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Arctic Ocean Oil Rights: International Law and Sovereign Title

Blanche Sas

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"Hang on to your youthful enthusiasms – you'll be able to use them better when you get older"

Lucius Annaeus Seneca, Letters From a Stoic.

Abstract

The Arctic Ocean has been identified as a region of potentially significant oil and gas reserves. It has significant political importance for its coastal states. These factors are complicated by its hostile geographical location and its extremely fragile and vulnerable environment. For an oil company to embark on exploration and exploitation in this region it must be assured of secure title to the oil it produces, and it is therefore this issue on which the analysis focusses.

This thesis examines acquisition of title to petroleum in the Arctic region, analyses how secure such title is, and critiques the role international law plays in achieving security of tenure. It adopts a top down approach tracing title to petroleum in the Arctic from the international law level, through coastal states' regimes, down to the oil company level.

Analysing this chain of title, the study examines whether indigenous peoples of the Arctic have become stakeholders in Arctic offshore petroleum, whether international law with respect to indigenous peoples' rights and self-determination has played any part in facilitating this development, and whether these rights have impacted, directly or indirectly, on title to offshore petroleum in the Arctic Ocean. The thesis also examines whether the other aspect of sustainable development of petroleum in the Arctic, environmental protection, affects either title to petroleum or its exercise.

In examining the Arctic coastal states' rights, the thesis identifies several new problematic legal areas, in particular in relation to the use of ice formations as loci for territorial sea basepoints, highly ambulatory coastlines causing issues for locating valid territorial sea baselines, and thawing subsea permafrost creating 'ambulatory continental shelves'. Such issues, the study shows, may have serious implications for the validity of certain coastal states' maritime delineations, with corollary implications for title to petroleum in specific offshore areas.

The work also studies the national regimes and their licensing/leasing regimes and how title is conveyed in practice to the producing oil company.

The study identifies the weaknesses in the international legal regime relevant to petroleum development and rights to petroleum in the Arctic Ocean. In particular, the relevant provisions of UNCLOS, which establish the basic legal framework of jurisdiction and sovereign rights of coastal states, are examined in detail and issues identified and analysed.

Finally, the thesis reaches both specific and general conclusions and looks forward to the possible future resolution of some of the key issues identified by the analysis.

Note

This thesis is based on data collected up to 1 August 2015. Major developments after that date are noted in footnotes, but not analysed.

Abbreviations

AEPS	Arctic Environmental Protection Strategy
AFDI	Annuaire Français de Droit International
AFRI	Annuaire Français de Relations Internationales
AGU	American Geophysical Union
AJIL	American Journal of International Law
AMAP	Arctic Monitoring and Assessment Programme
ASIL	The American Society of International Law
BEAR	Barents Euro-Arctic Region
BP	British Petroleum Plc. Website: http://www.bp.com
BIPM	International Bureau of Weights and Measures
BYIL	British Yearbook of International Law
CARC	Canadian Arctic Resources Committee
CEPML	Centre of Energy Petroleum and Mineral Law (University of Dundee)
CIGI	Centre for International Governance Innovation
CLCS	Commission on the Limits of the Continental Shelf
CYIL	Canadian Yearbook of International Law
DOALOS	United Nations Division for Ocean Affairs and the Law of the Sea
EEZ	Exclusive Economic Zone
EOS	Earth and Space Science News
EU	European Union
Fed. Reg.	Federal Register

FID	Final Investment Decision
FOS	Foot of the Continental Slope
GYIL	German Yearbook of International Law
IBA	International Bar Association
IBRU	International Boundaries Research Unit (Durham University)
ICC	Inuit Circumpolar Council
ICJ	International Court of Justice
ICJ Rep.	ICJ Reports
IHO	International Hydrographic Organization
IJNCL	International Journal of Marine and Coastal Law
ILA	International Law Association
ILC	International Law Commission
ICLQ	International Comparative Law Quarterly
IJMCL	International Journal of Marine and Coastal Law
ILM	International Legal Materials
ILO	International Labour Organisation
ILR	International Law Reports
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
ISA	International Seabed Authority
ITLOS	International Tribunal on the Law of the Sea
IUCN	International Union for Conservation of Nature and Natural Resources
km	kilometre
LOSB	Law of the Sea Bulletin
LNTS	League of Nations Treaty Series

m	metre
M	mile(s)
MARPOL	The International Convention for the Prevention of Pollution from Ships 1973 as supplemented by Protocols
MGU	Moskovskij Gosudarstvennyj Universitet (Moscow State University)
MJIL	Michigan Journal of International Law
MPA	Marine Protected Area
nm	means nautical mile(s) for the purposes of this thesis. However, this abbreviation is not strictly correct. nm is the abbreviation of the Institute for Standards for nanometer. According to IMO the abbreviation for the nautical miles is NM.[1] The International Hydrographic Organization and the International Bureau of Weights and Measures[2] both use M as the abbreviation for the nautical mile, as does formally the UN[3]. The ICJ uses 'nautical miles' and no abbreviation in its judgments. However, the International Law Association uses the abbreviation nm,[4] as do most authors writing on maritime delineation and delimitation (in particular in the Arctic)[5], and thus, following their example, so will this thesis.
NASA	National Aeronautics and Space Administration (United States)
NGO	Non-governmental Organisation
NOAA	National Oceanic and Atmospheric Administration (United States)
Non-party State	A state that is not a party to a treaty/convention
NRJ	Natural Resources Journal
NSIDC	National Snow and Ice Data Center (United States)
ODIL	Ocean Development and International Law

[1] IMO, *Guidelines for the Presentation of Navigation-Related Symbols, Terms and Abbreviations*, (2004), T2-OSS/2.7.1, S.N./Circ 243, 15 December 2004. Annex 2, at 8.

[2] BIPM, *The International System of Units (SI)*, 8th Edition, 2006, at 127. Which defines a nautical mile as 1852m.

[3] See for example, United Nations, Commission on the Limits of the Continental Shelf, *Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf*, (1999), CLCS/11, 13 May 1999, available at:
www.un.org/Depts/los/clcs_new/documents/Guidelines/CLCS_11.html#1.Introduction.

[4] See, for example: Committee on Legal Issues of the Outer Continental Shelf, ILA, *Preliminary Report, in Report of the Seventy Conference*, (New Delhi, 2002), 741, at 751.

[5] See for example, Baker, Byers, Crawford, McDorman, Pharand, Rothwell and Stephens,Tanaka, etc.(see Bibliography).

OGEL	Oil Gas and Energy Law. Website: http://www.ogel.org/
OECD	Organisation for Economic Cooperation and Development
OGLTR	Oil and Gas Law and Taxation Review
OSPAR	The organisational mechanism whereby the Convention for the Protection of the Marine Environment of the North-East Atlantic 1992 is implemented.
PCA	Permanent Court of Arbitration
PCIJ	Permanent Court of International Justice
PSA	Production Sharing Agreement
RGDIP	Revue Générale de Droit International Public
Roskomnedra	Komitet Rossiiskoi Federatsii po geologii I ispolzovaniiu nedr (The Committee of the Russian Federation for Geology and Subsoil)
Russia	The Russian Federation
SOLAS	International Convention for Safety of Life at Sea 1974
State Party	A state that is a party to a treaty or convention
UN	United Nations
UNCLOS	The United Nations Convention on the Law of the Sea 1982[6]
UNEP	The United Nations Environment Programme
UNGA	United Nations General Assembly
United States	The United States of America
UNTS	United Nations Treaty Series
USSR	Union of Soviet Socialist Republics
VJIL	Virginia Journal of International Law
VCLT	Vienna Convention on the Law of Treaties 1969
WWF	World Wildlife Fund. Website: http://wwf.org.uk

[6] 10 December 1982, 1833 UNTS 3.

YBILC	Year Book of International Law Commission
YILC	Yearbook of the International Law Commission
Z.f.a.o.R.VR	Zeitschrift für ausländisches öffentliches Recht und Völkerrecht

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Chapter 1: General Background and Introduction to Thesis

1.1 Introduction

The thesis examines the acquisition of title rights over the petroleum produced in the Arctic Ocean and the role that international law plays in the process of that acquisition. This topic arose in the context of the work of the author as a legal advisor to a Russian state oil company active in the Arctic in the 1990s, at which time the pressures of commercial practice precluded any detailed and comparative analysis. Having retired, and with climate change impacting dramatically on the region, the author has returned to this fascinating subject.

Since the 1990s there has been a fast growing volume of literature on various aspects of the legal regime in the Arctic Ocean region.[1] These books, together with Alfredsson and Koivurova's annual *The Yearbook of Polar Law*[2], have established an exceptional research base for this thesis. As an oil and gas lawyer, the author chose to frame the thesis questions with the practical but crucially important issue – the acquisition of title to petroleum by an oil company producing in the Arctic Ocean. Through this prism the role of international law becomes focussed, and new aspects and issues have come to light that have not been considered by previous authors. It is hoped that this thesis complements and supplements the previous academic work, while also being of practical benefit to the oil and gas lawyer working on Arctic Ocean projects.

In opening the thesis, this Chapter defines the geographic scope, rationale, hypotheses, relevance, and analytical methodology of the thesis.

1.2 Geographical Scope of Thesis

[1] Especially those of Byers, Franckx, Oude Elferink, McDorman, and Rothwell - see Bibliography, Annex 1.

[2] Gudmundur Alfredsson, Timo Koivurova and David Leary, *The Yearbook of Polar Law*, (2009), Vol. 1, Martinus Nijhoff; Gudmundur Alfredsson, Timo Koivurova and Natalia Loukacheva, *The Yearbook of Polar Law*, (2010), Vol. 2, Martinus Nijhoff; Gudmundur Alfredsson, Timo Koivurova and Kamrul Hossain, *The Yearbook of Polar Law*, (2011), Vol. 3, Martinus Nijhoff; Gudmundur Alfredsson, Timo Koivurova and Waliul Hasanat, *The Yearbook of Polar Law*, (2012), Vol. 4, Martinus Nijhoff; Gudmundur Alfredsson, Timo Koivurova and Adam Stapien, *The Yearbook of Polar Law*, (2013), Vol. 5, Martinus Nijhoff; Gudmundur Alfredsson, Timo Koivurova and Hjalti Omar Agustsson, *The Yearbook of Polar Law*, (2014), Vol. 6, Martinus Nijhoff.

The geographical limits of the thesis is a region comprising all marine areas north of the Arctic Circle, which is comprised of the Arctic Ocean proper[3] and all its smaller fringing seas, gulfs and bays (see Figure 1.1 below). The fringing seas include: the Bering, Chukchi, Greenland, Norwegian, Barents, Kara, Laptev, White, East Siberian, Prince Gustav Adolf, Pechora, Lincoln and Beaufort Seas. This region in the thesis will be termed the 'Arctic Ocean'.

Five states have coasts abutting the Arctic Ocean: Canada, Denmark (Greenland), Norway, Russia and the United States (hereinafter referred to as "the Arctic Five") and the thesis will restrict its scope to analysis of the issues in these states and the Area

It should be noted that Iceland's coast does not abut the Arctic Ocean - although some of its northern territorial sea does extend above the Arctic Circle into the Arctic Ocean . Thus, although Iceland is generally excluded from the study, where it is pertinent, some delimitation treaties to which Iceland is a party are analysed

1.3 Key Features of the Arctic Ocean Relevant to the Thesis Topic

The Arctic Ocean region is characterised by the following key geographical/geological, environmental, political and economic features:

- ***Geographical/Geological and Environmental Features***

Firstly, although the two polar regions share the common characteristic of being ice-covered for much of the year[4], it is important to note that the Arctic Ocean is very different from Antarctica. The key difference between the Arctic and the Antarctic is that one is a vast ocean surrounded by the five Arctic States and the other a vast continent surrounded by an ocean.[5] This difference has major implications for the resultant maritime zones and state claims.[6] Therefore, it is not surprising that, to date, any suggestion of legal transplantation

[3] On the extent and geographical features of the Arctic Ocean proper see: CIA, *The World Factbook*, (2013 - 2014), available at:
www.cia.gov/library/publicationjs/the-world-factbook;
Michael Matthias Timczak and J. Stuart Godfrey, *Regional Oceanography: An Introduction*, (2003), Daya Publishing House.
[4] Donald R. Rothwell, *The Polar Regions and the Development of International Law*, (1996), *CSICL*, at 26.
[5] Ibid, at 46; Donald R. Rothwell and Christopher C. Joyner, "The Polar Oceans and the Law of the Sea", (2001), in *Oude Elferink and Rothwell*, op. cit., Chapter 1, 1 at 7.
[6] Rothwell, op. cit. at 161.

to the Arctic of the type of treaty-style legal regime approach from the Antarctic has been fiercely rejected by the Arctic States[7], which instead opted in 1996 for the creation of a 'soft law' organisation, the Arctic Council[8], whose mandate is limited to the promotion of cooperation on issues of sustainable development and environmental protection.[9] Although many authors have advocated the further evolution of the Arctic Council into a formal international institution, after 20 years this has not occurred.[10] Nonetheless, under its auspices two topic-specific treaties[11] have been agreed by the Arctic Eight.[12] Some authors identify this as an evolutionary trend from 'soft' to 'hard' law.[13] However, it can be more convincingly argued that such treaties are rather manifestations of an *ad hoc* topic-specific approach, occurring only where the Arctic Five can see genuine national advantages in such binding international cooperation. Moreover, given the current tension between Russia and the other members of the Arctic Council, it may be a while before another such treaty emerges.

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[7] Timo Koivurova, "Alternatives for Arctic Treaty – Evaluation and a New Proposal*",* (2008), *RECIEL,* Vol. 17, No.1, 14; Julia Jabour, "Pharand's Arctic Treaty, Would an Antarctic Treaty-Style Model Work in the Arctic?" (2015), *International Law and Politics of the Arctic Ocean*, (Suzanne Lalonde and Ted L. McDorman, eds.), Martinus Nijhoff, 87.

[8] Thomas S. Axworthy, Timo Koivurova, Waliul Hasanat, *The Arctic Council: Its place in the future of Arctic Governance*, (2012), Munk-Gordon Arctic Security Program; Paula Kankaapaa, "The Arctic Council - from Knowledge Production to Influencing Arctic Policy Making", (2012), *The Yearbook of Polar Law*, (Gudmundur Alfredsson, Timo Koivurova, and Waliul Hasanat, eds.), Martinus Nijhoff, 59.

[9] Andreas Charron, "Lessons Learned and Lost from Pharand's Arctic Regional Council Treaty Proposal", (2015), in *International Law and Politics of the Arctic Ocean*, (Suzanne Lalonde and Ted L. McDorman, eds.), Martinus Nijhoff, 76, at 82 - 84.

[10] Kristin Bartenstein, "The Arctic Region Council Revisited, Inspiring Future Development of the Arctic Development of the Arctic Council", in *International Law and Politics of the Arctic Ocean, Essays in Honor of Donat Pharand*, (Suzanne Lalonde and Ted L. McDorman, eds.), Brill/Nijhoff, 55; Emily Hildreth, "Holes in the Ice: Why a Comprehensive Treaty Will Not Succeed in the Arctic and How to Implement an Alternative Approach", (2011), *Yearbook of Polar Law*, Vol. 3, 545.

[11] The 2011 Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, available at:
www.arctic-council.org/index.php/en/document-archive/category/20-main-documents-from-nuuk?download=73:arctic-search-andrescue-agreement-english.
The 2013 Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic, available at:
www.arctic-council.org/index.php/en/document-archive/category/425-main-documents-from-kiruna-ministerial-meeting?download=1792:Agreement-on-cooperation-on-marine-oil-pollution-preparedness-and response-in-the-arcticsigned-version-with-appendix.

[12] The Arctic Five plus Finland, Iceland, and Sweden. The three extra states all have territory north of the Arctic Circle, although with regard to Iceland, the Arctic Circle only passes through the small offshore island of Grimsey. The Arctic Council's members include all states with Arctic territory (the Arctic Eight), who thus share common interests and confront common issues specific to the Arctic region, in particular in respect of sustainable development and environmental protection.

[13] See, for example, Timo Koivurova, "Increasing Relevance of Treaties: The Case of the Arctic [Agora: The End of Treaties?]", (2014), *AJIL Unbound*, 6 May 2014, available at:
www.asil.org/blogs/increasing-relevance-treaties-case-arctic-agora-end-treaties.

Thus, because the Arctic Council does not have either jurisdiction or rights to resources in the Arctic Ocean, it will not be studied in the thesis, except where any of its activities impacts indirectly on the exercise of the rights of coastal states to exploit petroleum located in their Arctic maritime zones.

Figure 1.1 Map of the Arctic Ocean region[14]

Secondly, the Arctic Ocean has a very hostile and remote environment, with a fragile ecosystem and unique endangered fauna.[15] Crucially the ice in and around the Arctic Ocean

[14] © US CIA. Public Domain. Available at: www.cia.gov/library/publications/the-world-factbook/docs/refmaps.html

is melting at an accelerating and significant rate[16], as will be discussed in detail in Chapter 2 (Figure 1.2 below illustrates the diminishing ice extent). Because of these dramatic changes the Arctic Ocean has been identified by the Intergovernmental Panel on Climate Change ("IPCC") as a barometer for climate change.[17]

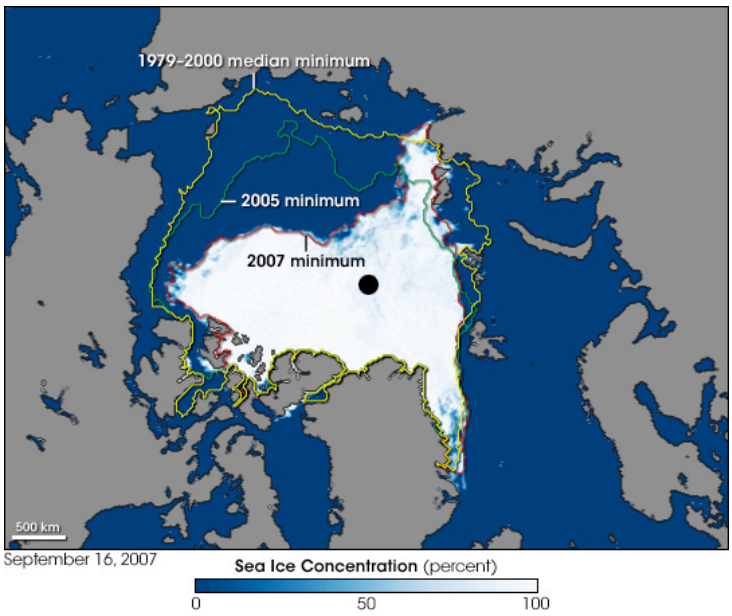

Figure 1.2: Decline of Arctic Ocean summer sea ice extent 1979 - 2007[18]

As will be discussed in Chapter 3, the hostile climate and conditions, the presence of massive amounts of thick semi-permanent ice[19], lack of infrastructure, and environmental fragility make offshore petroleum development in the region difficult, expensive and risky[20],

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[15] E. Carina and H. Keskitalo, *Climate Change and Globalisation in the Arctic: An Integrated Approach to Vulnerability Assessment*, (2008), Earthscan; Rothwell and Joyner, (2001), 5 -8; Rothwell, (1994), op. cit., 24 - 35.

[16] Kevin R. Arrigo, "The Changing Arctic Ocean", (2013), *Elementa, Science of the Anthropocene Online*, available at: www.elementascience.org/*articles/10/tabs/article_info*.

[17] IPCC*, IPCC Fifth Assessment Report,* (2014), Chapter 4, at 39, and Chapter 10, at 870.

[18] ©NASA/NSIDC. Public Domain, available at: ftp://ecco2.jpl.nasa.gov/data3/ATN_output/+temp/+seaice/Serreze_2002GLO16406.pdf.

[19] The degree of difficulty of operating in such ice was captured in: Ross Coen, *Breaking Ice, The Epic Voyage of the S.S. Manhattan through the Northwest Passage*, (2012), University of Alaska Press. This difficulty was illustrated in December 2012 when Shell's exploration rig, the Kulluk, was driven aground on the coast of the Chukchi Sea during an Arctic storm. See: "Kulluk Drilling Unit Runs Aground in Alaska", *Offshore Energy Today*, 2 January 2013, available at: www.offshoreenergytoday.com/kulluk-drilling-unit-runs-aground-in-alaska.

[20] Alun Anderson, *After the Ice,* (2009), Harper Collins, Chapter 14: "How Far Can Oil Go?", 196; Roger Howard, *The Arctic Gold Rush*, (2009), Continuum, Chapter 5: "Black Gold", 62 – 82.

and sustainable development becomes a pertinent issue, but not impossible to achieve.[21] Thus, the issue of title to petroleum in the Arctic Ocean has practical importance and is not purely academic.[22]

- ***Political***

Since the beginning of the 20th Century the Arctic Ocean region has been a zone of high politics raising crucial issues of national security and identity for the Arctic Five.[23]

Another fundamental feature of the region surrounding the Arctic Ocean is that it is inhabited: one and a half million people live in the Arctic, of whom 15% are indigenous people.[24] Over the last fifty years these indigenous peoples have increasingly claimed rights to land and resources on the mainland of the Arctic Five[25], and rights in the Arctic more generally.[26] The thesis will examine questions of devolution, self-determination, the extent to which rights to offshore petroleum have been granted to these peoples by each of the Arctic Five and the role international law has played in this regard.

Due to the Arctic Ocean's environmental vulnerability and global importance in terms of climate change[27], environmentalists and conservationists have increasingly campaigned for its protection, in particular against petroleum activities.[28] Their actions have had a direct

[21] Oluf Langhelle, Bjorn-Tore Blindheim and Olaug Oygarden, "Framing oil and gas in the Arctic from a sustainable development perspective", (2011), in *Arctic Oil and Gas, Sustainability at Risk?,* (Aslaug Mikkelsen and Oluf Langhelle, eds.), Routledge, 15, at 38 - 39.

[22] David Fairhall, *Cold Front Conflict Ahead in Arctic Waters*, (2010), I. B. Tauris, "Possible Outcomes", at 192 - 193; Anderson, (2010), op. cit., "Scope for Dispute", at 79 - 81.

[23] A useful study on this is: Charles Emmerson, *The Future History of the Arctic, How Climate Resources and Geopolitics are Reshaping the North and Why it Matters to the World*, (2010), Vantage Books.

[24] Ketil Feed Hansen and Nigel Bankes, "Human Rights and Indigenous People in the Arctic", in *Arctic Oil and Gas*, (2008), op. cit., Chapter 11, 291, at 291.

[25] This will be described for each of the Arctic Five in Chapter 4. For a useful overview see: Katja Gocke, "Recognition and Enforcement of Indigenous People's Land Rights in Alaska, the Northern Regions of Canada, Greenland, and Siberia and the Russian Far East", *The Yearbook of Polar Law*, Vol. 4, op. cit., 279.

[26] As exemplified by 2009 Circumpolar Declaration on Sovereignty in the Arctic: Inuit Circumpolar Council, C*ircumpolar Declaration on Sovereignty in the Arctic*, April 2009, available at: www.itk.ca/system/files_force/Declaration_12x18_Vice-Chairs_Signed.pdf?downoad=1.

[27] Sebastien Duyck, "Which Canary in the Coalmine? The Arctic in the International Climate Change Regime", (2012), *The Yearbook of Polar Law,* Vol. 4, op.cit., 583.

[28] Such as Greenpeace's actions against the Prirazlomnoye rig in the Pechora Sea in 2013: Moscow Times, "Greenpeace Storms Prirazlomnaya Platform in Arctic", (2013), *Moscow Times,* 24 August 2013, available at: www.themoscowtimes.com/special/environment/rus/. See also WWF reports on the Arctic available on its website at: wwf.panda.org/what_we_do_/where_we_work_/arctic/publicationjs/?204374/gap20thanniversary.

impact on licencing and on petroleum operations in the Arctic Ocean[29], as will be studied in some detail in the chapters on the different zones of each of the Arctic Five.

- ***Economic***

The Arctic Ocean has an estimated 18% of the world's undiscovered recoverable petroleum according to a 2008 United States Geological Survey ("USGS") report.[30] The Arctic Ocean is perceived as a petroleum development area of low political risk, although it has significant economic, investment and project risks and costs, thus requiring high oil prices to make projects commercially viable.[31] However, it should be recalled that such projects have already been successful, albeit limited in number: there has been more than 40 years of experience in north Arctic petroleum production primarily in Alaska (offshore Prudhoe Bay) and Russia (onshore Yamal Peninsula).[32] There are known large petroleum deposits in the Arctic Ocean[33], and the estimated world demand for petroleum is projected by the International Energy Agency ("IEA") to increase significantly (see Figure 1.3 below). These two factors combine to make the Arctic Ocean an interesting petroleum region.

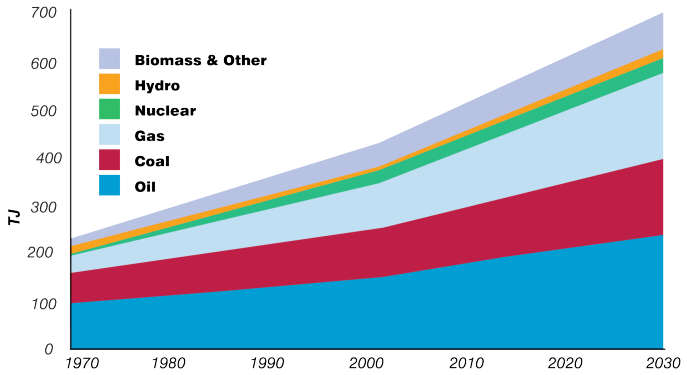

Figure 1.3: Projected increase in demand of petroleum[34]

[29] For example environmentalist and indigenous people groups have challenged the 2008 leases issued by BOEM for offshore Alaska on environmental grounds. Although unsuccessful, they delayed commencement of activities by over a year: see Chapter 3 for more details and discussion.

[30] *US Geological Survey's Circum-Arctic Oil and Gas Resource Appraisal 2008*, available at: http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf.

[31] See Mark Nuttall, "Oil and Gas Development in the North: Resource Frontier or Extractive Periphery?", *The Yearbook of Polar Law*, (2010), Vol. 2, op. cit., 225, at 233 - 243.

[32] For a brief description of the two developments see: Richard Sale and Eugene Potapov, *The Scramble for the Arctic, Ownership, Exploitation and Conflict in the Far North*, (2010), Francis Lincoln, at 171 - 174.

[33] David Leary, "From hydrocarbons to psychrophiles: the 'scramble" for Antarctic and Arctic Resources", (2014), *Polar Oceans Governance in an Era of Environmental Change,* (Tim Stephens and David L. VanderZwaag, eds.), Edward Elgar, Chapter 7, 125, at 128 - 130.

[34] ©OECD/IEA, *World Energy Outlook 2004*. Public Domain. Available at:

Reports by the International Energy Agency[35] and OPEC[36] in 2013 have indicated that:

- If the elimination of coal generation is to be achieved by 2100 as proposed by the IPCC 2014 Report[37] there will be an important role for natural gas and its demand will increase substantially.

- In the period to 2035, world petroleum demand will grow by 52% and hence it is highly likely there will be a push for Arctic oil and gas development within the next two decades. In the 2000s the media and some academics predicted a Klondike – type 'rush' among the Arctic Five for Arctic resources.[38] A decade later, however, it seems probable that, at least for next decade, the push is more likely to be a purposeful but 'slow dawdle'.[39]

These factors lead to the thesis' rationale and key questions.

1.4 Thesis Rationale and Methodology

If Arctic petroleum is to be developed to meet the projected growing demand, then an optimum legal regime ensuring sustainable petroleum development is essential.

The key premise of the thesis is that secure title to petroleum produced in the Arctic Ocean is vitally important for its exploitation. The first step for all companies involved in petroleum exploration and production relates to ensuring the acquisition of good title to the petroleum produced.[40] Consequently, the legal status of the area in which the petroleum activity is to

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http://www.world-nuclear.org/uploadedImages/org/info/Energy_and_Environment/primaryenergydemand.gif?n=7925.

[35] OECD/IEA, *World Energy Outlook 2013*, (2013), IEA, 12 November 2013, Executive Summary available at: www.iea.org/publications/freepublications/publication/WEO2013_Executive_Summary_English.pdf.

[36] OPEC, *World Oil Outlook,* (2013), OPEC, Executive Summary available at: www.opec.org/opec_web/static_files_project/media/downloads/publications/Executive_Summary_WII2014.pdf.

[37] IPCC, *Fifth Assessment Report*, (2014), available at: www.ipcc.ch/report/ar5/mindex.shtml.

[38] See for instance: Roger Howard, *The Arctic Gold Rush, The New Race for Tomorrow's Natural Resources,* (2009), Continuum.

[39] For a review that re-evaluates the 'rush' see: Timo Koivurova, "The Actions of the Arctic States Respecting the Continental Shelf: A Reflective Essay", (2011), *ODIL*, Vol. 42, No. 3, 211. Leary coined the 'dawdle': Leary, (2014), op. cit., at 145.

[40] Following the Roman law principle (Ulpian, D.50.17.54): "Nemo plus juris ad alium transferre potest, quam ipse habet" (no one can transfer more right to another than he has himself). Helpful information is contained in the unpublished thesis of George Ndi, *Investment Policy Transformation in the Natural Resources Sector: The*

occur becomes not an academic question, but one of practical importance, as the entity authorising such oil and gas activities can pass on only as good title to the oil and gas as it has itself.[41] Practically speaking, in an area where its legal status is unsettled, it would be very difficult to reach the financial investment decision (FID)[42] stage for a major petroleum project.[43] The arrangements with host governments under which oil and gas companies conduct petroleum exploration and production are premised on the assumption that the licensing state exercises sovereignty or sovereign rights over the area of operation and its subsoil natural resources.

States often pass title over land and subsoil to sub-units and authorities, and to aboriginal groups, and they also frequently transfer regulatory powers to manage and/or administer petroleum activities to sub-units and special authorities, agencies or indigenous organisations – the question is to what extent such delegation extends offshore and to what effect.[44]

Legal Implications as Regards the Tension Behind International Property Rights and Sovereign Rights, (1995), CEPML, Dundee University.

[41] For example see: P. Cameron, *Property Rights and Sovereign Rights: The Case of North Sea Oil*, (1988), Academic Press.

[42] Except, of course, where there is a zone of joint development agreement between the claimant states, the risk reward ratio is huge, or in the unlikely case when the host state provides a sovereign guarantee. For a useful summary of the key issues for a FID see: Z. Yuhva and L. Dongkun, a presentation made at *the Internet Technology and Applications Conference, 20 - 22 August 2010*, Investment Decisions of Overseas Projects for Petroleum Enterprises in Competitive Condition, available at:
http:/www.ieeexplore.ieee.org.

[43] The legal nature of petroleum exploration and production permits, licences, risk service contracts, leases, PSAs, and concessions (all of which range on a continuum from purely regulatory authorisations through contracts to ownership/proprietary rights) has been discussed extensively in the literature, see for example: Cameron, footnote 41, *supra*.
The legal nature of the regime under which the terms and conditions of the petroleum activity is undertaken has significant implications especially for legal and financial risk: in less developed and uncertain countries oil companies usually prefer to have a concession or a PSA – see, for example: F. C. Alexander, *Petroleum Sharing Contracts and other Host Government Contracts*, (2005), *OGEL*, Vol. 3, No. 1; A. Kemp, *Petroleum Rent Collection Around the World*, (1987), Institute for Research on Public Policy, Canada.
The Petrotimor Case (Petrotimor Companhia de Petroleos S.A.R.L. v. Commonwealth of Australia, (2003), 126 FCR 354) is a good example of how vulnerable upstream petroleum licences and concessions can be. The plaintiff's company had been granted a concession on the continental shelf of East Timor by Portugal, the mandated authority for East Timor. After the Indonesian invasion and occupation of East Timor Australia recognized Indonesian sovereignty over East Timor and concluded a joint development agreement with Indonesia which included the plaintiff's area, thereby resulting in the extinguishment of the Petrotimor concession. The Australian court dismissed the Petrotimor claims for compensation, ruling that the question of whether Australia had validly entered the joint zone agreement was, as an Act of State, non-justiciable.

[44] For different ownership approaches see: Y. Omorogbe and P. Oniemola, "Property Rights in Oil and Gas under Domanial Regimes", (2010), in *Property and the Law in Energy and Natural Resources*, (A. McHarg *et al*, eds.), Oxford University Press, 115.

Thus, clear title to petroleum once it has been produced is fundamental for investment and legal regimes need to ensure it. In this respect the thesis poses two further questions:

- What role has international law played in ensuring such a regime is in place?
- What influence has international law had in each national legal regime in respect of the transfer and exercise of title to petroleum rights?

In order to address these questions the thesis adopts a '*top down' methodology* (see Figure 1.4 below) tracing the role international law currently plays through the 'title to petroleum' chain from the coastal state to the oil company.

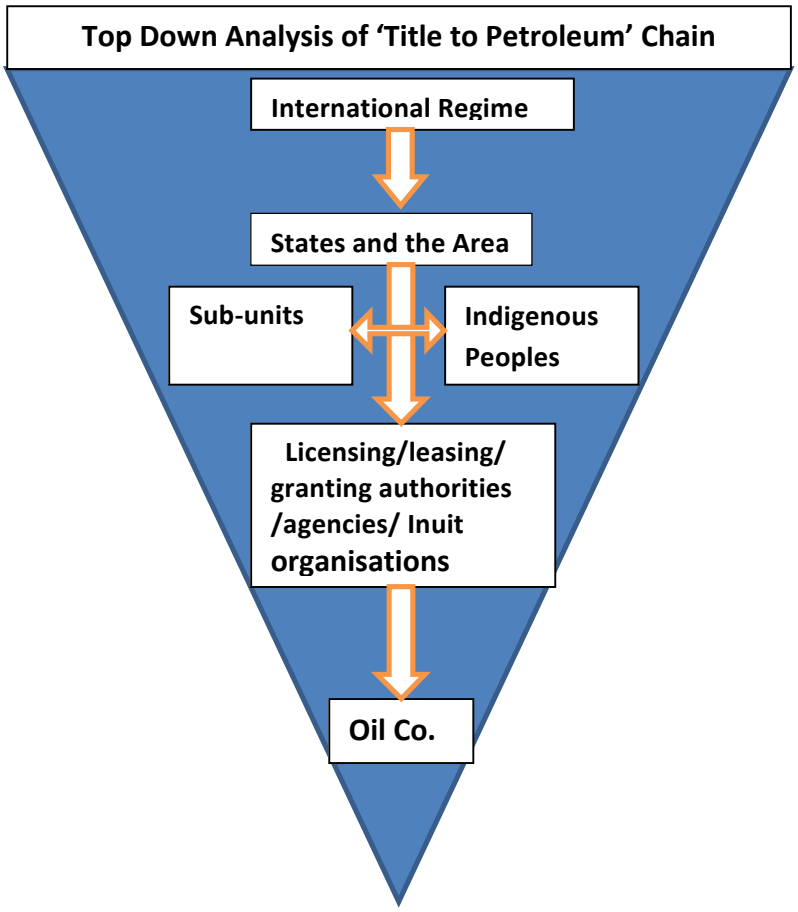

Figure 1.4: The top down approach: The title to petroleum chain[45]

[45] ©B.Sas 2015.

The analysis includes:

- An examination of the role of international law in establishing title to petroleum in the Arctic Ocean by states and the International Seabed Authority: sovereignty and/or sovereign rights over petroleum.
- An analysis of the implementation of these sovereign rights in the national regimes, with particular reference to:
    - An examination of the extent indigenous peoples' rights and environmental protection impact on title to offshore Arctic petroleum. The indigenous peoples living in the Arctic Ocean region may potentially have acquired rights with respect to petroleum located offshore, in particular nearshore. Environmental protection may also affect offshore petroleum development in a number of ways: for example, particularly sensitive marine environments may be protected by a prohibition on such activities in such areas or environmental impact assessments may be required and their process, consultation requirements, and criteria for evaluation may give grounds for legal actions that may prevent, or at least halt, licensing/leasing and activities related thereto.
    - An examination of any devolution to sub-units of regulatory and administrative powers and the transfer of title to the subsurface petroleum.
    - A description of the national oil and gas regimes of the Arctic Five and the mechanisms of transfer of title to petroleum ending with the oil company.

International lawyers generally tend to halt their analysis at the level of the coastal state acquiring sovereign rights, while corporate lawyers tend take a 'bottom up' approach starting with the licence, lease, concession, or other form of agreement and ending at the domestic law of the coastal state level.[46] The thesis combines the two approaches. Thus, the

[46] Such as a petroleum service agreement ("PSA") or risk service agreement.

thesis provides a comprehensive analysis and response to the question of the acquisition of title to petroleum.

The legal security of the entire chain of transfer of title to petroleum is intrinsically important in securing uncontestable good title to the oil company. By studying the links and influencing factors along this chain, it will be shown how international law plays both passive and active roles to varying levels of effectivity, with respect to coastal state's rights, self-determination and indigenous peoples, devolution and environmental protection. The thesis will demonstrate that in the Arctic Ocean international law has played a very mixed role. On occasions it has (1) provided basic principles and a framework for a viable maritime regime in which jurisdiction and rights are allocated to coastal states (UNCLOS); (2) created uncertainties in the regime and especially regarding rights, due to gaps in legal provisions, inadequate conceptualisation and definitions, and occasional poor implementation (Article 76 UNCLOS); (3) fallen short of keeping failed to keep abreast of fundamental changes in the environment which require new legal approaches (ice issues); (4) created potential economic disincentives for petroleum development in the Arctic ECSs (Article 82 UNCLOS); (5) provided mechanisms for the peaceful resolution of maritime baseline disputes (Part XV UNCLOS), although it has not addressed the issue of *locus standi* for Non-party States, the CLCS and the ISA; and (6), been a real stimulus to new petroleum development initiatives (such as its promotion of JZDs and unitisation of straddling petroleum deposits).

The thesis, by focusing on the specific issue of title to petroleum, has been able to identify particular inadequacies and limitations in the current legal regime and found that the devil is often in the detail. In fact, it echoes Koivurova's view, particularly applicable in the Arctic, that:

> "There should be more awareness of the applicable international law rules, but scholars should also examine the complexity and nature of these rules. It is only with this caution that international law can enhance prospects for better capturing the reality of international governance."[47]

1.5 Overview of Thesis

This section is brief as each Chapter of the thesis begins with a summary to enable the reader to follow the key themes and conclusions as they emerge through the thesis.

[47] Koivurova, (2011), op. cit., at 222.

Chapter 2 examines the governance of the Arctic Ocean by the law of the sea, much of which has been codified in UNCLOS. It also explores the possibility that the Arctic Ocean could legally be a semi-enclosed sea as such a categorisation could, under Article 123 of UNCLOS, give rise to important provisions regarding rights.

Next, Chapter 3 considers the legal status of ice in and abutting the Arctic Ocean and then analyses the drawing of territorial sea baselines along the ice-covered coasts in the Arctic. In doing so this Chapter analyses in some detail the legal status and jurisdictional implications of ice (differentiating between types of ice) in the Arctic Ocean and along the coasts abutting it and then it examines Arctic state practice with respect to ice.[48] There has been mooted over the years the concept of "ice is land" and the concomitant conclusion that, where ice persists for many years and is fixed to land, it may be able to generate territorial sea baselines.[49] The drafters of UNCLOS appear to have assiduously avoided the issue of the legal status of ice.[50] Irrespective of the original validity of basepoints located on ice, a further compounding factor is the current melting of these ice features and that as a result many of such basepoints are now in the sea - the Chapter provides several practical examples where, as a consequence, national basepoints have become invalid.

The relevance of this topic to petroleum activities may not at first be evident, but, as will be shown, use of the different forms of ice, ice shelves, glacier tongues and fast ice as loci for basepoints, has serious implications for defining the territorial baselines used in delimitation of all key maritime zones in the Arctic Ocean. Invalid territorial sea baselines would have the clear effect of calling into question the validity of all outer limits claimed for all maritime zones which are measured from them.

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[48] On this topic see: F. Auburn, *Antarctic Law and Politics*, (1982), Indiana University Press, 126; S. B. Boyd, "The Legal Status of Arctic Sea Ice: A Comparative Study and Proposal", (1984), *Canadian Yearbook of International Law*, Vol. 22, 98; C. C. Joyner, (1991), "Ice-covered Regions in International Law", *Natural Resources Journal*, Vol. 31, 213; C. C. Joyner, "The Legal Status of Ice", (2001), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, (A. G. Oude Elferink and D. R. Rothwell, eds.), Kluwer, 23; G. J. Mangone, "The Legal Status of Ice in International Law", (1988), *Antarctic Challenge III*, (R. Wolfrum, ed.), Dunker and Humblot; M. H. Nordquist (ed.), (1991), *United Nations Conference on the Law of the Sea 1982: A Commentary*, Martinus Nijhoff, 392; D. Pharand, "The Legal Status of Ice Shelves and Ice Islands in the Arctic", (1969), *Cahiers de Droit*, Vol. 10, 461.

[49] Erik Franckx, *Maritime Claims in the Arctic: Canadian and Russian Perspectives*, (1993), Martinus Nijhoff, at 81 - 82; S. B. Kaye, "Territorial Sea Baselines Along Ice Covered Coasts: International Practice and Limits of the Law of the Sea", (2004), *Ocean Development and International Law*, Vol. 35, No. 1, 75.

[50] Boyd, op. cit., at 40 - 144; Kaye, op. cit., at 76 - 84.

A further compounding factor is the current melting of these ice features and the Chapter provides several practical examples where, as a consequence, national basepoints have become invalid.

Similarly, the Chapter also studies the implications of the thawing of the permafrost both along the coastline and subsea. This analysis highlights how conceptual and definitional inadequacies in UNCLOS relating to the defining of baselines and continental shelf may potentially lead to very uncertain territorial baselines and limits of the continental shelves in the Arctic Ocean.

Chapters 4, 5, and 6 form the core of the thesis and examine in detail the coastal states rights to petroleum in each of the maritime zones (namely the territorial seas, EEZs and extended continental shelves) and then the national implementation of these rights by each of the Arctic Five. In each of the Arctic Five, devolution to sub-units, self-determination and indigenous peoples' rights and environmental protection are discussed in respect of offshore Arctic, with a specific focus on rights to offshore petroleum and their exercise.

Chapter 6 explores the issue of the coastal states' obligations in particular in relation to claiming an extended continental shelf ("ECS") (Article 76(8) UNCLOS). It examines the issues in respect of: (1) the legal implications of the thawing of subsea permafrost for defining the ECS, (2) submarine ridges and elevations and their crucial importance in defining the ECS, (3) the role and functioning of the CLCS, and (4) the Article 82 requirement to make payments to the International Seabed Authority in respect of petroleum produced from the ECS.

Chapter 7 summarises the issues connected with overlapping maritime claims in the Arctic Ocean: the seven delimitation agreements between Arctic States and issues relating to petroleum development in the areas of the agreements are examined. The remaining maritime delimitation dispute between Canada and the United States is described, issues are identified, and the possible solutions are also analysed.

Chapter 8 examines issues connected with title to petroleum located in the area beyond national jurisdictions and examines alleged claims to the North Pole by the Arctic Five.

Chapter 9 then draws some general and specific conclusions in respect of the role international law has played in ensuring that oil companies will acquire secure title to petroleum they produce in the Arctic and includes recommendations addressing some of the key issues identified in the conclusions.

International law establishes a basic framework for defining maritime boundaries of coastal states and the exercise of their sovereign rights therein, and, as the thesis demonstrates, in the Arctic Ocean, these boundaries and framework potentially entitle the coastal states to claim such extensive maritime areas that there will be very little left as the Area.

This framework therefore optimises the national interests of the Arctic Five who, not surprisingly, are taking the opportunity to assert maximal claims to their maritime zones. In 2008, they stated their collective position quite unambiguously in the Ilulissat Declaration:

> "By virtue of their sovereignty, sovereign rights and jurisdiction in large areas of the Arctic Ocean the five coastal states are in a unique position to address these possibilities and challenges. In this regard, we recall that an extensive international legal framework applies to the Arctic Ocean as discussed between our representatives at the meeting in Oslo on 15 and 16 October 2007 at the level of senior officials…We remain committed to this legal framework and to the orderly settlement of any possible overlapping claims. This framework provides a solid foundation for responsible management by the five coastal States and other users of this Ocean through national implementation and application of relevant provisions. We therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean. We will keep abreast of the developments in the Arctic Ocean and continue to implement appropriate measures."[51] (emphasis added).

A major conclusion of the thesis is that any future attempt at a major limitation or claw back of these Arctic sovereign rights granted under international law, given that two of the Arctic States are major superpowers, is highly unlikely. The thesis considers that any amendment of the current international regime will arguably (a) depend on the acquiescence of all of the Arctic Five, (b) be limited to issues of sustainable development, (c) be as *ad hoc* topic-specific agreements rather than being an overarching regional treaty, and (d) will not affect basic sovereign rights especially title to petroleum produced from a coastal state's maritime zones.

[51] The Ilulissat Declaration, Arctic Conference, Ilulissat Greenland, 27 - 29 May 2008 ("The Ilulissat Declaration"), (2008), available at:
http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf.

A recurrent theme of the thesis is that 'the devil lies in the detail'. By examining that detail, the thesis has been able to identify a number of problematic areas in the international legal regime itself in respect of maritime zones in the Arctic Ocean, all of which have very specific and significant practical and legal implications, especially in relation to petroleum development. The thesis also identifies conceptual inadequacies, implementation difficulties of UNCLOS provisions, and complicating factors occurring in national implementing legal regimes.

All these uncertainties deleteriously affect acquisition of clear title to petroleum produced in Arctic maritime zones, a number of which have either not been identified before or not been examined in such detail. The thesis concludes with looking into the future and exploring, where realistic, possible ways of resolving some of these uncertainties.

Therefore, it is hoped that this work contributes to enlarging the academic discussion of the legal regime in the Arctic Ocean, with specific focus on title to petroleum, and, for the practitioner, to usefully identifying areas of legal risk for an Arctic Ocean petroleum project.

Chapter 2: The Arctic Ocean, Governance and Legal Status

Summary:

First, this chapter clarifies the geographic scope of the thesis, the Arctic Ocean. It finds that the Arctic Ocean is not governed by an overarching regional treaty and concludes that the applicable legal regime relevant to the Arctic coastal states' sovereignty, sovereign rights and jurisdiction over defined maritime zones is the international law of the sea as set out in the 1982 United Nations Convention on the Law of the Sea ("UNCLOS").The Chapter then considers the Arctic Five claims of sovereignty, sovereign rights, and 'stewardship' over the Arctic Ocean as set out in the 2008 Ililussat Declaration. Next, it considers the possibility that the Arctic Ocean may have the legal status of a semi-enclosed sea under Article 122 of UNCLOS, but it finds the Arctic Ocean fails to meet certain criteria required under Article 122.

2.1 General Background and Introduction

The geographical limits of the thesis is a region comprising all marine areas north of the Arctic Circle, which is comprised of the Arctic Ocean and smaller fringing seas, gulfs and bays – see Figure 2.1. The fringing seas include: the Bering, Chukchi, Greenland, Norwegian, Barents, Kara, Laptev, White, East Siberian, Prince Gustav Adolf, Pechora, Lincoln and Beaufort Seas. Five states have coasts abutting the Arctic Ocean: Canada, Denmark, Norway, Russia and the United States.

There is no overarching regional treaty for the Arctic Ocean, as there is for the other polar region, the Antarctic.[1] Significant differences between the Arctic Ocean and the Antarctic Ocean regions – summarised in Figure 2.1 – may in great part explain the why in the Arctic "no true regional regime has been developed notwithstanding the common problems confronting Arctic States"[2]: the most significant feature being that the Arctic Ocean is surrounded by inhabited states.[3]

[1] On the Antarctic Treaty see:
Anne–Marie Brady (ed.), *The Emerging Politics of Antarctica*, (2013), Routledge; Tom Cioppa, "The Exploitation of Antarctica's Natural Resources and the Evolution of the Antarctic Treaty System: An Overview", (1995), *IBRU Boundary and Security Bulletin,* Autumn 1995, 59; Karen Scott, "Institutional Developments within the Antarctic Treaty System", (2003), *ICLQ*, Vol. 52, No. 2, 473; Gillian Triggs (ed.), *The Antarctic Treaty Regime, Law, Environment and Resources*, (2009), Cambridge University Press; Olav Scram Stokke and Davor Vidas (eds.), *Governing the Antarctic, The Effectiveness and Legitimacy of the Antarctic Treaty System,* (1997), Cambridge University Press.

[2] Donald R. Rothwell and Christopher C. Joyner, "The Polar Oceans and the Law of the Sea", (2001), in *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, (Alex G. Oude Elferink and Donald R. Rothwell, eds.), Brill/Nijhoff.

[3] However caution in trying to draw comparisons between the two polar regions should be exercised, especially if arguing for an Arctic Treaty. Young commented that generally "simplistic comparisons between the Arctic and the Antarctic do more to confuse the analysis of prospects for international cooperation in the

Characteristics	Arctic Ocean Region	Antarctic Ocean Region
1. Fundamental characteristic	An ocean surrounded by continents.	A continent surrounded by an ocean.
2. Size	The Arctic Ocean has an area of 14.05 million km^2 and is surrounded by the land masses of Canada, Denmark (Greenland), Norway, Russia and Norway of which approximately 15.5 million $km^{2,}$ is north of the Arctic Circle.	Antarctic continent has an area of approximately 14 million km^2 surrounded by the Southern Ocean with an area of approximately 20.3 million km^2.
3. Position in relation to human large population	Central, with over 2m people living within the Arctic Circle, and thousands of small communities living along the coastline of the Arctic Ocean.	Isolated with respect to other continents and human population. There is no permanent human habitation in Antarctica.
4. Continental glaciation	Generally small areas covered by ice caps, ice shelves, and glaciers, the principal being the Greenland ice sheet.	Very large area of glaciation: 97% land mass covered by ice sheet.
5. Temperature	Moderate cold with moderate to calm winds on average. Average annual mean temperature between minus 15°C to minus 20°C.	Extreme cold with frequent extreme wind velocities. Average mean temperature between minus 50°C and minus 57°C.
6. Sea ice extent	• Maximum amount: 15 million km^2. • Minimum amount: 5.2 million km^2 (2012). • Thickness: av. 2m. • Floes tend to converge and pack. • Significant decrease of 4.1% per decade. • Not very mobile as only three main outlets for the Arctic Ocean. • Melts less in summer with central core of perennial (multi-year) ice. The perennial ice coverage is about half the maximum winter cover.	• Maximum amount: 18 million km^2. • Minimum amount: 3 million km^2 (2011). • Thickness: av. 1m. • Floes disperse. • Small increase of 0.9% per decade. • Mobile. • Melts and disperses in the summer – over 85% of sea ice forms annually.

Arctic region than to shed light on this topic": Oran Young, "Arctic Waters", (1989), in *The Age of the Arctic*, (Gail Osherenko and Oran H. Young, eds.), Cambridge University Press, at 244.

7. Flora and fauna	Flora: highly diversified Fauna: diversified.	Virtually none, although has visiting birds and marine mammals.
8. Legal regime	No comprehensive international legal regime governing Arctic /Arctic Ocean.	1959 Antarctic Treaty system.

Figure 2.1: Key Characteristics of the Arctic and Antarctic Ocean Regions[4]

In 2008, the five Arctic littoral states, collectively termed the "Arctic Five", expressed unambiguously their consensus view in the Ilulissat Declaration[5]:

> "By virtue of their sovereignty, sovereign rights and jurisdiction in large areas of the Arctic Ocean the five coastal states are in a unique position to address these possibilities and challenges. In this regard, we recall that an extensive international legal framework applies to the Arctic Ocean as discussed between our representatives at the meeting in Oslo on 15 and 16 October 2007 at the level of senior officials…We remain committed to this legal framework and to the orderly settlement of any possible overlapping claims. This framework provides a solid foundation for responsible management by the five coastal States and other users of this Ocean through national implementation and application of relevant provisions. We therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean. We will keep abreast of the developments in the Arctic Ocean and continue to implement appropriate measures."[6] (emphasis added).

Nonetheless, even after the Ilulissat Declaration, some international organisations and jurists continued to indicate that they favoured a regional *lex specialis* approach and a specific Treaty system for the Arctic similar to that of the Antarctic[7], although the likelihood

[4] © B. Sas 2015. This table is based primarily on information contained in: (1) S. W. Boggs, T*he Polar Regions: Geographic and historical data for consideration in a study of claims to sovereignty in the Arctic and Antarctic regions*, 21 September 1933, Manuscript of Geographer for US State Department, Appellate Division Law Library Rochester N.Y.; and (2) United States National Science Foundation, *The U.S. Antarctic: Report of the U.S. Antarctic Programme External Pane*l, (1997), (Washington, D.C.). For a useful comparison of the differences in the current legal regimes for the Arctic and Antarctic see: Tim Stephens, "The Arctic and Antarctic Regimes and the Limits of Polar Comparativism", (2011), *German Yearbook of International Law*, Vol. 54, 315.

[5] The Ilulissat Declaration, (28 May 2008), Arctic Ocean Conference, Ilulissat, Greenland, May 27 - 29 2008, available at:
www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf.

[6] Ibid..

[7] Since 2008, the EU Parliament has advocated strongly for an 'Arctic Treaty' (e.g. EU Parliament Resolution of 9 October 2009 on Arctic Governance). This policy however has been opposed by both the EU Council and the Commission - see: Brit Floistad and Lars Lothe, "The Possibility of an Arctic Treaty", (2010), *Arctic Knowledge Hub*, available at:
www.arctic-search.com/The+Possibility+of+an+Arctic+Treaty;
Ida Holdhus, "Developing an EU Arctic Policy: Towards a Coherent Approach?", (2010), *VDM Verlag Dr. Müller*, at 71 - 75. The WWF also considers the current legal regime incoherent and inadequate and proposes a new international framework agreement for the Arctic - see: Timo Koivurova and Erik J. Molenaar, *International*

of such a treaty is now very remote.[8] As Jabour argues, this is not to say that progress of Arctic cooperation has been inhibited by the lack of a political treaty[9], and Young has suggested that the current sectoral approach to governance in the Arctic Ocean is preferable to a pan - Arctic treaty.[10]

Certainly, since 1991, when a non-binding agreement among the eight Arctic states[11] aimed at Arctic environment protection ("AEPS") was adopted[12], there has been ever increasing intergovernmental cooperation and various sectoral initiatives in the Arctic Region.[13] However, these initiatives relate to environmental protection, transport, pollution, and search and rescue.[14] The Arctic Council, founded in 1996[15], provides a high level intergovernmental discussion forum, and its working groups have generated significant

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Governance and Regulation of the Marine Arctic, (2010), WWF International Arctic Programme, Oslo, available at:
www.wwf.se/source.php/1223579/International%20Goverenance%20and%20Regulation%20of%20the%20Marine%20Arctic.pdf.
For general analysis, see: Rob Huebert, "The need for an Arctic Treaty: Growing from the United Nations Convention on the Law of the Sea", (2009), *Oceans Yearbook*, Vol. 23, 27.

[8] Natalia Loukacheva, "Arctic Governance", Chapter 7, (2010), in *Polar Law Textbook*, (Natalia Loukacheva), Nordic Council at 129 - 130; Brit Flaistad and Lars Lothe, *supra*.

[9] Julia Jabour, "Pharand's Arctic Treaty", (2015), Chapter 4, in *International Law and Politics of the Arctic Ocean, Essays in Honor of Donat Pharand*, (Suzanne Lalonde and Ted L. McDorman, eds.), 87, at 107.

[10] Oran Young, "Arctic Tipping Points: Governance in Turbulent Times", *AMBIO,* Vol. 41, 75, at 82.

[11] The eight Arctic States are Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States and are the only full members of the Arctic Council.

[12] Declaration on the Protection of the Arctic Environment, 14 June 1991, available at:
www.arctic-council.org/index'php/en/document-archive/category/556-arctic-environmental-protection-strategy?download=2360:roveniemi-declaration-1991.
Arctic Environmental Protection Strategy, 14 June 1991, available at:
www.arctic-council.org/index.php/en/document-archive/category/556-arctic-environmental-protection-straegy?download=53:aeps.

[13] Kristin Burtenstein, "The Arctic Region Council Revisited", Chapter 2, (2015), in *International Law and Politics of the Arctic Ocean, Essays in Honor of Donat Pharand,* (Suzanne Lalonde and Ted L. McDorman, eds.), Brill/Nijhoff, 55, at 82 - 86; E. Carina H. Keskitalo, "New Governance in the Arctic and Its Role for Supporting Climate Change Adaption", Chapter 5, (2009), in *Climate Governance in the Arctic*, (Timo Koivurova, E. Carina H. Keskitalo, and Nigel Bankes, eds.), Springer, 97 - 119; Davor Vidas, "The polar marine environment in regional cooperation", Chapter 4, (2000), in *Protecting the Polar Marine Environment, Law and Policy for Pollution Prevention*, (Davor Vidas, ed.), Cambridge University Press, at 78 - 103; David L. VanderZwaag, "The Arctic Council and the Future of Arctic Ocean governance: edging forward in a sea of governance challenges", Chapter 16, (2014), in *Polar Oceans Governance in an Era of Environmental Change*, (Tim Stephens and David L. VanderZwaag, eds.), Edward Elgar, at 308 - 338.

[14] The reports of the Arctic Council Working Groups (AMAP, ACAP, CAFF, EPPR, PAME, and SDWG) have been very influential, resulting in various soft law (such as the 2009 Arctic Offshore Oil and Gas Guidelines) and hard law (the SAR and Oil Spill Agreements) developments. See VanderZwaag, op. cit., at 312 - 326.

[15] *Declaration on the Establishment of the Arctic Council*, Joint Communique of the Governments of the Arctic Countries on the Establishment of the Arctic Council, 19 September 1996, available at:
www.arctic-council.org/index.php/en/document-archive/category/4-founding-documents?download=118:the-ottawa-declaration.

contributions, although primarily in the form of 'soft' law, such as guidelines.[16] Some Arctic specific sectoral hard law has emerged recently: under the aegis of the Arctic Council two binding agreements were reached by members of the Arctic Council on Search and Rescue[17] and Oil Spills[18], and under the aegis of the IMO a mandatory Polar Code for marine transport in the Arctic Ocean was agreed in 2015.[19]

Crucially, however, no matter how important this increasing governance of the Arctic Ocean may be, it does not impinge on the fundamental principles of sovereignty, sovereign rights and jurisdiction of coastal states in the Arctic Ocean. Specifically, for example, neither the IMO's nor the Arctic Council's mandate includes issues relating to sovereignty or jurisdiction in the Arctic.[20] Hence, these organisations have no direct relevance to the thesis's analysis of maritime delineation or delimitation in the Arctic and the exercise of coastal states' sovereign rights in the development of petroleum resources in their maritime zones in the Arctic Ocean, and they will not be analysed.

The Arctic Ocean is subject to the general rules of the international law of the sea, sourced in particular from customary international law[21], case law, the four 1958 Geneva Conventions[22], and UNCLOS[23], which is now the principal source in the field[24] having superseded the 1958 Geneva Conventions.

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[16] Primarily guidelines and reports. For a useful summary of this work see VanderZwaag, op, cit., at 312 - 328.

[17] Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, 12 May 2011, available at:
www.arctic-council.org/indexphp/en/document-archive/category/20-main-douments-from-nuuk?download=73:arctic-search-and-rescue-agreement-english.

[18] Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, 15 May 2013, available at:
www.arctic-council.org/index-php/en/document-archive/category/425/main-document-from-Kiruna-ministerial-meetings.

[19] The International Code of Safety for Ships Operating in Polar Waters ("The Polar Code"), (2014), adopted by IMO on 21 November 2014 and adopted by the IMO Environmental Protection Committee ("MEPC") at its 68th Session on 15 May 2015. See: "News, IMO MEPC 68 Adopts Environmental Provisions of Polar Code", (2015), *Climate Change Policy and Practice,* 15 May 2015, available at:
http://climate-l,iisd.org/news/imo-mepc-68-adopts-environmental-provisions-of polar-code/.

[20] In fact in the case of the Arctic Council to the extent that a criteria for determining the suitability of third states to be admitted as Observers to the Arctic Council is the extent to which the applicant state "recognise[s] Arctic states' sovereignty, sovereign rights and jurisdiction in the Arctic" - see Arctic Council website, "About US", "Observers" at:
www.arctic-council.org/index.php/en/eboit-us/arctic-council/observers.

[21] Rothwell and Stephens, op. cit., at 22 - 25.

[22] The four Law of the Sea Geneva Conventions of 1958 are:

1. The Convention on the Law of the Territorial Sea and Contiguous Zone, (1958), UNTS Vol. 516, 205.
2. The Convention on the Continental Shelf, (1958), UNTS, Vol. 499, 311.

Of the Arctic Five, four states are parties to UNCLOS[25], with the United States still not acceding to the Treaty[26], although it has repeatedly indicated that it considers most of UNCLOS to be declaratory of customary international law.[27] In fact, it is now universally accepted that in terms of delimitation and the nature of maritime zones key relevant provisions of UNCLOS, namely Articles 3 (territorial sea), 57 (exclusive economic zone), 76(1) (continental shelf) and 1 (the Area), are considered to be the codification of customary international law.[28] Thus, for purposes of this thesis UNCLOS usefully provides the working definitions and legal regimes for the various maritime zones in the Arctic Ocean and the rights and duties of coastal states in respect of these zones.

Textbooks on the law of the sea describe in detail the definitions, status, and nature of the key maritime zones (in particular, internal waters, the territorial sea, the exclusive economic zone, the continental shelf, and the high seas) and the rights and responsibilities of coastal states associated with them.[29] Hence, general knowledge of the international law relating to these zones is assumed, and this thesis will address only aspects that are, in the Arctic Ocean, unique, problematic and/or of specific relevance to oil and gas development in this region.

2.2 The Arctic Ocean – a semi-enclosed sea?

3. The Convention on the High Seas, (1958), UNTS, Vol. 450, 582.
4. The Convention on Fisheries and Conservation of Living Reserves of the High Seas, (1958), UNTS Vol. 559, 285

[23] United Nations Convention on the Law of the Sea, (1982), UNTS, Vol. 1833, 397.

[24] "…an extensive international legal framework applies to the Arctic Ocean...Notable, the law of the sea ….The framework provides a solid foundation for responsible management by the five coastal states and other users of this Ocean…We therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean…": *The Ilulissat Declaration*, (28 May 2008), Arctic Ocean Conference, Ilulissat, Greenland, 27 - 29 May 2008, available at:
www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf.

[25] Canada in 2003, Denmark/Greenland in 2004, Norway in 1996, and Russia in 1997.

[26] Despite the attempts of various administrations since Reagan to get the agreement of the Senate to the United States accede to the Convention: See J. Ashley Roach and Robert W. Smith, *Excessive Maritime Claims*, (2012), 3rd Edn., Martinus Nijhoff, at 14 and 632 - 637.

[27] See Roach and Smith, op. cit., at 188 - 189, where they describe United States policy and views on UNCLOS 1982.

[28] See Rothwell and Stephens, op. cit., at 72, 83 - 83, 96 - 97, 107, 134 - 135 (at least post 1996 for the Area), and 168. Opposition to Part XI on the Area was overcome by the adoption of an agreement revising those elements considered objectionable – especially by the United States. Nonetheless there do remain a few certain provisions, and parts of provisions, of UNCLOS 1982 that are not considered as reflecting customary international law.

[29] For example: E. D. Brown, *The International Law of the Sea*, (2008), 8th Edn., Vols. 1 & 2, Clarendon Press; R. R. Churchill and A. Vaughan Lowe, *The Law of the Sea*, (1999), 3rd Edn., Manchester University Press; D. P. O'Connell, *The International Law of the Sea*, (Ivan Shearer, ed.), (1984), Vols. 1 & 2, Clarendon Press.

It has been contentiously debated in the literature whether or not the Arctic Ocean can be classified as a semi-enclosed sea[30] under Article 122 UNCLOS.[31] Article 122 states that an enclosed or semi-enclosed sea refers to:

> "a gulf, basin or sea surrounded by two or more States and connected to another sea or the ocean by a narrow outlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal States".

Early in the 20th century the Soviet jurist Lakhtine had argued that the Arctic Ocean could fall within littoral states' "sectors of attraction"[32], an approach however which several leading jurists have argued was not firmly founded in international law.[33] Since 1982 some jurists, including Corell, Theutenberg, Borgia, Johnson, Boczek, Sollie and (on occasions) Pharand, have expressed their view that the Arctic Ocean is, or probably is, a semi-enclosed sea under Article 122 UNCLOS, Part IX.[34]

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[30] For a useful general legal overview of enclosed and semi-enclosed seas, see: Janusz Symonides, "The legal status of the enclosed and semi-enclosed sea, "(1984), *The German Yearbook of International Law*, Vol. 27, 315 - 333.

[31] L. A. Alexander, "Regionalism and the Law of Sea: The case of semi-enclosed seas", (1974), *Ocean Development and International Law Journal*, Vol. 2, Summer 1974, 151; B. Boczek, "The Arctic Ocean: An International Legal Profile", (1985), *Studies Notes*, Vol. 1110 - 15; F. Borgia, *Il regime guiridico dell'Artico*, (2012), Editorial Scientifica, at 110 - 112; H. Corell, "Reflections on the Possibilities and Limitations of a Binding Legal Regime", (2007), *Environmental Policy and Law*, 322; E. Franckx, *Maritime Claims in the Arctic, Canadian and Russian Perspectives*, (1993), Martinus Nijhoff, at 240 - 243; Enno Harders, "In quest of an Arctic legal regime", (1987), *Marine Policy*, (October 1987), 285, at 295 - 296; T. H. Heidar, "The Legal Regime of the Arctic Ocean", (2009), *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht*, 636; R. Hubert, "The Need to have an Arctic Treaty: Growing from the United Nations Convention on the Law of the Sea", (2009) *Ocean Yearbook*, Vol 23, Brill, at 35 -36; Uwe Jenisch, " Sovereign Rights in the Arctic: Maritime Policies and Practice after UNCLOS III", (1985), *German Yearbook of International Law*, Vol. 28, 297; T. Koivurova and E. J. Molenaar, *International Governance and Regulation of the Marine Arctic*, a report prepared for the WWF International Arctic Programme, (2010), at 67; M. McRae, " Management of arctic marine transportation: A Canadian perspective", *US - Canada Policy Forum, BANFF Canada, Alberta, 20 - 23 October 1984,* Conf. Paper No. 10; D. Pharand, "Les Problèmes de droit de l'Arctique, (1989), *Etudes Internationales*, Vol. 20, 131, at 162 - 163; D. Pharand, *The Law of the Sea of the Arctic with Special Reference to Canada*, (1973), at 315 and 316; Alexander Proelss and Till Müller, " The Legal Regime of the Arctic Ocean", (2008), *Z.f.a.o.R.VR*, Vol. 68, 651, at 663; D. Rothwell, The Polar Regions, and the Development of International Law, (1995), CSICL, at 288 - 291; Finn Sollie, "Polar Seas: Issues not dealt with in Law of the Sea: Neglected issues and problems", (1984), *The 1982 Convention on the Law of the Sea*, (A. W. Koers and B. H. Oxman, eds.), Proceedings of the 17th Annual Conference, Law of the Sea Institute Honolulu, at 653 - 667, 655 and 659; Yoshinobu Takei, "Polar Complications in the Law of the Sea: A Case Study of the Regime for Research and Survey Activities in the Arctic Ocean", (2010), a paper presented at *the Sixth ABLOS Conference, Contentious Issues in UNCLOS - Surely Not?*, Monaco, 25 - 27 October 2010, available at:
g.at.unsw.edu.au/ABLOS10Folder/S3P2.pdf.

[32] W. Lakhtine, "Rights over the Arctic", (1930), *AJIL.* Vol. 24, 703, at 713.

[33] For discussion of this approach see: Rothwell, (1995), op. cit. at 288 - 291; Franckx, op. cit., at 152 - 175

[34] All authors cited in footnote 31, *supra*.

Others, such as Beauchamp, are more equivocal,[35] but more recent writers, such as Harders, Proelss and Müller, and Franckx, having analysed the geographical requirements of a semi-enclosed sea under Article 122 in some depth, have concluded that either (1) the Arctic Ocean fails to meet them and is therefore not a semi-enclosed sea, or (2), since no littoral Arctic state has expressed the view that the Arctic falls within the definition of Article 122, it is wiser to take the view that it does not.[36] This author finds the arguments and conclusions of Harders, Proelss and Müller and Franck's analyses more analytically sound and persuasive.[37] Certainly, when the maps of the Arctic Ocean reproduced in Figures 2.2 and 2.3 are examined, the actual geographical and legal issues become clearer, and the conclusion leans heavily towards the Harders *et al* approach.

The first map shows the Arctic Ocean has two narrow outlets, the Bering and the Davis Straits, but also large open sea areas, such as the Norwegian and Greenland seas, which connect it to the North Atlantic. The second map gives a visual idea of the scale of the relatively large area of high seas in the Arctic Ocean. The key problem with Article 122 is that it does not give a clear definition of either the degree of enclosure and size of the sea, or of the narrowness of the outlet, or what constitutes "entirely or primarily".

[35] Beauchamp thought the Arctic Ocean "may" fit the definition of semi-enclosed sea, op. cit., at 11.

[36] Poelss and Müller, op. cit. at 648 and Franckx, op. cit., at 240 - 243. Harders, op. cit., at 295 states: "The relevant provision (Article 122) requires a "narrow outlet" to another sea or ocean and thus excludes the polar sea by virtue of its geographical configuration. The open sea spaces of the Greenland Sea, the Norwegian Sea and the Bering Sea clearly contradict the status of the Arctic Ocean as semi-enclosed". This contrasts markedly with Borgia (op. cit. at 110) who only examined the Bering and Davis Straits as the outlets, and concluded they matched the criteria of Article 122. Moreover, as less than 60% of the Arctic Ocean falls within the territorial seas or EEZs of the littoral states" it is hard to see how the second alternative geographical condition of Article 122 - that the sea is composed "*primarily*" of these zones - is met either. See Harders, footnote 31, *supra*, at 296,

[37] See Harders, footnote 31, *supra*, at 295 - 296 and Franckx, op. cit., at 240 – 243.

Figure 2.2: Map of the Arctic Region[38]

[38] © University of Texas at Austin. PCL Map Collection, Public Domain**,** courtesy of the University of Texas Libraries, University of Texas at Austin, see Library Web Material Usage Statement at: www.lib.utexas.edu/usage_statement.html. University of Texas at Austin. The map is available at : www.lib.utexas.edu/maps/islands_oceans_poles/arctic_region_pol_2012.pdf.

Figure 2.3: Map of 200nm EEZs of littoral Arctic States: the area within the blue line is high seas[39]

Some observations can be drawn:

(1) If we follow the criteria proposed by the United States expert on the subject Alexander[40] (that a semi-enclosed sea should be bordered by at least two states, have an area of at least 50,000 square miles, be a primary sea, enclosed for at least 50% by land and its open sea should not be more than 20% of its total[41]), it may be arguable that the Arctic Ocean meets his parameters to qualify as a semi-enclosed sea. However, it is significant that Alexander himself never included the Arctic Ocean in any of his lists of the world's semi-enclosed seas, and, in fact, instead he describes the Arctic Ocean as "a multi-state region bordered by states with 'common regional

[39] © Canadian Polar Commission, Government of Canada, 2007. Non-commercial reproduction of this map is permitted without written approval: see Important Notices, Copyright/Permission to Reproduce, at: www.polarcom.gc.ca/eng/content/important-notices#copyright.
This map was published in: R. McNab, O. Loken, and A. Anand, "The Law of Sea and Marine Scientific Research in the Arctic Ocean", (2007), *Canadian Polar Commission, Meridian – Newspaper*, Fall - Winter 2007, No. 1. (archived online).
[40] Alexander, op. cit., at 155 - 185.
[41] Ibid..

interests' and uses the term 'partially enclosed sea' (not a semi-enclosed sea) when describing the Arctic Ocean.[42]

(2) Harders, on the other hand, suggests that tighter parameters on the conditions for semi-enclosed sea under Article 122 should be drawn, and he argues that the open sea spaces of the Greenland Sea, the Norwegian Sea, and the Bering Sea contraindicate the status of the Arctic Ocean as a semi-enclosed sea.[43] Harders, having reviewed the treaty practice of 60 plus states, considers that it sets a more demanding benchmark: the presumption that an enclosed sea is bordered by land for no less than 80 - 90% of its circumference[44] - a criterion which the Arctic Ocean clearly would fail to meet.

(3) In respect of the other possible criterion for an Article 122 semi-enclosed sea, Harders argues the Arctic Ocean fails to be composed entirely or primarily of territorial seas and EEZs of the surrounding coastal states: as it has a considerable expanse of high seas beyond the exclusive economic zones of the riparian states. It has been estimated that the EEZ's of the five riparian states encompass approximately 60% of the area of the Arctic Ocean.[45] However, Proelss and Müller consider that the exact size of the area of EEZs of the riparian states is difficult to determine (and varies depending on the definition of Arctic Ocean) and that, even if the 60% estimation is accurate, it would remain "…problematic to hold that the said dimension implies that the Arctic Ocean consists 'primarily' of EEZs".[46]

(4) The view that the Arctic is not a semi-enclosed sea also matches the reported informal understanding among delegations at the Law of the Sea Conference.[47]

Thus, while the status of the Arctic Ocean relative to Article 122 remains formally unsettled, and some authors continue to categorise it as a semi-enclosed sea, it must be said that a

[42] Alexander, op. cit., at 152 and 159.
[43] Harders, op. cit., at 295 - 296.
[44] Harders, op. cit., at 295.
[45] Alexander Proelss and Till Müller, " The Legal Regime of the Arctic Ocean", (2008), *Z.f.a.o.R.VR*, Vol. 68, 651, at 684; D. Pharand, "The Arctic Waters and the Northwest Passage: A Final Revisit", (2007), *ODIL*, Vol. 38, 3, at 53.
[46] Proelss and Müller, ibid..
[47] See Proelss and Müller, op. cit., at 684; and Harders, op. cit., footnote 31, *supra*, at 296 (footnote 47).

very strong argument can be mounted that it is not a semi-enclosed sea under Article 122 UNCLOS.[48]

However, the question of real importance relates to the implications of being classified as a semi-enclosed sea. If the Arctic Ocean is considered to fulfill the conditions of an Article 122 semi-enclosed sea, then Article 123 would apply and this may have spin - on consequences for oil and gas developments in the Arctic Ocean.

Article 123 states:

> "*Cooperation of States bordering enclosed or semi-enclosed seas*
>
> States bordering an enclosed or semi-enclosed sea should cooperate with each other in the exercise of their rights and in the performance of their duties under this Convention. To this end they shall endeavor, directly or through an appropriate regional organization:
>
> (a) to coordinate the management, conservation, exploration, and exploitation of the living resources of the sea;
>
> (b) to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment;
>
> (c) to coordinate their scientific research policies and undertake where appropriate joint programmes of scientific research in the area;
>
> (d) to invite, as appropriate, other interested States or international organisations to cooperate with them in furtherance of the provisions of this article."

It should be noted that the article uses the words 'should cooperate' rather than 'shall cooperate', and "shall endeavor to" rather than "shall" and this has resulted in an ongoing academic debate on whether Article 123 creates an autonomous binding obligation for the coastal states to cooperate or merely a weak normative exhortation. If the article does create a legal duty on the coastal states of the Arctic to cooperate in the three listed areas and to invite other interested states and international organisations to participate in the cooperation, this could have an important impact on creating a regional legal regime, especially in respect of environmental protection. Such a regime would set policies and

[48] Some jurists still argue the Arctic is a semi-enclosed sea: for example, Borgia, argued in 2012, "Tale definizione troverebbe spazio anche nel'Arctico, dove gli stretti de Bering e di Davis sembrano soddisfare i requiiti dalla Convenzione aifini dell'applicabilita della norma": Borgia, (2012), footnote 31, *supra*.

norms with respect to environmental protection that would clearly impact on any oil and gas activities in the area. Importantly it should be noted that Article 123 does not include specifically the coordination of the exploration and exploitation of non-living resources, as it does for living resources (Article 123 (a)).

The actual level of requirements under Article 123 has also been debated. Several jurists have adopted the position that Article 123 does create, at least to some degree, an obligation of cooperation for the coastal states (see for example, Hu[49], Townsend-Gault[50], Kao[51], Pinto[52], Fleischer[53] and Pharand[54]).

But other jurists, including Nordquist *et al*[55], Proelss and Müller[56], and Franckx and Benatar[57] disagree, taking the view that the Article 123 is hortatory and not mandatory.

Of all the writers on the topic Franckx and Benatar provide the most exhaustive examination of Article 123, systematically working through the rules of interpretation under the Vienna Convention on the Law of Treaties.[58] Their analysis draws in particular from the *MOX Plant Case*, which gave rise to proceedings before multiple jurisdictions including an ITLOS tribunal[59] and an OSPAR Convention tribunal[60]. They trace how the text of Article 123

[49] Nien-Tsu Alfed Hu, "Semi-enclosed Troubled Water: A New Thinking on the Application of the 1982 UNCLOS Article 123 to the South China Sea", (2010), *ODIL*, Vol. 41, 281, at 304.
[50] Townsend - Gault argues that the very fact that Part IX UNCLOS and specifically Article 123 exist and single out seas with particular geographical configurations must mean there is legal significance behind it and not just hortatory – see: Ian Townsend - Gault, "Maritime Cooperation in a Functional Perspective", (2012), in *Maritime Energy Resources in Asia: Legal Regimes and Cooperation*, (Clive Schofield, ed.), National Bureau of Asian Research, Seattle, 7, at 11.
[51] Seokwoo Lee, "UNCLOS and the Obligation to Cooperate", (2012*),* in *Maritime Energy Resources in Asia: Legal Regimes and Cooperation*, (Clive Schofield, ed.), National Bureau of Asian Research, Seattle, 23.
[52] Moragodage C. W. Pinto, "The Duty of Cooperation and the United Nations Convention on the Law of the Sea", (1986), in *Realism in Law-Making: Essays on International Law in Honour of Willem Riphagen*, (Adriaan Bos and Hugo Siblesz, eds.), Martinus Nijhoff, 131, at 140.
[53] Carl Fleischer, "The New Regime of Maritime Fisheries", (1988), *Recueil des Cours de l'Académie de Droit International*, 1988 – II, 95, at 139 - 140.
[54] D. Pharand, "The Arctic Waters and the Northwest Passage: A Final Revisit", (2007), *ODIL*, Vol. 38, at 53.
[55] M. H. Nordquist, S. Rosenne, and S. Nandan, *United Nations Convention on the Law of the Sea, 1982: A Commentary*, (1993), Martinus Nijhoff, Vol. III, 'Enclosed and Semi-enclosed Seas', at 343 - 371.
[56] Proelss and Müller, footnote 31, *supra*.
[57] Erik Franckx and Marco Benatar, "The "Duty" to Cooperate for States Bordering Enclosed or Semi-enclosed Sea", (2012), a paper presented to the South China Seas: Cooperation for Regional Security and Development, Fourth International Workshop, Diplomatic Academy of Vietnam/Vietnam Lawyers Association, 18 – 21 November 2012, Ho Chi Minh City, Vietnam, available at:
huinghihoithao.com/scs/panel 7/VIL,%20-%20Eric%20Franckx.pdf.
[58] Article 31 – 33.
[59] *MOX Plant Case (Ireland v. United Kingdom),* available at:
www.itlos.org.

underwent a dramatic change between the Informal Single Negotiating Text ("ISNT")[61] of 1975, ("shall cooperate" and "shall …coordinate") and the 1976 Revised Negotiating Text ("should cooperate" and "shall endeavor …to coordinate").[62] Moreover, as they point out, the Chairman of the Second Committee responsible for drafting the provision has been quoted explaining this change as follows: "On the issue of enclosed and semi-enclosed seas, I have responded to the expressions of dissatisfaction with the provisions in the [ISNT] by making less mandatory the coordination of activities in such sea". [63]

Franckx and Benatar[64] argue that to consider that the provision creates binding duties would be "detrimental on a systemic level", as the 1982 Treaty was the result of trade-offs and compromises, a "package deal", balancing the various interests.

They also note that, in its Reply in the *MOX Plant Case*, Ireland surprisingly agreed with the UK that they "should cooperate" passage in Article 123 "is expressed in hortatory, rather than mandatory, language"[65]: a view echoed by the ITLOS tribunal, which considered Article 123 as "cast in weak terms".[66]

The conclusion Franckx and Benatar reach is that "Our reading of Art. 123 is such that it's framing and wording do *not* imply autonomous, binding obligations and exert at best *weak* normative force".[67] This approach accords with that of Nordquist *et al*, who take the view that the Article 123 UNCLOS "is couched in language of exhortation" and that "the language is not consistent with any mandatory obligation to join with the States bordering such seas in the activities specified in the article".[68]

Proelss and Müller come to a similar conclusion making the additional and insightful observation relative to the Arctic: that "it should not be ignored that the duty to cooperate

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[60] Dispute Concerning Access to Information under Article 9 of the OSPAR Convention (Ireland v. United Kingdom), Award of 2 July 2003, XXXIII U.N.R.I.A.A., 59.
[61] Nordquist *et al*, op. cit., at 362.
[62] Franckx and Benatar, op. cit., at 11.
[63] Franckx and Benatar, op. cit., at 6 - 12.
[64] Ibid., at 5.
[65] *MOX Plant, ITLOS Tribunal, Reply of Ireland*, 7 March 2003, para. 7. 17, at 81 - 82; Franckx and Benatar, op. cit., at 8.
[66] Dispute Concerning Access to Information under Article 9 of the OSPAR Convention (Ireland v. United Kingdom), Award of 2 July 2003, XXXIII U.N.R.I.A.A., 59, at 97, paras. 129 - 130. Franckx and Benatar, op. cit., at 9.
[67] Franckx and Benatar, op. cit., at 3.
[68] Nordquist *et al*, op. cit., para 123.12(c), at 366.

under Article 123(b) UNCLOS, if applicable, would seem to contradict in parts the unilateral approach on which the "Arctic exception" laid down in Art. 234 UNCLOS is based".[69] We will return to Article 234 later in Chapter 3.

Collectively the views of Nordquist, Franckx and Benatar and Poelss and Müller on this would appear to have much persuasive merit.

Therefore, it would seem strongly arguable that the Arctic Ocean does not meet the criteria to be classified as a semi-enclosed sea under Article 122 UNCLOS. Furthermore, whether or not the Arctic Ocean is a semi-enclosed sea, highly persuasive arguments can be made that Article 123 does not establish a mandatory duty to cooperate in relation to the subject matters listed. Thus, it is highly unlikely that Articles 122 and 123 UNCLOS have any direct, or indirect, impact on title to oil and gas produced in a maritime zone of any of the Arctic Five.

2.3 Conclusions

From the above, it can be seen that no overarching region specific legal regime has been developed for the Arctic Ocean, unlike Antarctica. The analysis demonstrated that the debate over the legal status of the Arctic Ocean as a semi-enclosed sea is not pertinent to the thesis questions.

General public international law, specifically the law of the sea, is applicable in the Arctic Ocean. The key source of the law of the sea is UNCLOS, whose provisions set out the legal framework for the delineation and delimitation of maritime zones and the rights and duties of coastal states in these zones. Despite the fact that the United States is not a party to UNCLOS, it does accept that key provisions relating to the definition of coastal states' maritime zones are now customary international law. The other four of the Arctic Five are parties to UNCLOS, and hence the thesis will therefore examine the issue of title to petroleum produced in these maritime zones in the context of the legal regime established by UNCLOS.

[69] Proelss and Müller, op. cit., 684 - 685.

The following chapters will examine how adequately this international law ensures that an oil company can acquire good title to the petroleum it produces in a maritime zone of a coastal state or in the Area in the Arctic Ocean.

Chapter 3: Changing Arctic ice conditions: Implications for Sovereignty and Jurisdiction

Summary

As both Rothwell and Joyner have commented[1], a unique feature of the polar seas is that for much of the year they are ice-covered. In the Arctic Ocean this feature raises questions connected with the legal status of ice and the legal regime relating to ice.[2] These questions are further complicated by the effects of climate change and pose interesting issues as to sovereignty and jurisdiction.[3]

Following on from the work of Boyd[4], Joyner[5], and Kaye[6] on the subject, this chapter will review the legal status of different forms of Arctic ice and examine the practical implications of the geophysical changes that are occurring with respect to ice for the legal status of ice features in the Arctic Ocean. As will be demonstrated, surprisingly, neither international law nor the international courts and tribunals have addressed the topic of ice.

These issues, in turn, raise fundamental legal concerns in relation to the use of basepoints for the territorial sea delineation which are located on ice features and ice-covered coastlines, especially given the dramatic melting of Arctic ice that has been occurring over the past 40 years. The Chapter addresses the legal validity of such basepoints and the consequences for drawing valid territorial sea baselines based on them. Since territorial sea baselines play a pivotal role in the definition of maritime zones of coastal states the question of the validity and appropriateness of such basepoints and baselines are crucial to the establishment of jurisdiction and sovereign rights to petroleum in resultant maritime zones. However, it will be shown that international law has as yet contributed little to the clarification of such fundamental issues.[7]

[1] Rothwell, op. cit., at 26; Donald R. Rothwell and Christopher C. Joyner, "The Polar Oceans and the Law of the Sea", Chapter 1, in *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, (2001), (Alex G. Oude Elferink and Donald R. Rothwell, eds.), Kluwer, at 7.

[2] Fabienne Quilleré - Majzoub, "Glaces Polaires et Icebergs: Quid Juris Gentium", (2006), *AFDI,* L II, at 434.

[3] Torleiv Bilstad, "Climate change and consequences for the Arctic", (2008), Chapter 3, in *Arctic Oil and Gas: Sustainability at Risk*, (2008), (Aslaug Mikkelsen and Oluf Langhelle, eds.), Routledge, 45.

[4] Susan B. Boyd, "The Legal Status of Arctic Sea Ice: A Comparative Study and a Proposal", (1984), *Canadian Year Book International Law*, Vol. 22, 98.

[5] C. C. Joyner, " Ice-Covered Regions in International Law", (1991), *Natural Resources Journal*, Vol. 31, 213; C. C. Joyner, "The Legal Status of Ice in International Law", (2001), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, (A. G. Oude Elferink and D. R. Rothwell, eds.), Chapter 2, 23, Kluwer, Martinus Nijhoff.

[6] S. B. Kaye, "Territorial Sea Baselines Along Ice Covered Coasts: International Practice and Limits of the Law of the Sea", (2004), *ODIL,* Vol. 35, No. 1, 75.

[7] International law does set out the general principles that can be interpreted in the special environment of the Arctic in relation to melting ice features. However, as will be shown, these have given rise to very differing academic views and state approaches, and therefore do not assist significantly in the clarification of the issues.

The Chapter will conclude with a discussion of whether, as a result of the geophysical reality of melting ice in the Arctic Ocean, the legal status of the different forms of ice needs to be re-evaluated and formalised, whether the use of ice features in drawing territorial sea baselines requires reconsideration, and baselines using such basepoints revised. Finally, the Chapter analyses what to date international law has contributed, or could contribute in the future, to the clarification of these issues.

This chapter is based on a 2015 publication co-authored by the thesis author.[8]

3.1 Physical status of Ice Features and of Permafrosted Coastlines in the Arctic Ocean

Annex 2 provides a general summary overview of the types of ice and their characteristics, and of permafrost in the Arctic and so such information will be assumed hereinafter.

(a) Ice Features

In terms of this Chapter's analysis of the role of ice features have played, and in some cases still play, in the definition of territorial sea baselines, the most relevant ice features are ice shelves, outlet glacier tongues, and fast ice. Over the last forty years the Arctic Ocean and Arctic ice have undergone what might be quite accurately termed a "sea change".[9] Arctic ice in all its forms is melting into the sea, as described in Annex 2. The extent of the melting of these features is highly relevant to the delineation of territorial sea baselines and Schofield and Sas summarise the current physical status of these key ice features in the Arctic Five.[10]

They conclude that all key ice features of the Arctic Five have experienced dramatic reductions over the last 25 years: most of the ice shelves have melted away (or are well on their way to doing so), most extending ice caps and outlet glacier tongues have retreated

[8] Clive Schofield and Blanche Sas, "Uncovered and Unstable Coasts", (2015), in *International Law and Politics of the Arctic Ocean, Essays in Honor of Donat Pharand*, (Suzanne Lalonde and Ted L.. McDorman, eds.), Brill/Nijhoff, 291 - 414. The thesis author's contribution to the publication was researched as part of the PhD process: See Author Contribution Statement in Annex 10.

[9] Andrew Shepherd, Erik R. Irvins, *et al*, "A Reconciled Estimate of Ice Sheet Mass Balance", (2012), *Science,* 30 November 2012, Vol. 338, No. 6111, 1183, which is a study by about 50 leading glaciologists on the ice formations and their melting over the last 20 years. See also the very informative SVALI Report: Jon Ove Hagen, Rene Forsberg, and Tomas Johannesson, "Interim report of current rates of change of land ice in the Arctic and North Atlantic region", (2012), *SVALI Report,* available at:
http://library.arcticportal.org 1727/1/svali_report_web1.pdf.

[10] Schofield and Sas, at 306 - 320 and Annex 1 at 335 - 340.

behind the coastline/fjord mouths, and most of the 'permanent' fast ice seasonally melts away.[11]

(b) Permafrost[12]

Permafrosted Arctic Ocean coasts are also experiencing dramatic changes, especially significant erosion resulting from the combined effect of the rapidly melting fast ice along the Arctic coast line in the summer, the thawing of the coastal permafrost and an increased frequency and intensity of Arctic storms and waves[13], all of which phenomena are described in Annex 2. This erosion of the Arctic coastline is of such a magnitude[14] that it raises several questions with respect to the drawing of territorial baselines, including: the legality, and now the utility, of drawing basepoints on fast ice along the eroding coastline[15], and, whether the Arctic coastline could be considered a 'highly unstable' coastline under Article 7(2) of UNCLOS. These questions will be addressed in Section 3.3 below.

3.2 Legal Status of Ice Formations in the Arctic Ocean

Prior to examining the role ice formations have played, or still play, in drawing territorial sea baselines of Arctic Ocean coastal States, it is necessary to examine the legal status of the different types of Arctic ice formations[16], as this has potential implications for the legality of using such features as loci for basepoint for territorial sea straight baselines.

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[11] Ibid..

[12] NSIDC defines 'permafrost' as: soil, rock or sediment that remains at or below 0°C for at least two years: NSIDC, "SOTC: Permafrost and Frozen Ground", (2015), *State of the Cryosphere,* available online at: http://nsidc.org/cryosphere/sotc/permafrost/html.
Permafrost in the Arctic usually has an ice content of 10 - 30 %. For information on permafrost see: T. Zhang, Barry K. Knowles, J. A. Heginbottom and J. Brown, "Statistics and characteristics of permafrost and ground ice distribution in the Northern Hemisphere", (1999), *Polar Geography*, Vol. 23, No. 2, 147 - 169.

[13] B. M. Jones, C. D. Arp, M. T. Jorgensen, K. M. Hinkel, J. A. Schultz, and P. L. Flint, "Increased rate and uniformity of coastline erosion in arctic Alaska", (2009), *Geophysical Research Letters*, Vol. 6, L03503, available at:
www.agu.org/journals/gl/gl0903/2008GL036205.

[14] Estimated to be on average 5m - 10m per annum, but often locally over 25m per annum and rising: see Annex 2.

[15] It is neither immobile nor permanent - two characteristics frequently invoked by the proponents of the "ice is land" approach, which is examined in subsection 3.3 below.

[16] Ice formations include ice shelves, outlet glacier tongues, ice islands, fast ice, and pack ice which are described in Annex 2.

The key question that has traditionally been posed is whether specific ice formations that are attached to the land, such as ice shelves and outlet glacier tongues, should be assimilated to the land or considered to be part of the sea.[17]

This question has significant relevance for locating territorial basepoints, which under international law are to be located *on* land, with the exception of Article 7(2) of UNCLOS situations.

A 1989 interpretive document issued by the United Nations Office for Ocean Affairs, confirms the necessity for basepoints to be located on land, stating unambiguously:

> "Appropriate points must be located *on* the territory of the State drawing the baselines and should be on or above the charted low water line used in other parts of the coast as the normal baseline…" (emphasis added). [18]

As will be seen next, the sources of international law do not provide any useful guidelines as to the legal status of ice or its use in the definition of territorial sea baselines. Looking for guidance on this issue in relation to approaches adopted in Antarctica[19], it would seem that, although ice shelves were deemed to be within the area of application of the Antarctic Treaty 1959[20] (Article VI – Geographical Coverage), the Treaty did not go so far as to term/define them as either "territory" or "land".[21]

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[17] Although some jurists have suggested that ice shelves and fast ice would best be considered to have a *sui generis* status, see: Annex 2 of Schofield and Sas, op. cit., at 340 - 402, and in particular the summaries of the views of Auburn, Beesley, Machowski and Rothwell.

[18] United Nations, *Baselines: an Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea*, (1989), United Nations, N.Y., available at: www.un.org/depts/los/doalos_publicationstexts/The%20LAw%20of%29the%20Sea_Baselines.pdf.

[19] On the general legal regime of Antarctica see: Sam Blay, Ryszard Piotrowicz and B. Martin Tsamenyi, *Public International Law: an Australian Perspective*, Chapter , (2005), 2nd Edn., Oxford University Press; Gillian D. Triggs, International Law and Australia Sovereignty in Antarctica, (1986), Legal Books Pty Ltd..

[20] Text available at: www.antarctica.ac.uk/about_antarctica/geopolitical/treaty/update_1959.php.

[21] On Article VI Antarctic Treaty see, Gillian Triggs, *International Law and Australian Sovereignty in Antarctica*, (1986), Legal Books PTY Ltd, at 85 - 96; Donald R. Rothwell, *The Polar Regions and the Development of International Law*, (1995), Cambridge: Cambridge University Press, at 268 - 298; Christopher Joyner, "Ice-Covered Regions in International Law", (1991), *Natural Resources Journal,* Vol. 31, at 213 - 242.
On the ice and basepoints in Antarctica see: Stuart Kaye, "Territorial Sea Baselines along Ice-Covered Coasts: International Practice and the Limits of the Law of the Sea", (2004), *ODIL,* Vol. 35, at 75 - 102; Donald R. Rothwell, The Polar Regions and the Development of International Law, *The Polar Regions and the Law of the Sea*, Chapter 7, at 262 - 272; Donald R. Rothwell, "Antarctic Baselines: Flexing the Law for Ice-Covered Coastline", Chapter 3, (2001), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction,* (Alex G. Oude Elferink and Donald R. Rothwell, eds.), Martinus Nijhoff, 49.

An extensive analysis of the sources of customary international law does not provide any conclusive view on the status of the various types of ice formations and most importantly with respect to ice shelves.[22] From reviewing conventions and treaties and the work of international organisations, it can be concluded that UNCLOS and previous law of the sea conventions and treaties, as well as the International Law Commission and other legal institutions have all studiously avoided addressing the legal status of ice and/or its use in drawing baselines.[23]

Furthermore, it can be observed that Article 234 of UNCLOS, which is the only provision referring to ice in any law of the sea treaty, is very limited in its scope and application.[24] It relates to the coastal state's rights to regulate in terms of navigation and environmental protection within its EEZ where two features occur: (1) particularly severe climatic conditions, and (2) the presence of ice covering such areas for most of the year. Vague in its phraseology and not specifically addressing legal issues of the ice itself, Article 234 is not helpful in assisting the determination of the legal status of ice.

Turning to other sources of customary law, in relation to decisions of international courts and tribunals, there has been only one international case to date, the *Greenland – Jan Mayen Case*[25], that potentially offered the ICJ an opportunity to address the issue of the legal status of ice and its use in delimitation of the territorial sea, and in that case it chose not do so.[26] Its failure to do so can best be explained as the result of the fact that the territorial baselines were not an issue of disagreement between the parties to the case. In accepting the "baselines and coordinates which the Parties have themselves been content to employ"[27], the ICJ avoided the need to examine potentially problematic baseline issues including the legal status of ice along coastlines.

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[22] Schofield and Sas, op. cit., at 323 - 328.

[23] For a detailed review of the equivocation of these international bodies- see: Susan B. Boyd, "The Legal Status of Arctic Sea Ice: A Comparative Study and Proposal", (1984), *Canadian Yearbook of International Law*, Vol. 22, 98.

[24] Rob Huebert, "Article 234 and Marine Pollution Jurisdiction in the Arctic", Elferink and Rothwell, op. cit., at 249.

[25] *Maritime Delimitation in the Area between Greenland and Jan Mayen (Denmark v. Norway),* ("*Greenland – Jan Mayen Case*"), (1993) ICJ Reports, 38, available at: http://www.icj-cij.org/docket/files/78/6743.pdf.

[26] As discussed in Schofield and Sas, op. cit., at 325 - 326.

[27] *Greenland – Jan Mayen Case*, op. cit., at 44, para.89.

State practice has also not been universally consistent, as can be seen from the more recent analyses by several legal writers.[28] As discussed earlier, ice formations may have been used as loci for basepoints by four of the Arctic Five, and, for example, Russia has at various times expressly included ice formations in its delimitation law. [29] On the other hand at least one Arctic state, the United States, has been clear that ice should not be considered land, and that the use of the straight baseline method should be very restricted.[30] The United States has formally protested against the 1985 Canadian use of straight baselines (some drawn to enclose waters claimed by Canada to be historic) around the Arctic Archipelago[31], and in the *Dinkum Sands Case*[32]*,* the Supreme Court ruled that, in evaluating the requirement for an island that it be "above water at high tide", land did not include ice that was not permanent, but formed seasonally.

Finally, from an extensive review of the literature analysing juristic writings on legal status of ice and ice formations since 1903[33], the following trends can be observed:

- In the period 1903 - 2013 about one third of the writers take the view that permanent stable ice formations that are attached to land should be assimilated to the land. The remaining authors either viewed ice as sea (about a quarter), adopted a sector, or another, approach where the status of ice is not relevant to defining baselines (about

[28] In particular see Boyd, Kaye and Rothwell, references cited in Schofield and Sas, op. cit., Annex 2, at 340 – 402.

[29] Decree of Tsar Nicolas II of Russia, regulating commercial fishing in the Maritime Province, 29 May 1911, in which the breadth of the territorial waters were to be calculated from the low water mark "or from the edge of the ice along the coast", *Polnoe Sobranie Zakonov Rossiiskoi Imperii*, (3rd Ser.), Vol. XXXI, at 449 - 452. Numerous Imperial Russian and early Soviet jurists argued that ice features attached to the land should be viewed as land territory: Lahktine, Korovin, Uustal, Zadororodskii, Keilin and Molodsov, see: Schofield and Sas, op. cit., Annex 2, at 340 - 402.

[30] Roach and Smith, op. cit., at, 67.

[31] It should be pointed out that Canada has used straight baselines not only arising from the accepted methods in UNCLOS but also where Canada considers the waters to be historic waters – with straight lines used to delineate the area where the historic waters are located. The United States has protested this approach: see ibid., at 111 - 112. An interesting question does arise: whether in the case of baselines enclosing historic waters that the basepoints should be located (anchored) on the land not ice. A number of complications arising from this question can be envisaged: (1) if the basepoints were located on the ice, how does that affect the historic waters' characterisation, and (2) how would ambulatory baselines apply in such a case? I am grateful to Professor T. L. McDorman for pointing out these issues.

[32] United States v. Alaska,, 1977 U.S. LEXIS 3865. Clive Symmons, *When is an 'Island' not an 'Island' in International Law? The riddle of Dinkum Sands in the case of US v. Alaska,* (1999), Maritime Briefings 2, No.6, Durham: International Boundaries Research Unit. Symmons examines the Special Master's view that ice would be assumed to land, but the Supreme Court ruled to the contrary.

[33] Schofield and Sas, op.cit., Annex 2, at 340 – 404.

a fifth), or were undecided (about a fifth). Early writers (1903 - 1959) were two to one in favour of ice-as-land, but later writers (2000 - present) were more or less evenly distributed between land, sea, and undecided.

- It is perhaps of particular note that all writers, who favoured considering ice that is attached to land as an extension of the land, premised their arguments on its permanence and stability.

- Moreover, of all the writers favouring the 'ice is land' approach, over 50% made specific reference to Antarctica and its massive ice shelves. This is highly relevant, as the characteristics of Antarctic ice shelves were different in scale and nature to those in the Arctic, at the time the writer voiced their opinions. Although the dramatic calving and melting of the ice formations of the Arctic have recently been mirrored in Antarctica.[34] Thus, drawing general conclusions on the legal nature of ice formations from the characteristics of ice formations or state practice in Antarctica may be considered flawed.

- In many of the later analyses of this issue[35], the various forms of ice in the Arctic Ocean are distinguished and differing legal status suggested, depending on the origin, location and characteristics of the ice form, as summarised in the Figure 3.1 below.

- Most of the recent major studies,[36] having examined the sources of custom and reviewed state practice, conclude that the issue of the legal status remains unresolved: to date there has been no judicial decision that has examined the issue,

[34] See recent reports on NISDC website at: https://nsidc.org/cryosphere/quickfacts/iceshelves.html; B. Wouters, A. Martic- Espanol, V. Helm, T. Flament, J. M. van Wessem, S. R. M. Ligtenberg, M. R. van den Broeke, and J. L. Bamber ,"Dynamic Thinning of glaciers on the Southern Antarctic Peninsula", (2015), *Science*, Vol. 348, No. 6237, 899; Karl Mathiesen, "Antarctic ice shelves are melting dramatically study finds", (2015), *The Guardian,* 26 March 2015, available at: http://www.theguardian.com/environment/2015/mar/26/collapse-antarcticas-glaciers-ice-melt-sooner-than-thought-scientists-warn.

[35] Ibid., at 325.

[36] Ibid..

international legal bodies have avoided the issue, jurists have taken very varying approaches, and state practice in the Arctic is not universally consistent.[37]

	Type of ice	**Premised characteristics**	**Status**	**Current characteristics 2014**	**Thesis author's suggestions relative to 2014 Arctic conditions**
1.	Sea ice – pack ice	Origin sea water and floating.	Almost universally seen as part of the sea.	Sea ice in the Arctic Ocean is significantly melting. The extent of multiyear ice has dramatically reduced. In 2012 NASA images show the sea-ice summer extent at its historical minimum.	Status as sea clearly valid.
2.	Sea ice – fast ice	Some viewed it as solid only seasonally. Jurists differ. Many base their conclusions on the premises of its permanence, stability and attachment to coast.	In such case viewed as sea. Assimilated to land.	Now in summer rapidly melting, or has already melted away. These premises are no longer valid generally.	Suggest status to be sea even if the fast ice is attached during the summer.
3.	Ice caps and ice sheets – on land	Universally seen as permanent and land based.	Assimilated to land.	Now also rapidly melting.	Land status should remain unchanged.

[37] Ibid..

4.	Ice caps – extending into sea	Some jurists premised their considerations of the legal status of these ice formations on the premise that they were permanent, stable and attached as the natural prolongation of land, and therefore should be considered as land.	Assimilated to land.	Now ice cap extensions are melting and retreating rapidly [for example the Polynarny Glacier on Komsomlets Island (Russia)].	Suggest status should be revised to sea in respect of those portions extending beyond the land.
5.	Ice shelves and glacier tongues	Many modern jurists, in particular those analysing the issue in an Antarctic context, premise their view on the characteristics of permanence, stability and attachment to the coast.	These jurists argued these ice features as best assimilated to land.	These features have melted, calved dramatically and generally retreated. The premises no longer appertain to such Arctic ice features.	Suggest status should be revised to sea (frozen).

Figure 3.1: Table of Types of Arctic Ice and their Legal Status[38]

The following general conclusions can be drawn from the author's analysis of the writings of jurists on the legal status of ice[39]:

(1) There does not appear to be any convincing evidence that a customary international law rule regarding the status of ice has emerged, or that such ice formations were, at any time, considered under international law to be land;

(2) Most of the premises, especially permanence, stability and attachment to land, on which the jurists based their arguments that certain ice features should be treated as

[38] © Sas 2015.
[39] Schofield and Sas, op. cit., Annex 2, at 340 - 404.

land (particularly ice shelves and glacier tongues, but also 'permanently' attached fast ice) are no longer valid in view of the Arctic melt;

(3) Most of the legal approaches to ice are rooted in their time period, reflecting the scientific and geographical knowledge, and the geopolitical and economic drivers, of that time;

4) There has been no consensus either historically or among recent legal writers, on the legal status of ice shelves; and,

(5) However, modern writers, given the changing geophysical characteristics of the Arctic region and such ice features, have increasingly either rejected the 'ice is land' approach, 'hedged their bets', or argued that ice should be viewed as a *sui generis* feature - this latter approach has mainly been adopted by writers concerned with Antarctic features.

Thus, pragmatically, since the geophysical characteristics of ice features in the Arctic are changing so rapidly, it is possible to conclude, at least in the Arctic, that the 'ice as land' approach to the legal problem concerning the status of ice is now no longer valid. It seems the problem is simply melting away. Moreover, with modern survey techniques and extensive mapping in the Arctic Ocean and the melting away of Arctic ice, it can be strongly argued that the most legally sustainable approach in the Arctic is that ice features such as ice shelves and outlet glacier tongues should be legally assimilated to the sea.[40]

3.3 Use of Ice Formations as Loci for Basepoints for Territorial Sea Baselines

3.3.1 General Introduction: Basepoints and Baselines[41]

The rules of international law concerning the construction of territorial baselines of coastal states are codified in Articles 5 and 7 of UNCLOS.[42] In the absence of other claims, a coastal

[40] Schofield and Sas, op. cit., 324 - 328.
[41] For a more detailed examination of international law on baselines and basepoints see, Schofield and Sas, op. cit., at Sections 2 and 3, at 292 and 305.

state will have "normal" baselines coincident with the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State. However, under Article 5, there are several other types of baselines that may be drawn in accordance with international law as an alternative to normal baselines. These include straight baselines under Article 7 UNCLOS, river closing lines[43], lines enclosing the permanent harbor works of ports,[44] bays closing lines[45], and closing lines with respect to archipelagic states.[46] It should also be recalled that under customary international law the closing lines (possibly a straight baselines) of historic waters are also baselines from which the territorial sea limits are measured.[47]

Straight baselines under Article 7(1) of UNCLOS are permitted where "the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity". Article 7(2) of UNCLOS allows the drawing of straight baselines where "because of the presence of a delta and other natural causes, the coastline is highly unstable". Both Article 7(1) and 7(2) are conditioned by criteria set out in Article 7(3) and Article 7(4) of UNCLOS: Article 7(3) provides that "the drawing of straight baselines must not depart to any appreciable extent from the general direction of the coast and sea areas lying within the lines must be sufficiently linked to the land domain to be subject to the regime of internal waters", and Article 7(4) stipulates that straight baselines "[s]hall not be drawn to and from low-tide elevations unless lighthouses or similar installations which are permanently above

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[42] On territorial sea baselines see: C. *Carleton* and C. Schofield, *Developments in the Technical Determination of Maritime Space Charts: Datums, Baselines, Maritime Zones and Limits,* (2001), Maritime Briefing, Vol. 3, No. 3, IBRU; R. R. Churchill and A .V. Lowe, *The Law of the Sea*, (1999), 3rd Edn., Manchester University Press, at 31 - 33; James Crawford, *Brownlie's Principles of Public International Law,* 8th Edn., (2012), Oxford University Press at 257 – 259; Donald R. Rothwell and Tim Stephens, *The International Law of the Sea*, (2010), Hart Publishing, at 40 -44; Tullio Scovazzi, *Atlas of Straight Baselines*, (1989), 2nd Edn., Dott. A. Guiffre; Tullio Scovazzi, "Baselines", (2015), in *Max Planck Encyclopedia of Public International Law*, available at:
opil.ouplaw.com/home/EPIL;
Yoshifumi Tanaka, *The International Law of the Sea*, (2012), Cambridge University Press, at 44 -56; T. Treves, "Codification du droit international et pratique des états dans le droit de la mer", (1990), *RCADI*, 1990 – IV, Vol. 223, 66; Gillian D. Triggs, *International Law, Contemporary Principles and Practices,* (2011), LexisNexis Butterworths, at 349 - 351; UNDAOLOS, *The Law of the Sea: Baselines: An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea*, (1989), United Nations.

[43] Article 9 UNCLOS.

[44] Article 10 UNCLOS.

[45] Article 11 UNCLOS.

[46] Article 47 UNCLOS.

[47] International Law Commission, UN, "Juridical Regime of Historic Waters including historic bays - study prepared by the Secretariat", Doc. A/CN.4/143, (1962), *Yearbook of then International Law Commission*, Vol. 11, available at:
http://legal.un.org/ilc/documentation/english/a_cn4_143.pdf.

sea level have been built on them or except in instances where the drawing of baselines to and from such elevations has received general international recognition".

Furthermore, Article 7(5) of UNCLOS allows for account to be taken of "economic interests peculiar to the region concerned, the reality and importance of which are clearly evidenced by long usage", while Article 7(6) states that a system of straight baselines may not be applied by a coastal state "in such a manner as to cut off the territorial sea of another State from the high seas or an exclusive economic zone".

Although the general framework for the straight baseline regime under Article 7 is clear, some aspects of specific provisions of the Article are less so, as the definitions for key terms are not provided and it also fails to provide clear rules for determining or assessing criteria for such baselines.[48]

Straight baselines under Article 7 have been analysed extensively academically, interpreted by the UN Office of Oceans Affairs and Law of the Sea, and examined in numerous cases before the ICJ.[49] The imprecise language and on occasions ambiguous terms of Article 7 has been the subject of academic criticism[50] and makes it difficult for the Article's application.[51] Support for the conservative American approach to this Article[52] can be found in the ICJ's decision in the *Qatar/Bahrain Case*, which stated unequivocally that the method of straight baselines under Article 7 UNCLOS "must be applied restrictively".[53]

As discussed earlier, straight baselines under Article 7(1) need to be anchored to "appropriate points" and these points must be located *on* the territory of the State drawing the baselines and should be *on or above* the charted low-water line used in the other parts of the coast as the normal baseline.[54] This point has particular relevance when examining

[48] For a detailed examination see: Schofield and Sas, op. cit., at 328 - 331.
[49] See quoted references in: Schofield and Sas, op. cit., footnotes 32 - 34, at 298 - 299.
[50] J. R. Prescott and Clive Schofield, *The Maritime Political Boundaries of the World*, (2005), Martinus Nijhoff, at 162 - 164.
[51] J. R. Prescott, *The Maritime Political Boundaries of the World*, (1985), Methuen, at 64.
[52] USDS, "Developing Standard Guidelines for Evaluating Straight Baselines", (1987), *Limits in the Seas*, No. 106, available at:
www.state.gov./e/ocs/ocns/opa/c16065.htm.
[53] Case Concerning Maritime Delimitation and Territorial Questions between Qatar and Bahrain (Qatar v. Bahrain), (Merits), ("*Qatar v. Bahrain Case*"), (2001), ICJ Reports 40., available at:
www.icj-cij.org/docket/files/87/7027.pdf.
[54] UN Office of Ocean Affairs and the Law of the Sea, cited in Schofield and Sas, footnote 8, *supra.*

the validity of using of ice formations as loci for basepoints and the legal situation when these formations have melted away into the sea, as will be discussed in the next sub-section.

3.3.2 Arctic States' Baseline and Basepoint Selection Practice

The ice-covered coasts of the Arctic Ocean pose significant practical problems in drawing territorial baselines.[55] These difficulties relate *inter alia* to (1) fast ice attached to the coast that makes locating the low water mark very difficult if not impossible in parts of the northernmost Arctic, (2) protruding tide-water glacier tongues and ice shelves, and, more recently, (3) Arctic coastlines that are being eroded by a combination of factors that include thawing permafrost and melting fast ice. [56]

The following table summarises the review of Arctic State baseline practice in the Schofield and Sas study.[57]

Arctic Ocean Littoral State	**Baseline System along Arctic Coasts**	**Relevant Legislation**	**Use of Ice Features as Loci for Basepoints**	**Other Basepoint or Baseline Features, Issues, and Comments**
Canada	Mixed normal and straight baseline system (including use of	• *The Ocean Act* 1996.[58] • Territorial Sea Geographic Coordinates (Area 7) Order 1985.[59]	It appears likely that ice shelves have been used as loci for basepoints along the northwest coast of Ellesmere Island (basepoints 68-75). In particular the basepoints at Capes Bicknor, Discovery and Nares were most	Arguably the northernmost coast of Ellesmere Island is sufficiently indented to warrant straight

[55] Schofield and Sas, op. cit., at 299 - 305.
[56] Schofield and Sas, op. cit., at 306 - 321.
[57] Schofield and Sas, ibid., and all documents and works referred therein.
[58] The Ocean Act 1996, c. 31, SC 18 December 1996, ("*Ocean Act*"), available at: http://law-lois.justice.gc.ca/eng/regulations/SOR-85-872/page_1.html.
[59] Territorial Sea Geographical Coordinates (Area 7) Order, SOR/85 - 872, 10 September 1985. The effect of this order has been continued under the authority of the Ocean Act 1996.

	UNCLOS based straight baselines and straight baselines enclosing claimed historic waters) The straight lines around the Arctic Archipelago have been challenged in respect of those which enclose the waters of the Northwest Passage.		likely, if any were, to be located on an ice shelf, ice rise or fast ice. [60] Whether or not the baselines along the Ellesmere coast are in respect of historic waters, or are straight baselines under Article 7 UNCLOS, these basepoints must, under international law of the sea, be located on *land*. Thus, the legal categorisation of the basepoints initially located on Ellesmere Island ice shelves and/or with respect to any of these ice – shelves that have melted now located in the sea is relevant and such basepoints are probably valid.[61]	baselines under Article 7.
Denmark/ Greenland	Mixed normal and straight baselines system.	• 1963 Royal Decree on the Delimitation of the Territorial Waters of Greenland No. 191, 27 May 1991, as amended by	• It appears that the Petermann Glacier's extension beyond the fjord's closing line was taken into account in the 1973 Denmark-Canada delimitation agreement and has not been subsequently adjusted with the melting of the	Basepoint No. 103 (0odaaq) the northernmost of Greenland, on what is, or more accurately was, a bank of gravel

[60] Schofield and Sas, op. cit., at 309 - 310.
[61] Schofield and Sas, op. cit., at 310.

		2004, Royal Decree No. 1004, 15 Oct 2004. [62]	ice tongue.[63] • Eastern Greenland's ice cap, the Flade Isblink, projects at certain points seaward beyond the outer edge of the land mass, and some basepoints are on the edge of the ice cap, and are either now either located in the sea or on the edge of the melting ice cap…thus creating legal uncertainty as their current and/or future validity.[64]	and silt in 1978. The Oodnaq basepoint is problematic as (1) it appears to have submerged and (2) has not been formally sighted since 1978, and (3) is a turning point of coastal direction. As such, its validity is crucial to establishing the northern most baseline of Greenland.[65]
Norway: **a. Svalbard**	**a. Svalbard** Single straight baseline	**a. Svalbard** • The Svalbard Treaty 1920.[66]	**a. Svalbard** • Re 1970 basepoints: In 1972 the USDS[71] and in 1973 Pharand[72] noted that both the Edgeoya and	**a. Svalbard** The USDS commented in Limits of the Sea

[62] 27 May 1963 on the Territorial Waters of Greenland (as amended by Royal Decree No. 636 of 6 September 1991 and the Royal Decree on Amendment of Royal Decree on Delimitation of the Territorial Waters of Greenland, No. 1004 of 15 October 2004), available at: www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/DNK-1963_Order.pdf.

[63] Schofield and Sas, op. cit., at 313.

[64] The text of this decree, the list of basepoints and a useful map can be found in the notification of these baselines by Norway on 8 June 2001, *Law of the Sea Bulletin*, Vol. 46, 72, at 75 - 79.

[65] Royal Decree of 30 June 1955, *USDD, Maritime Claims Reference Manual of 23 June 2005* (updated in August 2010), at 2 -319.

[66] Treaty concerning the Archipelago of Spitsbergen, 1920, 02 February 2009, ("*The Svalbard Treaty"),* available in English at: www.jus.uio.no/english/services/library/treaties/01/1-11/svalbard-treaty.xml.

	system	• Royal Decrees of 30 June and 25 September 1970 establishing a single straight baseline system around the archipelago.[67] Unopposed by all Treaty Parties and by non-Treaty Parties. • Royal Decree of 1 June 2001[68] defined current basepoints and straight baselines.	the Nordanslandet Glaciers had tongues which extended beyond the land mass. • Re 2001 basepoints ten of them are expressly stated as being located on ice caps or glaciers – specifically basepoints 78 - 83 on Kviyoya, basepoints 159 -161 on Nordlauslandet (as before), and basepoint 169 on Edgeoya (as before). As with the basepoints in Canada and Greenland, these basepoints have mixed fortunes with some located in the sea and others on very variable surging ice features - therefore they too pose a problem of legal uncertainty as to their validity.[73]	1972 that "several of the straight baselines intersect glaciers which project seaward of the baselines…" and that "The chart's accuracy may be of low degree which would cast doubt on the conclusion" but it continued: "However, if more accurate charts show this condition to prevail, the example of Svalbard may affect future treatment of coastal, glacial tongues as "special circumstances" for the measurement of the territorial sea.[75]

[71] USDS, Limits *in the Sea*, (1972), footnote 67, *su*pra, at 5.
[72] Pharand, op. cit., at 188.
[67] For texts of these decrees in English see: USDS, "Straight Baselines-Svalbard", *Limits in the Sea*, (1972), No. 39.
[68] Ibid..
[73] Schofield and Sas, op. cit., at 315.
[75] USDS, *Limits in the Sea,* (1972), footnote 67, *supra*.

b. Jan Mayen	**b. Jan Mayen Island** A single straight baseline system.	**b. Jan Mayen Island** • In 1955 Norway established a seventeen segment straight baseline system around the island of Jan Mayen.[69] • A Royal Decree of 30 August 2002[70] defined the basepoints and drew straight baselines around Jan Mayen Island.	**b. Jan Mayen Island** No basepoint is identified as on a glacier or ice cap. It would appear that no ice caps or glacier tongues protrude beyond the baselines, other than possibly *de minimis* the Beerenberg ice cap.[74]	**b. Jan Mayen Island**
Russia	**a. Arctic Mainland Coast** Normal baselines along the low water line.	**a. Arctic Mainland Coast** **b. Franz Josef Land** **c. Arctic Islands** For all above areas the following apply: • Declaration of the USSR Council of Ministers of the 15th January 1985, Decree 4450, (still in force.)[76]	**a. Arctic Mainland Coast** There are no ice features along Russian coastal shores that are involved in drawing the baselines.[78]	**a. Arctic Mainland Coast** The mainland coast baselines have not given rise to any objection.[84]

[69] Royal Decree of 30 June 1955, *USDD, Maritime Claims Reference Manual of 23 June 2005* (updated in August 2010), at 2 - 319.
[70] Regulations relating to the Limit of the Norwegian Territorial Sea around Jan Mayen, Royal Decree 30 August 2002, *Law of the Sea Bulletin*, Vol. 50, 22 - 23.
[74] Schofield and Sas, op. cit., at 317.
[76] Declaration 4450, Decree of the USSR Council of Ministers, 15 January 1985, available at: www.u.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1985_Declaration.pdf.

		• Federal Act on the internal maritime waters, territorial sea and contiguous zone of the Russian Federation 1998.[77]		
	b. Franz Josef Land Mixed system of straight baselines between basepoints on capes on land.		**b. Franz Josef Land** Surprisingly, given that 85% of FJL is permanently ice covered by ice domes, ice sheet and glaciers, it would appears from the maps and satellite images that ice features played little and probably no role in the drawing of baselines with the basepoints located on clearly elevated capes.[79]	**b. Franz Josef Land** No objection has been lodged in respect of these baselines and Norway signaled its acceptance of them through the delimitation in the Barents Sea Treaty

[78] Schofield and Sas, op. cit., at 317 - 319.
[84] Sas and Schofield, op. cit., 318 - 319.
[77] Act on the Internal Maritime Waters, Territorial Sea and Contiguous Zone of the Russian Federation, 17 July 1998, available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1998_Act_TS.pdf
[79] A. I. Sharov, H. Raggam and M. Schadt, "Satellite Hydrographic Monitoring along the Russian Arctic Coast", (2000), *International Archives of Photogrammetry and Remote Sensing*, Vol. XXXIII, Part BA, 947, available at:
www.isprs.org/proceedings/XXXIII/congress/part4/947_XXXIII-part4.pdf;
A. I. Sharov (ed.), *Satellite Monitoring and Regional Analysis of Glacier Dynamics in the Barents – Kara Region*, (2010), Reproteam, Joanneum Research, available at:
http://dib.joanneum.at/smaragd/downloads/SMARAGD_Brochure_10060_ed_title.pdf.
Despite the melting, sea ice is still reported to surround the main islands even in summer, see Chillymanjaro, "The glaciers in the Island of Franz Josef Land are currently in a state of retreat", (2011), *Arctic and Antarctic Climate Change, 20 August 2011,* available at:
the watchers.adorraeli.com/category/earth-changes/arctic-antarctic.
Tabular ice islands from the archipelago are usually less than 400km^2, i.e. relatively small by Antarctic standards. It should be noted that only 20% of the Franz Josef Land archipelago is land, the rest is sea, ice and snow. For a very stark pictorial view of the shrinkage see: A. Sharov, "Franz Josef Land Region: Glacier Changes 1950s - 2000s", (2008), *Joanneum Research online,* available at:
http://dib.joanneum.at/smargd/downloads/Eurasian_Arctic_5mio_100908_web.pdf.

			Despite images by NASA in 2011 showing that the glaciers and ice on Franz Josef are in retreat and melting[80], most of the coast remains for now permanently icebound, even in the summer. Hence it is hard to see how the low waterline can in practice be determined, without risking the use of ice as a locus for a basepoint[81]	2010.[85]
	c. Arctic Islands Mixed system but primarily straight baselines.		**c. Arctic Islands** It would appear that a few basepoints were located on glacier extensions on Russian Arctic Islands[82], and for example that at least two basepoints on Komsomolets Island are currently located in the sea, putting at risk their validity.[83]	**c. Arctic Islands** The United States has persistently objected to the straight baselines connecting basepoints on the Russian Arctic islands to the mainland.[86]
United States	The United States has a policy to use	Submerged Lands Act 1953.[88]	Since there are no significant ice formations such as ice shelves or outlet glacier tongues which	Unproblematic.

[80] NASA, "Franz Joseph Land", (2011), *Visible Earth*, NASA , 17 August 2011, available at: http://visibleearth.nasa.gov/view.php?id=51895.
[81] Schofield and Sas, op. cit., at 315 - 316.
[82] Schofield and Sas, op. cit., at 318 - 319.
[83] For detailed explanation see Annex 2 of the thesis.
[85] *Treaty on maritime delimitation and cooperation in the Barents Sea and the Arctic Ocean*, 15 September 2010, ("*Barents Sea Treaty 2010*"), available in English at: www,regjeringen.no/globalassets/upload/SMK/Vedlegg/2010/avtale_engelsk.pdf.
[86] This is outlined in: J. Ashley Roach and Robert W. Smith, *Excessive Maritime Claims,* (2012), 3rd Edn., Martinus Nijhoff, at 312 -318.

	low water mark baselines[87]		extend beyond the low water baselines, and fast ice along the Alaskan coast is seasonal all basepoints are located on land.[89]	

Figure 3.2: Table on Arctic State Practice Using Ice as Locus for Basepoints and Comments[90]

From the above table it appears that in some locations, notably in the most northerly locations of four of the Arctic Five, ice formations have been used as loci for basepoints for territorial sea baselines. The legal implications of this will now be analysed.

3.3.3 The Legal Implications of the Use of Ice Formations in Drawing Territorial Sea Baselines

Schofield and Sas argue that any basepoints located on ice features (such as fast ice, ice rises, ice shelves or protruding glacier tongues) in the Arctic would likely not meet the criterion of "appropriate points" for the drawing of territorial sea straight baselines under Article 7 of UNCLOS and are at serious risk of being considered invalid. [91]

Moreover, with the melting of Arctic ice features on which some basepoints were located along the coasts of the Arctic Five, it is highly arguable that any such basepoints that are now located in the sea are definitely not valid. As Caron has stated: "…if a baseline point…disappears the boundary generated by that point also disappears".[92] The gravity of such loss depends on the actual location of the basepoint.

The scale of the melting areas of the ice formations is large, sometimes over 100km[93], so the potential shift of baseline may not be insignificant. Clearly, if the basepoint is a key

[88] Submerged Lands Act 1953, 33 U. S. C. #130.
[87] Schofield and Sas, op. cit., at 320.
[89] B. F. Molina, "Glaciers of North America – Glaciers of Alaska, (2008), updated in 2010), USGS Professional Paper No. 1386, in *Satellite Images Atlas of Glaciers of the World*, (2010), (R. S. .Williams and Jane G. Ferrigno, eds.), available at:
http://pubs.usga.gov/pp/p1386/pdf/F1_russia.pdf.
[90] ©B. Sas 2015.
[91] Schofield and Sas, op. cit., at 323 – 331.
[92] David Caron, "When Law Makes Climate Change Worse: Rethinking the Law of Baselines in the Light of a Rising Sea Level", (1990), *Ecology Law*, Vol. 17, 621, at 634 - 635.
[93] For example the calving of the Peterman Shelf in Greenland in 2001 and 2008: Schofield and Sas, op. cit., at 313.

basepoint (such as a turning point) for a territorial baseline used in the determination of other maritime zones,[94] then the consequences of its invalidity may be important in terms of loss or gain of maritime areas by the coastal state. This issue is not academic and Annex 3 of the thesis provides a practical and illustrative example of such problematic territorial sea basepoints in Russia. The basepoints in the Russian example are at the northernmost extent of Russian territory and therefore have potential significant ramifications for the northwards limits of the EEZ and ECS. Similar such problematic basepoints can also be identified in three of the other Arctic coastal states as well.[95]

3.4 Unstable ice-covered coasts and territorial sea baselines

The Arctic Ocean coastline itself is also undergoing dramatic changes due to climate change with extensive erosion[96], due to the combined effect of melting fast ice (which formerly provided a barrier from the violent Arctic storms and wave action) and the thawing of the permafrost (which makes up an estimated 65% of the land of the coastline) which is significantly destabilizing the coast.[97] These unstable coasts are eroding at an unprecedented rate over thousands of miles of Arctic Ocean coastline - an estimated average of half metre per annum, but with huge variability and some areas recording over 45m of coastal erosion in a year.[98] This erosion consequently has legal implications for delimiting the territorial seas of the Arctic coastal states. The unprecedented ambulatory and geographically significant nature of Arctic coastlines today makes the definition of normal and straight baselines for the territorial sea extremely problematic.

The question arises as to the legal implications of such ambulatory coastlines. The international law of the sea does not expressly countenance the fixing of baselines or baselines, with the exception of the Article 7(2) situations. However, similarly it does not provide that baselines move automatically, or must be constantly adjusted in response to

[94] Clive Schofield, "Shifting Limits?: Sea Level Rise and Options to Secure Maritime Jurisdictional Claims", (2009), *Carbon and Climate Law Review*, Vol. 3, No. 4, 405, at 408 - 409.
[95] Schofield and Sas, op. cit., at 307 - 320.
[96] Schofield and Sas, op. cit., Section 4.
[97] Schofield and Sas, op. cit., Section 4.
[98] International Arctic Science Committee, Land-Ocean Interactions in Coastal Zone, Arctic Monitoring and Assessment Programme, International Permafrost Association, *State of the Arctic Coast 2010: Scientific Review and Outlook*, (2011), Geesthacht, Germany: LOPICZ International Project Office, 2011, at 11 - 19.

accretion or avulsion.[99] Lathrop identifies three possible approaches to baselines in the light of geographic changes to coastlines[100]: (1) they are automatically ambulatory with geographic changes to the coast; (2) they are fixed permanently by the coastal state with no obligation to update even in the event of significant geographic changes; and, (3) baselines may be fixed temporarily with an obligation to update in a timely fashion in the event of significant geographical changes.

Purcell[101] argues for the permanently fixed approach, but nearly all other juristic writers on the topic do not support her view. Although recognizing the desirability of fixing existing territorial sea boundaries and that climate change is not only causing massive Arctic coast erosion but also sea level rise, Alexander[102], Caron[103], Hayashi[104], Lisztwan[105], Lusthaus[106], Rayfuse[107], Schofield[108], Soons[109], Stephens[110], and Stoutenberg[111], disagree with Purcell.[112]

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[99] On ambulatory coasts see: Coalter G. Lathrop, "Baselines", (2015), Chapter 4, in *Oxford Handbook of the Law of the Sea*, (Donald R. Rothwell, Alex G. Oude Elferink Karen N. Scott and Tim Stephens, eds.), Oxford University Press, 66.

[100] Ibid., at 77 - 79.

[101] Kate Purcell, "Maritime Jurisdiction in a Changing Climate", (2012), in *The Law of Adaption to Climate Change: United States and International Perspectives*, (2012) (Michael B. Gerard and Katrina Fischer Kuh, eds.), (ABA 2012), 731, at 737.

[102] L. M. Alexander, "Baseline Delimitations and Maritime Boundaries, (1983), *Virginia Journal of International Law*, 503, at 535.

[103] David Caron, "Climate Change, Sea Level Rise and the Coming Uncertainty in Oceanic Boundaries: A Proposal to Avoid all Conflict", (2009), Chapter 1, *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea*, (Seoung-Yong Hong and Jan M. Van Dyke, eds.), Martinus Nijhoff, 1; D. D. Caron, "When Law Makes Climate Change Worse: Rethinking the Law of Baselines in the Light of Rising Sea Level", (1990), *Ecology Law Quarterly*, Vol. 17, 621.

[104] Moritaka Hayashi, "Sea Level Rise and the Law of the Sea: Legal and Policy Options", (2009), *Proceedings of the International Symposium of Islands and Oceans*, (Hiroshi Terashima, ed.), Ocean Policy Research Foundations, Tokyo, at 79 - 90.

[105] Julia Litsztwan, "Stability of Maritime Boundary Agreements", (2012), *Yale Journal of International Law*, Vol. 37, No. 1, 153, at 162 – 165.

[106] Jonathon Lusthaus, "Invading Waters: Climate Change Depossession, State Extinction, and International Law", (2010), *Politics,* Vol. 30, 113, available at:
http://works.bepress.com/jared_hestetune/1, at 27 - 29,

[107] Rosemary Rayfuse, "International Law and Disappearing States: Utilising Maritime Entitlements to Overcome the Statehood Dilemma", (2010), *University of New South Wales Faculty of Law Research Series 2010*, Paper 52, available at:
http://works.bepress.com/cgi/viewcontent.ogi?article=1247&content=unswwps=flrps10.

[108] Clive Schofield, "Sea Level Rise and Options to Secure Maritime Jurisdictional Claims, (2009), *Carbon and Climate Law Review*, Vol. 4, 405, at 406; Clive Schofield and Andi Arsana, "Climate change and the limits of maritime jurisdiction", Chapter 6, Section 4.1, (2012), in *Climate Change and the Ocean, Gauging the Legal and Policy Currents in the Asia Pacific and Beyond*, (Robin Warner and Clive Schofield, eds.), Edward Elgar, 127, at 134 – 148.

[109] Alfred Soons, "The Effects of Sea Level Rise on Maritime Limits and Boundaries", (1990), *Netherlands International Law Review*, Vol. 37, 207, at 222.

The strongest argument raised by Purcell to rebut the ambulatory interpretation is that the practical effect of marking the low water line on a chart as required by Article 5 of UNCLOS is to 'fix' that baseline until such time as new charts are produced.[113] She bases much of her arguments on the fact that the law of the sea gives "the clear priority to coastal state control over national maritime space".[114] However, Caron dismisses this argument, noting that this is a practical matter which does not resolve the legal question. He makes a strong case against such baselines being fixed, arguing that territorial sea baselines are ambulatory by negative implication.[115] The debate on ambulatory versus fixed baselines is usefully summarised by Lathrop[116] and Stephens,[117] and today remains unresolved. It is part of a wider ongoing discussion which has focused primarily on adjustment of baselines in response to sea-level rise due to climate change.[118]

Lathrop himself opts for the middle position viewing both other approaches as having serious flaws of legal and practical nature[119] and this author considers Lathrop's arguments persuasive.

Thus, following the Lathrop approach, it would seem that, currently under international law, coastal states should adjust their definitions of baselines in the Arctic Ocean and suitably

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[110] Tim Stephens, "The Law of the Sea and Climate Change Adaptation", (2015), Section 4 in Chapter 34, "Warming Waters and Souring Seas, Climate Change and Ocean Acidification", in *Oxford Handbook of the Law of the Sea*, (Donald Rothwell, Alex G. Oude Elferink, Karen N. Scott and Tim Stephens, eds.), Oxford University Press, 777, at 787 - 794.

[111] Jenny Grote Stoutenburg, "Implementing a New Regime of Stable Maritime Zones to Ensure the (economic) Survival of Small Island States Threatened by Sea-Level Rise", (2011), *International Journal of Marine and Coastal Law,* Vol. 26, 263.

[112] Caron puts it very succinctly: "if a baseline point disappears, the boundary generated by that point also disappears. Although this is obviously an important principle, it often goes unstated", op. cit., (2009), at 9.

[113] See Rayfuse, op. cit., at 4.

[114] Purcell, op. cit., at 739.

[115] Caron, (2009), footnote 103, *supra*, at 9.

[116] Lathrop, footnote 99, *supra*, at 77 – 79.

[117] Stephens, (2015), footnote 110, *supra,* at 789- 794.

[118] In addition to the already cited papers by Caron, Hayashi, Lusthaus, Rafuse, Schofield, Soons and Stoutenburg (all op. cit., at footnotes 99 – 111, *supra*) , for a useful overview of the issue, see: Clive H. Schofield, "Against a rising tide: ambulatory baselines and shifting maritime limits in the face of sea level rise", (2009), a paper presented to the *Proceedings of International Symposium on Islands and Oceans, Akasaka, Tokyo,* 22 -23 January 2009, available at:
http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1321&content=ihapapers.

[119] Lathrop, footnote 99, *supra.*

amend their coastal charts where the ambulation is significant,[120] however to date none of the Arctic Five have chosen done so.

There is a possible alternative to the use of normal baselines along the Arctic's unstable coastlines. Schofield and Sas[121] examined the possible use of straight baselines under Article 7(2) of UNCLOS, provided appropriate basepoints can be located, as then such baselines would be fixed. Having analysed the possibility of applying Article 7(2), Schofield and Sas conclude that it would require an extremely liberal interpretation of this Article for the Arctic mainland coastline to be able to invoke straight baselines that are fixed under Article 7(2). However, if, as they suggest, the Arctic Ocean states choose to do so, and none of the other Arctic States challenge such practice over a sufficiently long period, they may succeed in establishing a regional customary international law rule.[122] The real issue is how long this process of establishing regional custom would, or perhaps it should be will, take.

As Caron comments[123], shifting baselines may lead to uncertainties as to the boundaries of other maritime zones, such as the EEZ and ECS and certainly no oil company would consider investing billions in an Arctic project in any area of uncertain coastal state jurisdiction.

While the EEZ and territorial sea delineations may be affected by the use of melting ice features and coasts in drawing territorial sea baselines, in the case of the ECS there may be a different story. If a coastal state delineates its ECS on the basis of CLCS recommendations under Article 76(8), its limits will be 'final and binding' (this point will be further elaborated in Chapter 6 on the ECS). Practically, this would nullify the effect of the vulnerability of basepoints on ice features and/or the ambulatory nature of the coastline and ensure unchallengeable coastal state rights to explore and exploit its maritime zones out to the outer edge of its ECS, thus ensuring the coastal states has clear sovereign rights to exploit petroleum in the maritime zone.

But the wider issue of ambulatory baselines remains. Caron[124], Hayashi[125] and Stephens[126] all suggest possible approaches to the problem but the clearest, and arguably most

[120] Caron, footnote 103, *supra*, at 634.
[121] Schofield and Sas, op. cit., at 330 – 331.
[122] Ibid..
[123] Caron, footnote 103, *supra*.
[124] Ibid.

preferable, solution would be a new rule recognising fixed baselines in a new implementing agreement following the model of the 1994 Agreement.[127] The question arises whether the international community has sufficient communality of interest to reach agreement on the issue.

In the context of the Arctic Ocean it is highly questionable whether the Arctic Five would have any interest in opening these issues up to wider international debate – given the approach of the Arctic Five expressed in the Ilulissat Declaration, one suspects not.

3.5 General Conclusions and Suggestions regarding Issues connected with Arctic Ice

3.5.1 Ice Formation Issues

The legal status of ice and in particular ice shelves has particular relevance to the drawing of territorial sea baselines along the ice covered coasts of the northern Arctic Ocean. As discussed earlier, it is generally accepted that basepoints, in order to be "appropriate" for use under Articles 5 and 7 of UNCLOS, must be located on land. Thus, the "ice is land" debate is not purely academic, but has importance for the legality of locating basepoints on ice formations and their resultant baselines. The analysis concluded that, given the extent of the melting of ice and ice formations the best view was to consider Arctic ice shelves and glacier tongues, albeit that they are attached to land, as sea. This leads to the high probability that basepoints originally located on ice formations were invalid *ab initio*. although, since most of the ice shelves have melted and most of such basepoints will now be located in the sea, they are now undoubtedly invalid.

However, as can be deduced from Figure 3.2, ice formations *generally* appear to have been used sparingly for restricted sections of the northernmost coasts of the Arctic Ocean States where distinguishing ice from land is extremely difficult, and thus they have not played a major role in the drawing of any modern baselines of the Arctic Five. Except where the points involved were turning points, or such that the envelope of arcs method of drawing

[125] Hayashi, footnote 104, *supra*.
[126] Stephens, (2015), footnote 110. *supra,* at 793.
[127] Ibid.

other maritime zones would be affected, *generally* in the Arctic Ocean these basepoint anomalies will have a minimum effect, given the size of the maritime zones in question.

Nonetheless, where key basepoints are located at a turning point, (such as the basepoints relating to Komsomolets Island described in Annex 3), the envelope of arcs is affected, or where the width of the melted area of ice formation is sizeable (possibly up 50 – 100km), the legality of basepoints located on ice formations takes on a far greater significance.

As territorial sea baselines are used in the delimitation of other maritime zones, the legality of basepoints originally located on ice formations becomes highly pertinent for all maritime zone boundaries. In the case of a basepoint now located in the sea due to the melting of its ice formation, the legality of the resultant baselines and consequent maritime zone boundaries using such baselines is uncertain, and their validity may be challenged. Thus, invalid basepoints may give rise to possible maritime boundary disputes, especially between opposite and adjacent states.

While, in either of the above circumstances, the baselines in question are unlikely to be challenged by any of the four Arctic states who also use such ice features, the issue cannot be completely ignored as, for instance, the United States may challenge such use of ice features. Thus, although the probable invalidity of certain basepoints along the Arctic Ocean coasts should not be overly dramatized, neither should it be ignored legally or practically by oil companies active in the Arctic Ocean, as there may be uncertain jurisdiction at the edges of some areas of maritime zones.

3.5 2 Permafrost Issues[128]

Equally, it was observed above that the increasing coastal erosion along Arctic Sea coasts is problematic legally – thereby putting at risk of being invalid long sections of Arctic Ocean baselines.

The Arctic coastlines are highly unstable and significantly ambulatory, potentially causing territorial sea baseline issues for both normal and straight baselines in the Arctic Ocean. The consensus of jurists is that Article 7(2) cannot be applied to such situations to 'fix' the

[128] Most of the information in this subsection is from Schofield and Sas, op. cit., at 320 - 323 and 328 - 333.

baseline. Thus, in relation to this issue, there appears to be a lacuna in the international law of the sea, in particular in UNCLOS.

However, it can be argued that ultimately international law, albeit incidentally, may contribute to legal certainty with regard to an oil company's title to petroleum in the Arctic Ocean, in spite of its avoidance to clarify the issues connected with ice. This contribution results from the possibility of achieving 'final and binding' outer limits of the continental shelf under Article 76(8). This possibility will be examined in detail in Chapter 6 on the extended continental shelf.

What is clear from the analysis is that international law has not to date addressed either the legal status of ice and its use in defining territorial baselines, or the issue of ambulatory baselines in the Arctic Ocean or generally elsewhere.[129] In respect of the legal status of ice and use of ice formations as loci for basepoints, it can be said that the UNCLOS drafters, international organisations and judicial bodies, and the wide legal international community, although aware of the issue, have assiduously and deliberately avoided the issue for well over 50 years. In the case of the erosion of permafrosted Arctic coasts, this recent development could not have been anticipated by the UNCLOS drafters. As raised earlier, ambulatory baselines in the Arctic Ocean are part of a wider problem and debate, one that is currently ongoing and is showing no real progress to resolution. It is unlikely that Arctic States will push for an international agreement on the issue until they have settled the delineation and delimitation of their continental shelves. It is possible that eventually an Arctic regional solution may emerge among the Arctic Five.

An oil company should be aware of these issues in regard to any offshore licence acreage in the Arctic Ocean and ensure that the acreage is well away from any area vulnerable to challenge due to the retreating Arctic baselines, or alternatively seek some form of

[129] *The Chamizal Arbitration* (United States v. Mexico) of 1911 might be considered to give some indication of how international law could approach drawing a legal distinction between rapid and gradual changes along an Arctic coastline giving rise to differing delineations and delimitations lines. However, such consideration should bear in mind that the *Chamizal Arbitration* was decided on the basis of specific provisions in an 1884 Treaty: under these provisions different boundary lines were to be drawn in respect to the Rio Grande river boundary depending on whether the changes in the river course were gradual or rapid. Since there has been no consistent state practice subsequent to the arbitration award the tribunal's approach cannot be considered to be customary international law. Hence the arbitration approach is only a possibility. See: *Chamizal Arbitration, United States v. Mexico. Minutes of the meetings of the international Boundary Commission, June 10 and 15, 1911, containing the award in the Chamizal Case*, available at:
http://archive.org/details/chamizalarbitrat00inte.

guarantee from the coastal state regarding secure title to petroleum produced from the licensed area.[130]

[130] Although the coastal state may be reluctant to grant such guarantees. See general overview of possible forms of guarantees see: Timothy Irwin, Michael Klein, Guillermo E. Perry, and Mateen Thobaul, (eds.), *Dealing with Public Risk in Private Infrastructure*, (1997), World Bank, Chapter 1, by the editors at 1 - 20.

Chapter 4: International Law and Territorial Seas in the Arctic Ocean: Sovereignty and Title to Petroleum

Summary*:*

This Chapter examines the legal regime of territorial seas and coastal states' sovereignty over the seabed and subsoil of Arctic waters. There would seem that there is little *ex facie* that is problematic to analyse in respect of coastal state's ownership of the petroleum *in situ* in the seabed and subsoil of its Arctic territorial sea. However, it is in the domestic legal regime and its implementation of the international law on the territorial sea where potential problematic areas may arise.

The Chapter's analysis of the implementation of that sovereignty in the national regimes of the Arctic Five includes the examination of the impact on title to petroleum in the territorial sea zone of two issues: (1) the offshore rights of subunits of the states and/or devolution of rights and (2) the extent (if any) to which indigenous people of land territories adjoining the Arctic Ocean have been granted proprietary rights to offshore petroleum resources.

The analysis will show that: (1) international law has played a fundamental role in establishing a solid framework and a certain regime for coastal states' rights to petroleum in their territorial seas, (2) all of the Arctic Five accept the customary international law of the sea regime for the delineation and delimitation of the territorial sea, as codified in Articles 2 - 16 of UNCLOS, and (3) each of them has implemented these provisions into its national territorial sea regime in a consistent manner. However, the analysis will illustrate how the two topics mentioned above (subunits/devolution and indigenous rights) do impact on the transfer down the chain of title to petroleum from the coastal state to the oil company in at least two of the Arctic Five: for example, in respect of devolution and indigenous peoples' rights in Greenland/Denmark and the subunit issue (Alaska) in the United States.

As a sub-topic, the Chapter will also illustrate occasions when the international and national regimes for environmental protection, although not affecting the issue of actual title to petroleum may nonetheless indirectly impact and significantly affect the availability of specific acreage for petroleum development and/or the exercise of title rights by both the states and their licenced oil companies.

The Chapter comes to the general conclusion that, although international law has established a clear regime whereby coastal states have certain title to petroleum in the territorial sea zone, in some states, due to aspects of domestic law and the implementation of the international regime, there are complicating aspects with respect to the acquisition of title to petroleum produced by an oil company.

4.1 General Introduction: International Legal Regime of the Territorial Sea[1]

The juridical character of the territorial sea zone has a long history which has been well described in the literature.[2] Although not a party to UNCLOS, the United States accepts that the territorial sea provisions of UNCLOS codify customary international law.[3]

The sovereignty of a coastal state extends to its territorial sea, and the seabed and subsoil thereunder, as elaborated in Article 2 of UNCLOS, which is now universally recognized as expressing customary international law.[4] This sovereignty is subject only to the right of vessels of other states to exercise innocent passage[5] through the territorial sea.[6] Thus, a

[1] The legal regime of territorial seas has been described and analysed by numerous authoritative writers including: R. Churchill and A. V. Lowe, *The Law of the Sea*, (1988), Manchester University Press, Chapter 4, 71 - 101; James Crawford, *Brownlie's Principles of International Law*, (2012), 8th Edn., Chapter 11, at 255 - 265; D. P. O'Connell, *The International Law of the Sea*, (1982), (I. A. Shearer, ed.), Clarendon Press, Oxford, Vol. 1, at Volume 1, Chapters 3 - 5, at 60 - 229; Donald R. Rothwell and Tim Stephens, *The International Law of the Sea*, (2010), Hart Publishing, Oxford and Portland, Chapter 3, at 58 - 77; Gillian D. Triggs, *International Law, Contemporary Principles and Practices*, (2011), 2nd Edn., Lexis Nexis/Butterworths, at 348 - 360; Donald R. Rothwell and Tim Stephens, *The International Law of the Sea*, (2010), Hart Publishing, Oxford and Portland, Chapter 3, at 58 - 81; Yoshifumi Tanaka, *The International Law of the Sea,* (2012), Cambridge University Press, at 83 - 95.

[2] In particular see: R. Churchill and A. V. Lowe, *The Law of the Sea*, (1988), Manchester University Press, at 71 - 87; D. P. O'Connell, *The International Law of the Sea*, (1982), (I. A. Shearer, ed.), Clarendon Press, Oxford, Vol. 1, at 60 - 67; Donald R. Rothwell and Tim Stephens, *The International Law of the Sea*, (2010), Hart Publishing, Oxford and Portland, Chapter 3, at 58 - 77.

[3] The United States has expressly indicated this, in particular with respect to the definition and limits of the territorial sea and a coastal state's sovereignty and jurisdiction over its territorial sea see: President Reagan's 1988 Proclamation extending the territorial sea of the United States: *Presidential Proc. No. 5928, 27 Dec. 1988, Appendix 3*. See also: J. Ashley Roach and Robert W. Smith, *Excessive Maritime Claims*, 3rd Edn., Martinus Nijhoff, at 136.

[4] The Report on the Legal Status of Territorial Waters of the Second Committee of the 1930 Hague Conference on the Progressive Codification of International Law, is considered an authoritative statement of the law on the subject. [*Acts of the Conferences for the Codification of International Law, Minutes of the Second Committee, Territorial Waters*, Vol. III, Doc. C. 351(b)M.145(b)V], 212] In 1956 the ILC began working on the subject confirmed its customary international law status by adopting the 1930 text with only minor alterations, and its report [*Report of the International Commission to the General Assembly*, (1954), 11 G.A.O.R. Supp. 9, No. 9), at 19 - 22, UN Doc. A/2693 (1954)], whose text was then incorporated into the 1958 Geneva Convention on the Territorial Sea and Contiguous Zone [available at:
http://legal.un.org/ilc/texts/instruments/english/conventions/8_1_1958_territorial_sea.pdf.].
See Louis B. Soons, "The Law of the Sea: Customary International Law Developments", (1984), a speech to the *American University Washington College of Law, Edwin A. Mooers Lecture, 11 October 1984*, reproduced in: *The American University Law Review* (1984), Vol. 34, 271, at 277 - 278.

[5] The meaning of innocent passage is set out in Article 18 and 19 of UNCLOS. Useful summaries of the issues connected with the right of innocent passage and its exercise can be found in Tanaka, op. cit., at 85 - 96, and Triggs, op. cit., at 355 - 360.

[6] Sovereignty of a coastal state over the territorial sea is to be exercised subject to the provisions of UNCLOS and other rules of international law under Article 2(3) of UNCLOS, and innocent passage permitted under Article 17 of UNCLOS. On innocent passage see: Crawford, op. cit., at 317 - 319; O'Connell, op. cit., Chapter 7,

coastal state has both ownership of, and exclusive jurisdiction over, the seabed and subsoil of its territorial sea and the natural resources therein.

Every state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12nm (Article 3 of UNCLOS). Figure A7.1 in Annex 5 summarises the breadth of territorial seas claimed by each of the Arctic Five. In terms of the breadth of the territorial sea all the claims of the Arctic Five described above in Figure A7.1 are in conformity with the provisions of UNCLOS and customary international law. Only Greenland has a less than the maximum 12 nm breadth of territorial sea, namely 3 nm. It is unclear why, when extending the breadth of the territorial sea of the Danish mainland to 12nm, the breadth of Greenland's territorial sea remained 3nm.

As described in Chapter 3, four of the Arctic Five have used a mixture of types of territorial sea baselines along their Arctic coastlines. As was seen, the use of straight baselines and the selection of loci for basepoints for them are challenging in the ice-covered Arctic Ocean and leads to problematic areas of coastline where basepoints located on ice formations are probably invalid. This use of ice formations could potentially affect territorial sea baselines of some Arctic states and thereby all of the maritime zones measured from them, including the territorial sea. Generally the implications for uncertain outer limits of the territorial sea zones are not a cause for concern for an oil company due to the fact that in the adjoining area, the EEZ, the coastal state has sovereign rights over the petroleum located in its EEZ's seabed and subsoil.

Thus, with the exception of the issue of ice and drawing the territorial sea baselines, it seems that there is little that is problematic to analyse in respect of the coastal state's ownership of the petroleum *in situ* in the seabed and subsoil of its Arctic territorial sea. However, as will be shown below, it is in the domestic legal regime and its implementation of the international law on the territorial sea where potential problems may arise.

The following discussion provides a summary of the key aspects of each national regime, and how they impact on the issue of good title to petroleum produced in the territorial sea of the Arctic state.

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at 259 - 298; Rothwell and Stephens, op. cit., at 74 - 77 and 218 - 221; Triggs, op. cit., at 355 - 357; Tanaka, op. cit. at 85 - 92.

4.2 Sovereignty over the territorial sea and its seabed and title to petroleum: Arctic State Regimes: Canada[7]

4.2.1 General Introduction

The Canadian landmass abutting the Arctic Ocean is comprised of three governmental subunits: the Yukon, Nunavut and Northwest Territories (the "Territories").[8]

Figure 4.1: Map of Canada[9]

Constitutionally, these Territories are the creation of the federal government and have no entrenched constitutional status or legislative powers under the Canadian Constitution[10]:

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[7] A historical review tracing the development of the territorial sea regime of Canada can be found in: Bruce Calderbank, Alex M. MacLeod, Ted L. McDorman, and David H. Gray, *Canada's Offshore: Jurisdiction, Rights, Management*, 3rd Edn., ACTS - AATC; David H. Gray, *Canada's Unresolved Maritime Boundaries*, (Autumn 1997), IBRU Boundary and Security Bulletin, Vol. 5, No. 3, 61, at 101 – 122, available at: http:/www.dur.ac.uk/resources/ibru/publications/full/Bsb5-3_gray.pdf.

[8] Grant describes the acquisition of sovereignty over these Territories: Shelagh Grant, *Polar Imperative: A History of Arctic Sovereignty in North America*, (2011), Douglas and McIntyre, at 135 -154.

[9] © Her Majesty in right of Canada, Natural Resources Canada. Public Domain.

[10] Section 146 of the. Constitution Act 1867 which established the confederation expressly provided for the admission of Rupert's Land and the North-Western Territories into the Dominion of Canada. At the time of admission all heads of powers, including legislative, were granted to the Canadian Parliament. Section 4 of the Constitution Act 1871 confirmed that Canadian Parliament may make provision for any territory that is not yet included in any province, and this continues under the consolidated *Constitutional Act 1982.* See: *Consolidation of Constitutional Acts 1867 to 1982,* (Constitution Act 1867 [30 and 31 Victoria, c.3 (UK), as amended] and Constitution Act 1982 [Schedule B Canada Act 1982, c.11 (UK)], available at: www.laws-lois.justice.gc.ca/eng/Const/page-18.html#h-60.

they have defined jurisdictional boundaries within which they exercise delegated legislative, judicial and administrative powers under the authority of the federal Canadian parliament.[11] They have, therefore, a different legal status[12] from the ten provinces of Canada[13], which exercise constitutional powers in their own right.[14] There are three federal statutes governing the three Territories: the Yukon Act of 1898[15] (creating the Yukon), the Northwest Territories Act 1985 (as amended by Section 77 of the Nunavut Act),[16] and the Nunavut Act of 1993[17] (creating the new Territory of Nunavut, with the rump remaining the Northwest Territories). Under these statutes their legislative and executive bodies have been established and many 'province-like' onshore powers have been devolved to the three territorial governments, as will be discussed below.

It is worth noting that numerous decisions of the Supreme Court of Canada, addressing challenges by the provinces as to which level of government has jurisdiction offshore Canada, have confirmed that it is the federal government that has jurisdiction and rights over offshore Canada.[18] Nevertheless, two Atlantic provinces, Nova Scotia and

[11] Angus J. McGillivray, "Dominion and Provincial Powers under the British North America Act 1867", (1918-1919), *Illinois Law Review*, Vol. 13, 500 at 504; Dominique Melançon, "Aperçu du statut des Territoires du Nord-Ouest et du Yukon en droit constitutionnel Canadian", (1988), *Cahier de Droit*, Vol. 29, 599, at 604 - 606.

[12] For judicial examination of the constitutional position of the North West Territories and Nunavut see: *Morin v. Northwest,* [(1999), N.W.T.J., No. 5, para. 48] and in *Canada (Attorney General) v. Nunavik Tunngavik Inc.*, [(2008) Nu.J., No. 13, para. 80].

[13] The nuances of the distinction between provinces and territories were explained in a 1986 case dealing with Yukon's official languages Justice Meyer of the Yukon Supreme Court stated that "…the Yukon Territory is not a department of the federal Parliament or of the federal government, it is in my view an 'infant province' with most but not all of the attributes of a true province. The main distinction…is that in creating a province the federal government irrevocably divests itself of certain powers, whereas in the case of the Yukon Act it retains the right to amend or repeal this statute…", *St. Jean v. R and Commissioner of the Yukon Territory,* Yukon Reports [1988]: 2, 116 - 127. See: S. Smyth, "Colonialism and Language and Canada's North: A Yukon Case Study", (1986), *Arctic*, Vol. 49, No. 2, 155.

[14] On the Canadian federal system, see: Peter W. Hogg, *Constitutional Law of Canada,* 5th Edn, (2014), Carswell; Patrick J. Monahan and Byron Shaw, (2013), 4th Edn., Irwin Law; Augustus Henry Frazer Lefroy, *Canada's Federal System: Being a Treatise on Canadian Constitutional Law under the British North America Act*, (2006), Lawbook Exchange Ltd.

[15] Yukon Territory Act, 1898, (as amended), 61 Victoria, c. 6 (Canada), available at:
www.solon.org/Constitutions/canada/English/yta_1898.html.
Section 2 of this act created the separate territory of the Yukon.

[16] Northwest Territories Act 1985, R. S., c. N-27, available at:
www.justice.gov.nt.ca/Legal/documents/AuthoritiesVol1-01.pdf.

[17] Nunavut Act 1993, S. C. 1993, C.28. Section 3 of this act established Nunavut as a territory of Canada. Importantly for this thesis, it is Nunavut that has the majority if its landmass bordering, or in, the Arctic Ocean (as islands).

[18] *Canada v. British Colombia*, Supreme Court Reports, (1984), Vol. 1, 388; *Reference Re: Seabed and Subsoil of the Continental Shelf Offshore Newfoundland*, Supreme Court Reports, (1984), Vol. 1, 86.

Newfoundland and Labrador, have been granted joint jurisdiction with the federal government over offshore areas, with the limits of their resource areas, jurisdiction, and powers in relation to such offshore areas set down in federal-provincial agreements[19] and subsequently entrenched by federal laws.[20] It may be that at some stage northernmost Canada will follow the Nova Scotian and Newfoundland precedents and the federal government may grant offshore rights to the Territories, but, as will be shown in the analysis below, if this occurs it will be in the distant future, and probably only after all federal delineation and delimitation issues are settled.

In parallel with these 'devolution to sub-unit' developments, the federal government of Canada has now settled all Inuit land claims in the Territories, as will be discussed in more detail in the analysis of each territory below. Much has been written on the role of international law and the evolving international recognition of the rights of indigenous people in the last fifty years[21], and clearly these developments have influenced recent Canadian policy to some extent.[22]

The right to self-determination[23] is considered to be a *jus cogens* norm at international law[24], as expressed in Article 1 of both the International Covenant on Civil and Political

[19] *Canada – Nova Scotia Offshore Petroleum Resources Accord*, 26 August 1986, available at: http://www.cnsopb.ns.ca/pdfs/Accord.pdf]
The Atlantic Accord: Memorandum of Agreement Between the Government of Canada and the Government of Newfoundland and Labrador on Offshore Oil and Gas Resource Management and Revenue Sharing, 11 February 1985 [available at: http://www.servicenl.gov.nl.ca/printer/publications/aa_mou.pdf].

[20] Canada – Nova Scotia Oil and Gas Agreement Act [c. 29 SC 1984], Canada Nova Scotia Offshore Petroleum Resources Accord Implementation Act [c. 28 SC 21 July 1988], Canadian Laws Offshore Application Act [c. 44 SC 17 17 December 1990], and Canada–Newfoundland and Labrador Atlantic Accord Implementation Act (c.3 SC 1987].

[21] For example, recent textbooks include: S. James Anaya, *Indigenous Peoples in International Law,* (2004), 2nd Edn., Oxford University Press; Patrick Thornberry, *Indigenous Peoples and Human Rights*, (2002), Manchester University Press; Federico Lenzerini (ed.), *Reparations for Indigenous Peoples: International and Comparative Perspectives*, (2008), Oxford University Press; Elvira Pulitano, *Indigenous Rights in the Age of the UN Declaration*, (2012), Cambridge University Press; Alexandra Xanthaki, *Indigenous rights and United Nations Standards: self-determination, culture and land*, (2007), Cambridge University Press; Steve Allen and A. Xanthaki, *Reflections on the UN Declaration on the Rights of Indigenous"*, (2011), Hart, Oxford.

[22] For a general review from a Canadian perspective see: Nigel Bankes, "Land Claim Agreements in Arctic Canada in Light of International Human Rights Norms", (2009), in *The Yearbook of Polar Law*, (Gudmundur Alfredsson, Timo Koivurova and David Leary, eds.), Martinus Nijhoff, Vol. 1, at 175 - 233.

[23] Milena Sterio, *The Right to Self-determination under International Law, 'Selfistans', secession, and the rule of great powers*, (2013), Rouledge.

[24] As stated by the International Law Commission in: *Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law*, A/CN.4/L.702, 18 July 2006, at #33. See also *The Western Sahara Case*, ICJ Rep. 1975, 12 at 31 - 33; and *The Wall,* ICJ Rep. 2004, 137 at 171 - 172.

Rights 1966[25] and the International Covenant on Economic, Social and Cultural Rights 1966[26], to which Canada acceded on 19 May 1976.[27] The precise meaning and parameters of this principle are however much less clear.[28] Crawford explains:

> "It has been understood as the right of peoples under colonial, foreign or alien domination to self-government, whether through formation of a new state, association in a federal state, autonomy or assimilation in a unitary (non-federal) state. In different contexts, however, self-determination can mean different things and there is no universally accepted definition".[29]

As Bankes comments, Canada has adopted a relatively conservative approach to the interpretation of 'self-determination' with respect to the Inuit peoples in the Territories, framing it in terms of the domestic constitution[30] and national policy (rather than international law terms)[31], "with a general reluctance to engage with the relevance of international human rights law".[32] The negative vote of Canada at the UN General Assembly in 2007 on the *Declaration on the Rights of Indigenous Peoples*[33] illustrates a general

[25] *International Covenant on Civil and Political Rights, ("*ICCPR"), (*1966),* adopted and opened for signature by Un General Assembly Resolution 2200A (XXI), 16 December 1966, available at: www.ohchr.org/EN/ProfessionalInterest/Pages/CCPR.aspx.

[26] *International Covenant on Economic, Social, and Cultural Rights*, ("CESCR"), (1966), adopted and opened for signature by UN General Assembly Resolution 2200A (XXI), 16 December 1966, available at: www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx;

[27] UN *Treaty Collection*, at: https://treaties.un.org/pages/viewdetails.aspx?chapter=4&src=treaty&mtdsg_no=iv-4&lang=en.

[28] See Patrick Thornberry, *Indigenous peoples and Human Rights*, (2002), Manchester University Press, at 124 – situation act129.

[29] Crawford, op. cit., at 646 - 647.

[30] S. 35 of the *1982 Constitution Act,* recognises and affirms all existing aboriginal and treaty of the aboriginal peoples in Canada. See footnote 10, *supra*.

[31] Bankes, op. cit., at 176 - 177.

[32] Bankes, op. cit., at 179.

[33] GA Res.61/295, 13 September 2007, available at: www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf. It should be noted that Article 25 – 28 of the Declaration are particularly relevant to confirming indigenous peoples' rights to resources located in "traditionally owned or otherwise occupied and used land, territories, waters, and coastal seas". These Articles have been well analysed in the literature and hence will not be further analysed in the thesis. See, for example, Jeremie Gilbert, "Indigenous Rights in the Making: The United Nations Declaration on the Rights of Indigenous Peoples", (2007), *International Journal on Minority and Group Rights*, Vol. 14, 207; Asbjorn Eide, "Indigenous Self-Government in the Arctic and their Right to Land and Natural Resources", 2009), in *The Yearbook of Polar Law*, (Gudmundur Alfredsson, Timo Koivurova and David Leary, eds.), Martinus Nijhoff, Vol. 1, 245, at 250 - 252.

Canadian reluctance to import international legal instruments for the protection of indigenous rights into Canadian domestic law.[34]

Reports by various Commissions on the two Covenants' implementation have been critical of the Canadian approach of the 'extinguishment' of aboriginal rights through the land claims settlement agreements.[35] Moreover, Canada has ratified neither the *ILO Indigenous and Tribal Populations Convention 1957*[36], which, although assimilationist, provides for rights to control and use the land, water and natural resources upon which retention their cultures depend, nor the *ILO Convention on Indigenous and Tribal Peoples 1989*[37], specifically objecting to Articles 13 and 14 regarding land rights[38] - evidently Canada was concerned that as worded they could reopen settled land rights claims.[39]

On 12 November 2010 Canada formally declared its 'support' for the 2007 Declaration and endorsed its principles.[40] The official statement of support nonetheless emphasises that: (1)

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[34] See J. Anaya, *Report of the Special Rapporteur on the Rights of Indigenous Peoples, James Anaya on the Situation of Indigenous Peoples in Canada*, (2014), Human Rights Council, A/HRC/27/52/Add.2, available at: http://unsr.jamesanaya.org/countiry/reports/the-situation-of-indigenous-peoples-in-canada;
Terry Mitchell, (ed.), *The Internationalisation of Indigenous Rights, UNDRIP in the Canadian Context, Special Report*, (2014), CIGI.

[35] See, for example, the report of the Human Rights Committee CCPR, *Concluding Observations of the Human Rights Committee: Canada: 02/11/2005*, (2005), available at: www.treatycouncil.org/PDF/Concluding_observations_Canada_HRC.pdf.
In the section on principal subjects of concern and recommendations, Section 8, the Committee expresses concern regarding the Canadian approach of settlement agreements that result in the extinguishment of aboriginal land rights and calls upon Canada to re-examine its policy and practices. Canada did review its approach, but, as recent land claim settlement with the Innu in Labrador shows, it has not changed its 'extinguishment' approach.

[36] ILO, *Convention concerning the Protection and Integration of Indigenous and Other Tribal and Semi-Tribal Populations in Independent Countries 1957*, Convention No. 107, available at: www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:P12100_INSTRUMENT_ID:313352.NO.

[37] ILO, *Convention Concerning Indigenous and Tribal Peoples in Independent Countries 1989*, Convention No. 169, available at: www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:P12100_INSTRUMENT_ID:312314:NO.
Article 14 recognises indigenous rights of ownership and possession over the lands which they traditionally occupy. It is important to note that these rights are not extended to waters offshore.

[38] Probably with some justification, as it has had experience of Article 27 of ICCPR confirming land rights of indigenous peoples: see, for example: *Bernard Ominayak, Chief of the Lubicon Lake Band v. Canada*, Communication No. 167/1984 (26 March 1990), UN Doc. Sipp.No. 40 (A/45/40) 1990, available at: www1.umn.edu/humanrts/undocs/seesion45/167-1984.htm.

[39] For a background piece on the negotiations of the Declaration and Canada's objections see: AANDC, *Canada's Position: United Nations Draft Declaration on the Rights of Indigenous Peoples,* available at: aadnc-aandc.gc.ca/eng/11001000114078/110001000114079.

[40] AADNC, *The United Nations Declaration on the Rights of Indigenous Peoples*, (accessed online 7 July 2105), available at:

the Declaration does not reflect customary international law and does not change Canadian law, and (2) Canada continues to object to the text of the provisions regarding land rights.[41]

Additionally, at the international level, there has emerged the concept of an 'internal right to self-determination'[42], based on the inter-dependence of Articles 1 and 27 of the Covenants.[43] Comments by the UN Human Rights Committee have indicated its acceptance that self-determination can be defined as a degree of autonomy or self-government by an indigenous group *within* a state[44] and the degree of autonomy appears to be flexible. Arguably this approach is 'reflected' in the Nunavut Act and the Nunavut Land Claims Agreement[45], both of which will be discussed further in subsection 4.2.3 below.

Section 35 of the Constitution Act 1982 formally recognizes aboriginal peoples' inherent right to self-government, which was reaffirmed in the federal government's 1995 Inherent Right of Self-Government Policy.[46] The structures of self-government created by the various land claims settlement agreements are different, but all include both Inuit and public governments. The Canadian government would probably argue that the recent moves to devolution of Nunavut and NWT are the next steps in the evolution of 'self-government' for the Canadian Inuit.

Aandc-aands.gc.ca/eng/1309374407406/1309374458958.

[41] The Statement is reproduced in its entirety in AADNC, *Backgrounder: Canada's endorsement of the United Nations Declaration on the Rights of Indigenous Peoples*, available at: www.aadnc-aandc.gc.ca/eng/1292353979814/1292354016174.

[42] See Sterio, op. cit., at 18 - 22.

[43] James Summers, "The internal and external aspects of self-determination reconsidered", (2013), in *Statehood and Self-Determination*, (Duncan French, ed.), Cambridge University Press, at 229 - 249. It is important to mention that UNDRIP made exactly this move by having provisions 3 and 4.

[44] This development is discussed by Scheinin: Martin Scheinin, "The Right to Self Determination under the Covenant on Civil and Political Rights", (2000), in *Operationalizing the Right of Indigenous Peoples to Self Determination*, (Pekka Aikio and Martin Scheinin, eds.), Abo Institute for Human Rights, 193. See also: Asbjorn Eide, "Indigenous Self – Government in the Arctic, and their Right to Land and Natural Resources, in *The Yearbook of Polar Law*, (Gudmundur Alfredsson, Timo Koivurova and David Leary, eds.), Martinus Nijhoff, Vol. 1, 245, at 266 – 273.

[45] Nunavut being the only one of the Territories where the Inuit comprise over 20% of the Territory's population (84% as of 2011).

[46] Available at: www.ainc-inac.gc.ca/pr/pub/sg/plcy_e.html.

However, it would seem that the Canadian government is adopting an increasingly holistic approach to a vision of Canada's Arctic sovereignty[47], as reflected in the 2008 integrated northern strategy statement, which observed that "the Government supports a vision of a new North that realizes its full social and economic potential and secures its future, for the benefit of *all* Canadians" (my emphasis).[48] It should however be noted that the 2008 statement also elaborates the four pillars of exercising Canada's Arctic sovereignty, one of which is 'devolving northern governance'.[49] But this devolution is for all Canadians living in the Territories: only in Nunavut, where the Inuit are the vast majority of the population[50], can it be argued that the Canadian government is indirectly granting self-government to the Inuit.

What is clear from the above is that Canada has to date responded only in part to the evolution of international law on indigenous peoples' rights: it continues to pursue an 'internal to the state' approach to self-determination for the Inuit (which, as noted earlier, is not inconsistent with international law), it does not accept that its 'extinguishment' of land rights approach in land claim settlements should be altered, and it appears currently disinclined to devolve rights in offshore resources either to the Territories or to the Inuit.

The next sections will examine in detail how Canadian sovereignty is exercised and legal title to petroleum produced in the Canadian Arctic territorial sea is acquired and transferred.

4.2.2 Sovereignty over Canadian Arctic territorial sea and its seabed

[47] Matthew Carnaghan and Allison Goody, *Canadian Arctic Sovereignty*, (2006), Political and Social Affairs Division, Parliamentary Information and Research Service, Library of Parliament, Ottawa, available at: www.parl.gc.ca/content/LOP/researchpublications/prb0561-e.htm.

[48] Office of the Prime Minister, *Northern Strategy - Backgrounder*, (2008), Government of Canada, Ottawa, available at:
http;//pm.gc.ca/eng/media.asp?id=2016.

[49] See: INAC, *The Federal Government's Northern Strategy Delivers for all Canadians - Ministers Highlight Progress towards Canada's Northern Vision*, (2009), Government of Canada, Ottawa, available at :
http:/www.ainc-inac.gc.ca/ai/mr/nr/m-a2009/nr000000417-eng.asp.

[50] According to the 2011 Census, approximately 84% of the total population. See: Statistics Canada, *National Household Survey, Topics and release dates Census 2011*, 30 April 2013.

The Canadian offshore regime has been described and analysed in depth by numerous writers[51], and therefore this part will simply summarise the situation and identify any specific Arctic, Canadian or Territory issues.[52]

The Oceans Act 1996[53] arguably consolidated all previous Canadian law of the sea legislation, and, according to Calderbank *et al*, it "more closely resemble[s] the organization and provisions of UNCLOS".[54] This indicates the degree of overarching influence of international law on the Canadian federal law relating to the territorial sea.

Sections 4 and 5 of the Oceans Act define the inner and outer limits of the territorial sea and these definitions mirror the provisions of UNCLOS for the territorial sea.[55]

As a matter of international law Canada exercises full sovereignty over the waters and seabed of its territorial sea. Interestingly, the Oceans Act does not expressly state this, and it is also silent on the right of innocent passage of foreign vessels through Canadian territorial seas.[56]

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[51] Nigel Bankes, "Oil and Gas and Mining Development in the Arctic: Legal Issues", *Polar Law Textbook*, (2010), (Natalia Loukacheva, ed.), Nordic Council, TemaNord, at Section 6.4, at 107 - 109; Nigel Bankes, "Legal and institutional framework: comparative analysis", *Arctic Oil and Gas*, (2011), (Aslaug Mikklesen and Oluf Langhelle, eds.), 111, Routledge, at 116 - 117 and 123 - 125; Frederich Beauregard - Tellier, *The Arctic: Hydrocarbon Resources*, (2008), Info Series, Publication PRB 08-07E, 24 October 2008, Parliament, Ottawa, Canada, available at:
www.parl.gc.ca/information/library/PRBpubs/prb0807-e.htm;
Douglas Black and F. V. W. Penick, "Survey of Legal Issues: Canadian Offshore Oil and Gas Developments, (1991), *Alberta Law Review*, Vol. 30, No. 1, 178; Bruce Calderbank, Alec M. MacLeod, Ted L. McDorman and David H. Gray, *Canada's Offshore, Jurisdiction, Rights and Management*, (2006), 3rd Edn., Association of Canada Land Surveyors and Canadian Hydrographic Associates, Trafford Publishing; Constance D. Hunt, *The Offshore Petroleum Regimes of Canada and Australia*, (1989), Canadian Institute of Resources Law; Aldene Meis Mason Robert Anderson and Leo - Paul Dana, "Oil and Gas activities at the Mackenzie Delta in Canada's Northwest Territories", (2011), *Arctic Oil and Gas*, (Aslaug Mikklesen and Oluf Langhelle, eds.), Routledge. at 173 - 199; Tony Penikett, "Destiny or Dream Sharing Resources, Revenues and Political Power in Nunavut Devolution", *Polar Law Textbook II*, (2013), (Natalia Loukacheva, ed.), Nordic Council, TemaNord, Chapter 12, at 199 - 214;
Ian Townsend - Gault, *Petroleum Operations on the Canadian Continental Margin - The Legal Issues in a Modern Perspective,* (1983), Canadian Continental Shelf Law 1: Working Paper 2, and *The International Legal Context of Petroleum Operations in Canadian Arctic Waters*, (1983), Canadian Continental Shelf Law 2: Working Paper 4.

[52] Calderbank *et al*, op. cit., Chapters 7 and 8, at 145 - 188; Nigel Bankes, (2010), op. cit., Section 6.5, at 110 - 114.

[53] C.31, SC 18 December 1996, available at:
laws-lois.justice.gc.ca/eng/acts/O-2.4/page-1.html.

[54] Bankes, (2010), op. cit., at 110.

[55] Calderbank *et al,* op. cit., at 119 - 123.

[56] Calderbank *et al,* op. cit., at 123.

There is one international delimitation dispute that affects the territorial sea of Canada - the Beaufort Sea dispute with the United States[57], which will be discussed in Chapter 7 below.

Although, as discussed earlier, federal Canada has clear sovereignty over the territorial seabed, the next section will explore if, and to what extent, it has delegated any rights to either subunits or indigenous peoples.[58]

(i) Yukon

Under the definition of 'Yukon Territory' in the 2002 Yukon Act[59], the Territory stops at the shore of the Beaufort Sea – a continuing definition of the territory since 1898, when it was first created as an administrative district.[60] However, under the 2002 Yukon Act, the Federal Canadian Government transferred to the Yukon government the administration and control of the lands within the Territory, and the administration and legislative jurisdiction over petroleum resources in the "adjoining area" (defined in Schedule 2 of the Yukon Act), which consists of Shoalwater and Phillips Bays in the Beaufort Sea, which had been part of the former North West Territories.[61] These waters of the 'adjoining area' are internal waters,[62] and thus the Yukon Territory does not include any other offshore marine zones such as territorial sea offshore adjacent to Yukon Territory, which remains part of the territory of NWT.[63]

[57] For recent and detailed analyses of the Beaufort Sea Dispute, see: Ted McDorman, *Salt Water Neighbors: International Ocean Law Relations between the United States and Canada*, (2009), Oxford University Press; and Michael Byers, (with James Baker), *International Law and the Arctic*, (2013), Cambridge University Press, Chapter 3: The Beaufort Sea Boundary, at 56 - 91.

[58] Under the Constitution Act of Canada 1982 (as subsequently amended) Canada consists of ten Provinces and three Territories (Yukon, Nunavut and NWT). The Territories, unlike the ten Provinces, have no inherent jurisdiction and only have those powers delegated to them by the federal government. On Canadian Federalism - see: Joseph Eliot Magnet, *Constitutional Law of Canada,* (2007), Volume 1, Part I, Chapter 2.

[59] Yukon Territory Act 2002 , c.27 SC, 27 March 2002, as amended, available at: laws-lois.justice.gc.ca/engacts/Y-2.01/page-10.html#-15. (Current at 17/10/2013).

[60] Calderbank *et al*, op. cit., at 112.

[61] S. 18(2) Yukon Act, op. cit., footnote 59. See: Calderbank *et al*, op. cit., at 115.

[62] Calderbank *et al*, op. cit., at 184 - 188.

[63] As will be discussed immediately below.

Under the Inuvialuit Final Agreement[64], the indigenous people of the Yukon, the Inuvialuit, did not receive land in the Yukon[65], which is perhaps not surprising, as in Yukon they numbered less than 300.[66] Although they did receive other benefits (usufructuary and consultative), no rights to subsurface petroleum resources were granted onshore or offshore.

Thus, the Federal Canadian Government retains full sovereign control and rights over all of the Canadian territorial sea and its seabed and subsoil and the natural resources therein that are offshore from the Yukon.

(ii) Nunavut[67]

Under the 1993 Nunavut Act[68], the boundaries of the territories of Nunavut and the NWT were defined to include the internal waters and territorial seas of Canada offshore and adjacent to these territories.[69] However, under the Act title and rights to explore for and exploit, petroleum located in the seabed of offshore Nunavut remain with the Crown, and thus, with the Canadian federal government.

Under the 1993 Nunavut Land Claims Agreement Act[70], the Inuit were given no rights to marine areas offshore Nunavut[71], and consequently no rights to the petroleum located in the offshore area of the Nunavut Settlement Area.[72].

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[64] The Inuvialuit Final Agreement, 1984 (as amended), available at:
www.inuvialuitland.com/resources/Inuvialuit_final_Agreement.pdf.

[65] They did however get hunting and certain economic rights in respect of the Yukon North Slope area (the area of their traditional surface use) and the right to participate in reviewing any proposed oil and gas development in the area. A national park Ivaavik was created in the Western part of the Yukon North Slope and types of development are limited in the eastern part.

[66] There are no Inuvialuit settlements in that part of the Yukon. According to the 2006 Census there were only 255 Inuvialuit people in all of the Yukon - see: Yukon Bureau of Statistics, "Aboriginal Data", *Census 2006*, available at :
www.eco.gov.yk.ca/pdf/aboriginadata.pdf.

[67] A very useful collection of analyses on various aspects of the evolution of Nunavut can be found in:
IWGIA, *Nunavut: Inuit Regain Control of their Lands and their Lives,* (2000), IWGIA Document No.102, Copenhagen.

[68] Nunavut Act 1993, SC 1993, c.28, 10 June 1993, as subsequently amended, available at:
http://laws-lois.justice.gc.ca/PDF/N-28.6.pdf.

[69] Article 3, ibid..

[70] SC 1993, c. 29, available at:
http://laws-lois.justice.gc.ca/eng/acts/N-28.7/FullText.html.
This Act ratified the *Nunavut Land Claims Settlement Agreement between the Tunngavik Federation of Nunavut and Her Majesty the Queen in Right of Canada of 25 May 1993* (as amended), available at:

On 1 April 1999 Nunavut formally became a 'Territory' of Canada implementing the 1993 Nunavut Act[73], and since then the Nunavut government and indigenous peoples' representatives have been lobbying for devolution and powers over Nunavut's natural resources both onshore and offshore. Although the Canadian Government has had Nunavut devolution on its agenda since 2004, progress has been very slow and the government has made it clear that it does not intend to devolve offshore jurisdiction or rights to Nunavut.[74]

It would thus seem that a change in the current *status quo* regarding offshore resources and their management for Nunavut is unlikely to occur soon. The possibility of any offshore rights being delegated to any of these territories remains very low. Therefore, title to petroleum located in the seabed of the territorial sea offshore Nunavut, remains with the Crown/federal government.

(iii) Northwest Territories

The Northwest Territories Devolution Agreement ("Devolution Agreement") was agreed between the federal government, the NWTG and Inuit and the representatives of Indian and Inuit tribes (recognized under Inuvialuit Settlement Agreement) on 25 June 2013.[75] On 3 December 2013 the Northwest Territories Devolution Bill (Bill C – 15) was introduced to the Canadian Parliament[76], and the Northwest Territories Devolution Act, ratifying the agreement, received Royal Assent on 12 February 2014. [77]

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www.collectionscanada.gc.ca/webarchives/20071124140800/http://www.ainc-inac.gc.ca/pr/agr/pdf/nunav_e.pdf.

On 25 May 25, 1993, the Inuit (then residing to the east of the tree line of the Northwest Territories (NWT)) entered into the Nunavut Land Claims Agreement with Canada (NLCA). The NLCA identified the geographical area of the NWT inhabited by these Inuit as the Nunavut Settlement Area (NSA). On April 1, 1999, this area became the Territory of Nunavut, pursuant to s. 3 of the Nunavut Act, S.C. 1993, c. 28.

Jens Dahl, Jack Hicks, and Peter Jull, (eds.), *Inuit Regain Control of their Lands and their Lives*, (2000), IWGIA Document No.102, IWGIA, Copenhagen; Claudia Notzke, *Aboriginal Peoples and Natural Resources in Canada*,(1994), Captus University Publications.

[71] Article 15.2.3 of the Nunavut Land Claims Agreement, ibid..

[72] Defined in Article 3 of the Nunavut Land Claims Agreement, ibid..

[73] Pursuant to s. 3 of the Nunavut Act, op. cit., footnote 68, *supra.*

[74] See Annex 9 for a short description of the history of Nunavut devolution process.

[75] *Northwest Territories Lands and Resources, Devolution Agreement*, available at: www.aadnc-aandc.gc.ca/DAMDAM-INTER+HQ-NTH/STAGONG/texte-text/nwt_1385670345276.

[76] Aboriginal Affairs and Northern Development Canada, "Harper Government moves forward with Devolution in the Northwest Territories", (3 Dec, 2003), Ref. #2-3886, available at: www.aadnc-aandc.gc.ca/eng/1386023674602/1386023859192.

Under the 2013 Devolution Agreement the NWT government ("NWTG") is obliged to enact laws and regulations which are to mirror 27 federal acts and regulations, all of which will come into force on the transfer date. However, the devolution of rights to control and administer natural resources in the territory relates only to the onshore, and does not transfer title to the territorial waters, seabed or the resources *in situ*. However, this situation is not static. Under Article 3.20 of the Devolution Agreement, the federal government, the NWTG, and the Inuvialuit Region Corporation (representing the Inuit) were to commence negotiations "for the *management* of Oil and Gas resources in the Beaufort Sea and other northern offshore areas, *including Oil and Gas resource revenue sharing* and the timing of the commencement of such revenue sharing" (emphasis added) no later than 60 days after the signing of the Agreement. It is unclear from this text the extent of devolution envisaged by the parties in terms of rights with respect to offshore resources. Firstly and crucially, the Agreement uses the word 'management' and not the phrase 'transfer of title', in respect of petroleum resources, and although referring to the Beaufort Sea generally, the scope of the Agreement is limited to the territory of the NWT, as defined in the 2014 Northwest Territories Devolution Act.[78] However, the preamble gives a clear indication of the intentions of the Agreement: it states that "such devolution shall be effected in a manner that establishes *a framework for a cooperative and coordinated management regime* for lands, resources and rights in respect of waters in Northwest Territories *in which the Government of the Northwest Territories and the Aboriginal peoples of the Northwest Territories participate"* (emphasis added). In other words, it does not appear to extend to either the transfer of title to the offshore petroleum *in situ* in the territorial sea, or the granting of either proprietary or usufructuary rights in that petroleum, to the Inuit.

(iv) General Conclusions re Canadian Sub-Units

Imam Kassam, "NWT Premier Welcomes Devolution Bill", (2013), *The Voice of Denendeh*, 3 December 2013, CKLB Radio, available at:
http://cklbradio.com/2013/12/03/nwt-premier-welcomes-devolution-bill/.

[77] For the text of the Bill and details of its passage through Parliament see:
http://openparliament.ca/bills/41-2/c-15/.

[78] Northwest Territories Devolution Act, SC 2014, c. 2, Article 2, available at:
http://laws-lois.justice.gc.ca/eng/AnnualStatutes/2014_2/FullText.html.

Thus, having examined the relevant legal regime in each of the Territories, it can be concluded that jurisdiction over Canadian territorial waters in the Arctic Ocean remains entirely with the Crown/federal government, and that this situation is unlikely to change in the near future.

4.2.3 'Title to petroleum' regime in Canadian Territorial Waters[79]

Two federal laws, the Canadian Petroleum Resources Act 1985 ("CPRA")[80] and the Canada Oil and Gas Operations Act 1985 ("COGOA")[81], are in force in Canadian Arctic offshore waters, except for the adjoining area, as defined by section 2 of the Yukon Act, which comprises internal waters under the jurisdiction of Yukon.

The two federal acts are jointly administered by the Department of Aboriginal Affairs and Northern Development ("AANDC") and the Department of Natural Resources ("NRCan").[82] The division of responsibilities between the two departments is described in the Canada Oil and Gas Land Regulations ("COGLR").[83] Under Schedule VI of COGLR the AANDC has responsibility with respect to the exploration for, and exploitation of, petroleum resources in the territorial seas in the Arctic Ocean offshore Yukon, the NWT, and Nunavut.[84]

The federal National Energy Board ("NEB") also has specific regulatory powers with respect to offshore oil and gas operational activities under Canada Oil and Gas Operations Act ("COGOA")[85], but it has no responsibilities relating to title to petroleum. Currently, there are no production licences in the Arctic territorial waters of Canada, as can be seen from the 2013 AADNC list of licences[86], although exploration licences have been

[79] Nigel Bankes, "Oil and Gas and Mining Development in the Arctic: Legal Issues", (2010), Chapter 6, at 101 – 124, in *Polar Law Textbook*, (Natalia Loukacheva, ed.), (2010), Nordic Council, TemaNord 2010: 538.
[80] Canadian Petroleum Resources Act, c. 45, (RSC 1985, C. 36 (2nd Suppl.), as amended, available at: http://laws-lois.justice.gc.ca/eng/acts/C-8.5/.
[81] Canada Oil and Gas Operations Act, RSC 1985, c.O-7, as amended, available at: http:laws-lois.justice.gc.ca/eng/acts/o-7/.
[82] Calderbank *et al*, op. cit., at 200.
[83] Regulations Respecting the Administration and Disposition of Oil and Gas Belonging to Her Majesty in Right of Canada Under All Lands Forming Part of Canada But Not Within Any Province, PC 1961-0797, 6 June 1961, as amended - CRC 1978 c. 1518,.
[84] Article 2 CPRA, op. cit., at 129.
[85] Op. cit., footnote 81 , *supra*.
[86] Lin Callow, *Updated Oil and Gas Exploration and Development Arctic Forecast, Canadian Beaufort Sea 2013 - 2028*, a report prepared for AANDC, (2013), Beaufort Regional Environmental Assessment, May 3015, Table 1. Drilling Activity in the Beaufort Sea, at 4-5, available at:

granted in Canadian Arctic offshore areas since the 1960s.[87] From the 2013 AANDC Report[88] it appears that there are quite a few shallow near-shore exploration licence areas where exploration drilling may commence sometime after 2016.[89]

Although the Inuit have been granted no offshore rights to petroleum, they can nonetheless affect the exercise of these rights. Recently near-shore territorial sea licencing has run into 'local' opposition. The Inuit of Nunavut have strongly opposed the licencing of near-shore territorial sea areas on the grounds of the impact seismic testing, exploration and development of petroleum would have on local wildlife essential for their traditional subsistence and hunting, as well as the potential impact of any eventual oil spills.[90] For example, in October of 2013, the Qiqiktani Inuit Association ("QIA") requested that NEB not grant a seismic testing permit until "a strategic environmental assessment is conducted to consider the broader impacts of opening the Baffin region to oil and gas development".[91] Shortly thereafter Nunavut Tunngavik Incorporated unanimously passed a motion supporting QIA's position. The motion requested that "no permits related to oil and gas development, which includes seismic testing, be issued in the Baffin Bay, Davis Strait, Hudson Bay, Hudson Strait, Fox Basin, Lancaster Sound and Parry Channel (these areas are a mixture of territorial waters and internal waters) until such time as a Strategic Environmental Assessment is completed and Inuit concerns are addressed to the satisfaction of Inuit."[92] However, NEB reviewed the objection and issues, but then decided

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www.beaufortsea.co/wp-content/uploads/2013/06/NCR-5358624-v4-BREA_-_FINAL_UPDATE_-_EXPLORATION_ANDACTIVITY_FORECAST-_MAY_2013.pdf.

[87] Peter McKensie - Brown, Gordon Jaremco, and David Finch, *The Great Oil Age, The Petroleum Industry in Canada,* (1993), Detselig Enterprises Limited, Calgary, Alberta.

[88] Lin Callow, *Updated Oil and Gas Exploration and Development Arctic Forecast, Canadian Beaufort Sea 2013 - 2028*, a report prepared for AANDC, (2013), Beaufort Regional Environmental Assessment, May 2013,Table 1. Drilling Activity in the Beaufort Sea, at 4 - 5, available at: www.beaufortsea.co/wp-content/uploads/2013/06/NCR-5358624-v4-BREA_-_FINAL_UPDATE_-_EXPLORATION_ANDACTIVITY_FORECAST-_MAY_2013.pdf.

[89] Namely licence areas E480,E 482 - 485, and E489 -491, ibid., at 34.

[90] CBC News, "Ottawa greenlights Arctic offshore seismic tests over Inuit objectives", (2014), CBC, available at: www.cbc.ca/news/canada/north/ottawa-greenpeace-arctic-offshore-seismic-tests-over-inuit-objections-1.2688040.

[91] Warren Bernauer, "Nunavut Community Opposes Offshore Oil and Gas Exploration", (2014*), Intercontinental Cry*, 4 March 2014, available at: http://intercontinentalcry.org/nunavut-community-opposes-offshore-oil-gas-exploration/.

[92] Ibid..

to proceed, although it has been reported that the Inuit may institute legal action.[93] Because the Inuit do have offshore rights regarding using the waters and living resources, it appears that they are able, in some cases, to challenge the acreage offered to oil companies.

Moreover, there are also Marine Protected Areas ("MPAs")[94] in Canadian Arctic offshore waters that include territorial sea areas, and these are either not available for petroleum development activities or would involve very costly environmental protection requirements, often with significant regulatory oversight, for oil and gas activities in such areas.[95] Clearly oil companies would be well advised to be extremely cautious of lease areas bordering MPAs for fear of straddling deposits that post discovery may not be allowed to be developed.

However, outside these areas, and despite extensive 'devolution' of the three northern Territories of Canada and settlement agreements with indigenous peoples living in these Territories, the federal Canadian government has retained title to the petroleum resources located in the seabed and subsoil of its territorial sea in the Arctic Ocean.

Finally, it should be noted that, under s. 38 CPRA, a production licence in the Canadian Arctic territorial sea, issued by AANDC, grants to the licensee title to the oil and gas it produces from the licence area.

4.2.3 Conclusions

[93] Marc Montgomery, "Seismic testing approved - over Inuit opposition - for Canada's eastern Arctic", (2014), *Alaska Dispatch*, 5 July 2014, available at:
www.alaskadispatch.com/article/20140705/seismic-testing-approved-over-inuit-opposition-canada-eastern - arctic.

[94] On MPAs in the Arctic see: Ingvild Ulrike Jacobsen, "Marine Protected Areas as a Tool to Ensure Environmental Protection of the Marine Arctic: Legal Aspects", (2014), Chapter 10, in *Arctic Marine Governance,* (Elizabeth Tedsen, Sandra Cavalieri, and R. Andreas Kramer, eds.), Springer, at 215 - 236. There are also several more MPAS proposed in Canadian Arctic: *Report of the Commissioner of the Environment and Sustainable Development*, (2012), Chapter 3, Marine Protected Areas, Fall 2012, Exhibit 3.1, at 8.

[95] Suzanne Lalonde, "Marine Protected Areas", (2013), *The Law of the Sea and Polar Regions, Interactions between Global and Regional Regimes*, (Erik J. Molenaar, Alek G. Oude Elferink, and Donald R. Rothwell, eds.), Martinus Nijhoff, 85, at 94; UNEP, Marine Protected Areas: A Review of Progress", *UNEP/WCMC:2008*, available at:
www.unep.org/regionalseas/publications/otherpubs/pdfs/MPA-Network_report.pdf.
Canada is reported as having 25 MPAs within the Arctic conservation boundary - see "Canada's Federal Marine Protected Areas Strategy", (2005), available at,
www.dfio-mpo.gc.ca/oceans/publications/fedmpa-zpmfed/pdf/mpa-eng.pfd.

It is clear from the above that the international law of the sea, and in particular UNCLOS, has played a fundamental role in the key Canadian piece of maritime legislation, the Oceans Act.

The domestic implementing laws, in particular the CPRA are consistent with international law of the sea, and establish a clear chain of passage of title to petroleum down to the company level.

4.3 Sovereignty over Territorial Seas and its Seabed and Title to Petroleum: Arctic State Regimes: Denmark

4.3.1 Sovereignty over Danish/Greenlandic Territorial Sea and its Seabed

Figure 4.2: Map pf Greenland[96]

Denmark had by 1934 established full sovereignty over Greenland and that this sovereignty extended over the territorial sea of Greenland.[97] In 1963 an Order established the delimitation of the territorial sea of Greenland.[98] The Order actually established the inner

[96] © GraphicMaps, part of World Atlas.com. Permission for use of the map granted by WorldAtlas.com in an email from Myles D. Carter, WolrdAtlas.com, Valnet Inc., dated 17 June 2015.
[97] For a short summary on the history of Danish sovereignty over Greenland, see Annex 6.
[98] Order No. 191, 27 May 1963, available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/DNK_1963_Order.pdf.

limits of the territorial sea of Greenland using a combination of low-tide and straight baselines. It was silent as to the outer limit. At that time the outer limit was traditionally considered to be 3nm.[99]

The 1963 baseline coordinates were subsequently amended - in 1980 Denmark established straight baselines around the northern coast of Greenland, when defining Greenland's fisheries zones.[100] Canada formally objected to these baselines on several grounds:

1) The baselines were used to join Beaumont Island with Kap Bryany (42.6nm to the southeast) and with Cape Distant (40.9nm to the northeast). Canada argued that Beaumont Island is not part of "a fringe of islands";

2) Beaumont Island is an isolated uninhabited island of 4 square miles and should not generate an exclusive economic zone in its own right under Article 121(3) UNCLOS;

3) Some of the straight baselines were longer than 24nm;

4) The baselines did not follow the trend of the coast; and,

5) The straight baselines did not cross the mouths of the intervening fjords, but are further offshore.[101]

Although Canada and Denmark met in March 1982 neither side moved from its respective position.[102]

The Danish Royal Decrees of 1991 and 2004[103] adjusted some of the northern Greenland basepoints in the light of additional geophysical information. The 2004 straight baselines appear to still connect Kap Bryant to Beaumont Island and moreover appear to use some points that are not obviously actually on land (see for example basepoint 87 – a point 3 nautical miles west of Kap Bryant which may be either in the waters or on ice), and in which

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Greenland was classified as one of Denmark's non-self-governing territories after World War II – this was superseded by later legislation – see Annex 6 for a history of Danish Sovereignty over Greenland.

[99] On the width of the territorial sea see: Rothwell and Stephens, op. cit., at 412.

[100] Executive Order Number 176 of 14 May 1980, available at: www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/DNK.

[101] As reported in Calderbank *et al*, op. cit., at 162-163.

[102] Ibid..

[103] Royal Decree No. 936 , 6 September 1991, and Royal Decree No. 1005, 15 October 2004, available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/DNK.

case such points might be legally vulnerable. It is of interest that despite such fundamental issues and the Greenlandic baselines having some extremely long sections, there has been no public notice of any formal challenge by any State, including Canada or the United States, to the 2004 straight baselines of Greenland.

The 1999 Danish law which extended the territorial sea of Denmark to 12nm expressly excluded its application to Greenland.[104] As Churchill comments[105], it is unclear why Denmark did not extend to 12nm the breadth of Greenland's territorial sea in 1999 when it did so for its metropolitan territory, and why the breadth of the territorial sea of Greenland has continued to remain 3nm.

From the 1950s, pressure from the United Nations[106] and judgments of the ICJ for decolonisation and self-determination[107] led to Greenland's colonial status being formally abolished in 1953, when it became an integral part of the Kingdom of Denmark as a county.[108] Over the next twenty-five years, Greenlandic nationalist movements and political awareness emerged and pressed for Home Rule negotiations, and in the late 1970s A Home Rule Commission of Greenlandic and Danish politicians was established.[109] In 1978 Greenland was granted home-rule by the Danish Parliament under the Greenland Home Rule Act ("GHRA")[110] and in 2009 was granted further self - rule powers, with only foreign

[104] Article 6, Act No. 200, On the delimitation of the territorial sea, 7 April 1999, *Law of the Sea Bulletin*, No.40, 17, available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/DNK_1999_Act.pdf.
[105] Robin Churchill, "Claims to Maritime Zones in the Arctic", (2001), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, (Alex G. Elferink and Donald R. Rothwell, eds.), Martinus Nijhoff, 105, at 109.
[106] A good overview in: Alexandra Xanthaki, *Indigenous Rights and United Nations Standards: Self - Determination, Culture and Land,* (2007), Cambridge University Press.
[107] Timo Koivurova, "The International Court of Justice and Peoples", (2007), *International Community Law Review*, Vol. 9, 157.
[108] Under the 1953 Constitution of Denmark, (5 June 1953).
[109] Groenlandsk-dansk selvestyre-kommission, *Groenlandsk-dansk selvestyre-kommissions betoenkning om selvstyre in Groenland: Resume*, (2008), available at:
http://dk.nanoq.gl?emner/Landsstyre/Departementer?landsstyreformandens%20Department/Selvstyrekontor/~/media/D77831364B83409D2CF4C08D170288.ashx. For a history, see: Naja Dyrendom Graugaard, "National Identity in Greenland in the Age of Self-Government", (2009), *Working Paper 09/5*, *Centre for the Critical Study of Global Power and Politics*, at 14 - 17, available at:
www.trentu.ca/globalpolitic/documents/Graugaard095.pdf.
[110] The Greenland Home Rule Act, No. 577, 29 November 1978, available at:
www.stm.dk/_p_12712.html.

affairs, security[111], and financial/fiscal policy remaining under Danish control (albeit all to be conducted in consultation with the Home Rule Government of Greenland).[112] In particular, Greenland assumed responsibility for both its onshore and offshore mineral resources.[113] The move from 'Home Rule' to 'Self Governance' with all the nuances which that entitled, including the recognition of Greenlanders as a 'people', has been analysed extensively, and some academic writers consider that Greenland's 'self - governance' still falls short of 'self-determination' for its inhabitants.[114] This is perhaps because their notion of self-determination for Greenland is 'external self-determination'[115], equating it with full legal independence.[116] The question can be posed of how far along the self-determination spectrum has Greenland's devolution gone.

[111] Frederick Harhoff, "Sécurité et politique de l'Arctique - une perspective groenlandaise", (1989), *Etudes Internationales,* Vol. 20, No. 1, 45.

[112] Act on Greenland Self-Government Act, No. 473 of 12 June 2009, available at: www.stm.dk/a_2957.html.

[113] Listed as a field for transfer of responsibility in List II of the Schedule of SGA.

[114] J. Dahl, *Artisk Selvstyre*, (1986), Akademisk Forlag, Viborg; Guargaard, op. cit.; F. Hansen and T. O. Neilsen, "Nordic Amnesia: An Introduction to Rethinking Nordic Colonialism", (2008), *Rethinking Nordic Colonialism website*, available at : http://www.rethinking-nordic-colonialism.org/files/index.htm;
A. E. Lynge, "The Best Colony in the World" (2006), *Rethinking Nordic Colonialism. Act: Greenland*, available at : http://www.rethinking-nordic-colonialism.org/files/pdf/ACT2?ESSAYS?Lynge.pdf;
N. Loukacheva, *The Arctic: Legal and Political Autonomy of Greenland and Nunavut*, (2007), University of Toronto; R. Petersen, Colonialism as seen from a former colonized area", (1995), *Arctic Anthropology*, Vol. 32, No. 2, 118, available at : arcticcircle.uconn.edu/HistoryCulture/petersen.html; A. K. Sprensen, *Denmark - Greenland in the Twentieth Century*, (2007), Tusculanum Press, University of Copenhagen.

[115] Which refers to the right to decide on the political status of a people and its place on the international community in relation to other states including the right to separate from the existing state to which the people concerned is a part and to set up a new independent state, see: C. van Walt van Praag and O. Serio, "Implementation of Right to Self-determination as a contribution to conflict prevention", (1998), *a report to International Conference of Experts, UNESCO, Barcelona, 21 - 27 November 1998*, available at: www.unescocat.org/punang.html.

[116] It is not possible here to analyse the debate on internal and external self-determination and the various interpretations of the principle with its vague and ambiguous articulation in various international instruments: for analyses of various aspects see for example: James Anaya, op. cit.; Antonio Cassesse, *Self Determination of peoples: a legal appraisal,* (1995), Cambridge University Press; Karen Knop, *Diversity and Self – Determination in International Law,* (2002), Cambridge University Press; Kristina Roepstorff, *Self Determination of Indigenous Peoples with the Human Rights Context: A Right to Autonomy?* (undated), Law and Development Online, available at: www.lawanddevelopment.org/doc/self-determination.pdf;
Patrick Thornberry, "The Democratic or Internal Aspect of Self – Determination with some Remarks on Federalism", (1993), in *Modern Law of Self – Determination*, (Christian Tomuschat, ed.), Dordrecht.

Both the Greenland Home Rule Act 1978[117] and the Act on Greenland Self Rule Government Act 2009[118], failed to transfer full sovereignty and ownership of the subsoil resources to Greenland. However, Section 2(1) of the 2009 Self Rule Act did transfer jurisdiction over the control and use of natural resources in the subsoil/seabed of onshore or offshore (including all maritime zones) Greenland to the Greenland Self Rule Government.

The 2009 Self Rule Act in its preamble recognised the right of indigenous people of Greenland to self-determination and appears to indicate that self-determination is the rationale underlying the Act.[119] Although the Act (passed by the Danish Parliament) devolves authority to the Self Rule government in respect of administration and legislative regulation of, and transferred beneficial rights to, all petroleum activities in the territory of Greenland (including the territorial sea), it does not transfer full sovereignty or sovereign rights to the petroleum *in situ* thereunder, which remain with the Danish Crown.

4.3.2 Petroleum Activities in Greenlandic territorial sea and acquisition of good title to petroleum produced there

Between the 1970's and late 1990's, Danish and Greenlandic survey agencies and Nunaoil (post its establishment under the 1978 Act on Mineral Resources in Greenland[120]), Greenland's national oil company, gathered seismic and well-control data in offshore West Greenland.[121] By 1990 there were only two areas offshore West Greenland held by licences, and since then all offshore drilling wells in the region have been unsuccessful.[122] Despite increased offshore licensing rounds in the 2000s, and with now over ten oil companies

[117] Act No.577, 29 November 1978, a translation of which is available at: http://plone.unige.ch/art-ard/cases-affaires/utimut-process-2013-denmark-and-greenland/the-greenland-home-rule-act-1978/at_downlaod/file.

[118] Act No. 473, 12 June 2009, a translation is available at: www.stm.dk/multimedia/GR_Self-Government_UK.doc.

[119] Asbjorn Eide, Asbjorn Eide, "Indigenous Self – Government in the Arctic, and their Right to Land and Natural Resources", in *The Yearbook of Polar Law*, (2009), (Gudmundur Alfredsson, Timo Koivurova and David Leary, eds.), Martinus Nijhoff, Vol. 1, 245, at 259 -265.

[120] Act No. 585 of 29 November 1978, repealed and replaced by the Greenland Parliament Act No. 7 of 7 December 2009 on Mineral Resources and Mineral Resource Activity ("the Mineral Resources Act").

[121] Jens Christian Olsen, "Proving up petroleum prospectivity offshore Greenland", (2006), *First Break,* Vol. 24, April 2006, 61.

[122] J. A. Chalmers, T. C. R. Pukvertaft, F. G. Christiansen, H. C. Larsen, K. H. Lausen, T. Ottesen, T. Dahl – Jensen, K. J. Bate and R. C. Whittaker, "Geology and Petroleum Prospectivity in the Region Offshore Southern West Greenland – A Summary", (1995), *Rapport Gronlands Geologiske Undersogelse,* Vol. 165, 13.

engaging in offshore exploration[123], offshore Greenland remains today extremely under-explored, with its real prospectivity unknown.[124]

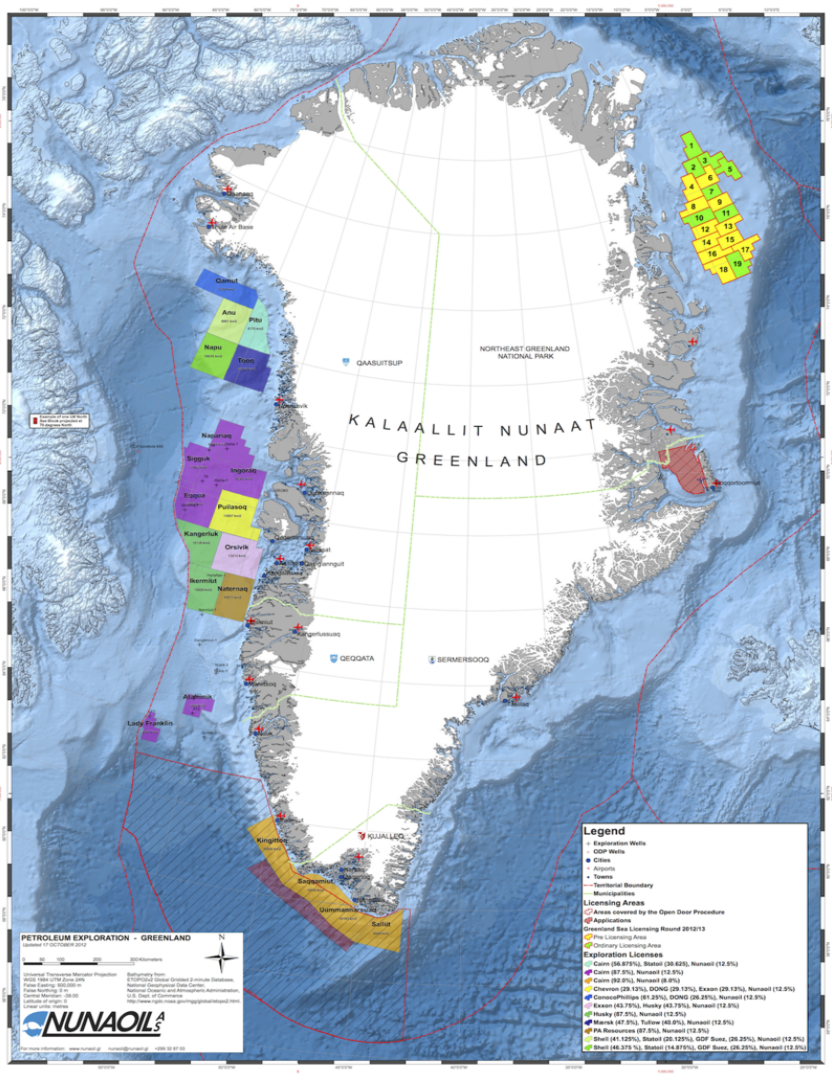

Figure 4.3: Map of Greenlandic exploration licence areas[125]

The Greenlandic oil and gas regulatory regime is established in the (Greenlandic) Mineral Resources Act 2009 (as amended) (MRA").[126] There is currently no petroleum production in

[123] Mineral Licence and Safety Authority, Government of Greenland, *List of Mineral and Petroleum Licences in Greenland*, 1 July 2014, available at:
ww.govmin.gl/images/stories/minerals/list_of_licences/list_of-licences.pdf.

[124] K. Eric Bogoslowski and Lyndon Miller, "Petroleum Source Potential in the West Disko Area, Offshore West Greenland: Regional Evidence from Multiple Data Sets", (2010), *Search and Discovery*, Article #10280, 30 November 2010, available at:
www.searchand discovery.com/documents/2010/10280bogslowski/ ;
Olsen, footnote 121, *supra.*

[125] ©Nunaoil, Public Domain, available at:
http://nunaoil.gl/fileadmin/use_upload/maps/NO%20Licence%20Maps/NUNOIL_LM_310114.pdf.

Greenland or its maritime zones.[127] However, the MRA regime addresses the possibility of licencing future petroleum production. Article 2(1) reiterates the Greenland Self Government's right to control and use mineral resources in the subsoil of Greenland, and Article 2(2)(i) states that prospecting, exploration and exploitation of mineral resources of Greenland can be performed only under a licence issued by the Greenland Government. Article 9(1) extends the MRA to "the territorial land and *territorial sea off Greenland* and in the continental shelf and the exclusive economic zone off Greenland" (emphasis added).

The Bureau of Mineral Resources and Petroleum ("BMP") was established in 1998, as an agency under the Greenlandic Ministry for Industry and Mineral Resources. Under Article 3(1) of the MRA[128], the Greenlandic Ministry of Industry and Mineral Resources has exclusive authority for the licensing of all oil and gas activities with the territory of Greenland.

The BMP makes acreage available by two processes: regular licence tender rounds and 'open door' areas[129], where oil companies can apply for blocks in these areas at any time.[130] There are two open door offshore areas: Northern Greenland (2013) and South West Greenland and Jameson Land area (2008).[131] Since 2002, the offshore zones of the Davis

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[126] Greenland Parliament Act No. 7 of 7December 2009, on mineral resources and mineral resources activities, (as amended)("Mineral Resources Act" or "MRA"), available at:
www.govmin.gl/images/stories/about_bmp/Unofficial_translation_-_Mineral_Resources_Act_as_amended_by_act_no_6_0f_june_2014_-_pdf.pdf.
A good description of the Greenlandic oil and gas regime is provided by Bankes – see: Nigel Bankes, "Oil and Gas and Mining Development in the Arctic: Legal Issues", (2010), *Polar Law Textbook*, (Natalia Loukacheva, ed.), Nordic Council, Chapter 6, 101, at 113; Also: Peter Shriver and Helen Kibsgaard (Delacour), "Legal framework for oil and gas and mining in Greenland", *Delacour News,* (June 2013), available at:
http://en.delacour.dk/news/2013/june/legal-framework-for-oil-gas-and-mining-in-greenland/.

[127] Naalakkersut, *Current Licences,* 2013, Government of Greenland, at:
www.govmin.gl/index.php/petroleum/current-licences.

[128] Which replaced the former 1998 Act, and which was amended by the Greenland Parliament Act 26 of 18 December 2012 .

[129] Article 23 MRA 2009, op. cit.

[130] BMP, See Article 8 in any model licence: for example, the *Model Licence Exclusive Licence No.yyyy/xx For Exploration For and Exploitation of Hydrocarbons in an Offshore Area in North East Greenland,* October 2009, available at:
www.govmin.gl/images/stories/petroleum/exploration_exploitation/2012-13/Greenland_sea_model_Licenc_ENG.pdf.

[131] Nigel Bankes, "Oil and Gas And Mining Development in the Arctic: Legal Issues", (2010), *Polar Law Textbook*, (Natalia Loukacheva, ed.), Nordic Council, Chapter 6, 101, at 113.

Strait, Baffin Bay, and East Greenland have been subject to regular licencing rounds.[132] It should be noted from Figure 4.3 that there are a number of licence blocks that include territorial sea areas.

The BMP issues to the winning bidder for a licence area either a non-exclusive prospecting licence[133] to conduct preliminary exploration such as seismic, or an exclusive exploration and exploitation licence.[134] Usually the licence starts as an exploration licence with the possible extension to an exploitation licence to allow production from a commercial discovery (this is reflected in Article 8 of the licence agreement). Article 17(2) allows for state participation, through the national oil company Nunaoil[135], in exploration and exploitation licences.[136] All licences issued to date since the Home Rule Act 1978 have required that Nunaoil has a carried interest in the licence[137], which means that the oil company must transfer to Nunaoil an agreed percentage of the oil produced although Nunaoil has made no contribution to the costs of its production.

A model exploration/exploitation licence agreement was published by the BMP for an exploration and exploitation licence in the 2006 open door round, along with a model joint operating agreement.[138] There are three key aspects to this model agreement: firstly, NUNAVUT A/S must be given a carried interest (Article 12); secondly, under an exploitation licence, the licensee is given the exclusive right to exploit and use the petroleum subsurface the licence area (Article 8); and thirdly the licensee must pay royalty, and this may be taken either in cash or petroleum (Article 11).

[132] A summary of the various rounds can be found in: Petroleum in Greenland, (2012), *Minesonline.com*, available at:
www.minesonline.com/government-project-opportunities/greenland-opportunities/petroleum-in-greenland.aspx.
[133] Article 15 MRA 2009, ibid..
[134] Article 16 MRA 2009, ibid..
[135] See Nunaoil website: http://nunaoil.gl/en/about-nunaoil.html.
[136] Bankes, op. cit., discusses the legal regime for offshore oil and gas exploration and exploitation, 110 - 114.
[137] A carried interest is defined as a fractional interest in oil and gas property such as a lease or licence, the owner of which has no obligation for operating costs. These are paid by the owner(s) of the remaining fraction who is(are) reimbursed from the profits of production. R. D. Langerkamp, *Handbook of Oil Industry Terms and Phrases*, (1994), 5th Edn., PennWell, at 60.
[138] Delacour, *Legal framework for oil and gas and mining in Greenland*, (2013), Delacour website, available at: en.delacour.dk/news/2013/jue/legal-framework-for-oil and gas-and- mining-in-greenland/.

Under Article 11 of that model licence agreement, a licenced producer would acquire title to its share[139] of the petroleum produced at the point of extraction. Model agreements from other licencing rounds have similar provisions.[140]

Thus, within the Greenlandic territorial sea, a licensee would, under a BMP licence and licence agreement, acquire good title to its share of the petroleum it produces.

4.3.3 Conclusions

Although title to offshore petroleum *in situ* remains with the Danish Crown, under Self Rule the Greenlandic government is empowered to licence offshore exploitation of petroleum and to transfer title to the petroleum produced to the licensee. As has been discussed earlier Self Rule Greenland has enacted a Greenlandic petroleum regime[141], which ensures a licensee gets good title to the petroleum it produces in the licence area in the Greenlandic territorial sea.

From the above, it can be seen that international law played a crucial role in establishing Danish sovereignty over the Greenland territorial sea and in the process of self-determination, and which is then reflected in the implementing laws.

4.4 Norway

4.4.1 Norwegian Sovereignty and the territorial sea: General

(i) Sovereignty over Norwegian Territorial Sea off the mainland

A series of acts (1935 – 2002) defined the geographic coordinates for the straight baselines of the territorial sea of the Norwegian mainland,[142] and the outer limit of the territorial sea, which was established at 12nm.[143]

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[139] As Nunaoil will have between 8.5% (open door) to 12.5% (general licence round) share of petroleum production.

[140] A useful historical review on Greenlandic licences (issued up to 1979) can be found in: Asger Thylstrup, "The Legal Character of Petroleum Licences in Greenland and the Faroe Islands", (1981), in *The Legal Character of Petroleum Licences: A Comparative Study,* (Terence Daintith, ed.), CLMLS, Chapter 6, at 176 - 185.

[141] Under the MRA, see: footnote 126, *supra*.

[142] See: Royal Decree, 12 July 1935, , available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/NOR_1935_Decree.pdf; and,

The Royal Decree of 31 May 1963 Relating to the Sovereignty of Norway over the Sea-Bed and Subsoil outside the Norwegian Coast[144] states:

> "The Seabed and subsoil in the submarine areas outside the coast of the Kingdom of Norway are under Norwegian sovereignty as regards exploitation and exploration of natural resources, as far as the depth of the superjacent waters admits of exploration and exploitation of natural resources, within as well as outside the maritime boundaries otherwise applicable, but not beyond the median line in relation to other states."

Section 2 of the implementing Act of 21 June 1963 states:

> "The right to submarine natural resources is vested in the state."

Thus, the state's sovereign right over petroleum resources is clearly legally established under Norwegian law.

The question then arises: Are there any other juridical persons (other states, sub-units or indigenous peoples), who also can claim petroleum rights in the territorial seas claimed by Norway?

(a) Disputes with Other States

There has been only one maritime boundary dispute involving territorial seas offshore mainland Arctic Norway, that with USSR/Russia. In 1957 Norway and the USSR agreed their maritime boundary in the Varangerfjord in the Arctic Ocean.[145] Under the Agreement, the boundary agreed runs from the northern end point of the land boundary between the Kingdom of Norway and the USSR/Russia in a northeastern direction through the Varangerfjord and terminates on the Varangerfjord's closing line – thereby not extending

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Regulation relating to baselines for determining the extent of the territorial sea around mainland Norway as laid down by Royal Decree of 14 June 2002, as amended by Crown Prince Regent's Decree of 10 October 2003, *Law of the Sea Bulletin,* No. 54, at 88.

[143] Act No. 57, 27 June 2003, Relating to Norway's territorial waters and contiguous zone, and the list of coordinates of points defining the outer limit of the territorial sea around mainland, *Law of the Sea Bulletin*, No. 54, at 29 and 97.

[144] Available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/NOR_1963_Act.pdf.

[145] Agreement between the Royal Norwegian Government and the Government of the Union of Soviet Socialist Republics concerning the sea frontier between Norway and the USSR in the Varangerfjord, 15 February 1957, available at:
www.un.org.depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/NOR-RUS1957SF.PDF.

into the Barents Sea. However, in 2007 Norway and Russia revised the 1957 Agreement ("the 2007 Varangerfjord Agreement")[146], extending the maritime boundary northwards to the intersection of Norway's preference median line and Russia's preference line[147], the sector line in the Barents Sea, thus creating a 23.2km maritime boundary – see Figure 4.4 below.

[146] Agreement between the Russian Federation and Kingdom of Norway on the Maritime Delimitation in the Varangerfjord area, 11 July 2007, *Law of the Sea Bulletin*, No.67, (2008), 42, available at: www.un.org/Depts/los/doalos+publications/LOSBulletins/bulletinpdf/bulletin67e.pdf.

[147] Article 1 of the 2007 Varangerfjord Agreement states that the boundary line described in Article 2 "shall delimit the territorial sea…between Norway and Russian Federation in the Varangerfjord area". In fact, under Article 2, point 3 of the boundary line is defined as "the point of intersection of the outer limits of the territorial sea of the Russian Federation and of the territorial sea of Norway in the Varangerfjord".

Figure 4.4: Map of the delimitation of the Varangerfjord Area under the 2007 Norway – Russia Boundary Agreement[148]

(b) *The Arctic Subunit and Indigenous Peoples*

The Norwegian mainland whose coast abuts the Arctic Ocean/Barents Sea is the main part of the county of Finnmark in the Kingdom of Norway.[149] There is evidence that Finnmark has been inhabited by humans for over 10,000 years.[150] There are currently over 75,000 people living in Finnmark, but mostly in the south western coastal area along the Norwegian Sea, and the south eastern coastal area near Russia[151], leaving the northern Arctic Ocean/Barents Sea coast very sparsely inhabited. There are three key ethnic groups in Finnmark: the Sami, the Norwegians, and the Kven.

[148] Ministry of Foreign Affairs, Norway. Public Domain. Agreement between the Russian Federation and the Kingdom of Norway on the Maritime Delimitation in the Varangerfjord area, 11 July 2007, *Law of the Sea Bulletin* 67, (2008), 42, at 44.

[149] In 1576 the King of Norway created a new administrative unit in his realm, Vardohus len, and this region has had several subsequent changes of name: in 1660 to Vardolos amt (in the 18th Century it was also called Finmarkens amt) and then in 1919 to Finnmark flyke, its current title. See: H. I. Hansen and B. Olsen, *Sames historie fram till 1750*, (2006), Liber, Stockholm.

[150] See Finnmark government information website: www.finnmark.no/page.jsp?id=138&lang=en.

[151] As of 2013. Over 40% of Finnmark lives in two south western communes of Vest Finnmark: (Hammerfest) (10,000+) and Alta (20,000+). See Statistics Norway (Statistisk sentralbyra) at: www.ssb.no/en/folkendrhist.

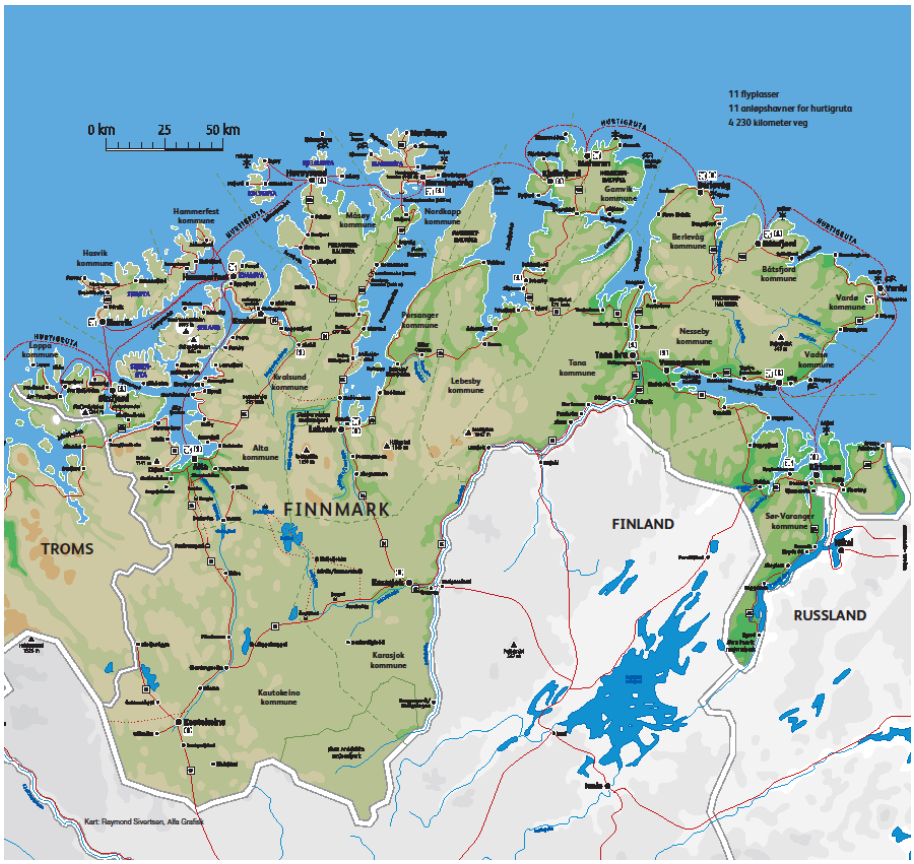

Figure 4.5: Map of Finnmark[152]

It has been suggested by some experts that Norwegians may have had settlements along the Arctic coast for as long as the Sami[153], which complicates issues in relation to the Sami. The coastal areas of Finnmark had certainly been colonized by Norwegians by the 10th Century, and were actively settled from the 15th Century.[154] This ethnic group forms the majority of inhabitants of Finnmark today, although exact division of population along ethnic lines is difficult due to the high degree of intermarriage between the three main peoples of Finnmark.[155]

[152] ©Finnmark Fylkeskommune. Public Domain, available at: www.finnmark.no/media/dokument/2014-01/kart%20norsi.pdf.
[153] Eide, op. cit., at 274.
[154] Ibid..
[155] Gro Ween and Marianne Lien, "Decolonisation in the Arctic? Nature Practices and Land Rights in the Norwegian High North", (2012), *Journal of Rural and Community Development,* Vol. 7, 93, at 97; M. Lien, "Shifting Boundaries of a Coastal Community: Tracing Changes on the Margin", (2003), *Globalisation: Studies in Anthropology*, (T. H. Eriksen, ed.), Pluto Press, London, at 93 - 122.

The Kven people are descended from Finnish immigrants (farmers and inshore fishermen) of the 18th and 19th Centuries, and are legally recognised as an 'ethnic minority' by Norway.[156] It has been estimated there are about 10 - 15,000 ethnic Kvens in Norway today but due to an active government assimilation policy in the 19th and early 20th Centuries[157], the Kven have largely become integrated into mainstream Norwegian society, with significant intermarriage with local Sami and Norwegians.[158] Although as an ethnic minority in Norway they have certain special rights (regarding the preservation of their language and culture), they do not attract any land claim rights as would an indigenous people, and have no special claims or rights to Norwegian sub-surface petroleum on or offshore.

It has been estimated that the Sami[159] have been in Norway for approximately 2000 years.[160] The Sami are a Fino-Ugrian people[161] and in Finnmark divide into two key groups: the Mountain Sami of the interior (nomadic reindeer herders) and the Sea Sami of the coastal area (fishermen establishing permanent settlements).[162] The two groups have distinct linguistic and cultural differences, although belonging to the same ethnic

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[156] As a result of Norway becoming a party to the Council of Europe's 1995 *Framework Convention for the Protection of National Minorities* on 7 March 1999. The Convention is available at:
http//:conventions.coe.int/Treaty/en/Treaties/Html/157.htm.
They also achieved legal protection of their language and culture in 2005, within the framework of the European Charter for Regional or Minority Languages.

[157] Termed "fornorskningspolityikka" – norwegianisation.

[158] On various aspects of such intermarriage see: Hilde L. Jastad, "Viewing Ethnicity from the Perspective of Individuals and Households: Finnmark During the Late Nineteenth Century", (2013), in *Indigenous Peoples and Demography: The Complex Relation between Identity and Statistics*, (Per Axelsson and Peter Skold, eds.), Berghahn Books, Chapter 8, at 149 - 162; Bjorn Evjen, "Finn in Flux: 'Finn' as a Category in Norwegian Populations Censuses of the Nineteenth and Twentieth Centuries", (2013), *Indigenous Peoples and Demography: the Complex Relation between Identity and Statistics*, (Per Axelsson and Peter Skold, eds.), Berghahn Books, Chapter 9, at 163 - 172. Although there are pockets round Alta, and elsewhere, most are in the Nord- and Sor- Varanger, Tana, Gamvik and Nesseby communes in Eastern Finnmark. See: Kenneth Hyltenstam, *Kvenskans status*, (2003), University of Stockholm, *a report prepared for Kommunal- og regionaldepartementet och Kultur - og kirkedepartementet i Norge, October 2003*, available at:
http://www.regjeringen.no/upload/kilde/kkd/rap/2003/0001/ddd/pdfv/193348-kvenrapport_hyltenstam_slutversion_oktober.pdf.

[159] A useful short description and history of the Sami people can be found in: Gail Osherenko and Oran Young, "On Sami", (1989), *The Age of the Arctic*, Cambridge University Press, at 86 - 90.

[160] Eide, op. cit. at 274. Useful histories of the Sami in Norway can be found in: G. Gjessing, *Norge i sameland,* (1973, Gyldendal; and O. M. Haeta, *Samene. Nordkalottens urfolk,* (2002), Hoyskoleforlaget, Kristiansand.

[161] The first written record of them ("Fenni") dates back to 98 A.D.: Publius Cornelius Tacitus, *De Origine et situ germanorum*, at XLVI, translation available at:
http://www.crtpesaro.it/Materiali/Latino/De%20Origine%20Et%20Situ%20Germanorum.php

[162] Elna Hellander, *The Sami of Norway*, (2013), Reiservett, at:
www.reiservett.no.norway/facts/culture_science/sami.html#2;
Eide, op. cit., at 273.

grouping.[163] The Sea Sami inhabit permanent settlements along the coastal areas of Finnmark, but have significantly assimilated into general Norwegian society and intermarried with local Norwegians.[164] Due to such factors identifying the Sami population has been difficult, but generally there is thought to be around 30,000 - 40,000 Sami in Norway[165], and some 20,000 - 25,000 Sami in Finnmark.[166] Difficulties have arisen in agreeing the objective criteria to be used to define who is a Sami[167], and there has been a reluctance to identify as Sami by some who may have had Sami parents or grandparents (a consequent effect of past discrimination and the 19th Century Norwegian assimilation policy).[168] The Sami are estimated to constitute about twenty- five percent of the population of Finnmark, with their towns and settlements scattered between Norwegian and Kven conglomerations.[169]

The question has been posed whether or not the Sami are an Arctic indigenous people.[170] Although most of the regions inhabited by Sami are sub-Arctic, there are nonetheless Sami who live north of the Arctic circle, although it must also be said that there has been considerable 'blending' of the Sami with ethnic Norwegians, especially by the Sea Sami. However, despite these factors, the Sami have now been recognised internationally as an

[163] Moreover as Hansen and Midtgard state: "It is essential to understand that, even though they are said to be one people, the Sami do not represent one homogenous opinion…" - see: Ove Heitmann Hansen and Mette Ravn Midtgard, "Going North, The new petroleum province of Norway", (2008), *Arctic Oil and Gas, Sustainability at Risk?*, (Aslaug Mikkelsen and Oluf Langhelle, eds.), Routledge, Chapter 9, 200, at 223.

[164] Reida (Mindt Eiermann), *The Coastal Sami of Norway*, University of Texas at Austin online, available at: www.utexas.edu/courses/sami/dieda/hist/nor-sami.htm.

[165] Boreale, *An Introduction to the Sami People,* (2001), available at: http://boreale.konto.itv.se/samieng.htm.

[166] Oyvind Ravna, "Legal Protection of Coastal Sami Culture and Livelihood in Norway", (2012), in *The Yearbook of Polar Law,* (Gudmundur Alfredsson, Timo Koivurova and Waliul Hasanat, eds.), Martinus Nijhoff, Vol. 4, at 261 - 278.

[167] Act No. 56, 12 June 1987, defines as a Sami a person who either:

- has Sami as a first language;
- considers himself a Sami and lives in entire accordance with Sami rules and who is recognised by the representative Sami body as a Sami ; *or*
  has a parent who satisfies the two above criteria.

[168] Asbjorn Eide, "Indigenous Self-Government in the Arctic, and their Right to Land and Natural Resources, (2009), in the *Yearbook of Polar Law*, (Gudmundur Alfredsson and Timo Koivurova, eds.), Martinus Nijhoff, Vol. 1, 245, at 273 - 280.

[169] There is only a very small percentage of Sami who earn their primary income from traditional Sami industry (reindeer husbandry or inshore fishing) – see: Lars – Nila Lasko and Gail Osherenko, *The Sami People and the Northern Sea Route: Juridical, Social and Cultural Concerns*, (1999), INSROP Working Paper No. 154, IV.4.1.

[170] Eide, op. cit., at 273.

indigenous Arctic people,[171] and by Norway itself as an indigenous people.[172] The relevant key legislation relating to the rights of the Sami, land rights, self-government and self-determination are:

- The Sami Act 1987[173]

  This act established the Sami Parliament, which is primarily an advisory body, and has little decision making power. The scope of authority of the Sami Parliament is much less than the self-government of Greenland and the governments of the Yukon, Northwest Territories and Nunavut. Its prime activities relate to strengthening Sami cultural institutions, language, education and small businesses.[174]

- The amendment of the Norwegian Constitution 1814[175]

  In 2005 the Constitution was amended to include a new Article 100a, which states:

  "It is the responsibility of authorities of the State to create conditions enabling the Sami people to preserve and develop its language, culture and way of life."

- The Finnmark Act 2005[176]

[171] The Sami Council is an Indigenous Peoples Organisation that participates in the work of the Arctic Council through the Arctic Council Indigenous Peoples Secretariat.

[172] Norway became a party to the ICCPR and in 1980 a Commission on Sami Issues, relying heavily on Article 27 ICCPR concluded the Sami must be able to preserve the land which is a basis of their culture. [NOU 1984:18: Om sames rettstilling (On the Legal situation of the Sami), Oslo, available at: regjeringen.no/nb/dep/kmd/tema/sameplitikk/midtspalte/nou-198418-om-samenes] and in 1988 it was made a consitutional requirement. – see: Eide, op. cit., at 277.

[173] Act No.56 of 12 June 1987, *Concerning the Sameting and other Sami Legal Matters*, ("The Sami Act"), available at: www.regjeringen.no/en/doc/laws/acts/the-sami-act.html?id=449701.

[174] Eide, op. cit. at 279 - 280.

[175] The Norwegian Constitution, 17 May 1814, as subsequently amended, available at: www.stortinget.no/en/In-English/About-the-Storting/The-Constitution/tion/TheConstitution/.

[176] Act No. 85 of 17 June 2005, relating to Legal Relations and Management of Land and Natural Resources in the County of Finnmark, ("The Finnmark Act"), available at: www.wipo.int/wipolex/en/details.jsp?id=11129. See also Ministry of Justice and the police and the Ministry of Local Government and Regional Development, The Finnmark Act - A Guide, (2008), available at: www.gaidu.org/govat/doc/brochure_finnmark_act.pdf.

The Act's key provision transfers title in all Norwegian state land located in Finnmark to the Finnmark Estate (Finnmarkseiendommen), which was a purpose-created entity to administer and manage such land.[177] The Finnmark Estate is governed by a board: three appointed by the Sami Parliament and three by the Finnmark County Council.[178] Under the Finnmark Act, *all* the residents of Finnmark have achieved a form of collective ownership and the rights to use lands and waters of Finnmark county, although Sami do have a special status.[179] The exact extent of these rights with respect to "land and water" under the Act is gradually being defined. [180]

The Act also provides that the Sami people, through their traditional and prolonged use of land and water[181], have acquired certain usufructuary rights to land in Finnmark.[182] A commission has been established to survey and define these rights.[183]

All Finnmark residents are given the rights to exploit natural resources *on* the land[184], but importantly the Finnmark Act does not include the granting of subsurface onshore or offshore rights, and rather relates to usufructuary rights to engage in traditional use of the land and living resources.[185]

It should be noted that that a major factor in why the Finnmark Act was enacted was the 1990 ratification by Norway (as the first state in the world) of ILO Convention No.169. The author is grateful to Professor Timo Koivurova for drawing this to her attention.

[177] Sections 6 - 20, ibid..

[178] Section7, ibid..

[179] Eide, op. cit., at 279. This status is now reflected in other legislation, for example :(1) only people of Sami origin conduct reindeer husbandry in Norway under Article 9 of the Reindeer Husbandry Act (2) the Sami parliament can lodge an objection against a mineral project Article 5 -4 of the 2010 Planning and Building Act.

[180] Article 278 - 280.

[181] O. Ravna, *Recognition of Indigenous Peoples' Land Rights through Modern Legislation, The Case of the Sami People in Norway*, (2006), Ministry of Foreign Affairs, Oslo.

[182] Section 1, ibid..

[183] Section 29, ibid..

[184] On the equal treatment for all Finnmark residents see: Gro B. Ween and Marianne Lien, "Decolonisation in the Arctic? Nature Practices and Land Rights in Norwegian High North", (2012), *Journal of Rural and Community Development*, 93.

[185] Jeremie Gilbert*, Indigenous Peoples' Land Rights Under International Law, From Victims to Actors*, (2012), Transnational Publishers, "The Saami Parliaments: Usufructuary Rights", at 236 - 237; and Eide, op. cit., at 278.

Although the Finnmark Act enhances Sami rights[186], it is debatable whether the Act fully fulfills Norwegian obligations under Articles 14 and 15 of the *ILO Convention No. 169*[187], but it is seen by the Norwegian government as doing so substantially.[188]

Independence does not appear to be on the Sami agenda[189], perhaps due to the high level of integration of Sami into the mainstream Norwegian society and the fact that Sami settlements are scattered and interspersed between the Norwegian and Kven of Finnmark, making a geographical region as a Sami homeland virtually impossible. Thus, it is unlikely that much further evolution of self-government towards independence will occur.[190]

The Finnmark Act has faced criticism and various NGOs, Sami representatives and academics have argued that the Sami's rights should include resources in and beneath Sami land areas and in the sea, to varying extents.[191] The Sami Parliament considers first and foremost that regulations should ensure Sami consultation and participation in oil and gas developments in the region (including its offshore) and that the Sami should receive a share of the financial benefits from such activities.[192] To date it appears that the Norwegian government has not been willing to consider such extension of rights.[193] However, Sami pressure regarding co-management rights on the utilisation of natural resources and a share of profits

[186] Timo Koivurova, Vladimir Mastoboev, Kamrul Hossain, Vigdis Nygaard, Anna Petretei, and Svetlana Vinigradova, " Legal Protection of Sami Traditional Livelihood from the Adverse Impacts of Mining: A Comparison of the Level of Protection Enjoyed by Sami in Their Four Home States", (2015), Arctic Review on Law and Politics, Vol. 6 No.1, 11.

[187] Oyvind Ravna, "The Process of Identifying Land Rights in parts of Northern Norway: Does the Finnmark Act Prescribe an Adequate Procedure within the National Law", (2011), *The Year Book of Polar Law*, Gudmundur Alfredsson and Timo Koivurova, eds.), Martinus Nijhoff, Vol. 3, 422, at 452. Oyvind Ravna, "The Fulfilment of Norway's International Legal Obligations to the Sai- Assessed by the Protection of Rights to Land, Waters and Natural Resources", (2014), International Journal on Minority and Group Rights", Vol. 21, 325.

[188] Ravna, (2011), op. cit., at 451 - 453

[189] Eide, op. cit., at 281. The Sami appear to aiming at most for 'internal self-determination", as set out in Article 3, of the Draft Nordic Sami Convention. (An English text is available at: www.regjeringen.no/upload/BLD?Nordic%20Sami%20Convention.pdf, and discussed in the Commentary to Article 3). This issue is discussed by Koivurova – see: Timo Koivurova, "The Draft for a Nordic Saami Convention", (2006/2007), *European Yearbook of Minority Issues*, Brill, Vol. 6, 103, at 115 - 116.

[190] John B. Henriksen, "Sami Self – Determination, Land and Traditional Livelihoods Self – Determination and the Media", (2011), *Galdu Cala, Journal for the Rights of Indigenous Peoples*, No.1/2011.

[191] Hansen and Midtgard, op.cit., 224 - 226.

[192] Aili Keskitalo (President Sami Parliament);
See: www.nordlys.no, on 15 August 2006 and *Aftenposten*, 1 February 2006: Johan Mikkel Sara (Vice President of the Sami Parliament):
www.aftenposten.no, on 12 May 2006. Cited by Hansen and Midtgard, ibid..

[193] Hansen and Midtgard quote several representatives of government, op. cit., at 225 - 226

continues.[194] The impetus of the Draft Nordic Sami Convention[195], which appeared in 2005 to herald significant progress on many of these issues,[196] appears to have slowed down significantly.[197] Whatever is finally agreed, the Draft's provisions may give some clues as to the limits of concessions on these issues that the Nordic governments might be prepared to consider.[198]

Thus, the Sami[199], have not been given any offshore resources rights to date[200], and it would seem highly unlikely that, even if Sami rights are extended offshore in the future, they would amount to much more than inshore fishing rights, and/or consultative rights with respect to offshore development.[201]

From the above, it appears that, despite Norway voting in favour of the United Nations Declaration on the Rights of Indigenous Peoples 2007 ("UNDRIP")[202], and being a party to the ICCPR, ICSECR, and *ILO No. 169 Convention* (all discussed earlier), such commitments have not translated, in particular under the Finnmark Act 2005, into any rights for the Sami to petroleum located under their onshore traditional lands and certainly not offshore,.[203]

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[194] Limited levels of both aspects were proposed in the Draft Nordic Sami Convention, Article 36 and 37. The only provision with respect to offshore aspects and natural resources is Article 38, which addresses fishing issues in 'coastal areas'

[195]Draft Nordic Sami Convention, available at:
www.regjeringen.no/upload/BLD/Nordic%20Sami%20Convention.pdf

[196] Timo Koivurova, "Draft Nordic Saami Convention", (2006/2007), *European Yearbook of Minorities Issues*, Brill, Vol. 6, 103;

[197] Timo Koivurova, "The Draft Nordic Saami Convention: Nations Working Together", (2008), *International Community Law Review*, Vol.10, 279, at 292 - 293.

[198] Nigel Bankes and Timo Koivurova, "Conclusion", (2013), in *The Proposed Nordic Saami Convention*, (Nigel Bankes and Timo Koivurova, eds.), Hart Publishing, at 404.

[199] Useful histories of the Sami in Norway can be found in: G. Gjessing, *Norge i sameland,* (1973, Gyldendal; O. M. Haeta, *Samene. Nordkalottens urfolk,* (2002), Hoyskoleforlaget, Kristiansand; Gail Osherenko and Oran Young, "On Sami", (1989), in *The Age of the Arctic*, Cambridge University Press, at 86 - 90.

[200] Asbjorn Eide, "Indigenous Self-Government in the Arctic, and their Right to Land and Natural Resources", (2009), in *The Yearbook of Polar Law,* (Gudmundur Alfredsson and Timo Koivurova, eds.), Martinus Nijhoff, Vol. 1, 245, at 273 - 280.

[201] Ove Heitmann Hansen and Mette Ravn Midtgard, "Going North, The new petroleum province of Norway", (2008), in *Arctic Oil and Gas, Sustainability at Risk*?, (Aslaug Mikkelsen and Oluf Langhelle, eds.), Routledge, Chapter 9, 200, at 223 - 227. This is reflected perhaps in Article 38 of the Draft Nordic Sami Convention (see footnote 195, *supra*).

[202] United Nations, Declaration on the Rights of Indigenous Peoples, adopted by General Assembly Resolution 61/295 of 13 September 2007, available at:
www.un.org/esa/socdev/unpfil/documents/DRIPS_en.pdf.

[203] On these aspects see Annex 7 on the Sami and their rights.

To date, despite media protests and general public statements, the Sami have not lodged any formal legal claims with respect to rights in the territorial sea and to petroleum resources located in its seabed.[204]

(c) General Conclusions - Mainland

There remain no disputed areas in the territorial sea offshore the Norwegian mainland, the indigenous people currently have no rights offshore there, and no offshore rights have been devolved to Finnmark. Hence, currently there is clear Norwegian Crown (hence central government) sovereignty over the seabed and subsoil of mainland Norway's territorial sea and the petroleum resources located thereunder. International law of the sea played a fundamental role in the establishment of Norwegian sovereignty over the territorial seas the Arctic Norwegian mainland. However, international law otherwise has not to date led to these rights being devolved or in part shared with indigenous peoples of the region.

(ii) Sovereignty over the Territorial Sea off Jan Mayen Island

Jan Mayen Island is a small volcanic island (373km² in area) in the Arctic Ocean, approximately a third of which is covered by glaciers. It lies approximately 600km northeast of Iceland, 500km east of central Greenland and 1000km west of the North Cape of Norway. The island is relatively mountainous with no indigenous population or economy. It is ice covered for much of the year.

Norwegian sovereignty over Jan Mayen Island is well established in international law.[205]

[204] Hansen and Midtgard,, (2008), footnote 201, *supra,* Chapter 9, 200.
[205] See Annex 5 for a brief summary of the acquisition of sovereignty over Jan Mayen by Norway.

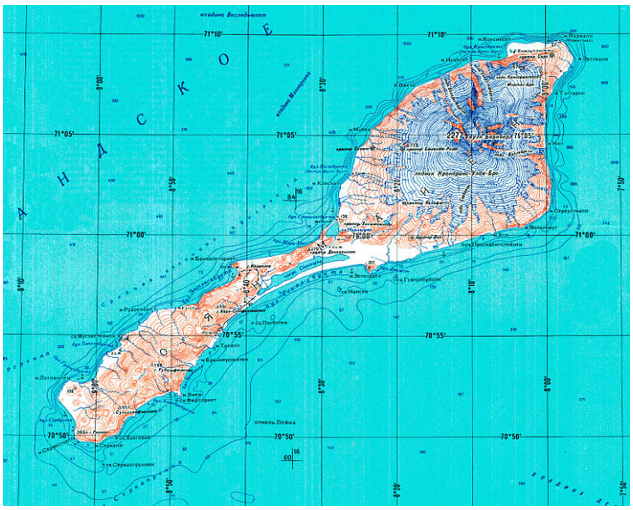

Figure 4.6: Map of Jan Mayen Island[206]

The question arose at the 1981 Iceland-Norway Conciliation Commission[207] of whether Jan Mayen, being barren uninhabited and isolated, is an island as defined under international law and is thereby entitled to have maritime zones. The Conciliation Commission came to the conclusion that Jan Mayen is an island under UNCLOS, and thus has its own maritime zones.[208] This view was accepted by the parties and reflected in the *Iceland – Norway (Jan Mayen) Agreement*.[209] The ICJ confirmed the Commission's decision in its 1993 judgment in *Denmark v. Norway Case*[210], and the parties in that case then concluded the *Denmark*

[206] ©General Staff of Soviet Armed Forces. This Soviet Topographic Map [sheet R-29-IX, X, XI of Soviet Genshtab maps, scale 1:200K, and edition 1967, cropped] is not an object of copyright under Paragraphs 5 and 6 of Article 1259 of Part IV of the Civil Code No, 230-FZ of the Russian Federation of 18 December 2006.

[207] *Conciliation Commission on the Continental Shelf area between Iceland and Jan Mayen. Report and Recommendations to the Governments of Iceland and Norway*, Decision of June 1981, Reports of International Arbitral Awards, Vol. 27, 1, available at:
http://legal.un.org/riaa/cases/vol_XXVII/1-34.pdf.

[208] Ibid., at 10.

[209] Agreement on the Continental Shelf between Iceland and Jan Mayen (Iceland – Norway) 1981, ("*Iceland – Norway (Jan Mayen) Agreement*"), (1982), ILM, Vol. 21, 1222. Agla Margret Egilsdottir, *Agreement between Iceland and Norway on the Continental Shelf Between Iceland and Jan Mayen*, (2013), MA Thesis, University of Reykjavik, available at:
http://skemmn.is/stream/get/1946/15935/35974/1/agreement.between.Iceland.and.Norway.on.the.continental.shelf.between.Iceland.and.Norway.pdf, at 13.

[210] Case Concerning Maritime Delimitation in the Area Between Greenland and Jan Mayen, (Denmark v. Norway), ("*Denmark v. Norway Case*"), ICJ Judgment of 14 June 1993, available at:
icj-cij.org/docket/files/78/6743.pdf.

(Greenland) – Norway (Jan Mayen) Delimitation Agreement,[211] thereby signaling Denmark's acceptance of Jan Mayen having its own maritime zones.

As a result of the above, it can be concluded that Norway has sovereignty over the territorial sea of Jan Mayen Island. Norway established the limits of the territorial sea of Jan Mayen in 2002 regulations. [212] These regulations defined the baselines as a mixture of low water line and straight baselines and the outer limit as 12nm. There has been no public notice of any formal objection to these baselines.

(*iii)* *Sovereignty over the Territorial Sea off Svalbard*[213]

[211] Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the delimitation of the continental shelf in the area between Jan Mayen and Greenland and concerning the boundary between the fisheries zones in the area, ("*Denmark (Greenland) - Norway (Jan Mayen) Delimitation Agreement*"), 18 December 1995, (1996), *Law of the Sea Bulletin*, 59. See Byers, op. cit. at 37.

[212] *Regulations relating to the limits of the Norwegian Territorial Sea around Jan Mayen of 30 August 2002*, available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/NOR_2002_Regulations.pdf.

[213] For detailed analyses of the Svalbard issues see:
D. H. Anderson, "The Status under International Law of the Maritime Areas around Svalbard", (2007), a paper read at the Symposium on "Politics and Law - Energy and Environment in the Far North," held at the *Norwegian Academy of Science and Letters,* 24 January 2007, available at:
www.dnva.no/binfil/download.php?tid=27096;
I. Bartsits, "On the Question of the Legal Status of the Russian Arctic Sector", (1999), *Faktor*, No. 7, 34 (translated from Russian);
Robin Churchill and Geir Ulfstein, *Marine Management in Disputed Areas, The Case of the Barents Sea*, (1992), Routledge, Chapter 2, at 23 - 53;
Robin Churchill and Geir Ulfstein, "The Disputed Marine Zones Around Svalbard ", (2010), in *Changes in the Arctic Environment and Law of the Sea*, Panel IX, (Nordquist ed.), at 551 - 593, Martinus Nijhoff, available at:
http://ssm.com/abst=1937583;
Oystein Jensen and Svein Rottem, "The Politics of Security and International Law in Norway's Arctic Waters", (2010), *Polar Record*, Vol. 46, No.1, at 75 - 83, Cambridge University;
A. A. Kirilev, *Contemporary Issues of the Law of the Sea: Modern Russian Approaches*, (translated by W. E. Butler), (2003), Eleven International Publishing;
W. Lakhtine, "Rights Over The Arctic ", (1930), *AJIL*, Vol. 24, 700 ;
Trygve Mathisen, *Svalbard in International Politics 1871 – 1925: The solution of a unique international problem,* (1954), Norsk polarinstitutt, Skrifter.
E. Morelli, *Il regime geridico dello Svalbard e il nuovo diritto del mare*, (1988), Booklet, (1 January 1988), Giuffre Milan;
Willy Ostreng, *Politics in High Latitudes: the Svalbard Archipelago*, (1978), McGill - Queens University Press (translated by R. I. Christopherson);
T. Pederson, "The Svalbard Continental Shelf Controversy: Legal Disputes and Political Rivalries", (2006), *Ocean Development and International Law*, Vol. 37, No. 3 - 4, at 339 - 358;
T. Pederson, *Conflict and Order in Svalbard Waters*, (2008), Department of Political Science Faculty of Social Sciences, University of Tromsø;
T. Pederson and T. Henrikson, "Svalbard Marine Zone: The End of Legal Uncertainly?", (2009), *International Journal of Marine and Coastal Law*, Vol. 41, No. 1, 141;

Svalbard[214] (also called Spitsbergen[215]) is an Arctic archipelago of several large islands and numerous smaller islands, located in the Barents Sea.[216] All the islands are situated between 74° and 84° N and 10° to 35° E. The main island lies some 350 nautical miles (nm) north of the North Cape of Norway while its southernmost island, Bear Island lies 220 nautical miles north of Norway. To the east of the archipelago are the Russian archipelagos of Novaya Zemlya and Franz Josef Land and to the west lies Greenland. Its total land area covers 62,400km^2.

Figure 4.7: Map of Svalbard[217]

Icebound for much of the year, Svalbard has no indigenous population and its population is made up of scientists, administrators, fishermen and persons engaged in coal mining. It is also estimated that the surrounding seabed may contain significant amounts of petroleum

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T. Scovazzi, "Antichi e ricenti problemi del regime guridico delle Spitzbergen", (1980), *Studi in onore di Cesare Grasseti*, Vol. 3, Milan, 1679;
L. T. Timochenko, *Spitsbergen History and Modern Day,* (1992), Kharkov, at 6 - 14;
Geir Ulfstein, *The Svalbard Treaty: From Terra Nullius to Norwegian Sovereignty,* (1995), Oslo, Scandinavian University Press, at 34;
A. N. Vylegzhanin and V. K. Zilanov, *Spitsbergen: legal regime of adjacent marine areas*, (2007), (edited and translated by W. E. Butler), Eleven International Publishing.

[214] The information in this paragraph is drawn from the *Encyclopaedia Britannica Online*, on Svalbard, (www.britannica.com), and from Timoshenko, footnote 213, *supra.*

[215] Spitsbergen (or Spitzbergen) is the old Dutch/ English name of the archipelago (also used by the Russians), while the Norwegians have used Svalbard, which since 1920 has been increasingly used in the literature and formal documents.

[216] The archipelago includes Spitsbergen (or called West Spitsbergen by the Russians), Edge Island, Bear Island, Barents Island, North-East Land, Prince Charles Forland, Hope Island, Kvitoya, and the King Charles Islands.

[217] ©CIA (United States). Public Domain: "they [CIA maps] may be copied freely without the permission of the Central Intelligence Agency ("CIA"), stated at: cia.gov/library/publications/CIA-maps-publications/.

deposits.[218] The natural resource potential of the islands and adjacent waters has raised the issue of the legal status of Svalbard and its adjacent waters from one of interesting academic debate to one of serious economic and political interest. Svalbard also has for Norway, and to a lesser extent Russia, significant geopolitical and security implications.[219] All these factors have made the legal status of Svalbard and its adjacent waters particularly important.[220]

Norwegian sovereignty over Svalbard and its waters has had a long and complex history and there is extensive literature on the legal issues in respect of Svalbard.[221] The following

[218] In 2009 the US Geological Survey estimated the mean undiscovered, conventional, technically recoverable petroleum resources in the Barents Sea to be 11 billion barrels of crude oil, 380 trillion cubic feet of natural gas and 2 billion barrels of natural gas liquids – see: T. R. Klett and D. L. Gautier, *Assessment of Undiscovered Petroleum Resources of the Barents Sea Shelf*, US Geological Survey Fact Sheet 2009 - 3037, (June 2009), available at:
http://pubs.usgs.gov/fs/2009/3037/pdf/F-509-3037.pdf.

[219] Jensen and Rottem, op. cit., footnote 213, *supra*, at 75 - 83.
Also it should be noted that there has been a surprising level of significant political interest by the United States in Svalbard and its legal status dating back to early 20th Century - see: Elen Singh, *The Spitsbergen Question, United States Foreign Policy 1907 - 1935,* (1980), Universitetsforlaget, Oslo;
A. M. Oreshnekov. "On the Right of Ownership of Norway to 'State Lands of Spitsbergen", (1994), *Moscow Journal of International Law*, No.3 [translation], and cited by Vylegzhanin and Zilankov, footnote 213, *supra,* at 11.

[220] According to a Norwegian Ministry of Foreign Affairs Report to the Storting, Report No. 30 (2004 - 2005), *Opportunities and Challenges in the North*, Oslo, at 12, available at:
ww.regjeringen.no/en/dep/ud/documents/propositions-and-reports/reports-to-the-storting/20042005/report_no-30_to_the_storting_2004-2005.html?id=198406.
Svalbard is a key object in the High North Policy of Norway – see: the Ministry of Foreign Affairs, *Norwegian Government's High North Strategy*, (2006), Ministry of Foreign Affairs, Oslo and Tromso, available at:
http://www.regjeringen.no/upload/kilde/ud/pla/2006/006/ddd/pdfv/302927-nstrategi06.pdf.

[221] D. H. Anderson, "The Status under International Law of the Maritime Areas around Svalbard", (2009), *Ocean Development and International Law*, Vol. 40, No. 4, 373; Morten Anker, "The High North and Russo-Norwegian bilateral economic relations", (2009) Bank of Finland – Institute for Economics in Transition, *BOFIT Online 10/2009*, available at:
www.fni.no/russcasp/MA-bon1009-32-41.pdf;
J. A. Bernhardt, "Jurisdictional Friction over Unexploited Oil Reserves", (1973 - 1974), California Western International Law Journal, Vol. 4, No. 61, 62;
Ida Caracciolo, "The Unresolved Controversy: the legal situation of the Svalbard Island maritime areas: an interpretation of 1920 Treaty in the light of UNCLOS 1982", (2009), a paper to the 20th Anniversary Conference, IBRU, Durham University, 1 - 3 April 2009, 'The State of Sovereignty', available at:
www.dur.ac.uk/resources/ibru/conferences/sos/ida_caracciolo_paper.pdf;
Robin Churchill and Geir Ulfstein, "The Svalbard Disputed Maritime Zones Around Svalbard, (2011), *Changes in the Arctic Environment and the Law of the Sea*, Panel IX, Martinus Nijhoff, available at:
http://ulfstein.net/wp-content/uploads/2012/08/ChurchillUlfstein20101.pdf;
Claudia Cinelli, *El Artico ante el derecho del mar contemporaneo,* (2012), Tirant, Monograph No 790, available from www.tirant.es.
Rolf Einar Fife, *Svalbard and Surrounding Maritime Areas, Background and Legal Issues - Frequently Asked Questions*, Ministry of Foreign Affairs, Norway, online, 22 April 2013, available at:

discussion follows from that analysis and summarises the issue of sovereignty over the territorial sea of Svalbard.

Prior to 1920 Svalbard was considered *terra nullius.*[222] In 1920 nine 'interested' states[223] signed the Treaty on Spitsbergen[224] ("*Svalbard Treaty" or "ST"*), recognising Norway "full

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www.regjeringen.no/en/dep/ud/selected-topics/civil-rights/Spesiell-folkerett/folkerettslige-sporsmal-i-tilknytning-ti.html?id=537481;
Carl August Fleischer, "The New International Law of the Sea and Svalbard", a paper given at the Norwegian Academy of Sciences and Letters, 150th Anniversary Symposium, 25 January 2007, available at:
ww.driva.no/binfil/download.php?tid=27095;
Brit Floistad, *The controversy over the applicable regime outside Svalbard's territorial sea*, (2007), MA Thesis, University of Oslo, available at:
www,duo.uio.no/bitstream/handle/10852/21363/67953.pdf?sequence=1;
Bjorn Geir Harsson and George Preiss, "Norwegian Baselines, Maritime Boundaries and the UN Convention on the Law of the Sea", (2012), *Arctic Review on Law and Politics*, Vol. 3, No. 1, 108; Tore Henriksen and Geir Ulfstein, "Maritime Delimitation in the Arctic: The Barents Sea Treaty", *Ocean Development and International Law,* Vol. 42, No. 1 - 2, 1; Uwe Jenisch, "The Arctic Ocean and the New Law of the Sea", (2005), *Essays on the New Law of the Sea,* (B. Vukas, ed.), Zagreb, 479; Arnfinn Jorgensen-Dahl, "The Soviet-Norwegian Maritime Disputes in the Arctic Law and Politics", (1990), *Ocean Development and International Law*, Vol. 21, No. 4, 411; Jacek Machowski, "Scientific activities on Spitsbergen in the light of the international legal status of the archipelago", (1995), *Polish Polar Research*, Vol. 16, No. 1 - 2, 13; Arild Moe, *Utenrikspolitiske remmebetingelser og norsk Svalbard-politick*, (1983), Fridtjof Nansen Research Institute, Report 3; Alexander Oreshenkov, "Arctic Diplomacy, History Lessons for Settling Disputes on Litigious Territories", (2009), *Russia in Global Affairs,* No. 4, October – December 2009, available at:
http://eng.globalaffairs.ru/print/number/n_14250;
Torbjorn Pedersen and Tore Henriksen, "Svalbard's Maritime Zones: The End of Legal Uncertainty?", (2009), *International Journal of Marine and Coastal Law*, Vol. 24, 141; Torbjorn Pedersen, "The Svalbard Continental Shield Controversy: Legal Disputes and Political Rivalries", (2007), *Ocean Development and International Law*, Vol. 37, No. 3 – 4, 339; Torbjorn Pedersen, *Conflict and Order in Svalbard Waters*, (2008), University of Tromso; Torbjorn Pedersen, "Denmark's Policies Toward the Svalbard Area, (2009), *Ocean Development and International Law*, Vol. 40, No. 4, 319; Thomas Pedersen, "International Law and Politics in US Policymaking: The United States and Svalbard Dispute", *Ocean Development and International Law,* Vol. 42, No. 1 - 2, 120, and "Norway's rule on Svalbard: tightening the grip on the Arctic Islands", (2009), *Polar Record*, Vol. 45, No. 233, 147; Susan J. Rolston and Ted L. McDorman, "Maritime Boundary Making in the Arctic Regions", (1988), *Ocean Boundary Making: Regional Issues and Developments*, (Douglas M. Johnston and Phillip M. Saunders, eds.), Croom Helm, at 40 - 44; D. Rothwell, op. cit., at 160 -161, 178 - 179 and 344 - 345; Kurt M. Shusterich, "International Jurisdictional Issues in the Arctic Ocean", (1984-1985), *Ocean Development and International Law*, Vol. 14, 235; Bo Johnson Theutenberg, "The Arctic Law of the Sea", (1983), *Nordisk Tidsskrift for International Ret*, Vol. 52, 3 - 39, Fasc. 1 - 2, at 25- 27; G. Ulfstein, *The Svalbard Treaty: from 'terra nullius' to Norwegian Sovereignty*, (1995) Scandinavian University Press; A. N. Vylegzhanin and V. K. Zilanov, *Spitsbergen, Legal Regime of Adjacent Marine Areas*, (2007), (William Butler, translator and editor), Eleven Publishing; Sarah Wolf, *Svalbard's Maritime Zones, Their Status under International Law and Current and Future Disputes Scenarios*, (2013), Working Paper FG 2, 2013/Nr. 02, January 2013, Stiftung Wissenschaft und Politik, Berlin, available at:
www.swp-berlin.org/fileadmin/contents/products/arbeitspapiere/WP_wolf_2013.pdf.

[222] For a thorough legal analysis of this issue see Geir Ulfstein, *The Svalbard Treaty: From Terra Nullius to Norwegian Sovereignty*, (1995), Oslo, Scandinavian University Press, at 34 and Appendix 1.

[223] Netherlands, Great Britain and Ireland (which also signed on behalf of Canada, India and South Africa), Denmark, United States of America, Italy, France, Sweden, Norway, and Japan, Paris, 9 February 1920.

[224] League of Nations Series (1924), No. 18. The Treaty in English is reproduced as Annex 8 in Vylegzhanin and Zilanov, footnote 213, *supra*.

and absolute sovereignty" over the islands of the Spitsbergen archipelago and their territorial waters, but simultaneously stripping Norway of certain key sovereign rights[225]. In particular this treaty also provided that the other treaty parties' nationals were entitled to exercise rights of economic activities on the islands (and in their territorial seas) on the same basis as those enjoyed by Norwegian nationals,[226] and that Norway was forbidden from establishing military bases or using the Svalbard Archipelago for warlike purposes,[227] or profiting economically from its sovereignty, since all taxes and duties levied there should be devoted exclusively to the archipelago.[228]

Importantly, although the USSR neither participated in the negotiations nor signed the Treaty on Spitsbergen in 1920[229], it officially acceded to the Treaty on Spitsbergen on 7 May 1935.[230] The matter of treaty parties' rights becomes further complicated by the fact that there are now over 40 states[231] who have become parties to the treaty and many of whom have no real link to the Arctic, for example, South Africa, Saudi Arabia, Japan, China, the Dominican Republic, and Venezuela.

The issue of Norwegian 'sovereignty' over the Svalbard islands themselves, albeit with its treaty limitations has, as most legal writers agree,[232] has been settled by international acceptance. Thus, the land territory status of Svalbard is not really an issue in the 21st Century: what is a real problem is the status of the archipelago's adjacent maritime areas.

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[225] Articles 1 and 2, ibid..
[226] Article 2 and 3, ibid..
[227] Article 9, ibid..
[228] Article 8, ibid..
[229] But Russian nationals were accorded equal rights until a post Bolshevik revolution government could be recognised by the Contracting Parties, see Article 10, ibid..
[230] Vylegzhanin and Zilanov, footnote 213, *supra*, at 25.
[231] Including the United States, see - Elen C. Singh, *The Spitsbergen (Svalbard) Question: United States Foreign Policy 1907 - 1935,* (1980), Doctoral Thesis University of Denver, available at: ahr.oxfordjournals.org/content/87/2/554.1.full.pdf.
[232] See the authors cited in footnote 213, *supra*. It should be noted that the practical exercise of sovereignty has not always been easy for the Norwegians, particularly in respect of the Russian settlements on Svalbard. Oystreng, (op. cit., at 92 - 100), gives several examples of the difficulties in the 1970s. However, since 1987 and perestroika, the Russians appear to have adopted a less challenging and more relaxed approach: mines have been closed down, the Russian population reduced from 2000 to 800, and many social facilities of the settlements shut down. Although such relaxed attitude may be applicable onshore Svalbard, the Russian opposition to the 1977 Norwegian 200m fishery protection zone round the Svalbard Archipelago has been more visible, see: Vylegzhanin and Zilanov, footnote 213, *supra*, at 41 - 73.

Under Article 1 of the 1920 Svalbard Treaty[233] State Parties agree:

> "to recognise, subject to the stipulations of the present Treaty, *the full and absolute sovereignty* of Norway over the Archipelago of Spitsbergen".[234]

As there is no limitation affecting sovereignty *per se* under the Treaty, it can be concluded that Norway exercises the same sovereignty as any other state over its territory, subject in its exercise to the provisions of the Treaty.[235] Moreover, after over 90 years, under customary international law, Norwegian sovereignty over the territory of Svalbard must also be considered binding on Non-parties States to the Svalbard Treaty. [236]

As to possible other title holders of the petroleum rights, since there are no indigenous people on Svalbard, there are no claims of indigenous people with respect to the territorial waters of the island, or the resources lying thereunder.

The territorial application of the Svalbard Treaty is defined in Articles 2 and 3 to include the 'territorial waters' off Svalbard. There is general agreement among commentators that under the Treaty Svalbard Norway is entitled to a territorial sea, over which Norway exercises sovereignty, and certainly state practice affirms this view.[237] Although earlier there had been diverging legal arguments as to whether the 1920 Treaty allows enlargement of the 'territorial waters', it would seem that now most jurists consider that such zones to be

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[233] For a thorough legal analysis see Geir Ulfstein, *The Svalbard Treaty: From Terra Nullius to Norwegian Sovereignty*, (1995), Oslo, Scandinavian University Press, at 34 and Appendix 1.

[234] Footnote 222, supra.

[235] Churchill and Ulfstein, op. cit., at 554 - 555.

[236] Churchill and Ulfstein, op. cit. at 555. Aust argues that the Svalbard Treaty has *erga omnes* effect by meeting all of the requirements for a treaty creating an objective regime: Antony Aust, *Handbook of International Law*, (2005), Cambridge University Press, at 334 - 335. This would strengthen considerably the argument for the Svalbard Treaty being binding on non-parties.

[237] D. H. Anderson, "The Status under International Law of the Maritime Areas around Svalbard, (2007), *a paper read at the Symposium on "Politics and Law – Energy and Environment in the Far North*", held at the Norwegian Academy of Science and Letters on 24 January 2007, at 5 - 6, available at www.dnvano/binfil/download.php/tid=27096;
Churchill and Ulfstein, op. cit., at 557 - 558; Tore Henriksen, "Svalbard's Maritime Zones. The (lack of) jurisdiction of Norway over foreign maritime activities in the waters off Svalbard", (2013), UIO, available at : www.jus.uio.no/nifs.forskning/projekter/sjosikkerhet/ressurser/safety/inthenorth/Svalbard%20Maritime%20Zones.ppt;
A. N. Vylegzhanin and V. K. Zilanov, *Spitsbergen, Legal Regime of Adjacent Marine Areas*, (2007), (William E. Butler, ed.), Eleven International Publishing, at 28 - 30.

"evolutionary" or "ambulatory", and that the definition of what constitutes 'territorial waters' under the 1920 Treaty can evolve with international law.[238]

Indeed, the limits of this territorial sea have changed very gradually since 1920, mirroring changes in international law. In 1970 a Royal Decree established a 4nm outer limit[239] and a mixture of low tide and straight baselines for the territorial sea of Svalbard.[240] There were no formal objections to the use of straight baselines around the archipelago, except for some comments by the United States in 1972 regarding baselines and protruding glaciers and use of straight baselines where according to the coast was merely 'serrated' but not 'deeply indented or cut into' as required by Article 7(1) of UNCLOS.[241]

In 2001 regulations repealing the 1970 decree confirmed the 4nm limit and redefined the coordinates for the basepoints of the territorial sea baselines, specifying the geodetic datum used (EUREF89).[242] Section 2 of the 2003 Act No. 57 then extended the outer limit of the territorial sea of Svalbard to 12nm, in keeping with what a state is entitled to claim under Article 3 of UNCLOS. Not surprisingly, given significantly more hydrographic surveying of Svalbard over a 30 year period, in November 2003 a new set of coordinates defining the outer limits of the territorial sea of Svalbard was communicated to the United Nations.[243] No objections have been recorded regarding either the extension to 12nm or the method employed in determining the outer limit of the territorial sea of Svalbard.

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[238] Churchill and Ulfstein, op. cit., at 582; Fleischer (2007), op. cit., 8; Pedersen and Henriksen, (2009), at 144; Ulfstein (1995), op.cit., at 426 - 427, Anderson, op. cit., at 376; Pederson, (2006), op. cit., at 344 – 346; Caracciolo, op. cit., at 9 - 14. But cf. two Russian writers: Vylegzhanin and Zilanov, (2007), op. cit. at 42 - 57, whose comments were however made before the 2010 Barents Sea Treaty.

[239] There has been an accepted Nordic practice of using 4nm, see: O'Connell, op.cit.. at 457 - 458 and 643 - 645.

[240] Royal Decree of 25 September 1970 concerning the Delimitation of the Territorial Waters of Parts of Svalbard, available at :
www.un.org/depts /los.LEGISLATIONANDTREATIES/PDFFILES/NOR_1970_DelimitationDecree.pdf.

[241] United States Department of State, The Geographer, Straight Baselines Svalbard, Limits in the Seas, No.39, 6 March 1972, at 4 - 5.

[242] Regulations relating to the limits of the Norwegian territorial sea around Svalbard (Royal Decree of 1 June 2001)(1), available at:
www.un.org/depts/los.LEGISLATIONANDTREATIES/PDFFILES/NOR_2001_DecreeTS.PDF.

[243] "List of coordinates of points defining the outer limit of the territorial sea around Svalbard," *Law of the Sea Bulletin,* No. 54, (2004), at 41, available at:
www.state.gov/documents/organization/61539.pdf.

It is noteworthy that in both recent delimitation agreements involving Svalbard and opposite coastal States, the other party has implicitly accepted the territorial sea baselines of Svalbard: Denmark in the *2006 Greenland - Svalbard Boundary Treaty* and Russia in the *2010 Barents Sea Treaty*.[244] The United States, although reserving its position with respect to other maritime zones, has not objected either to the drawing of straight baselines around Svalbard, nor to the extension to 12nm of the territorial sea.[245]

In conclusion it can be said that the Svalbard Treaty is a wonderful example of a poorly conceived and imprecisely drafted international agreement, where subsequent public international law has introduced new concepts and regimes, which it could not have envisaged and now cannot take into account. All these factors combine to leave the Treaty outdated and a potential source of significant international maritime delimitation disputes that may seriously impact on future petroleum projects in the area, as will be discussed below.

4.4.2 The Norwegian Petroleum Regime and title to petroleum located in the seabed of the territorial sea

(i) Petroleum Regime in the Territorial Sea off the Mainland: the Barents Sea/Lofoten Area, Norwegian Sovereignty and Title to Petroleum

The regime for oil and gas development offshore the Norwegian mainland is established under the 1996 Petroleum Act[246] and the 1997 Petroleum Regulations.[247]

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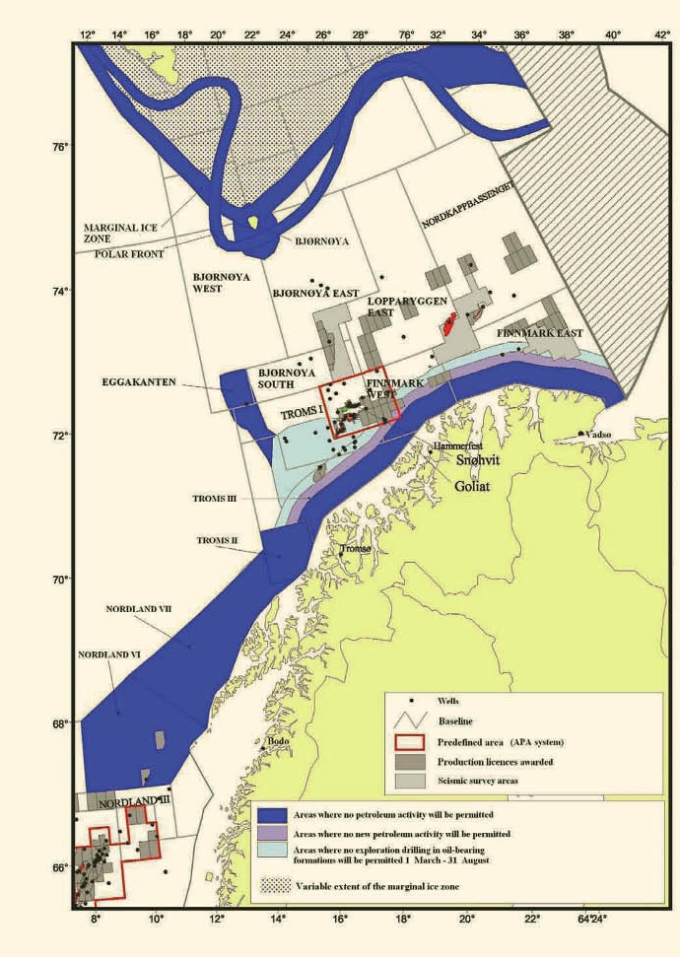
[244] *Agreement between the Government of the Kingdom of Norway on the one hand and the Government of the Kingdom of Denmark together with the Home Rule Government of Greenland on the other hand, concerning the delimitation of the continental shelf and the fisheries zones in the area between Greenland and Svalbard*, 20 February 2006, *UNTS*, Vol. 2378, 1-42887, 21, available at:
www.un.org/doc/Publications/UNTS/Volume%202378/v2378.pdf;
Alex G. Oude Elferink, "Maritime Delimitation Between Denmark/Greenland and Norway", (2007), *Ocean Development and International Law,* Vol. 38, No. 4, 375.
The Treaty between the Kingdom of Norway and the Russian Federation Concerning Maritime Delimitation and Cooperation 2010, (October 2010), available at:
www.regjeringen.no/en/dep/ud/campaign.delimitation/treaty.html?=614006;
Tore Henriksen and Geir Ulfstein, "Maritime Delimitation in the Arctic: The Barents Sea Treaty", (2011), *ODIL*, Vol. 42, No 1 - 2, 1 at 6 - 7.

[245] Torbjorn Pedersen, "International Law and Politics in US Policymaking: The United States and the Svalbard Dispute", (2011), *ODIL,* Vol. 43, No. 1 - 2, 120.

[246] Last amended by Act No. 38, 24 June 2011, available at:
www.ptil.no/getfile.php/Regelverket/Petroleumsloven_e.pdf.

Section 3-3 (Production Licence) of the 1996 Act states: “The licensee becomes the owner of the petroleum which is produced”.

In the context of the geographical limitations of this thesis, this ‘title to petroleum’ is currently academic, as since 2006 there has been a prohibition on all petroleum exploitation activities in a band of sea 35km wide from the territorial sea baseline from the edge of the Troms II acreage around to the Russian border in the Barents Sea.[248]



[247] Royal Decree of 27 June 1997, available in English at: www.npd.no/en/Regulation/Regulation/petroleum-activities/.

[248] Erik Olsen, “Combining sustainable use and biodiversity in MSP – The Norwegian integrated management plans”, (2013), *a presentation to the Swedish Marine Spatial Planning Workshop, 23-24 April 2013*, Slide 6, available at: www.havochvatten.se/download/18.2cf45b7613f6ca957cc55b0/1372751416142/sweden-msp-workshop-Olsen-23-april.pdf.

Figure 4.8: Map showing in blue protected areas in territorial sea offshore mainland Norway[249]

This prohibition was introduced as a result of the Norwegian Integrated Ocean Management Plan 2006[250] (see resultant map of protected offshore areas in Figure 4.8 above). The plan identified this coastal area as particularly vulnerable, environmentally highly sensitive, of particular biological value, and therefore in need of special protection from oil and gas activities.

In fact, there were further restrictions under the 2006 Plan, including no new petroleum activities in the 35-50km band and no drilling between 1 March and 31 August in a 50-65 km band offshore from the Troms *II* petroleum province along the coast to the Russian border.[251] However, in 2010, the Updated Integrated Management Plan for the Marine Environment of the Barents Sea - Lofoten Area[252] amended these restrictions: the 35 - 65km band was opened for petroleum operations, but with date restrictions.[253] These plans, which were advisory, have subsequently been approved by the Storting[254], and are now being implemented through the provisions of the 2008 Marine Resources Act[255], and the Nature Diversity Act 2008, [256] and through the Petroleum Directorate's licencing policy.

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[249] Norwegian Ministry of the Environment, *Integrated Management of the Marine Environment of the Barents Sea and Sea Areas off the Lofoten Islands ("Norwegian Integrated Ocean Management Plan 2006"),* (2006), Report 8 to the Storting (2005 - 2006), available at:
http://www.regjeringen.no/en/dep/kld/documents-and-publications/government-propositions-and-reports-/reports-to-the-storting-white-papers-2/20012002/Report-No-12-2001-2002-to-the-Storting/4.html/id=452101.

[250] Ibid..

[251] Rolleiv Solholm, "Restrictions on petroleum activities in North", (2006), *Norwegian Post*, 31 March 2006, available at:
www.norwaypost.no/index/php/culture/gastronomic/155578.

[252] Norwegian Ministry of the Environment, *First Update of the Integrated Management Plan for the Marine Environment of the Barents Sea-Lofoten Area*, (2010), Meld. St.10 (2010) Report to the Storting (White Paper), available at:
www.regjeringen.no/pages/37878053/PDFS/STM201020110010000EN_PDFS.pdf. The Plan was approved by the Storting on 31 March 2011.

[253] Norwegian Ministry of the Environment, *First Update of the Integrated Management Plan for the Marine Environment of the Barents Sea-Lofoten Area*, Meld. St.10 (2010) Report to the Storting (White Paper), at 137, available at:
www.regjeringen.no/pages/37878053/PDFS/STM201020110010000EN+PDFS.pdf.

[254] The 2006 Plan was approved by the Storting on 31 March 2006 and updated by 'First Update of the Integrated Management Plan for the Marine Environment of the Barents Sea-Lofoten Area, approved on 11 March 2011, provided at:
http://www.regjeringen.no/pages/37878053/PDFS/STM201020110010000EN_PDFS.pdf.

[255] Act No 37. Of 6 June 2008 on the management and conservation of living marine resources ("The Marine Resources Act"), available at:

It has been argued by Hoel[257] and Olsen[258] that the environmental protection provisions of UNCLOS (Part XII), and the various initiatives under conventions and organisations to which Norway is a party or member (conventions such as OSPAR, MARPOL, and the Biodiversity Convention[259], and organisations such as IMO, UNEP, BEAR Council[260], and especially the Arctic Council[261]), and the pressure from various NGO's (such as the WWF[262] and Bellona[263]), have significantly influenced the 2006 Norwegian government approach.[264] This would certainly seem to be the case. The Integrated Management Plan process started with a report from the Ministry of Environment in 2001 entitled "Protecting the Riches of the Sea"[265], after which the Storting decided, in 2002, that the government should prepare an Integrated Management Plan for the Barents Sea, which finally emerged in 2006[266], and was

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www.wipo.int/wipolex/en/text.jsp/file_id=244986.

[256] The Nature Diversity Act, Act No.100, 19 June 2009, relating to the Management of Biological, Geological and Landscape Diversity, available at:
www.wipolex/en/text.jsp/file_id=179529.

[257] Alf Hakon Hoel, "Integrated Oceans Management in the Arctic: Norway and Beyond", (2010), *Arctic Review on Law and Politics*, Vol. 1 No. 1, 186.

[258] Erik Olsen, Herald Gjoseter, Ingolf Rottingen, Are Dommasnes, Peter Fossur, and Per Sanberg, "The Norwegian eco-system based management for the Barents Sea", (2007), *ICES Journal of Marine Science*, Vol.64, No.4, 599.

[259] UN, *Convention on Biodiversity 1992*, available at:
www.cbd.int/doc/lgal/cbd-en.pdf.

[260] On BEAR's influence see:
Olav Schram Stokke, "Sub-regional cooperation of the Arctic marine environment; the Barents Sea", Protecting the Polar Marine Environment, (2000), *Law and Policy for Pollution Prevention*, (David Vitas, ed.), Cambridge University Press, at 124 - 148.

[261] For example, in 2004 the Arctic Council adopted an Arctic Marine Policy Plan calling for ecosystem based oceans management in the Arctic, available at:
www.pame.is/arctic-marine-strategic-plan.

[262] WWF, *The Barents Sea Ecoregion: A Biodiversity Assessment*, (2003), available at:
http://wwf.panda.org/who_we_are/wwf_offices/norway/news/12202/The-Barents-Sea-Ecoregion-A-biodiversity-assessment.

[263] Bellona, *Report on Offshore Oil and Gas Development in Northwest Russia: Consequences and Implications,* (2007), Bellona, 23 November 2007, available at:
http://bellona.org/news/uncategorised/2007-11-offshore-oil-and-gas-development-in-northwest=russia-consequences-and-implications.

[264] Hoel, op. cit., at 189 - 191.

[265] Ministry of Climate and Environment, *Protecting the Riches of the Sea*, (2001), available at:
http://www.regjeringen.no/en/dep/kld/documents-and-publications/government-propositions-and-reports-/reports-to-the-storting-white-papers-2/20012002/Report-No-12-2001-2002-to-the-Storting/4.html/id=452101.

[266] Royal Norwegian Ministry of the Environment*, Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands*, Report No. 8 to the Storting, (2005 - 2006), available at:
www.regjeringen.no/globalassets/upload/md/vedlegg/stm200520060008en_pdf.pdf.

updated in 2011.[267] The Protecting the Riches of the Sea Report reviewed international developments and Norwegian commitments[268], and the 2006 Plan also made similar references.[269] `These Plans all introduce integrated eco-system based management of marine environment[270], as envisaged in the UN Convention on Biological Diversity of 1992.[271]

Thus, it would appear that international environmental law has played a significant role in influencing the Norwegian licencing regime in territorial seas off the mainland of Norway in the Barents Sea/Lofoten Area (under the 2006 Management Plan). Its effect has been to prevent oil companies from developing these mainland coastal areas, thus rendering the issue of good title to petroleum in this part of the Norwegian Arctic territorial sea academic.

(ii) Petroleum Regime in the Territorial Sea off Jan Mayen Island, Norwegian Sovereignty and title to petroleum located thereunder

The 1963 Act relating to Exploration and Exploitation of Submarine Natural Resources[272] applies to Jan Mayen territorial seas (as a consequence of them being Norwegian territorial waters), and under Article 2 of that Act, petroleum located under Jan Mayen's territorial seas belongs exclusively to the State.[273]

However, these rights are now academic, for nearly the whole of Jan Mayen Island and all its offshore waters to the outer limit of the territorial sea were designated in 2010 a Norwegian nature reserve, where petroleum activities are effectively prohibited.[274]

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[267] Royal Norwegian Ministry of the Environment*, Updated Version of the Integrated Management Plan for the Barents Sea – Lofoten Area,* 11 March 2011, available at: http://heinonline.org.ezproxy1.library.usyd.edu.au/HOL/Page?handle=hein.journals/albir40&id=93&collection=journals/albir.

[268] Section 4.1, footnote 265, *supra*, at 10.

[269] Section 2.1, footnote 266, *supra*, at 13.

[270] Geir Ottersen, Erik Olsen, Gro.I van der Meeren, Are Dommasnes and Harald Loehns, "The Norwegian plan for integrated ecosystem based management of the marine environment in the Norwegian Sea", (2011), *Marine Policy,* Vol. 3, 389.

[271] Footnote 259, *supra.*

[272] Available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/NOR_1963_Act.pdf.

[273] Ibid..

[274] See Section 2, Chapter 1 of *Forskrift om fredrung av Jan Mayen naturreservat*, Law No. 1456 of 19 November 2010, available at: http://lovdata.no/dokument/SF/forskrift/2010-11-19-1456.

(iii) Petroleum Regime in the Territorial Sea off Svalbard, Norwegian Sovereignty and title to petroleum located in its subsoil

In terms of petroleum activities, Norwegian "full and absolute" sovereignty over Svalbard and its territorial waters (Article 1 ST) which implies the right to adopt laws and regulations on Svalbard and their enforcement,[275] which is reflected in the provisions of the ST.[276] It has never been challenged that Norway has the right to regulate petroleum activities in the territorial sea off Svalbard.

The most important regulation enacted by Norway for Svalbard is the 1925 Mining Code[277], enacted as Norwegian law under the aegis of Article 8 of the ST. The most relevant provision of the Treaty to petroleum activities is Article 3 of the ST, which states that the nationals of all Treaty Parties shall be admitted "on a footing of absolute equality…to the exercise and practice of all maritime, industrial, mining or commercial operations on land in the territorial waters". Although Article 3 of the ST and the Mining Code generally are not particularly appropriate to the control and management of petroleum exploration and exploitation licensing and other oil and gas activities, the Norwegian government has indicated that it considers that the Mining Code does apply to oil and gas activities.[278] It is highly unlikely, however, that either Articles 3 or 8 of the ST, or the Mining Code, will be ever amended/updated due to the political difficulties that would attend such an attempt.

Under Section 9(2)(d) of the 1925 Mining Code, a licence is required to explore for and exploit minerals in Svalbard's territorial waters. Under the Mining Code, there is a Commissioner of Mines for Svalbard (Section 5(1)), and it is that official who issues the licence (Sections 7 – 12). The right to exploit petroleum issued under such licence can best

[275] Geir Ulfstein, "Spitsbergen/Svalbard", (2012), in *Max Planck Encyclopedia of Public International Law*, (Rudiger Wolfrum, ed.), Oxford University Press, at Section 1, para. 24.
[276] See Article 3 ST: "...subject to the observance of local laws and regulations…".
[277] The Mining Code (the Mining Regulations) for Spitsbergen (Svalbard) laid down by Royal Decree of 7 August 1925 as amended by Royal Decree of 11 June 1975, available in English at: App.uio.no/ub/ujur/oversatte-lover/data/for-19250807-3767-eng.pdf.
[278] The Royal Decree of 25 March 1988 on Safety Measures in the Event of the Exploration and Exploratory Drilling in Strata of Hydrocarbons on Spitsbergen, for example.

be characterised as a *profit à prendre* and thus petroleum title is passed at the moment it is reduced to possession.[279]

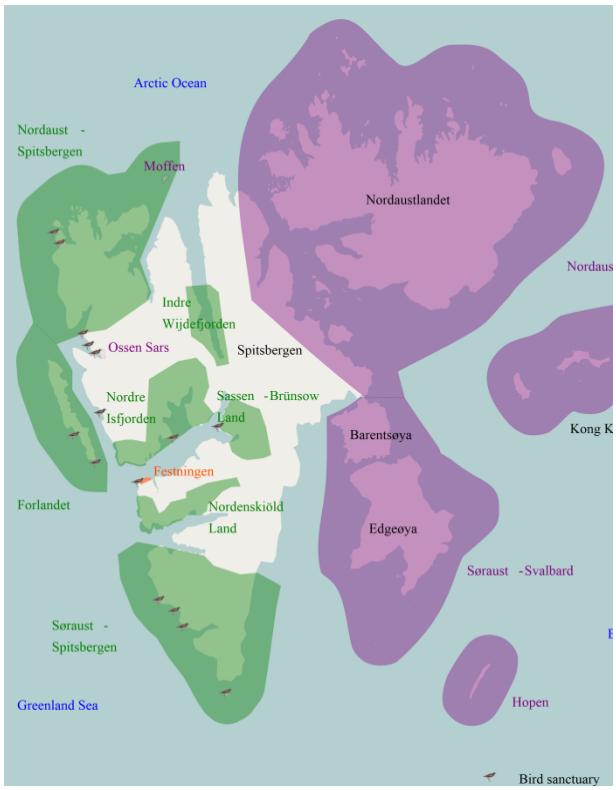

Figure 4.9: Map showing preserved areas in the Svalbard Archipelago[280]

Crucially, however, as with Jan Mayen, most of the Svalbard Archipelago and its territorial sea was declared either a national nature reserve or a nature park in 2002, under the 2012 Svalbard Environmental Protection Law.[281] As a result of this law, the territorial seas of Svalbard are not open to exploration or development.[282] This reflects past and current government policy: for example, a key objective of the Norwegian government's Svalbard

[279] See Article 14(2), Mining Code.

[280] The nature reserves are coloured purple and nature parks are in green. Author: Arsenikk, no permission is required under the Creative Commons Attribution-Share Alike 3.0 Unported licence.

[281] The law was last amended by Act No.20 of 20 April 2012, in accordance with Royal Decree of 20 April 2012.

[282] See Report to the Storting No. 22 (2008-2009), op cit., at 66 and 99. It should be noted that although Norway, under the EEA Agreement, must implement the EU's EIA and SEA Directives, Svalbard was specifically excluded under the EEA Agreement. See: Ida Cathrine Thomassen, *The Continental Shelf of Svalbard: Its Legal Status and Legal Implications of the Application of the Svalbard Treaty Regarding Exploitation of Non-Living Resources*, (2013), a Master's Thesis, University of Tromso, at 14, available at: www.munin.uit.no/bitstream/handle/10037/6168/thesis.pdf/sequence=1.

policy was stated in 2008 as "the preservation of the area's unique natural wilderness",[283] a policy that the Ministry reiterated in 2010.[284] Norway thus would appear to be applying in a rather rigorous way, with respect to Svalbard, its commitments/undertakings under the Convention on Biological Diversity[285] and the principles in the Rio Declaration on Sustainable Development.[286]

International law has played a significant role in the Norwegian government imposing significant restrictions on petroleum activities in the Svalbard's territorial sea, and, due to such restrictions, the issue of title to petroleum produced there remains purely academic.

4.5 Russia

4.5.1 Sovereignty and the territorial sea: General

Russia is a party to both the 1958 GCTSCZ and UNCLOS.[287]

Butler has analysed the history of Tsarist claims with respect to territorial waters[288], and Franckx[289] and Butler[290] have examined in detail the USSR regime, including relative to the Arctic. None of these studies' findings will be repeated here, except where relevant to the current legal analysis.

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[283] Department of Justice and Policy Department, *Report to the Storting on Svalbard*, (2008).St. Meld. Nr. 22 (2008-2009), at 1.

[284] Ministry of Climate and Environment, Report to the Storting (white paper), Meld. St.10 (2010 – 2011), *First Update of the Integrated Management Plan for the Marine Environment of the Barents Sea-Lofoten Area*, available at:
www.regjeringen.no/pages/37878053/PDFS/STM201020110010000EN_PDFS.pdf.

[285] Footnote 259*, supra.*
Norway ratified the Convention on 09/07/1993.

[286] Rio Declaration on Environment and Development, 1992, in particular Principles 2 and 5, available at:
www.unep.org/Document.Multilingual/Default.asp?DocumentID=78&ArticleID=1163.
Norway signed the Agenda and Agreed to the Declaration at the meeting of UNCED in Rio De Janeiro, Brazil, 2 - 14 June 14. See: The Post Sustainability Institute, *The list of nations who attended and agreed to the 1992 Rio Declaration on Environment and Development (Agenda 21),* available at:
www.postsustainabilityinstitute.org/which-nations-signed-agenda-21.html.

[287] It ratified the 1958 GCTSCZ on 22 November 1960 and the 1982 UNCLOS on 12 March 1997. On Russian approach to UNCLOS and Law of the Sea see: A. A. Kovalev, *Contemporary Issues of the Law of the Sea, Modern Russian Approaches*, (2004), (edited and translated by W. E. Butler), Eleven Publishing.

[288] William E. Butler, *The Law of Soviet Territorial Waters, A Case Study of Maritime Legislation and Practice,* (1967), Praeger, Chapter 1, at 1 – 10.

[289] Erik Franckx, *Maritime Claims in the Arctic, Canadian and Russian Perspectives*, (1993), Martinus Nijhoff, 145 - 228.

[290] Butler, (1967), op. cit., Chapter 4, at 27 - 34.

Figure 4.10 Map of Russia

The breadth of the territorial sea claimed by Russia is 12nm, as allowed under Article 3 of UNCLOS. It has been suggested that this breadth has in fact been claimed since a 1909 Tsarist Decree, which established a customs and navigation supervision belt of 12nm[291], and certainly since 1927, when a Law on the State Boundary established a 12nm belt of waters.[292]

Prior to 1960, the USSR (and its jurists) generally used the term "territorial waters"[293] to describe the belt of sea adjacent to the coast where it exercised full sovereignty (subject to "innocent passage" in non-internal waters.) However, the term "territorial sea" was incorporated into Article 3 of the 1960 on the State Boundary[294], and this term has been used in USSR/Russian legislation and international agreements of the USSR/Russia with other states since then.

[291] Decree of 10 December 1909, see: P. D. Barabolia, L. A. Ivanashchenko. D. N.Kolesnik, *Voenno-morskoi mezhdunarodnopravovoi spravochnik,* (Naval International Law Manual), (1966), Voenizdat, Moscow, 215, at 217.

[292] As reported in: Leonard B. Schapiro, "The Limits of Russian Territorial Waters in the Baltic", (1950), *BYIL*, Vol. 27, 439, at 447.

[293] The use of the term was reviewed by Butler: Butler (1967), op. cit., at 27.

[294] The Statute on the Protection of the State Boundary of the Union of Soviet Socialist Republics, of 5 August 1960, *Vedomosti SSSR (1960),* No. 34, Item No. 324. An English translation available at: Butler, (1967), op. cit., Appendix 10, 111 - 125

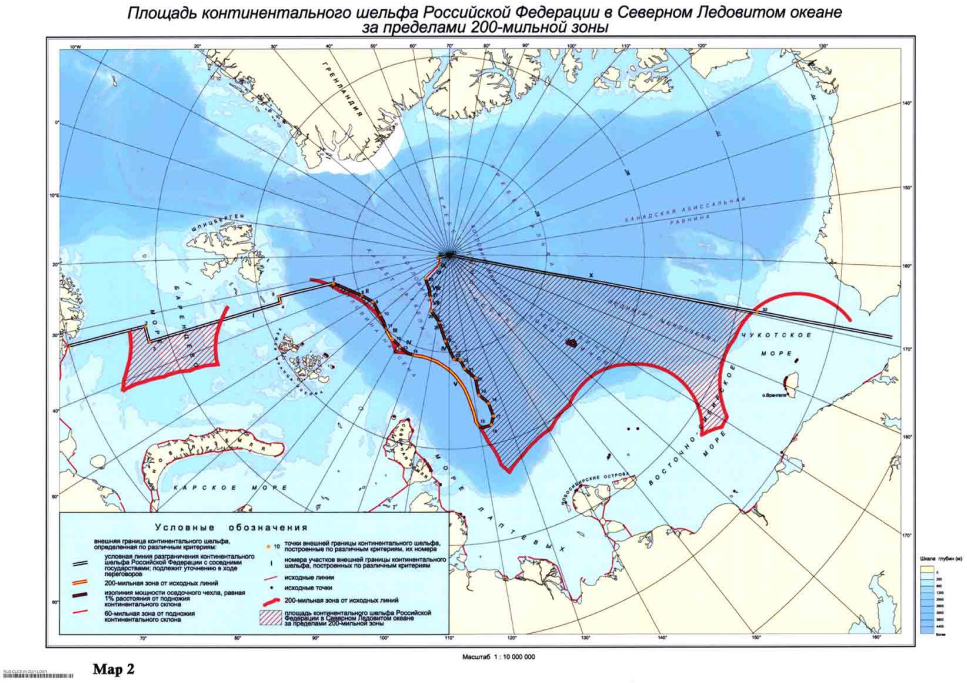

Figure 4.11: Map of the maritime zone of Russia in the Arctic.[295]

Article 2 of the 1998 Law No.155-FZ on the international waters, territorial sea and contiguous zone of the Russian Federation[296], defines the breath, nature and limits of the Russian territorial sea ("Territorial Waters Act"). [297]

In particular Article 2.4 states:

> "The sovereignty of the Russian Federation extends to the territorial sea … and also its seabed and subsoil…"

The fundamental doctrinal document defining the public policy of the Russian Federation regarding maritime areas is the *Maritime Doctrine of the Russian Federation 2020*, approved by President Putin, on 27 July 2001.[298] One of the key issues of the *Maritime Doctrine* is the assertion of sovereignty over Russian maritime zones and (in defining national interests of

[295] © Ministry of Foreign Affairs of the Russian Federation, the Arctic Component of the 2001 Russian Continental Shelf Submission. Public Domain. Posted on the website of the UN Division of Ocean Affairs and Law of the Sea.
[296] As amended by Federal Law No.49m- FZ of 22 April 2003.
[297] Federal Act on the internal maritime waters, territorial sea and contiguous zone of the Russian Federation 1998, ("The Territorial Waters Act"), at: www.un.org/depts/los/LEGISLATIONANDTREATIES?PDFFILES?RUS_1998_Act_TS.pdf.
[298] An English version is available at: www.oceanlaw.org/downloads/arctic/Russian_Maritime_policy_2020.pdf.

Russia in the oceans) it specifically affirms the "inviolability of sovereignty of the Russian Federation covering …the territorial sea …and …the seabed and sea floor.".

The breadth of the Russian territorial sea is to be measured from baselines drawn in accordance with Article 3 of the Territorial Waters Act. The 1971 Statute on the Protection of the State Border incorporated the 12nm breadth of the territorial sea, and introduced the possibility of drawing straight baselines.[299] The 1985 Decree on Baselines[300] defines a mixed system of low-tide baselines and straight baselines around Russia's Arctic coast, and since this Decree has not been superseded it is currently applicable.[301] These straight baselines, *inter alia*, enclose a number of large island groups and straits, which together form part of what is termed the Northern Sea Route.[302] Brubaker has analysed the legal status of these baselines and the Northern Sea Route, and found that most of the Russian coastline delineation is non-controversial and that many of the straight baselines are highly arguable as valid.[303] However, the United States, the key persistent objector[304] since 1985, continues to contest (just) three straits, the Demetri, Laptev and Sannikov (which Russia claims as historic waters[305]), claiming them to be international straits and not internal waters.[306] If the United States' approach is correct then the three straits would be primarily territorial seas with small areas of EEZ/high seas. In 2012, the Russian Duma passed the Law on the

[299] Edict of 10 June 1971, On the Introduction of Modification to the Statute on the Protection of the State Border of the USSR, 24 V.V.S. 254 (1971).an English translation available in: W. Butler, "New Soviet Legislation on Straight Base Lines", (1971), *ICLQ*, Vol. 20, 780, at 781. Up to 1971 the USSR adhered to a system of normal baselines - for example the 1960 Statute on the Protection of the State Border.

[300] Decree of 15 January 1985, Declaration 4450, available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1985_Declaration.pdf.

[301] For discussion on Russian classification of internal waters and territorial sea, see: W. E. Butler, "Soviet Maritime Jurisdiction in the Arctic", (1972), *Polar Record*, Vol. 16, 418; A.J. Kolodkin and M. E. Volosov, "The Legal Regime of the Soviet Arctic: Major Issues", (1990), *Marine Policy*, Vol. 14, 163; W. Ostreng. The Soviet Union in Arctic Waters, (1987), Law of the Sea Institute, Honolulu; I. V. Stepanov and P. Orebech, *Legal Implications for the Russian Northern Sea Route and Westward in the Barents Sea*, (2005), Fridtjof Nansen Institute; Oran R. Young, *Arctic Politics: Conflict and Cooperation in the Circumpolar North* , (1992), Dartmouth College, Hanover, London.

[302] For a useful historic examination of the legal aspects of the Northeast Arctic Passage see: W. E. Butler, *Northeast Arctic Passage*, (1978), Martinus Nijhoff, especially Chapter 4, at 92 - 127.

[303] Brubaker, (1999), op. cit., 207 - 214.

[304] On the legal effect of persistent objection see: Ted Stein, "The Approach of a Different Drummer: The Principle of the Persistent Objector in International Law", (1985), *Harvard International Law Journal,* Vol. 26, No. 2, 457; Holning Lau, "Rethinking Persistent Objector Doctrine in International Human Rights Law", (2005), *Chicago Journal of International Law*, Vol. 6, 495; J. Charney, "The Persistent Objector Rule and the Development of Customary International Law", (1985), *BYIL,* Vol. 56, No.1, 1.

[305] Brubaker, op. cit., at 34 - 35.

[306] Roach and Smith, op. cit., at 53.

Northern Route, in which it establishes rules for transit through the Northern Sea Route.[307] Although these rules have been observed by most major insurance companies and accepted by shipping companies (even some state owned shipping companies such as the state owned COSCO), their legality has been refuted by the United States - Laruelle suggests that the US rationale behind the refutation is that acceptance of the rules "would be tantamount to recognising Russian sovereignty beyond its territorial waters".[308] *Ex facie* this view of the three straits with ice-covered coasts would, however, appear at odds with United States' general acceptance of Article 234 of UNCLOS.[309] Brubaker states that "[r]egarding the balance between Article 234 and international straits LOSC Part III regimes, probably the international straits regime would dominate *theoretically*".[310] Although this view is probably correct, it is, however, only so if the United States approach that the three straits are international straits is also correct which, as raised above, is by no means certain.

It should also be recalled that the United States' concern is with regard to transit passage through these straits, and not in respect of Russian rights over its territorial waters and EEZ and natural resources located thereunder. Thus, this debate is somewhat academic for the key issue of this thesis, as, in all these (straits) areas, Russia would have sovereign rights to explore for and exploit the natural resources located in the seabed of these straits, which would, under the United States' approach, be either Russian territorial sea or EEZ.

Despite being party to numerous human rights treaties that are relevant to a greater or lesser extent to ethnic minorities, Russia has not ratified most of the treaties addressing

[307]"Zakon O vnesenii izmenenii v otdel'nye zakonodatel'nye akty RF v chasti gosudarstvennogo regulirovaniiantorgovogo moreplavaniia v akvatoriii Severnogo morskogo puti' (Law 'On the inclusion of charges in separate legislative acts of the Russian Federation in part of the state regulation of commercial navigation in the waters of the Northern Sea Route', of 28 July 2012, *Rossiiskaia Gazeta,* 30 July 2012, available at:
http://www.rg.ru/2012/07/30/more-dok.html.

[308] Mariene Laruelle, *Russia's Arctic Strategies and the Future of the Far North*, (2014), M. E. Sharpe (Armock, N. Y.), at 72. Some 48 reportedly transitted the NE passage in 2013. The Chinese ship that transited (round trip) the NE Passage in 2013 and 2015, the Yong Sheng, although a commercial vessel, is fully owned by COSCO, a state-owned major shipping company. Moreover, in November 2010 a commercial agreement on long term cooperation on Arctic shipping in the NE Passage was agreed between Sovcomflot and the state owned China National Petroleum Corporation. These actions can be argued to imply implicit Chinese government acceptance of the Russian transit rules. See: Alber Buixade Farré, Scott R. Stephensen, Linling Chen, Michael Czub, *et al*, "Commercial Arctic shipping through the Northeast Passage: routes, resources, governance, , and infrastructure", (2014), *Polar Geography,* Vol. 37, No. 4, 298.

[309] Brubaker, op. cit., at 61.

[310] Brubaker, op. cit., at 188 and 189.

self-determination of peoples, or indigenous peoples' rights of use and/or ownership over lands and natural resources.[311] Like Canada and the United States, Russia has neither ratified the *ILO Convention Concerning Indigenous and Tribal Peoples in Independent Countries 1957* [312], which provides for the right to *control and use* the land, water and natural resources upon which retention their cultures depend, nor the *ILO Convention on Indigenous and Tribal Peoples 1989*[313], which addresses the issue of territorial ownership (Articles 2, 5, 13, and 14). Moreover Russia abstained from voting on UNDRIP.[314]

This negative approach has been followed despite the fact that under Article 69 of the Russian Constitution the Russian Federation guarantees the rights of indigenous peoples in compliance with universally recognized principles and norms of international law and Treaties concluded by the Russian Federation. Specifically, the jurisdiction of the Russian Federation includes the regulation and protection of the rights of "national minorities" under Article 71 of the 1993 Constitution[315], and, under Article 72, it shares jurisdiction with the eighty nine sub-federal units (such as republics or regions), for "protection of the rights of ethnic minorities", which includes areas relating to "…possession, use, and management of land, mineral resources, water and other natural resources".

On the other hand, it is on this constitutional basis that Russia has enacted several laws relating to the protection of "numerically small peoples of the Russian Federation", and, in particular, those located in the North, Siberia and the Russian Far East. This legislation includes:

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[311] Mariya Riekkinen, "Participatory Rights of Russia's Indigenous Peoples Regarding Land Issues", (2011), *Issues of Business and Law,* Vol. 3, 110, at 112.

[312] International Labor Organization, Convention Concerning the Protection and Integration of Indigenous and Other Tribal and Semi-tribal Populations in Independent Countries, ("*ILO Convention Concerning Indigenous and Tribal Peoples in Independent Countries"),* (1957), Convention No. 107, available at: www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:P12100_INSTRUMENT_ID.312252:NO. Article 14 recognises indigenous right over land.

[313] International Labor Organization, Convention on Indigenous and Tribal Peoples, ("*1989 ILO Convention on Indigenous and Tribal Peoples"),* (1989), Convention No.169, available at: www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0:NO::P12100_ILO_CODE:C169.

[314] Available at: http://untreaty.un.org/cod/avl/ha/ga+61-295/ga_61-295.html.

[315] The Constitution of the Russian Federation, 1993, available in English at: www.constitution.ru.en/10003000-0.1.htm.

- the Federal Law on the Guarantees of the Rights of Indigenous Numerically Small Peoples of the Russian Federation 1999[316];

- the Federal Law on the Basic Principles of Community Organisation of Indigenous Numerically Small Peoples of the North, Siberia and the Russian Far East[317], and

- Federal Law on the Territories of Traditional Environmental Management of Indigenous Numerically Small Peoples of the North, Siberia and the Far East of the Russian Federation[318].

In addition to these specific pieces of legislation, general legislation also has been drafted or amended to give indigenous peoples further rights (e.g. the Forest and Water Codes and the Federal Law on the Animal World[319]).

Bowring however cautions: "What appears to be a flawless scheme of protection must be treated with skepticism".[320] It would appear that the implementation of these laws is poor and that there have been recent laws and amendments that impact adversely indigenous peoples and the rights granted under the specific legislation.[321]

The most important legislation in regard to indigenous rights to resources is the 1999 *Federal Law on Guarantee of Rights of Numerically Small Peoples of the Russian Federation*[322], which grants certain usufructuary rights, but so far none of this legislation has indicated any willingness on the part of the Russian federal government to transfer ownership rights of either the land or the subsurface natural resources to indigenous peoples[323] - moreover none of the laws have offshore application.

[316] No. 82-F3, 30 April 1999, as amended on 22 August 2004.
[317] No. 104-F3,20 July 2000, as amended 21 March 2002 and 22 August 2004.
[318] No. 49-F3, 7 May 2001.
[319] Bowring lists such laws and describes the specific indigenous rights provisions therein: B. Bowring, "Russian legislation in the area of minority rights", (2013), *Managing Ethnic Diversity in Russia*, (Oleh Protsyk and Benedikt Harzl, eds.), Routledge, Chapter 1, 15, at 31 – 32.
[320] Ibid., at 32.
[321] See para. 27, Concluding Observations of 24 November 2009 of the Human Rights Committee, available at: www.dacess-dds-ny.un/doc/UNDOC/GEN/G09/465/50/PDF/G0946550.
[322] Law of the Russian Federation, On Guarantees of Rights of Numerically Small Peoples of the Russian Federation, (1999), Russian Federal Law No. 82-F3, 30 April 1999, *Mir Korennykh Narodov Zhivaya Arktika*, 3 (2000): 24 - 26.
[323] Gail Osherenko, "Indigenous rights in Russia: is title to land essential for cultural survival?," (2001), *Georgetown International Environmental Law Review,* Vol. 13, 695; Riekkinen, op. cit., at 113 - 114; Gail Fondahl, Olga Lazebnik, Greg Poelser, and Vasily Robbek, "Native 'Land Claims', Russian Style", (2001), *The Canadian Geographer*, Vol. 45, No. 4, 545, at 548 – 549.

As Andreyeva and Kryukov point out, despite the fact that the 2001 Federal Law on Territories of Traditional Nature[324] creating the legal basis for the creation of protected areas came into effect in May 2001, to date not one such reserve has been approved by the federal government under that law.[325] They also note the ineffective lobbying for rights by the Russian Association of Indigenous Peoples of the North ("RAIPON")[326] and conclude that there has been a virtually total failure of the federal government to implement the federal laws adopted between 1999 and 2001.[327] This is a view echoed by many analysts and the UN Rights Committee in 2009.[328]

Riekkinen has examined three recent cases in Russia where indigenous peoples claimed land rights, and in all three cases the courts concluded that the interests of oil extraction have priority over traditional indigenous use/rights.[329]

In conclusion it appears that:

[324] Federal Law of the Russian Federation, About the territories of the traditional natural management of the indigenous small people of the North, Siberia and the Far East Russian Federation, No 49 – FZ, 7 May 2001, available at:
http://cis-legislation.com/document.fwx?rgn=1482.
[325] Andreyeva and Kryukov, op. cit., at 271.
[326] Founded as a NGO in 1990. See: Marjorie Mandelstam Balzer, "Endangered Communities? The Politics of Endangered Peoples in Siberia", a presentation to the Kennan Institute, Woodrow Wilson Centre Washington (2013), 28 January 2013, summary at:
www.wilsoncenter.org/publication/endangered-communities-the-politics-indigenous-peoples-siberia;
Ryan Allen Hallsten, "Indigenous Diplomacy, in the Russian Federation: RAIPON's Relationship with the Russian Federal Government", (2014), *Research Paper, University of Alaska*, Fairbanks, presented 13 December 2014, available at:
https://ps669.community.uaf.edu/files/2014/12/RAIPON-Research-Paper.docx;
Tamara Semenova, "Russian Indigenous Peoples of the North as Political Actors", (2008), a *guest lecture at the Arctic Centre University of Lapland,* 8 December 2008, available at:
www.arcticcentre.org/loader.aspx?id=e35b5282-1275-4c0b-beef-d2654ce3cfff.
[327] Ibid., at 270; See Fondahl *et al*, op. cit., at 548: "Most of the aboriginal representative with whom we talked (1997 -1999) praised the evolving law and damned the lack of its enforcement"; See also D. Bogoyavlenskiy and O. Murashko, "Indigenous Peoples of the North: results of the 2002 general census and political situation", (2004), *Indigenous Peoples' World – Living Arctic*, Vol. 15, available at:
http://ansipra.npolar.no/english/Items?census02.html.
[328] UN Human Rights Committee (CCPR), Concluding Observations of 24th November 2009, CCPR/C/RUS/CO/6available, para.28 at:
http://daccess-dds-ny.un.org/doc/UNDOC/GEN/G09/465/50/PDF/G0946550. This concern was further elaborated in 2013 by the Committee on the Elimination of Racial Discrimination (CERD), Concluding Observations of 17 April 2013, at para. 20, available at:
ww2.ohchr.org/English/bodies/cerd/docs/co/CERD.C.RUS.CO.20-22.English.doc.
[329] Riekkinen, op. cit., at 111 - 113; Osherenko 715 - 718.

- Russian law regarding the rights of indigenous people in Russia and land is (very) slowly evolving, but is currently extremely limited in scope[330];
- There is also a failure of implementation of that legislation at the federal level of government and even through the judicial system[331]; and most importantly,
- Russian legislation does not provide the indigenous people with any right of ownership or property rights (titular or usufructuary) to subsurface natural resources offshore.[332]

General Conclusions:

(1) Russia has not granted to its indigenous peoples in the Arctic either title or usufructuary rights to offshore seabed resources, (2) there has been no offshore devolution to regional bodies/governments and (3) thus, such rights remain exclusively at the federal Russian government level.[333]

International law of the sea was crucial in establishing Russian sovereignty over the territorial sea and petroleum located there. Other international law, in particular that

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[330] See, for example:

- Federal Law on National and Cultural Autonomy of the Russian Federation, Sobrainie Zakonodatelstva Rossiyskoy Federacii, 1999, No. 18 - 2208
- Federal Law on General Principle of Organization of Obshchinas of Indigenous Numerically Small Peoples of the North, Siberia, and the Far East of the Russian Federation, Sobrainie Zakonodatelstva Rossiyskoy Federacii, 2000, No. 30 - 3122.
- Federal Law on the Territories of Traditional Nature Use by Indigenous Numerically Small Peoples of the North, Siberia, and the Far East of the Russian Federation, Sobrainie Zakonodatelstva Rossiyskoy Federacii, 2001, No. 20 - 1972.
- Resolution on the Measures of the Establishment of the Territories of Traditional Nature Use by indigenous Numerically Small Peoples of the North, Siberia, and the Far East by the Council of Federation of the Federal Assembly of the Russian Federation, Sobrainie Zakonodatelstva Rossiyskoy Federacii, 2003, No. 40 - 3839.
- Federal Decree on the concept of sustainable development of indigenous peoples of the North, Siberia, and the Far East of the Russian Federation, Sobrainie Zakonodatelstva Rossiyskoy Federacii, 2009, No. 7, 876.

All these laws are available in from: www.government.ru. English translations can be obtained as part of a subscription service by Garant at: English.garant.ru/legislation/.

[331] Riekkinen, op. cit., at 118 - 119; and Osherenko at 727 - 728.

[332] Ibid..

[333] For useful studies of the issues regarding the restricted scope of RF laws and failure to properly implement these laws see: Indra Overland, "Indigenous Rights in the Russian North", (2009), in *Russia and the North*, (Elena Wilson Rowe, ed.), University of Ottawa Press, Chapter 7, at 165 – 185; Anna A. Sirina, "Oil and Gas Development in Russia and Northern Indigenous Peoples",(2009), in *Russia and the North*, (Elena Wilson Rowe, ed.), University of Ottawa Press, Chapter 8, at 187 - 202.

relating to devolution and self-determination, indigenous peoples rights, and the environment has had little impact on this sovereignty, its effective implementation into Russian law, and the transfer to the oil company of title to petroleum it produces in the Russian territorial sea.

4.5.2 The Russian Petroleum Regime and title to petroleum located in the seabed of the territorial sea

(i) Russian Petroleum Licencing Regime

This subsection will show that the Russian oil and gas regime provides a clear chain of transfer of title to petroleum to an oil producer in its territorial seas.

The 1998 Federal Act on the Internal Maritime Waters, Territorial Sea and Contiguous Zone of the Russian Federation ("Territorial Waters Act") is currently in force.[334] Article 2.1 of this Act defines the territorial seas of the Russian Federation as:

> "…the sea belt adjacent to the land territory or internal maritime waters, whose breadth is 12 nautical miles measured from the baselines referred to in article 4…"

Article 4 defines a mixed baseline regime of low tide water line and straight baselines. Some of the basepoints of straight baselines in the Russian Arctic are legally questionable, having been located on ice formations that have subsequently melted, putting that section of the delineation of territorial sea baseline into question.

Importantly Article 2.4 states that:

> "[the] sovereignty of the Russian Federation extends to the territorial sea…and also its seabed and subsoil…".

The legal regime for petroleum exploration and exploitation in the Russian Federation is set out in the 1993 Subsoil Law[335] and the 1995 Production Sharing Law.[336] The Subsoil Law

[334] The Federal Law on Internal Waters, Territorial Sea and Contiguous Zone, No. 155 - FZ, of 17 July 1998, available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1998_Act_TS.pdf.
The United States has been a persistent opponent of the claims of Russia in respect of internal waters and straight baselines – but since 2013, in respect of the Arctic, such opposition is limited to three straits - the Dimitri, Laptev, and Sannikov - see: Roach and Smith, op, cit., at 53.

regime has been much analysed[337] and criticised for its extremely bureaucratic approach.[338] However, the Petroleum Sharing Agreement ("PSA")[339] regime failed to resolve the complexities of the Subsoil Law regime, since subsoil licences are still required to be obtained. The limited effectiveness of the PSA Regime has been discussed extensively in the literature[340], and only three PSAs have to date reached production stage (Sakhalin I, Sakhalin II, and Kharyaga field), each of which was required to obtain an average of 15,000 permits in order to start operations.[341] Since the use of PSAs anywhere else in Russia is highly unlikely, being unpopular both with investors and the Russian petroleum agencies,[342]

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[335] Law of the Russian Federation, *On Subsoil*, No. 2395-1, of 21 February 1992 (as amended) An English version is available at:
http://cis-legislation.com/document.fwx?rgn=1494.

[336] Law of the Russian Federation, *Production Sharing Agreements*, No. 225-FZ of 30 December 1995, English translation available at:
LEXIS, IntLaw Library, RFLaw File, Garant 10005771, http://english.garant.ru/legislation.
Martin Frederich and Thomas Walde, "Russian Federation: Law on Production Sharing Agreements", (1996), *ILM*, Vol. 35, 1253; Chris Ferguson, "Russian Law-Production Sharing Agreements", *Petroleum Review*, Vol. 50, 60; Petra Hirsch, "The Russian Law on Production-Sharing. A Breakthrough for PSAs", (1997), *World Fiscal Systems for Oil and Gas 1997*, Barrows Company Inc., at 21, available at:
www.dundee.ac.uk/cepmlp/gateway/files.php?file=car1_PHIRSCH_294589262.pdf; Andrei Konoplyanik, "The Russian Production Sharing Agreement", (1996), *OGEL*, Vol. 14, 314;

[337] Natalia Morozova, "Subsoil Law", (2009), *Corporate Counsel's Guide to Doing Business in Russia,* 2nd Edn., Thomson/Reuters, (May 2009), Chapter 20, 685.

[338] See for example: Anna Shutga, "Financial Investment in Russia's Oil and Gas: Legal Framework and Lessons for the Future", (2001), *University of Pennsylvania Journal of International Law*, Vol. 74, No.4, 1067;
J. W. Skelton Jnr., "Investing in Russia's Oil and Gas Industry: The Legal and Bureaucratic Obstacles", *Natural Resources and Environment*, Vol. 8, 26.

[339] Very useful studies on the nature and history of petroleum sharing agreements are: Allen and Overy, *Guide to Extractive Industries Documents – Oil and Gas*, (2013), World Bank Institute Governance for Extractive Industries Programme, January 2013; Kirsten Bindemann, *Production-Sharing Agreements: An Economic Analysis*, (1999), WPM 25, October 1999, Oxford Institute for Energy Studies.
A 2005 special edition of OGEL on Petroleum Sharing Contracts also provides several useful articles: OGEL, *Production Sharing Contracts*, (2005), Special Edition, Volume 3, No. 1, March 2005, available at:
www.ogel.org.

[340] Ian Rutledge, *The Sakhalin II PSA- a Production 'Non-Sharing Agreement': Analysis of Revenue Distribution,* (2004), a Report for WWF et al, Sheffield Energy and Resource Information Service, November 2004, available at:
www.carbonweb.org/documents/SakhalinPSA.pdf;
Mark A. Stoleson, "Investment in an Impasse: Russia's Production Sharing Agreement Law and Continuing Barriers to Petroleum Investment in the Russian Federation", (1997), *Duke Journal of Comparative and International Law,* Vol. 7, 671;

[341] Marina Mikhilyukova, "The PSA Patron", (2001), *Russian Petroleum Investor*, (September 2001), at 13.

[342] Kaj Hober, "Does Russia need Production Sharing Agreements?", (2013), *Transnational Dispute Management,* Vol. 4, available at:
www.transational-dispute-management.com;
Johannes Rath, "Production-Sharing Agreements in the Russian Federation", (2005), *OGEL*, (March 2005), Vol. 3, No. 1.

there is not even a remote chance that the PSA regime, unless significantly modified and streamlined, will be applied to Arctic development, given its strategic importance.

Currently only state owned companies can be awarded offshore Arctic licences[343], and only licences under the Subsoil Law have been issued, but, in 2012, the RF government did consider allowing western companies to be 'co-owners' of exploration and exploitation licences in Arctic Waters[344]. It would seem that the Ukrainian crisis has put a stop, at least for the moment, to any such liberalisation.[345]

For the foreseeable future, only the Subsoil Law is relevant to licencing offshore in the Arctic. Article 1.2 of the Subsoil Law states that the subsoil of the territory of the Russian Federation and the minerals contained therein are 'state-owned property'. Article 2.1 (3) states that there is 'Federal ownership' of the internal waters, territorial sea and continental shelf of the Russian Federation. Thus, under the Territorial Waters Act and Subsoil Law the federal state owns the petroleum located under the seabed of the territorial sea, and there are no other potential claimants.

Article 11 of the Subsoil Law defines a licence issued by federal authorities under the Act and Article 12 states that the licence will have provisions granting "the property right to the produced (mined) mineral raw material". Both the licences and the licence agreements of Rosneft and Gazprom do contain such provisions.[346]

Joint venture agreements ("JVAs") between the state owned oil companies and the western companies with respect to specific fields will then contain provisions transferring to the partner western companies ownership of the proportion of petroleum produced agreed

[343] As discussed in Chapter 6 .

[344] Guy Chazan, "Russia Moots Arctic Oil Licences for West", (2012), *Financial Times, (*5 October 2012), available at:
www.ft.com/intl/cms/s/0/19b4ae-0e18-11e2-8d92-00144feabdc0.html#axzz28OijdDyy;
Thomas Fenton Krysiek, "Agreements from Another Era, Production Sharing Agreements in Putin's Russia 2000 - 2007", (2007), Oxford *Institute for Energy Studies*, Working Paper No.34, (November 2007).

[345] Andreas Kuersten, "Russian Sanctions, China, and the Arctic", (2015), *The Diplomat*, 03 January 2015, available at:
http://thediplomat.com/2015/russian-sanctions-china-and-the-arctic/.

[346] See examples of subsoil licences and licence agreements available from Barrows Company Inc., at:
www.barrowscompany.com

under the JVAs, or more commonly, a joint venture company will be created, which will own the produced petroleum, and then transfer to the various shareholders the ownership of the petroleum produced, in the proportion of their shareholdings.[347]

4.6 United States

4.6.1 *United States Sovereignty, Alaska, and the territorial sea*

Although the United States has signed UNCLOS, it has not acceded to the treaty. Articles 2 and 3 of UNCLOS are considered by the United States to be customary international law.[348] The United States, in keeping with these provisions, defines the territorial sea as "the belt of water immediately adjacent to the coast of the nation".[349] It considers that a nation has sovereignty over the territorial sea and its seabed, in keeping with Article 1 of the 1958 GCTSCZ, to which it is party, and Article 2 of UNCLOS. [350]

President Washington first proclaimed a 3nm territorial sea for the United States in 1793[351], and the breadth of the US territorial sea remained 3nm until 1988, when the United States claimed a 12nm territorial sea (consistent with Article 2 of UNCLOS) by Presidential Proclamation.[352] The authority of the President to make such a proclamation was initially questioned by the Congress and was analysed in some depth by the Justice Department, but it was concluded that he did have such power.[353]

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[347] A recent such arrangement is described in outline in: Vladimir Soldatin, "Update - Russia lets China in on East Siberia oil Production", (2013), *Reuters*, 18 November 2013), available at: http://uk.reuters.com/article/2013/10/18/rosneft-cnpc-jv-idUKL6N0I80K520131018.

[348] See: NOAA, Office of the General Counsel, *Maritime Zones and Boundaries, Territorial Sea,* (downloaded 1 July 2015), available at: www.gc.noaa.gov/gcil_maritime.html#territorial.

[349] The American Law Institute, *Restatement (Third) of the Foreign Relations Law of the United States*, Sec. 511(a) (1987) ("Third Restatement").

[350] Ibid., Sec . 511(b).

[351] Douglas W. Kmiec, Acting Assistant Attorney General, Office of Legal Counsel, U.S. Department of Justice, *Memorandum for Abraham D. Sofaer, Legal Advisor, Department of State, of 4 October 1988, Re: Legal Issues Raised by the Proposed Presidential Proclamation to Extend the Territorial Sea,* at 6, available at: www.gc.noaa.gov/documents/100488-doj-legal.pdf.

[352] Proclamation of the President of the United States of America, Ronald Reagan, No. 5928 of 27 December 1988, *Federal Register*, Vol. 54, No. 5, 9 January 1989, at 777, available at: www.gc.noaa.gov/documents/terr_sea_54_fr_777.pdf.

[353] Ibid, at 36.

The domestic effect of this extension created a minor complexity in the offshore jurisdictional division between Federal and State authorities. Pre-proclamation the states of the United States had for decades held jurisdiction over the then 3nm territorial sea zone adjacent to the state due to provisions of the 1953 Submerged Lands Act ("SLA").[354] Under the Outer Continental Shelf Lands Act 1953 ("OCSLA")[355], the Federal United States had jurisdiction beyond the boundary of the states over the maritime zones of United States defined under international law.[356] This right was retained after the proclamation extending the breadth of the territorial sea.[357] Thus, states of the United States generally have jurisdiction over 3nm from their officially recognised coast (territorial sea baseline)[358] and the Federal United States has jurisdiction over the territorial sea beyond 3nm.[359] This division of jurisdiction was examined in an earlier series of Supreme Court judgments, when some of the states attempted to challenge the federal jurisdiction over the territorial sea area between the end of the state jurisdiction and the limit of the territorial sea (i.e. generally between 3-12nm).[360]

[354] 43 U.S. Code Chapter 29 – Subchapter II-Submerged Lands, # 1311 - 1313, available at: www.law.cornell.edu/uscode/text/43/chapter-29.
[355] 43 U.S. Code Chapter 29 – Subchapter III – Outer Continental Shelf Lands, #1331 -1356a.
[356] Ibid, at #1332. W. M. Christopher, "The Outer Continental Shelf Act: Key to a New Frontier", (1953), *Stanford Law Review*, Vol. 6, 23 at 28 - 31.
[357] Kmiec, op. cit., at 26 -28.
[358] The exceptions being Texas and Florida with 9nm.
[359] With the extension of the width of the territorial sea from 3nm to 12 nm such a federal arrangement is not unique, Australia also has a very similar arrangement established under the Coastal Waters (State Powers) Act 1980, Coastal Waters (Northern Territory Powers) Act 1980 and the Petroleum (Submerged Lands) Act 1967.
[360] See: *United States v. California*, 332 U.S.19 (1947); *United States v. Louisiana,* 39 U.S. 699 (1950); *United States v. Texas*, 339 U.S. 707 (1950); and *United States v. Maine,* 420 515 (1975).

Figure 4.12: Map of Alaska showing the Arctic Ocean and seas[361]

Section 6 (m) of the Alaska Statehood Act 1958[362] applied the SLA to the state of Alaska, and granted Alaska "the same rights as do existing States thereunder". Within their offshore boundaries, under OCSLA coastal states have:

> "(1) title to and ownership of the lands beneath navigable waters within the boundaries of respective states, and (2) the right and power to manage, administer, lease, develop, and use the said lands and natural resources".[363]

Thus, Alaska has rights (including title) out to the 3nm in the Arctic territorial sea of the United States, and in particular it has rights to the seabed of the territorial sea and the natural resources therein, which it can develop subject to any overriding Federal legislation (which would be primarily relating to environmental protection[364] and national security).[365]

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[361] ©Freeworld maps. No permission required see: www.freeworldmap.net.

[362] Of 7 July 1958, available at: http://avalon.law.yale.edu/20th_century/ak_statehood.asp.

[363] OCSLA, footnote 355, *supra,* at # 1331.

[364] For example: The Coastal Zone Management Act, as amended by the Energy Policy Act 2005, 16 U.S.C. ## 1451 - 1465, available at: http://coastalmanagement.noaa.gov/about/czma.html. This Act encourages (through *inter alia* federal grants) coastal States to protect their coastal zones and have integrated management plans for these zones which include territorial seas under State jurisdiction, and to coordinate these plans with federal programs. See: David A. Streubel, "Reappraisal of State Interests in Outer Continental Shelf Leases Under the Coastal Zone

Beyond 3nm from the coast of Alaska, under domestic law, the Federal United States has sovereign rights over the territorial sea, its seabed and the natural resources located thereunder.[366] Note therefore that within the territorial sea of the United States both the federal and state authorities have title to the petroleum *in situ* in their respective areas.[367]

4.6.2 The United States and Alaskan Petroleum Regimes and title to petroleum located in the seabed of the territorial sea[368]

Management Act: Secretary of Interior v. California (104 S. Ct 656)", (1985), *Urban Law Annual: Journal of Urban and Contemporary Law*, 277.

[365] For example: The Naval Petroleum Reserve Act 1976, (42 U.S.C. 6501), available at: http://www.gpo.gov/fdsys/pkg/STATUTE-90/pdf/STATUTE-90-Pg303.pdf. Under this Act the NPR-A was created. See the Institute of Energy Research's Fact Sheet on the NPR-A, available at: http://instituteforenergyresearch.org/wp-content/uploads/2012/10/National-Petroleum-Reserve-Fact-Sheet-DRS-1-2.pdf.

[366] OCSLA, footnote 355, *supra*, at ## 1331 - 1333.

[367] Unlike the situation for the federal United States in its EEZ or continental shelf zones, where under Article 56(1) and 77 of UNCLOS it only has the exclusive right to explore for and exploit petroleum located in the seabed and subsoil of these zones.

[368] This section has been based on information contained in the following comprehensive analyses:
Robin Kundis Craig, "Treating Offshore Submerged Lands as Public Lands: A Historical Perspective", (2013), *Public Land and Resources Law Review*, Vol. 34, 51; Michael Crommelin, "Offshore Oil and Gas Rights, A Comparative Study", (1974), *Natural Resources Journal*, Vol. 14, October 1974, 457; Robert B. Krueger, "The Development and Administration of the Outer Continental Shelf Lands of The United States", (1968), *Rocky Mountain Mineral Law Institute,* Vol. 14, 643; Robert B. Krueger, "An Evaluation of the Provisions and Policies of the Outer Continental Shelf Lands Act of the United States", (1970), *Natural Resources Journal*, Vol. 10, 763; Aaron L. Shalowicz and Michael W. Reed, "Chapter 2: Outer Continental Shelf Lands Act: 21 General Statement", (1962), *Shore and Sea Boundaries*, Vol. 1, NOAA, at 181 - 200; Adam Vann, *Offshore Oil and Gas Development: Legal Framework*, CRS Report for Congress, 25 June 2013. No. 7-5700, available at: www.crs.gov.

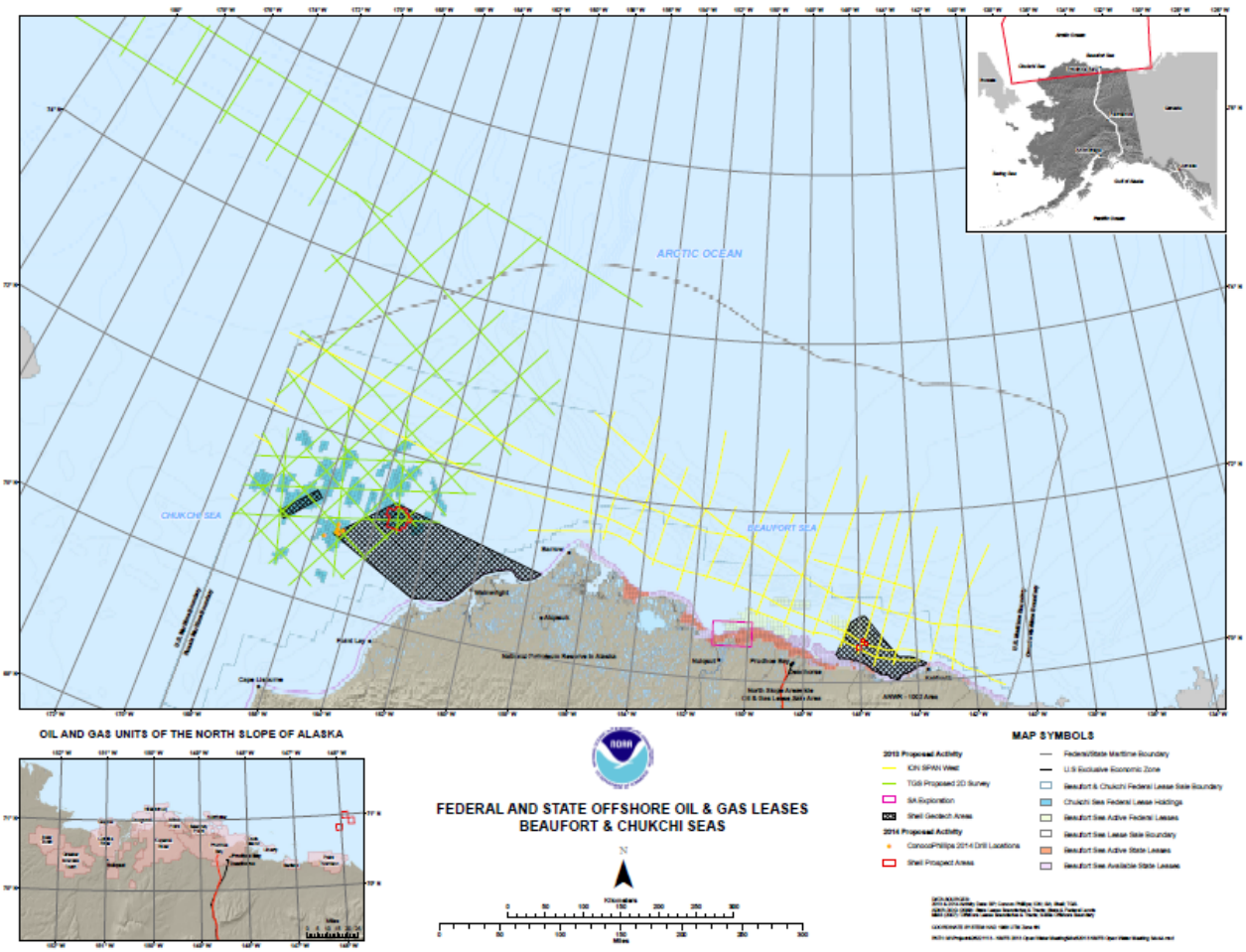

Figure 4.13: Map of Alaskan federal and state offshore boundary and leases[369]

(i) Federal Regime

Firstly, not all territorial sea areas adjacent to Alaska are available for Federal lease sales. There are five MPAs in the Beaufort and Chukchi Seas, although they do not encompass particularly large offshore areas, and in fact only three extend significantly seaward.[370] However, in most of these areas offshore oil and gas development is prohibited. In addition, it can be seen from Figure 4.14 that there is a wide band of marine area adjacent to the Chukchi Sea (including the territorial sea) (termed a "Corridor" by BOEM), where oil and gas

[369] @ NOAA, US . Public Domain, available at: www.nmfs.noaa.gov/pr/pdfs/permits/openwater/map.pdf

[370] NOAA, *National Marine Protected Areas Centre: The Marine Protected Area Inventory*, The Barents/Chukchi Seas (EcoRegion 2), available at: http://mpa.noaa.gv/dataanalysis/mpainventory/ (access 1 July 2015).

lease sales have been indefinitely deferred by the Department of the Interior.[371] This deferral of petroleum development in the Chukchi Sea for environmental and social impact reasons is in compliance with provisions and requirements of the National Environmental policy and implementing regulations.[372] Thus, cumulatively there is a significant area of the territorial sea adjacent to Alaska that is not available for oil and gas leasing. It can be argued that this removal from availability has directly and indirectly been influenced by international environmental law.

Presidential Executive Order No.13158[373] on Marine Protected Areas ("MPAs") consolidated previous laws and strengthened and expanded the national system of MPAs in the United States, which appear to reflect Decisions VII/15 and VII/28 of the 2004 Conference of Parties ("COP") to the Convention on Biological Diversity[374], despite the fact that the United States is only a signatory, and not a party, to the Convention.[375]

Thus, environmental protection policy and law of the United States , sometimes resulting from commitments of the United States under international law and sometimes resulting from the influence of international developments, restricts to some extent the exercise of sovereign rights of exploitation of petroleum resources located in offshore Alaska.

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[371] Defined as a sea area in the Chukchi Sea extending 60nm (97km) offshore along the coast of Alaska. See: BOEM, *Chukchi Sea Outer Continental Shelf Oil and Gas Lease Sale 193 Record of Decision*, (2015), USDI, March 2015, available at:
www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_region/Leasing_and_Plans/Leasing /Lease_Sales/Sale_193/03-31-2015-LS193-ROD-Second-SEIS.pdf.

[372] In particular the protection of the bowhead whale habitat used for migration, feeding, breeding and nursing of calves, and crucially important to the indigenous peoples' traditional life (survival hunting), BOEM, *Chukchi Sea Planning Area, Oil and Gas Lease 193, Final Supplemental Environmental Impact Assessment*, Vol. 1, (2011), OCS EIS/EA, BOEMRE 2011-041, August 2011, at ES-3, available at:
www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska-Region/Environment/Environmental_Analysis/2011-041v1.pdf.

[373] Of 26 May 2000, available at:
http://energy.gov/sites.prod/files/nepapub/nepa_documents/RedDont/Req-EO13158marineprot.pdf.

[374] Decision VII/15: Biodiversity and Climate Change and Decision VII/28Protected Areas (Article 8(A) to (E)), *COP 7 Decisions, Seventh Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity, 9 -20 February 2004, Kuala Lumpur, Malaysia*, available at:
www.cbd.int/decisions/cop/?m=cop-07.

[375] For a fascinating study of the reasons behind the United States' failure to ratify the Convention see: Robert F. Blomquist, "Ratification Resisted: Understanding America's Response to the Convention on Biodiversity, 1989 – 2002", (2002), *Golden Gate University Law Review,* Vol.32, No.4, 493.

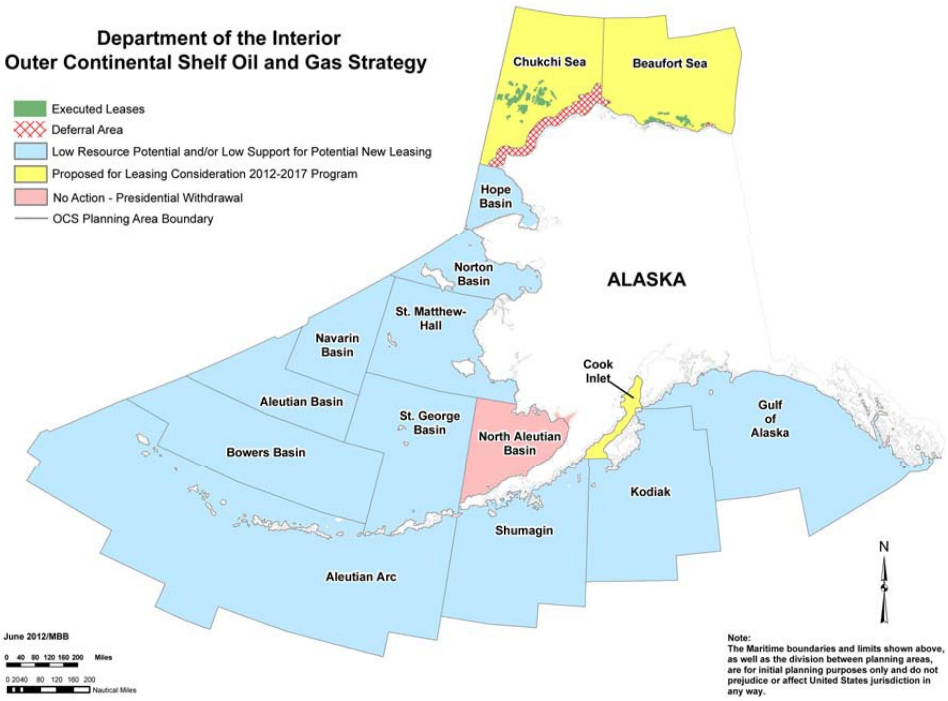

Figure 4.14: Map of OCS Strategy of the United States[376]

The 1971 land settlement agreement with the indigenous peoples in Alaska, the Alaska Native Claims Settlement Act ("ANCSA")[377], does not include any offshore territory and grants no proprietary rights offshore to the indigenous peoples.[378] In 1982 the courts rejected native claims to aboriginal title to offshore areas and sea ice within Alaska's 3nm zone.[379] However, in a series of cases[380], the Inupiat of Alaska have attempted to claim large parts of the Beaufort and Chukchi Seas lying beyond the 3nm limit (in the Chukchi Sea out to

[376] ©BOEM. Public Domain, available at: www.boem.gov/uploadedFiles/BOEM/Oil_and_Gas-Energy_Program/Leasing/Five_Year_Program/2012-2017/Program_Area_Maps/Alaska%20Planning%20Areas%20with%20restrictions.pdf.

[377] 16 USC Chapter 51, ## 3101- 3233, available at : http://www.law.cornell.edu/uscode/text/16/chapter-51

[378] Gail Osherenko and Oran R. Young, "Chapter 4: Arctic Homelands: Native Interests", in *The Age of the Arctic, Hot Conflicts and Cold Realities*, (1989), Cambridge University Press, at 4.2. 78 - 81.

[379] *Inupiat Community of the Arctic Slope v. United States (ICAS II*), 548 F. Supp. 182 (D.Ak. 1982), affirmed 746 F. 2d 570 (9th Circ. 1984), cert denied 106 S. Ct. 68, 88 L.Ed. 2d 56 (1985).

[380] *Inupiat Community of the Arctic Slope Conflicts v. United States (ICAS II),* 548 F. Supp. 182 (D. Alaska 1982); *Inupiat Community of the Arctic Slope v. United States (ICAS II),* 746 F. 2d 570, (9th Circ.1984), cert. den. 474 U.S.820 (1985), reh. den. 485 U.S.972 (1988); *People of Village of Gambell v. Clark (Gambell*), 746 F.2d 572 (9th Cir.1984); *Amoco Production Co. v. Native Village of Gambell*, 480 U.S.53` (1987); *People of Village of Gambell v. Babbitt*, 999 F.2d 403 (9th Cir. 1993); *Native Village of Eyak v. Diane Marie Inc.,* 154 F.3d 1090, 1 (9th Cir, 1998), cert. den. 527 U.S. 1003 (1999).

[380] Gail Osherenko and Oran R. Young, "Chapter 4: Arctic Homelands: Native Interests", (1989), in *The Age of the Arctic, Hot Conflicts and Cold Realities, Studies in Polar Research Series, Cambridge University Press.*

65nm) - rights they assert that could not have been extinguished by the ANCSA.[381] These claims have not yet been fully resolved in respect of non-exclusive hunting and fishing rights on the Outer Continental Shelf[382] ("OCS").[383] However, both the decisions of the United States Court of Appeals for the Ninth Circuit in the *Eyak Cases* held that, in respect of sovereign rights on the OCS, the paramount authority of the United States over foreign affairs, foreign commerce, and national defence precluded assertion of aboriginal exclusive use and occupancy of the OCS.[384] These decisions mirror similar ones on the Federal 'paramountcy' doctrine applied to the offshore waters of the various states in cases between the United States and the states of California, Louisiana, Texas and Maine.[385] Therefore, in terms of title to the seabed of the OCS and petroleum located thereunder, it seems settled that these rights reside with the Federal United States.

The United States is not a party to the *1989 International Labour Organization Convention on Indigenous and Tribal Peoples*[386], because, it can be suggested, it fears that this, *inter alia*, may reopen the claims settlement, including regarding nearshore areas. The United States[387], did not vote in favour of the *2007 UN Declaration on the Rights of Indigenous Peoples* ("UNDRIP")[388], although it has subsequently formally announced its 'support' for the Declaration,[389] while emphasising that UNDRIP is "not legally binding or a statement of

[381] Section 4 ANCSA extinguished all aboriginal title in the territory of Alaska.
[382] As defined in ANCSA as the marine area beyond the seaward jurisdiction of the state: Section 1 ANCSA, op. cit.
[383] See the following Eyak cases: *Eyak Native Village v. Blank*, No.09-3588 (9th Cir. 2012); *Native Village of Eyak v. Daley*, 375 F.3d 1218 (9th Cir. 2004); *Native Village of Eyak v. Trawler Diane Marie Inc.*, 154 F.3d 1090 (9th Cir. 1998), cert den. 527 U.S. 1003 (1999)) ("*Eyak Cases*").
[384] On these cases and for an analysis of the doctrine of federal 'paramountcy' see: Davis S. Case and David A. Voluck, *Alaska Natives and American Law*, (2012), 3rd Edn, University of Alaska Press, at 77 - 79.
[385] *United States v. California, 332* U.S.19 (1947); *United States v. Louisiana*, 39 U.S. 699 (1950); *United States v. Texas*, 339 U.S. 707 (1950); and *United States v. Maine*, 420 515 (1975).
[386] ILO, Convention 169 of 27 June 1989, available at : http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169.
[387] Objecting in particular to Articles 19, 26,28 and 29 regarding land rights.See Osherenko and Young, footnote 378, *supra.*
[388] The Declaration is an annex to the GA Resolution 61/295, of 13 September 2007, available at: www.un.org/esa/socdev/unpfil/document/DRIPS_en.pdf.
[389]USDS, *Announcement of US Support for the United Nations Declaration on the Rights of Indigenous Peoples*, 15 December 2010, available at: www.state.gov/documents/organisations/184099.pdf; Editorial, "Victory!: U.S. Endorses UN Declaration on the Rights of Indigenous Peoples", (16 December 2010), *Cultural Survival Inc*., available at: www.culturalsurvival.org/news/united-states/victory-us-endorses-un-declaration-rights-indigenous-peoples.

current international law".[390] In the statement it did, however, emphasise the interests of indigenous peoples in environmental issues connected with sustainable development of resources.[391]

There has been much discussion of the legal status of UNDRIP and whether or not its principles are statements of customary international law.[392] It is beyond the remit of this thesis to enter into an analysis of these issues in any depth. For thesis purposes, it is sufficient to accept as correct the approach of the ILA's *2010 Report on the Hague Conference on Indigenous Peoples*[393], which while answering 'no' to the first question ("UNDRIP, just like any other declaration of principles, cannot be a binding legal instrument"[394]), it replied as follows to the second:

> "…even though it cannot be maintained that UNDRIP as a whole can be considered as an expression of customary international law, some of its key provisions can reasonably be regarded as corresponding to established principles of general international law, therefore implying the existence of equivalent and parallel international obligations to which States are *bound* to comply with".[395]

An example of one such established principle is the right of indigenous peoples to self-determination, which the ILA Report states is *affirmed* in Article 3 UNDRIP.[396] More relevant to this thesis is the ILA Report's response to the question it poses of whether there is a

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[390] Ibid., at 1 It should be recalled that Article 46 of the Declaration attempts to balance the rights of indigenous peoples and the territorial integrity of a state. On this issue see : International Law Association, *Rights of Indigenous Peoples,* The Conference Report: The Hague (2010), at 9 – 16, available at: ww.ila-hq.org/download.cfm/docid/9E2AEDE9-BB41-42BA-9999FO359E79F62D.

[391] Ibid., at 6 - 13.

[392] See for example: S. J. Anaya and S. Wiessner, "The UN Declaration on the Rights of Indigenous Peoples: Towards Re-empowerment", (2007), *JURIST Forum*, 3 October 2007, available at: http://jurist.law.pitt.edu/forum/2007/10/un-declaration-on-rights-of-indigenous.php; Claire Charters, "The Legitimacy of the UN Declaration on the Rights of Indigenous Peoples", (2009), in *Making the Declaration Work. The United Nations Declaration of the Rights of Indigenous Peoples*, (Claire Charters and Rodolfo Stavenhagen, eds.), (2009), IWGIA Document No. 127, IWGIA, Copenhagen, at 280, available at: www.iwgia.org.iwgia_files_publications_files/making_the_declaration_work.pdf;
Rhiannon Morgan, (2013), *Indigenous Peoples, the United Nations and Human Rights*, Oxford Brookes University; Sarah. M. Stevenson, Indigenous Land Rights and the Declaration on the Rights of Indigenous Peoples: Implications for Maori Land Claims in New Zealand", (2008*), Fordham International Law Journal*, Vol. 32, No. 1, 298.

[393] Conference Report of The Hague Conference (2010), Rights of Indigenous Peoples, (2010), the International Law Association, available at: www.ila-hq.org/download.cfm/docid/9E2AEDE9-BB41-42BA-9999F0359E79F62D.

[394] Ibid., at 5 and 43

[395] Ibid at 43

[396] Ibid..

customary international law indigenous peoples' right of ownership of natural resources (such as sub-surface petroleum) located in/under their land or in the seabed coastal waters traditionally used by them: the ILA Report's answer is no[397], but the Report adds that international law "is increasingly supporting (directly or indirectly) positive answers to these questions".[398]

So it can be concluded that at the moment Canada and the United States are correct in their views of the legal status of UNDRIP and its provisions, it is 'soft law'. However, the subject domain is rapidly evolving, and perhaps in the future there may evolve customary law rights of indigenous peoples to subsurface resources both onshore and in the nearshore, but this is not the case at this time.

Despite this lack of proprietary rights indigenous groups have as we have seen earlier challenged successfully some offshore lease sales, especially in respect of the environmental impact assessments of the DOI, although they related primarily to continental shelf oil and gas activities. These recent challenges and court decisions have not addressed the issue of title, but rather the right to develop, as will be described shortly below.

Thus, there is no indigenous title to offshore petroleum and only the federal and Alaskan state governments have rights in, and jurisdiction over, the territorial sea offshore Alaska in respect of its seabed and any petroleum resources located thereunder.

Turning to analyse the federal regime the legal and regulatory framework for US offshore oil and gas activities is, as Baker describes, a complex nexus of over 40 federal statutes and regulations.[399] The primary federal law governing offshore oil and gas development in the federal area of the territorial sea waters offshore Alaska is OCSLA, which was discussed earlier.

Section 1332 OCSLA declares that the United States has full sovereign rights beyond the 3nm boundary. To effect the law's purpose of the expeditious and orderly development of Outer Continental Shelf ("OCS") resources as elaborated in Section 1332 OCSLA, the Act

[397] Ibid., at 43.
[398] Ibid., at 23.
[399] Baker, op. cit., at 12 - 13.

extends the application of the law of adjacent states to the OCS when it does not conflict with federal law (Section 1333(a)(2)(A)) and provides a comprehensive leasing process for *inter alia* OCS petroleum resources (Sections 1332 - 1336). A lease is defined in Section 1331[400] as:

> "any form of authorisation issues under section 1337 of this title and maintained under section 1335 of this title and which authorises exploration for and development and production of minerals". [401]

OCSLA requires the federal government to prepare, revise and maintain an oil and gas leasing programme.[402] Such programmes have to date resulted in the issuance of hundreds of lease sales tracts in offshore Alaska.[403] Currently there is a federal programme for Alaska for 2012 - 2017, under which areas in the Beaufort and Chukchi Seas adjacent to Alaska will be offered in 2017 and 2016 respectively.

These programmes have proved somewhat problematic in recent years, giving rise to several significant court cases. The first challenge in 2008 was with respect to the Five Year Plan of Lease Sales for 2007-2012. In *Center for Biological Diversity v. U.S. Department of the Interior*[404] the plaintiff[405] challenged the plan (programme) on several grounds, including a claim the plan did not consider the impact of oil and gas leasing on climate change, that it had been approved without adequate baseline biological research and Endangered Species Act consultation, and a claim that the Department of the Interior (relying on an inadequate environmental sensitivity assessment by the National Oceanographic and Atmospheric Administration) had failed to satisfy the requirement in Section 18(a)(2)(g) of the OCSLA that it must consider "the relative environmental sensitivity and marine productivity of different areas of the Outer Continental Shelf".[406] The Court upheld the latter argument and therefore vacated the plan with respect to leasing in the Chukchi, Beaufort, and Bering Seas, as it was in these areas that the analysis of the environmental sensitivity was found to be

[400] Section 1331 subsection2(c) of OCSLA, footnote 355, *supra*.
[401] Petroleum is included under the definition of minerals given in Section 1331(q) OCSLA, footnote 355, *supra*.
[402] Section 1331 subsection 18 of OSCLA, footnote 355, *supra*.
[403] See *the Map of Federal and State Offshore Oil and Gas Leases: Beaufort and Chukchi Seas*, available at: www.nmfs.noaa.gov/pr/pdfs/permits/openwater/map.pdf.
[404] *Center for Biological Diversity v. U.S. Department of the Interior*, 563 F.3d 466 (D.C. Cir. 2009).
[405] Which, *inter alia,* included the Native Village of Point Hope, the Inupiat Community of the Arctic Slope, the Alaska Wilderness League, Pacific Environment, and ten other environmental groups.
[406] Footnote 404, *supra*, at 488.

deficient. It upheld three arguments against the Mineral Management Services' ("MMS" - the precursor of the Bureau of Ocean Management ("BOEM")) environmental impact statement: that it did not specifically consider the potential environmental impact of offshore natural gas development, that it did not adequately determine the relevance of the environmental information missing from the Environmental Impact Statement ("EIS"): that it failed to adequately determine the relevance of environmental information missing from the EIS, and that it failed to adequately assess the cost of getting that missing information.[407] Therefore, the Court ordered the MMS to revise the environmental impact statement that it had used in the 2008 lease sale.[408]

In response BOEM appealed against the ruling and filed a supplemental EIS. In December 2010 it filed a new plan that promised to honour existing leases in the Arctic OCS, but deferring all remaining Beaufort and Chukchi Seas lease sales for the 2012 - 2017 Five Year Plan.[409] In September 2011 environmental organisations and Alaskan Indigenous Peoples' groups challenged Shell's extended exploration plans for the Beaufort and Chukchi Seas for 2012.

On the 31 December 2012 the Kullak, one of Shell's drilling rigs in the Chukchi Sea, ran aground on the coast of the Gulf of Alaska.[410] To further compound Shell's difficulties, ten days later the US Environmental Protection Agency issued a statement that Shell had violated its offshore permits under the Clean Air Act 1970.[411] As a consequence, in early 2013, Secretary of Interior Ken Salazar ordered an expedited review of Shell's 2012 Alaska drilling programs in the Beaufort and Chukchi Sea[412] and the DOI issued its report on 8

[407] Ibid..
[408] In *Center for Biological Diversity v. U.S. Department of the Interior,* footnote 404, *supra.*
[409] Center for BioDiversity, *Arctic Oil Development, Action Timeline*, (2014), available online at: www.biologicaldiversity.org/programs/public_lands/energy/dirty_energy_development/oil_and_gas/arctic/action_timeline.httml.
[410] Henry Fontain, "Breakaway Oil Rig, Filled with Fuel, Runs Aground", (2013), *NY Times*, 1 January 2013, available at: www.nytimes.com/2013/01/02/business/energy-environment/shell-oil-rig-runs-aground-in-alaska.html?_r=0.
[411] United States Environmental Protection Agency, "EPA fines Shell for Clean Air Act violations during offshore exploration in Alaska", (2013), News Release EPA, 9 May 2013, available at: http://yosemite.epa.gov/opa/admpress.nsf/0/095964532154B9A285257BDD00812EAF.
[412] USDOI,"Secretary Salazar Launches Expedited Assessment of 2012 Arctic Operations", January 8 2013, available at: www.doi.gov/news/pressreleases/secretary-salazar-launches-expedited-assessemnt-of-2012-arctic-operations.cfm.

March 2013.[413] On 22 January 2014 the Court of Appeals for the 9th Circuit ruled that the DOI had violated the law when it sold offshore oil and gas leases in the Chukchi Sea off the coast of Alaska in 2008.[414] Under an order from that 9th Circuit Court all oil activities have been suspended, while BOEM revises the EIS for the 2008 lease sale and then issues a BOEM decision on whether it had been appropriate to conduct the sale.[415] In the meantime the court has allowed BOEM to review lease-related documents such as Shell's exploration programme for 2015.[416] Perhaps surprisingly, given the Kullak drilling rig incident[417] and the level of opposition and litigation[418], after having halted oil exploration in Alaskan Arctic waters in 2014[419], in August 2014 Shell filed its amended drilling programme for its lease in the Chukchi Sea for 2015.[420]

The litigation by Alaskan Inupiat people in respect of the 2008 lease sales demonstrates that, although they have no formal proprietary rights to the seabeds offshore Alaska and/or the natural resources thereunder, they do have legal mechanisms to try to protect their interests and way of life, which may affect the exercise of title rights and operations under issued leases. This is very much in keeping with provisions of the ILO Convention No. 169 (1989) and the 2007 UN Declaration on Indigenous Peoples Rights, both discussed above.

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[413] DOI, Report to the Secretary of the Interior, *Review of Shell's 2012 Alaska Offshore Oil and Gas Exploration Program*, 8 March 2013, available at:
www.doi.gov/news/prsessreleases/upload/shell-report-3-8-13-final.pdf.

[414] *Native Village of Point Hope et al v. Jewell,* United Court of Appeals for the Ninth Circuit ,Court No. 12-35287, DC No. 1:08-cv-00004-RRB, Opinion, available at:
http://earthjustice.org/sites/default/files/files/Chukchi.Decision44Opinion.pdf.

[415] Yereth Rosen, "Judge Orders new review for Chukchi lease sale", (2014), *Alaska Dispatch News*, 24 April 2014, available at:
www.adn.com/article/20140424/judge-orders-new-review-2008-chukchi-sea-lease-sale.

[416] Ibid..

[417] NOAA, "Rig Refloated: Update on Efforts to Mobile Grounded Rig Kullak in Alaska", (2013), *Office of Response and Restoration*, 11 January 2013, available at:
http://response.restoration.noaa.gov/about/media/update-efforts-mobilize-grounded-drill-rig-kulluk-alaska.html.

[418] For a review see: Eric Lidji, "Alaska Offshore Special Report: Arctic Alaska offshore, a 40-year Recap", (2011), *Petroleum,* Vol. 16, No. 4, 23 January 2011, available at:
www.petroleumnews.com/pntruncate/614419950.shtml.

[419] Yereth Rosen, "Shell calls off 2014 oil exploration in Alaska's Arctic waters", (2014), *Alaska Dispatch News*, 30 January 2014, available at:www.adn.com/article/20140130/shell-calls-off-oil-exploration-alaskas-arctic-waters.

[420] Alan Bailey, "Shell files plan, Company wants to drill in the Chukchi in 2015: yet to make final decision", *Petroleum*, Vol. 19, No.35, 31 August 2014, available at:
File://C:/UsersPavilion/Documents/Shell%20files%20plan%20-%20August%2031.%202014%20-%20Petroleum%20News.htm.

The Inupiat groups' actions, like those of environmentalists, have, as we have seen, challenged the legality of leases issued. Of course, any such challenge would reasonably be expected to occur long before an oil company reached the production phase, and therefore it is improbable that such challenges could ever impact on title to petroleum produced in the United States' Arctic Ocean.

Moreover, recent Shell actions show there are alternative ways to minimise such litigation possibilities by indigenous peoples: in 2014 Shell embarked on an effort to 'co-opt' certain Inupiat groups into its petroleum exploration activities in its lease areas in the Alaskan Arctic offshore,[421] by creation of a joint venture vehicle, which would allow a carried interest (overriding royalty) at the production stage for the indigenous community group joint venturers. This appears to be an attempt to reduce Alaskan Inupiat opposition to offshore petroleum development in the Chukchi Sea and perhaps to avoid any title or development challenges should any project under the leases reach production stage.[422]

On the assumption that the lease of a producing oil company is a validly issued one, the passage of title to oil produced from the leased area will be traced next.

The agency, within the Department of the Interior, which administers and regulates the OCSLA oil and gas leasing programme is BOEM.[423] Section 1337(b)(4) OCSLA requires that a lease issued by BOEM entitles the lessee to explore for, develop, and produce oil and gas, conditioned on applicable due diligence requirement and the approval of a development and production plan. Thus, a valid lease issued by BOEM transfers title to the lessee of the petroleum produced from the leased area.[424]

(ii) The Alaskan Oil and Gas Regime

[421] Yereth Rosen, "Shell, Native corporations unveil joint venture in Chukchi Sea leases", (2014), *Alaska Dispatch News*, 31 July 2014, available at:
www.adn.com/article/20140731/shell-native-corporations-unveil-joint-venture-chukchi-sea-leases.
[422] It should be noted that on 17 August 2015, the federal United States government (USDI) granted Shell final clearance to resume drilling in the Chukchi Sea: Timothy Gardiner, "U.S. gives Shell final nod to drill for oil in Arctic", (2015), *Reuters,* 17 August 2015.
[423] BOEM's Governing Statutes are summarised at :
www.boem.gov/Governing-Statutes/.
[424] This is in the granting clause of the lease: See John S. Lowe, *Oil and Gas Law in a Nutshell*, 5th Edn., (2009), West, United States, at 'The Granting Clause', 173 - 185.

Under the Alaska Land Act[425] (state) land means "all land, including shore, tide and submerged land, or resources belonging to or acquired by the state".[426] Under the Alaska Statehood Act 1958, the state of Alaska acquired the same rights to the 3nm offshore zone as the existing states had at the time of joining under the Submerged Lands Act 1953.[427] Thus, the state of Alaska has title to the petroleum resources located under the territorial sea outwards to the 3nm limit in the areas that are not protected/reserved federally. Section 1 of the Alaskan Constitution[428] states that "[it] is the policy of the State to encourage the settlement of its land and the development of its resources by making them available to the maximum use consistent with the public interest". Article VIII Section 2 further states that "[t]he legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the state, including land and water, for the maximum benefit of its people".

The leasing of state land for exploration and development of petroleum resources in the 3nm zone offshore is then authorised under the Alaska Land Act[429], and the Department of Natural Resources of the Alaskan government is authorised to administer the leasing.[430] Under Alaskan law not all offshore Alaskan offshore areas are available for lease sales. For example, under the Alaska Land Act, there are bans on oil and gas leases (for environmental reasons) in Kachemak Bay[431] and Bristol Bay.[432] Thus, the Division of Oil and Gas of the Alaska Department of Natural Resources conducts regular scheduled competitive oil and gas lease sales on available "state lands", which, as we have seen, include the state's offshore areas.[433] The commissioner of the Alaska Department of Natural Resources is tasked with

[425] Title 38, Public Land Chapter 5, available at: http://touchngo.com/lglcntr/akstats/Statutes/Title38/Chapter05.htm.
[426] Alaska Statute ##38-05.965, ibid.
[427] Alaska Statehood Act, 7 July 1958, op. cit., Section 6(m).
[428] The Constitution of the State of Alaska, ratified by the people of Alaska 24 April 1956, and became operative with the formal proclamation of statehood on 3 January 1959, is available at: www.legis.state.ak.us/basis/folioproxy.asp?url_http://wwjnu0.1.legis.state.ak.us/cgi-bin/foliosa.dii/acontxt/query-*/doc%7Bt1%7D?.
[429] Alaska Stat. ##38.05.131 seq.
[430] See the Alaska Lands Act, op. cit., at # 38.05.180 and the Public Resources Act, at #41.21.020
[431] Alaska Statute, Title 38, Public Lands, Chapter 5, Alaska Lands Act # 38.05.140(f), available at: http://codes.ip.findlaw.com.akstatutes/38.
[432] Alaska Statute op. cit., #38.05.184.
[433] A complete list of all lease sales since 1959 is available in: State of Alaska, *The Five Year Oil and Gas Lease Sales Program*, January 2014, at 34-38, available at: http://dog.dnr.a;aska.gov/Leasing/Document/FiveYear Reports/2014/2014-Five-Year-Program.pdf.

the annual preparation of a Five Year programme and every January a new 5-Year Oil and Gas Lease Sales Programme is submitted to the Alaska State Legislature.[434]

Leasing is regulated by Alaskan secondary legislation, which *inter alia*, sets out the various aspects/requirements of competitive bidding, acreage selection, financial and fiscal terms, limitations, competitive bidding provisions, lease provisions, practices and procedures.[435]

The competitive oil and gas lease[436], a model of which is part of each lease sale bidding package, is standardised, and the key clauses, in particular the grant clause, have been the same since 2008.[437] Clause 1 of a competitive oil and gas lease of the state of Alaska (Department of Natural Resources) states:

> "1. GRANT. (a) Subject to the provisions of this lease, the state grants and leases to the lessee, without warranty, the exclusive right to drill for, extract, remove, clean, process and dispose of oil, gas and associated substances in or under the following described tract of land;….containing approximately …acres, more or less (referred to in this lease as the "leased area")….."[438]

The nature of 'ownership' of oil and gas in the land of the United States, the "Rule of Capture" and correlative rights have been extensively analysed in depth by several jurists[439], and it is only necessary for the purposes of this thesis to note that the grant by Alaska does not convey ownership *in situ* to the petroleum in the leased area. It rather creates a *profit à prendre*, whereby the lessee acquires title to the petroleum once it is produced and reduced

[434] On its 2013 Licensing Program see the DNR's 2014 Exploration Licensing Programme, available at: http://dog.dnr.alaska.gov/leasing/Documents/5YearReports/2014/2014-exploration-licensing-program.pdf.
[435] 11 AAC 04, 11 AAC 82, 11 AAC 83, 11AAC 84, and 11 AC 88. All available at: http://dog.dnr.alaska.gov/AboutUs/OGStatutes.htm.
[436] On oil and gas leases generally in the United States see: Eugene Kuntz, *A Treatise on Oil and Gas*, (1989), Anderson Publishing, Vol. 2, in particular Chapters 18 - 20.
[437] Since when the documentation is available online at: http://dog.dnr.alaska.gov/Leasing/PreviousSales.htm.
[438] See lease in documentation in ibid..
[439] W. E. Colby, "The Law of Oil and Gas", (1949), *California Law Review*, Vol. 31, No. 4, September 1943, 357; Terence Daintith, *Property and the Law in Energy and Natural Resources*, (2010), Oxford University Press, at "The Rule of Capture: The Least Worst Property Rule for Oil and Gas", 140; Kent Graham, "The Oil and Gas Profit a Prendre: What Effect on California Land", (1969), *Loyola of Los Angeles Law Review,* Vol. 2, 136; Robert E. Hardwicke, "The Rule of Capture and Its Implications as Applied to Oil and Gas, *Texas Law Review,* Vol. 13, 391; Bruce M. Kramer and Owen L. Anderson, "The Rule of Capture-An Oil and Gas Perspective", (2005), *Environmental Law*, Vol.35, 899; Lowe, op. cit., at 64; M. K. Woodward, "Ownership of Interests in Oil and Gas, (1965), *Ohio State Law Journal,* 353.

to his possession[440], in whatever proportion he is entitled to receive under the terms of the lease, or provisions of project agreements relating to royalties, shares of production among joint venturers, unitisation, and the like. The state of Alaska and the federal government have cooperated in a number of joint lease sales of areas that straddle or are adjacent lease areas bordering the 3nm boundary under the authority of the Agreement between the United States and the State of Alaska Pursuant to Section 7 of the OCS Lands Act, as amended and Alaska Statutes 38.05.137.[441] Such sales have always included a model unitisation agreement, which the oil companies may agree to modify, subject to the approval of such modifications by BOEM and DNR.[442] Such leases and unitisation agreements establish a clear chain of title to petroleum produced and appropriate sharing of the petroleum between the lessees.[443]

As a final comment on Alaskan leases in the territorial sea up to the 3nm limit, it may be worth revisiting the controversy of opening up of the 1002 Area, a highly prospective area adjoining the North Slope/Prudhoe Bay.[444] Under Section 1002 of the Alaska National Interest Land Conservation Act 1980 ("ANILCA"), a decision was deferred on the management of oil and gas exploration and development of the 1.5m acre coastal plain in the ANWR.[445]

Over the past 20 years 11 Alaskan legislatures have passed numerous bills and resolutions supporting the opening up of the 1002 Area to oil and gas leasing and development, but to date repeated efforts to pass Congressional legislation to open the 1002 Area have been

[440] Defined as an exclusive right to go onto land and take some part of the land or a product of the land, and whoever, in the exercise of that right, removes a product of the land is the owner of that product. See in the context of oil and gas: Kuntz, op. cit., at #23.2.

[441] For details of such sales see for example: The Decision and Findings of the Commissioner Alaska Department of Natural Resources, Northstar Unit Agreement, 23 January 1990, available at: http://dog.dnr.alaska.gov/units/Documents/1990/19900123NSUDandFNorthstarUAAprvl.pdf.

[442] A history and details of such sales can be found in: Alaska Outer Continental Shelf Office, of Land Management, DOI, US*, Proposed outer continental shelf oil and gas lease sale 71*, Diapir Field, (1992), DOI, available as a free e-book from http://play.google.com

[443] Ibid., at 5 seq..

[444] The USGS estimated in 2011 that the total recoverable oil in the 1002 Area is 7.7 BBO. See USGS, Fact Sheet 0028-01: Online Report, *Arctic National Wildlife Refuge, 1002 Area Petroleum Assessment, including Economic Analysis*, available at: http://pubs.usgs.gov/fs/fs-0028-01/fs-0028-01.htm.

[445]Federal Law passed on 12 November 1980 Available at:

unsuccessful.[446] In 2013 the Obama administration reaffirmed its 2011 policy[447] that the whole of ANWR including the 1002 Area will continue to be protected against oil and gas leasing and development.[448]

From Figure 4.13 below it can be seen that ANWR includes some offshore areas in the territorial sea zone and hence this standoff between the federal government and the state of Alaska is relevant to the discussion of title.

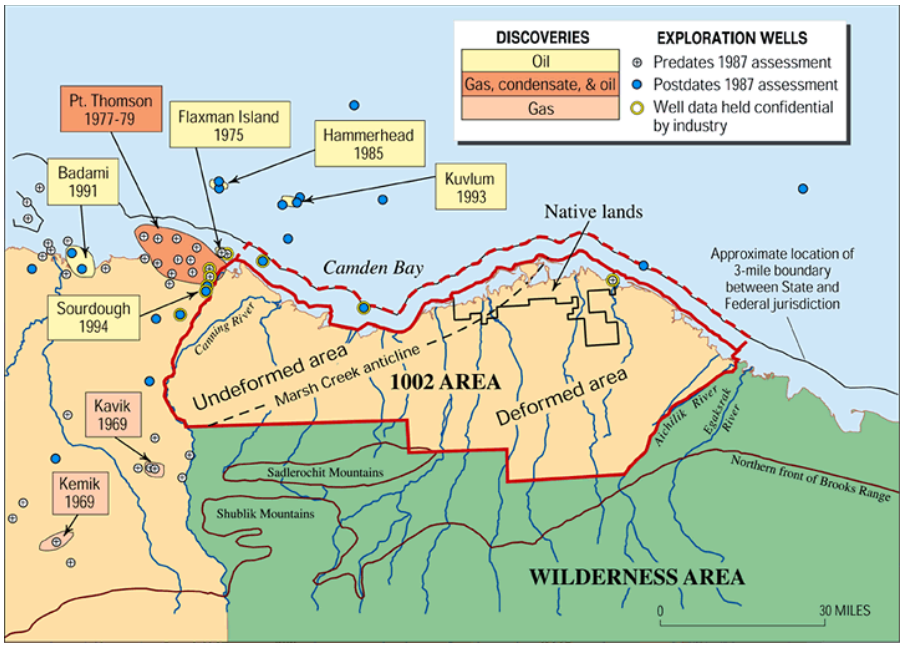

Figure 4.13: Map of the ANWR 1002 area[449]

To date the ANWR remains the largest protected wildlife refuge in the United States, and no leases have been granted for oil and gas development in the ANWR and, in particular, in the

[446] State of Alaska, Department of Natural Resources, *Fact Sheet: Alaska's Exploration Proposal for the ANWR 1002 Area*, (2011), at 4, available at: www.anwr.org/features/pdfs/ANWR-1002-Area-Oil-%20Gas-Exploration-Plan-Fact-Sheet.pdf.

[447] Tim McDonnell "Obama Administration Moves Against Alaska Oil Drilling", (2011), *Mother Jones,* 17 August 2011, available at: www.motherjones.com/blue-marble/2011/08/anwr-wilderness-designation.

[448] Juliet Eilperin, "Administration won't trade ANWR drilling for clean energy fund", (2013), *Washington Post,* 19 March 2013, available at: www.washingtonpost.com/blogs/post-politics/wp/2013/03/19/administration-wont-trade-anwr-drilling-for clean-energy-fund/;
Cindy Shogan, "Taking a Stand for Our Arctic Ocean", *Huffington Post*, 27 June 2013, available at: www.huffington.post.com/cindy-shogan/taking –a stand-for-our-ar_b_3818088.html.

[449] ©USGS, Public Domain: USGS, Fact Sheet 0028-01: Online Report, *Arctic National Wildlife Refuge, 1002 Area Petroleum Assessment, including Economic Analysis*, available at: http://pubs.usgs.gov/fs/fs-0028-01/fs-0028-01.htm.

1002 area. This status will continue for the foreseeable future, unless a future Republican Alaskan government chooses to confront the federal government by direct action, as some prominent politicians have recently suggested they might do if elected.[450] The interesting question, if Alaska should unilaterally attempt to issue leases for oil and gas in the ANWR, is what would be their legality? One suspects that no major oil company would elect to challenge the federal government's right to regulate wildlife refuges, under the National Wildlife Refuge System Administration Act 1966[451] ("Wildlife Refuge Act") and ANILCA, either by bidding or through the courts. It would appear self-evident that Alaska does not have the legal right to hold lease sales in the ANWR in contravention of federal decisions taken under the Wildlife Refuge Act and ANILCA, thus any lease sale in ANWR would be illegal, and hence title to any oil produced would have been invalidly granted.

Finally, it is of interest to consider the legal implications of the federal – Alaskan division of the territorial sea in the light of possible ambulatory baselines caused by significant coastal erosion resulting from climate change and the thawing permafrost and melting ice in the Arctic, as discussed in Chapter 3. In the long term, any adjustment of the baselines will not in practice affect the federal government's right to exploit the petroleum resources as landward movement would only result in any acreage at the existing outer limits of the territorial sea becoming part of the EEZ of the United States. However, a landward shift of the 3nm limit of Alaska may result in some leased acreage falling within federal jurisdiction, possibly resulting in a straddling (federal United States - Alaska) deposit in a change of jurisdiction. Such a development would require new federal – Alaskan agreement on the leased area (addressing the issues of straddling, joint management and revenue division) and some form of assurance to the licensee from federal and Alaskan authorities as to its continued good title to the petroleum its produces.

4.7 Conclusions on the Role of International Law on Sovereignty over Petroleum Located in the Seabed of the Territorial Seas of the Arctic Five and the Acquisition of Title to Petroleum Produced Therefrom

[450] Kate Stoppard, "Alaska Lt. Governor Candidate Says State Should 'Invade' Arctic Refuge", (2014), *Huffington Post,* 20 May 2014, available at: www.huffingtonpost.com/2014/05/20/alaska-arctic-wildlife-refuge_n_5359069.html.

[451] As amended by the National Wildlife Refuge System Improvement Act 1997, available at: http://fws.gov.laws/lawsdigest/NWRSACT.HTML.

In respect of the Arctic Ocean territorial seas of the Arctic Five, what can one conclude from this Chapter's analysis in regard to title to petroleum for a producing oil company and what role has international law played in securing such title?

Certainly UNCLOS can be seen as "an unprecedented attempt by the international community to regulate all aspects of the resources of the sea and uses of the oceans, and thus bring a stable order to mankind's very source of life".[452] However, the United States has yet to accede to it.

Nonetheless in the Ilulissat Declaration[453], the Arctic Five recognised that an extensive international legal framework applies to the Arctic Ocean and that they "remain committed to this legal framework" – part of this framework they identified as the law of the sea.

They also stated that "by virtue of their sovereignty, sovereign rights and jurisdiction in large areas of the Arctic Ocean" that they are in a "unique position to address" the challenges of "climate change and melting ice [which] have a potential impact on vulnerable ecosystems, the livelihoods of local inhabitants and indigenous communities, and the potential exploitation of natural resources".

It is interesting to note that they later claim "stewardship" to protect the Arctic Ocean ecosystem: it is as if they are attempting to "regionalise" the Arctic Ocean – perhaps laying the first tentative steps towards a regional convention such as the 1995 *Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean*[454] (possibly on the basis of Article 234 UNCLOS).

What is clear from both from their declarations and their practice is that:

(a) The Arctic Five consider that the law of the sea applies to the Arctic Ocean and that it, together with the legal framework identified at the 2008 Oslo meeting of the Arctic

[452] K. Hober, "Territorial Disputes and Natural Resources: The Melting of the Ice and Arctic Dispute", (2012), *OGEL,* 1, at 13.
[453]The Ilulissat Declaration by Canada, Denmark, Norway, the Russian Federation, and the United States of America, Arctic Ocean Conference, Ilulissat, Greenland, 28 May 2008, available at: http://arctic-council.org/folearchive/Ilulissat-declaration.pdf.
[454] http://195.97.36.231/dbases/webdocs/BCP/bc95_Eng_p.pdf.

Council[455], is sufficient as the governance regime for the Arctic Ocean. In the Declaration they recall an extensive international legal framework (expressly including the law of the sea), and state that they are committed to this framework and that it provides a solid foundation for responsible management of the Arctic Ocean by them and other users through national implementation and application of the relevant provisions. The Arctic Five assert that therefore there is no need to develop a new comprehensive international legal regime to govern the Arctic. This view has been challenged by a number of environmental and indigenous peoples groups[456] and by jurists.[457]

(b) In terms of a coastal state's sovereignty over its territorial seas, customary law of the sea, as codified in UNCLOS, establishes a very clearly defined regime, granting full sovereignty to the coastal states over the waters, seabed and resources thereunder, save for the reserved right of innocent passage. It also provides the rules for the delimitation of territorial sea boundaries between adjacent states.

On the other hand, we have seen some gaps in the international law and its implementation, especially in respect of the optimisation of environmental protection of the fragile ecosystem, and resolving the claims of indigenous peoples of the region in respect of the offshore Arctic and its resources.

(c) In terms of disputed claims in the Arctic, there is only one disputed territorial sea area: the Beaufort Sea boundary between Canada and the United States. The dispute in respect of the territorial sea area is unlikely to be resolved separately from the resolution of the other maritime zones along the Canada - United States maritime boundary in the Arctic Ocean. International law is clear on the delimitation of adjacent territorial seas (codified in Article 15 UNCLOS). However, in the Beaufort Sea it is a

[455] On this meeting see: Rudiger Wolfrum, "The Arctic in the Context of International Law", (2010), in *New Chances and New Regimes in the Arctic Regime,* (Georg Witschell, Indo Winkelmann, and Rudiger Wolfrum, eds.), Berliner Wissenschafts-Verlag, 37, at 46 - 48.

[456] See the WWF, "Arctic Stewardship, The Arctic needs new rules", (2014), *WWF Arctic Website,* available at: http:/wwf.panda.org/what-we_do/where_we_work/arctic/what_we_do/arctic_Marine_governance/.

[457] A. A. Alimov, "Gas, Oil, Energetic and Climate: Arctic Region and its Role in Sustainable Development of the Modern World", (2012), *OGEL*, Vol.2, online at www.ogel.org;
Ivan Bunik, "Alternative Approaches to Delimitation of the Arctic Continental Shelf", (2008), *OGEL*, Vol. 1, No. 4, 114.

matter of whether or not the meridian division under the US - Canada Treaty extends offshore.

The United States - Canada dispute in the Beaufort Sea concerns the extension of the land boundary between Yukon and Alaska. Canada claims that the maritime boundary runs along the 141°W meridian as an extension of the land boundary agreed between Yukon and Alaska by Britain (Canada's predecessor state) with Russia (the United States/Alaskan precursor) under Article III of the 1825 St. Petersburg Treaty.[458] However, the United States rejects this position and argues that the boundary should be determined using the equidistance principle out to the limit of national jurisdiction.[459] These differing positions produce a 6,250nm^2 triangular shaped disputed maritime area. This Beaufort Sea dispute will be discussed further in Chapter 7, where it is concluded that since neither state is likely to agree to submit to this dispute to an international tribunal, it is left to the states to agree on the delimitation. To date international law has done little to assist in the dispute's resolution, other than to lay down the ground rules for a peaceful negotiated delimitation - although this in itself is no mean accomplishment.

(d) When it comes to the implementation of the international legal framework for the territorial sea, its seabed and the natural resources located therein into the national regimes of the Arctic Five, this Chapter has shown the following:

- *Devolution to Subunits*
    - Only Denmark has devolved significant powers to a sub-unit over the territorial sea, its seabed and the natural resources located therein, that is to the Greenland Self – Rule Government. Even then however, the title to

[458] Convention between Great Britain and Russia Concerning the Limits of their Respective Possessions on the North-West Coast of America and the Navigation of the Pacific Ocean, St Petersburg, 16 February 1825, 75 Con. TS 95 – 101, available in English translation at:
http://explorenorth.com/library/history/bl-ruseng.htm.
The official version is in French, and is available at:
http:// explorenorth.com/library/history/bl-rusengfr1825.htm.

[459] For a useful description of the principles and some of the issues connected with its application see: O'Connell (I. Shearer, Ed.). op, cit., Vol. 2, at 684 - 685, and Rothwell and Stephens, op. cit., at 386 - 391, 395 - 396, and 401 - 402,

the petroleum *in situ* remains with the Danish Crown. The Danish government argues this Self Rule is the penultimate step in self-determination for Greenland's indigenous people[460], in keeping with Article 1 of the 1945 UN Charter[461], Article 15 of the 1948 UN Universal Declaration of Human Rights[462], the UN General Assembly Resolution 1514(XV) of 14 December 1960, and Article 1 of the 1966 Covenants ICESCR and ICCPR[463], to which Denmark has been a party since 1972. The other Arctic Five have a more restricted approach to self-determination within the state.

- The United States has a complicating constitutional division of powers and rights between the federal and the Alaskan governments. Under domestic law the United States' sovereign rights in the territorial seas have been transferred to the Alaskan government to 3nm seaward of the coast line. Within the 3nm zone Alaska has full rights of jurisdiction and title to the seabed and the petroleum located therein. The sharing by State of Alaska and the Federal United States of jurisdiction in the Arctic territorial sea may cause uncertainty for a lessee as to its title to petroleum.

  This sharing will also clearly complicate in practical terms any negotiations with Canada in respect of the Beaufort Sea Dispute. However, Alaska has no legal standing to enter into such negotiations itself with Canada, and must accept whatever is eventually agreed by the US federal government.[464]

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[460] Naja Dyrendom Graugaard, "National Identity in Greenland in the Age of Self-Government", (2009), *Working Paper CSGP09/5*, Trent University, at 46 - 49, available at: www.trentu.ca/globalpolitics/documents/Graugaard095.pdf.

[461] Chapter 1, available at:. http://treaties.un.org/doc/publication/ctc.uncharter.pdf

[462] Available at: www.un.org/en/documents/udhr.

[463] Burak Cop and Dogan Eymirlioglu, "The Right of Self-Determination in International Law towards the 40th Anniversary of the Adoption of the ICCPR and ICESCR", (2005), *Perceptions*, Winter 2005, 115, available at: http://sam.gav.tr/wp-content/uploads/2012/02/BurakCopAndDoganEymirliuogly.pdf.

[464] As affirmed in *LaGrand (Germany v. U.S.)*, Provisional Measures, ICJ Reports 1999, 9, at 16: "...Arizona is under the obligation to act in conformity with the undertakings of the United States".

- *Indigenous Peoples Offshore Petroleum Rights.*

None of the Arctic Five have transferred specifically to indigenous peoples any rights to the territorial sea, its seabed, or the natural resources therein. As discussed above, Greenland may be considered by some analysts the exception, for, although the transfer of powers and rights is to the Greenland Government and not to indigenous peoples, 85% of the population of Greenland is Inuit and the land/territory in Greenland is communally owned. So giving Greenland Self Rule and allowing the Inuit of Greenland to self - determine it can be argued may not be substantively different, and may just be a matter of approach to achieve the same outcome.

The ILO Convention No. 169 (1989)[465] has been ratified by 22 countries but of the Arctic Five only Denmark (1996) and Norway (1990) have ratified the Convention. Articles 14 and 15 recognise indigenous peoples' rights to their traditional lands and the natural resources pertaining thereto. Interestingly Article 14 relates only to 'land' and not also to 'territories', and therefore only has onshore application. In the Norwegian section of this Chapter we saw that Norway has not recognised any Sami offshore property rights.

Compatible with and reinforcing *ILO No. 169 Convention* is the 2007 UNDRIP.[466] Article 26 of UNDRIP asserts indigenous peoples rights over the lands and territories which they have traditionally owned, occupied or otherwise used or acquired, and resources. It also requires states to give legal recognition and protection to such rights. Although the United States and Canada voted against the Declaration both have since indicated their 'endorsement' of the Declaration, while emphasising its 'aspirational' nature and that it is not legally

[465] Available at:
www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0:NO::P1200_ILO_CODE:C169
For a useful review of ILO Convention No. 169 see: Athanasios Yupsanis, "ILO Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries 1989 - 2009: An Overview", (2010), *Nordic Journal of International Law,* Vol. 79, 433,

[466] 61/295, available at:
www.un.org/esa/socdev/unpfil/documents/DRIPS_en.pdf.

binding. Russia abstained in the vote and has subsequently indicated no intention of endorsing UNDRIP.

Thus, it does not appear that international law has had any significant legal influence on offshore indigenous rights in the United States, Canada or Russia. In fact, as discussed above, a US Supreme Court ruled against offshore aboriginal rights in the Alaskan territorial sea, seabed or resources therein, and it is highly unlikely that Canada, at least in the foreseeable future, would reopen the lands claims settlement agreements to extend any rights offshore.

- *Environmental Issues*

The Arctic Five, in the Ilulissat Declaration, acknowledge the environmental fragility of the Arctic Ocean's ecosystem and need to protect the "livelihood of local inhabitants and indigenous communities".

As described in the Chapter, some environmentally vulnerable areas in or abutting the Arctic Ocean have been set aside in each of the Arctic Five as special reserves, and are unavailable for oil and gas activities.

However, many of these reserves were established long before the 1970s and the first concerns of climate change. The Russian zapovedniks have their origins in Tsarist Russia and the United States' ANWR dates back as a federal protected area to 1960.[467] Some others, particularly in Norway, Canada, and Greenland, are the results of International efforts to establish marine protected areas, which commenced in earnest with the 1992 *Convention on Biological Diversity* ("CBD")(as amended),[468] and were re-enforced at 2002 World Summit on Sustainable Development[469], and by the 2010 (Decisions X29, 31, 32 42) and

[467] By order of Fred Andrew Seaton, Secretary of the Interior, under President Eisenhower.
[468] Footnote 259, *supra.*
[469] UN, *Report on the World Summit on Sustainable Development*, (2001), Johannesburg, South Africa, 26 August 2002 – 4 September 2002, A/Conf.198/20, UN New York, Chapter IV of the Plan of Implementation, 20 - 37, available at:
www.un.org/jsummit/html/documents/summit_docs/131302_wssd_report_reissued.pdf.

2012 (Decisions XV17 and 18) decisions at the 10th and 11th meetings of the Conference of the Parties to the CBD.[470]

As discussed in the Chapter, most of these nature reserves/refuges, or MPAs have prohibited oil and gas development in all the Arctic Five, but in the Alaskan Arctic Ocean, the Barents Sea, and the Arctic Ocean offshore Svalbard and Jan Mayen, there is pressure to open up adjoining areas and, in some cases, areas in the currently protected areas and to allow 'highly controlled' oil and gas activities. International law appears to leave such decisions to the sovereign states.

The Chapter gave examples of how both soft and hard international law has had some impact in reducing the acreage available for oil and gas activities in the Arctic Ocean, but do not directly impact on title to the petroleum *in situ* in the territorial seas in the Arctic Ocean.

Certainly, an oil company would also be well advised to avoid acreage bordering such reserves/refuges/MRAs in order to avoid difficulties in the event of a straddling deposit.

As was discussed above in respect of the 2008 Lease in the Chukchi Sea, environmental impact issues, and specifically the Environmental Impact Assessment ("EIA")[471] and its associated regulatory regime,) have been important in protecting the offshore Arctic environment and the interests in the habitat of the coastal indigenous peoples of the United States EIAs have been part of petroleum regulatory regimes in the west since the 1960s and in Russia since 1992 and all the Arctic Five have such requirements. The EIAs in each jusrisdiction have slowly evolved into very complex and demanding documents.

[470] Of 21 May 1992, available at:
www.cbd.int/doc/legal/cbd-en.pdf.

[471] Timo Koivurova, *Environmental Impact Assessment in the Arctic: A Study of International Legal Norms*, (2002), Ashgate Publishing;
Larry W. Carter, "Environmental Impact Assessment", (1999), Chapter 2, in *Engineers Handbook*, CRC Press, available at:
ftp://www.energia.bme.hu/pub/hullgazd/Environmental%20Engineers'%20Handbook/Ch02.pdf

The contents required for EIAs in the Arctic have been influenced by the 1997 "Guidelines for Environmental Impact Assessment ("EIA") in the Arctic"[472], developed under the aegis of the 1991 Arctic Environmental Protection Strategy of the Arctic Council.[473] The Guidelines focused on the specific circumstances and issues in the Arctic, in particular cumulative impacts, trans-boundary issues[474], the participation of indigenous peoples and the use of traditional knowledge. All of the Arctic Five endorsed the Guidelines. The Arctic Council's working groups have reviewed EIAs in each of the Arctic Five, and found that they are relatively standardised in their requirements.[475] From the review one can argue that Arctic soft law has affected the nature and content of Arctic EIAs, and thus the licensing/leasing regimes under which oil companies operate in the Arctic Ocean.

Final Conclusions

From this Chapter's analysis of the Arctic Ocean's territorial seas, it appears that to a very large extent international law of the sea establishes a clear legal regime for territorial seas in the Arctic Ocean, especially regarding the sovereignty of coastal states over the territorial seas and the rights to petroleum located therein.

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[472] Available at:
http://arcticcentre.ulapland.fi/aria/procedures/eiaguide.pdf.

[473] 14 June 1991, available at:
www.arctic-council.org/index.php/en/document-archive/category/4-founding-document?download=53:aeps.
On the evolution of the Guidelines see: Finnish Ministry of Environment, *Guidelines for Environmental Impact Assessment (EIA) in the Arctic*, (1997), FME, Preamble at 4.

[474] There is also the issue of the extent of the duty of States to conduct Assessment in a transboundary environmental impact assessment prior to petroleum activities in the Arctic Ocean under international law (customary international, UNCLOS, and/or the 1991 Convention on Environmental Impact in a Transboundary Context ("ESPOO")). Canada, Denmark, and Norway are parties to ESPOO, while Russia and United States are signatories. Thus it has a special status for the Arctic Five but it is beyond the scope of this thesis to examine this issue as it has no direct impact on the issue of title to petroleum. See Rachael Lorna Johnstone, "Evaluating ESPOO: What Protection does the Espoo Convention Offer the Arctic Marine Environment?", (2013), in *The Yearbook of Polar Law*, (Gudmundur Alfredsson, Timo Koivurova, and Adam Stepien, eds.), Martinus Nijhoff, 337; Timo Koivurova, "Transboundary Environmental Assessment in the Arctic", (2008), *Impact Assessment and Project Appraisal*, Vol. 26, No. 4, 265; Wiek Schrage, "The Convention on Environmental assessment in a Transboundary Context", (2008), in *Theory and Practice of Transboundary Environmental Impact Assessment,* (Kees Beastmeijer and Timo Koivurova, eds.), Martinus Nijhoff, 29.

[475] Available at:
http://www.vyh.fi/feil/intercoo/arctic/index.htm.

This chapter has also however shown areas where the law of the sea and the rest of the international legal framework applicable in Arctic Ocean territorial seas, have been less effective - in particular with respect to actually resolving delimitation issues, addressing the issue of offshore indigenous rights, and protecting sufficiently the particularly vulnerable areas of the territorial seas of the Arctic Five.

Despite identifying some significant issues and uncertainties in the implementation of the international legal regime into national regimes, the Chapter demonstrates that the transfer of title can be successfully traced from the State level, through subunits, to oil companies under the terms of licences and leases issued by the appropriate governmental agency. Under the terms of the leases or licences/ licence agreement in each of the Arctic states it was found that good title is passed to the producing oil company.[476]

Thus, it can be concluded that title rights over petroleum produced in Arctic territorial seas are legally transferred in a clear chain of rights to the producing oil company as a result, in the main, of the provisions of international law of the sea and their effective implementation in domestic law.

[476] Where there are straddling deposits over jurisdictional boundaries the title issue is addressed by agreements and regulations.

Chapter 5: International Law and the Exclusive Economic Zones in the Arctic Ocean: Sovereignty and Title to Petroleum

Summary:

This Chapter examines the legal regime of the exclusive economic zone ("EEZ"), including the right of a coastal state to claim a 200nm EEZ and the exclusive right of a coastal state in an EEZ to explore for and exploit petroleum located in the seabed and subsoil – both of which are rights at customary international law, as codified by UNCLOS. Since the coastal state's EEZ sovereign rights in respect of the seabed and subsoil are to be exercised in accordance with Part VI of UNCLOS which sets out the continental shelf regime, the main analysis of this zone will be undertaken in Chapter 6 in the analysis of the continental shelf, which extends for a minimum of 200nm from the territorial sea baselines, thus including the geographical area of the EEZ.

The analysis shows that all of the Arctic Five have claimed a 200nm EEZ and that there are no issues in respect of devolution to subunits or indigenous peoples' rights issues with respect to the EEZs. The implementation of the EEZ rights under international law into the national regimes of the Arctic Five is found to be unproblematic, except for two Norwegian islands, Svalbard and Jan Mayen.

The Chapter demonstrates that international law plays a fundamental role in creating clear sovereign rights for coastal states over the petroleum located in the seabed and subsoil of the EEZ. Although international law has played an important part in resolving the issues connected with Jan Mayen Island's EEZ, the Chapter describes how Svalbard maritime jurisdictional and rights issues remain unresolved and that Norway has adopted alternative approaches to claiming an EEZ for Svalbard, with the 1920 Svalbard Treaty continuing to complicate issues rather than providing solutions.

5.1 General Introduction: the EEZ[1]

The Exclusive Economic Zone ("EEZ") comprises a maritime area beyond and adjacent to the territorial sea and extends to a maximum limit of 200nm measured from the baselines from which the breadth of the territorial sea is measured, as codified in Articles 55-57 of UNCLOS.

[1] Texts on general aspects of the EEZ include: D. J. Attard, *The Exclusive Economic Zone in International Law*, (1987), Oxford University Press; James Crawford, *Brownlie's Principles of Public International Law*, 8th Edn., (2014), at 274 - 279; R. R. Churchill and A. V. Lowe, *The Law of the Sea*, (1999), Manchester University Press, at 138; B. Kwiatowska, *The 200 Mile Exclusive Economic Zone in the New Law of the Sea*, 3rd Edn., (1986), Martinus Nijhoff; D. P. O' Connell (I. A. Shearer, ed.), *The Law of the Sea*, (1984), Clarendon Press, Chapter 15, at 553 - 581; S. Oda, "Exclusive Economic Zone", in *Encyclopaedia of Public International Law*, (R. Bernhardt, ed.), Vol.11,, (1989), North Holland, 104; D. Pharand (ed.) *The Continental Shelf and the Exclusive Economic Zone,* (1993), Nijhoff; Donald R. Rothwell and Tim Stephens, *The International Law of the Sea*, (2010), Hart Publishing, Chapter 4, at 82 - 97; Yoshifumi Tanaka, *The International Law of the Sea*, (2012), Cambridge University Press, at 124 - 131; Gillian Triggs, *International Law: Contemporary Principles and Practices*, 3rd Edn., (2011), LexisNexis Butterworths, at 368 - 375; Francisco Orego Vicuna, *The Exclusive Economic Zone Regime and Legal Nature under International Law*, (1989), Cambridge University Press.

The EEZ forms part of customary international law,[2] and has been recognised as such by the ICJ[3] and, importantly in the context of the Arctic Ocean, by the United States[4]. The claiming of an EEZ is optional under both UNCLOS and customary international law and its existence depends upon an assertion by the coastal state.[5] Once claimed, it may coexist with a contiguous zone out to 24nm[6] and with the continental shelf out to the EEZ maximum of 200nm.[7]

Articles 55 - 75 of UNCLOS set out the EEZ regime in some detail.[8] The EEZ is a multi-layered zone and includes the seabed and subsoil, as well as the waters superjacent to the seabed and subsoil in that zone.[9] The EEZ regime is a *sui generis* bundle of rights and duties[10], for the coastal (Article 56) and other states (Article 58)[11], which includes sovereign rights over the resources of the seabed and subsoil and a complex regime of exclusive or semi-exclusive rights over fishing.[12] Kwiatkowska describes it as a multi-functional resource zone[13], but for the purposes of this thesis only those aspects connected with the exploration and exploitation of the seabed and subsoil will be examined.

Under Article 56(1)(a) of UNCLOS, which is now considered to be customary international law[14], the coastal state has sovereign rights for:

> "…exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil…"

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[2] Crawford, op. cit., at 277, Rothwell and Stephens, op. cit., at 84; Triggs, op. cit., at 369.
[3] Continental Shelf (Libyan Arab Jamahiriya v. Malta) case ("*Libya v. Malta Case*"), (1985), ICJ Rep.13, at 29 and 34.
[4] US Presidential Proclamation, 10 March 1983, ILM, Vol. 22, 461.
[5] Rothwell and Stephens, op. cit., at 85.
[6] To be claimed, see - Article 24 GCTS and 33 UNCLOS. Triggs, op. cit., at 362.
[7] Which is an inherent right under customary international law, see also Article 1 GCCS and Article 76 UNCLOS.
[8] Triggs points out that it should not be assumed that all of the detailed UNCLOS provisions have yet achieved customary international law status, Triggs, op. cit., at 369.
[9] Article 55 UNCLOS. Triggs, op. cit., at 369.
[10] Rothwell and Stephens, op. cit. at 84; Triggs, op. cit., at 369.
[11] On the rights and duties of coastal states see Rothwell and Stephens, op. cit., at 87 - 92 and similarly for non-coastal states see, Rothwell and Stephens, op. cit., at 92 - 96.
[12] Rothwell and Stephens, op. cit., at 84. Described by Professor Maurice Mendleson, "Written Evidence to the House of Lords Select Committee on the Arctic", (2014), *LOS\HL evidence 2014 final*, 23 September 2014, available at:
http://data.parliament.uk/writtenevidence.svc/evidencedocument/arctic-committee/arctic/written/13335.html.
[13] Kwiatkowska, op. cit., at 4 - 6.
[14] See the"*Libya v. Malta Case*", op.cit., para. 34, at 33: "[T]he institution of the exclusive economic zone, with its rule on entitlement by reason of distance, is shown by the practice of States to have become a part of customary law".

Under Article 56(3) of UNCLOS, the EEZ sovereign rights of the coastal state in respect of the seabed and subsoil are to be exercised in accordance with Part VI of UNCLOS, which sets out the continental shelf regime. The EEZ's regime is therefore subordinated to that of the continental shelf regime. Under Article 76(1), which is also considered to codify customary international law[15], a coastal state has a right to a continental shelf ("CS"), which extends to a maximum of 200nm from the territorial sea baselines, irrespective of geological or geomorphological considerations[16], and, unlike the EEZ, requires neither proclamation nor occupation.[17] Although the EEZ and CS are two different and distinct maritime zones and regimes[18], it has been convincingly argued that there is significant 'parallelism' between the two regimes regarding the sovereign rights over seabed resources in the 200nm area measured out from territorial sea baselines of a coastal state in the zone.[19] For this reason, the main analysis of this maritime zone will be in Chapter 6 together with the analysis of the continental shelf regime.

Delimitation of the EEZ between states with opposite or adjacent coasts is set out in Article 74 of UNCLOS, which provides:

> *Delimitation of the exclusive economic zone between States with opposite or adjacent coasts*
>
> 1. The delimitation of the exclusive economic zone between States with opposite or adjacent coasts shall be effected by agreement on the basis of international law, as referred to in Article 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution.
>
> 2. If no agreement can be reached within a reasonable period of time, the States concerned shall resort to the procedures provided for in Part XV.
>
> 3. Pending agreement as provided for in paragraph 1, the States concerned, in a spirit of understanding and cooperation, shall make every effort to enter into provisional arrangements of a practical nature and, during this transitional period, not to jeopardize or hamper the reaching of the final agreement. Such arrangements shall be without prejudice to the final delimitation.
>
> 4. Where there is an agreement in force between the States concerned, questions relating to the delimitation of the exclusive economic zone shall be determined in accordance with the provisions of that agreement.

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[15] Case concerning the delimitation of maritime areas between Canada and the French Republic, Court of Arbitration Decision of 10 June 1992, ("the *St Pierre and Miquelon Case*", (1992), *ILM*, Vol. 31, 1149.
[16] Kwiatowska, op. cit., at 8.
[17] Rothwell and Stephens, op. cit., at 118 - 119; Triggs, op. cit., at 369.
[18] *Libya v. Malta Case*, op. cit., at 33, para. 34.
[19] As first raised by Judge Shigeru Oda in his Dissenting Opinion in the *Tunisia v. Libya Case* [(1982), ICJ Reports, 130, at 233. Kwiatkowska examines the issue in detail - Kwiatkowska, op. cit., at 13 – 17.

In the *Jan Mayen Case* the ICJ found that Article 74(1) reflects customary international law as regards EEZ delimitation.[20]

Maritime delimitation methodology has historically vacillated between two contrasting approaches to equitable principles: the result oriented equity approach and the corrective equity approach, which have been analysed extensively.[21] Tanaka takes the view that that a third approach has now developed merging the two approaches.[22] The ICJ described in the 2009 *Black Sea Case*[23] this delimitation methodology that can be applied in any case dealing with the EEZ, continental shelf or a 'single maritime boundary line.[24] It is a three stage approach which has been termed the adjusted equidistance/median line method. Under this approach the process of delimitation is to be divided into three stages: first, the establishment of the provisional equidistance line, second, the examination of whether there are relevant circumstances calling for the adjustment of the provisional equidistance line in order to achieve an equitable result, and third, the verification whether the delimitation line does not lead to an inequitable result by applying the test of disproportionality.[25]

This delimitation method is extensively described in recent textbooks on the law of the sea and has been well analysed in the law of the sea literature[26], and therefore will not be repeated. It suffices to note that this approach has been followed by both the ICJ and ITLOS in numerous subsequent cases.[27] As will be seen in Chapter 7 on maritime delimitation, several of the maritime delimitation agreements in the Arctic Ocean have been based, albeit in some cases rather loosely, on this approach.

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[20] Maritime Boundary in the Area between Greenland and Jan Mayen (Denmark v. Norway) ("*Jan Mayen Case*"), (1993), ICJ Reports, 34, at 38.
[21] See for example, Tanaka, op. cit., at 192 - 198.
[22] Yosifumi Tanaka, "Reflections on Maritime Delimitation in the Romania/Ukraine Case before the International Court of Justice", (2009), *NILR,* Vol.56, 419.
[23] Maritime Delimitation in the Black Sea (Romania v. Ukraine) ("*the Black Sea Case*"), (2009), Judgment of 3 February 2009, (2009), ICJ Reports 3.
[24] On single maritime boundaries, see Rothwell and Stephens, op. cit., at 395 - 396; Triggs, op. cit., at 374; Stuart Kaye, "Lessons Learned from the Gulf of Maine Case: The Development of Maritime Boundary Delimitation Jurisprudence since UNCLOS III", (2008), *Ocean and Coastal Law Journal*, Vol. 14, 73.
[25] *The Black Sea Case,* paras 115 - 122, at 101 - 103.
[26] Crawford, op. cit. Chapter 12, at 285 - 294; Rothwell and Stephens, op. cit., Chapter 16, at 399; Triggs, op. cit., at 378 - 385.
[27] For references to these cases see footnotes in Crawford, Rothwell and Stephens, and Triggs, ibid..

There are three single boundary agreements in the Arctic Ocean: the 1973 Canada – Greenland Agreement[28], the 1990 Bering Sea Agreement[29], and the 2010 Barents Sea Treaty[30], while the two agreements between Denmark (Greenland) and Norway with respect to Svalbard and Jan Mayen relate only to their continental shelves and EFZs.[31] All three single boundary agreements clearly define the boundaries of the States' respective EEZs, and have provisions relating to any deposit straddling a boundary. As will be discussed in Chapter 7, the unitisation provisions in these agreements are short, general, and leave the substantive arrangements to be negotiated post discovery. This is not ideal from an oil company's viewpoint and an important aspect to which international law appears to make little contribution.

5.2 The EEZs of the Arctic Five

All five Arctic states have claimed EEZs as set out in the table below.

Country	Claimed	Comments
Canada	s.13 Oceans Act 1996[32]	s. 13 claims a Canadian EEZ. Under s. 16 of the Oceans Act Canada retains the Fishing Zones of Canada that had been claimed in

[28] Agreement between the Government of the Kingdom of Denmark and the Government of Canada relating to the Delimitation of the Continental Shelf between Greenland and Canada, 17 December 1973, in force since 14 March 1974), available at:
www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/DNK-CAN1973CS.PDF.
Professor T. L. McDorman has indicated to the author his view that, although the Treaty expressly relates only to continental shelves, as it predates UNCLOS, it is presumed to apply to the EEZs of the two states.

[29] Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, I June 1990, available at:
www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/USA-RUS199MB.PDF. This agreement is an interim agreement, as discussed further in Chapter 7.

[30] Agreement between the Kingdom of Norway and the Russian Federation Concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, 2010, available in English at:
www.regjeringen.no/upload/ud/vedlegg/folkerett/avatle_engelsk.pdf.

[31] Agreement Between the Government of the Kingdom of Norway on the one hand and the Government of the Kingdom of Denmark with the Home Rule Government of Greenland on the other hand concerning the delimitation of the continental shelf and the fishery zones between Greenland and Svalbard, 20 February 2006, UNTS, Vol. 2378, 1-42887, 21, available at:
http://treaties.un.org/Publications/UNTS/Volume%202378/v2378.pdf; and,
Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the delimitation of the continental shelf in the area between Jan Mayen and Greenland and concerning the boundary between the fisheries zones in the Area, 18 December 1995, and the Additional Protocol to the Agreement of 18 December 1995 between the Kingdom of Norway and the Kingdom of Denmark on the Delimitation of the Continental Shelf in the Area between Jan Mayen and Greenland and the boundary between Fishery Zones in the Area, 11 November 1997, both available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/STATEFILES/DNK.htm.

[32] C.31. S.C. 18 December 1996.

		regulations earlier. s. 14 states that Canada has "sovereign rights in the exclusive economic zone of Canada for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living …of its seabed and subsoil…". s.15 vests these sovereign rights in Her Majesty in right of Canada (i.e. in Federal Canada).
Denmark/Greenland	1. Royal Decree on the Entry into Force of Act on Exclusive Economic Zones for Greenland 2004.[33] 2. Executive Order on the Exclusive Economic Zone of Greenland of 20 October 2004.[34]	1. This decree applied the 1966 Act on Exclusive Economic Zones[35] to Greenland pursuant to s. 5 of that Act. 2. This Executive Order, made pursuant to s. 2(2) of the 1996 Act establishes in s. 1 the EEZ measured from the territorial sea baselines set out in Royal Decree No. 1004.[36] S. 3 delimits the EEZ in relation to Canada up to 75° N. In s. 4(2) in relation to Jan Mayen and Greenland the Order sets out the points for the straight geodesic lines of the agreed delimitation. 3. Despite the 2006 Denmark - Norway Agreement concerning delimitation of the continental shelf and fisheries zones in the area between Greenland and

[33] Royal Decree No. 1005 of 15 October 2004, Law of the Sea Bulletin , Vol. 56, 126, available at: www.un.org/depts/los/doalos_publications/LOSBulletins/bulletinpdf56e.pdf.

[34] Executive Order on the Exclusive Economic Zone of Greenland of 20 October 2004, available at: http://www.un.org/Depts/los/doalos_publications/LOSBulletins/bulletinpdf/bulletin66e.pdf.

[35] Act No.411 of 22 May 1996 on Exclusive Economic Zones, available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/DNK_1996_Act.pdf.
The Act was put into effect by Executive Order No. 584 of 24 June 1996 concerning Denmark's Exclusive Economic Zone, available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/DNK_1996_Order.pdf

[36] Royal Decree of 15 October 2004 on Amendment of Royal Decree on Delimitation of Territorial Waters of Greenland, Law of the Sea Bulletin, Vol. 56, 126, available at: www.un.org/depts/los/doalos_publications/LOSBulletins/bulletinpdf56e.pdf.

		Svalbard, since Norway has not claimed an EEZ for Svalbard, there is no agreed EEZ delimitation. However, s. 4(1) of the Executive Order states that, in the absence of such agreement, the delimitation of Greenland's EEZ in relation to Norway (Svalbard) at distance of less than 400nm, will follow the median line.
Norway	1. Act No. 91 of 17 December 1976 relating to the Economic Zone of Norway[37] creates the basis for an EEZ to be established by a decree of the King. 2. Royal Decree of 17 December 1976[38] implemented the Act but only with respect to the mainland. 3. Neither Svalbard nor Jan Mayen have an EEZ but both have a 200nm EFZ.	1. The Act applies to the Norwegian mainland and Jan Mayen Island. 2. The implementing Decree does not apply to Jan Mayen or Svalbard. 3. Discussed in text below.
Russia	The Federal Act on the Exclusive Economic Zone of the Russian Federation 1998.[39]	Its provisions mirror Article 56 and 57 of UNCLOS. Article 1(1) of the Act claims an EEZ for the mainland and all islands of the RF, including those in the Arctic Ocean, and the Article asserts the exclusive right of the RF to explore and exploit the subsoil of the EEZ and natural resources thereunder. Competence for the EEZ is given to federal agencies (Articles 5 and 7). Article 32 incorporates Article 234 of UNCLOS on the protection and preservation of ice – covered

[37] An English translation is available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/NOR_1976_Act.pdf
[38] Royal Decree of 17 December 1976 relating to the establishment of the Economic Zone, available at:
ww.un.org/depts/los/LEGISLATIONAND TREATIES/PDFFILES/NOR_1976_DECREE.pdf.
[39] Available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1998_Act_EZ.pdf.

		areas.
United States	1. Proclamation 5030 by the President of the United States of America on the Exclusive Economic Zone of the United States of America, 10 March 1983.[40]	
	2. Public Notice No. 2237, "Exclusive Economic Zone and Maritime Boundaries: Notice of Limits".[41]	2. This Public Notice sets out the limits defining the EEZ offshore Alaska and supersedes all limits defined in Public Notices published since 1977.

Figure 5.1: EEZs Claimed by the Arctic Five[42]

There are two special cases regarding EEZs in the Arctic, both involving Norwegian territory, namely Jan Mayen Island and Svalbard.

(a) Jan Mayen Island

As discussed in Chapter 4, Norwegian sovereignty over Jan Mayen Island (land territory) has never been disputed since it was formally claimed by Norway in 1929.[43]

Norway enacted a law creating the legal basis for establishing a 200nm economic zone in the seas adjacent to the coast of the Kingdom of Norway in 1976.[44] No state challenged this law, and it applied to Jan Mayen as the island had been an integral part of the Kingdom of Norway since 1929 (s. 1 of the 1930 Jan Mayen Act).[45] The reason there was no challenge

[40] 48 Fed. Reg. , 10605 (14 March 1983), available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/USA_1983_Proclamation.pdf.
[41] 60 Fed. Reg. No. 163, 23 August 1995, Notices, at 43825, available at: ww.gc.noaa.gov/documents/1954_fr_eez_boundaries.pdf.
[42] ©B.Sas 2015.
[43] Royal Decree of 8 May 1929 placed Jan Mayen Island under Norwegian sovereignty. A brief history of the island is given in: Odd G. Skagestad, (Norwegian Ministry of Foreign Affairs), "The Scope of Norwegian Commitments Related to Scientific Research on Jan Mayen Island", in *Jan Mayen Island in Scientific Focus*, (S. Skreslet, ed.), (2004), 269 at 271 - 272.
[44] Act No. 91of 17 December 1976 relating to the Economic Zone of Norway, available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/NOR_1976_Act.pdf.
[45] Lov om Jan Mayen, Lov av 27.02.1930 nr. 2, available at: https://lovdata.no/dokument/NL/lov/1930-02-27-2.

regarding Jan Mayen may have been because the implementing Royal Decree only established an EEZ for the mainland.[46]

When in 1979 Norway wished to create a 200nm fishing zone and delimit the continental shelf of Jan Mayen, it entered into negotiations with Iceland resulting in the Agreement concerning Fishery and Continental Shelf Questions of 28 May 1980 ("FCSA").[47] The preamble of FCSA states that Iceland had established an economic zone of 200nm and that in the near future Norway would establish a fishery zone around Jan Mayen. Norway acceded to the Icelandic claim for an unrestricted EEZ in the direction of Jan Mayen, thus yielding approximately 30,3000 km^2 of sea area which lies within 200nm of Jan Mayen.[48] Jan Mayen, thus, in terms of waters, has an EEZ extending to 200nm only where it is not constricted by Iceland's full extent EEZ.[49] One day after the Agreement was concluded, Norway established a 200nm exclusive fisheries zone consistent with the provisions of the Agreement. Henriksen suggests that the reason Norway did not declare a 200nm EEZ was most likely because the delimitation of the continental shelf was still outstanding.[50]

The FCSA had left the continental shelf delimitation to further negotiations and under the FCSA the parties agreed to appoint a Conciliation Commission whose mandate was to make unanimous recommendations within 5 months of its appointment, with regard to the dividing line for the shelf area between Iceland and Jan Mayen (Article 9 of FCSA). The Commission was instructed to take into account "Iceland's strong economic interests in these sea areas, the existing geographical and geological factors and other special circumstances".[51] Although the recommendations of the Commission were not binding on the parties, the parties agreed during negotiations to "pay reasonable regard to them".[52]

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[46] S. 1 of Royal Decree of 17 December 1976, footnote 38, *supra* ; Skagestad, footnote 43, *supra,* Chapter 25, at 271 -272.

[47] A translation of which supplied by the Government of Norway is available at: ww.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/ISL-NOR1981CS.PDF.

[48] Preamble of the Agreement and also Iceland, Law No. 41 concerning the Territorial Sea, the Economic Zone and Continental Shelf, 1 June 1979, (1979), *ILM*, No. 18, 1504.

[49] Elliott L. Richardson, "Jan Mayen in Perspective", (1988), *AJIL*, Vol. 82, 443, at 444. This is an account of the report and reasoning of the Commission's Chairman, and makes interesting reading.

[50] Tore Henriksen, "The Icelandic - Norwegian Maritime Conflict", in *The Nordic Peace*, (Clive Archer and Pertti Joenniemi, eds.), Ashgate Publishing, 112, at 114.

[51] Article 9, FCSA.

[52] Ibid..

During earlier negotiations Iceland had challenged the status of Jan Mayen as an island capable of generating its own maritime zones [53], and it had argued that Jan Mayen Island was in fact a rock (as now defined in Article 121(3) of UNCLOS). However, at the time it should be recalled that UNCLOS III was still in progress and Iceland had not even ratified the Geneva Convention on the Continental Shelf, although its definition of continental shelf in Article 5 of its domestic 1979 legislation mirrors that of Article 76(1) of UNCLOS.[54] In 1979 Iceland, in addition to claiming a 200nm EEZ, had also proclaimed that it was entitled to a continental shelf that extended beyond its EEZ.[55]

The Commission was well aware of the positions and arguments of the parties, as two of its members had participated in all previous negotiations between the parties, a fact that led the Commission to consider it unnecessary to request written or oral pleadings from the parties.[56]

The Commission, comprising three senior Law of the Sea jurists[57], rejected Iceland's contention and, with no detailed arguments (having briefly described Jan Mayen Island[58]), concluded that Jan Mayen should be considered as an island under international law and that Jan Mayen Island is entitled to a territorial sea, an EEZ and a continental shelf. [59]

The Commission then addressed the issue of how to divide the continental shelf between the Parties[60] and decided to explore the feasibility of a special zone of joint exploration and development covering the most promising resources potential of the disputed area. The

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[53] A very useful analysis in English is a 2013 Master of Law Thesis: Agla Margret Egilsdottir, *Agreement between Iceland and Norway on the Continental Shelf Between Iceland and Jan Mayen*, (2013), Reykjavik University, available at:
http://skemmen.is/stream/get/1946/15935/35974/1/Agreement.between.Iceland.and.Norway.on.the.continental.shelf.between.Iceland.and.Norway.pdf.

[54] Iceland, Law No. 41 of I June 1979 concerning the Territorial Sea, Economic Zone and the Continental Shelf, available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/ISL_1979_Law.pdf.

[55] It should be recalled that under Article 76 a state must submit a claim for extended continental shelf to the CLCS.

[56] *Report and Recommendations to the Governments of Iceland and Norway of the Conciliation Commission on the Continental Shelf Area Between Iceland and Jan Mayen*, (1980), *ILM*, Vol.20, 797, at 801, ("The Report").

[57] Hans Anderson (Iceland), Jens Evensen (Norway) and Elliott L. Richardson (Former Ambassador at Large and Special Representative of the President of the Law of the Sea Conference who was appointed as Chairman).

[58] The Report, ibid., Section III, at 801 - 803.

[59] The Report, ibid., Section IV, at 803 - 804.

[60] The Commission did not wish to become 'mired' in what they considered the as yet 'completely uncrystallised' principles governing continental shelf delimitation between neighbouring states (UNCLOS III was still ongoing). Richardson, op. cit., at 445.

focus was to be "on a fair division of the resources, rather than on the determination of an artificial line". [61] On the advice of a special scientific advisory committee on the geomorphology and geology of the Jan Mayen Ridge (as well as some other potentially prospective areas), the Commission concluded that the Jan Mayen Ridge area was the only area between Jan Mayen and Iceland with any hydrocarbon potential. [62] It therefore recommended a joint development zone ("JDZ") of an area covering 45,475km^2 in the Jan Mayen Ridge area[63]. Iceland's EEZ overlaps the southwest corner of the JDZ by about 12,725km^2 with the remaining area north of Iceland's EEZ comprising about 32,750km^2.[64]

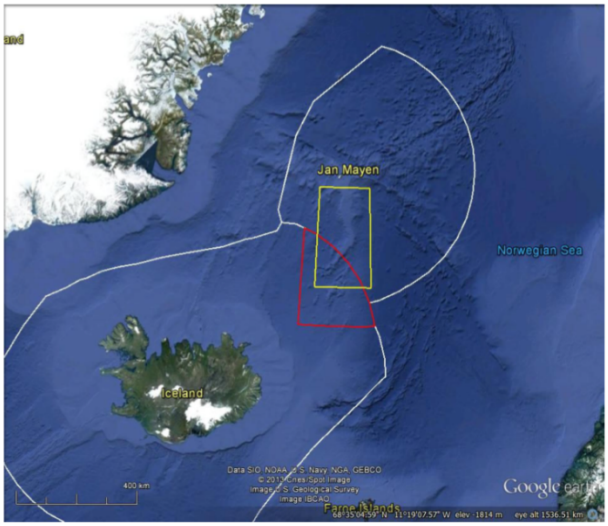

Figure 2. The Icelandic and Norwegian EEZ (White lines), the northern Dreki area (Red) and the joint development zone (Yellow). Source: ‚Jan Mayen EEZ" 68°35'04.59N and 11°19'07.57"W. Google Earth. Accessed 10 May 2013.

Figure 5.2: Map of the Icelandic and Norwegian EEZ (specifically Jan Mayen)[65]

The Commission proposed a regime for exploration and exploitation using the Norwegian concession model and the allocation of hydrocarbon resources in the Joint Development Zone ("JDZ") between the two states (note that such proposal is consistent with Article 74.3 and 83.3 of UNCLOS). The Commission chose not to determine other boundaries other than those governing the EEZ of Iceland and the fisheries jurisdiction of Norway.

In the JDZ it recommended that cooperation commence at the pre-drilling stage (on terms that were rather favourable to Iceland[66]), and then suggested a concession regime overlaid

[61] Ibid..
[62] The Report, op. cit., at 822 and 824.
[63] Richardson, footnote 49 , *supra*, *at* 447.
[64] Ibid..
[65] © Google Earth., 2013. Public Domain. See: Permissions, Attribution Guidelines for Google Maps and Google Earth, at:www.google.com/permissions /geoguidelines/attr-guide.html.

by a joint development agreement for exploration and production phases. At the development stage the combined Icelandic-Norwegian government participation interest would constitute a minimum of 50% of a joint venture with private company(ies).[67] Norwegian legislation would apply in the north area and Icelandic law would apply in the south area.[68] Each country would have the option to participate in negotiating the joint venture with private companies in the other Party's sector, of joining any joint venture group formed, and of acquiring a fixed percentage of 25% or less.[69] Unitisation, it recommended, should be implemented in all following possibilities: within the JDZ across Iceland's EEZ boundary line, across the JDZ southward into Iceland's EEZ, and across the JDZ northward on Norway's side.[70] It proposed that any transboundary deposit lying to the north on Norway's side should be considered as falling wholly with the JDZ, which effectively would extend the Zone into Norwegian jurisdiction.[71] Perhaps not surprisingly, due to the number of concessions made to it, Iceland was delighted with the Commission's recommendations.

Norway concluded with Iceland, on the 22 October 1981, the Agreement on the Continental Shelf between Iceland and Jan Mayen.[72] Both parties accepted the Commission's recommendations, and Article 1 of the Agreement states that the continental shelf delimitation line "shall coincide with the delimitation line for the Parties' economic zones". Article 2 defines the coordinates of the area where they established a joint zone of development (Article 3-9). Egilsdottir gives a detailed analysis of the legality of the Agreement under UNCLOS and concludes that it meets the requirements of Articles 74.1 and 83.1 of UNCLOS and Article 6 of GCCS and that the adjusted boundary line is equitable taking into account relevant circumstances.[73] Her analysis and conclusions are in line with this author's.

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[66] The Report, op. cit., at 836 - 839. The commission evidently did this "recognising that Iceland had less extensive experience in joint ventures than Norway" - Richardson, footnote 49, *supra,* at 848.
[67] The Report, op. cit., at 836 - 839.
[68] Ibid..
[69] Ibid..
[70] The Report, op. cit., at 838.
[71] Ibid..
[72] Available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/ISL-NOR1981CS.PDF.
[73] Egilsdottir, footnote 53, *supra,* at 23 – 30.

An interesting question can be raised relating to the nature of the JDZ regime[74]: is it a permanent solution?

The FCSA does not provide a fixed or pre-determined duration for the Agreement. This agreement was entered into prior to Iceland and Norway becoming parties to UNCLOS. Thus Article 73 and 84 of UNCLOS would not apply unless they, in respect of JDZs, are customary international law.

Richardson, the Chairman of the Conciliation Commission, observed that parties should be aware that the provisional arrangement could have "norm-creating "role.[75] Moreover he argued that the terms and conditions on which the parties agreed for such an arrangement should not deviate from that which they would think acceptable on a permanent basis.[76] This seems to have been the case. The 1997 Additional Protocol to the FCSA concerning the final delimitation of the maritime waters between Jan Mayen, Iceland and Greenland clearly recognises the JDZ.[77] Hence, it can be convincingly argued that it is a permanent solution in this case. [78]

[74] Egilsdottir, footnote 53, *supra,* 42 - 44.
[75] Richardson, op. cit., at 453.
[76] Richardson, ibid..
[77] Additional Protocol to the Agreement of 28 May 1981 between Norway and Iceland concerning Fishery and Continental Shelf Questions and the Agreement derived therefrom of 22 October 1981 on the Continental Shelf between Jan Mayen and Iceland, of 11 November 1997, available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/NOR-ISL1997FC.PDF.
[78] Townsend - Gault and Stormont, and Bastida *et al*, maintain that, although JDZs are usually temporary, they can also be a permanent solution: (Ian Townsend – Gault and William Stormont, "Offshore Petroleum Joint Development Arrangements: Functional Instruments? Compromise? Obligation?", (1995), in *The Peaceful Management of Trans-Boundary Resources*, (Gerald Blake *et al,* eds.) at 51 - 52; Bastida *et al*, op. cit., at 371.

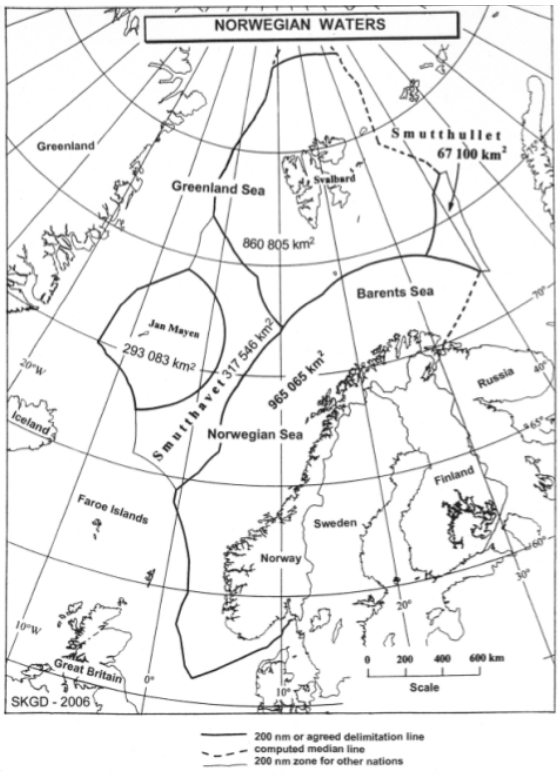

Figure 5.3: Delineation of Norwegian waters as in 2010 prior to the Barents Sea Treaty.[79]

When negotiations began with Denmark regarding the continental shelf and Exclusive Fisheries Zone ("EFZ") delimitations in respect of the area between Jan Mayen Island and Greenland, Denmark made a similar claim to that which had been made by Iceland. However, Norway refused to accept the Danish claim, and the dispute was taken to the ICJ.[80] In the 1993 ICJ judgment the court held that each delimitation is unique and accepted the Norwegian arguments that the Icelandic agreement was not a precedent.[81] The Court divided the disputed area of 64,500km^2 60:40 in favour of Norway.[82]

As a result of the ICJ judgment the parties concluded in 1995 a delimitation agreement relating to the area between Greenland and Jan Mayen.[83] It is very short and reflects the

[79] ©SKGD 2006. Norwegian Mapping Authority. Public Domain.
Website: www.statkart.no/skgd/nyaales.

[80] Case Concerning Maritime Delimitation in the Area between Greenland and Jan Mayen (Denmark v. Norway), ICJ Rep. 1993, available at:
www.icj-cij.org/docket/files/78/6743.pdf.

[81] Ibid., at 76 - 77, para. 86.

[82] Ibid., at 79 - 81, paras. 91 - 93. This can be seen clearly from the Sketch Map of the delimitation at 80.

[83] The Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the Delimitation of the Continental Shelf in the Area between Jan Mayen and Greenland and concerning the Boundary between the Fishery Zones in the Area, 18 December 1995, available at:
ww.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/DNK-NOR1995CS.PDF.

1993 ICJ judgment.[84] Article 2 sets out a very general duty on the parties to agree on the exploitation of any agreed straddling deposit, but the generality of the provision leaves uncertain how clear title to petroleum of a straddling deposit will be resolved.

(b) Svalbard

As discussed in Chapter 4, Norwegian sovereignty over Svalbard and its territorial waters is conditioned by the provisions of 1920 Treaty of Spitsbergen ("The Svalbard Treaty"). The USSR challenged the Norwegian declaration of 3 June 1977 of an exclusive fishing zone ("EFZ")[85] with a breadth of 200km around Svalbard.[86] All other States accepted Norway's right to establish the EFZ round Svalbard, but not all accepted the Norwegian view that the provisions of the Treaty do not apply beyond the territorial sea.[87] Because of these continuing views Norway has chosen to only establish an EFZ and not claim an EEZ.[88]

Even with the establishment of the Joint Norwegian – Russian Joint Fishery Commission in 1976[89] and the 2010 Barents Sea Treaty establishing the maritime boundary between Norway and Russia (see Figure 5.4 below), Russia continues to challenge aspects of the fisheries protection legislation in the area.[90]

[84] Ibid., Articles 1 and 3 establish the single maritime boundary.
[85] Royal Decree relating to the Fishery Protection Zone around Svalbard of 3 June 1977.
[86] See for example: A. A. Kovalev, *Contemporary Issues of the Law of the Sea*: Modern Russian Approaches, (2004), Eleven International Publishing, (edited and translated by W. E. Butler), at 185;
[87] Notably Iceland, Russia and the UK. Churchill and Ulfstein, op. cit., at 40 and 51.
[88] Ministry of Foreign Affairs, "Opportunities and Challenges in the North", *Report No.30 to the Storting (2004 – 2005)*, at 3.3, available at:
www.regjeringen.no/en/dep/ud/documents/propositions-and-reports/report-to-the-storting/20042005/report_no-30_to_the_storting_2005-2005/3.html?id=198409.
[89] On this Commission see: Geir Honneland, "Norway and Russia in the Barents Sea: Cooperation and Conflict in Fisheries Management", (2007), *Russian Analytical Digest*, No. 20, 9.
[90] Trude Pettersen, "Russia wants to discuss Svalbard Fisheries Protection Zone,", (2011), *Barents Observer*, 8 October 2011, available at:
www.barentsobserver.com/en/articles/russia-wants-to-discuss-svalbard-fisheries-protection-zone.

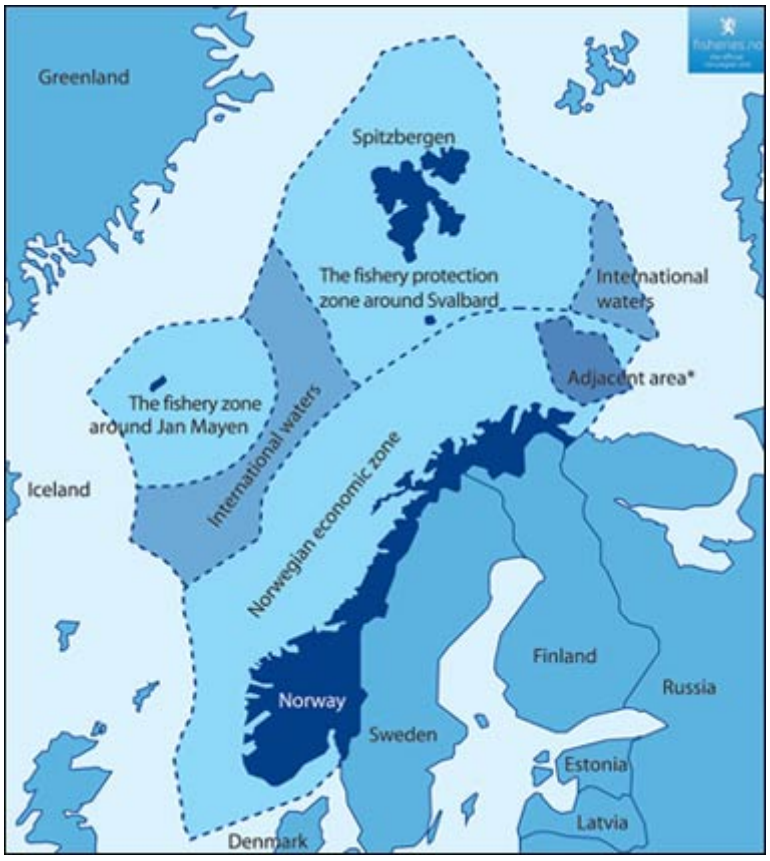

Figure 5.4: Map of Fishery Protection Zone (2007)[91]

Against this background, it is perhaps not surprising that Norway has still not claimed an EEZ for Svalbard. The issue of a continental shelf for Svalbard is examined in Chapter 6.

5.3 Petroleum Regimes, EEZS and Title to Petroleum

Coastal states have the right to explore and exploit the natural resources of the seabed of their respective EEZs under Article 56(1) of UNCLOS. It is worth noting that in their EEZs, they do not *own* the petroleum *in situ* in the seabed.

States can only transfer as good a right to petroleum as they themselves possess to the authorised oil companies producing petroleum in their EEZS. Thus, as we will see below, the national petroleum regimes for oil and gas exploitation can only grant, *inter alia*, to the oil company the exclusive right to produce petroleum from an authorised area and to own its share of the petroleum once produced. It should also be recalled from Chapters 4 that no Arctic State has devolved its offshore sovereign rights to explore and exploit the EEZ to any

[91] ©Nafo, Public Domain, available at: http://www.nafo.int/about/media/oth-news/2007/image/map.jpg.

subunit, or indeed no Arctic State has granted to its indigenous Arctic peoples any rights to petroleum offshore.

However, an oil company's share of the produced petroleum may be less than 100% in cases where there exists state participation in the licence, any royalty payable in kind, or an unitisation agreement allocating shares in the produced petroleum.

There are also protected areas in the EEZs of the Arctic Ocean, such as MPAs, in which accessibility for petroleum development is restricted. They are established by various environmental laws and governmental policies in respect of Arctic Ocean waters, often under the aegis of international commitments of the Arctic States arising from conventions such as the MARPOL Convention[92], the Polar Bear Convention 1973[93], or the Convention on Biodiversity 1992.[94]

Although MPAs and nature reserves within marine areas remove parts of the Arctic Ocean from the ambit of petroleum activities, they do not directly affect the issue of title to petroleum. Oil companies, however, would be well advised to avoid licence/lease blocks close to such areas, as straddling deposits might prove difficult to realise. Chapter 7 will return to these issues in greater depth.

Figure 5.5 below summarises the relevant petroleum regime legislation and production licence/lease terms relating to granting title rights to petroleum produced in the EEZ of each Arctic state.

	Relevant National Petroleum Legislation	**Relevant Provisions**	**Lease/License Transfer of Title**
Canada	1. Canada Petroleum Resources Act 1985 ("CPRA").[95]	1. Arctic EEZ seabed falls within the definition of "frontier lands" (Article 2 CPRA), and thus within the	1. Article 37(1) CPRA states: "A production licence confers, with respect to the frontier lands to which the licence

[92] The International Convention for the Prevention of Pollution from Ships 1973 (as amended), available at: http://library.arcticportal.org/1699/1/marpol.pdf. This convention creates "Special Areas"
[93] The Agreement on the Conservation of Polar Bears, 1973, available at: http://sedac.clesin.org/entri/texts/polar.bears.1973.html.
[94] Convention on Biological Diversity, 1992, available at: www.cbd.int/history/default.shtml.
[95] Canada Petroleum Resources Act, R. S. C. 1985, c. 36 (2nd Supp.), as amended, available at: http://law-lois.justice.gc.ca/PDF/C-8.5.pdf.

		scope of application of this Act. Royalty in kind may be payable. Article 55(1) and (2), CPRA. Petroleum interests vest in Her Majesty in right of Canada. Article 2, CPRA.	applies … (c) the exclusive right to produce petroleum from those frontier lands; and (d) title to the petroleum so produced. Title is subject to the terms and conditions of the licence."
	2. Department of Natural Resources Act 1994 ("DNRA").[96]	2. Licensing Authority is the Minister of Natural Resources. Article 5 DNRA and Article 2 "Minister", CPRA.	
Denmark/ Greenland	1. Greenland Self Rule Act 2009 ("SGA").[97]	1. The Greenland Self-Government has the right of use of, and the right to exploit, mineral resources in the territory of Greenland. (which includes offshore maritime zones). Article 2(1) SGA and Article 2 MRA.	
	2. Mineral Resources Act 2009 ("MRA")[98]	2. "Mineral resources" is defined to include oil and natural gas. Article 5(1) and (2). The Licensing Authority is the Mineral Resource	2. Each offshore licensing round bid package includes a model exclusive licence for the exploration for, and exploitation of, hydrocarbon in the licence area. They are

[96] Department of Natural Resources Act, S. C. 1994, c. 41, available at: http://law-lois.justice.gc.ca/eng/acts/N-20.8/.
[97] The Act on Greenland Self-Government Act, No. 473 of 12 June 2009, available at: www.stm.dk/a_2957.html.
[98] Greenland Parliament Act No. 7 of 7 December 2009, On Mineral Resources and Mineral Resource Activities, an unofficial translation available on BMP website at: www.govmin.gl/images/faelles/mineral_resources_act_inofficial_translation.pdf.

		Authority (which includes the Licence and Safety Authority (formerly the Bureau of Minerals and Petroleum)). Article 3 MRA.	relatively standard. Such a model licence [99] includes provisions relating to: a. The extension of the licence for exploitation from exploration in the event a commercial discovery is made, in accordance with Article 16(3) MRA. b. Exploitation licence defined as an extension of the exploration licence for the purpose of exploitation in an area. Article 1 MRA. Note there is no express granting of rights in the licences re produced petroleum other than the right to 'exploit' the resource, which mirrors the terminology in Article 56 UNCLOS. c. A provision for an interest of the state company Nunaoil A/S in the licence (carried interest during exploration phase). Articles 12 and 17(2) of the Model Licence. The oil company also has an obligation (if so requested) to buy Nunaoil A/S's share of production. Article 13 - 01 Model Licence. d. Payment of Sales and Surplus Royalty in cash. Article 11 Model Licence.
Norway	1. Act No. 72, 29	1. As neither Jan Mayen nor	1. Under Article 3(3) 1966 PA the

[99] For the purposes of this table the model licence from the 2014 Open Door Procedure for Offshore Areas in South West Greenland round is used, ("Model Licence"): available at: www.govrnin.gl/images/stories/petroleum/udbud/udbud_2018_2018/South_West_Greenland/Model_Licence_2014_South_West_Greenland.pdf.

	November 1996, relating to petroleum activities ("1996 PA").[100] 2. Regulations to Act relating to Petroleum Activities 1997 ("1997 PR").[101] A history of the Norwegian petroleum regime and a summary of all applicable laws and	Svalbard has claimed an EEZ, we will examine offshore continental shelf application of these laws around both these archipelagoes in the next Chapter. This chapter will therefore only examine the EEZ offshore mainland Arctic Norway. Under Article 1(1) of the 1996 Law the right to submarine natural resources is vested in the State. This right to explore and exploit petroleum resources may then be granted to companies. Article 3(3) 1996 PA. The requirement of state participation established under Articles 3.6 1996 PA. 2. Licensing authority: Ministry of Petroleum and Energy Article 2 1997 PR.	Ministry can grant exclusive right to an oil company on the EEZ to exploration, exploitation drilling and production of a petroleum deposit. The holder of a production licence issued under the 1996 PA "becomes the owner of the petroleum which is produced". (Article 3(3) 1996 PA).

[100] Last amended by Act No. 38, 24 June 2011, available at: www.ptil.no/getfile.php/Regelverket/Petroleumsloven_e.pdf.
[101] Royal Decree of 27 June 1997, available in English at: www.npd.no/en/Regulation/Regulation/petroleum- activities/.

	regulations are available[102], and will not be repeated here.		
Russia	1. Russian Constitution 1993[103]	1. Under Article 67 of the Russian Constitution the sovereign rights and jurisdiction in the EEZ according to international law is vested in the Russian state. Under Article 71(m) the jurisdiction of the Russian Federation includes, *inter alia*, the determination of the status and protection of the EEZ.	
	2. Law of the Russian Federation on the Exclusive Economic Zone, No. 191 - FZ, of 17 December 1998.[104]	2. Under Article 5(1)(2) of this Law, the RF shall exercise EEZ sovereign rights. Under Article 5(1)(3) the RF has exclusive licensing rights for exploration and production of natural resources in the subsoil of the EEZ, and such licensing is to be done in accordance with 1995 Continental Shelf Law (see below).	

[102] By Mette Karine Gravdahl Agerup, Assistant Director General, Ministry of Petroleum and Energy, Norway, available at:
www.oireachtas.ie/parliament/media/committees/archivedcommittees/cnranda/Norwegian-petroleum.pdf.
[103] The Constitution of the Russian Federation, available in English at:
http://www.constitution.ru/en/10003000-01.htm.
[104] An English version can be purchased from:
www.cis-legislation.com.

	3. Law of the Russian Federation on the Continental Shelf of the Russian Federation, No. 187 – FZ, of 30 November 1995.[105]	3. Article 8 empowers the authorised government bodies of the Federal government to licence petroleum activities to use the subsoil of the continental shelf and EEZ. The rights and obligations granted by such licences are to be in accordance with the licensing provisions set out in the *Subsoil Law.* (See 4. below).	
	4. The *Subsoil Law* 1992.[106]	4. Under Article 1.2 of the *Subsoil Law* the resources in the subsoil are state owned. A subsoil licence (issued under Article 11) shall grant under Article 12 (7) that once petroleum has been extracted under a subsoil production licence they can be owned by the licensee.	4. Following the sequence of cross referral, an Article 11 subsoil licence grants the licensee (there is also a subsoil use agreement which exists in parallel enlarging on the rights and obligations) title to the "agreed amount" of produced petroleum under Article 12 of the *Subsoil Law*. The *Subsoil Law* also establishes that subsoil use licences for deposits on the continental shelf/EEZ are to be issued to entities that fulfill the special criteria that permit offshore subsoil rights to be awarded without tender or

[105] Ibid..

[106] The Law of the Russian Federation No. 2395-1 'On Subsoil', ("*Subsoil Law"),* 21 February 1992, unofficial English version available at: http://ci-legislation.com/document.fwx?rgn=1494.

			auction on decision of the federal government (Article 9).
United States[107]	Outer Continental Shelf (OCS) Lands Act ("OCSLA") 1953.[108]	S.2 defines Outer Continental Shelf as all submerged lands lying seaward and outside the lands within the adjacent state's (i.e. Alaska's) 3nm jurisdiction and of which the subsoil and sea appertain to the United States and are subject to its jurisdiction and control - in other words it includes the EEZ. S.3 establishes the federal right of jurisdiction and control over the seabed and the natural resources thereunder. The Secretary of State is authorised to grant mineral leases on the Outer Continental Shelf for oil and gas development. Ss. 5 and 8	The Bureau of Ocean Energy Management ("BOEM") in the US Department of Interior ("USDI") oversees the leasing process in the EEZ. S.18 requires USDI to prepare a 5 year programmes for lease sales. A lease granted to the winner of a lease sale conveys the right to explore for, develop and produce oil and gas within the lease area under S. 8 OCSLA. The lease specifies these rights – see for example S. 2 - Rights of Lessee.[110]

[107] For a useful manual on United States offshore petroleum law see; *Federal Offshore Oil and Gas Leasing and Development*, (2013), Manual and DVDs, Rocky Mountain Mineral Law Foundation, Order No. SCO13P. For a short overview see: Adam Vann, *Offshore Oil and Gas Development: Legal Framework,* (2014), Congressional Research Service Report, 7 -5700, 26 September 2014, available at: www.fas.org/sgp/crs/misc/RL33404.pdf.

[108] 43 U.S.C. c. 29, Subchapter III, available at: www.epw.senate.gov/ocsla.pdf.

		of OCSLA. The department of the Interior is responsible for implementing the OCSLA in US waters, including in the Arctic Ocean.[109]	

Figure 5.5: National Petroleum Regimes in the EEZs of the Arctic Five[111]

5.4 Conclusions on the role international law plays in securing title to petroleum in the EEZs of the Arctic Five

From the above it can be concluded that international law has established a clear legal regime under which coastal states can claim EEZs, and in which maritime zone they have sovereign rights for the purposes of exploring and exploiting the natural resources in the seabed of the EEZs. In the Arctic context, Svalbard and Jan Mayen Island are minor exceptions to this, and in these two instances international law has only fully resolved the issues connected with one of the islands' EEZs. As discussed, Norway's ability to claim maritime zones beyond the territorial sea for Svalbard remains problematic.

Maritime delimitation agreements with respect to Svalbard and Jan Mayen have addressed continental shelf delimitation and each addresses the issue of straddling boundaries. The 1981 Iceland – Norway Agreement established a JDZ for the overlapping claims area. It can be considered a permanent solution and goes a long way to establishing a clear petroleum regime for the area and ensuring transfer to a producing oil company of clear title to its share of the oil from the area. The Chapter finds that the other Arctic Ocean delimitation agreements establish clear maritime boundaries, but, in addressing the issue of straddling deposits, they fail to provide anything other than brief and general provisions for unitisation, leaving the important specific issues, including allocation and title to petroleum produced, to be negotiated once a straddling commercial discovery is made – from an oil company's perspective a far from an ideal situation.

[110] See for example: US Department of Interior, BOEM, *The 2005 Oil and Gas Lease of Submerged Lands under the Outer Continental Shelf Act, Form BOEM-2005,* (October 2011) available at: www.boem.gov/BOEM-2005/.
[109] 43 USC #1344(a),(e).
[111] ©B.Sas 2015.

From Figure 5.5 it can be seen that each of the Arctic Five has implemented the EEZ sovereign rights regarding the exploration for and exploitation of petroleum under international law into its domestic law. Each of the Arctic Five has established a petroleum regime under which an authorised producer of petroleum in an Arctic EEZ acquires good title to its share of the oil it produces.

Chapter 6: International Law and the Continental Shelf in the Arctic Ocean: Sovereignty and Title to Petroleum

Summary:

This central Chapter in the thesis explores the issue of coastal state's rights to petroleum located in the seabed and subsoil of the continental shelf and the ability of an oil company to be granted title to the petroleum it may produce there. It first provides detailed analysis of the continental shelf regime and of the conceptual, definitional, and implementation issues relating to the continental shelf regime as set out in the relevant provisions of UNCLOS.

In particular it demonstrates the complexity and inadequacies of the formulae and limits set down in Article 76 to define the continental shelf and highlights the difficulties in their practical implementation. The study shows that Article 76, particularly in the Arctic context, is conceptually poor and awkwardly drafted – an unhappy mixture of science and law – where key concepts are often undefined or ambiguous. Key terms such as seabed, subsoil. foot of slope, continental margin, natural prolongation, ridges, and elevations are examined in detail, and examples given, demonstrating how this crucial lack of clear definitions impacts on delineation of the extended continental shelves of coastal states, especially in the context of the thawing subsea permafrost, giving rise to a possible new issue for the law of the sea: the case of the "ambulatory continental shelf".

The practice and process of coastal states claiming extended continental shelves is then studied. The Chapter provides a detailed table of the implementing national legislation and relevant provisions and demonstrates that Article 77 of UNCLOS, which grants coastal states exclusive rights to explore and exploit the seabed and subsoil of their continental shelves, is imported successfully into the domestic laws of the Arctic Five.

The Chapter identifies and analyses the weakness of the provisions relating to the role of the Commission on the Limits of the Continental Shelf ("CLCS"), and the tricky technical evaluation of state claims regarding the nature of specific ridges and elevations in the Arctic Ocean. In terms of allegedly excessive ECS claims, the Chapter also examines the *locus standi* of Non-party States and that of the International Seabed Authority ("ISA").

An examination of Article 82 of UNCLOS demonstrates how poor conceptualisation (albeit having a clear ultimate objective), weak drafting and poor implementation results in multiple inadequacies and lacunae. Potentially, the Article affects the commercial viability of Arctic Ocean ECS petroleum production and may run the risk of acting as a real disincentive for coastal states to develop their Arctic ECSs.

All of the issues identified in the Chapter affect coastal states' rights and thus title to petroleum on the continental shelf. From the analysis it seems, that, after providing the basicframework, international law contributes relatively little to clarifying many of these problematic situations - in the main they are left to the states to sort out.

6.1. General Introduction on the Continental Shelf

It is essential to any analysis of the delineations and delimitations of continental shelves in the Arctic that the concept of the continental shelf, the key specificities of the definition of the continental shelf, and the issues arising therefrom, are understood. As this chapter will show, there exist a number of problematic uncertainties arising from these issues that complicate continental shelf delineation and delimitation in the Arctic Ocean. The history of the evolution of the legal concept of the continental shelf is well described in academic literature[1] and UN[2] and government websites[3], and will not be repeated here. Four of the

[1] Nuno Marques Antunes and Fernando Maia Pimental, "Reflecting on the Legal – Technical Interface of Article 76 of the LOSC: Tentative Thoughts on Practical Implementation", (2003), a paper presented at the *ABLOS Conference Addressing Difficult Issues in UNCLOS 1982*, available at:
www.gmat.unsw.edu.au/ablos/ABLOS03Folder/PAPER3-1.PDF;
Chris Carleton, "Article 76 of the UN Convention on the Law of the Sea - Implementation Problems from the Technical Perspective", (2006), *International Journal of Marine and Coastal Law*, Vol. 21, No. 3, 287;
Churchill and Lowe, op. cit., at 141 - 159; Peter J. Cook and Chris M. Carleton, eds., *Continental Shelf Limits: The Scientific and Legal Interface,* (2000), Oxford University Press (all chapters therein);
Crawford, op. cit., at 269 - 274;
International Bar Association, Committee on the Legal Issues of the Outer Continental Shelf, "Legal Issues of the Outer Continental Shelf", (2004), *Report of the Committee on the Outer Continental Shelf*, Berlin Conference 2004, available at:
www.ila-hq.org/download.cfm/docid/B5A51216-4A4B-ABA5D2CAD1CF4E98;
International Bar Association, Committee on the Legal Issues of the Outer Continental Shelf, "Second Report on the Legal Issues of the Outer Continental Shelf", (2006), in *Second Report of the Seventy-Second Conference*, Toronto 2006, 215;
Ron Macnab, "The Case for Transparency in the Delimitation of the Outer Continental Shelf in Accordance with UNCLOS Article 76", (2004), *Ocean Development and International Law*, Vol. 35, 1;
Ron Macnab, " The Outer Limit of the Continental Shelf in the Arctic Ocean", (2004), in *Legal and Scientific Aspects of the Continental Shelf*, (M. H. Nordquist, J. N. Moore, and T. H. Heidar, eds.), Martinus Nijhoff, 301;
Ted McDorman, "The Continental Shelf Regime in the Law of the Sea Convention: A Reflection on the First Thirty Years", (2012), *International Journal of Marine and Coastal Law*, Vol. 27, 743;
O'Connell, op. cit., at 467 - 509 and 684 - 727;
David M. Ong, "A Legal Regime for the Outer Continental Shelf? An Inquiry as to the Rights and Duties of Coastal States within the Outer Continental Shelf", (2003), a paper presented to the *Third Biannual ABLOS Scientific Conference, Monaco 2003*, available at:
www.iho.int/mtg_docs/com_wg/ABLOS/ABLOS_Conf3/PAPER7-4.PDF;
Alex G. Oude Elferink, "Article 76 of the UN Convention on the Law of the Sea - Implementation Problems from a Legal Perspective", (2006), *International Journal of Marine and Coastal Law*, Vol. 21, No.3, 269;
Alex G. Oude Elferink, "The Outer Limits of the Continental Shelf in the Polar Regions, (2013), in *The Law of the Sea in Polar Regions*, (Erik J. Molenaar, Alex G. Oude Elferink, and Donald R. Rothwell, eds.), Martinus Nijhoff, Chapter 4, at 61 – 84;
Sharveen Persand, "A Practical Overview of Article 76 of the United Nations Convention on the Law of the Law of the Sea", (2005), *Fellows Papers*, Mauritius Oceanography Institute, United Nations and Nippon Foundation of Japan, 1, at 2 - 4, available at:
www.un.org/depts/los/nippon/unnff_programme_home/fellows_pages/fellows_papers/persand_0506_mauritius.pdf;
V. Prescott, "Natural Rights to Hydrocarbon Resources of the Continental Margin Beyond 200 Nautical Miles", (1998), in *Boundaries and Energy: Problems and Prospects*, (G. H. Blake, ed.), Kluwer, 51 - 82;
V. Prescott, "Resources of the continental shelf and international law", (2000), in *Continental Shelf Limits*: the Scientific and Legal Interface, (Peter Cook and Chris Carleton, eds.), op. cit., at 64 - 83;

Arctic Five states are parties to UNCLOS[4] and Articles 76 and 77 of UNCLOS (on the juridical definition of the continental shelf and the rights of coastal states) are considered by the United States (the only UNCLOS Non-party State of the Arctic Five) to be a codification of customary international law[5]. Thus, it suffices, for the purposes of the thesis, only to analyse the definition of the continental shelf in Article 76 of UNCLOS. It is worth commenting that Article 76 of UNCLOS marked a significant change in the definition of the continental shelf, introducing a juridical continental shelf (of 200nm) in addition to the definition of the natural continental shelf based on geological and geomorphological features, as can be seen from the definition below.[6]

Rothwell and Stephens, op. cit., at 98 - 118;
Suzette V. Suarez, *The Outer Limits of the Continental Shelf, Legal Aspects of their Establishment*, (2008), Springer;
Peter - Tobias Stoll, "Continental Shelf", (2013), in *Encyclopedia of Public International Law*, (R. Wolfrum, ed.), Max Planck Institute, Vol. 2, 719, available on line at:
www.mpepil.com;
Tanaka, op. cit., at 132 - 145; Triggs, op. cit., at 363 - 368.

[2] UN, DOALOS, *The Law of the Sea: Definition of the Continental Shelf - An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea 2-4*, (UN Sales No., E.93.V.16, 1993).

[3] Especially in the United States – see: http://continentalshelf.gov.
See Roach and Smith on United States policy, op. cit., at 187 – 193.

[4] UNCLOS includes the *Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982*, ("1994 Agreement"), adopted 28 July 1994, (1994), 1836 UNTS 3.

[5] The United States' Interagency Group on the Law of the Sea and Ocean Policy in 1987 stated that; "the delimitation provisions of Article 76 of the 1982 United Convention on the Law of the Sea reflect customary international law". See: *Memorandum from the Assistant Secretary John D. Negroponte to the Deputy Legal Advisor Elizabeth Verville of* 17 November 1987, State Department File No.P89 0140-0428, Cumulative Digest 1878.
Re Article 76, see: "Letter of Submittal, Treaty Between the United States and Mexico on the Delimitation of the Continental Shelf in the Western Gulf of Mexico Beyond 200 Nautical Miles", (2000), Washington, D.C., Treaty Doc. 106 - 39, excerpted in *Digest of U.S. Practice in International Law 2000*, at 599, available at:
www.state.gov/documents/organisations/139599.pdf;
Re Article 77, see: "Guidance prepared by the U.S. State Department on claims related to Antarctica.",(2004), excerpted in *Digest of U.S. Practice in International Law 2004,* at 732, available at:
www.state.gov/documents/organization/139391.pdf.
Both the Article 76 and 77 references above were drawn to the author's attention by J. Ashley Roach, "Today's Customary International Law of the Sea", (2014), *ODIL*, Vol. 45, No. 3, 239, 94, at 249.
This view of Article 76 as customary international law has been confirmed by the ICJ in several judgments: Case Concerning the Continental Shelf (*Libya v. Malta*), (1985), ICJ Rep. 33, at 55, para. 77; Territorial and Maritime Dispute (*Nicaragua v. Colombia*), (2012), ICJ Rep. at 666, para. 118. The tribunal in Canada - France Maritime Boundary Arbitration ("*The St Pierre and Miquelon Case*") assumed Article 76 to be customary international law, [*St Pierre and Miquelon Case*, (1992), ILM, Vol.31, 1149]. See also: Churchill and Lowe, op. cit., at 150: Crawford, op. cit., at 222 and 274; Oude Elferink, (2012), op. cit., at 63; Tanaka, op. cit., at 133 and 134, but cf. at 140 – 141 (written before the 2012 *Nicaragua v Colombia* judgment); Triggs, op. cit., at 364.

[6] Article 1 of GCCS 1958 defined the continental shelf as either submarine areas beyond the territorial sea out to a depth of 200nm or beyond that limit as far as exploitation of the natural resources allow - clearly an ambulatory limit as oil and gas technology evolves. The general consensus was this was an unsatisfactory definition in need of revision (see O'Connell, op. cit., at 492 seq.). In response the international courts and

Article 76 of UNCLOS states:

"Definition of the continental shelf

1.The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.

2.The continental shelf of a coastal State shall not extend beyond the limits provided for in paragraphs 4 to 6.

3.The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the seabed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.

4.4. (a) For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either:

(i) a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope; or

(ii) a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope.

4(b) In the absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base.

5. The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a)(i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres.

6. Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that

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tribunals evolved new criteria for continental shelf definition – see the *North Sea Continental Shelf Cases*, op. cit., at 31, para. 43.

are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs.

7. The coastal State shall delineate the outer limits of its continental shelf, where that shelf extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude.

8. Information on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured shall be submitted by the coastal State to the Commission on the Limits of the Continental Shelf set up under Annex II on the basis of equitable geographical representation. The Commission shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf. The limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding.

9. The coastal State shall deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf. The Secretary-General shall give due publicity thereto.

10. The provisions of this article are without prejudice to the question of delimitation of the continental shelf between States with opposite or adjacent coasts."

The diagram in Figure 6.1 below illustrates the various alternative formulae and limits in the definition of the continental shelf.

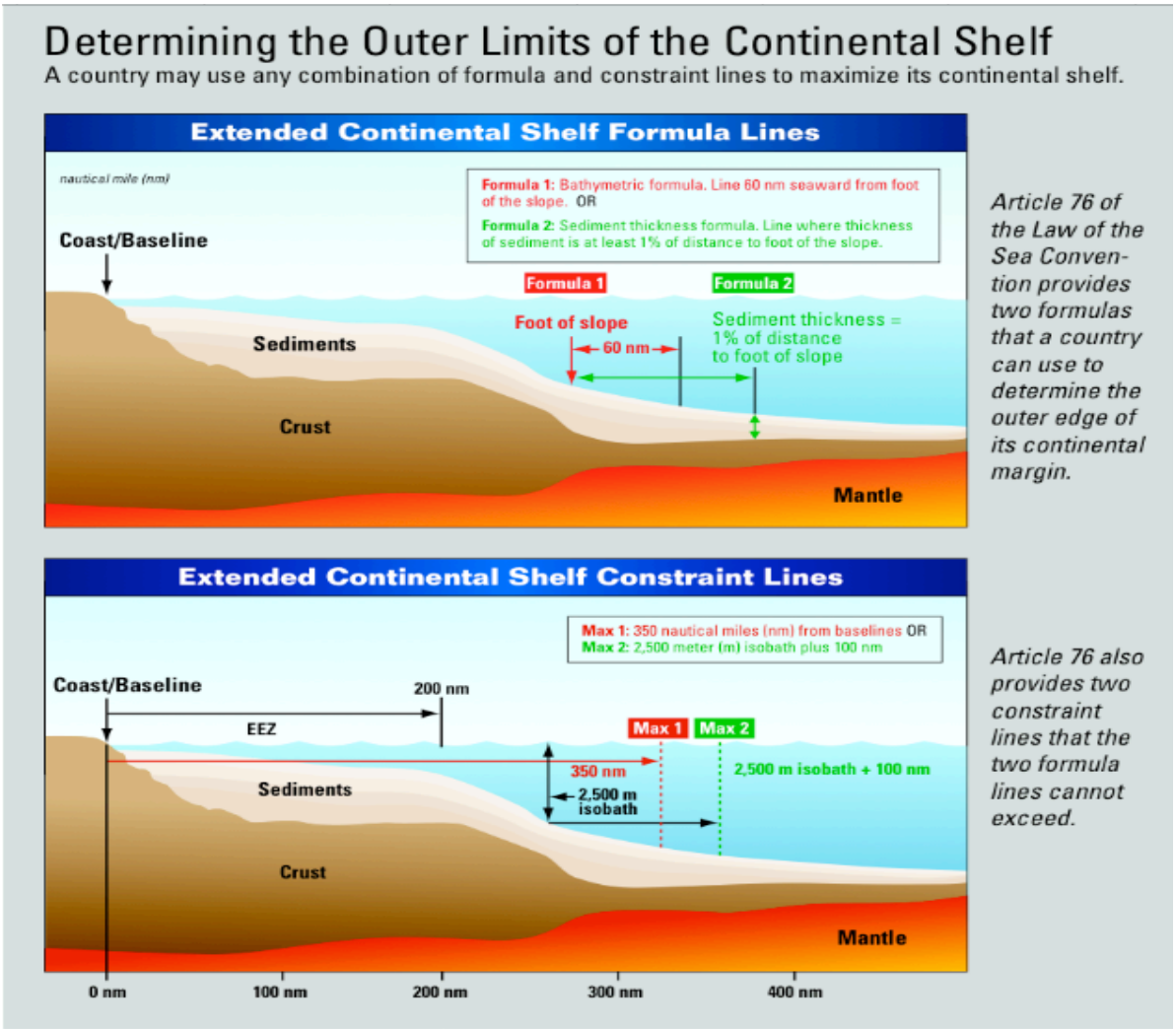

Figure 6.1: Diagrams showing how to use formulae and constraint lines to define and establish the limits of the continental shelf under Article 76 UNCLOS[7]

From the above definition several important general points can be made:

(1) The lengthy[8] and awkwardly drafted[9] definition is full of complexities, and is a mixture of law and science (geology, geodesy, geomorphology, and hydrography[10]), which

[7] ©USDS. Public Domain, available at: http://m.state.gov/mc26317.htm

[8] 617 words.

[9] Bernard H. Oxman, remarks made in "Discussion", (1989), in *The International Implications of Extended Maritime Jurisdiction in the Pacific*, (J. P. Craven, J. Schneider, and C. Stimson, eds.), University of Hawaii, at 270 - 273 and 434 - 435.

[10] Johnson described the criteria of Article 76 as combining the "influences of geography, geology, geomorphology and jurisprudence": Douglas M. Johnson, *The Theory and History of Ocean Boundary Making*, (1988), McGill – Queens Press, at 91. Mc Dorman argues that the influence of hydrocarbon resources should be added to the list, as sediment thickness criteria was resource exploitation driven: Ted L. McDorman, "The Continental Shelf Beyond 200nm Law and Politics in the Arctic Ocean", (2009), *Transnational Law and Policy*, Vol. 18, No. 2, 155, at 170.

gives alternative definitional formulae and limits and uses key but legally undefined terms such as: continental slope, continental rise, oceanic ridge, seabed, submarine elevation, submarine ridge, and subsoil.[11] The definition of continental shelf is characterised by vagueness, ambiguity, and uncertainty, possibly arising from its origins in political compromise[12], and not unlike other provisions elsewhere in UNCLOS.[13]

Moreover, the criteria in Article 76(4) are not easily applicable in any given situation[14], and, according to Arctic hydrographers, are particularly difficult in practice to apply in the Arctic Ocean.[15] For example, the mapping of the seafloor of the Arctic is extremely difficult due to the conditions in which such mapping occurs: short summer periods, the presence of continuous sea ice in some parts, limitations of technology and resources (such as specially equipped icebreakers or nuclear submarines), high costs, and long time frames.[16] Moreover, even where data has been collected, teams of specialists are required to analyse and process it, and this complex data processing can be very time consuming and costly.[17] The identification of crucial features such as

[11] On these terms see: Walker, op. cit., at 150 (#37), 152 (#38), 196 (# 67), 264 (128), 293 (#157), 312 (#180), 315 (#182) and 317 (#184).

[12] On this see: Maurice Hope – Thompson, "The Third World and the Law of the Sea: The Attitude of the Group of 77 Towards the Continental Shelf", (1980), *Boston College Third World Law Journal,* Vol. 1, No. 1, Part IV: "The Movement Towards Compromise on the Continental Shelf Issue", at 58 – 62, available at: http://lawdigitalcommons.bc.edu/twlj/vol1/iss1/11;
Also Antunes and Pimental (2003), footnote 1, *supra*, at 10; Macnab, ((2004), footnote 1, *supra*) described Article 76 as "a triumph of ambiguity".

[13] For example, in the Arctic context, Article 234.

[14] McDorman provides a brief insight in the complexities and uncertainties of the Article 76 formulation, see: McDorman, (2004), op. cit., at 304;
On the general technical difficulties, see: Chris Carleton, "Article 76 of the UN Convention on the Law of the Sea – Implementation Problems from the Technical Perspective", (2006), *IJMCL*, Vol. 21, No. 3, 287.
On specific Arctic Ocean issues, see: Larry Mayer, Martin Jacobsson, and John Hall, "Challenges of Collecting Law of the Sea Data in the Arctic", (2005), in *International Energy Policy, The Arctic and the Law of the Sea*, (Myron H. Nordquist, John Norton Moore and Alexander S. Skaridov, eds.), Part III: Scientific Aspects of Energy Exploration and Exploitation at Sea, 125, at 133.

[15] See for instance: Deborah R. Hutchinson, H. Ruth Jackson, John W. Shimeld, C. Borden Chapman, Jonathon R. Childs, Thomas Funck and Robert W. Rowland, "Acquiring Marine Data in the Canada Basin, Arctic Ocean", (2009), *EOS*, Vol. 90, No. 23, 9 June 2009, 197, 197 - 198.

[16] Betsy Baker, "Law, Science, and the Continental Shelf: The Russian Federation and the Promise of Arctic Cooperation", (2010), *American International Law Review*, Vol. 25, No. 2, 251, at 259 - 260, Carleton, op. cit., at 125, and 128 - 129.

[17] Carleton, (2006), op., cit., at 292 - 293.

the foot of the slope can be very difficult in the Arctic Ocean.[18] The mapping and analyses done so far have shown that the floor of the Arctic Ocean is far more complex geologically and geomorphologically than the UNCLOS drafters could have envisaged.[19]

The criteria of Article 76 and the difficulties encountered in their application in the Arctic Ocean context will be further examined below in Sections 6.2 and 6.3.

(2) All coastal states have an *inherent* right[20] to a continental shelf which is defined in Article 76(1) as the seabed and subsoil of the submarine areas either throughout the natural prolongation of the land territory as far as the outer edge of the continental margin (a geological criterion) *OR* to a distance 200nm from the territorial sea baselines when the outer edge of the continental margin does not extend up to that distance (the automatically 'ascribed continental shelf' based on a distance criterion of 200nm). The landward limit of the continental shelf is the seaward limit of the territorial sea.

From the above it is worth noting that:

1. The continental shelf does not depend on occupation or express proclamation.[21] However, for a continental shelf extending beyond 200nm, Article 76(8) does require that the coastal state submit to the Commission on the Limits of the Continental Shelf ("CLCS") information on the limits of that shelf.[22] Additionally Article 76(8) provides that the limits of a continental shelf established by the coastal state on the basis of recommendations of the CLCS are "final and binding".

[18] Chris Carleton, "Practical Realization of the Continental Shelf", (2000), in *Continental Shelf Limits*, (Peter J. Cook and Chris M. Carleton, eds.), 268, at 271.
[19] Baker, footnote 16, *supra*.
[20] O'Connell, op.cit., at 482 - 484. See Article 77(3) of UNCLOS: "the rights of the coastal state over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation".
[21] The ICJ in the North Sea Continental Shelf Cases commented that "the rights of the coastal state in respect to the area of the continental shelf …exist *ipso facto* and *ab initio*, by virtue of its sovereignty over the land. In short there is …an inherent right": *North Sea Continental Shelf* Cases (Germany v. Denmark, Germany v. Netherlands), Judgment of 20 February 1969, at 21 - 22, para. 19, available at: http://www.icj-cij.org/docket/files/52/5561.pdf.
[22] For a thorough examination of the role of the CLCS, see: Oystein Jensen, *The Commission on the Limits of the Continental Shelf, Law and Legitimacy*, (2014), Martinus Nijhoff.

Moreover, Article 76(7) sets out how the continental shelf beyond 200nm shall be delineated and Article 82 requires the coastal state to make payments or contributions in kind throughthe International Seabed Authority with respect to the exploitation of the continental shelf beyond 200nm. No such requirements exist for the continental shelf within 200nm. Sections 6.2 and 6.3 below will discuss this issue in the context of the Arctic.

2. Both formulae/methods require territorial sea baselines, which, under Article 3 UNCLOS, must be "determined in accordance with this Convention" and in particular straight baselines must join "appropriate points" under Article 7(1) UNCLOS. This has major implications for legally valid continental shelf delineation, especially in the Arctic where territorial sea baselines have been drawn using ice features and/or where basepoints are now located in the sea due to melting ice conditions, as discussed in Chapter 3.

(3) Article 76(4) gives the operational definitions of the outer edge of the continental margin. For continental shelves beyond 200nm, Article 76(4)(a) gives two options for defining the outer edge of the continental margin whenever the margin extends beyond 200nm: *either* (i) as a line referencing the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1% of the shortest distance from such point to the foot of the continental slope *or (ii)* as a line referencing fixed points not more than 60nm from the foot of the continental slope.

Article 76(4)(b) defines the foot of the continental slope as the point of maximum change in gradient at its base (in the absence of evidence to the contrary).

The geological criterion in Article 76(1) and the definition of continental margin and foot of the continental slope in Articles 76(3) and 76(4) give rise[23] to various practical and

[23] For a very useful analysis of these issues from both the geological and legal perspective, see; Hollis D. Hedberg, "Continental margins from viewpoint of the petroleum geologist", (1970), *AAPG Bulletin,* Vol. 54, No. 1, January 1970, 3.

interpretive difficulties in determining the outer edge of the continental margin. This will be explored further below, particularly in relation to Arctic conditions.

(4) The issue of ridges, their categorisation, and legal impact on the delineation of the continental shelf is a highly problematic area. The lack of definition of the term 'submarine ridge' is a lacuna of some significance, particularly in the Arctic Ocean. Some authors have cautioned that this uncertainty should not be allowed to provide a few states with the opportunity to claim large areas of the ocean seabed at the expense of the Area.[24] Section 6.3.1 will return to examine this topic in detail.

(5) Article 76(10) expressly provides that the provisions of Article 76 are "without prejudice" to the question of delimitation of the continental shelf between opposite and adjacent states. As Johnson and Oude Elferink state: "The significance of this provision is evident from a review of continental shelf areas beyond 200nm worldwide".[25] We will also examine further this issue below.

(6) The definitions and issues relating to the legal effect of oceanic ridges, submarine ridges and submarine elevations in Articles 76(3) and 76(6) add significant further complexity in defining the limits of continental shelves beyond 200nm. This is particularly relevant in the Arctic Ocean and will be analysed in depth below.

(7) One thing, however, is certain. Despite the procedural requirements of Articles 76 (7) and (8), it is the coastal state, not the CLCS, which has the legal capacity to set the state's outer limit of the continental margin.[26] It is the coastal state that defines its

[24] Taft, for example states: "The submarine provision [Article 76(6)] must not be the wedge of the very few to undermine the legal, political, and economic interests of the overwhelming majority of developing and developed nations. Indeed, the integrity of the geographical scope of the Area beyond national jurisdiction is at stake". See: George Taft, "Solving the Ridges Enigma of Article 76 of the United Nations Convention on the Law of the Sea", (2001), a paper presented to the ABLOS Conference 2001 , Monaco 18 - 19 October 2001, *Report to the ABLOS Conference 2001 : Accuracies and Uncertainties in Maritime Boundaries and Outer Limits*, available at:
http://iho.int/mtg_docs/com_wg/ABLOS/ABLOS_Conf2/TAFT.PDF.

[25] Constance Johnson and Alex G. Oude Elferink, "Submissions to the Commission on the Limits of the Continental Shelf in Cases of Unresolved Land and Maritime Disputes: The Significance of Article 76(10) of the Convention on the Law of the Sea", (2006), Chapter 9, in *The Law of the Sea: Progress and Prospects*, (David Freestone, Richard Barnes and David Ong, eds.), Oxford University Press, 162.

[26] Jensen, footnote 22, at 134 - 135; Ted L. McDormon, "The Role of the Commission on the Limits of the Continental Shelf: A Technical Body in a Political World", (2002), *The International Journal of Marine and Coastal Law*, Vol. 17, No. 3, 301, at 306.

continental shelf (Article 76(7)), albeit it should follow the Article 76(8) procedure to have outer limits that are "final and binding". This procedure may involve potentially a "dialogue"[27] or "ping-pong process"[28] with a cycle of submissions to the CLCS, recommendations of the CLCS, resubmissions, and further recommendations.[29]

Moreover, as some delegations to the 11th Meeting of State Parties to UNCLOS pointed out in 2001, there does not appear to be any legal consequence stipulated by UNCLOS in the case that a state does not make a submission to the Commission, and several states at the 11th Meeting emphasised the principle that the rights of a coastal state over its continental shelf are inherent and do not depend upon occupation, effective or notional, or any express proclamation.[30]

The role of the Commission as a technical body making recommendations on coastal states' submissions of continental shelf claims has been thoroughly analysed in the literature and will not be repeated here.[31] It suffices to note that, although the CLCS's recommendations are not binding, they do have legal consequences.[32] The primary consequence is that under Article 76(8) delineations of the outer limits of the continental shelf based on CLCS recommendations "shall be final and binding". The questions of the meaning of the term "on the basis of'" and "on who will the outer limits be final and binding?", arising under Article 76(8), have been addressed by numerous scholars[33] and the International Law Association ("ILA").[34] In examining the

[27] Douglas M. Johnson, *The Theory and History of Ocean Boundary - Making*, (1988), McGill - Queen's University Press, at 95; Suarez, op. cit., at 200.

[28] Piers R. R. Gardiner, "The Area beyond National Jurisdiction – Some Problems with Particular Reference to the Role of the Commission on the Limits of the Continental Shelf", (1987), in *Maritime Boundaries and Oceanic Resources*, (G. H. Blake, ed.), Croom Helm, 63, at 69; McDorman, (2002), op. cit., at 306.

[29] A process that Smith and Taft consider "could go on indefinitely", see: R. W. Smith and G. Taft, "Legal Aspects of the Continental Shelf", (2000), in *Continental Shelf Limits: The Scientific and Legal Interface*, (P. J. Cook and C. M. Carleton, eds.), Oxford University Press, at 20; Ulf - Dieter Klemm, "Continental Shelf, Outer Limits", (1992), in *Encyclopedia of Public International Law,* (Rudolf Bernhardt, ed.), North Holland, Vol. 1, 804, at 806.

[30] UN, *Report of the Eleventh Meeting of State Parties to the LOS Convention,* (2001), Doc. SPLOS/73 of 14 June 2001, at paras. 67 – 82, available at:
www.un.org./Depts/los/meeting_states_parties/documents/splos_73.

[31] For two relatively recent and thorough studies, see: Jensen, footnote 22, *supra;* Suzette V. Suarez, *The Outer Limits of the Continental Shelf, Legal Aspects of their Establishment*, (2008), Springer.

[32] Suarez, op. cit., at 213.

[33] Jensen, op. cit., footnote 22, at 94 – 117; Smith and Taft, op. cit., at 20, Suarez, op. cit., at 213 – 216.

[34] International Law Association, "Legal Issues of the Outer Limits of the Continental Shelf", (2004), *ILA Berlin Conference (2004)*, at 21, available at:

meaning of "on the basis of" the ILA indicated that there is a certain degree of flexibility in following the recommendations allowed the coastal state.[35] Moreover, the CLCS is not competent to indicate whether a state has established the outer limits of its continental shelf "on the basis of" its recommendations [36], although third states may challenge them on that basis.[37]

There is universal agreement that, *de minimis,* outer limits delineated on the basis of the CLSC's recommendations are final and binding on the submitting coastal state.[38] The ILA has taken the view that outer limits established on the basis of the CLCS's recommendations are also final and binding on other states who are parties to UNCLOS.[39] Certainly it can be strongly argued that, failing any protest from a third state, the ILA's view is correct. Furthermore, outer limits cannot become final and binding by operation of Article 76(8) on states that are not parties to UNCLOS as a consequence of the *pacta tertiis* rule.[40]

Such issues are in the case of the Arctic Ocean highly pertinent, as will be shown in Section 6.3 below.

6.2 Article 76: Definitional Issues

Article 76 is a legal definition of continental shelf[41] and should not be confused with the scientific definition of continental shelf, albeit that it is replete with scientific terms.[42] As Antunes and Pimental argue, the terms in Article 76 derived from geosciences "are to be

www.ila-hq.org/download.cfm/docid/B5A5216-8125-4A4ww.ila-hq.org/download.cfm/docid/B5A51216-8125-4A4B-ABA5D2CAD1CF4E98.

[35] ILA, Berlin Conference, (2004), footnote 34, *supra*, at 21 - 22.

[36] A. De Marffy Mantuano, "La Frontiere des Dernieres Limites Maritimes: La Role de la Commission des Limites du Plateau Continental", (2003), in *La Mer et son Droit: Melanges Offerts à Laurent Lucchini et Jean - Pierre Queneudec*, (Daniel – Heywood Anderson, Vincent P. Bantz, Genevieve Bastid – Burdeau, Mohammed Bedjaoui, Josette Beer- Sabel, eds.), A. Pedone, 399, at 413.

[37] ILA, Berlin Conference (2004), footnote 34, *supra*, at 21.

[38] ILA, Berlin Conference (2004), footnote 34, *supra,* at 23.

[39] ILA, Berlin Conference (2004), footnote 34, *supra*, at 35.

[40] ILA, Berlin Conference (2004), footnote 34, *supra,* at 23.

[41] O'Connell, Vol. 1, op. cit., at 476 - 477.

[42] Antunes and Pimental, (2003), op. cit., at 2 - 4; Baker, op.cit., at 265; R. W. Smith and G. Taft, "Legal Aspects of the Continental Shelf", (2000), in *Continental Shelf Limits: The Scientific and Legal Interface*, (Peter Cook and Chris Carleton, eds.), Oxford University Press, 17.

viewed with caution, as they may have two distinct meanings: a geo-scientific meaning and a juridical meaning".[43]

The CLCS states that: "[t]he term "continental shelf" is used by geologists generally to mean that part of the continental margin which is between the shoreline and the shelf break or, where there is no noticeable slope, between the shoreline and the point where the depth of the superjacent water is approximately between 100 and 200 metres".[44] This geological definition clearly does not match the juridical definition in Article 76 as Figure 6.2 illustrates clearly.[45] As the CLCS in its Guidelines comments: "the Convention makes use of scientific terms in a legal context, which at times departs significantly from accepted scientific definitions and terminology".[46]

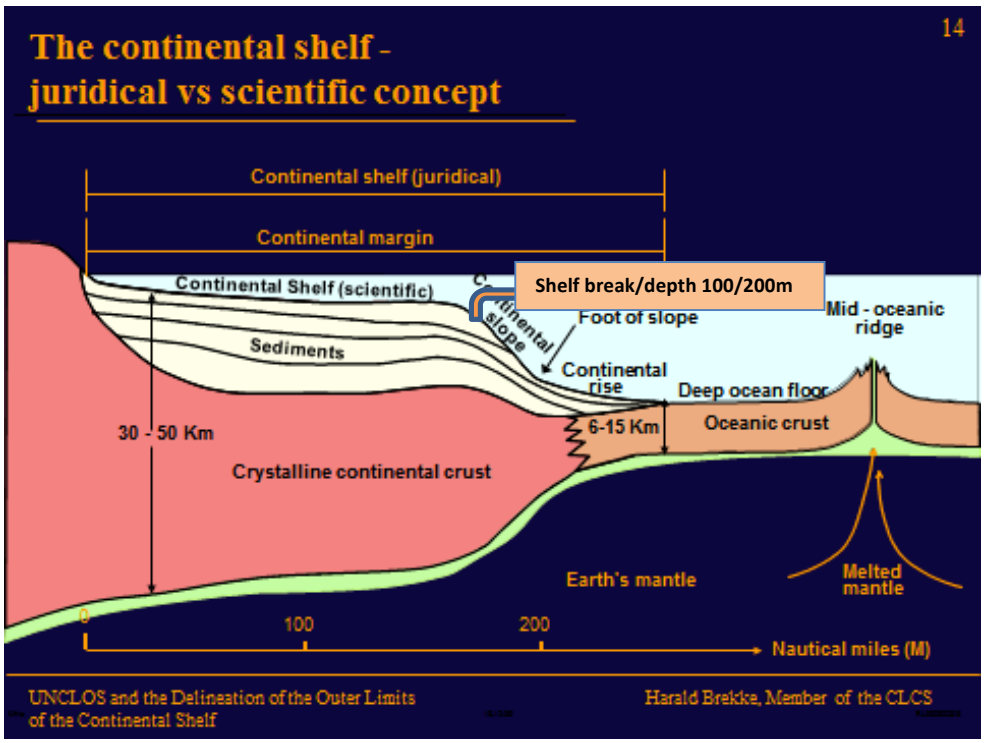

Figure 6.2: Diagram of juridical and scientific concepts of the continental shelf[47]

[43] Antunes and Pimental, (2003), op. cit., at 6.
[44] Persand, footnote 1, *supra,* at 5; Hedberg, footnote, 23, *supra,* at 3.
[45] Hedberg, ibid..
[46] UN Commission on the Limits of the Continental Shelf, *Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf,* (1999), CLCS/11, available at: www.un.org/depts/los/clcs_new/clcs_home.htm.
[47] © Harald Brekke. Permission to use this diagram in the thesis was given by Brekke in an e-mail dated 2 January 2015. Permission was also given for the insertion of 'shelf break' by the thesis author. Available in:

In fact, there are a number of terms and concepts used in the 'distance criteria' definition of continental shelf of Article 76 that appear to lack formal juridical definition and these will be briefly analysed below in considering the continental shelf definition in Article 76 (1)-(3), in particular in the context of the Arctic Ocean: they include the terms seabed, subsoil, natural prolongation, and continental margin. Other terms/phrases specific to the definition of the extended continental shelf in Article 76 (4)-(6), such as foot of the slope, ridges, elevations, evidence to the contrary, and sedimentary rock, shall be examined in Section 6.3 below which analyses the definition for the continental shelf beyond 200nm. The Arctic Ocean has characteristics which have significant importance in the interpretation and application of the definition of continental shelf for delineation and delimitation purposes, and may in some circumstances, as will be analysed below, lead to uncertainty of the limits of coastal states' maritime claims in the Arctic Ocean, in particular in relation to the thawing of subsea permafrost. This definitional uncertainty could have important consequences in practice. As Graben states:

> "Depending upon how these terms are defined, characterised, and measured, states could have wildly varied claims to their continental shelves...
>
> One consequence of uncertainty in the language of the treaty is that, positivist accounts of compliance with Commission authority may be of limited explanatory value when indeterminacy is apparent….Since law is uncertain and potentially open to equally valid and competing interpretations States may act at odds with each other or with the Commission and still be construed as complying with international law…".[48]

The following section will demonstrate that a "back to basics" approach with a detailed examination of the definitions and terms of Article 76 of UNCLOS is not a purely academic exercise but may be one of fundamental importance for the delineation and delimitation of the key maritime zones of the coastal states in the Arctic Ocean.

Harald Brekke, "United Nations Convention on the Law of the Sea and the Delineation of the Continental Shelf", (2000), presentation to the *Open Meeting of the Commission on the Limits of the Continental Shelf 2000,* held on 1 May 2000, at 6 – 36, available at:
www.continentalshelf.org/_documents/1Brekke.ppt.

[48] Sari Graben, "Science and Compliance in the Arctic: A Regulatory Approach to the Commission on the Limits of the Continental Shelf", (2013), a paper presented at the *2012 – 2013 University of Washington Canada Fulbright Visiting Chair Lecture and Roundtable on the Arctic,* University of Washington, Seattle, 30 May 2013, at 5 – 6, available at:
Whttp://jsis.washington.edu/canada/file/Science%20&%20Arctic%20Compliance_Fulbright.pdf.

6.3 Analysis of Key Undefined Terms in Articles 76(1) – 76(3) of UNCLOS

6.3.1 Seabed:[49]

As Marston says, concepts and rules "for the bed and subsoil of the territorial sea were conceived later than the corresponding rule for the superjacent waters".[50] Before the 19th Century states were concerned with issues of freedom of the seas and the slow emergence of the right of coastal states to territorial waters.[51] Slowly from the 17th Century onward states exploited the living resources of the surface of the seabed[52] and in the 19th Century some states commenced subsea mining of coal and other minerals by tunnelling from onshore, and passed enabling laws.[53]

Article 9 of the ILA's 1926 Draft *Convention on the Law of Maritime Jurisdiction in time of Peace* used the term 'seabed', but without defining it.[54]

It was only well into the 20th Century, with technological advancement enabling subsea exploitation of natural resources such as petroleum, that States commenced to take very serious interest in the legal status of the sea floor.[55] In the 1930s successful hydrocarbons drilling had begun in the Arabian Gulf, Gulf of Paria, Gulf of Mexico and Gulf of California, and by the end of WWII the extent and scale of the hydrocarbons located in the subsea

[49] Wolfgang Graf Vitzthum, "Seabed and Subsoil", (2000), in *Encyclopedia of Public International Law*, (Rudolf Bernhardt, ed.), Vol. 4, North Holland.

[50] G. Marston, "The evolution of the concept of sovereignty over the bed and subsoil of the territorial sea, (1977), *BYIL*, Vol. 48, (1976 – 1977), 321, at 332.

[51] For a detailed of the doctrine of *mare liberum* and the emergence of territorial waters of coastal states see, Hersch Lauterpacht, ed., *Oppenheim's International Law*, 8th Edn., (1955), Vol. 1, Peace, at Part II, Chapter II: the Open Sea, at 582 - 635, and Chapter II, Part II, Chapter I, at Section VI: Maritime Belt, at 486 - 504; James B. Morell, *The Law of the Sea: An Historical Analysis of the 1982 Treaty and its Rejection by the United States*, (1992), McFarland, at 1 - 22.

[52] R.P. Anand, "Legal Continental Shelf", (1980), *in Law of the Sea, Caracas and Beyond,* (Ram Prakash Anand, ed.) Martinus Nijhoff, Chapter 7, 145, at 145; Carl M. Franklin, *The Law of the Sea: Some Recent Developments*, (US Naval War College International Law Studies 1959-1960, (1961) DCF, Washington, at 30 - 31; P. C. Jessup, *The Law of Territorial Waters and Maritime Jurisdiction,* (1927), G. A. Jennings Co. Inc., at 15. Cecil Hurst, "Whose is the Bed of the Sea?", (1923), *BYIL,* Vol. 4, 23, at 24;,

[53] Jensen, op. cit., Chapter 2.2 – The Early History of the Legal Regime of the Continental Shelf, at 8 - 11; Lauterpacht, *Oppenheim's International Law*, op. cit., at Part II, Chapter II, Sections IX and X, at 628 - 635, Suarez, op. cit., at 1 - 30; Michael P. Scarf, *Customary Law in Times of Fundamental Change, Recognising Grotian Moments*, (2013), Cambridge University Press, Chapter 5: The Truman Proclamation on the Continental Shelf", at 107 - 123;

[54] See ILA, *Report of the 34th Conference held in Vienna, 5 – 11 August 1926*, (1927), ILA, London.

[55] Jensen, op. cit., "Chapter 2.2 – The Early History of the Legal Regime of the Continental Shelf", at 10.

subsoil in such regions was well known. [56] Hence, in 1945, responding to military and oil industry lobbying for a clear legal regime for exploitation of these resources[57], President Truman issued a proclamation on the 28 September 1945 on the United States' rights with "[r]espect to the Natural Resources of the Subsoil and Seabed of the Continental Shelf ("The Truman Proclamation").[58] The Truman Proclamation did not involve any claim of sovereignty, only of jurisdiction and exclusive control.[59] The proclamation was marked by an absence of protest from other states, and other coastal states soon followed suit with their own unilateral claims and legislation.[60]

However, the Truman Proclamation used the terms 'seabed' and 'subsoil' without defining them.[61] Moreover, subsequent law of the sea conventions (the 1958 Geneva Conventions and UNCLOS) also use these terms without defining them.[62] The International Law Commission in its draft articles on the continental shelf and related subjects of 1951[63], and its revised draft articles of 1953[64], also used the term seabed in the definition of the continental shelf, but without defining it. In fact, as Mouton draws to our attention, the Proclamation and all subsequent conventions tend to use the terms seabed and subsoil as a phrase whereby "the two notions are mentioned in one breath".[65]

Walker appears to cite as authoritative the definition of 'seabed' in the Glossary of the International Hydrographic Organization ("IHO").[66] The *IHO 2006 Glossary*, echoing the

[56] Ibid..
[57] Barry Buzan, *Seabed Politics*, (1976), Praeger Special Studies in International Law and Politics, Praeger.
[58] Reprinted in Marjorie M. Whitemann, *Digest of International Law*, (1965), USDS, at 756.
[59] On the concepts of 'sovereignty' and 'jurisdiction and exclusive control' see: Hersch Lauterpacht, "Sovereignty over Submarine Areas", (1950), *BYIL*, Vol. 17, 376, at 389.
[60] Lauterpacht, (1950), op. cit., at 380 - 382; Jensen, op. cit., at 12; Suarez, op. cit., at 28.
[61] George K. Walker, *Definitions for the Law of the Sea. Terms Not Defined by the 1982 Convention*, (2012), Martinus Nijhoff, #157, Sea-bed, seabed or bed, at 293.
[62] See Articles 1, 56, 76, 77, 133 and 194 UNCLOS.
[63] See draft Article 1 - *Report of the International Law Commission covering the work of its 3rd session,* 16 May – 27 July 1951. General Assembly Record: Sixth Session Supplement No. 9 (A/1858).
[64] *The Report of the International Law Commission covering the work of its 5th session*, 1 June – 14 August 1953, General Assembly Official Records: Eight Session Supplement No. 9 (A/2456).
[65] M. W. Mouton, *The Continental Shelf,* (1952), Martinus Nijhoff, Section 4: Seabed and Subsoil, at 281.
[66] International Hydrographic Bureau, *Manual on Technical Aspects of the United Nations Convention on the Law of the Sea – 1982, Appendix 1: Glossary*, (2006), ("*IHO 2006 Glossary*"), Special Pub, No. 51, 4th Edn., IHO, at #84, available at:
http://ohi.schom.fr/publicat/free/files/S-51_Ed4-EN.pdf.

earlier 1997 IHO Glossary[67], defines seabed as "[t]he top of the surface layer of sand, rock, mud, or other material lying at the bottom of the sea and immediately above the subsoil". The seabed under this definition is the top of a surface layer, which would indicate that it is the interface between the matter lying at the bottom of the sea and the overlying waters. However, it should be noted that these are scientific definitions, and are not without their weaknesses[68], as will be discussed shortly.

As Suarez states "it is erroneous to characterise it [Article 76] in terms purely scientific or technical….it is in fact very difficult to maintain the illusion of a boundary between legal interpretation on the one hand and scientific/technical interpretation on the other".[69]

The apparent lack of formal legal definition of many key terms in Article 76, such as seabed and subsoil, implies, as argued by Antunes and Pimental[70], that such terms must be holistically interpreted: i.e. "consideration must be given not only to the text, and to the object and purpose of LOSC, but also to all aspects of the preparatory work and conclusion of the LOSC, the interrelationships between different paragraphs, the methodological rules of treaty interpretation, logics and hermeneutics"[71] that is, following the rules of interpretation of Articles 31 and 32 of the Vienna Convention on the Law of Treaties 1969 ("VCLT")[72].

In interpreting the terms of Article 76, the basic rules of treaty interpretation, as set out in Article 31 and 32 of VCLT, shall be followed. Although Norway and the United States are not

[67] International Hydrographic Bureau, *Technical Aspects of the Law of the Sea Working Group, Consolidated Glossary of Technical Terms Used in the United Nations Convention on the Law of the Sea*, (1989), Special Publication No. 51, #75, reprinted as part of Annex A1-5 in *Annotated Supplement to the Commander's Handbook on the Law of Naval Operations*, (A. R. Thomas and James C. Duncan, eds.), IHO.
[68] For example, the definitions of seabed and subsoil appear tautologous, as discussed later in this Chapter.
[69] Suarez, op. cit., at 132.
[70] Antunes and Pimental, (2003), op. cit., at 10.
[71] Ibid..
[72] All textbooks on international law discuss these articles, but for two articles which analyse them very usefully, see: Jean - Marc Sorel and Valerie Bore - Eveno, "1969 Vienna Convention: Article 31 General Rule of Interpretation", (2011), in *The Vienna Conventions on the Law of Treaties, A Commentary*, (Olivier Corten and Pierre Klein, eds.), Vol. 1, Oxford University Press, 804; Ulf Linderfalk "Is Hierarchical Structure of Articles 31 and 32 of the Vienna Convention Real or Not? Interpreting the Rules of Interpretation", (2007), *Netherlands Journal of International Law*, Vol. 65, 133.

parties to this Treaty[73], Articles 31 and 32 of VCLT are now considered to be customary international law,[74] and hence, the rules of interpretation set out in these articles can be justifiably applied to the interpretation of Article 76 of UNCLOS.

Adopting first the textual approach[75] and looking at the "ordinary meaning" of the term "seabed", it would appear that there is no one generally accepted or universal meaning.

The Oxford Dictionary online defines seabed as:

> "Seabed: the ground under the sea: the ocean floor"[76]

This definition has as its fundamental basis all ground underlying sea/ocean, thus viewing seabed and subsoil as a single unit.

Turning to legal sources of definitions, Black's Law Dictionary defines seabed as "The sea floor: the ground underlying the ocean over which nations assert sovereignty especially if underlying their territorial waters".[77] Another United States international law dictionary by Fox also defines seabed as the sea floor.[78] This definition also appears to view the seabed and subsoil as a unit, which underlies the sea.

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[73] As of 1st January 2015. Re United States, see: USDS, *The Restatement (Third) of Foreign Relations Law of the United States (1987)*, at section 325; Maria Frankowska, "The Vienna Convention on the Law of Treaties Before the United States Courts", (1981), *Virginia Journal of International Law*, Vol. 28, 281, at 326 – 352.

[74] The ICJ has on numerous occasions confirmed the customary law status of Article 31 of VCLT – see for example: Territorial Dispute (*Libyan Arab Jamahirya v. Chad*), Judgment ICJ Rep. 1994, at 21, para. 4; Oil Platforms (*Islamic Republic of Iran v. United States of America*), Preliminary Objections, Judgment, ICJ Rep. 1999 (II), at 812, para. 23; Case Concerning Kasikili/Sedudu Island (*Botswana v. Namibia*), Judgment ICJ Rep. 1999, at 1059, para. 18.

[75] On the three commonly acknowledged modern approaches to treaty interpretation: textualist, internationalist and teleological, see: Antony Aust, *Modern Treaty Law and Practice*, 2nd Edn., (2007), Cambridge University Press, at 184 - 206; David J. Bederman, Chistopher J. Borgen and David A. Martin, *International Law: A Handbook for Judges*, (2003), American Society of International Law; Richard A. Falk, "On Treaty Interpretation and the New Haven Approach: Achievements and Prospects", (1968), *Virginia Journal of International Law*, Vol. 8, (1967 – 1968), 323; A. D. McNair, *The Law of Treaties*, 2nd Edn., (1961), Oxford University Press, Part IV: Interpretation and Application of Treaties, 345 - 431; Ian McTaggart Sinclair, *The Vienna Convention on the Law of Treaties*, (1984), 2nd Edn., Manchester University Press, at 114 – 158. O'Connell gives an extensive list of significant writers on interpretation of treaties: D. P. O'Connell, *International Law*, (1970), Stevens and Sons, at 251, (footnote 371).

[76] Oxford Dictionary of English, available at:
www,oxforddictionaries.com.

[77] Bryan A. Garner, ed., *Black's Law Dictionary*, (2009), 9th Edn., West Group, at 1466.

[78] James R. Fox, *Dictionary of International and Comparative Law*, (2003), 3rd Edn., Oceana, at 294.

A search through other international and national law dictionaries did not yield any further/useful definitions.[79]

From a comprehensive review of the preparatory work of UNCLOS[80], the decisions of international courts or tribunals, and the work of the international law commissions, committees, and associations[81], no legal definition appears to have been formulated and/or generally adopted.

O'Connell describes the emergence of the concept of seabed in the 19th Century[82], in particular in relation to mining of submerged lands and sedentary fishing: "… even in the case of the territorial sea legal attention has concentrated upon the seabed rather than upon jurisdiction over the waters only in relatively recent times".[83]

Johnson suggests that seabed may in fact be merely a *term of art*, "introduced into the sphere of submarine law by jurists familiar with problems concerning the respective rights, in the matter of ownership of minerals beneath areas of land…".[84] Certainly the case law of New Zealand has asserted that 'seabed' has a meaning arising from English common law - but gives no references[85]. Interestingly, Section 5 of New Zealand's *Marine and Coastal Area (Takutar Moana) Act 2011*[86] expressly includes "subsoil, bedrock and other materials" located under the area bounded by the mean high water springs line and the outer limits of

[79] Including, for example: Daphne A. Dukelow and Betsy Nuse, *The Dictionary of Canadian Law*, (1990), 2nd Edn., Carswell; Fox, *ibi., (*seabed is "the floor of the sea", at 294); John P. Grant and J. Craig Barker, *Parry and Grant Encyclopedic Dictionary of International Law*, (2009), 3rd Edn., Oxford University Press, (at 544 it lists the terms but does not define them - rather it cites their uses in conventions); *Dictionaire de la Terminologie du Droit International*, (1960), Academique Internationale, SIREY; Earl Jowitt, *The Dictionary of English Law,* (1959), Vol. 2 (I - Z), Sweet and Maxwell.

[80] Negotiations of UNCLOS took place over 10 years in 11 sessions. A very good summary of the sessions in respect of the definition of the continental shelf is provided by Suarez: Suarez, op. cit., at 43 – 71.

[81] For example, none of the draft articles of the Preparatory Committee of the Hague Conference 1930 contain any reference to seabed or subsoil, see, *Report of Preparatory Committee of the Hague Conference 1930*, "Territorial Waters", (1929), *AJIL*, Vol. 23, Special Supplement, 243.

[82] O'Connell, (1982), op. cit., at 449 – 456.

[83] O'Connell, (1982), op. cit., at 449 – 450.

[84] D. H. N. Johnson, "The Legal Status of the Seabed and Subsoil", (1956), *Z.f.a.o.R.VR*, Bd.16, 451, at 462, available at:
http:.www.zaoerv.de/16_1955_56/16_1955_3_4_a_451_499.pdf.

[85] Re Ninety Mile Beach, (1963), NZLR 461; Marlborough Sounds Case, Ngati Apa and others v. the Attorney-General and others, (2002), *3 NZLR*, 643; Waitangi Tribunal, Report on The Crown's Foreshore and Seabed Policy, (2004), *Waitangi Tribunal Report 1071*, Legislation Direct, at 41 – 80, available at:
http://form.justice.govt.nz/search/Documents/WT/wt_DOC-68000605/Foreshore.pdf

[86] Marine and Coastal Area (Takutar Moana) Act, (2011),NZ Legislation (2011, No.3), available at:
http://www.legislation.govt.nz/act/public/2011/0003/latest/DLM3213131.html.

the territorial sea, now termed 'the marine and coastal area'. The 2011 Act assiduously avoids the use of the term 'seabed', unlike the 2004 *Foreshore and Seabed Act*[87], which it repealed. It is interesting to conjecture why this change has occurred. Analysing other State Practice, a thorough examination of the constitutions and national legislation and case law of the Arctic Five produces no legal definition of either seabed or subsoil.

Furthermore, the writings of jurists do not assist in finding a generally agreed legal definition of seabed or subsoil.[88] It would seem that, as Robbie puts it so well, "the collection of often sparse and contradictory authority makes the task of determining

[87] Foreshore and Seabed Act, (2004), Public Act No. 93, 2004, available at: www.legislation.govt.nz/act/public/2004/0093/latest/DLM319839.html.

[88] These jurists use the terms but fail to define them, although some do make a distinction between seabed and subsoil: In addition to the authors listed in footnotes 1, and 48 – 53, Also see: R. P. Anand, "The Continental Shelf", (1980), in *Law of the Sea, Caracas and Beyond*, (Ram Prakash Anand, ed.), Martinus Nijhoff; S. W Boggs, "Delimitation of Seaward Areas Under National Jurisdiction", (1941), *Geographical Review*, Vol. 41, 240; John Colombos, *The International Law of the Sea*, (1967), Sixth Edn., Longmans; Henry G. Crocker, *The Extent of the Marginal Sea*, *A Collection of Official Documents and Views of Representative Publicists*, (1919), Government Printing Office Washington; Paul Fauchille, *Traité de Droit International Public*, (1925), 8eme Edn., (Henry Bafils, ed.), Rousseau, Tome 1, Deuxieme Partie, Paix, 'III – Lit et sou-sol de la mer territorial' (2), at 494; Gerald Fitzmaurice, "Some results of the Geneva Convention on the Law of the Sea", (1959), *ICLQ,* Vol. 8, 73; Thomas Wemyss Fulton, *The Sovereignty of the Sea: an Historical Account of the Claims of England and the Evolution of Territorial Waters: with special reference to the rights of fishing and the naval salute*, (1911), William Blackwood and Sons at 697; A. Gilbert C. Gidel, "La Mer territoriale and zone contigué", *Recueil des Cours*, Vol. 134, 241; A. Gilbert C. Gidel, *Droit International de la mer,* (1934), Paris, Tome III, at 500; Hugo Grotius, *Mare Liberum*, (1608), The Freedom of the Seas, the English version translated by Ralph van Deman Magoffin, (1916), Oxford University Press; Alexander Pearce Higgins and Constantine John Colombos, *Higgins and Colombos on the International Law of the Sea,* (1951), 2nd Revised Edition, Longmans; Richard Haworth, " The Continental Shelf Commission", (1999), in *Oceans Policy: New Institutions, Challenges and Opportunities,* (Myron H. Nordquist, and John Norton Moore, eds.,), 147, at 147 - 48; Alexander Peace Higgins, *Hall's International Law*, (1924), 8th Edn., Oxford University Press; Cecil J. B. Hurst, "Whose is the bed of the sea?", (1923/1924), *BYIL*, Vol. 24, 34; Phillip C. Jessup, "United National Conference on the Law of the Sea", (1959), *Columbia Law Review*, Vol. 59, No. 2, 234; Robert Jennings and Arthur Watts, eds., *Oppenheim's International Law,* (2008), 9th Edn., Vol. I; Phillip C. Jessup, *The Law of Territorial Waters and Maritime Jurisdiction*, (1927), G. A. Jennings, New York; D. H. N. Johnson, "The Legal Status of the Sea Bed and Subsoil", (1955/1956), *Z.a.o.f.R.VR*, 451; Hersch Lauterpacht, "Sovereignty Over Submarine Areas", (1950), *BYIL,* Vol. 27, 376; William E. Masterton, *Jurisdiction in Marginal Seas*, (1929), Macmillan; M. W. Mouton, *The Continental Shelf*, (1952), Martinus Njhoff, at 266-268 and 281 - 293; L. D. M. Nelson, "The Continental Shelf: Interplay of Law and Science", (2002), in *Liber Amicorum Judge Shigeru Oda*, (Nisuke Ando, Edward McWhinney and Rudiger Wolfrum, eds.,), at 1241 – 1247; Victor Prescott, "Resources of the Continental Margin and International Law", (2000), in *Continental Shelf Limits: the Scientific and Legal Interface*, (Peter J. Cook an Chris M. Carleton, eds.), at 72; John Seldon, *Of the Dominion or Ownership of the Sea*, (1652), (translated by Marchmount Nealan), William Du Gard; H. A. Smith, *The Law and Custom of the Sea*, (1959), 3rd Edn., Steven and Sons, at 45; Philip A. Symonds, Olav Eldholm, Jean Mascle and Gregory F. Moore, "Characteristics of Continental Margins", (2000), in *Continental Shelf Limits: the Scientific and Legal Interface*, (Peter J. Cook an Chris M. Carleton, eds.), 25; Emer de Vattel, *Le droit des gens, The Law of Nations*, (translation by Charles G. Fenwick), (1916), Carnegie Institution of Washington, Vol. I, c. 23, at 107.

ownership of land beneath water a challenging one" [89] – the same can be said for the *definition* of that land beneath sea water.

Examining Roman jurists' writings on the sea and public rights, it can seem unclear whether, when using the term 'sea' they are referring to the water and/or the land underlying the waters.[90] However, Justinian considered the 'sea' *res communis* and states that "the sea itself, with the soil and sand that lies beneath" is part of the law of nations. He thus does distinguish between the sea waters and the soil beneath, but does not make any further distinction between the 'seabed' and 'subsoil'.[91]

When examining Scots institutional writers it seems that that they adopted the term 'sea bed' to mean the ground at the bottom of the sea.[92] It would seem that the concept of seabed under Scots law (which is a mixed common law and civil law system) can trace its origins as an extrapolation from the concept of "riverbed" ("aluveus") as the soil under the waters of a river and is viewed as the extension of the land from the foreshore. It is likely that this process was mirrored in other jurisdictions. If this is the case, in international law, then seabed would include all material beneath the overlying sea waters.

Since 1923 when Hurst questioned who has rights in respect of 'the bed of the sea'[93], national and international jurists have been analysing the issues, but mainly concentrating on the right of exploitation of the 'seabed and subsoil' offshore coastal states, rather than on defining the terms.[94] In 1932, when Gidel considered the terms 'seabed' and 'subsoil', he concluded that there is a fundamental difference between them.[95] Gidel argued that interference with the seabed involves repercussions with rights of the high seas, while

[89] Jill. J. Robbie, *Private Water Rights in Scots Law,* (2012), a PhD thesis, University of Edinburgh, at 58, available at:www.era.lib.ed.ac.uk/bitstream/handle/1842/7796/2/Robbie2013.pdf?sequence=2&isAllowed=y.
[90] Ibid., at 59.
[91] Caesar Flavius Justinian, *The Institutes,* Book II, Title I, Project Gutenberg's The Institutes of Justinian, (2009), Translator J. B. Moyle, available at:
www.gutenberg.org/files/5983/5983-h/5983-h.htm.
Caesar Flavius Justinian, *The Institutes,* Book II, Title I, Project Gutenberg's The Institutes of Justinian, (2009), Translator J. B. Moyle, Book II, Title I (1) and (5),
available at:
www.gutenberg.org/files/5983/5983-h/5983-h.htm.
[92]Such as Stair, Erskine, Hume, and Bell and described by Robbie: Robbie, op. cit., at 11 – 37.
[93] Cecil Hurst, "Whose is the Bed of the Sea?", 1923), *BYIL*, Vol. 4, 23, at 23 - 24 and 34 - 43. A view criticised by Gidel – see footnote 88, *supra*.
[94] C. W. Harders, "The Seabed", (1969), *Federal Law Review*, Vol. 3, 202.
[95] G. Gidel, *Le droit international public de la mer,* (1932), Vol. 1, Sirey, at 488 - 501 and 507 - 517.

interference with the subsoil does not.[96] He offered no formulation of the terms, beyond drawing these distinctions. Similarly Higgins and Colombos in 1943 drew a clear distinction between the bed of the sea and its subsoil, indicating that the latter was subject to occupation and the former was not.[97] However, since the 1958 Geneva Conventions it is dubious whether the occupation and interference arguments can usefully continue to be used to draw a distinction between these terms. For example, Article (2) of UNCLOS extends sovereignty of the coastal state over the territorial state to include its bed and subsoil.

Mouton took the view that the seabed is nothing else other than a surface dividing the sea from the subsoil - an 'infinitely thin layer of material between the subsoil and the overlying seas".[98] The problem with that definition is that when his definition of subsoil is examined it is the material below the seabed, i.e. the two definitions are tautologous. Also the concept of 'infinitely thin' layers is weak. Following his logic it might have been better to have described it as the interface between subsoil and overlying sea water. This definition, however, when used, may similarly result in a tautologous definition of subsoil. The same problem of tautology unfortunately occurs with the IHO definitions of seabed and subsoil.

Vitzthum, who states that "[f]or legal purposes there is no substantial difference between the terms 'seabed' and 'ocean floor', also appears to view 'seabed and subsoil' as a phrase and term of art used in conventions "to refer to the floor of the seas and ocean and submarine landmass".[99] This definition does not clarify the individual definitions of the two terms.

An examination of writings and reports of international organisations and institutions does not provide any useful legal definitions of seabed or subsoil.[100]

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[96] As Johnson draws to our attention: D. H. N. Johnson, "The Legal Status of the Seabed and Subsoil", (1956), *Z.f.a.o.R.VR*. 451, at 46, available at:
http://www.zaoerv.de

[97] Pearce Higgins and C. John Colombos, *The International Law of the Sea*, (1943), Longmans, at 54.

[98] Martinus. W. Mouton, *The Continental Shelf*, (1952), Martinus Nijhoff, at 281 – 291.

[99] Ibid., at 328.

[100] See for example: Division of Legal Affairs and Law of the Sea, Office of Legal Affairs, UN, *The Law of the Sea: Training Manual for delineation of the outer limits of the continental shelf beyond 200 nautical miles and for preparation of submissions to the Commission on the Limits of the Continental Shelf*, (2006), UN; Division of Legal Affairs and Law of the Sea, Office of Legal Affairs, UN, *Handbook on the Delimitation of Maritime Boundaries*, (2000), UN; International Hydrographic Organization, *A Manual; Technical Aspects of the United*

Looking at the use of the terms contextually, the object and purpose of Article 76 of UNCLOS is to define the continental shelf. In doing so Article 76(1) defines it using the concept of the continental margin which Article 76(3) defines as comprising:

> "the submerged prolongation of the land mass of the coastal State, and consists of the seabed and subsoil of the shelf, the slope, and the rise". (emphasis added).

This article indicates that the seabed and subsoil are both part of the submerged land mass of the coastal state, treating them together, but offering no clues as to their specific individual legal definitions. It does however clearly distinguish them from the overlying waters.[101] The 1958 Geneva Conventions on the Territorial Sea and Contiguous Zone and on the Continental Shelf offer no formal definitions of seabed and/or subsoil either.[102]

However, a search of the use of the term seabed contextually in other UNCLOS articles does provide four possibly interesting results: Article 1, Article 2(1), Article 56(1), and Article 77(1).

Article 1, defines the Area in relation to "the seabed and ocean floor and subsoil thereof" (emphasis added). A few comments can be made. Firstly, the definition indicates that the drafters of UNCLOS considered the concepts of seabed, ocean floor and subsoil as distinct Secondly they considered that the subsoil is related to the seabed (as indicated by 'thereof'). However thirdly, the nature/definition of the terms is not elaborated. Thus, Article 1 does not provide any further clarification of the meaning of the term 'seabed'.

Article 56(1), refers to "the seabed and *its* subsoil" (emphasis added). *Ex facie* this phrase could be interpreted as indicating that the subsoil is a subset of the seabed ("subset

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Nations Convention on the Law of the Sea 1982, (1993), Special Publication No. 51, 3rd Edn., IH Bureau, Monaco, Annex V; International Law Commission, (1959), *Yearbook of the International Law Commission* 1954, Vol. II, Documents A/CN.4/76 and A/CN.4/77, 1, UN: and "Regime of the High Seas", Documents A/CN.4/60, A/CN.4/69 and A/CN.4/70, *Yearbook of the International Law Commission 1953*, (1959), Vol. II, 1 - 57, UN; League of Nations, Report of the Subcommittee of the Committee of Experts for the Progressive Codification of International Law (Territorial Waters), (1926), reproduced in *AJIL,* (1926), Special Supplement, 109; International Law Association ("ILA"), *Draft Convention on Law of Maritime Jurisdiction in Time of Peace*, (1927), Report of the 34th Conference of the ILA, Vienna, 5 - 11 August 1926.

[101] As does Pearce Higgins: Pearce Higgins, Hall's *International Law,* (1924), 8th Edn., Oxford University Press, see the footnote on page 194. Fulton draws distinction between the "soil or bed of sea" and the 'sea' itself: Thomas Wemyss Fulton, *The Sovereignty of the Sea,* (1911), William Blackwood and Sons, at 697.

[102] Both reproduced in *A/Conf.13/L-58*, of 29 April 1958, available at: http://legal.un.org/avl/ha/gclos/gclos.html.

definition approach"). The official texts of UNCLOS in French, Spanish and Russian, use similar phrases in Article 56(1): French - ""des fonds marins et leur sous-sol" translates as "of the seabed and its subsoil"), Spanish - "del lecho y el subsuelo" (translates as "of the seabed and the subsoil") , and Russian - "на морском дне и в его недрах" ('na morskom dne i v ego nedra' translates as 'of the sea bottom and its subsoil'). Two out of three of these non-English versions *ex facie* appear to support the subset definition.

The second, Article 77(4), states that sedentary species" are natural resources of the continental shelf over which states exercise sovereign rights of exploitation. It defines "sedentary species" for the purposes of that article as:

> "organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil." (emphasis added).

As in Article 76, Article 2(1) also uses a phrase '[sea]bed and subsoil", making no distinction between the terms. This raises the possibility that the drafters intended not to draw a distinction between the terms but to use them in conjunction with each other.

Thus, regrettably, the analysis of the term 'seabed' and its use elsewhere in UNCLOS does not add any clarification to its meaning in Article 76 of UNCLOS.

One final point merits brief comment: the question of who is entitled to interpret Article 76 and the legal rights thereunder.

It is well established in public international law that states parties to a treaty have the power to apply and interpret provisions of the treaty.[103] The primary right to interpret Article 76 appears to belongs to the coastal state and is founded upon its right to establish the limits of the continental shelf.[104]

But there are other entities/institutions also empowered to interpret UNCLOS such as the ICJ, ITLOS and in particular the CLCS.[105] Suarez concludes her analysis of whether the CLCS, in the exercise of its mandate and its role in the determination of the outer limits of the

[103] See for example, Crawford, *Brownlie's Public International Law*, op. cit., at 369 – 380.
[104] Suarez, op. cit., at 120 - 121.
[105] For a detailed analysis of such powers see: Henry Schermers and Niels M. Blokker, *International Institutional Law*, (2003), 4th Edn., Martinus Nijhoff.

continental shelf is also empowered in the performance of these powers to interpret Article 76.[106]

Despite the non – legally binding nature of CLCS Guidelines, it has been convincingly argued that in practice states have "little choice but to refer to the interpretation provided by the Commission in its Guidelines".[107] Certainly when the Guidelines are silent that may be another matter.

Suarez echoes Allott's view that the process of submissions and recommendations under Article 76 is a sort of power sharing[108], with one entity perhaps more equal than the other.[109] This approach appears to be supported by the ILA. The ILA's Committee on the Outer Continental Shelf is of the opinion that the competence of the CLCS does not replace the competence of state parties (or courts or tribunals) to interpret the Convention.[110] In fact, it exhorts the CLCS to defer and "to accept the interpretations of relevant provisions of the Convention provided by the coastal state making a submission", unless these were not in accordance with the Convention.[111] This would probably be the case with the definition of 'continental margin' under Article 76(3).

What can be concluded from the above review?

Firstly, that both seabed and subsoil are distinct from the overlying waters. Secondly, that the terms are often used together as a phrase in UNCLOS and other law of the sea conventions. Thirdly that, although the term 'seabed' has a scientific meaning, it remains unclear whether the legal definition has the same meaning, or what its exact definition is, or its relationship to the subsoil.

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[106] Suarez, op. cit., at 121 -122.

[107] Suarez, op. cit., at 131. This may be viewed as an overstatement. In practice, it seems that States refer to the Guidelines when it is in their interest and point out contrary opinions when the Guidelines are not in their interest.To the extent one can determine what the CLCS concludes based on recommendations issued, it appears that the CLCS does not strickly adhere to the Guidelines where a reasonable argument can be made thatb the Guideline in question is not the best approach. The author is grateful to Professot T. L. McDorman for drawing this CLCS practice to the author's attention.

[108] Phillip Allott, "Power Sharing in the Law of the Sea", (1983), *AJIL*, Vol. 77, 1, at 3.

[109] Suarez, op. cit., at 124.

[110] ILA, Commission on the Outer Continental Shelf, "Legal Issues of the Outer Limits of the Continental Shelf", (2004), in *Report of the Seventy – First Conference Berlin 2004*, at 780.

[111] Ibid.; Suarez, op. cit., at 124 - 125.

However, it may be that a brief examination of the definition of 'subsoil' can further illuminate this discussion.

6.3.2 Subsoil

As with seabed, the term subsoil is used extensively with respect to the territorial sea, the EEZ and the continental shelf regimes under UNCLOS[112], but similarly it is not defined in that convention (nor, in fact, in any other law of the sea convention) nor it seems by jurists, ICJ and ITLOS judgments, or State Practice.

Black's Law Dictionary does not define subsoil, although the Cambridge Dictionary defines the term 'subsoil' as "the layer of soil that is below the surface level".[113]

The IHO defines subsoil as "all naturally occurring matter lying beneath the seabed or deep ocean floor."[114] Walker adopts this IHO definition.[115] Certainly such definition of subsoil is consistent if tautologous with the IHO's definition of seabed and thus is not a satisfactory definition.

Oppenheim (Lauterpacht) makes a clear distinction between the 'surface' and 'subsoil 'of the 'seabed' in respect of the territorial sea.[116] He also describes 'subsoil' as "beneath the bed of the open sea", perhaps suggesting that the seabed is a surface layer (of undefined thickness) between the subsoil and the overlying waters.[117] However, elsewhere he talks of "the surface of the seabed or …its subsoil" (emphasis added)[118], apparently indicating that the term 'seabed' includes its surface and its subsoil[119] - but again not contributing to a clear consistent understanding of the terms.

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[112] In particular Articles 2(2), 56(1), and 76(1) of UNCLOS.

[113] Available online at:
http://dictionary.cambridge.org/dictionary/british/subsoil

[114] IHO, (1994), op.cit., #536, at 234; IHO, (1999), *Consolidated Glossary, Accord, 2 Commentary* , op. cit., para 2.8(e).

[115] Walker, op. cit., #184 Subsoil, at 317.

[116] Lauterpacht, op. cit., Chapter 1, section VI, 'The Surface and Subsoil of the Sea Bed beneath the Maritime Belt', #190b at 501.

[117] Lauterpacht, op. cit., Chapter 2, section IX, 'The Surface of the Bed of the Open Sea', #287bb, at 628 - 629,and section X, The Subsoil Beneath the Bed of the Open Sea, # 287c, at 629 – 632.

[118] Lauterpacht, op. cit., Chapter 2, section X, #287bb, at 628 – 629.

[119] See also P. C. Jessup, *The Law of Territorial Waters and Maritime Jurisdiction,* (1927), G. A. Jennings Co. Inc., at 15; Carl M. Franklin, *The Law of the Sea: Some Recent Developments*, (US Naval War College International

Thus, it would seem that the term 'subsoil' suffers from the same lack of a clear legal *definition as the 'seabed'.*

6.3.3 Conclusions regarding the Definitions of Seabed and Subsoil

This lack of proper legal definitions for the terms 'seabed' and 'subsoil', and the often loose and contradictory use of terminology connected with the concepts, appears to typify both the writings of jurists and international organisations, and the drafting of conventions on the law of the sea. It leaves the question open as to what materials the two areas consist of, their individual concepts, and their legal nature. For many purposes/contexts it would seem that the use the phrase "seabed and subsoil" (i.e. viewing them as a unit; as all material below the overlying water) – as Article 76 of UNCLOS does – is sufficient for the purpose.

6.3.4 Relevance of the Definitions of Seabed and Subsoil to Arctic Ocean Delineation

The above discussion, leads to the conclusion that, although the legal status of the seabed and subsoil has generated a large volume of literature (some of the key pieces are discussed above), neither UNCLOS, nor other treaties on the law of the sea, State practice, or a consensus of juridical opinion, has yet provided a formal *legal* definition of seabed or subsoil.[120]

This lack of clear definitions may have significant implications for delineation and delimitation in the Arctic Ocean, and, in respect of offshore areas with thawing subsea permafrost, is particularly pertinent. This subsection will next explore this topic.

Subsea (alternatively termed "offshore") permafrost is permafrost that is located under the sea/ocean. [121] In the Arctic Ocean it is now thawing[122] and degrading.[123] Thawing of subsea

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Law Studies 1959 - 1960, (1961) DCF, Washington, at 30 - 31; Cecil Hurst, "Whose Is the Bed of the Sea?", (1923 -24), *BYIL* Vol. 1, at 24.

[120] Alex G. Oude Elferink, "The Regime of the Area: Delineating the Scope of Application of the Common Heritage Principle and Freedom of the High Seas", (2007), *International Journal of Marine and Coastal Law*, Vol. 22, No. 1, 143, at 148.

[121] This has been defined as permafrost occurring "beneath the sea bottom" in the *Glossary of Permafrost and Related Ground – Ice Terms*, the Permafrost Subcommittee Associate Committee of Geotechnical Research, National Research Council of Canada, Technical Memorandum No. 142, 1988, at 68, available at: http://achive.nrc-cnrc.gc.ca/obj/irc/doc/pubs/tm/tm142.pdf.

permafrost results from a number of factors, including ocean temperature, salinity, currents, ice cover and bathymetry.[124] Most of the research on subsea permafrost has been to date in relatively shallow waters and very little is known for deeper waters.[125] Examining first one of the key factors in subsea permafrost thawing, it seems that the IPPC, NOAA and other researchers all agree that the Arctic Ocean is undergoing a relatively rapid temperature rise[126], the question is how deep have the Ocean's waters been affected to date, and what are the projections? There is some evidence that the deep Arctic Ocean is a undergoing a significant temperature rise.[127] As illustrated in the graph in Figure 6.3 below, senior oceanographers from the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research[128] have established that in the Greenland Sea (adjacent to the Arctic Ocean) over the last thirty years the water temperature between 2000m depth and the seabed has risen by 0.3^0 C and is now increasing exponentially.

Their French version uses the term "pergelisol sous-marin", which clearly relates to the sea and not seabed. But cf. other authors who consider it as "permafrost *occurring beneath* the seabed", see for example, T. E. Osterkamp, "Sub-sea Permafrost", (2001), in *Encyclopedia of Ocean Sciences*, (J. H. Steele, S. A. Thorpe, and K. K. Turekian, eds.), Academic Press, 2002, at 2902; Volker Rachold, Dmitry Yu. Bolshiyanov, Mikhail N. Grigoriev, Hans-Wolfgang Hubberten, Victor V. Kunitsky, Franziska Merker, Paul Overduin, and Waldemar Schneider, "Near–shore Arctic Subsea Permafrost in Transition", (2007), (Revised Version*), EOS: Transactions of the American Geophysical Union*, Vol. 88, No. 13, 149, at 150.

[122] Osterkamp, op. cit., at 2 – 9.

[123] S. Wetterich, M. Winterfield, H. Meyer, L. Schirrmeister, P. P. Overduin, and M. Grigoriev, "Seabed Permafrost Degradation in the Western Laptev Sea", (2010), a paper presented to Third European Conference on Permafrost, Longyearbyen, Svalbard, Norway, 13 – 17 June 2010, available from: http://epic.awi.de/22777. Also see Chapter 3 above.

[124] Osterkamp, op. cit. at 2 - 5; Rachold, Bolshiyanov, Grigoriev, *et al*, op. cit., at 149.

[125] See for example: Alexey Portnov, Yugen Mienert and Pavel Serov, "Modelling the evolution of climate sensitive Arctic subsea permafrost in regions of extensive gas expulsion at the West Yamal shelf", (2014), *Journal of Geophysical Research: Biogeosciences*, Vol. 119, No. 11, 2082; D. J. Nicolsky, V. E. Romanovsky, N. Romanovskii, A. L. Kholodov, N. E. Shakova and I. Semiletov, "Modelling subsea permafrost in the Eastern Siberian Arctic Shelf: The Laptev Sea Region", (2012), *Journal of Geophysical Research,* Vol. 117, No. F3, September 2012, F03028, 1 - 22.

[126] M. – L. Timmermans and A. Proshutinsky, " Arctic Ocean Sea Surface Temperature", *Arctic Report Card*: *Update 2014*, NOAA, 2 December 2014, available at: www.arctic.noaa.gov/reportcard/sea_surface_temperature.html;
NOAA, "Rising Air and sea temperatures continue to trigger changes in the Arctic, Arctic is warming at twice the rate of anywhere else on Earth", 17 December 2014, online at:
IPCC Fifth Assessment Report, (2013), Chapter 6, (Hans-O Portner and David M. Karl, eds.), 418.

[127] R. Somavilla, U. Schauer and G. Budeus, "Increasing amount of Arctic Ocean deep waters in the Greenland Sea", (2013), *Geophysical Research Letters*, Vol. 40, No. 16, August 2013, 4361; R. Schubert, H.J. Schellnhuber, N. Buchmann, A. Epiney, R. Griesshammer, M. Kulessa, D. Messner, S. Rahmstorf and J. Schmid, (2006), *Special Report, German Advisory Council on Global Change* ("WBGU"), Berlin, 2.2.1, at 7 – 8.

[128] As part of the Helmholtz Climate Initiative of the Helmholtz Association of German Research Centres, see, Helmholtz Association, About Us, available at: www.helmholtz.de/en/about-us.

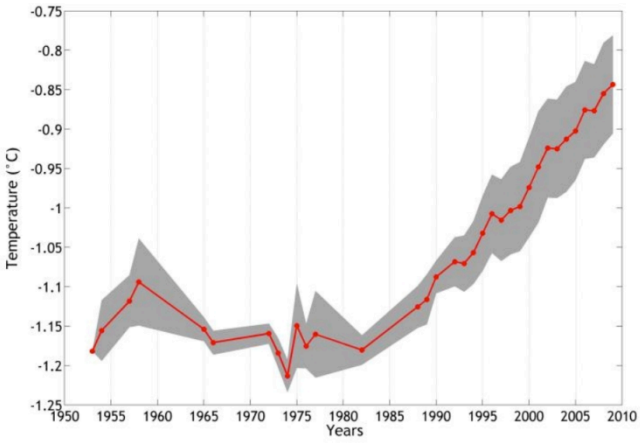

Figure 6.3: Graph of temperature below 2000m in Greenland Sea[129]

Since the mean temperature of deep water in the Arctic Ocean is currently only -0.9^{0}C, such increases raise a real issue: that it is possible in the future that even deep Arctic Ocean permafrost may thaw. It has been estimated that a 1^{0}C change in sea temperature could result in up to 100m per decade thaw of permafrost under the Arctic Ocean.[130] This thaw occurring on the slope and rise would exaggerate the effect on the delineation of the continental shelf. Moreover, subsea permafrost can melt from the bottom up[131], thus exacerbating the rate and extent of the thaw. Within fifty years a dramatic thawing of the subsea permafrost is predicted[132], and, as will be shown later, this could result in the CS limits shifting significantly landward (possibly up hundreds of kms) – so the issue is of primary interest in the delineation.

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[129] ©Somavilla, Schauer and Budeus (footnote 127, *supra*). Permission to use this graph in the thesis granted by Somavilla in an e-mail dated 18 February 2015 in which she attached this version.

[130] Siaak Slanina, *Permafrost in the Arctic*, (2010), International Arctic Science Committee, Chapter 6, 6.3,, 14, t 17 -18, available at:
www.eoearth.org/view/article/156165/.

[131] T. E. Osterkamp, *A Thermal history of Permafrost in Alaska*, a paper presented to the Eighth International Conference on Permafrost, Zurich 2003, Proceedings, at 863 – 868.

[132] See Alexey Portnov, Andrew J. Smith, Jurgen Mienert, Gergy Cherkashov, Pavel Rekant, Peter Semenov, Pavel Serov, and Boris Vanshtein, "Offshore permafrost decay and massive seabed methane escape in water depths of 20m at the South Kara shelf", (2013), *Geophysical Research Letters,* Vol. 40, No. 15, 3962 – 3967; Maja Sojtaric, "Methane is leaking from permafrost offshore Siberia", (2014), *CAGE*, 18 December 2014, available at:
https://cage.uit.no/news/methane-leaking-permafrost-seal-offshore-siberia/;
Thomas Nilsen, "Alarm over Kara Sea permafrost thawing", (2015), *Barents Observer*, 9 January 2015, available at:
http://barentsobserver.com/en/arctic/2015/01/alarm-over-kara-sea-permafrost- thawing-09-01.

Turning now to legal issues arising from this possibility, in particular in the context of Article 76 the following questions can be posed: Is subsea permafrost in the Arctic Ocean, (1) part of the seabed, (2) part of the subsoil, (3) part of both seabed and subsoil, depending on their definitions), (4) part of the overlying seas or, (5) some *sui generis* material which falls into one of these categories, but lies on/in the ocean floor under the superjacent waters?

These questions are analogous to that posed by Oude Elferink in 2007:

> "Does the seabed only refer to solid materials that make up the bottom of the sea, or does it also include solids, water or other liquids, or gases in contact with those materials"[133]

In particular Oude Elferink examined the issue in the context of hydrothermal vents[134] (including the water vented and the materials contained therein) and "brine pools".[135] He and Burke[136] both analysed hydrothermal vents with respect to their inclusion in the seabed and both concluded that the hydrothermal vent's structure, as well as the water flowing from it, is part of the seabed.[137] Oude Elferink similarly considered brine pools to be part of the seabed.[138] He arrived at this conclusion because (a) the waters in a brine pool are significantly different in composition from the overlying waters[139], and (b) the pool's shape is the result of the morphology of the surrounding seabed. In his analysis he considered:

> "two criteria would seem to be relevant to determining whether certain features are part of the seabed or the superjacent waters. One is their location in relation to the seabed, and the other is that they can clearly be distinguished from the surrounding waters".[140]

---

[133] Oude Elferink, (2007), op. cit., at 148.

[134] "A vent is typically formed as seawater pierces the crust, is heated by the magma, and goes back into the ocean through a hot vent, bringing with it mineral substances" - Salvatore Arico and Charlotte Salpin, "Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects", (2005), United Nations University, *UNU-AIS Policy Report of 15 August 2005*, at 9, available at: Http://i.uni.edu/media/unu.edu/publication/28370/DeepSeabed1.pdf.

[135] "A brine pool is a crater-like depression on the seafloor filled with very concentrated brines coming from the Luan Salt Layer" - B. Carney, "Lakes within Oceans", (2002), *NOAA Ocean Explorer online*, available at: http://oceanexplorer.noaa.gov/explorations/02mexico/background/brinepool/brinepool.html.

[136] W. Burke "State Practice, New Ocean Uses, and Ocean Governance under UNCLOS for the 21st Century", (1996), in *Oceans Governance: Strategies and Approaches for the 21st Century*, Law of the Sea Institute, Honolulu, 219, at 231.

[137] Ibid., and Oude Elferink, op. cit., at 148.

[138] Oude Elferink, op. cit., at 148 - 149.

[139] Ibid., at 149.

[140] Oude Elferink, op. cit., at 148.

So with these analyses in mind, returning to the question of subsea permafrost, what can be deduced? Subsea permafrost in the Arctic Ocean is surprisingly extensive[141], as can be seen from Figure 6.6 below, and occurs mainly in offshore Arctic Alaska[142], Canada[143], Norway[144] and Russia.[145] It has also been researched very little[146], with most research concentrating on terrestrial permafrost and coastal erosion.[147]

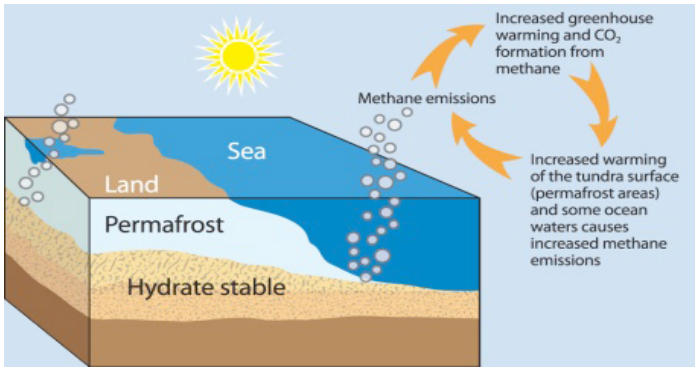

Figure 6.4: Diagram showing layers of subsea materials[148]

[141] IPCC, Climate Change, *The IPCC Impacts Assessment, First Assessment Report*, Working Group II Report, Chapter 7, Seasonal snow cover, ice, and permafrost, Section 2.3 Permafrost, 7-1, at 7-7, available at: www.ipcc.ch/ipccreports/far/wg_II/ipcc_far_wg_II_full_report.pdf;
Michael E. Vigdorchik, *Arctic Pleistocene History and the Development of Submarine Permafrost*, (1980), Westview Press; P.V. Sellman and K. G. Neave, "Subsea Distribution on the Alaskan Shelf", (1983), in *Proceedings of the Fourth Annual International Conference on Permafrost*, Fairbanks, Alaska, July 1983, US National Academy Press, at 75 -82; V. V. Malakhova, D. J. Nicolsky, V. E. Romanovsky, N. N. Romanovskii, A. L. Kholodov, N. E. Shakhova, and I. P. Semiletov, "Modelling of sub-sea permafrost in the East Siberian Arctic Shelf: The Laptev Sea Region, (2012), *Journal of Geophysical Research*, Vol. 117, F03028, 1 at 4.

[142] T. E. Osterkamp, "Sub-sea Permafrost", (2001), in *Encyclopedia of Ocean Sciences,* (J. H. Steele, S. A. Thorpe, and K. K. Turekian, eds.), Academic Press, 2902, at 2909 – 2010.

[143] See for example: J. Ross Mackay, "Offshore Permafrost and Ground Ice, Southern Beaufort Sea, Canada", (1972), *Canadian Journal of Earth Sciences*, Vol. 9, No. 11, 1550.

[144] Arne Instanes, Maria Leibman, and Evgeny Melnikov, "Offshore Permafrost and Oil and Gas Development", (2001) in *Permafrost Responses in Economic Development, Environmental Security and Natural Resources: Proceedings of the NATO Advanced Research Workshop, Novosibirsk, Russia, 12 – 16 November 1998, (*R. Paepe, Elfi Van Overloop, Vladimir P. Melnikov, and Vladimir D. Gorokhov, eds.), NATO Science Series, 95, at 99.

[145] See for example: N. N. Romanovskii, A. V. Gavrilov, A. H. Kholodov, G. P. Pustovoit, H. W. Hubberten, F. Neissen, and H. Kassens, "Map of Predicted Offshore Permafrost Distribution on the Laptev Sea Shelf", (1998), *Permafrost – Seventh International Conference* (Proceedings, Yellowknife, Canada, Collection Nordicana, No. 55, 967; N. N. Romanovskii, H. W. Hubberten, A. V. Gavrilov, V. E. Tumskoy and A. L. Kholodov, "Permafrost of the east Siberian Arctic shelf and coastal lowlands", (2004), *Quaternary Science Reviews*, 1359.

[146] W. M. Sackinger, P. W. Barnes, P. W. Harrison, *et al, Problems and Priorities in Offshore Permafrost Research*, (1976), National Academy of Sciences, Committee on Permafrost, (Troy L. Pewe, Chairman).

[147] Instanes et al, op. cit., at 95.

[148] © Only One Solution. General use permitted. Available at: www.only-one-solution.org/methane_hydrate.html.

Permafrost appears to have various definitions: for example:

(1) The IHO defines it as "a layer of soil or bedrock at a variable depth beneath the surface of the earth in which the temperature has been below freezing continuously for a few to several thousands of years." [149]

(2) The United States' National Snow and Ice Data Centre ("NSIDC") defines it as "ground (soil, rock and organic material) that remains frozen for more than two years"[150] (see Figure 6.4 above). The National Research Council of Canada (and its associated organisations)[151] and the IPA uses exactly the same definition.[152] The IPCC definition appears almost identical, the difference between the IPCC definition and the others is that it changes the bracketed phrase after ground to just "soil or rock".[153] It thus loses the inclusion of the organic material component and the 'and' of the other definitions is changed to 'or'. It is debatable whether this in practice is significant from a geologist's viewpoint.

(3) The US Permafrost Association defines permafrost as "Earth Materials that remain continuously at or below 0°C for at least two years".[154]

(4) Dartmouth College's Glossary defines permafrost as "that section of frozen ground below the active surface which remains permanently below the melting point."[155]

(5) AMAP of the Arctic Council defines permafrost as "soil or rock remaining at or below 0°C for at least two consecutive years".[156]

(6) UNEP defines permafrost as "perennially frozen ground remaining at or below 0°C for at least two years". It further elaborates that it "includes the content of the ground before it was frozen, such as bedrock, gravel, rocks, silt and organic material…..Ice acts like cement to bind soil and rock together".[157]

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[149] International Hydrographic Organisation, *Hydrographic Dictionary*, (1994), Vol. 1, English, Special Publication No. 32, Fifth Edition, IHO, at 3746: permafrost, 176, available at: www.iho.int/iho_pubs/standrad/S-32/S-32-eng.pdf.(2014)

[150] NSIDC, State of the Cryosphere, *SOTC: Permafrost and Frozen Ground*, available online in January 2015 at: http://nsidc.org/cryosphere/sotc/permafrost.html.

[151] Associate Committee on Geotech Research, *Glossary of permafrost and related ground ice terms*, (1988), NRC, Associate Committee on Geotech Research, Technical Memorandum 142.

[152] The International Permafrost Association, *Glossary*, available at: http://ipa.arcticportal.org/resources/what-is-permafrost.

[153] IPCC, *Climate Change, The IPCC Impacts Assessment, First Assessment Report*, Working Group II Report, Chapter 7, Seasonal snow cover, ice, and permafrost, Section 2.3 Permafrost, 7-1, at 7-7, available at: www.ipcc.ch/ipccreports/far/wg_II/ipcc_far_wg_II_full_report.pdf.

[154] United States Permafrost Association, *Permafrost Glossary*, available online in January 2015 at: www.uspermafrost.org/glossary.php.

[155] Dartmouth College, "Glossary of Snow, Ice and Permafrost Terms", *Encyclopedia Arctica*, Vol.1, Geology and Allied Subjects, Vol. I-0087, #076 Permafrost, available at: http://collections.dartmouth.edu/artica-beta/html/EA01-07.html.

[156] AMAP, *Water, Ice and Permafrost in the Arctic, Glossary*, at 30, available at: www.unep.org/pdf/permafrost.pdf.

[157] Ibid., at 4.

What do all these definitions have in common?

> Firstly, that permafrost consists of frozen soil, rocks and possibly other organic materials.
>
> Secondly, that it must have been frozen for longer than 2 years.

Given this very broad definition, it seems that permafrost can take many forms with different origins and very variable characteristics.[158] Osterkamp usefully describes the basics of subsea permafrost very succinctly:

> "It may or may not contain ice. "Ice-bearing" describes permafrost or seasonally frozen soil that contains ice. "Ice-bonded" describes ice-bearing material in which the soil particles are mechanically cemented by ice. Ice-bearing and ice-bonded material may contain unfrozen pore fluid in addition to the ice. "Frozen" implies ice-bearing or ice-bonded or both, and "thawed" implies non-ice-bearing. The "active layer" is the surface layer of sediments subject to annual freezing and thawing in areas underlain by permafrost. Where seabed temperatures are negative, a thawed layer ("talik") exists near the seabed. This talik is permafrost but does not contain ice because soil particle effects, pressure and the presence of salts in the pore fluids can depress the freezing point 2°C or more. The boundary between the thawed region and the ice-bearing permafrost is a phase boundary. "Ice-rich" permafrost contains ice in excess of the soil pore spaces and is subject to settling on thawing". [159]

(1) What relevance do the above definitions and this description have to subsea permafrost in the Arctic Ocean?

Offshore permafrost in the Arctic Ocean can be either a result of old onshore permafrost now submerged ("relic") or more recently generated in the sea ("oceanic").[160] Loktev *et al* describes the latter as occurring "when the sea bottom temperature is below freezing point and pore water is less saline than the overlying seawater".[161] It can have a depth of hundreds of meters below the interface of the seabed and overlying waters. In fact Osterkamp states that "ice-bearing permafrost in the Eastern and central Beaufort Shelf

[158] See IPCC Report, op. cit., at 7-7.
[159] Osterkamp, op. cit. at 2902 - 2903.
[160] Andrey Loktev, Vladimir Bondarev, Sergey Kilikov, and Sergey Rokos, "Russian Arctic Offshore Permafrost", (2012), Conference Paper*, Offshore Site Investigations and Geotechnic: Integrated Technologies – Present and Future*, 12 - 14 September 2012, London, England, Doc No. SUT-OSIG-12-65, Society of Underwater Technology, S. 1. 1 available from:
www.oneptreo.org/conference-paper/SUT-OSIG-12-65.
[161] Ibid..

exceeds 600m"[162], and Romanovskii *et al* indicate at that the maximum thickness of offshore relic permafrost on the Laptev Sea Shelf is 600 - 800m.[163] Ice–bearing, ice–bonded and ice–rich subsea permafrost occur in the Arctic Ocean. Ice-rich sub-sea permafrost has been located in the Canadian and Alaskan portions of the Beaufort Sea and in the Russian part of the Arctic Ocean and "the thawing of this permafrost can result in differential settlement of the seafloor…".[164]

There is a general lack of data on subsea permafrost in the Arctic.[165] Nonetheless, there appears to be a general consensus among permafrost researchers that Arctic subsea permafrost has the following characteristics:

1. Offshore subsea permafrost exists in large areas of the Arctic Ocean and appears to extend well out to sea in some regions, such as Russian Arctic Ocean where it extends beyond 200nm (see Figures 6.5 and 6.6).
2. It can be classified based on genesis or ice content,[166] as discussed above, and often has all the ice characteristics (ice-bearing, ice-bonded and ice-rich).
3. Arctic subsea permafrost is primarily relic, although there is some oceanic.[167]
4. Subsea permafrost in the Arctic Ocean can have a water/ice content of over 50%.[168]
5. The Arctic Ocean subsea permafrost is generally thawing and degrading rapidly due to warming sea temperatures[169] and other factors[170], causing potentially

[162] Osterkamp, op. cit., at 2910.
[163] N. N. Romanovskii, A. G. Gavrilov, A. L. Kholodov, G. P. Pustovoit, H. W. Hubberten, F. Niessen, and H. Kassens, "Map of Predicted Offshore Permafrost Distribution on the Laptev Sea Shelf", (1998), in *Permafrost – Seventh International Conference, Proceedings, Yellowknife (Canada), Collection Nordicana*, No.55, 1998, 967, at 971.
[164] Osterkamp, op. cit., at 2905
[165] Osterkamp, op. cit., at 2909.
[166] Instanes *et al*, op. cit., at 93.
[167] Ben Gerwick, *Construction of Marine and Offshore Structures*, (1999), 3rd Edn., CRC Press, Chapter 2.7; Subsea Permafrost and Clathrates, at 55.
[168] Rachold *et al* assert that permafrost located in the Western Laptev Sea is ice – rich, having an ice content >80% by volume, see: V. Rachold, D. Y. Bolshiyanov, M. N. Grigoriev, H. – W. Hubberten, R. Junker, V. V. Kunitsky, F. Merker, P. Overduin, and W. Schneider, "Nearshore Arctic Subsea Permafrost in Transition", (2007), *EOS*, (AGU), Vol. 88, No. 13, 149 -156, available online at:
http://onlinelibrary.wiley.com/store/10.1029/2007EO130001/asset/eost15901.pdf;jsessionid=06F089D8A1871B1CFAFE725A852739F2.f03t02?v=1&t=i5oqi31t&s=083adca57cb12d7a78608be8d00ca28546a4ce3e.
[169] IPCC, *Climate Change 2013 : The Physical Science Basis,* (2014), Summary for Policy Makers, at 7 and 23, available at:
www.icc.ch/pdf/assessment-report/ar5/wg1/WGIARS5_SPM_brochure_en.pdf.

significant subsea erosion of the ocean floor.[171] Although there is some evidence of a less common aggrading of permafrost in deep waters and off far north island coasts.[172] However, generally, subsea permafrost, like all ice in the Arctic[173], is in fact thawing/melting at a far faster rate than first envisaged.[174]

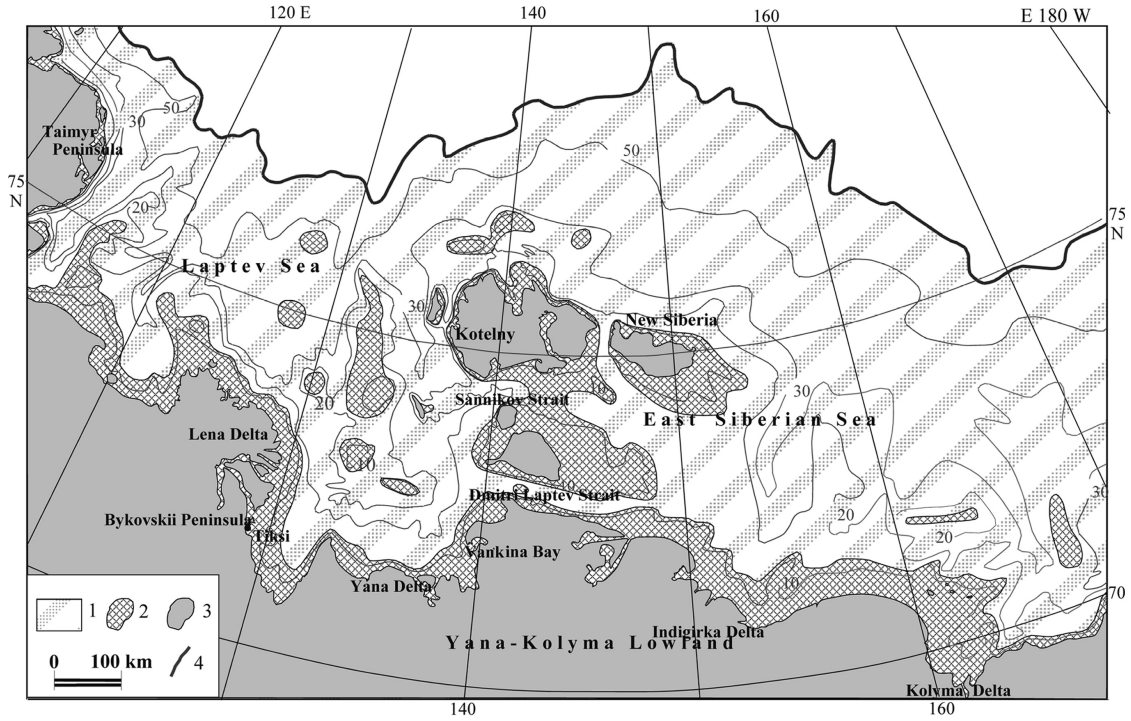

Figure 6.5: Map of the permafrost state in Laptev Sea (Russia). **Legend: 1 – Ice-bearing offshore relic permafrost; 2 – Ice-bearing and ice-bonded offshore relic permafrost; 3 – Terrestrial ice-bonded permafrost; 4 – Edge of the shelf.[175]**

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[170] Walsh *et al,* op. cit., at 18.

[171] J. E. Vonk, L. Sanchez–Garcia, B. E. van Dongen, V. Alling, D. Kosmach, A. Carkin, P. Semiletov, O. V. Dudarev, N. Shakhova, P. Roos, T. Eglinton, A. Anderson, and O. Gustafsson, "Activation of old carbon by erosion of coastal and subsea permafrost in Arctic Siberia", (2012), *Nature*, 6 September 2012, Vol. 7414, 137.

[172] Romanovskii *et al*, op. cit., 968 - 969.

[173] Laura Geggel, "Arctic Sea Ice Thinning Dramatically Study Finds', *Science*, 4 March 2015, available at: file:///C:/User/Documents/Arctic%20Sea%20Ice%20'Thinning%20Dramatically,'%20Study%20Finds.html.

[174] V. I. Sergienko, L. I. Lobkovskii , I. P. Semiletov, O. V. Dudarev, N. N. Dmitrievskii , N. E. Shakhova, N. N. Romanovskii, D. A. Kosmach, D. N. Nikol'skii, S. L. Nikiforov, A. S. Salomatin, R. A. Anan'ev, A. G. Roslyakov, A. N. Salyuk, V. V. Karnaukh, D. B. Chernykh, V. E. Tumskoi, V. I. Yusupov, A. V. Kurilenko, E. M. Chuvilin, and B. A. Bukhanov, "The Degradation of Submarine Permafrost and the Destruction of Hydrates on the Shelf of East Arctic Seas as a Potential Cause of the "Methane Catastrophe": Some Results of Integrated Studies in 2011", (2012), *Doklady Sciences, Oceanography,* Vol. 446, No.1, 1132.
http://istina.msu.ru/publications/article/7506856/.

[175] © Hubberten and Romanovskii. Permission for use in thesis granted by email from Hans-Wolfgang Hubberten dated 21 January 2015. H. W. Hubberten and N. N. Romanovskii, "The main features of permafrost in the Laptev Sea region, Russia – a review", (2003), in *Permafrost*, (Marcia Phillips, Sarah. M. Springman & Lucas U. Arenson, eds.), Swets & Zeitlinger, 431, Figure 1, at 432.

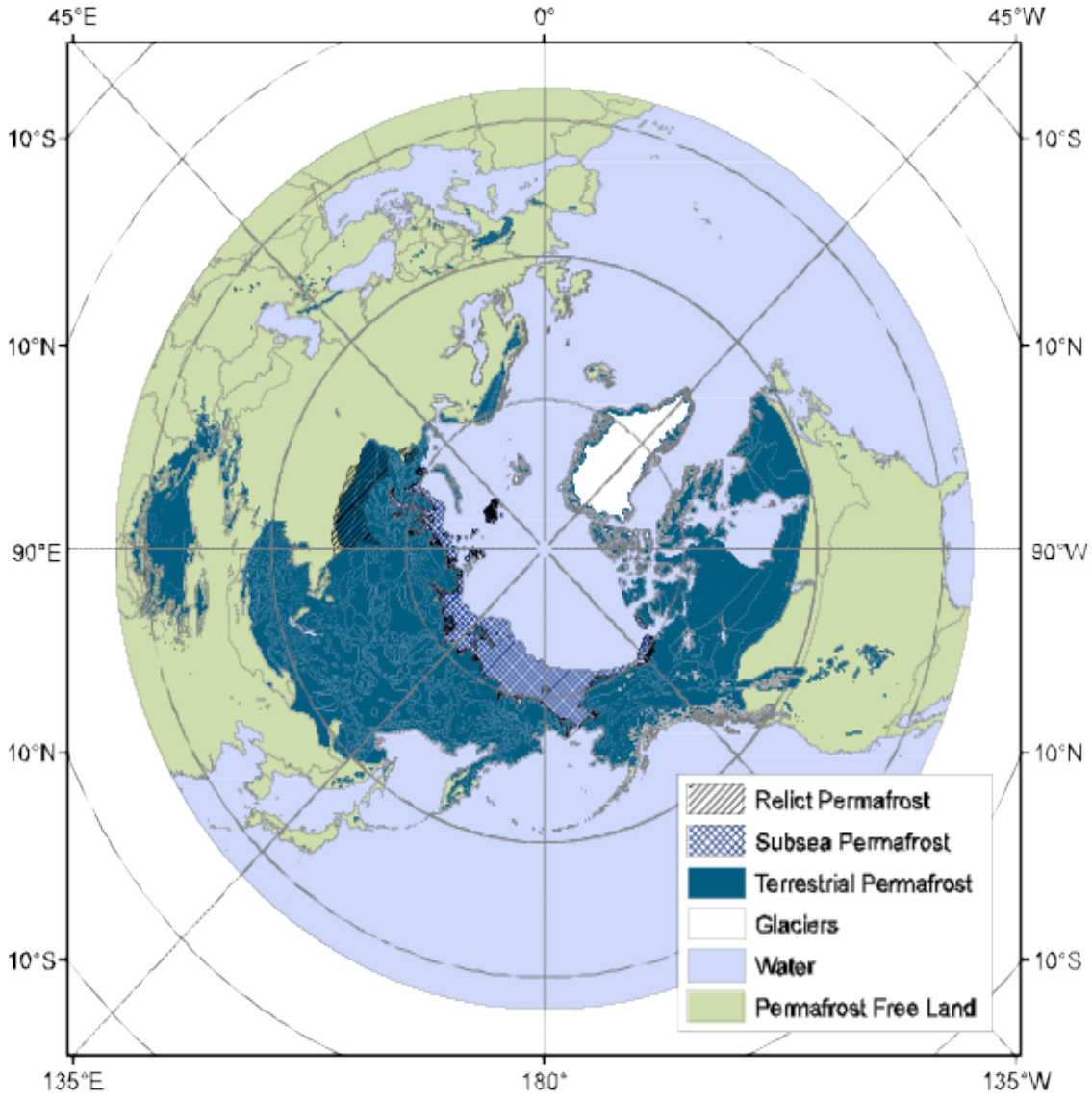

Figure 6.6: Map of approximate distribution subsea permafrost in the Arctic Ocean[176]

Following Oude Elferink's two criteria described earlier, and examining the circumstances of subsea permafrost in the Arctic, it can be seen that:

1. *Origin:*

   Relic subsea permafrost is related to former land, which has submerged. It can thus be strongly argued this relic permafrost's affinity is related to the seabed

[176] © Encyclopedia of Earth. Public Domain – Creative Commons Licence. See International Arctic Science Committee, Arctic, Permafrost in the Arctic, Section 6.6.2 of the Arctic Climate Assessment, (Sjaak Slanina, ed.), (2010), in the *Encyclopedia of Earth*, available online at: www.eoearth.org/view/article/155185

and subsoil rather than to the superjacent water. It parallels in many ways the conditions in Oude Elferink's analysis of brine pools and hydrothermal vents. However, it may be also possible to argue that oceanic permafrost especially with high sea ice content is more closely related to the overlying waters, but this form is significantly less common.

2. *Relationship with the overlying waters:*

Permafrost is a mixture of rock, sediment and ice. The majority of Arctic subsea permafrost is relic, hence its ice has low salinity due to its fresh water origin, and is thus clearly distinguishable from overlying waters. Ocean subsea permafrost has a seawater origin and therefore has much closer affinity with the overlying water.

Thus, adopting the criteria used by Oude Elferink, the answer would be that generally subsea permafrost is either an integral part of the 'seabed and subsoil' of the Arctic Ocean, or a form of *sui generis* material that it is either part of the seabed and subsoil or overlying the seabed and subsoil but underlying the sea waters. Certainly, Oude Elferink argues strongly for a non-restrictive interpretation of the definition of seabed[177], including subsoil. In this case subsea permafrost could fall within the term "other material" of the 2006 IHO definition of seabed discussed earlier.

Turning to examine Arctic State practice, in at least one Arctic state, both the federal government and its Supreme Court considered that ice on land could not necessarily be assimilated to the land. It should be recalled from Chapter 3 that in the *Dinkum Sands Case* the US government argued that ice layers on a sandbar were not to be treated as land, a view that was shared by the United States Supreme Court. Moreover, as described in Chapter 3, floating ice such as ice islands, pack or sea ice, and icebergs have not been considered by states and many jurists to be part of the territory of the State of origin, although they have concluded that state jurisdiction may apply for specific purposes, such as in the *Escamida Case* discussed in Chapter 3. It is therefore arguable that, if this same approach is applied to subsea permafrost lying beneath sea water, especially where there

[177] Oude Elferink, op. cit., at 149.

are high levels of ice/water content, it might not be considered part of the seabed, but *sui generis*. This would fit with the current thawing of the subsea permafrost which is resulting with significant changes to the ocean floor. It's thawing means that it could not be a permanent or stable component of the seafloor and thus it raises the question whether it should be included in the seabed and subsoil.

Some authors have argued that the seabed would be better defined in relation to the overlying waters and not in terms of its composition or origin, or in relation to subsoil.[178] This would have its attractions in relation to permafrost.

Using the wide interpretation of the 2006 IHO definition and Oude Elferink's approach to the term used in Article 76(1)), and even given its origins, mixed composition and the fact that it is now thawing, it is arguable that subsea permafrost is legally part of the seabed and/or its subsoil. However, some doubt remains.[179]

(2) From the above discussion the following question arises: what is the consequence of any categorisation relating to subsea permafrost's inclusion in the seabed and subsoil?

If subsea permafrost is not part of the seabed and subsoil, then potentially depth measurements would be altered and sedimentation measurements may become complicated and/or uncertain. As a result, Article 76 of UNCLOS would become even more difficult in practice to apply. For example, if permafrost of any significant thickness lies below the sea (and we have seen it can be up to 800^{+}m in the Arctic Ocean), and if it is not legally part of the seabed and subsoil, it would be extremely difficult to use the provisions for delineation and setting limits of the continental shelf. Article 76(5) would also be problematic. For example, if the permafrost depth is discounted, as not being part of the seabed and subsoil, then, in the measurement of the 2500m isobath, the limit would shift shoreward, possibly significantly. This effect of bringing the limits of the continental shelves nearer to their relative coastlines is not something that coastal states would wish to contemplate.

[178] Johnson, op. cit., at 462.
[179] Although not as strong, there is an arguable case that it is *sui generis* in nature.

If permafrost is included in the seabed and/or subsoil, as argued earlier, then due to its thawing and degrading, the criteria for Articles 76(4) and 76(5) would require constant re-evaluation (until potentially settled as final and binding under Article 76(8)[180]) and thus the continental shelf limits (for beyond 200nm) would become ambulatory until (if and when) fixed as final and binding. Examples of these issues arising from 'ambulatory continental shelves' are given in the four illustrations below.

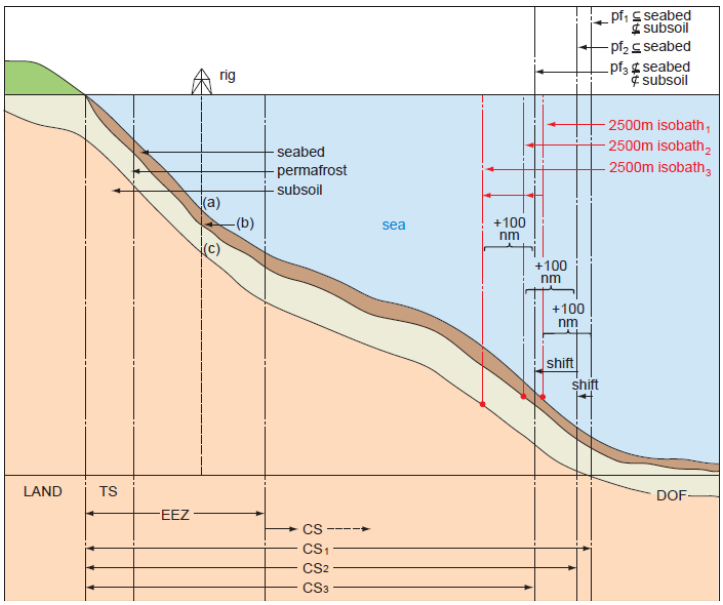

Figure 6.7: Different permafrost categorisations and resultant implications for ECS (isobathic) delineations and illustration of drilling for petroleum through permafrost and implications of its categorisation[181]

[180] The issue of becoming 'final and binding' under Article 76(8) is discussed below.

[181] © B.Sas 2015. Phillip Stickler, Department of Geography, University of Cambridge converted my rough sketch into this figure.

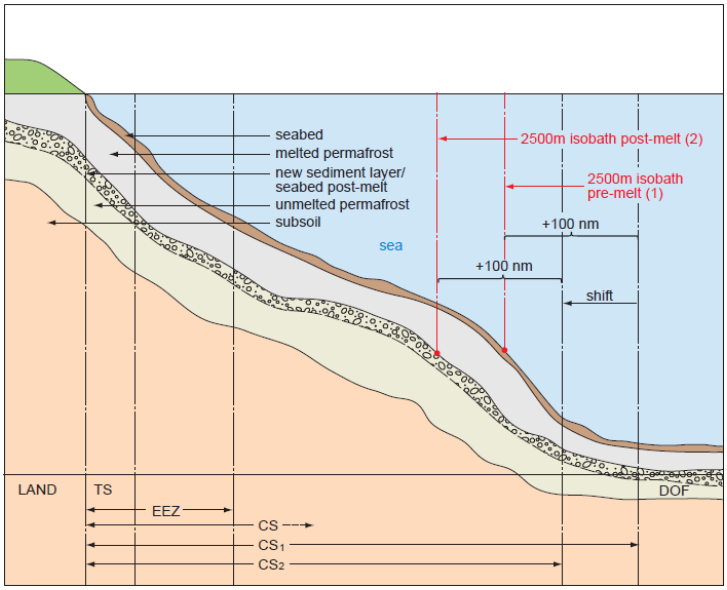

Figure 6.8: The shift of the ECS (isobathic) delineation after thawing where permafrost categorised as part of seabed[182]

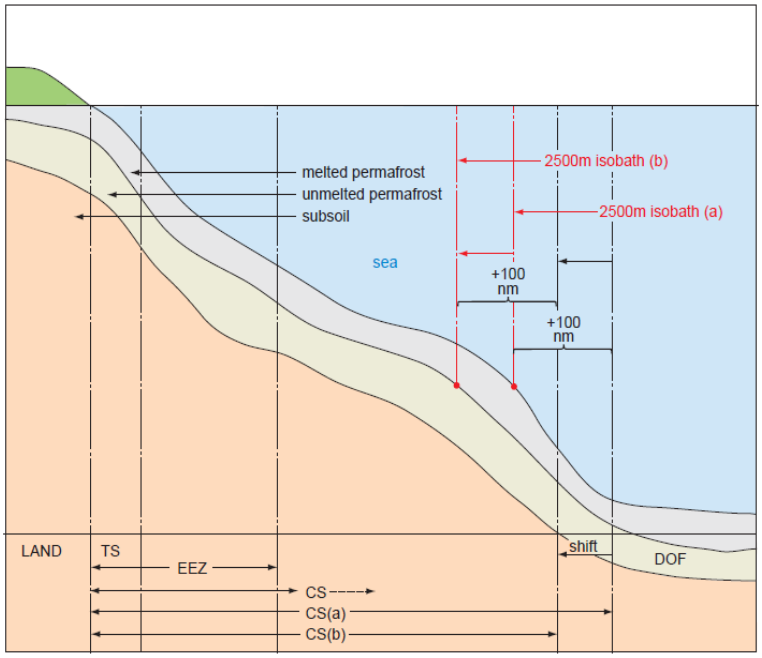

Figure 6.9: The shift of the ECS (isobathic) delineation after thawing where permafrost categorised as not part of the seabed[183]

[182] © B.Sas 2015. Phillip Stickler, Department of Geography, University of Cambridge converted my rough sketch into this figure.

[183] © B.Sas 2015. Phillip Stickler, Department of Geography, University of Cambridge converted my rough sketch into this figure.

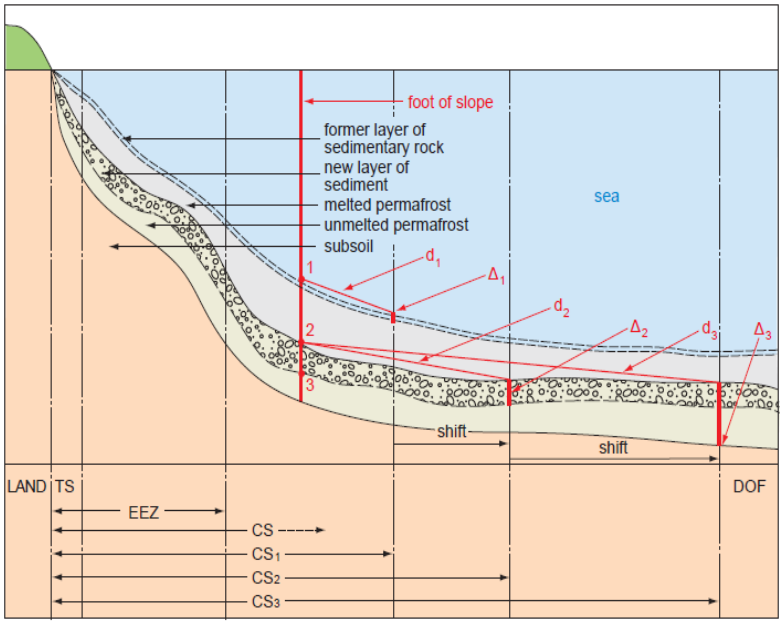

Figure 6.10: The shift of ECS (Article 76 (4)(a)(i)) after thawing if permafrost considered part of the seabed's 'sedimentary rocks'[184]

Legend to Figures 6.7 and 6.10: All figures: t.s. - territorial sea EEZ – exclusive economic zone c.s. – continental shelf dof – deep ocean floor pf – permafrost	Figure 6.7: (a) – interface of seabed and sea (b) – surface of permafrost (c) – surface of subsoil cs1 – cs where pf is part of seabed cs2 – cs where pf is part of subsoil but not seabed cs3 - cs where pf is not part of either seabed or subsoil
Figure 6.8: 2500m isobath (1) - in case of seabed pf and pre-thaw of pf 2500m isobath (2) – in case of seabed pf and post pf thawing	Figure 6.9 : 2500m isobath (a) – pre pf thaw 2500m isobath (b) – post pf thaw cs(a) – cs pre pf thaw cs(b) – cs post pf thaw

[184] © B.Sas 2015. Phillip Stickler, Department of Geography, University of Cambridge converted my rough sketch into this figure.

cs (1) – cs pre pf thaw cs(2) – cs post pf thaw	

Figure 6.10:

Δ1 – 1% of d1

Δ2 – 1% of d2

Δ3 – 1% of d3

d1 – distance to foot of slope where pf is not part of seabed pre pf thaw

d2 – distance to foot of slope where pf is not part of seabed post thaw

d3 – distance to foot of slope where pf is part of seabed post thaw

cs1 – cs pre pf thawing where pf is not part of seabed

cs2 – cs post thawing where pf is not part of seabed

cs3 – cs post pf thawing where pf is part of seabed

Explanatory Notes:

Caveat: **All analysis in this section takes the territorial basepoint on land as fixed. However, as was discussed earlier in the chapter on territorial sea, this is not necessarily the case with melting ice and thawing onshore permafrost in the Arctic. However such ambulatory baselines can only compound any shifting of the outer limits of the continental landward or reduce the effect of any seaward movement.**

Figure 6.7: Firstly, this figure illustrates how the categorisation of permafrost may be crucial in extended continental shelf delineation. Using the isobath method under Article 76(5) of UNCLOS the extended continental shelf limit shifts landward: the furthest seaward ECS is when the permafrost is categorised as part of the seabed, it is nearer to shore is when it is categorised as part of the subsoil but not the seabed, and it is nearest to shore is when the subsea permafrost is categorised as neither part of the seabed nor the subsoil ("*sui generis*"). This landward movement of the ECS depending on the categorisation of subsea permafrost is not in the coastal state's interest.

Secondly, it is also useful to note that, in drilling to get to the subsoil containing petroleum reserves, it is necessary to pass though the seabed (points (a) to (b)) and then through the permafrost (points (b) to (c)). If permafrost is neither part of the seabed nor the subsoil (i.e. is "*sui generis*"), then it is debatable whether Articles 56 or 77 allow for this drilling activity.

Article 56(1) states that: "In the exclusive economic zone, the coastal state has: (a) sovereign rights for the purposes of exploring and exploiting, conserving and managing natural resources, whether living or non – living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from water, currents and winds". (emphasis added)

Article 77(1) states that: "The coastal State exercises over the continental shelf sovereign rights for

the purpose of exploring and exploiting its natural resources."

From the above it is clear that a coastal state's CS rights appertain only to seabed and subsoil exploitation of the seabed and subsoil of the EEZ and continental shelf. Where other activities/uses on/of the sea/ocean floor were envisaged by the UNCLOS , they were included as special provisions in the convention: for example, Article 70 and the right to lay submarine cables and pipelines on the continental shelf. Thus, it is clear therefore that a *'cuius est solum, eius est usque ad coelum et ad inferos*'[185] style argument is not automatically applicable to state jurisdiction under Articles 56 and 77 re subsea permafrost.

Within the 200nm limit, when permafrost is not assimilated to the superjacent waters, the seabed, or subsoil, it would seem that, in its EEZ, a coastal state would try to rely on the phrase "with regard to other activities for the economic exploitation and exploration of the zone" to establish a legal basis for petroleum drilling through the permafrost. However, this is by no means an undisputable interpretation. Examples of such activities under Article 56(1) are given as the production of energy from water, currents and winds. This would seem to imply that the activity should in itself be exploitative. In the case of drilling, the activity would be the creation of a passage for drilling equipment to pass through the permafrost to the subsoil in order to conduct exploitation there.

Arguably, by applying the *ejusdem generis* principle of international law[186], a narrow interpretation of the phrase might not extend to drilling through *sui generis* permafrost, as it in itself is arguably not an exploitative activity of the permafrost – although a coastal state would undoubtedly argue it was.

As we have seen earlier in Chapter 5, the Arctic Five have claimed EEZs with the limited exceptions for areas round Svalbard and Jan Mayen islands. Thus, it is only for these two locations that the provisions of Articles 76 and 77 would be relevant for continental shelves around the islands. Article 77(1) does not contain an additional phrase regarding 'other activities', as in Article 57(1), but only refers to rights with respect to the continental shelf as defined in Article 76, i.e. restricted to the seabed and subsoil.

Thus, the categorisation of subsea permafrost as *sui generis* could lead to questions of the legality in respect of exploiting the continental shelves round Svalbard and Jan Mayen by passing through the permafrost that is neither part of the seabed or subsoil, as an express legal basis for such activity would appear to be unclear.

It can be argued that, as with land rights, sovereign rights offshore cannot be acquired by inference or interpretation of wider intention of a specific provision of UNCLOS. Under the English common law regarding easements a person cannot cross or use land not belonging to him without the permission of the owner or some form of granted right, unless it is *res nullius*. So the question is: if permafrost is not under coastal state jurisdiction, under whose jurisdiction is it? Could it fall within the catchment of the Area?

The Area is defined in Article 1(i) of UNCLOS as: "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction". Thus, the answer must clearly be no - simply *ex facie* of

[185] Latin maxim for "whoever owns the soil, it is theirs all the way to the heavens and to the netherworld". A common law principle concerning landownership, now limited by case law and statute.

[186] See for example: Aust, op. cit., at 20; Brownlie, *Principles of International Law*, op. cit., at 629; Lauterpacht, *Oppenheim's International Law*, op. cit., at 1279 – 1280; Ulf Linderfalk, *On the Interpretation of Treaties: The Modern International Law as Expressed in in the 1969 Vienna Convention on the Law of Treaties*, (2007), Springer, at 303 – 319; McNair, op. cit., at 393 – 399; G. Swarzenberger, *International Law,* Vol. 1, (1957), 3rd Edn., Stevens, at 510.

definition it cannot, since it also only relates to the seabed and subsoil.

So the question becomes: is *sui generis* subsea permafrost *res nullius* or *res communis?*[187] Any attempt to answer this question would be to revisit the great law of the sea debates of the 1950s, 60s and 70s as to the evolution of the continental shelf itself and its status.[188] In the end UNCLOS did not categorise the status of the continental shelf, but merely defined it and the rights of coastal states in relation to it – by granting 'sovereign rights' falling short of sovereignty and ascribing exclusive rights to the coastal state, but only for the purpose of the exploitation rights of the natural resources. It would seem that s*ui generis* subsea permafrost would similarly be unfruitfully debated, with its status falling comfortably within neither of the concepts.

Thus, it is likely that any international court or tribunal called upon examine this issue would adopt a relatively pragmatic approach. Arguably it would be likely to examine the questions of who else other than the coastal state could have any legal interest in the subsea permafrost and in conducting activities therein, and how if they did they could proceed to access subsea permafrost, sandwiched between the seabed and subsoil, without the coastal state's agreement. It can be argued therefore that, in all probability, such a court/ tribunal would determine, possibly *ipso jure,* that a coastal state may drill through *sui generis* subsea permafrost, as to decide otherwise would do damage to the intentions of the drafters of Articles 56 and 77 and prevent the exercise of the coastal state's rights to allow exploitation of the seabed and subsoil of its EEZ and continental shelf under those articles. It is unlikely, however, that such court/tribunal would choose to opine on its specific legal status.

Given the above discussion, it may be useful for coastal Arctic states in their relevant domestic laws, regulations and licenses/leases to expressly include the right to drill through subsea permafrost.

Thus, although discussion of the categorisation of permafrost may be perceived as primarily an academic exercise, the above shows it may have at least two practical implications and further implications will be discussed below.

Figure 6.8: This figure illustrates the effect thawing of the subsea permafrost beyond 200nm from the territorial sea baseline can have on the limit of an extended continental shelf, using the 2500m isobath method under Article 76(5), where the permafrost is categorised as part of the seabed or seabed and subsoil. With the thawing of subsea permafrost, in such a case, which is the most cogent categorisation, the continental shelf limit would shift landward.

Figure 6.9: This figure illustrates the effect of thawing subsea permafrost beyond 200nm from the territorial sea baseline, using the 2500m isobath method under Article 76(5), where the permafrost is categorised as part of the subsoil and not seabed. With the thawing of subsea permafrost, in such a case, the continental shelf limit would also shift landward.

Conclusion from Articles 75 and 76: Although the practical significance of the issue of thawing subsea permafrost should not be over egged in relation to the EEZ or continental shelf within 200nm, it does

[187] O'Connell reviewed a similar, now historical, debate regarding the status of seabed: O'Connell (Shearer), op. cit., at 449 -450.

[188] H. Lauterpacht, "Sovereignty over Maritime Areas", (1950), *BYIL*, at 376 seq.; David Lehman, "The Legal Status of the Continental Shelf", (1960), *Louisiana Law Review,* Vol. 20., No.4, 646 (and particularly the authors (Mouton, Gidel, Waldock, Kunz, and O'Connell) cited in footnote 7 at 653 – 654) Kokusaiho Gaiko Zasshi, (1955), "The Continental Shelf", in *Fifty Years of Law of the Sea*, (Shigeru Oda, ed.), Martinus Nijhoff.

have implications for the delineation of the continental shelf beyond 200nm.

As discussed earlier, it is estimated that a 1^0C rise in sea temperature could result in up to 100m thaw of subsea permafrost in a decade, possibly two.[189] According to Portnov, if the temperature of the oceans increases by 2^0C as suggested in some reports, it will accelerate the thawing to the extreme.[190] In fifty years therefore, with unchecked global warming and continued warming of the seas/oceans, there could be dramatic levels of thawing of subsea permafrost, thus shifting landward any unsettled delineations and limits of the ECSs in the Arctic Ocean – possibly by hundreds of kilometres.[191] Although the Arctic Five would presumably not challenge each other's claims in such event, as each would be suffering the same problem, it may be that, with the increasing interest of third states in the Arctic Ocean[192] these countries may see it in their best interests to enlarge the Area by challenging any 'unsettled' delineations, or making negative representations to the CLCS with respect to Arctic Five submissions. This demonstrates the importance for the Arctic Five of fixing as "final and binding" the outer limits of their continental shelves under Article 77(8). Section 4 of this Chapter will return to elaborate on this point.

Figure 6.10: This figure illustrates how the categorisation of subsea permafrost beyond 200nm from the territorial sea baseline, using the sedimentary rock thickness method of Article 76(4)(a)(i), may affect the definition of the extended continental shelf. In this case the continental shelf moves seaward. However, the extent of such a continental shelf shift would be constrained by the limits set in Article 76(5), which, as seen in Figures 6.7 – 6.10, can also shift the limit of continental shelf landward, thus counteracting the seaward definitional shift.

This figure also illustrates the issues that might occur in the event permafrost is (a) categorised as part of the seabed, and (b) because it is 'solid' and composed of frozen sediment, also considered to be "sedimentary rock". The depth of the 'seabed would be significantly increased and thus, in the event of thawing of the permafrost, the extended continental shelf in such a categorisation would shift considerably seaward. The figure demonstrates this shift in a post thaw situation but an analogous shift would occur in a pre thaw situation. However, it must be added that this particular scenario, being dependant on permafrost being considered seabed 'sedimentary rock', is highly unlikely and any state that attempted such an approach would undoubtedly encounter strong and highly arguable opposition.

These four illustrations demonstrate that the categorisation of subsea permafrost has significant implications in practice for the delineation of the continental shelf in the Arctic Ocean, especially in respect of the ECS. The likely categorisation of subsea permafrost as part of the seabed/subsoil, as discussed earlier, would generally result in a landward shift of the limit of the continental shelf, although there are some possible, but unlikely scenarios, where the shift of the continental shelf is seaward.

[189] Walsh *et al*, op. cit., at 19 -26.

[190] Thomas Nilsen, "Alarm over Kara Sea permafrost thawing", (2015), *Barents Observer*, 09 January 2015, available at:
http://barentsobserver.com/en/arctic/2015/01/alarm-over-kara-sea-permafrost-thawing-09-01.

[191] Unfortunately there are few ongoing programs to physically monitor the state of subsea permafrost and the effects of global warming in particular significant increases in sea temperature, thus most publications are model- based and speculative: Walsh et al. op. cit., at 16 - 17.

[192] Such as Japan, China, India, and South Korea.

(3) Conclusion:

From the above analysis it can be argued that an entirely new issue for the law of the sea can be coined with respect to thawing subsea permafrost: the case of the 'ambulatory continental shelf'.

When UNCLOS was being drafted the presence of subsea permafrost was not fully understood and its extent certainly not established. It may be that had the drafters known, it would have been accorded a special status or assumed expressly into the seabed and subsoil by definition. Being primarily relic type permafrost, Arctic subsea permafrost can comfortably be argued that it is part of the seabed and subsoil. Any other interpretation would cause major damage/uncertainty to the Convention's legal regime, arguably going against the drafters' rationale of the distinction between seabed and subsoil overlying waters and their regimes. However, even with this categorisation, given that the Arctic subsea permafrost is thawing rapidly, the issue of 'ambulatory continental shelves' remains pertinent and problematic for the future delineation of the continental shelf in the Arctic Ocean. This conclusion regarding delineation of the extended continental shelf in the case of melting Arctic subsea permafrost compounds the conclusions of Chapter 4 on problematic territorial sea baselines and the delineation of zones using these baselines in the case of melting ice shelves and coastal permafrost.

6.3.5 The "Natural Prolongation"[193]

The fundamental notion of the continental shelf as the natural prolongation of the adjacent land mass has 'evolved' over the years since the 1985 ICJ judgment in the *Libya v. Malta Case*.[194] In that case, the Court took the view that, although complementary, both distance and natural prolongation are "essential elements in the juridical concept of the continental shelf"[195], and found that "no criterion for delimitation of shelf areas can be derived from the principle of natural prolongation in the physical sense".[196] Jia points out that in the *Libya v.*

[193] Steinar Thor Gudlaugsson, "Natural Prolongation and the Concept of the Continental Margin for the Purposes of Article 76", (2004), in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff.
[194] Continental Shelf (Libya v. Malta), ICJ Reports, (1985), 1. ("*Libya v. Malta Case*")
[195] Ibid., at para. 34.
[196] Ibid., at para.79.

Malta Case the ICJ found that "within 200nm no role should be given to geological or geophysical factors either for verifying the legal title to the continental shelf or for its delimitation. It is this eventual disregard of the factors affecting a natural prolongation that renders this judgment significant. For it did not reconcile with the earlier statement of the Court on complementarity".[197]

Kim[198] argues that the "modified or weakened status of natural prolongation results from three factors: the pursuit of the establishment of more objective and accurate outer limits of the continental shelf, the need to not completely ignore natural features in the process, and the introduction of a new artificial zone (EEZ) …".[199] Her argument is that although natural prolongation may be irrelevant to the distance definition in Article 76(1), it retains relevance in the geological definition (the outer edge of the continental margin definition) and that therefore [i]t is difficult to acknowledge...that natural prolongation serves as a specific criterion for the definition of the continental shelf".[200]

Lilje – Jensen and Thamsborg agree and conclude "(physical) natural prolongation over the years has lost its power as the governing principle of entitlement to shelf areas within 200nm from the shoreline in favour of distance and determined on the basis of the coastal opening".[201] These views are shared by several other authors,[202] and in fact Charney considers that in the 1985 *Libya v. Malta Case* the ICJ virtually discarded the concept.[203]

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[197] Jia, op. cit., at 80.

[198] CLCS, *The definition of the continental shelf and criteria for the establishment of its outer limits*, available at: http://www.un.org/depts/los/clcs_new/continental_shelf_description.htm#definition. S

[199] Kim, op. cit., at 383.

[200] Ibid..

[201] Jorgen Lilje - Jensen and Milan Thamsborg, "Role of Natural Prolongation in Relation to Shelf Delimitation Beyond 200 Nautical Miles", (1999), *Nordic Journal of International Law,* Vol. 64, 619, at 622.

[202] Johnathon Charney, "International Maritime Boundaries for the Continental Shelf: The Relevance of Natural Prolongation", (2002), in *Liber Amicorum Judge Shigeru Oda*, (Nisuke Ando, Edward McWhinney, Rudiger Wolfrum and Betsy Baker Roben, eds.), 1011; David Colson, "The Delimitation of the Outer Continental Shelf between Neighbouring States", (2003), *AJIL*, Vol. 97, 91; Keith Highet, "Whatever Became of Natural Prolongation", (1989), in *Rights to Oceanic Resources: Deciding and Drawing Maritime Boundaries*, (Dorinda G. Dallmeyer, ed.), Martinus Nijhoff, 87; D. N Hutchinson, "The Concept of Natural Prolongation in the Jurisprudence Concerning Delimitation of Continental Shelf Areas", (1985), *BYIL*, Vol. 55, 133; Jorgen Lilje - Jensen and Milan Thamsborg, "Role of Natural Prolongation in Relation to Shelf Delimitation Beyond 200 Nautical Miles", (1999), *Nordic Journal of International Law,* Vol. 64, 619; Mahdi Zahraa, "Natural Prolongation and Delimitation of Maritime Boundaries", (1996), *Finnish Yearbook of International Law*, Vol. 7, 378.

[203] Jonathon Charney, op. cit., at 1020: "it *de facto* but perhaps not *de jure* continued the long practice of discarding natural prolongation as a relevant consideration in third – party settlements of international maritime boundaries in accordance with international law".

However, there are other authors who differ. Jia, for example, after an in-depth analysis considers that the question of whether the notion of natural prolongation has survived the 1985 ICJ judgment is to be answered in the affirmative[204], including within 200nm. He cites the ITLOS *Bangladesh v. Myanmar* judgment[205] as providing implicit confirmation of the continued relevance of the notion of natural prolongation to the entitlement to the continental shelf.[206]

Along the same lines, Benitah[207] and Proelss and Müller consider that "…the 'natural prolongation' nature of a zone is a necessary but not sufficient condition for its legal inclusion in the continental shelf." [208]

It would seem that Jia's arguments and these latter views are more convincing. Crucially, for example, his view appears generally more in line with the jurisprudence of the international courts and tribunals. The ICJ in its judgment in the 1969 *North Sea Continental Shelf Cases* found that a coastal state's title to a continental shelf relies on the existence of natural extension of its land territory.[209] In the 1985 *Libya v. Malta Case*, while emphasising the 'ascribed continental shelf', explained that "That is not to suggest that the idea of natural prolongation is now superseded by that of distance….The concepts of natural prolongation and distance are therefore not opposed but complementary; and both remain essential elements in the juridical concept of the continental shelf".[210] Although the Tribunal found it difficult to accept that natural prolongation represents a "separate and independent criterion" that must be satisfied as a precondition for the existence of a continental shelf

[204] Bing Bing Jia, "The Notion of Natural Prolongation in the Current Regime of the Continental Shelf: An Afterlife?", (2013) *Chinese Journal of International Law*, Vol. 12, 87, at 101 - 102.
[205] Dispute Concerning of the Maritime Boundary between Bangladesh and Myanmar in the Bay of Bengal ("*Bangladesh v. Myanmar Case*"), Judgment of 14 March 2012, available at:
ww.itlos.org/fileadmin/itlos/documents/cases/case_no_16/C16_Judgment_14_03_2012_rev.pdf.
[206] Jia, op. cit., at 96 – 99.
[207] M. Benitah, "Russia's Claim in the Arctic and the Vexing Issue of Ridges in UNCLOS", (2007), *ASIL Insights*, Vol. 11, No. 27, available at:
http://www.asil.org/insights/volume/11/issue/27/russias-claim-arctic-and-vexing-issue-ridges-unclos.
[208] Alexander Proelss and Till Müller, " The Legal Regime of the Arctic Ocean", (2008), *Z.f.a.o.R.VR*, Vol. 68, 651, at 663, available at:
www.zaoerv.de/.
[209] *North Sea Continental Shelf Cases,* op. cit., at paras. 19 and 43.
[210] *Libya v. Malta Case*, op. cit. at para.34

beyond 200nm[211], it did not dismiss its relevance. In fact Schofield *et al* conclude that the judgment:

> "represents an important development in that the Tribunal has offered a means by which natural prolongation…can be interpreted with enhanced objectivity and precision".[212]

ITLOS in the 2013 *Bangladesh v. Myanmar case* implicitly confirmed the relevance of the natural prolongation concept to the continental shelf entitlement.[213] Jia's approach would also appear to sit well with the CLCS's "test of appurtenance" in its 1999 Scientific and Technical Guidelines.[214]

Gudlaugsson has analysed systematically and extensively the nature of natural prolongation as either a geomorphologically or geologically based concept term, or a hybrid of the two.[215] He came to the conclusion that 'natural prolongation' is a geomorphologically based concept, although its definition does use geological terms, and that:

1. 'Jumping'[216] with the help of geological features is not allowed.[217]
2. Geomorphic prolongation cannot be overridden by any geologically based concept of natural prolongation.[218]

Finally, it should be noted that whatever the approach one adopts to natural prolongation, it is clear from the definition in Article 76(1) that the continental shelf need not be continuous out to 200nm[219], which marks a significant change from the definition of continental shelf prior to UNCLOS, as expressed in the 1969 *Continental Shelf Cases*.[220] This,

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[211] *Bangladesh v. Myanmar Case*, op. cit., at para. 449.
[212] Clive Schofield, Anastasia Telesetsky, and Seokwoo Lee, "A Tribunal Navigating Complex Waters: Implications of the Bay of Bengal Case", (2013), *Ocean Development and International Law*, Vol. 44, No. 4, 363, at 375.
[213] *Bangladesh v. Myanmar case*, op. cit., at paras. 426 - 427.
[214] Op. cit., at 2.2, 8 – 10. Gudlaugsson analyses the test of appurtenance: Gudlaugsson, op. cit., at 68 - 71.
[215] Gudlaugsson, op. cit., at 67 - 78.
[216] Which "consists in applying some purported geological property of natural prolongation to lay claim to a feature isolated from the wider juridical continental margin by the foot of the slope", Gudlaugsson, op. cit., at 75. He describes this approach: and rejects it as inconsistent with Article 76: Gudlaugsson, op. cit., at 75 - 76.
[217] Gudlaugsson, op. cit., at 75.
[218] Gudlaugsson, op. cit., at 77.
[219] Hyun Jung Kim, "Natural Prolongation: A Living Myth in the Regime of the Continental Shelf?", *Ocean Development and International Law*, Vol. 45, 374, at 378 - 379.
[220] The Judgment inferred two requirements for entitlement to a continental shelf: contiguity and continuity : *North Sea Continental Shelf Cases*, op. cit., at 51, para. 95.

as will be shown later in the Arctic Ocean context, is important in the delineation of extended continental shelves for the Arctic Five**.**

6.3.6 The Continental Margin[221]

Article 76(3) of UNCLOS states that:

> "the continental margin comprises the submerged prolongation of the land mass of the continental shelf and consists of the seabed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil itself".

It is worth repeating that, although this is a legal definition, it depends on key concepts from geology: shelf, slope and rise (see Figure 6.11 below).

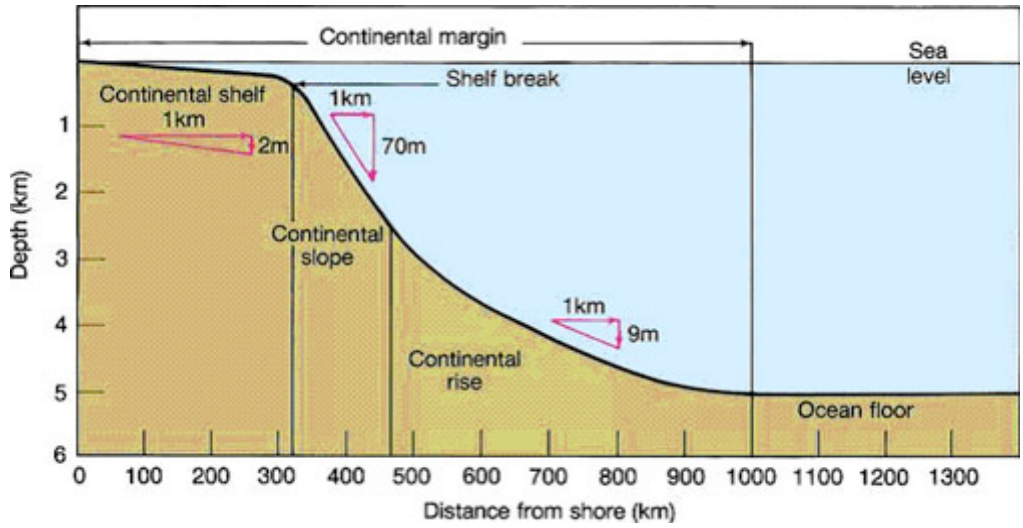

Figure 6.11: Idealised geological diagram showing Continental Margin and components[222]

The DOALOS training manual for the delimitation of the outer limits of the extended continental shelf identifies the scientific terms embedded in the Article 76 definitions and constraints[223], and the IHO defines these terms as follows:

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[221] Symonds *et al* give a very useful analysis of the continental margin in a geological/geomorphological sense: Phillip A. Symonds, Olav Elgholm, Jean Mascle and Gregory Moore, "Characteristics of Continental Margins", (2000), in *Continental Shelf Limits The Scientific and Legal Interface,* (Peter J. Cook and Chris M. Carleton), Chapter 4, 25.

[222] © Chaytor and Brothers, USGS. Public Domain.
Jason Chaytor and Daniel Brothers, "High Resolution Multibeam Mapping of Mid-Atlantic Canyons to Assess Tsunami Hazards", (2011), *USGS: Sound Waves*, available online at:
http:// soundwaves.usgs.gov/2011/10/.

1. *Shelf*

Shelf is defined geologically as an area adjacent to a continent or around an island extending from the low – water line to the depth at which there is usually a marked increase of the slope to a greater depth, i.e. to a point on the shelf break.[224]

2. *Slope*

The Slope is defined geologically as "that part of the continental margin that lies between the shelf and the rise".[225]

3. *Rise*

The rise is defined geologically as "a submarine feature which is that part of the continental margin lying between the continental slope and the deep ocean floor".[226]

Deep ocean floor is defined by IHO as "the surface lying at the bottom of the deep ocean with its oceanic ridges, beyond the continental margin".[227] Walker defines it identically.[228]

What is clear is that these definitions are tautologous and in important respects vague.

Hence it may be worth trying to discover a more precise, accurate and non-tautologous set of definitions or descriptions of these concepts.

For example, more descriptive, albeit vague, notion of the concept of 'rise' is given by Symonds *et al*:

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[223] Division for Ocean Affairs and Law of the Sea, Office of Legal Affairs, *The Law of the Sea: Training Manual for the delineation of the outer limits of the continental shelf beyond 200nm and for preparation of submission to the Commission on the Limits of the Continental Shelf*, (2006), DOALOS, UN.

[224] See the Glossary of Technical Terms in Cook and Carleton, op. cit., Annex 1, at 321, at 328; IHO's 2007 Glossary, op. cit., at # 87; IHO's 1997 Former Glossary, op. cit., at #78; Hedberg, op. cit., at 3.

[225] See IHO's 2007 Glossary, op. cit., at # 22; Hedberg, op. cit., at 5. A good description of slope is given in: Intergovernmental Ocean Commission, "Opportunities and Problems in marine geology and geophysics", (1965), *Marine Geology*, Vol. 3. 227; R. S. Dietz, "Continental and ocean basin evolution by spreading of sea floor", (1961), *Nature,* Vol. 190, No. 4779, 854; R. S. Dietz, "Origin of the Continental Slope", (1961), *American Scientist*, Vol. 52, 50.

[226] See IHO's 2007 Glossary, op. cit., at #20.

[227] See IHO' 2007 Glossary, op. cit., at #24; Hedberg, op. cit., at 16.

[228] Walker, op. cit., #47, at 163.

> "Although continental rise is a geomorphic term, it is really used to describe a depositional feature caused by the accumulation of sediment largely derived from the continent and transported down and along the slope."[229]

The concept of 'slope' could be defined as the submarine depositional feature, caused by the accumulation of sediment largely derived from the continent and transported down and along the continental slope, which commences at the seaward edge of the shelf ("shelf break") and whose steeper slope descends downwards towards the deep ocean floor. [230]

However, even this definition relies on a legal definition of another term: in this case the 'deep ocean floor'. To use the IHO definition would result in a tautology again. However, even as a geological term the 'deep ocean floor' is difficult to define, especially without reference to oceanic crust.[231] Antunes and Pimental view 'crustal neutrality' as central to the interpretation of Article 76.[232] They argue that during UNCLOS III proposals for reference to be made to continental and oceanic crusts in the definition in Article 76 were not accepted[233], probably because the boundary between the two crusts is often not clearly defined.[234] However, they do concede that "it has to be recognised that areas of oceanic crust correspond 'tendentially' to the concept of "deep ocean floor".[235] That is, in practice generally, the deep ocean floor is composed primarily of oceanic crust material, although there are some significant exceptions – e.g. specific oceanic areas that may contain continental crust.[236] As seen earlier, there appears to be no formal legal definition of 'deep ocean floor', despite its fundamentally important use in UNCLOS.[237]

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[229] Symonds, Eldholm, Mascle and Moore, op. cit., at 31.
[230] The shelf generally slopes gently with a gradient of less than 1:1000, while the slope usually has gradients of 1:40: ibid., at 29.
[231] As opposed to continental crust. A useful short description of both types of crust can be found in: British Antarctic Survey, "Earth's crust", available at:
www.antarctica.ac.uk/about_antarctica/geography/rocks/earths_crust.php;
Hedberg identifies five major complications making a simple distinction between continental shelf and deep ocean floor based solely on differences between ocean and continental crusts: Hedberg, op. cit., op. cit., at 29.
[232] Antunes and Pimental, (2003), op. cit., at 11 - 12: Hedberg, op. cit., at 29.
[233] Antunes and Pimental, ibid..
[234] T.H. Heidar, "Legal aspects of continental shelf limits", (2003), in *Proceedings of the Conference on the Legal and Scientific Aspect of the Continental Shelf Limits, Iceland 2003*, (M. H. Nordquist, J. N. Moore, and T. H. Heidar, eds.), Martinus Nijhoff, 19,
[235] Antunes and Pimental, (2003), op. cit., at 11.
[236] "Although continental crust is compositionally distinct from oceanic crust, the boundary between the two crustal types is often not clearly defined….": DOALOS, *The Law of the Sea 1993*, op. cit., at 10 - 11
[237]For example in Article 76(3).

The principal rule of treaty interpretation under Article 31 VCLT leads to interpreting the term 'deep ocean floor' in good faith in accordance with the ordinary meaning to be given to that term in its context and in the light of its object and purpose. If one assumes that "deep ocean" implies ocean/sea water at least deeper than 2500m isobath (using Article 76(5) as 'context'), the 'deep ocean floor' could arguably be defined as the surface of all solid matter underlying the waters of the deep ocean and which is beyond 350nm from the territorial sea baselines of any coastal state and further than 100nm beyond the 2500 isobath (using Article 76(5) as context).

This would provide a working, non-tautologous definition, although perhaps it is still more of a 'term of art' than a formal legal concept.

6.3.7 Conclusions on Article 76's Definitional Issues

The above discussion leads to the inevitable conclusion that it is not possible, even after fully analysing the constituent scientific terms, to define the juridical continental shelf without some aspect of uncertainty or ambiguity.[238] This situation arises from the reality that the "simple categorisation of margin morphology into shelf, slope and rise is rarely found in practice owing to the variety of geomorphological forms of the continental margin resulting from different tectonic settings".[239]

However, this lack of formal legal definition for UNCLOS terms such as continental margin and deep ocean floor may not generally impact too dramatically on the delineation of continental shelves particularly when EEZ rights are being invoked out to 200nm. However, for Svalbard and Jan Mayen, for which no EEZs have been claimed, the situation could be more complex in establishing the delineation of their continental shelves, especially in respect of the issue of subsea permafrost. To date the delimitation with adjacent/opposite states has been settled by agreement, at least for overlapping continental shelf claims within 200nm. But we will see in the next section that the ambiguity and lack of legal clarity

[238] Several authors come to the same view in their analyses: Antunes and Pimental, (2003), op. cit., at 10 -15; Hedberg, op. cit., at 29; Ron Macnab, "The Case for Transparency in the Delimitation of the Outer Continental Shelf in Accordance with UNCLOS Article 76", (2004*), Ocean Development and International Law*, Vol. 35, 1.
[239] DOALOS, Office of Legal Affairs, *The Law of the Sea: Definition of the Continental Shelf*, (1993), UN, Sales No. E.93V.16, at 11.

of Article 76 and key terms become far more problematic with continental shelves beyond 200nm, especially in the Arctic Ocean.

The detailed examination of the terms seabed and subsoil yielded a potentially significant problematic area that has not before been raised in the literature, the impact of thawing permafrost on the delineation of the ECS. It would appear that as the subsea permafrost melts, depending on the categorisation of the permafrost as seabed and/or subsoil the continental shelf becomes "ambulatory".

6.4 The Continental Shelf beyond 200nm – The Extended Continental Shelf ("ECS")

6.4.1 General Introduction

Article 76 has been heavily analysed and critiqued in the literature[240] and this general body of writing will be assumed in the analysis in this section. Giving a summary overview of the key provisions of Articles 76 and 82 relating to the delineation of the ECS, the thesis will examine only those aspects relating to the delineation of the continental shelf beyond 200nm that are particularly relevant in the Arctic Ocean.

6.4.2 Brief Overview of the Key Aspects of Article 76, with specific emphasis on the delineation of Arctic ECSs

It should be noted that this overview is not presented in the strict order of the paragraphs of Article 76, but as issues which evolve in a sequential fashion through the application of the Article.

6.4.2.1 Article 76(1): Defining the Continental Shelf beyond 200nm

[240] See for example, Churchill and Lowe, op. cit., at 150 seq.; Crawford, *Brownlie's Principles of Public International Law*, op. cit., at 273 -274; DOALOS, Office of Legal Affairs, *Training Manual 2006*, op. cit.; DOALOS, *The Law of the Sea 1993*, op. cit.; T. E. McDorman, "The Entry into Force of the 1982 LOS Convention and the Article 76 Outer Continental Shelf, (1995), *IJMCL*, Vol. 10, 165; Rothwell and Stephens, op. cit., at 107 - 109; Suarez, op. cit., at 39 – 74; Tanaka, op. cit., at 132 – 148; Smith and Taft, op. cit.17 - 24; Triggs, op. cit., at 363 - 366;

One definition of continental shelf, the one relating to within 200nm, was discussed in Section 6.2 above. The other definition given in Article 76(1) defines the continental shelf as follows:

> "The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin…"

As discussed in Section 6.2, although the term 'continental margin' is 'defined' in Article 76(3), it is not without its issues due to its reliance on several geological terms, whose definitions in turn are themselves problematic – all of which make a clear stand-alone definition very difficult.

6.4.2.2 Articles 76(2) and 76(4) : Setting the Outer Limits of the ECS

(1) General Discussion

Article 76(2) restricts the outer limits of the continental shelf defined using this method:

"The continental shelf of a coastal state shall not extend beyond the limits provided for in paragraphs 4 to 6".

Article 76(4)(a) identifies two criteria for fixing the outer edge of the continental margin, whenever that margin extends beyond 200nm from the territorial sea baselines: namely,

(1) the 'sedimentary thickness formula" (also termed the ""Irish formula" or Gardiner formula") in Article 76(4)(a)(i), where "the outer edge of the continental margin is fixed by a line delineated by reference to the outermost fixed points at each of which the thickness of the sedimentary rocks is at least 1% of the shortest distance from such a point to the foot of the continental slope"[241] and,

(2) the 'distance formula' (also termed the "Hedberg formula") in Article 76(4)(a)(ii), where the outer edge of the continental margin is determined by a line

[241] Tanaka, op. cit., at 135.

delineated by reference to fixed points not more than 60 nautical miles from the foot of the continental slope".[242]

Firstly, it should be noted that "[i]t is not mandatory for a coastal state to apply uniquely the distance formula or the sedimentary thickness formula throughout the claimed area, and at any particular location it may apply the formula that is most advantageous to interests".[243]

Secondly, it must be said, as Macnab points out, that the process of establishing sediment thickness is potentially a very complex operation with a correspondingly greater scope for error and/or misinterpretation and as a rule of thumb, sedimentary thickness measurements are determined at best to an accuracy of 10%.[244]

Thirdly that the definitional issues with respect to 'continental margin' are a cause for great concern with respect to Article 76(4)(b)(i). In other words, as Macnab eloquently puts it, "in the application of the sediment thickness formula the need to reconcile the simplistic assumptions of paragraph 4(b)(i) with the geological complexities of the real world" makes the idealised model of the continental margin highly problematic.[245] These problems are greatly exacerbated in the Arctic Ocean beyond 200nm by the practical difficulties in obtaining acceptable measurements, data, and samples.[246] For instance, there may be polar pack ice with multi-year ice making access extremely difficult and complicating the gathering of detailed and systematic data using either the borehole method or the seismic reflection and refraction profiling method.[247]

Moreover both paragraphs 4(a)(i) and (4)(a)(ii) depend on the location of the "foot of the continental slope", which is defined in Article 76(4)(b):

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[242] Ibid..

[243] Ron Macnab, "The Case of Transparency in the Delimitation of the Outer Continental Shelf in Accordance with UNCLOS Article 76", (2004), *ODIL*, Vol. 35, 1, at 7.

[244] Macnab, (2004), op. cit., at 7.

[245] He sets out three practical difficulties. Macnab, (2004), op, cit., at 7.

[246] For a very understandable description of the practical difficulties in the acquisition and analysis and interpretation of geological, geomorphological and oceanographic data, see: Alan Evans, Chris Carleton and Lindsay Parson, "Article 76: The Ridge Issue", a conference paper to the *ABLOS Conference: Addressing Difficult Issues in UNCLOS*, Monaco, 26 – 27 October 2003, available at: www.iho.int/mtg-docs/com_wg/ABLOS/ABLOS_conf3/PAPER2-3.PDF.

[247] A Description of these methods can be found in: Troy L. Holcombe and Carla J. Moore, "Data Sources, Management and Presentation, (2000), Chapter 15, in Cook and Carleson, op. cit., 230, at 239 – 240.

> "In absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base".

As will be discussed below, the definition of the foot of the slope is vague and in practice it may be extremely difficult to locate.

(2) Key Definitional Issue in Articles 76(4) that is Particularly Problematic in the Arctic: The 'Foot of the Slope'

(i) *General Introduction*

The foot of the continental slope ("FOS") is a crucially important feature[248], which must be located in order to: (1) apply the 'test of appurtenance'[249], (2) measure the outer edge of the continental margin[250], and (3) use the formulae and rules in Article 76 of UNCLOS by which to delineate the outer limits of the continental shelf.[251]

Article 76(4)(b) states that:

> "[i]n the absence of evidence to the contrary, the foot of the continental slope is defined as the point of maximum change in the gradient at its base".

Since 1982 the IHO, the DOALOS and the CLCS all have attempted to varying extents to clarify aspects of this definition. The IHO 2006 Glossary considers that:

> "It [the FOS] is the point where the continental slope meets the continental rise, or if there is no rise, the deep ocean floor."[252]

The 1993 DOALOS study on the definition of the continental shelf elaborates:

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[248] Bjarni Mar Magnusson, "The Rejection of Theoretical Beauty: The foot of the Continental Shelf in Maritime Boundary Delimitations Beyond 200 Nautical Miles", (2014*), ODIL,* Vol. 45, No. 1, 41.

[249] "It is from the foot of the slope that the test of appurtenance is taken": Suarez, op. cit., at 154. The CLCS requires a coastal state claiming an ECS to prove that the submerged natural prolongation of its land mass extends beyond of appertenance 200nm – "the test of appurtenance". The CLCS in its 1999 Guidelines (op. cit.) formulated the test at paragraph 2.2.8. See: Ron Macnab, "Initial Assessment", (2000), in *Continental Shelf Limits*, (Peter J. Cook and Chris M. Carleton, eds.), Oxford University Press, 253, at 253 – 256.

[250] Article 76(4)(a) of UNCLOS.

[251] Implicitly in Article s 76(5) and 76(6) of UNCLOS.

[252] The *IHO 2006 Glossary*, op. cit., at para. 36.

> "The foot of the slope commonly lies close to the outer edge of the continent that is near the place where the crust changes from continental to oceanic."[253] …
>
> "Normally the maximum change in gradient at the base of the continental slope occurs either at the point where the rise and slope join, or where a trench exists, along the axis of such trench".[254]

The CLCS in its 1999 Guidelines recognises the fundamental importance of the FOS to defining the ECS[255], and, while not elaborating generally on the definition, it does at length set out its interpretation of the Article and how it considers its implementation should be done.[256]

The CLCS considers that defining the FOS by " evidence to the contrary" is complementary to the primary gradient rule.[257] As Suarez discusses, some commentators disagree with the CLCS's 'general rule exception' or 'complementary' approach to the interpretation of Article 76(4) (b).[258] Some authors, such as Antunes and Pimental[259], argue the phrase provides an equally valid alternative means to define the FOS. This is a view echoed by the ILA in its 2006 *Report on the Legal Issues of the Outer Continental Shelf*, where it disagreed with the CLCS's complimentary approach, concluding that "Article 76(4)(b) does not establish a precedence between the two approaches contained in it".[260] This alternative approach appears to be strongly arguable and to have more support among authors.[261]

We will next examine both aspects of the definition.

(ii) The Gradient Approach

The gradient approach leaves several definitional issues open:

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[253] DOALOS, UN, (1993), op. cit., at para. 34.
[254] Ibid., at para. 43.
[255] *1999 CLCS Guidelines,* op. it., at 5.1.1
[256] *1999 CLCS Guidelines,* op. cit., sections 5 and 6, at 23 – 32; See also the *CLCS's 2006 Training Manual,* op. cit., at V-20 – V-21.
[257] *1999 CLCS Guidelines,* op. cit., at paras. 6.1.2 and 6.1.3, at 43.
[258] Suarez, op. cit. at 155.
[259] Antunes and Pimental, (2003), op. cit., at 13 - 15.
[260] ILA, *Legal Issues of the Outer Continental Shelf*, 2nd Report, Toronto Conference (2006), at 7, available at: www.ila-hq.org/downloas.cfm.docid/435A6BA1-4F85-47B3-9ED23A6F64924414.
[261] Antunes and Pimental, (2003), op. cit., at 13 - 15; Suarez, op. cit., at 155.

(1) There is no quantification of the gradients involved – as Carleton *et al* point out[262], all that is required is to find the point at which the gradient changes most.

(2) Article 76 offers no guidance on how to determine where the maximum change of slope occurs, or what to do when a maximum change is observed in two or more locations.[263]

(3) There is no specific depth associated with the foot of the slope – although the Article 76(4) definition does use the word "base", indicating towards the deeper part of the slope.[264] The CLCS 1999 Guidelines define the base as:

> "the region where the lower part of the slope merges into the top of the continental rise, or into the top of the deep ocean floor where a continental rise does not exist"[265]

It would appear from this definition and the CLCS method for identifying it that 'the base' does not have exact boundaries[266] – which would seem a somewhat fuzzy start to the definition of the FOS.

The generally used method for the gradient approach is primarily morphological - with analysis of the bathymetric profiles perpendicular to the edge of the continental shelf.[267] This process is open to uncertainty, being heavily dependent upon the quality, quantity, distribution and orientation of the bathymetric data/profiles, the accuracy and resolution of the sounding equipment (wide-beam vs. narrow beam sonar, single-beam vs. multibeam sonar), the accuracy of navigation systems used to determine observation positions, the processing that has been applied to the data (sound velocity corrections, filtering, statistical and other adjustments), data formats (original profiles vs. profiles reconstructed from grids), data accessibility (confidential vs. pubic databases) and the criteria applied in the data

[262] Chris M. Carleton, Steve Shipman, David Monahan, Lindsay Parson, "The Practical Realisation of the Continental Shelf Limit", (2000), Chapter 17, in *Continental Shelf Limits*, (Peter J. Cook and Chris M. Carleton, eds.), Oxford University Press, 268, at 271.
[263] Macnab, (2002), op. cit., at 258.
[264] Carleton *et al,* footnote 262, *supra*.
[265] *1999 CLCS Guidelines,* op. cit., at section 5.4.5, at 41.
[266] Suarez, op. cit., at 156.
[267] On this method see: Dave Monahan, "Determination of the Foot of the Continental Slope as the Point of Maximum Change in the Gradient at its Base", 2004), in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John Norton Moore and Tomas H. Heidar, eds.), Martinus Nijhoff, Panel II, 91.

analysis and interpretation.[268] Macnab estimates that the potential uncertainty of the FOS's location using this method can generally be estimated to be tens of kilometres.[269]

Carleton *et al*[270] and Antunes and Pimental[271] identify numerous geophysical and geological situations on the continental slope (saddles, troughs, terraces, etc.) where determination of the FOS by the gradient (bathymetric and geomorphological) method becomes highly complex (on some occasions impossible), adding further uncertainty to the identification of the location of the FOS, in such circumstances it is likely that the 'in absence of evidence to the contrary' approach may be used.

(iii) 'In absence of evidence to the contrary' Approach

Article 76(4) does not indicate what 'evidence to the contrary' may consist of.

Rosenne and Nandan comment that the phrase 'in absence of evidence to the contrary' implies that there may be special circumstances requiring the application of alternative means for determining the FOS.[272]

The ILA in its 2006 Report on the Legal Issues of the Outer Continental Shelf argues that the gradient approach "may not always accurately establish the foot of the slope and that foot of the slope is not defined solely by geomorphological characteristics…".[273]

The CLCS 1999 Guidelines elaborate on this point and provide that:

> "The Commission interprets this provision as an opportunity for coastal states to use the best geological and geophysical evidence available to them to locate the foot of the continental slope at its base when the geomorphological evidence given by the maximum change of gradient as a general rule does not or cannot locate reliably the foot of the continental slope".[274]

[268] Macnab, (2000), op. cit., at 258; Macnab, (2004), op. cit., at 5.
[269] Macnab, (2000), op. cit., at 266.
[270] Carleton *et al*, (2000), op. cit., at 271 – 274.
[271] Antunes and Pimental, (2003), op. cit., at 13 - 18.
[272] Sandan and Rosenne, (eds.), (1993), op. cit., at 876.
[273] ILA, Toronto Conference 2006, op. cit., at 7 - 8.
[274] CLCS 1999 Guidelines, op. cit., section 6. 3. 1, at 30.

Both the CLCS[275] and DOALOS[276] refer to 'evidence to the contrary' as being geological and geophysical evidence.[277]

The CLCS 1999 Guidelines recognise the difficulties in trying to determine the FOS from a geological or geophysical perspective[278] and that the examples and definitions it presents in the Guidelines may not exhaust all possibilities or difficulties.[279] Taft and Haq[280], Carleton[281], Haworth[282], Carleton, Shipman, Monahan and Parson[283], and Macnab[284] illustrate many of the difficulties arising in an 'evidence to the contrary' determination, and the resultant uncertainties in the location of the FOS.[285]

Macnab argues that the Article 76(4)(b) provision for determining the FOS by means of 'evidence to the contrary'

> "adds a further layer of potential ambiguity to the process by indicating that other, and unspecified, classes of information may be used for that purpose".

and that the use of 'evidence to the contrary' needs

> "to be accompanied by a series of qualifications, that touch upon the quality of the evidence and its scientific suitability for the purpose – and which could raise the outcome to a new level of uncertainty".[286]

In fact, Carleton *et al* state:

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[275] CLCS 1999 Guidelines, op. cit., section 6.3.1, at 46.
[276] DOALOS, (1993), footnote 2, *supra*, para. 47, at 14.
[277] On the approach used to map the foot of the slope studying the various characteristics (geomorphological/bathymetric, geological and geophysical) see Carleton *et al*, (2000), op. cit., at 270 - 274.
[278] Ibid., at section 6.2.4, at 29.
[279] Ibid., at section 6.2.5, at 29.
[280] George Taft and Bilal Haq, "Deep Sea Fan Issues", (2000), *in Continental Shelf Limits; The Scientific and Legal Interface*, (Peter J. Cook and Chris M. Carleton, eds.), Chapter 19, 308.
[281] Chris Carleton, "Article 76 of the UN Convention on the Law of the Sea – Implementation Problems from the Technical Perspective, (2006), *IJMCL*, Vol. 21, No. 3, 267, at 293 - 296.
[282] Richard T. Haworth, "Determination of the Foot of the Continental Slope by Means of Evidence to the Contrary to the General Rule", (2004), in *Legal and Scientific Aspects of Continental Shelf Limits,* (Myron H. Nordquist, John Norton Moore and Tomas H. Heidar, eds.) , Panel II, 121.
[283] Carleton, Shipman, Monahan, and Parson, (2000), op. cit., at 270 - 278.
[284] Macnab, (2000), op. cit. at 258 and 266.
[285] Where there are troughs or terracing or indeed where there is no FOS: Carleton, (2006), op. cit., at 295.
[286] Macnab, (2010), op. cit., at 5.

> "clearly there is no 'exact' foot of the slope: there is, rather, a zone in which judgment must be applied which is taken to mark the edge of the continent".[287]

Thus, the inbuilt definitional uncertainties, together with the coastal state's 'judgment call', make any challenge of an excessive ECS claim involving questioning the location the FOS difficult, and if the CLCS (a body of technical experts) has it in a submission, very difficult.

(iv) Article 76(4)(b) and the Arctic Ocean

An ECS submission under Article 76 of UNCLOS must be substantiated by high quality data and analysis.[288] Such data for the FOS is, as discussed above, difficult to obtain with a high degree of certainty in the best of conditions and using the most modern technology[289], but in the ice-covered waters and hostile environmental conditions of the Arctic Ocean[290], the data gathering exercise becomes extremely difficult[291] and presents special challenges[292], and at very high costs.[293]

Large areas of the floor of the Arctic Ocean are considered by experts to be inadequately mapped.[294] For example, it would seem that current public bathymetric charts of the Arctic

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[287] Carleton *et al*, (2000), op. cit., at 271.

[288] Mayer, Jabobsson and Hall, (2005), op cit., at 125 - 127.

[289] Institute Association of Sedimentologists, *Sediments, Morphology and Sedimentary Processes on Continental Shelves: Advances in Technologies, Research and Applications, (2012),* (Michael Z. Li, Christopher R. Sherwood and Philip R. Hill, eds.), Wiley. Also Chapters 6 -15, Part II, *Continental Shelf Limits. The Scientific and Legal Interface*, Cook and Carleton, eds., op. cit., at 87 - 252.

[290] With the ice melting and more open water the possibility of Arctic storms of increased frequency and violence is growing: Alister Doyle, "Worsening Arctic storms to threaten oil, shipping industries, "(2009), *USA Today*, 4 February 2009, available at:
www.usatoday.com/weather/climate/globalwarming/2009-02-04-arctic-storms_N.htm.

[291] Mayer, Jabobsson and Hall, (2005), op. cit., at 128 - 130.

[292] See Mayer, Jacobsson, and Hall, (2005), op. cit., at 128 - 133.

[293] For example Canada is estimated to have spent over $200m on subsea mapping in its Arctic waters with existing ships and equipment: Paul Watson, "Why Canada's race for the North pole could backfire", (2013), *Toronto Star,* 13 December 2013, available at: http://t.thestar.com/#/article/news/world/2013/12/13/why--canadas-race-for-the-north-pole-could-backfire.html.
It has been estimated that a new hydrographic icebreaker with the most recent technology could cost over $1bn: Seattle Times Staff, "Scrapping the Polar Star stopped while lawmakers search for budgetary icebreaker", (2012), *The Seattle Times*, 21 June 2012, available at:
www.seattletimes.com/opinion/scrapping-the-polar-sea-stopped-while-lawmakers-search-for-budgetary-icebreaker/.

[294] Larry Mayer describes it as "the least mapped place in the world", see: Daniel Cressey, "Arctic mapping redraws borders", (2008), *Nature News,* 15 February 2008, available at:
www.nature.com/news/2008/080215/full/news.2008.603.html.
Macnab, Neto and van de Poll, (2001), op.cit., at 88.

Ocean are still considered to be inadequate for making an Article 76 submission.[295] Although there has been a surprising level of collaborative mapping expeditions and other forms of cooperation and data exchange[296], not all information is in the public domain or shared by all states.[297]

A further complicating factor is that interpretative criteria and methods may also vary between States and their analysts, "particularly in areas where subjective judgements might be called into play, e.g. locating the foot of the slope".[298]

A final point may be made, namely that the quality and accuracy of data mapping the Arctic Ocean floor depends significantly on the climatic conditions allowing the use of the latest technology when mapping. It has been found that on occasions previous estimates of the location of a FOS can be very inaccurate. For example, in 2007, due to extremely favourable weather conditions, a United States' specialist survey icebreaker, after several transit mappings, identified and confirmed a clear change in slope associated with a very distinctive transition to flat lying abysmal plain sediments located at 81^0N, more than 100nm north of the previously thought location of the FOS of the Chukchi Plateau's northern margin.[299] This example demonstrates not only the difficulty in obtaining data in Arctic conditions, but also the potential scale of inaccuracy.

(v) Conclusions

[295] Such as the *International Bathymetric Chart of the Arctic Ocean (*updated version 2008), available at: M. Jacobsson, Ron Macnab, L. A. Mayer, R. Anderson, M. Edwards, J. Hatzky, H. W. Schneke and P. Johnson, "An Improved Bathymetric Portrayal of the Arctic Ocean: Implications for ocean modelling and geological, geophysical and oceanographic analyses", (2008), *Geophysical Letters*, Vol. 35, 1.

[296] All the Arctic Five have cooperated in data sharing to some level with Canada. The United States, Denmark and Canada have also engaged in joint mapping exercises in the Arctic Ocean throughout the 2000s. See, for example:
Foreign Affairs, Trade and Development, Canada, *International Collaboration; Collaboration with Denmark*, available at:
www.international.gc.ca/continental/collaboration.aspx; NOAA, "US-Canada Arctic Ocean survey partnership saved costs and increased data", 5 December 2011, available at:
www.noaanews.noaa.gov/stories2011/20111215_arctic.html.

[297] Macnab et al, ibid..

[298] Ibid..

[299] Larry Mayer, "Sea Floor Mapping and Exploration in a Changing Arctic Sea Ice Environment", (2010), in *Changes in the Arctic Environment and the Law of the Sea*, (Myron H. Nordquist, Tomas H. Heidar, and John Norton Moore, eds.), Martinus Nijhoff, 83, at 97.

As Suarez describes, the drafters of UNCLOS were well aware of difficulties and uncertainties of locating the FOS[300], but were unable to agree any better formulation than Article 76(4)(b).[301]

The importance of this uncertainty should not be underestimated. The FOS is fundamental to the defining of the ECS, thus any uncertainty in its location can potentially be compounded by further uncertainties in the measurements in the formulas of Articles 76(4)(a), 76(5) and 76(6).

As discussed above, not only is there a definitional issue, but the practical aspects of the implementation of the definition in locating a FOS, especially in the Arctic Ocean, are extremely difficult and costly. Thus, it seems highly unlikely that any third state would be prepared to invest the hundreds of millions of dollars (more probably billions) necessary to gather evidence of the excessive nature of any ECS claim in the Arctic Ocean.[302] It is far more likely that a third state would choose to rely on the CLCS to assess data submitted and make recommendations under Article 76(8).[303]

6.4.2.3 Article 76(5): Constraints on the Outer Limits of the Continental Shelf

Article 76(5) establishes two alternative means of establishing the outer limits of the continental shelf:

(1) a maximum of 350nm from the territorial sea baselines, or

(2) 100nm from the 2500m isobath.

Figure 6.1 illustrates clearly the formulae and the limits under Article 76(4) and 76(5).

[300] See the Preliminary Study by the UN Secretariat illustrating the various formulae prepared for the UNCLOS III delegates: Doc. A/CONF.62/c.21/L.98.

[301] Suarez, op. cit., at 157. However, it seems that during UNCLOS negotiations the most important map produced showed that the FOS was moderately clearly defined generally and thus could serve as a useable feature for measurment and the relevant non-legal experts supported the use of the FOS. I am grateful to Professor T. L. McDorman for this piece of information.

[302] In the Arctic it is likely that opposite or adjacent states have collaborated with the ECS state and have the same data, or have already done their own mapping of the key Arctic features and shared the data: it is highly unlikely that other than commenting on each other's submissions the Arctic Five would take any juridical action.

[303] Possibly submitting comments to the CLCS during the process.

Crucially important for delineation in the Arctic Ocean, Article 76(5) states that:

> Notwithstanding the provisions of paragraph 5 on submarine ridges, the outer limits of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural components of the continental margin, such as plateau, rises, caps, sandbanks and spurs".

The categorisation of submarine features such as ridges and elevations are, in the best of conditions controversial and difficult practically to establish. As will be discussed below in Subsection 6.4.4 in the Arctic these difficulties are greatly increased and have major implications for the extent of the ECSs that can be claimed by the Artic Five.

6.4.3 The CLCS, Submissions, and Recommendations: Article 76(8)

Article 76(8) requires a coastal state which is party to the Convention to submit information on the outer limits of its continental shelf to a special technical commission, the Commission on the Limits of the Continental Shelf ("CLCS").[304] Below several key aspects of Article 76(8) and its implementation will be discussed.

6.4.3.1 The CLCS

The CLCS was established under Article 1 of Annex II of UNCLOS. Article 3(1) of Annex II confers two functions on the CLCS. The first function is to consider and evaluate the data and other material submitted to it by coastal states and to make recommendations to the coastal states in this matter in accordance with Article 76(8) and the Statement of Understanding.[305] The second function is to provide scientific and technical advice, if requested by the coastal state concerned during the preparation of its submission. Importantly Article 9 of Annex II together with Article 76(1) clearly state that the action of the CLCS should not prejudice matters relating to delimitation of maritime boundaries –

[304] On the CLCS see: Vladimir Vares, "The Continental Shelf Beyond 200 Nautical Miles: The Work of the Commission on the Limits of the Continental Shelf and the Arctic", (2009), *Vanderbilt Journal of Transnational Law*, Vol. 42, 1265; Oystein Jensen, The Commission on the Limits of the Continental Shelf, (2014), Brill/Nijhoff; Suarez, (2010), op. cit., at 131 - 168; Suarez, (2008), op. cit., at 75 - 117.
[305] Adopted by UNCLOS III on the 29 August 1980.

procedures for the operation of the CLCS are set down in the Rules of Procedure of the Commission.[306]

In accordance with Article 2(1) of Annex II of UNCLOS, the CLCS is to be composed of 21 members elected by State parties from among their nationals and who are experts in the field of geology, geophysics or hydrography, having due regard to the need to ensure equitable geographical representation. Thus, no jurist is a member of the CLCS. Tanaka notes, however, that its tasks "are not completely separate from the legal interpretation of the relevant rules of the Convention".[307]

According to the ILA the competence of the CLCS is not to replace the competence of the state parties to interpret the provisions of UNCLOS and sees the task of the CLCS as assessing the technical and scientific data of each submission – as opposed to "consideration of scientific and technical terms" which would be interpretation.[308] On the other hand, Higgins considers that the state parties may share the interpretive functions with institutions (such as the CLCS) which are specifically mandated to assist them in complying with their treaty obligations.[309]

Certainly this view is arguably reflected in the issuance by the CLCS in 1999 of its Technical Guidelines[310], which "form the basis for the Commission to make its recommendations".[311] It states expressly that:

> "With these Guidelines, the Commission aims to also to clarify its interpretation of scientific, technical and legal terms contained in the Convention". (emphasis added)

Suarez indicates that these Guidelines, produced by the CLCS in fulfilling its mandate, are legitimate.[312] It may be that this view can be challenged especially with respect to

[306] The latest of 2008 is available at:
www.un.org/Depts/los/clcs_new/commission_documents.htm. On these see: R. Wolfrum, "The Delineation of the Outer Continental Shelf": Procedural Considerations", (2009), in *Liber Amicorum Jean – Pierre Cot: Le Process International*, Bruyant, 352; Suarez, op. cit., at 94 - 112.
[307] Tanaka, op. cit. at 138.
[308] ILA, (2004), op. cit., at 780.
[309] R. Higgins, The Development of International Law Through the Political Organs of the United Nations.
[310] CLCS, Scientific and Technical Guidelines of the commission on the Limits of the Continental Shelf, (1999), UN, CLCS/11, 13 May 1999, available at:
file:///C:/Users/Pavilion/Documents/CLCS-11.htm.
[311] Ibid., at 5.

interpreting legal terms, *ex facie* it would seem beyond its mandate, as set out in Article 76(8) and Annex II. Whatever the academic view however, in practice none of the state parties (or in fact the United States) have challenged their legitimacy.

Although the Guidelines are non-binding and are not an integral part of UNCLOS, it is inevitable, as Suarez comments[313], that they are playing an influential role in the development of the law establishing the outer limits of the continental shelf. Thus, in the analysis of the definitions of key terms below, reference will frequently be made to these Guidelines.

The Commissioners have an inherent duty to act independently – both scientifically and politically.[314] Certainly McDorman has called into question whether (due to its funding arrangements[315]) the CLCS can be seen as a totally impartial and independent body. He argues that the principal role of the CLCS is "as a *legitimator* of the claims of a coastal state and that this is a relatively modest role in what is essentially a boundary – making process that is political".[316]

The role of the CLCS was clarified by the ITLOS in the *Bay of Bengal Case*.[317] As noted in 2012, the ITLOS confirmed that a coastal state has an inherent right to a continental shelf beyond 200nm (where it physically exists) and that Article 76(8) merely "provides a procedural opportunity to establish the outer limits of that shelf that will enhance the opposability of those limits vis à vis other states"[318] - an opportunity, it must be said, that is

[312] Suarez, op. cit., at 127 and 129.
[313] Suarez, op. cit., at 129. Although perhaps falling short of providing definitive terminology and evidential guidelidelines I am grateful to Professor T. L. McDorman for pointing out the argument that this leads to a flexibility which he argues is necessary when categorising subsea features, i. e. that they do not fall into "one size fits all "definition. However, the author would argue that this view merely confirms McNab's concern that such CLCS submissions are a 'poker game' and that too much flexibility can generate arbitrariness irrespective in whose favour the CLCS decides.
[314] Suarez, op. cit., at 94.
[315] The members are paid by their home States while acting in their personal capacities.
[316] T. L. McDorman, "The Role of the Commission on the Limits of the Continental Shelf: A Technical Body in a Political World", (2002), *IJMCL*, Vol. 17, No. 3, 301, at 301 and 323 - 324.
[317] Op. cit., at para. 409.
[318] T. L. McDorman, "The Continental Shelf Regime in the Law of the Sea Convention: A Reflection on the First Thirty Years", (2012), *IJMCL*, Vol. 27, 743, at 747 - 748.

time consuming and very expensive with an unpredictable outcome, as will be discussed further below.[319]

6.4.3.2 Article 76(8) and Submissions by Non-party States

A complex and to date unresolved question is whether a Non-party State, such as the United States, has a right to make a submission to the CLCS. Zinchenko concludes that it is not possible to answer the question positively based on UNCLOS provisions and customary international law.[320] He does suggest that such recourse to the CLCS by a Non-party State may attempt to be based on the general duty (under customary international law[321]) to cooperate with regard to shared natural resources, but arguably it may still be beyond the CLCS's competence.[322] Oude Elferink also favours a negative answer to the question.[323]

This issue has clear implications for the United States in the event it should wish to take advantage of the 'final and binding' consequence of an Article 76(8) submission. It would seem it must first become a party to UNCLOS.

6.4.3.3 Arctic Ocean Submissions

(1) Submissions and Recommendations in the Arctic

To date, three of the Arctic States (Denmark, Norway and Russia) have submitted claims to the CLCS regarding Arctic Ocean delineations.[324]

Russia made its submission to the CLCS on 20 December 2001[325], and in 2002 the CLCS recommended that Russia resubmit additional scientific data to what was provided in

[319] Tavis Potts and Clive Schofield*,* "Current Legal Developments, The Arctic*",* (2008), *IJMCL*, 151, at 166.
[320] Zinchenko, op. cit., at 234 - 235.
[321] Moreover Articles 74(30 and 83(3) of UNCLOS provide for such an obligation. On the general duty see: *The North Sea Continental Shelf Cases*, (1969), cit., 3, at para 97 and Article 3, United Nations General Assembly Resolution 3281, (XXIX): Charter of Economic Rights and Duties of States, (1974), available at: http://investmentpolicyhub.untad.org/Download/TreatyFile/2778;
A useful review of this issue can be found in: Denis V. Rodin, *Offshore transboundary petroleum deposits: cooperation as a customary obligation,* (2011), a Master's thesis, Faculty of Law, University of Tromso, available at:
http://munin.uit.no/bitstream/handle/10037/3894/thesis.pdf?sequence=2.
[322] Ibid., at 235.
[323] Oude Elferink, (2004), op. cit., at 269.
[324] Russia (2001), Norway (2006) and Denmark (2014): all submissions are available on the CLCS website at: www.un.org/depts/los/clcs_new/commission_submissions.htm.

2001.[326] Interestingly the United States, a Non-party State, submitted to the CLCS several objections to the Russian submission with respect to the Arctic delineation in the submission[327], and the key objections regarding the Arctic related to the categorisation of the seafloor highs, and will be analysed in detail below.

Russia responded to the CLCS's Recommendations in a letter dated 3 June 2003 which apparently contained questions and comments.[328] However the letter has not been made public and hence it is unclear the degree to which Russia accepted the CLCS Recommendations. Evidently the subcommission appointed to deal with the Russian submission drafted a letter that was sent to the Russian Federation - again the contents of the letter have not been published.[329] This lack of transparency is symptomatic of the wider lack of transparency in the entire submission/recommendations process, a feature that has been criticised by many commentators. There is no provision in Article 76 or the Rules of Procedures of the CLCS that allow for disclosure. It is beyond the scope of this thesis to discuss the issue of confidentiality requirements relating to the Commission's recommendations and decision making process, but the author does concur with Macnab, who argues that "this lack of transparency could impair the overall process and jeopardise the acceptance of its conclusions by other states" and advocates for the adoption by the Meeting of States Parties a more open regime of information sharing and wider participation in deliberations.[330]

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[325] The Submission by the Russian Federation to the Commission on the Limits of the Continental Shelf on the Outer Limits of the continental shelf beyond 200nm from the baselines, (2001), *("Russian CLCS Submission 2001"*), Executive Summary, 20 December 2001, available at:
www.un.org/depts/los/clcs_new/submisions_files/submission_rus.htm.

[326] Hereinafter termed the "*CLCS Recommendations Russia 2002":* Report of the Secretary General of the United Nations to the Fifty-Seventh Session of the United Nations General Assembly under the agenda item Oceans and the Law of the Sea, UN Publication A/57/57/Add.1 of 8 October 2002, paras. 38 - 41, at para. 39, available at:
http://daccessdds.un.org/doc/UNDOC?GEN?N02/629/28/PDF/N0262928.pdf?OpenElement.

[327] *Notes Verbales* from Canada, Denmark, Japan, Norway and the United States:, available at:
www.un.org/depts.os/clcs_new/submission_files/submission_rus.htm.

[328] Mentioned in "Statement of the Chairman of the Commission on the Limits of the Continental Shelf on the Progress of Work in the Commission", Thirteenth Session, CLCS/39, 30 April 2004, at 4. Suarez, op. cit., at 209

[329] Ibid.; Suarez, op. cit., at 210..

[330] Ron Macnab, "The Case for Transparency in the Delimitation of the Outer Continental Shelf in Accordance with UNCLOS Article 76", (2004), *ODIL*, Vol.35, 1, at 1 and 10 – 15. Potts and Schofield are even more scathing: "this situation may also result in suspicion and scepticism' on the part of interested parties denied access…and …potentially breeding 'concerns about the impartiality and the integrity of the process": Potts and Schofield, op. cit., at 166.

In late 2014 Russia had indicated that it intended in 2017 to resubmit to the CLCS further data relating to its delineation of its Arctic ECS[331], however on 3 August 2015 it resubmitted its ECS Arctic claim.[332]

Norway made its submission to the CLCS in 2006.[333] None of the *Notes Verbales* (Denmark, Russia, Iceland and Spain[334]) actually challenged its delineation of its Arctic ECS, except that Denmark, Iceland and Russia brought to the attention of the CLCS outstanding disputed areas and agreed to CLCS considering the Norwegian submission without prejudice to their

[331] According to Ria Novosti, Russia intended to resubmit in 2017: "Заявка на расширение шельфа в Арктике требует еще 120 миллионов рублей", *Ria Novosti*, 23 February 2015, available at: http://ria.ru/economy/20150223/1049191314.

[332] Since the thesis cut-off date, the Russian Federation has submitted to the CLCS a partial revised submission on the Russian Arctic ECS claim, ("*2015 Russian Resubmission*"), see on the CLCS website: Russian Federation, "Partial Revised Submission of the Russian Federation to the Commission on the Limits of the Continental Shelf in Respect of the Continental Shelf of the Russian Federation in the Arctic Ocean, Executive Summary, (2015), *CLCS*, 3 August 2015, available at: http://www.un.org/depts/los/clcs_new/submissions_files/rus01_rev15/2015_08_03_Exec_Summary_English.pdf.

No academic analysis of the 2015 Russian Resubmission has been published yet, but for a selection of media articles see:

Maria Antonova, "Russia files UN claim over vast swathe of Arctic", (2015), *Yahoo News*, 4 August 2015, available at: http://news.yahoo.com/russia-files-un-claim-over-vast-swathe-arctic-135134141.html;

Kashmira Gander, "Russia makes fresh bid for Arctic region which could hold quarter of Earth's undiscovered fossil fuels", (2015), *The Independent*, 4 August 2015, available at: http://www.independent.co.uk/news/world/europe/russia-makes-fresh-bid-for-arctic-region-which-could-hold-quarter-of-the-earths-undiscovered-fossil-fuels-10438807.html;

IBRU, "Russia submits Arctic seabed claim", (2015), *IBRU Boundary News*, 5 August 2015, available at: https://www.dur.ac.uk/ibru/news/boundary_news/?itemno=25362&rehref=%2Fibru%2Fnews%2F&resubj=Boundary+news+Headlines;

Valdimit Isachekov, "Russia submits claim for vast Arctic seabed territories at UN", (2015), *CBC News*, 4 August 2015, available at: http://www.cbc.ca/news/canada/north/russia-submits-claim-for-vast-arctic-seabed-territories-at-un-1.3178447;

Ria Novosti,"Россия подала пересмотренную заявку на расширение шельфа в Арктике", (2015), *РИА Новости*, 4 August 2015, available at: http://ria.ru/economy/20150804/1161384523.html;

Atle Staalesen, "Russia submits claim for North Pole", (2015), *Barents Observer*, 4 August 2015, available at: http://barentsobserver.com/en/arctic/2015/08/russia-submits-claim-north-pole-04-08;

Olivier Truc et Benoît Vitkine, "La Russie réaffirme ses ambitions en Arctique", (2015), *Le Monde*, 8 Août 2015, at 4 ;

Elena Wilson Rowe, "La Russie réaffirme ses ambitions en Arctique", (2015), *Le Monde,* 8 Août 2015.

Since the 2015 Russian Resubmission occurred after the thesis cut-off date no analysis of it is included in the text of the thesis, although where appropriate it is noted in footnotes of the thesis.

[333] Government of Norway, *The Executive Summary of the Continental Shelf Submission of Norway in respect of areas in the Arctic Ocean, the Barents Sea and the Norwegian Sea,* 27 November 2006, ("*Norwegian CLCS Submission 2006"*), Executive Summary at 10 - 11, available at: www.un.org/depts/files/los/clcs_new/new/submissions_files/nor06/nor_exec_sum.pdf.

[334] These are available on the CLCS website at: www.un.org/depts/los/clcs_new/commission_submissions.htm

resolution while Spain, although expressly not challenging Norway's rights to claim an ECS for Svalbard, reserved its rights under the Svalbard Treaty.[335] The 2009 CLCS Recommendations proposed some amendment[336], which Norway has indicated it accepts[337], although it has yet to implement the limits of the ECS into domestic law.[338]

Denmark/Greenland, having submitted in December 2014[339], may have to wait many years for the CLCS's recommendations.[340] The two *Notes Verbales* (from Norway and Canada[341]) so far have raised no objections but merely alert the CLCS to areas of existing and potential overlapping disputes.[342] It is notable that the United States has been silent especially in regard to ridges issue – an issue that will be further explored in Section 3.3.6 below.

[335] The Spanish *Note Verbale* and unofficial translation is available at: Un.org/depts/los/clcs_new/submissions_files/nor06/esp_0700348.pdf. Norway sent a *Note Verbale* to the CLCS on the Spanish Note in the 28 March 2007 emphasising that the differing views on the scope of application of the Svalbard Treaty and its interpretation do not affect the interpretation or application of Article 76: *Note Verbale* from the Permanent Mission of Norway to the United Nations to the Commission on the Limits of the Continental Shelf, 28 March 2007, available at: www.un.org/depts/los/clcs_new/submissions_files/nor06/note28march2007.pdf.

[336] CLCS, *The Summary of the Recommendations of the Commission on the Limits of the Continental Shelf in Regard to the Submission made by Norway in Respect of Areas in the Arctic Ocean, the Barents Sea and the Norwegian Sea on 27 November 2006* ("*CLCS Recommendations Norway 2009"*), available at: www.un.org/depts/los/clcs_new/submissions_files/nor06/nor_rec_summ.pdf.

[337] See a press release of the Ministry of Foreign Affairs which quotes Foreign Minister Jonas Gahr Store's reaction to the CLCS recommendations as: "This establishes a clear vision of responsibility and creates predictable conditions for activities in the High North. It confirms that Norway has substantial rights in maritime areas of some 235,000 square kilometres. The recommendation is therefore of historic significance for Norway": MFA, Nor. *Extent of Norway's Continental Shelf in the High North clarified*, (2009), Press Release, available at: www.regjeringen.no/en/aktuelt/shelf_clarified/id554718/.

[338] As of 1 May 2015.

[339] Denmark, *Partial Submission* GEUS, *of the Government of the Kingdom of Denmark together with the Government of Greenland to the Commission on the Limits of the Continental Shelf of Greenland, Executive Summary, ("Danish CLCS Submission 2014*"), (15 December 2014), available at, www.un.org/depts/los/clcs_new/submissions_files/dnk76_14/dnk2014_es.pdf; http://um.dk/en/~/media/UM/Danish-site/Documents/Politik-og-diplomati/Nyheder_udenrigspolitik/2014/DNK2014_ES_N-GREENLAND.pdf.

[340] In 2009 the United National General Assembly adopted a resolution on 4 December 2009 listing the problems related to the CLCS being overloaded with work: UN GA, (2009), A/RES/64/71, Part VII, para. 47, available at: http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N09/466/09/PDF/N0946609.pdg?OpenElement.

[341] Available from the CLCS website at: www.un.org/depts/los/clcs_new/commission_submissions.htm.

[342] Ibid..

Canada made a partial submission, which indicated its intention to submit its Arctic Ocean outer limits at a later date, citing its rights under Article 77 of UNCLOS.[343] None of the Notes Verbales (Denmark, France and the United States)[344] made any comment on this proposed later Arctic submission.

As discussed earlier, the United States is not a party to UNCLOS and therefore not entitled to submit its delineation of the outer limits of the continental shelf to the CLCS, nor will other states' outer limits be binding on the United States.

(*2*) *Issues in Regard to the Delimitation of Overlapping Claims*

It is likely once the claims of all the Arctic States for the outer limits of their continental shelves are known there will be significant areas of overlapping claims. Some Arctic States will become opposite or adjacent due to their claimed ECSs.[345] Such disputes are to be resolved by agreement between the opposite or adjacent states on the basis of international law in order to achieve an equitable solution (Article 76(10) and Article 83 of UNCLOS).

As will be discussed further in Chapter 7, the general issues arising in respect of delimitation beyond 200nm have been well examined in the literature[346], especially in the light of the *Bay of Bengal Case*[347], and therefore they will not be considered here.

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[343] According to the Executive Summary Canada: *Government of Canada, Partial Submission of Canada to the Commission on the Limits of the Continental Shelf Regarding its Continental Shelf in the Atlantic Ocean*, Executive Summary, 6 December 2013, at 3 available at:
www.un.org/depts/los/clcs_new/submission_files/can70_13/es_can_en.pdf.

[344] Available from the CLCS website at:
www.un.org/depts/los/clcs_new/commission_submissions.htm.

[345] As Byers describes there is even a potential overlapping area between Canada and Russia in the Beaufort Sea, Sea, see: Byers, op. cit., at 90.

[346] Including: Colson, (2003),op. cit.; Coalter Lathrop, "Continental Shelf Delimitation Beyond 200 Nautical Miles: Approaches Taken by Coastal States before the Commission on the Limits of the Continental Shelf", (2011), in International Maritime Boundaries, (D. A. Colson and R. W. Smith, eds.), *ASIL*, 4139. For further sources see the footnotes in Lathrop and in the encyclopedic work by Kwiatkowska: Barbara Kwiatkowska, *Submissions to the UNCLCS in Cases of Disputed or Undisputed Maritime Boundary Delimitations or other Unresolved Land or Maritime Disputes of Developing States*, (2011), a Farewell lecture at the Faculty of Law, Utrecht University, 9 December 2011, available online at:
http://dspace.library.uu.nl/bitstream/handle/1874/235430/2011_Kwiakokowska_farewell_lecture.pdf?sequence=1.

[347] ITLOS, Dispute Concerning Delimitation of the Maritime Boundary Between Bangladesh and Myanmar in the Bay of Bengal ("Bangladesh v. Myanmar), Judgment, of 14 March 2012, available at:

Three points, however, should be made:

- The negotiations of the boundary agreements for overlapping Arctic ECSs may be negotiated long and hard and may prove to be as difficult to achieve as the maritime agreements in the Arctic region relating to areas within 200nm.
- Allain in her detailed analysis of the issue of overlapping claims in the Arctic is somewhat less sanguine on the UNCLOS role. She considers that UNCLOS with its serious lack of clarity and ambiguities in its terminology and lacunae in its provisions exacerbates the possibility of serious disputes between Arctic states in respect of overlapping ECS claims in the Arctic Ocean.[348] There is also counter evidence of Arctic Five cooperation and the joint common interest to divide the Arctic among the Arctic Five with minimal outside interference, such as the Ilulissat Declaration. It may be that the reaction to the Danish Submission re Greenland will be indicative of the future approach of the Arctic Five as to the role of the CLCS, UNCLOS, and ECS claims.
- It may be, as Byers suggests, that Canada and the United States will trade off areas in their ECS areas for areas with 200nm in any settlement of their long running boundary dispute[349].
- As Byers points out, the *Bay of Bengal Case* concerned a situation without a submarine ridge or submarine elevation and that:

> "[a]t the moment the case law and state practice with respect to the delimitation of extended continental shelves remain too limited and variable to provide clarity on whether and how a submarine elevation off a common continental margin on one side of a land border might be considered relevant by an international court or tribunal charged with delineating a maritime boundary".[350]

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www.itlos.org/fileadmin/itlos/documents/cases/case_no_16/C16_Judgment_14_03_2012_rev.pdf;
R. Churchill, "the Bangladesh/Myanmar Case: Continuity and Novelty in the Law of Maritime Boundary Delimitation", Cambridge Journal of International and Comparative Law", (2012), Vol. 1, 138; Marcin Kaldunski and Taduesz Wasilewski, "The International Tribunal for Law of the Sea on Maritime Delimitation: *The Bangladesh v. Myanmar Case*", (2014), *ODIL*, Vol. 45, 123; Clive Schofield, Anastasia Telesetsky and Sekwoo Lee, "a Tribunal Navigating Complex Waters: Implications of the *Bay of Bengal Case"* (2013), *ODIL*, Vol. 44, 363.

[348] Allain, op. cit., at 28 -29.

[349] Byers, op. cit., at 79 – 91.

[350] Byers (2013), op. cit., at 74.

In fact, the mere identification and categorisation of elevations and ridges is in itself potentially a major source of contention, as will be examined next.

6.4.4 Submarine Ridges and Elevations and Submissions under Article 76[351]

[351] This extensive footnote provides the reader with a good bibliography on the topic, as none exists elsewhere. Monique Andree Allain, "Canada's Claim to the Arctic: A Study in Overlapping Claims to the Outer Continental Shelf,", (2011), *Journal of Maritime Law and Commerce*, Vol. 42, No. 1, 1; Betsy Baker, "Law, Science and the Continental Shelf", (2010), *American University International Law Review*, 251; Harald Brekke and Philip A. Symonds, "The Ridge Provisions of Article 76 of the UN Convention on the Law of the Sea", 2004), *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff, 169; Harald Brekke and Philip A. Symonds, "Submarine Ridges and Elevations of Article 76 in Light of Published Summaries of Recommendations of the Commission on the Limits of the Continental Shelf", (2011), *ODIL*, Vol. 42, No.4, 289; Harald Brekke, "Defining and recognizing the outer limits of the continental shelf in polar regions", (2014), in *Polar Geopolitics? Knowledges, Resources and Legal Regimes*, (Richard C. Powell and Klaus Dodds, eds.), Edward Elgar, Chapter 3, 38, at 41; Michael Byers, *International Law and the Arctic,* Cambridge University Press, at 96 – 108; Chris Carleton, "Article 76 of the Convention on the Law of the Sea – Implementation Problems from the Technical Perspective", (2006), *IJMCL*, Vol. 21, No. 3, 287; Chris Carleton, Steve Shipman, David Monahan, and Lindsay Parson, "The Practical Realisation of the Continental Shelf Limit", (2000), in *Continental Shelf Limits, The Scientific and Legal Interface,* (Peter J. Cook and Chris M. Carleton, eds.), Oxford University Press, 268; Jaume Saura Estapa, *Delimitacion Juridica International de la Platforma Continental*, (1996), Coleccion Practica Juridica, Tecnos, at 52 - 54; Alan Evans, Chris Carleton and Lindsay Parson, "Article 76: The Ridge Issue", (2003), a paper presented to *ABLOS Conference 2003 on Addressing Difficult Issues in UNCLOS*, Monaco, 28 - 30 October 2003, at:
ww.iho.int/mtg_docs/com_wg/ABLOS/ABLOS_Conf3/PAPER2-3.PDF;
Jianjun Gao," The Seafloor High Issue in Article 76 of the LOS Convention: Some Views from the Perspective of Legal Interpretation", (2012, *ODIL*, Vol. 43, No.2, 119; Tomasz Gorski, "A Note on Submarine Ridges and Elevations with Special Reference to the Russian Federation and the Arctic Ridges", (2009), *ODIL*, Vol. 40, 56; Arthur Grantz*, "Treatment of Ridges and Borderlands Under Article 75 of the United Nations Convention on the Law of the Sea: the Example of the Arctic Ocean",* (2004), in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff, 201; S. T. Gudlaugsson, "Natural Prolongation and the Concept of the Continental Margin for the Purposes of Article 76", (2004), *in Legal and Scientific Aspects of Continental Shelf Limits*, (M. H. Nordquist, John N. Moore, and T. H. Heidar, eds.), Martinus Nijhoff, 61, Section 6: The Problem of Seafloor Highs, at 88 – 89; Tomas H. Heidar, "Legal Aspects of Continental Shelf Limits", in *Legal and Scientific Aspects of Continental Shelf Limits*, (2004), (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff, 19, at Section 3.5: Ridges, 28; Kamrul Hussein, "UN LOS Convention and the extended continental shelf", (2009), a *presentation given to the Finnish Parliament on 18 November 2009,* available at:
www.arcticparl.org/files/news%20itema/presentations%20from%20Helsinki%20Nov%202009/Mr.%20Kamul%20Hussein.pdf;
Bjorn Kunoy, "The Terms of Reference of the Commission on the Limits of the Continental Shelf: A Creeping Legal Mandate", (2012), *Leiden Journal of International Law*, Vol. 25, 109; Lagoni, op.cit., at 192 - 195; Ron Macnab, "Initial Assessment", (2000), in *Continental Shelf Limits, The Scientific and Legal Interface,* (Peter J. Cook and Chris M. Carleton, eds.), Oxford University Press, 253; Ron Macnab, "Submarine Elevations and Ridges: Wild Card in the Poker Game of UNCLOS Article 76", (2008), *ODIL*, Vol. 38, 223; Christian Marcussen, "Who Owns the North Pole? Understanding Denmark's submission to the CLCS", a *presentation to High North Dialogue 2025 on 18 March 2015*, available at:
www.highnorthdialogue.no/wp-content/uploads/2015/03/Christian-Marcussen.pdf.
J. F. Pulvenis, "The Continental Shelf Definition and Rules Applicable to Resources", (1991), in *A Handbook on the New Law of the Sea*, (Rene-Jean Dupuy and Daniel Vignes, eds.), Brill/Nijhoff, Vol. 1, 315; Suarez, op. cit., at 166 - 168 and 206; Victor Prescott, "National rights to hydrocarbon resources of the continental margin beyond 200 nautical miles", (1998), in *Boundaries and Energy Problems and Prospects,* (G. H. Blake, M. A. Pratt, and C. H. Schofield, eds.), Kluwer, 51; Philip A. Symonds, O. Eldholm, J. Mascle, and G. F. Moore,

6.4.4.1 General Discussion

Article 76(6) states:

> "Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural components of the continental margin, such as plateau, rises, caps, sandbanks, and spurs".

From this Article, and recalling that Article 76(3) also specifically stated that the continental margin does not include "the deep ocean floor with its oceanic ridges or the subsoil thereof", it is clear that the categorisation of seafloor features will have significant impact on the delineation of the ECS.

Article 76 of UNCLOS, in defining the continental shelf of a coastal state and its limits, refers to three submarine features: the "oceanic ridge", the "submarine ridge" and the "submarine elevation", each of which has important legal consequences in defining the ECS. As Macnab states, the wording of Article 76 is "manifestly unhelpful" in "offering no formal definitions that describe their morphological and geological characteristics".[352]

There exists a significant amount of literature on the negotiations of the Article 76 provisions relating to submarine ridges and elevations,[353] analysis of their definitions/ meanings and examination of their roles in determining a coastal state's entitlement to an

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"Characteristics of Continental Margins", (2000), in *Continental Shelf Limits, The Scientific and Legal Interface,* (Peter J. Cook and Chris M. Carleton, eds.), Oxford University Press, 25; Philip A. Symonds and H. Brekke, "Overview of Ridges Related to Article 76 of the Convention on the Law of the Sea", (2003), in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John N. Moore, and T. H. Heidar, eds.), Martinus Nijhoff, 141; Philip A. Symonds, Mike F. Coffin, George Taft, and Hideo Kagami, "Ridge Issues", (2000), in *Continental Shelf Limits, The Scientific and Legal Interface,* (Peter J. Cook and Chris M. Carleton, eds.), Oxford University Press, 285; George Taft, "Solving the Ridges Enigma of Article 76 of the United Nations Convention on the Law of the Sea", (2001), a paper presented to *ABLOS Conference 2001*, IHO, Monaco, 18 – 19 October 2001, Session 1, available at:
www.iho.int/mtg_docs/com_wg/ABLOS/ABLOS_Conf2/TAFT.PDF;
Brian J. Van Pay, "Disputed Areas Beyond 200 Nautical Miles: How Many and How Will Geophysical Characteristics Matter in Their Resolution?", (2012), in *Maritime Ocean Diplomacy*, (Myron H. Nordquist and John Norton Moore, eds.), Martinus Nijhoff, 47; Philomene Verlaan, "New Seafloor Mapping Technology and Article 76 of the 1982 United Nations Convention on the Law of the Sea", (1997), *Marine Policy*, Vol. 21, No. 5, 425, at 427 - 428; Weiguo Wang, "Geological Structures of Ridges with Relation to the Definition of Three Types of Seafloor Highs Stipulated in Article 76", (2011), *Acta Oceanologica Sinica*, Vol. 30, 125.

[352] Macnab, (2008), op. cit., at 223 - 224.

[353] See for example, CLCS, Training Manual, 2006, op. cit., *Module VII,* at 19 - 24; ILA, Toronto Conference 2006, Legal Issues of the Continental Shelf, op, cit., at 5 - 6; Oxman, (1989), op. cit., at 227 - 228.

ECS.[354] This section highlights the key definitional and practical issues arising in relation to these provisions, and then examines the implications of such ridges and elevations in the Arctic Ocean.

While the term 'oceanic ridge' is not defined in UNCLOS, Article 76(3) establishes that the continental margin "does not include the deep ocean floor with its oceanic ridges" [355], and, thus, that this type of ridge is not considered part of the continental shelf.[356]

Walker and the IHO define an 'oceanic ridge' as "a long elevation of the ocean floor with irregular or smooth topography and steep sides"[357] – perhaps an overly general definition to be of practical application in the delineation of an ECS.

The CLCS 1999 Guidelines found that in the scientific literature the term "oceanic ridge' "is not used in an entirely strict sense"[358], and varies considerably. Antunes and Pimental also concluded that the term "cannot be read as strict scientific terminology", a conclusion which they demonstrate is well supported in the literature.[359] They argue that 'oceanic ridge' in the context of Article 76 is a legal category of submarine feature "created specifically for the purpose of a legal instrument", which they proceed to describe and then offer pointers and guidelines as to how their proposed interpretation can be put into practice.[360]

Following a similar approach Brekke and Symonds reviewed the summaries of CLCS recommendations up to 2011[361], and concluded that the following CLCS approach had emerged with respect to the characteristics of oceanic ridges:

> "Seafloor highs that lie beyond the outer edge of the continental margin are considered to be part of the "deep ocean floor and its oceanic ridges".[362]

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[354] Generally see: S. N. Nandan, S. Rosenne, and N. R. Grady, *United Nations Convention on the Law of the Sea – A Commentary*, (1995), Martinus Nijhoff, Vol. II, but for a specific review of the terms through the negotiations, see: Symonds and Brekke, (2004), op. cit., Table 2, at 146 - 148.

[355] As was discussed earlier in the discussions of the definitions of 'continental margin' and 'foot of slope', 'deep ocean floor' is another undefined term in UNCLOS.

[356] DOALOS, *The Law of the Sea, Definition of the Continental Shelf*, op. cit., at para. 58, at 21.

[357] Walker, op. cit., para.128, at 264; IHO Consolidated Glossary, 2006, op. cit., Appendix 1, Term #68, at 19.

[358] CLCS 1999 Guidelines, op. cit., Section 7.2.3, at 34.

[359] Estapa, op. cit., at 52 -54; Pulvenis, op. cit., at 354, Verlaan, op. cit., at 428.

[360] Antunes and Pimental, (2003), op. cit., at 24 - 25.

[361] Of the 14 CLCS recommendations as of August 2011, 10 involved seafloor high issues: Gao, op. cit., at 121.

Gao agrees with Brekke and Symonds and proposes that the following characteristics apply to an 'oceanic ridge' in the context of Article 76:

> "an oceanic ridge is not part of the continental margin of a coastal state, which means that an oceanic ridge does not constitute 'the submerged prolongation of the land mass of the coastal states' nor is it part of the natural prolongation of the land territory".[363]

Ordinarily it can be said that an oceanic ridge is composed of oceanic crust and lies completely beyond the geomorphological continental shelf.[364] However, whether the oceanic ridge shares geological characteristics and origin with the deep ocean floor is not crucial to its categorisation. The CLCS 1999 Guidelines state:

> "…the Commission feels that geological crust types cannot be the sole quantifier in the classification of ridges…".[365]

What therefore appears to be the deciding factor is that an oceanic ridge does not have geomorphological continuity with the landmass of a coastal state.[366] This should make, in theory at least, the distinction between oceanic ridges and other submarine features easier to draw.

'Submarine ridges' and 'submarine elevations' are also not defined in UNCLOS. Walker defines the terms as:

> Submarine ridge: means "an elongated elevation from the seafloor with irregular or relatively smooth topography and steep sides".[367]
>
> Submarine elevations: means "a seabed elevation that is below the surface of the sea at all times that could be part of the continental margin".[368]

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[362] Brekke and Symonds, (2011), op. cit., at 304
[363] Gao, op. cit., at 120
[364] Byers, op. cit., at 98.
[365] CLCS 1999 Guidelines, op. cit., at 54.
[366] On this point see: Gao, op. cit., at 137. A view confirmed in the CLCS Recommendations in regard to the UK's 2008 submission in respect of Ascension Island: CLCS, "Summary of Recommendations of the Commission on the Limits of the Continental Shelf in Regard to a Submission made by the United Kingdom of Great Britain and Northern Ireland in Respect of Ascension Island on 9 May 2008, 5 April 2008, paras. 22 and 23, available at:
www.un.org/Depts/los/clcs_new/submissions-files/gbr08/.
[367] IHO Consolidated 2006 Glossary, op. cit., at para. 98; Walker, op. cit., para. 182, at 315.

Gao suggests fuller definitions, which, in the context of Article 76, mirror and summarise accurately the views of the ILA[369], the CLCS[370] and other writers[371]:

> "Submarine ridges, which are part of the natural prolongation of the land territory of a coastal state, but not natural components of the continental margin, are those submarine features that have geomorphological continuity with the landmass of the coastal state. In light of the context of paragraph 6, the term 'submarine ridges' is of a general application and collectively includes features that are specifically not submarine elevations".

> "Submarine elevations, which are not only part of the natural prolongation of the land territory of a coastal state but also natural components of the continental margin, are those submarine features that have geomorphological as well as geological continuity with the landmass of the coastal state. The decision of whether a seafloor high can be taken as a submarine elevation depends on the connection between the seafloor high and the land mass in question".[372]

Antunes and Pimental conclude in terms of the categorisation of submarine features that "as far as ridges and ridge – like features are concerned, the fundamental aspects appear to be twofold: geomorphic continuity and geological continuity"[373]. How to assess such continuities is the key issue.[374]

The CLCS offers coastal states little in the way of practical specific guidelines to assess such continuities. The *1999 CLCS Guidelines* conclude that its approach "shall be based on such scientific and legal considerations as natural prolongation of land territory and land mass, morphology of the ridges and their relation to the continental margin as defined in paragraph 4, and continuity of ridges" and that "[as] it is difficult to define the details

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[368] Walker, op. cit., para. 182, at 312.
[369] ILA, Berlin Conference 2004, Section 6.5, at 19 - 20; ILA, Toronto Conference, Conclusion 3, at 4 -7.
[370] CLCS 1999 Guidelines, Section 7.2 and Section 7.3, at 34 - 36.
[371] Including: Antunes and Pimental, (2003), op. cit., at 24 - 28; Brekke and Symonds, (2004), op. cit., at 185 - 191; Byers, op. cit., at 99 -104; Gudlaugsson, op. cit., at 89; Symonds, Eldholm, Mascle, and Moore, (2000), op. cit., at 281 - 303.
[372] Gao, op. cit., at 137.
[373] Antunes and Pimental, (2003), op. cit., at 27.
[374] Although Taft concluded his analysis that the whole concepts of submarine ridges is moot [G. Taft, "Solving the Ridges Enigma of Article 76 of UNCLOS", (2001), a paper presented at *2001 ABLOS Conference, Monaco*, 18 -19 October 2001, available at: www.gmat.unsw.edu.au/ablos/AABLOS01Folder/ablos01_papers.htm. This view highlights the difficulty of categorisation and evidencing that features to have the requisite characteristics - although its absolute rejection is clearly incorrect, as the CLCS has recognised features as elevations and submarine ridges since the article was written. (See, *CLCS Faroese Recommendations 2009*, *infra*).

concerning various conditions", it is "appropriate that the issues of ridges be examined on a case by case basis".

From the Brekke and Symond's examination of the CLCS's approaches regarding the categorisation of specific ridges in its recommendations up to 2011[375], and from Kunoy's analysis of various CLCS submissions and recommendations[376], a slowly emerging consensus can be detected (although there are some variations).

However, Byers warns that the decision of the CLCS to continue to decide on a 'case by case' basis "maintains an on-going element of uncertainty in the process".[377] This definitional uncertainty makes the categorisation of a submarine ridge or elevation difficult, and this in turn has crucial implications for the clear and certain determination of a coastal state's ECS.

As discussed earlier, an oceanic ridge under Article 76(3) plays no part in the delineation of the continental shelf of a coastal state. On the other hand, under Article 76(6) submarine ridges and submarine elevations may provide valid bases for establishing the outer limits of the ECS, provided they meet the definitional requirements. In the case of submarine ridges, under Article 76(6) the outer limits of the continental shelf shall not exceed 350nm. But this restriction "does not apply to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, sandbanks and spurs". The limits in this elevation case are established under Articles 76(4) and Article 76(5), which have been discussed earlier. Coastal states acting in their best interests to maximise the seabed area over which they have jurisdiction, will be at pains to stretch definitions that are uncertain and then submit evidence to the CLCS that its ridges are submarine, not oceanic, ridges and preferably that they are elevations.

Given the imprecise terminology of Article 76, the non-specific CLCS guidelines, the lack of public information with respect to CLCS submissions and recommendations, and the case by case basis of the CLCS deliberations, the outcome of any submission involving submarine features is somewhat uncertain. Macnab has likened the making a CLCS submission involving submarine elevations or ridges to a game of poker, with the submarine features

[375] Brekke and Symonds, op. cit. at 203 - 204.
[376] Kunoy, op. cit., at 120 - 121.
[377] Byers, op. cit., at 104.

being wild cards, but a game in which the CLCS can override the value of the wild card once the player has declared his hand, rendering his hand worthless[378]: "At the end of the game, a coastal state may discover that not only did it misjudge the value of the cards it was holding, but that it played them all wrong".[379] This is clearly not a situation in which an oil company would feel confident that good title to petroleum produced on an ECS has been transferred from the licencing coastal state.

Turning to the actual subsea formations in the Arctic Ocean the following section will examine how coastal states using the provisions of Article 76 are actually seeking to categorise them and use them to define (and maximise) the outer limits of their continental shelves.

6.4.4.2 Submarine Ridges and Elevations in the Arctic Ocean

As can be seen in Figure 6.12 below, the Arctic Ocean contains four potential continental elevations[380] – the Jan Mayen Micro-Continent/Iceland Plateau, Yermak Plateau, the Morris Jessup Rise/Plateau, and the Chukchi borderland (each of which consists of plateaux and spurs) – and five ridges – the Gakkel, the Lomonosov, the Aegir, the Alpha and the Mendeleev. We will briefly examine each of the structures with respect to their categorisation under Article 76.

[378] Macnab, (2008), at 223 and 234.
[379] Macnab, (2008), op. cit., at 224 – 225.
[380] Defined in the IHO 1994 Glossary (op. cit., term# 510, at 27) as: a region adjacent to a continent, normally occupied by or bordering a shelf that is highly irregular with depths well in excess of those typical of a shelf.

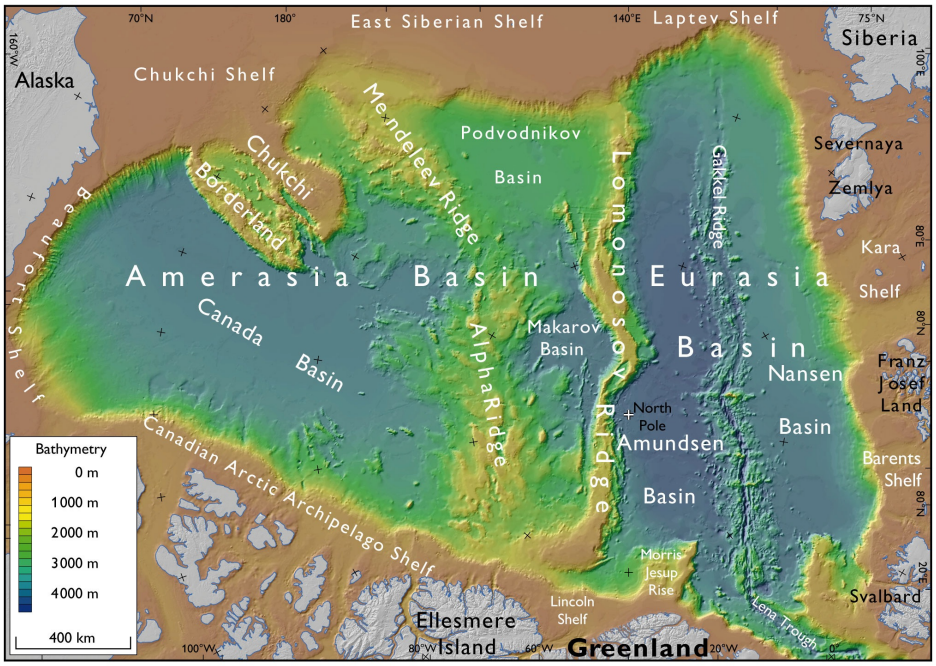

Figure 6.12: Map showing key submarine ridges and elevations in the Arctic Ocean[381]

(1) Submarine Elevations in the Arctic Ocean

a. Jan Mayen Micro-Continent/Iceland Plateau ("JMMC/IP")

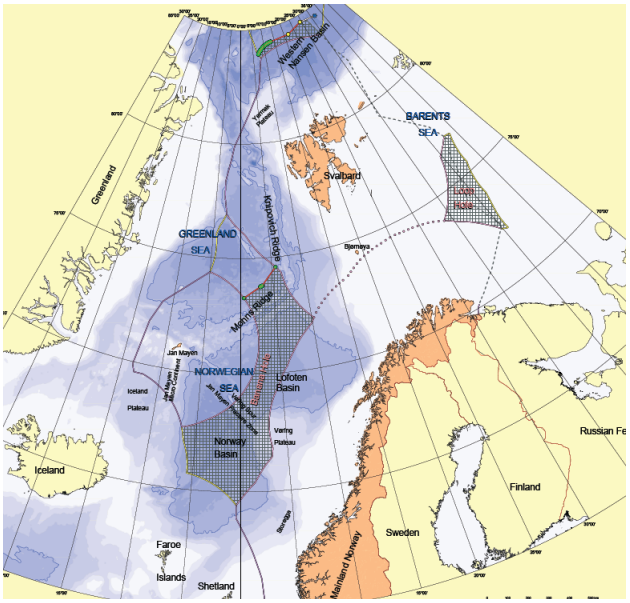

Figure 6.13: Map of the submarine features in the Arctic Ocean relevant to Norway[382]

[381] ©GEUS. Public Domain. GUES, *The Partial Submission of the Government of Denmark together with the Government of Greenland Commission on the Limits of the Continental Shelf*, *Executive Summary,* (2014), GUES, Figure 1, at, available at: www.un.org/depts/los/lcs_new/submissions_files/dnk76_14/dnk2014_esw.pdf.

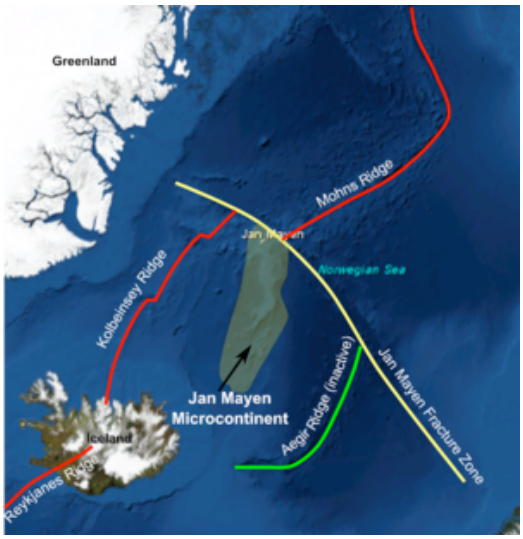

Figure 6.14: Detailed Map showing the JMMC/IP[383]

As can be seen from Figures 6.13 and 6.14 above, this seafloor high is located in the area of the so-called Banana Hole[384] in the Norwegian and Greenland Seas.[385] In the 2006 Norwegian Submission to the CLCS, the JMMC/IP was identified and evidenced by the Norwegian government as a submarine elevation under Article 76 of UNCLOS.[386] Both Denmark and Iceland lodged *Notes Verbales* expressing no objection to the CLCS considering the Norwegian submission and making recommendations on the basis of the data contained therein.[387] Thus, no state challenged the Norwegian view of the status of the JMMC/IP. In its 2009 Recommendations[388], the CLCS recognised that, by way of the FOS envelope[389] and its

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[382] ©NPD. Public Domain. Available at:
www.npd.no/Global/Norsk/1-Aktuelt/Nyheter/%5BPDF-vedlegg%5D/Kart412.pdf.

[383] ©Wikimedia (Commons). Public Domain. Available at:
http://upload.wikimedia.org/wkipedia/commons/thumb/b/b5/JanMayenlocation.PNG/300px-JanMayenlocation.PNG.

[384] The 'Banana Hole' is the ocean area surrounded by the EEZs of Norway, Iceland, the Faroe Islands and Greenland, the fishery zone of Jan Mayen Island and the fishery protection zone of Svalbard.

[385] Although not in the strict definition of the Arctic Ocean part of this feature lies within the wider definition of Arctic Ocean used in this thesis, hence it is included in the analysis.

[386] Government of Norway, *The Executive Summary of the Continental Shelf Submission of Norway in respect of areas in the Arctic Ocean, the Barents Sea and the Norwegian Sea,* 27 November 2006, ("*Norwegian CLCS Submission 2006"*), Executive, at 10 -11, available at:
www.un.org/depts/files/los/clcs_new/new/submissions_files/nor06/nor_exec_sum.pdf.

[387] Government of Denmark, Note dated 24 January 2007 and the Government of Iceland, Note Dated 29 January 2007, both available at:
www.un.org/depts/los/clcs_new/submissions_files/submission_nor.htm.

[388] CLCS, *The Summary of the Recommendations of the Commission on the Limits of the Continental Shelf in Regard to the Submission made by Norway in Respect of Areas in the Arctic Ocean, the Barents Sea and the Norwegian Sea on 27 November 2006* ("*CLCS Recommendations Norway 2009"*), paras. 41 - 77, at 18 – 29, available at:
www.un.org/depts/los/c;cs_new/submissions_files/nor06/nor_rec_summ.pdf.

morphology, the JMMC/IP was part of the submerged prolongation of the landmass of Jan Mayen.[390] The CLCS, "[b]ased on the morphological and geological evidence in the Submission, the additional material provided by Norway…and the literature", agreed "that *on balance* the JMMC/IP composite high is a submarine elevation that is a natural component of the continental margin of Jan Mayen in the sense of Article 76, paragraph 6" (emphasis added).[391]

b. Morris Jessup Plateau/Rise

The Morris Jessup Plateau/Rise is located north of Greenland and extends into the Amundsen Basin of the Arctic Ocean, as shown in Figure 1 of the Danish CLCS Submission 2014.[392] The Executive Summary mentions the Morris Jessup Plateau/Rise but does not give any analysis of its structure. However, from the Submission's map of the outer limits of the continental shelf[393], it is clear that it was considered an elevation for the purposes of delineation of the Greenlandic ECS.

It may be that Denmark considered that analysis and evidence of the status of the Morris Jessup Plateau/Rise was unnecessary for the submission since, in its consideration of the Yermak Plateau in the *CLCS Recommendations Norway 2009,* the CLCS mentions the Morris Jessup Plateau/Rise, observing that "the Yermak Plateau, and its conjugate feature the Morris Jessup Rise…are continental margin features" sharing the same origin.[394] Thus, it appears that the CLCS has indicated that the Morris Jessup Plateau/Rise can be included in the margin of Greenland and that it considers it to be a submarine elevation under Article 76 of UNCLOS.[395]

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[389] The role of the FOS envelope in establishing the outer edge of the continental margin and its relationship with elevations and ridges is well explained by Brekke and Symonds in: Brekke and Symonds, (2011), op. cit., at 293 - 299.
[390] *CLCS Recommendations Norway 2009*, footnote 388, *supra,* para. 55 at 23; See GAO, (2012), op. cit. at 131.
[391] *CLCS Recommendations Norway 2009*, footnote 388 *supra,* para. 77, at 29.
[392] Denmark, *Partial Submission of the Government of the Kingdom of Denmark together with the Government of Greenland to the Commission on the Limits of the Continental Shelf of Greenland, ("Danish CLCS Submission 2014*"), Executive Summary, 15 December 2014, available at, www.un.org/depts/los/clcs_new/submissions_files/dnk76_14/dnk2014_es.pdf.
[393] Ibid, Figure 1, at 8.
[394] *CLCS Recommendations Norway 2009*, footnote 388, *supra,* para. 30, at 12.
[395] Jianjun Gao, "The Continental Shelf Beyond 200 Nautical Miles in the Arctic Basin", (2011, *RJT*, Vol. 45, 717, at 729.

c. *The Yermak Plateau*

As can be seen in Figure 6.15 below, the Yermak Plateau projects into the Nansen basin from the narrow shelf north of Svalbard.[396]

The Norwegian Government states in the *Norwegian CLCS Submission 2006* that the Yermak Plateau is part of the Eurasian Continental Shelf.[397] It asserts that the Yermak Plateau "is continuous along its entire length in terms of both morphology and geology" and hence is part of the continental margin of Svalbard.[398] None of the *Notes Verbales* of Denmark, Iceland, the Russian Federation or Spain, make any adverse comments/challenge to this view of the status of the Yermak Plateau, as a submarine elevation under Article 76. This view is reflected in the literature on the geology and morphology of the Yermak Plateau.[399]

In the CLCS *Recommendations Norway 2009,* the CLCS confirms the Yermak Plateau is a continental margin feature, and that it was:

> "formed during the episode of rifting and breaking up that accompanied the south – westward propagation of the Gakkel Ridge seafloor spreading system and resulted in the opening up of the Fram Strait between Greenland and Svalbard. The base of the continental slope associated with the relatively steep, irregular and complex margin of the Yermak Plateau is generally readily identifiable on a morphological basis",

[396] Useful background literature on the geology and geomorphology of the plateau includes: W. H. Geissler, W. Jokat, and H. Brekke, "The Yermak Plateau in the Arctic Ocean in the light of reflection seismic data – implication for its tectonic and sedimentary evolution", (2011), *Geophysical Journal International,* Vol. 187, No. 3, 1334; Ruth Jackson, G. Leonard Johnson, Erik L. Sundvor and Anni K. M. Myhre, "The Yermak Plateau: Formed at a triple junction", (1984), *Journal of Geophysical Research*, Vol. 89, Issue B5, 3223; O. Ritzmann and W. Jokat, "Crustal Structure of north-western Svalbard and the adjacent Yermak Plateau: Evidence for Oligocene detachment tectonics and non-volcanic breakup", (2003), *Geophysical Journal International*, Vol. 152, No. 1, 139.

[397] *Norwegian CLCS Submission 2006*, footnote 333, *supra,* Section 5 at 9.

[398] Ibid..

[399] See articles in footnote 333*, supra.*

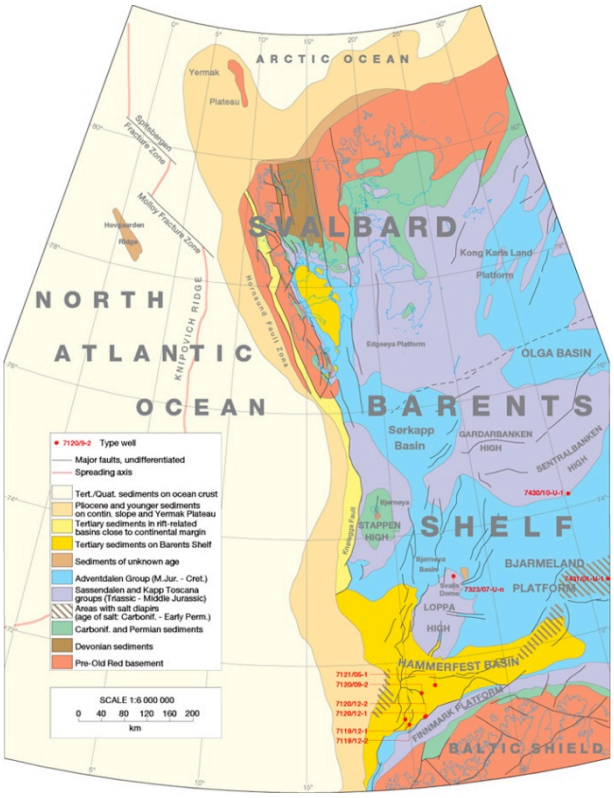

Figure 6.15: Map showing the Yermak Plateau[400]

and that:

> "..the Commission agreed in general with the way this foot of the continental slope was established by Norway".[401]

d. The Chukchi Plateau

The Chukchi Plateau is a large submerged seafloor formation extending north from the Alaskan continental margin into the Arctic Ocean feature – see Figure 6.16 below – and has been the subject of extensive research.[402]

[400] ©NHM, UIO, Norway, Public Domain. Available at: http://nhm2.uio.no/norges/litho/svlbard/1-02.jpg.

[401] *CLCS Recommendations Norway 2009,* op. cit., at para. 30, at 12.

[402] Including: V. Arrigoni, J. R. Hopper, B. J. Coakley, and Y. Kristoffersen, "Is there evidence for recent compression along the Northwind Ridge and Chukchi Borderland?", (2007), EOS Trans. AGU 88(52), Fall Meeting; Kelly Brumley, *Tectonic Geomorphology of the Chukchi Borderland: Constraint for Tectonic Reconstruction Models*, (2009), University of Alaska; R. S. Dietz and Shumway, "Arctic Basin Geomorphology", GSA Bulletin, Vol. 72, 1319; A. Grantz, G. L. Johnson, J. F. G. Sweeney, S. N. D. May, and P. E. Hart, "Geology of the Arctic continental margin of Alaska", (1990), in GSA Geology of North America, v. L: The Arctic Ocean Region, (A. Grantz, G. L. Johnson, and F. G. Sweeney, eds.), GSA, 257; J. K. Hall, "Chukchi Borderland, (1990), in

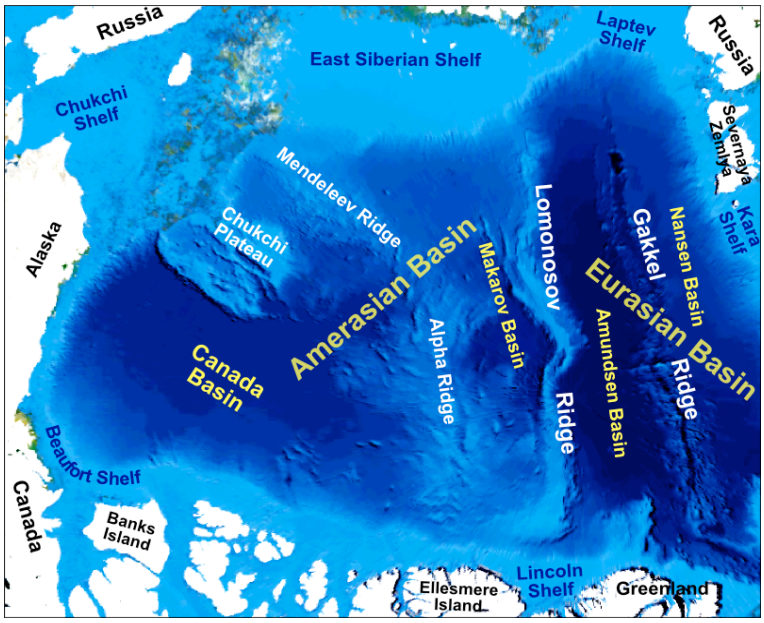

Figure 6.16: Map showing the Chukchi Plateau[403]

Since 1980, the United States has adopted the position that the Chukchi Plateau is a natural component of the Alaskan Arctic margin and is a submarine elevation in the sense of Article 76 of UNCLOS[404], which will allow for the determination of the ECS beyond the 350nm

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GSA Geology of North America, Vol. L: The Arctic Ocean Region, (A. Grantz, L. Johnson, and J. F. Sweeney, eds.), GSA, 593; J. R. Hopper, B. J. Coakley and Y. Kristoffersen, "Structural style of the Chukchi Borderland from marine seismic data collected on the USCGC Healy, (2006), *AGU Fall Meeting, Abstract #OS53B -1119*; M. Johnson, R. Macnab, L. Mayer, R. Anderson, M. Edwards, J. Hatzky, H. W. Schenke, and P. Johnson, "An improved bathymetric portrayal of the Arctic Ocean: Implications for ocean modelling and geological, geophysical and oceanographic analyses", (2008), *Geophysical Letters*, Vol. 10, 1029; L. A. Mayer, and others, "U.S. Law of the Sea cruise to map the slope and foot of the slope and 2,500m isobath of the US Arctic Ocean margin", *Cruise Reports from 1974 to 2014*, Center for Coastal and Ocean Mapping/Joint Hydrographic Center, University of New Hampshire, available at:
http://icefloe.net/archived-cruise-reports; L. A. Mayer, K. Brumley, A. Andronikov, D. N. Chayes, A. A. Armstrong, B. Calder, J. K. Hall, W. C. Clyde, A. Bothner, and J. V. Gardner, "Recent Mapping and Sampling on Chukchi Borderland and the Alpha – Mendeleev Ridge Complex", (2008), AAGU Fall Meeting, Abstract # C11C-051; P. T. Taylor, K. Kovacs, P. Vogt, G. Johnson, "Detailed aeromagnetic investigation of the Arctic Basin", (1981), Journal of Geophysical Research, Vol. 86, No. B7, 6233.

[403] © Mike Norton, 2011. Norton has contributed this image to Wikipedia Commons: this file is licenced under the Creative Commons Attribution – Share Alike 3.0 Unported licence. Free for use. Available at:
http;//commons/m.wikimedia.org/wiki/File:Arctic_Ocean_bathymetric_features.png.

[404] See: the statement made by Ambassador Elliot Richardson on 3 March 1980 to the 128th Plenary Session of UNCLOS III on the issue: "His delegation's support for the proposal…rested on the understanding that it was understood – and to the best of his knowledge there was no contrary interpretation - that features such as the Chukchi Plateau could not be considered a ridge …but were covered by the last sentence of the proposed…Article 76(5)" - UN COC. a/CONF.62/SR128, para.156, at 43, reproduced in the *Official Records of the Third UN Conference on the Law of the Sea*, (1981),Vol. XIII, 32.

constraint.[405] There was no differing opinion expressed then, and there does not appear to have been any public statements or evidence to the contrary.

Byers raises the interesting issue that Canada may also have sovereign rights over part of the Chukchi Plateau, which will impact on its ECS, depending on what basis and how the delimitation boundary between the Unites States and Canada is settled.[406]

It can be concluded that it is unlikely that any state, given the public scientific data available, will challenge the United States' categorisation of the Chukchi Plateau, or if the United States should become a party to UNCLOS, that the CLCS would consider it a ridge.

***Conclusion*:**

From the above discussion of the Arctic Ocean elevations, it appears that the CLCS has so far recognised as submarine elevations three out of the four candidates.

Therefore, although there are significant definitional issues that elsewhere in the world may make drawing the distinction between the three seafloor formations difficult, in terms of Arctic submarine elevations this has proved not to be the case, despite the difficulties of data collection and analysis.

The question is now how ridges fare in categorisation in the Arctic Ocean.

(2) Submarine Ridges in the Arctic Ocean

(a) The Gakkel Ridge

The Gakkel Ridge is also known as the Arctic Mid-Ocean Ridge, and is an extension of the Mid-Atlantic spreading ridge – see Figure 6. 11 above. Grantz describes it as follows:

> The Gakkel Ridge is the mid-ocean spreading axis along which the oceanic Eurasia Basin of the Arctic Ocean was created from about 58 Ma to the present. It owes it relief to thermal and volcanic processes at a seafloor spreading axis… [it is] part of the central Arctic Ocean basin".[407]

[405] Byers, op. cit., at 74; Gorski, op. cit., at 58.
[406] Byers, op. cit. at 80.

> It lies "between areas of oceanic crust created by seafloor spreading now deeply buried by clastic sediment and ocean water" and wholly within the ring of continental slopes and the shelf – break positive free-air gravity anomalies that encircle the deep Arctic Ocean Basin".[408]

He concludes that, with such characteristics, it falls within the category of an oceanic ridge.[409] This view appears to have been universally accepted by scientists[410], lawyers[411], and governments. The Russian[412], Norwegian[413] and Danish[414] Arctic CLCS submissions all treat the Gakkel Ridge as an oceanic ridge. No third state has suggested to the contrary. The CLCS accepted the Norwegian view of the Gakkel Ridge and the resultant ECS limits without comment.[415]

(b) Aegir Ridge

[407] Grantz, (2004), op. cit., at 206 – 207.
[408] Ibid., at 208 - 209.
[409] Ibid., at 209.
[410] See, for example: Wilfried Jokat and Mechita C. Schmidt – Aursch, "Geophysical characteristics of the ultraslow spreading Gakkel Ridge, Arctic Ocean, (2007),*Geophysical Journal International,* Vol. 168, No. 3, 893. This article has an extensive bibliography and all the articles contained therein view the Gakkel Ridge as an oceanic ridge in the sense of Article 76.
[411] See for example: Hussein, who states that "Gakkel Ridge blocks Norway from a larger ECS "as it is an oceanic ridge: Hussein, op. cit., slide 4; Macnab, Neto and van den Poll discuss how the Gakkel Ridge also fails to meet the 1% thickness requirement: Macnab, Neto, and van den Poll, (2001), Figure 9, at 95.
[412] Submission of the Russian Federation to the Commission on the Limits of the Continental Shelf beyond 200nm from the baselines, (2001), ("*Russian CLCS Submission 2001"),* available at: www.un.org/depts/los/clcs_new/submissions_files/submission_rus.htm. From Map 2 in the *Russian CLCS Submission 2001* it is clear that the Gakkel Ridge has been excluded from the submission.
[413] *Norwegian CLCS Submission 2006,* footnote 333, *supra.*
[414] *Danish CLCS Submission 2014*, footnote 392, *supra:* It states that the ridge terminates at the Lena Trough (i.e. well off the continental margin of Greenland (at 14), and from the delineation of the ECS in Figure 1 (at 8) that treats it as an oceanic ridge).
[415] *CLCS Recommendations Norway 2009, supra.*

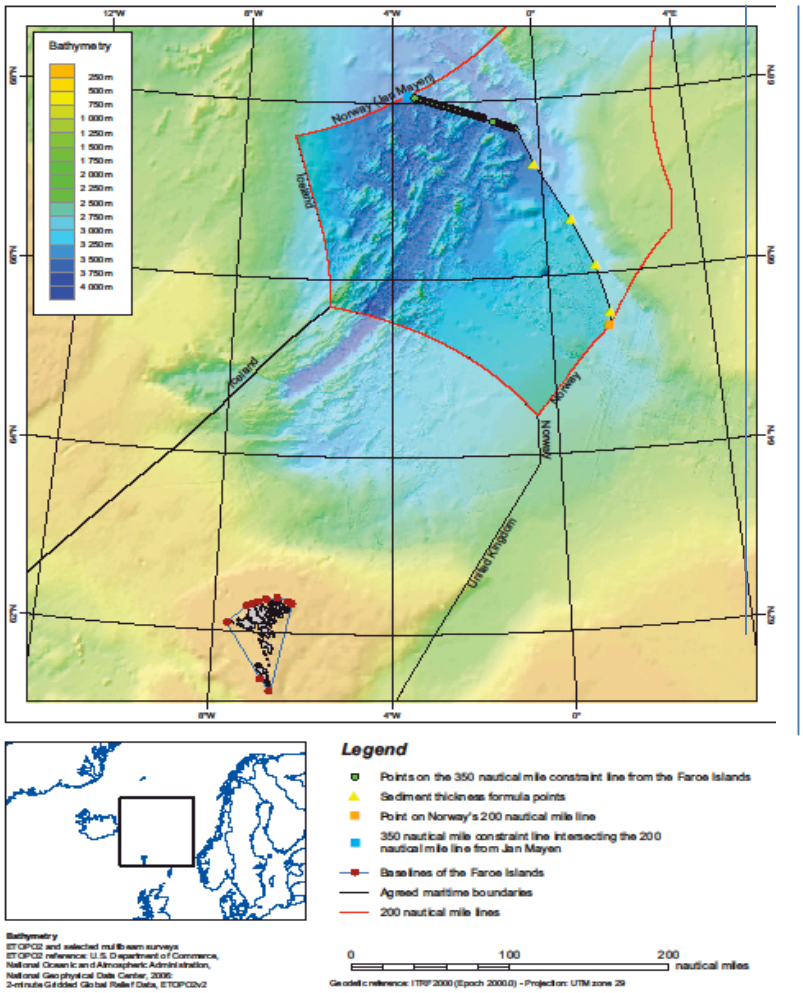

Figure 6.17: Map of Aegir Ridge and the limits of the Faroese ECS[416]

The Aegir Ridge is not an Arctic Ocean basin ridge, but part of it does extend northwards into the Arctic Ocean as defined by the thesis, as can be seen from Figure 6.17 above, and hence it will be examined as relevant.

In the Danish *Faroese CLCS Submission 2009* to the CLCS, the Danish Government took the view that given its geological and morphological characteristics which Denmark could evidence, the Aegir Ridge was a submarine ridge.[417] This view was then echoed by the CLCS

[416] *Partial Submission of the Government of the Kingdom of Denmark together with the Government of the Faroes to the Commission on the Limits of the Continental Shelf: The Continental Shelf North of the Faroe Islands,* 29 April, 2009, ("*Faroese CLCS Submission 2009*"), Executive Summary, at 7, available at: www.un.org/Depts/los/clcs_new/submissions_files/dnk28_09/dnk2009executivesummary.

[417] *Faroese CLCS Submission 2009*, *ibid.*, at 10, 14 and 15, and from the manner in which the ECS is drawn out to 350nm using the ridge.

in its 2014 Recommendations.[418] Evidently from the CLCS Recommendations it appears that Denmark submitted to the CLCS "highly detailed" evidence of the geological and geomorphological characteristics of the Aegir Ridge.[419]

The CLCS recommendations are particularly interesting in terms of the crucial principle of 'crustal neutrality'[420] in categorising ridges.[421] It accepted that the Aegir Ridge (which it found is morphologically continuous with the continental margin north of the Faroe Islands and falls within a common envelope of the FOS), was a submarine ridge in the sense of Article 76(6) of UNCLOS, *despite* the fact that it "is an extinct seafloor spreading ridge that is geologically different from the landmass of the Faroe Islands".[422]

In conclusion the Aegir Ridge appears to have been well evidenced and proved unproblematic in fitting into its categorisation as a submarine ridge.

(c) Alpha and Mendeleev Ridges

The Alpha and Mendeleev Ridges are parts of a 1500km long and 250-400km wide submerged mountain range running from near the northwestern side of Ellesmere Island (Canada) to near Wrangel Island (Russia) which separates the Amerasian basin from the Eurasian basin. It is the largest submarine structure in the Arctic Ocean, and the Alpha and Mendeleev Ridges are crucially important to both Russian and Canadian ECS claims.

As Byers comments, a key question is whether they are connected or each one terminates somewhere mid-Arctic Ocean. [423] Recent (but not Russian or Canadian) scientific studies of the velocity and density structures of the ridges are "consistent with a model where the two

[418] CLCS, *Recommendations of the Commission on the Limits of the Continental Shelf in regard to the Partial Submission of the Government of the Kingdom of Denmark together with the Government of the Faroes to the Commission on the Limits of the Continental Shelf in respect of the Continental Shelf North of the Faroe Islands on 29 April, 2009,* ("*CLCS Recommendations Faroes 2009*"), 12 March 2014, para. 39, at 14 and 15 : available at:
www.un.org/depts/los/clcs_submissions_files/dnk28-09/2014-03014_SWCDNK_REC_COM_20140521.pdf.
[419] *CLCS Recommendations Faroes 2014, ibid.,* para.31, at 8.
[420] I.e. - ridges are to be classified without reference to crustal type.
[421] Gao, op. cit., at 125 - 126; Hussein, op. cit., at slide 52. See the Subcommission's view on the application of crustal neutrality citing its own Guidelines in *The CLCS Summary of Recommendations, Submission of the United Kingdom (Ascension Island)*, 15 April 2010, para.22, at 5 - 6, available at:
ww.un.org/depts/los/clcs_new/submissions_files/gbr08_asc_isl_rec_summ.pdf.
[422] *CLCS Recommendations Faroes 2014,* footnote 418, *supra,* para. 34, at 8.
[423] Byers, op. cit., at 106.

ridges are contiguous and share a common origin"[424], and no literature or government statements have been made to the contrary. Thus, they will be examined as a single structure in the thesis as the Alpha – Mendeleev Ridge.

The fundamental issue for Russian and Canadian ECS claims is the categorisation of this ridge system (as either an oceanic ridge, a submarine ridge or a submarine elevation) as each categorisation has significant implications for the extent of the Arctic Ocean seabed area over which either country can claim sovereign rights.

In 2001 the Russian Government made its CLCS submission for, *inter alia*, the Arctic region[425], it included taking into account the Alpha-Mendeleev Ridge. There is a significant body of legal commentary on the *Russian CLCS Submission 2001*[426] and hence this section will only highlight the key relevant aspects of the submission and recommendations and note the most recent developments.

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[424] Dayton Dove, Bernard Coakley, John Hopper, and Yngye Kristoffersen, "Bathymetry, controlled source seismic and gravity observations of the Mendeleev Ridge: implications for ridge structure, origin and regional tectonics" (2011), *Geophysical Journal International,* Vol 183, No. 2, 2010 – 2011, 481.

[425] The Submission by the Russian Federation to the Commission on the Limits of the Continental Shelf on the Outer Limits of the Continental Shelf beyond 200nm from the Baselines, (2001), *("Russian CLCS Submission 2001"*), Executive Summary, 20 December 2001, available at: www.un.org/depts/los/clcs_new/submisions_files/submission_rus.htm.

[426] Betsy Baker, "Law, Science, and the Continental Shelf: The Russian Federation and the Promise of Arctic Cooperation", (2010), *American University International Law Review,* Vol. 25, 251, Part III, at 267 - 270; Marc Benitah, "Russia's Claim in the Arctic and the Vexing Issue of Ridges in UNCLOS", (2007), *ASIL, Insights*, Vol. 11, No 27, 8 November 2007; Byers, op. cit., at 104 – 109; Grantz, op. cit., 201; Margaret F. Hayes, "US Continental Shelf Policy", (2010), in *Changes in the Arctic Environment and the Law of the Sea*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff, 469; Kathyn Isted, "Sovereignty in the Arctic: An Analysis of Territorial Disputes and Environmental Policy Considerations", *Journal of Transnational Law and Policy*, Vol. 18, No. 2, 344, at 358 - 360; Mark Jarashow, Michael B. Runnels, and Tait Svenson, "Note: UNCLOS and the Arctic: the Path of Least Resistance", (2007), *Fordham International Law Journal*, Vol. 30, No. 5, 1587, at 1595; Ron Macnab, The Case for Transparency in the Delimitation of the Outer Continental Shelf in Accordance with UNCLOS Article 76", (2004), *ODIL*, Vol. 35, 1; Ron Macnab and Lindsay Parson, "Continental Shelf Submissions: The Record to Date", (2006), *IJMCL*, Vol. 21, No. 3, 309; Ted L. McDorman, "The Continental Shelf Beyond 200nm: Law and Politics in the Arctic Ocean", (2009), *Journal of Transnational Law and Policy*, Vol. 18, No. 2, 155, at 176 - 179; Sean D. Murphy, "Contemporary Practice of the United States Relating to International Law, U.S. Reaction to Russian Continental Shelf Claim", (2002), *AJIL*, 969; Alex Oude Elferink and Constance Johnson, "Outer Limits of the Continental Shelf and 'Disputed Areas': State Practice Concerning Article 76(10) of the LOS Convention", (2006), *IJMCL*, Vol. 21, 461, at 470; Alex Oude Elferink, "The Continental Shelf in the Polar Regions: Cold War or Black - Letter Law", (2009), *Netherlands Yearbook of International Law*, Vol. 40, 121, at 150 - 152; Alex Oude Elferink, "Recent 'Sector' Practice of the Russian Federation", (2015), in *International Law and Politics of the Arctic Ocean: Essays in Honour of Donat Pharand, (*Suzanne Lalonde and Ted L. McDorman, eds.), Martinus Nijhoff, 269, at 273 - 284; Proelss and Müller, op. cit., at 666 - 668; Mel Weber, "Defining the Outer Limits of the Continental Shelf across the Arctic Basin: The Russian Submission State's Rights, Boundary Delimitation and Arctic Regional Cooperation", (2009), *IJMCL*, Vol. 24, 653, at 659 - 665;

First, it would seem from the Executive Summary and Maps of the *Russian CLCS Submission 2001* that Russia considers that the Alpha-Mendeleev Ridge is the natural prolongation of the Russian continental margin, and, moreover, that it is a natural component of that margin – i.e. it is a submarine elevation.[427] Five states submitted *Notes Verbales* (Canada, Denmark, Japan, Norway, and the United States)[428] but only one, the United States, challenged this categorisation outright.[429] Japan has a non-Arctic dispute regarding islands used in the delineation, Canada and Denmark simply referred to their inability to agree or disagree with the Russian ECS delineation without further supporting data to analyse. Norway, although consenting to the CLCS examination of the area, formally declared a dispute it had with Russia at that time over an area in the north Barents Sea, and reminded the CLCS to make recommendations without prejudicing the claims of neighbouring states or the final delimitation.

The *Note Verbale* of the United States forcefully rejected any possibility that the Alpha-Mendeleev Ridge is a natural prolongation of the Russian continental margin. It asserts that supporting data shows that "[i]t is not part of any State's continental shelf".[430] On what appears to be very thin evidence, the United States made a very robust rejection of the Russian submission, a view that somewhat surprisingly some American scientists[431] continued to hold until the early 2000s, when the United States started its Arctic Ocean mapping project.[432] Although the United States has not formally amended its opinions in the 2002 Notification, State Department representatives, have, as Baker notes, indicated that "the U. S. view of Arctic geology is evolving and that in hindsight, the Notification reflected an inadequate appreciation of the scientific complexities involved".[433] Margaret Hayes,

[427] Maps 1 and 2, *Russian CLCS Submission 2001, supra.*
[428] See the Notes Verbales on the CLCS website at:
www.un.org/depts/los/clcs_new/submissions_files/submission_rus.htm.
[429] *United States of America: Notification regarding the submission made by the Russian Federation to the Commission on the Limits of the Continental Shelf,* 18 March 2002, at 2 – 3, available at:
www.un.org/depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_USAtext.pdf.
It has been brought to the author's attention by Professor T. L. McDorman that the view put forward in the *note verbale* is consistent with the view expressed by the United States during the negotiations of Article 76 UNCLOS.
[430] Ibid., at 3.
[431] Such as Grantz, (2004), op. cit., at 2006 - 2007.
[432] On the history of the project see the website of the Center for Coastal and Ocean Mapping/Joint Hydrographic Centre (at http://cco,m.unh.edu/about-ccomjhc). Also Hayes, op. cit., at 470 - 475.
[433] Baker,(2010), footnote 426, *supra*, at 270. She cites remarks of Margaret Hayes of the US State Department' Office for Ocean and Polar Affairs made in February 2009.

former director of the Office for Ocean and Polar Affairs of the US State Department, wrote in May 2009 that the United States' comments in the *Note Verbale* were based only on "publicly available information and what in hindsight appears to have been an inadequate appreciation of the complexities of Arctic Geology". Since 2002, Hayes goes on to say, the United States has conducted extensive Arctic mapping exercises, consultations, and collaborative studies. In fact, she reveals that "[r]ecently collected bathymetric data shows that there may be a morphologic and geologic continuity between the Chukchi Borderland and the Alpha – Mendeleev system.[434] This is very significant as the United States considers the Chukchi Borderland/Plateau to be a submarine elevation. Finally and probably most importantly for a future Russian re-submission, she states:

> "at this point we would withhold judgment on the validity of new or revised submissions – at least until the Commission issues a summary of its recommendations".[435]

Good news, perhaps, for the future Russian submission.[436]

It is not clear whether or not the American *Note Verbale* influenced the deliberations of the subcommission appointed to examine the Russian submission. The subcommission received no instructions from the Commission to disregard any of the Notes Verbales, even though the United States did not allege any ongoing disputes or delimitation issues with the Russian Federation. This approach differs from the one it adopted with regard to the Brazilian submission in 2004[437], when the Commission made a ruling referring to Annex II and instructed the subcommission to disregard comments submitted by the United States.[438] It is difficult to identify a coherent rationale for the differing approaches.

In 2002, the CLCS adopted by consensus a number of recommendations including one suggesting that the Russian Federation collect and analyse more information/data and

[434] Hayes, (2009), op. cit., 469 - 470.
[435] Hayes, (2009), op. cit., at 476.
[436] This resubmission is no longer in the future. On the 2015 Russian Resubmission, see references in footnote 332, *supra*.
[437] *Submission by Brazil to the Commission on the Limits of the Continental Shelf on the Outer Limits of the continental shelf beyond 200nm from the baselines*, 17 May 2004, available at:
www. un.org/depts/los/clcs_new/submissions_files/submission_bra.htm.
[438] On this point see; Suarez, op. cit., at 2067 – 208; Weber, op. cit., at 664.

submit a revised submission in respect of its ECS in the Central Arctic Ocean.[439] Russia has not yet submitted a revised submission, but there are indications that it may do so in 2017.[440] Its resubmission would have priority over the Commission considering Greenland's submission[441], and Canada has yet to make a submission in respect of the Arctic. As the Alpha-Mendeleev Ridge is also fundamental to the future Canada ECS claims and Canada shares a common interest in its categorisation, it may be that behind the scenes there is scope for scientific collaboration between Russia and Canada.

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[439] Hereinafter termed the "*CLCS Recommendations Russia 2002":* Report of the Secretary General of the United Nations to the Fifty-Seventh Session of the United Nations General Assembly under the agenda item Oceans and the Law of the Sea, UN Publication A/57/57/Add.1 of 8 October 2002, paras. 38 - 41, at para. 39, available at:
http://daccessdds.un.org/doc/UNDOC?GEN?N02/629/28/PDF/N0262928.pdf?OpenElement.

[440] Since the thesis' cut off date Russia, as discussed in FN 332 ,made a Partial CLCS Submission in August 2015. A tender for legal advisors to assist in the preparation of a resubmission for the Russian Arctic ECS had given the target date as 2017, see: Trude Pettersen, "Application for Russia's Arctic shelf claim out to tender", (2015), *Barents Observer*, 24 February 2015, available at:
http://barentsobserver.com/en/arctic/2015/02/application-on-russias-arctic-shelf-claim-out--24-02.
Thus, the 2015 Russian Resubmission took observers somewhat by surprise – see footnote 332, *supra*. It is interesting to speculate on why it was submitted in August 2015, and why the Submission's Executive Summaries (Russian and English) are dated April 2015 indicating that a hundred copies were printed. The Executive Summaries also show many signs of being rushed and unpolished, for example:
(1) The English version has numerous spelling errors (e.g. repeatedly 'Commision'), and sections which have jumbled phrases (at page six with paragraph beginning with "the Area of the sea bed…"); and,
(2) the Russian and English texts do not always give the same information (e.g. the English version lists 4 recommendations and the Russian version only 2, at page 5). There are many more other errors and mismatches.
One can speculate about the reason behind this apparently rushed resubmission:
(1) It may be that the Russian move was pre-emptive…as the United States has yet to comment on the Greenlandic 2014 ECS claim and the legal status of the Alpha-Mendeleev and Lomonosov Ridges;
(2) Given the Crimean Crisis and the effects of the sanctions, it may have been for domestic political reasons (the Russian legislative elections have been moved forward to 16 September 2016, as on 1 July 2015 the Constitutional Court accepted the possibility of conducting such earlier elections. (Interfax, "Госдума приняла в первом чтении законопроект о переносе выборов", *Vedomosti,* 19 July 2015, available at:http://www.vedomosti.ru/politics/news/2015/06/19/597158-gosduma-prinyala-v-pervom-chtenii-zakonoproekt-o-perenose-viborov) but then why has so little been made of the submission in the media?;
(3) It may have been in response to the content of the *2014 Danish CLCS Submission*, especially with respect to the status of the Alpha-Mendeleev Ridge and the Chukchi Plateau. They may have been concerned either regarding any possible future *Note Verbale* (esp. from the United States) agreeing with the Danish categorisation of either feature, which would potentially complicate their subsequent resubmission, or that the CLCS may get to the Greenlandic submission quicker than expected before 2017?

[441] This can be deduced by the procedure followed in the case of the Partial Revised Submission in respect of the Sea of Okhotsk made by Russia on 28 February 2013 and the CLCS sub commission began its consideration of the revised submission in August 2013 ("Following its reconstitution the Sub commission met without delay"), and the Recommendations of the CLCS were adopted on 11 March 2014 – taking just over a year. See: CLCS, *Summary of Recommendations of the Commission on the Limits of Continental Shelf in Regard to the Partial Revised Submission made by the Russian Federation in respect of the Sea of Okhotsk on 28 February 2013*, (2014), CLCS, available at:
www.un.org/Depts/los/clcs_new/submissions_files/rus01_rev13?2014_03_13_COM_REC_RUS_summary.pdf

It may be that Russia will choose to wait for the Greenlandic Recommendations to see how the Lomonosov Ridge evidence is dealt with by the CLCS, any *Notes Verbale* in response to the submission, and/or the Canadian partial submission in respect of the Arctic, before resubmitting.[442]

As the deliberations and detailed recommendations of the CLCS are confidential, it is difficult to speculate exactly what issues the CLCS had with the Russian submission, and in particular with the categorisation of the ridges therein. Since 2002 the Russians, Canadians, Americans and the Danes have all conducted major studies of the ridges (some collaborative), and there is now a substantial volume of scientific literature specifically on the Alpha-Mendeleev Ridge.[443] It would seem, as discussed earlier, from many of these studies, that undoubtedly the Alpha – Mendeleev Ridge is at least a submarine ridge, and that there is ever increasing evidence that it is a submarine elevation in the sense of Article 76. It was clearly highly advisable for Russia, Canada and Denmark to cooperate in their data gathering and its interpretation with respect to the Alpha – Mendeleev Ridge, and that is

[442] Clearly Russia chose not to wait -see footnotes 332, 435, and 439, *supra*.

[443] Recent studies include: Andrey Chernykh, Ekaterina Astafurova, Maria Kaorneva, Alena Egorova, Anton Redko, Vladimir Glebovsky, "Tectonic pattern of the Mendeleev Ridge and adjacent basins: results of joint analysis of potential fields and recent Russian seismic data", (2013), a paper presented to *the EGU General Assembly 2014*, 27 April – 2 May 2014, Vienna, Austria, EGUGA..1614872C, available at:
http://adsabs.harvard.edu/abs/2014EGUGA..1614872C;
A. Dossing, H. R. Jackson, J. Matzka and Einarsson, T. M. Rasmussen, A. V. Olesen, and J. M. Brozena, "On the origin of the Amerasian Basin and the High Arctic Large Igneous Province – results of new aeromagnetic data", (2013), *Earth and Planetary Science Letters*, Vol. 363, 1 February 2013, 219; Dayton Dove, Bernard Coakley, John Hopper, and Yngye Kristoffersen, "Bathymetry, controlled source seismic and gravity observations of the Mendeleev Ridge: implications for ridge structure, origin and regional tectonics" (2011), *Geophysical Journal International,* Vol 183, No. 2, 2010 – 2011, 481; V. D. Kaminsky. V. A. Poselov, V. Y. Glebovsky, A. V. Zayonchek, and V. V. Butsenko, "Geophysical and Geological Study of the Transition Zone Between the Mendeleev Rise and the Adjacent Siberian Shelf: Preliminary Results", (2005), *AGU Fall Meeting 2005*, Abstract, #T12C-06, available at:
www.agu.org/meetings.fm05;
N. Lebedeva – Ivanova, Yuy Ya Zamansky, Aldona E. Langinen, and Michael Langinen, and Michael Yu Sorokin, "Seismic profiling across the Mendeleev Ridge at 82^0N: Evidence of continental crust", (2006), *Geophysical Journal International*, Vol. 165, No. 2, 527; A. F. Morozov, O. V. Petrov, S. P. Shokalsky, S. N. Kashubin, A. A. Kremenetsky, M. Yu. Shkatov, V. D. Kaminsky, E.A. Gusev, G. E. Grikurov, P. V. Rekant, S. S. Shevchenko, S. A. Sergeev, V. V. Shatov, "New Geological Data are Confirming Continental Origin of the Central Arctic Rises", (2013), *Regionalnya Geologia I Metallogenia (Regional Geology and Metallurgy)*, Vol. 53, (Summary in English translated by N. Lebedeva – Ivanova), available at:
www.evgengusev.narod.ru/morozov-2013eng.pdf;
Moscow Times, "Scientists Claim Mendeleev Ridge is Russian Continental Shelf", (2014), *Moscow Times,* 30 April 2014; E. V. Verzhbitskii, L. I. Lobkovskii, A. F. Byakov, and M. V. Kononov, "The Origin and Age of the Alpha – Mendeleev and Lomonosov ridges in the Amerasian Basin", (2013), *Oceanology*, Vol. 53, No. 1, 89 [this article has a significant bibliography of recent Russian studies on the ridge]; Chuang Zuan and James E. T. Channell, "Origin of apparent magnetic excursions in deep-sea sediments from Mendeleev - Alpha Ridge, Arctic Ocean",(2010), *Geochemistry, Geophysics, Geosystems*, Vol. 11, No.2, QO2003.

precisely what the three states have done to some extent.[444] However, it is unclear how much consultation and data exchange occurred regarding the Alpha – Mendeleev Ridge before the *Danish CLCS Submission 2014.*

The *Danish CLCS Submission 2014* certainly provides some interesting information/indicators for a future Russian resubmission and a further Canadian partial submission on their Arctic ECSs.[445] It states:

> "The Alpha-Mendeleev ridge complex and the Chukchi Borderland are morphologically continuous with the land mass of Greenland, However the submitted data and other material in this Partial Submission do not provide for their classification as submarine elevations that are natural components of the Northern Continental Margin of Greenland."[446]

This statement would appear to indicate that Denmark considers that:

(1) there is morphological continuity of the Alpha-Mendeleev Ridge at least vis à vis Greenland. McDorman has written that 'informal indications' suggest that the CLCS rejected the Russian assumption that the Alpha-Mendeleev Ridge is a

[444] All the Arctic Five have cooperated in data sharing to some level with Canada and the United States. Denmark and Canada have engaged in joint mapping exercises in the Arctic Ocean throughout the 2000s. See, for example:
Foreign Affairs, Trade and Development, Canada, International Collaboration; Collaboration with Denmark, available at:
www.international.gc.ca/continental/collaboration.aspx; NOAA, "US-Canada Arctic Ocean survey partnership saved costs and increased data", *NOAA News*, 5 December 2011, available at:
www.noaanews.noaa.gov/stories2011/20111215_arctic.html. On Canadian cooperation see also: E. Riddel – Dixon, "Canada and Arctic Politics: The Continental Shelf Extension", (2008), *ODIL*, Vol. 39, 343, at 350; On Danish cooperation see: Thomas Winkler, "Danish Interests in the Arctic", (2010), in *Changes in the Arctic Environment and the Law of the Sea*, (Myron H. Nordquist, Tomas H. Heidar, and John Norton Moore, eds.), Martinus Nijhoff, 477 at 484; Russian cooperation has been more limited and no joint mapping exercises have been done, although there have been significant sharing of information through conferences, Polar Year Projects, workshops and increased publication of findings – for example, the MAST project (Macnab, Neto, and van de Poll, (2000), op. cit., at 90) the 2007 US-Russia Workshop on Plate Tectonic Evolution of Northeast Russia [available at: http://pangea.stanford.edu/research/structure/nerussia/index.html]. On the United States, see for example: Weber, op. cit., at 676 – 680].

[445] From the 2015 Russian Resubmission it appears that the Russians agree with the categorisation of the Lomonosov ridge as an elevation in the Danish CLCS Submission 2014. The Danish submission did not include data that would evidence that the Alpha-Mendeleev Ridge and Chukchi Plateau were elevations rather than ridges under Article 76(6). The 2015 Russian Resubmission indicates that the data provided in the resubmission will provide sufficient evidence to have the features categorised as elevations. (*2015 Russian Resubmission,* Executive Summary, footnote 332, *supra*, at 6.) The full submission is reported to have over 2000 pages of supporting scientific data and will possibly take over three years to analyse. Moreover, as a resubmission, the *2015 Russian Resubmission* will take priority over the *2014 Danish CLCS Submission*, with its review is expected to start in February 2016. see Antonova, footnote 332, *supra.*

[446] *Danish CLCS Submission 2014,* footnote 392, *supra.*

natural prolongation of the Russian continental margin due to what it perceived to be breaks separating the ridge from the adjacent margin.[447] Since 2005, Russian surveys have gathered significant amounts of data that, according to publications, indicate the geomorphological and geological continuity of the ridge.[448] In the light of this development, Macnab cautions the CLCS that, given its 2002 recommendations, "[it] needs to tread carefully when formulating its recommendations in such areas".[449]

(2) the Alpha-Mendeleev Ridge is a submarine ridge relevant to the Greenlandic ECS, and thus subject to the 350nm limitations of Article 76(6) – which is reflected in Figure 1 of the *Danish CLCS Submission 2014*. This is good news for both Canada and Russia in so far as it is categorised as *de minimis* a ridge; and,

(3) that the data submitted by Denmark in December 2014 did not demonstrate that the Alpha – Mendeleev Ridge met the geological continuity requirement to be a submarine elevation. This could mean several things:

(a) that Denmark simply ran out of time to gather further data before the lapse of their 10 year time limit in December 2014. In such case, Denmark may be able to submit further information during the long wait for the CLCS to consider its submission, probably between 10-20 years at the current rate of the CLCS's progress through submissions.[450] The failure to gather sufficient data to make the case may also be symptomatic of the degree of difficulty the Arctic states face in gathering data in the hostile environment of the Arctic Ocean in proximity to the Alpha – Mendeleev Ridge.[451]

(b) the data they have is insufficient with respect to geological continuity with the Greenlandic margin (that it is a natural component of the Greenlandic

[447] McDorman, (2008), op. cit., at 226.

[448] See Russian studies cited in footnote 440*, supra,* and see for recent consolidation of data: V. A. Poselov, V. V. Butshenko, V. D. Kaminsky, and T. S. Sakulina, ""Mendeleev Rise (Arctic Ocean) as a geological continuation of the continental margin of Eastern Siberia", (2012), *Dolady Earth Sciences,* Vol.443, No. 1, 388.

[449] Macnab, (2008), op. cit., at 226.

[450] In 2009 the United National General Assembly adopted two resolutions listing the problems related to the CLCS being overloaded with work: UNGA, (2009), A/RES/64/71 and A/RES/64/72.

[451] Larry Mayer, "Seafloor Mapping and Exploration in a Changing Arctic Sea Ice Environment", (2010), in *Changes in the Arctic Environment and the Law of the Sea*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff, 83.

continental margin), so they have not submitted data relating to geological continuity. This, however, would not necessarily prove to be negative for Canada or Russia, who may still be able to evidence continuity to their respective margins.

Therefore, since there are no time limitations on resubmissions[452], or additional partial submissions, playing a 'waiting game' in gathering further data, collaborating on a shared approach, and analysing ridge oriented CLCS submissions and recommendations, would seem a prudent move for both Canada and Russia.[453] The potential rewards of a successful categorisation of the Alpha – Mendeleev Ridge as a submarine elevation for either country are great.[454] For example, according to Skaridov and Skaridova, an expedition in 2007 by the research icebreaker the Akademik Fedorov located oil reserves in the basin of the Alpha-Mendeleev Ridge that have an estimated volume of oil of 5 trillion tons (twice as much as the elephant Shtokmanskoye deposit in the Barents Sea).[455]

In conclusion, the Russian experience of CLCS with regard to the Alpha-Mendeleev Ridge demonstrates all the difficulties associated with Article 76(6) (practical, definitional and political), and it serves as a clear example of Macnab's concept of ECS submissions as a 'poker game'. However, Article 76(8) is also 'the only game in town' if a State Party[456] wishes the outer limits of its ECS to be 'final and binding'. This step ensures the security of the sovereign rights of the coastal state to the petroleum located in the seabed and subsoil of

[452] McDorman states: "there is no legislated end-point to the 'ping–pong' process": McDarment, (2009), op. cit., at 179. Smith and Taft state: "Theoretically, this process could go on indefinitely": Smith and Taft, op. cit., at 20. The only regulatory limitation on time is that a resubmission shall be made "within a reasonable time" [Article 8 Annex II, UNCLOS and Rule 53(4) of Rules of Procedure of the Commission on the Limits of the Continental Shelf, CLCS/40/Rev.1, 17 April 2008, available at:
http://daccess-dds-ny.un/doc/UNDOC/GEN/N08/309/23/PDF/N0830923.pdf?OpenElement]. This allows Arctic states significant flexibility given the degree of difficulty in data gathering and analysis.

[453] An approach the Russians did not adopt, as on 4 August 2015 they made a resubmission to the CLCS, as raised earlier in footnotes 332, 440 and 444, *supra.*

[454] On the importance of hydrocarbons in the Arctic Ocean beyond 200nm see: Shamil Midkhatovich Yenikeyeff and Timothy Fenton Krysiek, "The Battle for the Next Energy Frontier: The Russian Polar Expedition and the Future of Arctic Hydrocarbons", (2007), *Oxford Energy Comment*, August 2007, Oxford Institute for Energy Studies, available at:
www.oxfordenergy.org/wpcms/wp-content/uploads/2011/01/Aug2007-The Battle for thenextenergyfrontier-ShamilYenikeyeff-and-TimothyFentonKrysiek.pdf.

[455] Alexander S. Skaridov and Mariya Skaridova, "Legal Aspects of Russian Perspectives on Continental Shelf Issues in the Arctic Areas", (2005), in *International Energy Policy, the Arctic and the Law of the Sea,* (Myron H. Nordquist, John Norton Moore, and Alexander S. Skaridov, eds.), Martinus Nijhoff, 79, at 95.

[456] In this thesis the term State Party is defined as a state which is party to Treaty and the term Non-party State is a state which is not party to a Treaty.

the ECS and its title to petroleum produced there incontestable, establishing clear title it can transfer to its licensees.

(d) Lomonosov Ridge

The Lomonosov Ridge is approximately 1500 km long and has a unique feature: it appears to span the Arctic Ocean from the Russian continental margin to the Canadian and Greenlandic continental margins. There are troughs/saddles at either end of the ridge and so questions have been raised as to the meeting of the test of appurtenance.

The Russian CLCS Submission 2001, in particular Map 2, indicates that the Russian Federation considers the ridge to be a submarine elevation.

However, the United States in its 2002 *Note Verbale* to the CLCS stated that it considered the Lomonosov Ridge:

> "a freestanding feature in the deep, oceanic part of the Arctic Ocean Basin, and not a natural component of the continental margins of either Russia or any other State".[457]

The circumstances of this Notification were discussed earlier in respect of the Alpha – Mendeleev Ridge, and it should be recalled that in its 2002 recommendations the CLCS neither accepted nor rejected the submission but asked for more data.[458]

Since 2001 numerous surveys by Canada, Denmark and Russia have provided significant volumes of (geomorphological, geological, and oceanographic) data, which they interpret as evidencing that the Lomonosov Ridge is the natural prolongation of the landmass of all three [459]countries.

[457] *United States of America: Notification regarding the submission made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, 18 March 2002, available at: www.un.org/depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_USAtext.pdf.

[458] In the Report of the Secretary General, Oceans and Law of the Sea of 8 October 2002, Addendum 1, para. 48 at 11, UN Doc. A/57/57/Add.1, available at: http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N02/629/28/PDF/N0262928.pdf?OpenElement.

[459]459

Thus, most writers consider that there is sufficient evidence[460] to reach the conclusion that the Lomonosov Ridge constitutes *de minimis* a submarine ridge[461] – a view apparently now shared by some representatives of the US State Department.[462] However, from the most recent studies it would seem that there is a growing scientific view, based on an unprecedented amount of seismic, bathymetric, and aerogeophysical data gathered on the Lomonosov Ridge since 2005 that the Lomonosov Ridge is a natural component of the continental margins of Russia, Canada and Denmark/Greenland.[463] In other words, that it is a submarine elevation, and, thus, may qualify for the application of the depth constraint under Article 76(4) and that the outer limits of the continental shelf may be established beyond 350 nm from the baselines. Some eminent ECS authorities have also come to this

[460] Jacob Verhoef, David Mosher and Steve Forbes, "Defining Canada's Extended Shelves", (2011), *Geoscience Canada*, Vol. 38, 85, at 92.

[461] Beyer's, op. cit., Macnab, (2010), op. cit., at 301 - 302; T. Potts and C. Schofield, "Current Development – The Arctic", (2008), *IJMCL*, Vol. 23, 151, at 154 (further sources);

[462] Hayes, (2010), footnote 426, *supra*, footnote 7, at 474.

[463] James R. Cochran, Margo H. Edwards and Bernard J. Coakley, "Morphology and structure of the Lomonosov Ridge, Arctic Ocean", (2006), *Geochemistry, Geophysics, Geosystems,* Vol. 7, No. 5, 7, Q05019; A. Dossing. H. R. Jackson, J. Matzka, I. Einarsson, T. M. Rasmussen, A. V. Olesen, J. M. Brozena, "On the origin of the Amerasian Basin and the High Arctic Large Igneous Province – Results of new aeromagnetic data", (2013), *Earth and Planetary Letters*, Vol. 363, 219; E. A. Gusev, "Geological structure of conjunction area of Lomonosov Ridge and continental margin of Laptev and East Siberian Seas", (2011), *Neftegazovaya Geologiya, Teoriya I Praktika*, Vol. 6, No. 3, available at:

Marc Jacobsen, "High North Dialogue 2015 – Interview with Christian Marcussen", (2015), *Arctic Institute,* March Bodo Norway, 9 March 2015, available at:

www.thearcticinstitute.org/2015/03/030915-Interview-withChristian-Marcussen.html;

Jackson, Dahl – Jensen, and the LORITA working group, (2010). op. cit., at 11; Ruth Jackson et al, "The Structure of the Lomonosov Ridge, Arctic Ocean", a paper presented to the *AGU Fall Meeting 2010,* Abstract #T31A-2122, available at:

http://adsaabs.harvard.edu/abs/2010AGUFM.T31A2122;

W. Jokat, "The sedimentary structure of the Lomonosov Ridge between 88^0N and 80^0N, (2005), *Norwegian Geophysical Journal International*, Vol. 163, 698;

A. Langinen, Nina N. Lebedeva – Ivanova, David G. Gee, Yu Ya Zamansky, "Correlations between the Lomonosov Ridge, Marvin Spur and Adjacent Basins of the Arctic Ocean based on seismic data, (2009), *Techtonophysics*, Vol. 472, No. 1, 309; Alexander N. Minakov and Yury Yu. Podladchikov, "Tectonic subsidence of the Lomonosov Ridge", (2012), *Geology*, Vol. 40, 99; A. F. Morosov, O. V. Petrov, S. P. Shokalsky, S. N. Kashubin, A. A. Kremenetsky, M. Yu. Shkatov, V. D. Kaminsky, E. A. Gusev, G. E. Grikurov, P. V. Rekant, S. S. Shevchenko, S. A. Sergeev, and V. V. Shatov, "New Geological Data Confirming Continental Origin of Central Arctic Rises", (2013), *Regional geology and metallogeny*, No. 53; A. L. Pskarev and V. A Savin, "Gravitational Modelling of the Earth's Crust of the Lomonosov Ridge", (2010), *Karotazhnik*, Vol. 198, 9, 41; Peter Varga, "Canada asks scientists to extend Arctic shelf claim to North Pole", *Nuatsiaq Online,* News, 10 December 2013, available at:

www.nunatsiaqonline.ca/stories/article/65674canada_asks_scientists_to_extend_arctic_shelf_claim_to_north_pole/;

V. Verzhbitsky, L. I. Lobkovskii, A. F. Byakov, M. V. Kononov, "The Origin and age of the Alpha – Mendeleev and Lomonosov Ridges in the Amerasian Basin", (2013), *Oceanology*, Vol. 53, No. 1, February 2013, 89.

view.[464] For example, in 2014 Brekke, former member of the CLCS[465], wrote that the Lomonosov Ridge is "morphologically and geologically the submerged prolongation of both continents".[466]

The *Danish CLCS Submission 2014* also makes such assertions, together with the submission to the CLCS of what is understood to be highly detailed evidence.[467] The Submission states:

> "The Lomonosov Ridge is a sliver of continental crust that divides the Arctic Ocean into its two main basins – the Eurasia and the Amerasia Basins…
>
> These observations show that the Lomonosov Ridge shares a common geological history with the onshore areas of Greenland and the Canadian Arctic Archipelago …
>
> Since the end of the Eurekan Orogeny, the Lomonosov Ridge has been firmly attached to the Lincoln Shelf and Northern Continental Shelf of Greenland and has been drifting with the North American Plate. The Lomonosov Ridge is both morphologically and geologically an integral part of the Northern Continental Margin of Greenland".[468]

Byers raises the interesting issue that the Lomonosov Ridge might be claimed as the natural component of the continental shelves of Denmark/Greenland, Canada, and Russia.[469] Certainly scientists working for the Russian, Canadian and Danish governments have suggested that it is a "double – sided margin that rifted at a time when the North American and the Eurasian landmasses were indistinct".[470] Neither UNCLOS nor the CLCS 1999 Guidelines preclude the possibility of a ridge connecting two continental margins, or, as Byers argues that the possibility that such a ridge "could conceivably be judged a natural component of all margins to which it is attached". For the time being, the Danes appear to have opted out of the possibility of using the ridge in its ECS delineation, but there is a strong possibility that, if the CLCS is given the necessary relevant and highly detailed

[464] Harald Brekke, "The limits of the continental shelf in the Arctic Ocean", (2014), *The Norwegian Scientific Academy for Polar Research,* News Letter, No. 12, June 2014, at 4.
[465] Note that Brekke is named as having provided scientific advice in the preparation of the *2015 Russian Resubmission*: Executive Summary, footnote 332, *supra,* at 8.
[466] Ibid..
[467] Ibid..
[468] Ibid., at 14.
[469] Byers, op. cit., at 118.
[470] Ruth Jackson, Trine Dahl – Jensen and the LORITA Working Group, "Sedimentary and Crustal Structure from the Ellesmere Island and Greenland Shelves into the Lomonosov Ridge, Arctic Ocean", (2010), *Geophysical Journal International*, 11.

supporting evidence, that both Russia and Canada may be successful in claiming the Lomonosov Ridge as a submarine elevation.[471]

In summary, as with the Alpha – Mendeleev Ridge, coastal states will attempt to categorise the Lomonosov Ridge in the most advantageous way to maximise their ECS. It may have been that the 2001 submission was just too early in the CLCS experience and with insufficient evidence. It is strongly arguable that given the current level of data on the formation a very different decision would be reached.

6.4.4.3 The Tricky Issue of Subcommission Selection for Submissions Involving Submarine Ridges and Elevations

The issue of the overloaded schedule of the CLCS is well described in the literature[472] and five to ten years is currently the expected time frame for CLCS consideration of a submission.[473] There is, however, another aspect of the CLCS process which is a cause for concern.

The examination of a coastal state's submission is, except when the Commission decides otherwise, conducted by a subcommission specifically appointed by the Commission to deal with the particular submission.[474] Each subcommission is composed of seven members, who

[471] The Macnab words of caution to the CLCS discussed in relation to the Alpha – Mendeleev Ridge apply equally to the Lomonosov Ridge, see; Macnab (2008), footnote 351, *supra*. Certainly the United States appears to have learnt its lesson in rushing to judgment and admits that in 2002 it sent the *Note Verbale* based on inadequate information and 'an inadequate appreciation of the complexities of Arctic geology": Hayes, (2010), footnote 426, *supra*, at 475. The *2015 Russian Resubmission* appears based on extensive data collection and the reported 2000 pages of scientific data may well provide sufficient evidence, see the Executive Summary, *2015 Russian Resubmission*, *supra*, at 12-30 and the statement of the Russian Foreign Ministry reported in Antinova, footnote 332, s*upra*.

[472] Suzette Suarez, "Commission on the Limits of the Continental Shelf, (2010), Max Planck Yearbook of United Nations Law, Vol. 14, 131, at 134; CLCS, *Issues related to the workload of the Commission on the Limits of the Continental Shelf*, (2010), DOALOS, available at:
www.un.org/depts/los/clcs_new/clcs_workload.htm;
Galo Carrera Hertaldo, "Presentation of the Commission on the Limits of the Continental Shelf" (2010), a *presentation by the CLCS to the Informal Working Group of the MSP, UN,* 14 April 2010, available at:
www.un.orgs/los/clcs_new/workload/2010_04_14_workload_presentation.pdf.

[473] Christian Marcussen, project leader for the 2014 Danish Partial Submission for Greenland estimated that the consideration of the submission by the CLCS would occur in 2020: Marc Jacobsen, "High North Dialogue 2015 – Interview with Christian Marcussen",(2015),*The Arctic Institute*, 9 March 2015, available at:
www.thearcticinstitute.org/2015/03/030915-Interview-with-Christian-Marcussen.html.

[474] Article 5 of Annex II of UNCLOS. This section is based on much of the information contained in Suarez's section on the establishment of a sub commission: Suarez, op. cit., at 187 - 189.

are to be selected from the 21 members of the CLCS[475] on the basis of several considerations set out in Annex 5 of Annex II of UNCLOS and the Rules of Procedure[476], including that the Commission:

- ensure the highest possible integrity of the process[477];
- ensure that among the selected subcommission members there is the specific expertise required by the submission. The Commission is to take into account the scientific and technical needs of the submission and ensure, to the extent possible, a balance of scientific expertise and geographical representation[478];
- exclusion of members from states with any dispute (or potential dispute) regarding the submission[479];
- exclusion of ineligible members of the Commission under Article 5 Annex II, such as nationals of the submitting coastal state or members who have assisted/advised with the coastal state's submission[480];
- identification and disqualification of any members who "may, for other reasons, be perceived to have a conflict of interest".[481]

Article 2(1) Annex II of UNCLOS requires that members of the CLCS are (1) experts in the field of geology, geophysics or hydrography and (2) nationals of state parties, and that in their selection there has been "due regard to the need to ensure equitable geographical representation".[482] Article 2(1) Annex II of UNCLOS states that "no less than three members shall be elected from each geographical region". From Figure 6.18 it can be seen the current composition (with salient selection information) is the following:

[475] Currently 20 awaiting the replacement of the retired Georgian member (as of January 16 2015).
[476]Rules of Procedure of the Commission on the Limits of the Continental Shelf, 17 April 2008, CLCS/40/Rev.1, Part X, Rules 42 - 44, at 14 - 15, ("*CLCS Rules of Procedure*") available at: http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N08/309/23/PDF/N08309923.pdf?OpenElement.
[477] A view expressed by the Commission deliberating the composition of the sub commission for the 2001 Russian submission: See Paragraph 15, CLCS/48, 7 October 2005, at 3.
[478] Rule 42(1)(c), *CLCS Rules of Procedure*, footnote 476, *supra.*
[479] Rule 42(1)(b), *CLCS Rules of Procedure*, footnote 476, *supra.*
[480] Rule 42(1)(a), *CLCS Rules of Procedure*, footnote 476, *supra.*
[481] Rule 42(1)(b), *CLCS Rules of Procedure,* footnote 476, *supra.*
[482] Regional Groupings are: Africa ("AG"), Latin America and Caribbean ("GRULAC"), Asia-Pacific ("APG"), Western Europe and Others (WEOG) and Eastern Europe "EEG"). See: www.in,org/depts/DGACM/RegionalGroups.shml.

Country and regional grouping	**Opposite or adjacent State**	**Dispute**	**Expertise**	**Years of experience**	**Highest qualification**	**No potential conflict of interest regarding country**
Argentina ***GRULAC***	X	X	Geophysicist	40	Unclear but -Post graduate qualification as Geodetic and Geophysical Engineer and as Hydrographer	X
Brazil ***GRULAC***	X	X	Hydrographer with bathymetry expertise	40	PhD Hydrography	X
Cameroon ***AG***	X	X	Geologist	35	Engineering degree in petroleum geology	X
Canada/UK ***WEOG***	O	O	Geologist / Geophysicist	45	PhD Geology	O - Arctic State
China ***APG***	X	X	Marine geophysicist	45	Unclear level Geophysics	O - Arctic Council Observer
Denmark ***WEOG***	O	O	Geologist	30	PhD equivalent Geology	O - Arctic State
[Georgia] **[*EEG*]**	**VACANT**	-	-	-	-	-
Ghana ***AG***	X	X	Geologist/environmental protection	35	MSc Applied Geology	X
India ***APG***	X	X	Geologist Geophysicist	45	Master of Technology Applied Geology	O - Arctic Council Observer
Japan ***APG***	X	X	Geologist	40	PhD Geology	O - Arctic Council Observer
Kenya ***AG***	X	X	Geologist	20	MSc Geosciences	X
South Korea ***APG***	X	X	Geologist	50	PhD Marine Geology	O - Arctic Council Observer
Malaysia ***APG***	X	X	Geologist	30	PhD in tectonic/basin analysis MSc Sedimentology	X
Mexico ***GRULAC***	X	X	Hydrographer with geodetic expertise	30	University – level of qualification not provided	X
Mozambique ***AG***	X	X	Geologist and geophysicist	10	PhD Geophysics	X
Netherlands ***WEOG***	X	X	Geophysicist	25	PhD Marine Geophysics	O - Arctic Council Observer
Nigeria ***AG***	X	X	Geologist	30	PhD Geophysics	X
Pakistan ***APG***	X	X	Hydrographer	12	BSc Naval Studies. MA in Strategic Studies	X

Poland ***EEG***	X	X	Geologist Oceanographer	20	PhD Geology and DR. Hab. Geology	O - Arctic Council Observer
Russia ***EEG***	O	O	Geodesy, Hydrographer, Geology	55	Doctorate in Technical Science	O - Arctic State
Trinidad and Tobago ***GRULAC***	X	X	Hydrographer	35	BSc - Offshore Geodesy major	X
Legend: Green = Arctic State Aquamarine = state is Arctic Council member or observer Grey = member sat on 2001 Russian submission						

Figure 6.18: Table of current members of the CLCS with information relevant to selection for a subcommission dealing with Arctic delineation[483]

In the case of submissions involving the determination of the outer limits of Arctic ECSs, which will inevitably involve ridges and elevations, it is interesting to consider how these criteria may impact on the selection of subcommission members.

It can be suggested that all members who are nationals of any of the Arctic Five, or who are members or observers of the Arctic Council should be excluded as having a potential conflict of interest: this would include China, India, Japan, Poland and the Netherlands. [484]

The geographical spread of eleven available members is currently such that there would potentially be no available members from the WEOG or Eastern European group.

Moreover, with respect to a Russian resubmission, two of the remaining members, Carrera Hurtado of Mexico and Awosika of Nigeria, if still members at the time of resubmission, as members of the original subcommission, would be 'grandfathered' into the 'reconstituted'

[483] ©B. Sas 2015. From information on CLCS website at: www.un.org/depts/los/clcs_new/commission_members.htm.

[484] There may also be national strategies/policies that are also contraindicative: for example, in 2009 the Chinese Deputy Foreign Minister, Hu Zhengyue, is reported to have stated that "the Arctic beyond the 200nm EEZ of the A5 states belongs to all humankind": David Curtis Wright, "China's Growing Interest in the Arctic", (2013), *Journal of Military and Strategic Studies*, Vol. 15, No. 2, 50, at 52. For more recent reiterations of this view see the following and the footnotes contained therein: Francois Godement, David Cohen, Antoine Bondaz, Agatha Kratz, Raffaello Pantucci and Qingzhen Chen, "'One Belt, One Road': China's Great Leap Outward", (2015), *ECFR,* (June 2015), available at: www.ecfr.eu/page/-/China_analysis_belt_road.pdf; Shiloh Rainwater, "Race to the North: China and its Implications", (2013), *Naval War College Review*, Vol. 66, No. 2, (Spring 2013), 62; Linda Jakobson and Jungchao Peng, "China's Arctic Ambitions", (2012), *SIPRI Policy Paper No. 34*, November 2012, SIPRI.

subcommission, as happened in the case of the Russian resubmission in respect of the Sea of Okhotsk.[485]

Potentially then, for a Russian resubmission, there would be nine available members left to draw from for five vacancies – two of whom have less than 12 years of experience since graduation and three of whom have no postgraduate qualifications.[486] Thus, in terms of meeting the selection criteria for a subcommission and meeting the challenging issues in the analysis of submitted scientific data of an Arctic delineation involving the complex and relatively specialist issues of ridges and elevations, there may be some selection concerns.

To address this potential issue it may be that the CLCS should propose to a Meeting of States Parties the enlargement of its membership before the CLCS Recommendations on the Danish submission for Greenland, before the future resubmission of Russia, and the Partial Submission regarding the Arctic by Canada come up for consideration.[487]

6.4.4.4 General Conclusions Regarding the Problematic Definitions of Submarine Ridges and Submarine Elevations under Article 76

The analysis above demonstrates the pivotal role submarine ridges may play in the delineation of the outer limits of the continental shelf, especially in the Arctic Ocean. However, UNCLOS and public international law generally have fallen short, at least in the Arctic context, in providing (through convention, customary international law, or judicial decisions) clear and precise terminology for these crucially important subsea features, or guidelines as to the crucial characteristics of each category and the nature and standard of data necessary to evidence the distinguishing characteristics. Thus, problems have arisen in the application of Article 76 provisions relating to these subsea features in CLCS submissions, as discussed above.

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[485] CLCS, *Summary of Recommendations of the Commission on the Limits of Continental Shelf in Regard to the Partial Revised Submission made by the Russian Federation in respect of the Sea of Okhotsk on 28 February 2013*, (2014), CLCS, para. 6, at 2, available at: www.un.org/Depts/los/clcs_new/submissions_files/rus01_rev13?2014_03_13_COM_REC_RUS_summary.pdf.

[486] The desire to have Awsika and Carrera Huraldo on the CLCS considering the resubmission may have been a factor in the rushed *2015 Russian Resubmission* as their terms will elapse in 2017? – see footnote 332, *supra*.

[487] This is now clearly not going to happen before the Russian Resubmission, but might occur to some extent before the CLCS' consideration of the 2015 Russian Resubmission.

The CLCS's 1999 Guidelines provide only the most basic descriptions and characteristics of the different categories of subsea features, when what is needed at least in the Arctic Ocean context is precise and clear terminology and evidential guidelines. The analysis of the Arctic ridges and elevations, which are extremely long and/or large, demonstrates the significance these issues can have on the categorisation of a subsea feature and therefore on the outer limits of an ECS.

The situation is further compounded by the lack of transparency of the Article 76(8) process, where submissions, recommendations and other communications are confidential. The Executive Summaries, as has been shown in relation to Arctic subsea features, are often terse and uninformative, especially as to the rationale behind the categorisation and the evidential base that was provided or required.

The examination of Arctic ridges and elevations demonstrated the significant practical difficulties that have been faced by Arctic states (Russia, Norway, and Denmark) in making submissions and confirms that to date they have indeed been the 'wild cards' in the Macnab 'poker game' of the Article 76(8) submission process.

In practice, at least in the Arctic, these difficulties may prove to be surmountable. As scientific technology rapidly develops and the ice melts in the Arctic Ocean, the mapping of these previously inaccessible seafloor features becomes easier and more able to provide convincing evidence. The imprecision of the definitions and requirements for categorising subsea features can in fact work both ways. It allows potential wiggle room for claimants, especially given that the CLCS has made several decisions on subsea highs "on balance", but it also allows other states to challenge the claims (which the Americans did so forcefully in 2002 with respect to the 2001 Russian CLCS Submission). However, it may be that the Russian 2001 submission was simply a step too early.

Since 2002 there has been significant scientific cooperation and collaboration among the Arctic Five, and this sharing of information and methods of interpretation may well be leading to a common understanding of the subsea features of the Arctic Ocean. Moreover, as the 2008 Ilulissat Declaration, the Arctic Five now appear to have agreed that, within the bounds permitted by UNCLOS and international law, it is in their common interest to jointly

maximise their ECS delineation claims, and then, by negotiation between themselves, sort out any overlapping claims. Thus, international law may have in fact left avenues available through which the Arctic Five will probably collectively optimise their ECS claims.

If these suppositions are correct, then it is likely that, for future CLCS submissions, negative comments from the Arctic Five on the categorisation of Arctic subsea features (such as occurred in 2002 with the Lomonosov Ridge) are highly unlikely and the onus will rest solely upon the CLCS to ensure the correct categorisation of Arctic subsea features.

On this responsibility of the CLCS a final comment can be made. Given the Arctic Ocean Region's economic, political, and strategic importance, it would be a legitimate expectation that the international legal regime would provide the very best scientific expertise and experience to assist in the categorisation of these subsea features to facilitate the delineation of the ECSs in this region, which in turn impacts on extent of the Area and the common heritage of mankind. However, as discussed above, there may be a question mark over such an assumption.

6.4.5 Dispute Settlement and Article 76

6.4.5.1 Article 76 and Recourse to Part XV of UNCLOS

Given that Article 76 contains a specific procedure to establish the outer limits of the continental shelf, the question is raised as to what extent states are precluded from recourse to Part XV of UNCLOS. This issue has been examined by the ILA[488] and several authors.[489] As Eiriksson comments, the relevant provisions of UNCLOS are unclear on this point and recent literature on the subject evidences a surprising lack of accord among jurists.[490] Karagiannis takes the view that recourse to Part XV is excluded[491], as do Smith and

[488] ILA, Committee on the Legal Issues of the Outer Continental Shelf, (2004), Section 4: Dispute Settlement in Relation to Article 76, at 7 - 12.

[489] Gudmundur Eiriksson, "The Case of Disagreement Between a Coastal State and the Commission on the Limits of the Continental Shelf", op. cit., at 258

[490] Anna Cavnar, "Accountability and the Commission on the Limits of the Continental Deciding Who Owns the Ocean Floor,", (2009), *Cornell International Law Journal*, Vol. 42, 387; McDorman, (2002), at 315 - 318; Macnab, (2004), op. cit., at 1 - 17; Nelson, (2002), op.cit., at 1238 - 1240; Nelson, (1999), at 577 - 582; Smith and Taft, op. cit., at 20; Suarez, op.cit., at 213 – 216; A. A. Zinchenko, "Emerging Issues in the Work of the Commission on the Limits of the Continental Shelf", (2004), in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, J. N. Moore, and T. H. Heidar, eds.), 223, at 226 – 227.

Taft.[492] However, Anderson considers that Article 76 is in principle not exempt from dispute settlement procedures under Part XV of UNCLOS and this view is also that of Brown[493], McDorman[494], and Antunes and Pimental[495], all of whom argue that disputes regarding controversial issues in submissions/recommendations under Article 76 can be resolved by the dispute settlement mechanisms set down in Part XV of UNCLOS and international law in general for state parties. Their arguments appear significantly more convincing than those of Karagiannis or Smith and Taft, and their view is reflected in the ILA's approach to the issue.[496]

Non-party States to UNCLOS are under no obligation whatsoever with regard to the CLCS's recommendations[497], but may submit (and in practice have done so[498]) their comments to the CLCS on an ECS submission.[499] The CLCS made a ruling on the admissibility of comments of Non-party States when the United States submitted its comments on the 2002 Russian ECS submission. It referred to Annex II of its Rules of Procedure[500] which provides that third states may have a role in the submission/recommendation process in cases where it has overlapping claims with the submitting state or where there is a case of an unresolved maritime or land boundary dispute between the two.[501] In this case it found that the United

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[491] S. Karagiannis, "Observations sur la Commission des Limites du Plateau Continental", (1994), *Espaces et Resources Maritimes*, Vol. 8, 163, at 189.

[492] They maintain that the UNCLOS drafters deliberately opted to exclude the establishment of the outer limits of the ECS from compulsory and binding third party dispute settlement procedures: Smith and Taft, op. cit., at 20.

[493] E. D. Brown, *Sea Bed Energy and Mineral Resources and the Law of the Sea: The Area within National Jurisdiction,* (1984), Graham and Trotman, at I.4.15 – 16.

[494] McDorman, (2002), op. cit., at 315 - 316 and 317 - 319.

[495]Antunes and Pimental found no evidence to suggest that Article 76 is excluded from the dispute resolution mechanisms of UNCLOS; Antunes and Pimental, (2003), op. cit., at 29. But see Proelss and Müller, op. cit., at 680 - 681.

[496] ILA, (2004), op. cit., at 10.

[497] Proelss and Müller, op. cit., at 680.

[498] The Government of the United States of America, *Comments of the United States of America to the Russian Submission to the Commission on the Limits of the Continental Shelf*, 28 February 2002, CLCS.01.2001.LOS/USA, 1, at 1 - 3.

[499] Suarez, op. cit., at 180

[500] CLCS, *Rules of Procedure*, (2004), CLCS/40, 2 July 2004, CLCS.

[501] CLCS, *Statement of the Chairman of the Commission on the Limits of the Continental Shelf in the Progress of the Work in the Commission*, 14th Session, CLCS/42, 14 September 2004, 1, at 4.

States had no such interests and therefore it decided not to consider the comments of the United States in this instance.[502]

Although States Parties have the right to submit comments on and object to a submission of a coastal state to the CLCS[503], Proelss and Müller argue convincingly that they are generally estopped from challenging the legality of maritime delineation made on the basis of a CLCS recommendation, due to its 'final and binding' nature.[504] However, in case of delineation infringing upon the rights of states with adjacent or opposite coasts the opposite conclusion must be drawn (Article 76(10)).[505]

Proelss and Müller consider that if a coastal State Party does not delineate its ECS according to a CLCS recommendation then this is primarily a procedural violation of Article 76.[506] However, where a state with adjacent or opposite coasts considers the delineation an infringement of its rights/claims, it may initiate legal action under the dispute settlement provisions of Part XV of UNCLOS.[507]

A third state, when it considers that such an ECS delineation breaches Article 76, would, in an action before an international tribunal or court, need to establish *locus standi,* which may prove to be difficult.[508] This issue, due to its importance, will now be analysed briefly.

6.4.5.2 Third states and 'locus standi' in respect of Alleged Excessive ECS Claims

(1) Preliminary Comments

[502] Ibid..The United States requested the CLCS reconsider its decision. It did but after deliberation it upheld it: CLCS, *Statement of the Chairman of the Commission on the Limits of the Continental Shelf in the Progress of the Work in the Commission*, 3 May 2005, CLCS/44, para.17, at 4.

[503] G. Taft, "Applying the Law of the Sea Convention and the Role of the Scientific Community Relating to Establishing the Outer Limit of the Continental Shelf Where it Extends Beyond the 200 Mile Limit", (2007), in *Law, Science and Ocean Management*, (M. H. Nordquist, R. Long, T. H. Heidar, and J. N. Moore, eds.), 469, at 471 - 472.

[504] Proelss and Müller, op. cit. at 677 - 678. On the other hand, some jurists, such as Professor T. L. McDorman, strongly disagree with this view, arguing that Article 76(8) does not restrict any state from protesting the location of an outer limit of the shelf beyond 200nm even when that limit is consistent with the recommendation of the CLCS.

[505] Ibid..

[506] Ibid..

[507] Ibid..

[508] Proelss and Müller, op. cit., at 678, but cf. R. Wolfrum, "The Role of International Dispute Settlement Institutions in the Delimitation of the Outer Continental Shelf", (2006), in *Maritime Delimitation,* (R. Lagoni and D. Vignes, eds.), Martinus Nijhoff, 19, at 30.

Before analysing the issue of the *locus standi* of third states in relation to alleged excessive ECS claims, several preliminary points are worth making:

- From Article 291(2) of UNCLOS the dispute settlement mechanisms entailing binding decisions of Part XV of UNCLOS are open only to Non-party States as specifically provided for in the Convention. In terms of the Area and common heritage or Article 76 of UNCLOS there is no such explicit provision for disputes.[509] Thus, a state that is not party to UNCLOS, but has independently accepted the jurisdiction of the ICJ, might seek to bring an action before the ICJ, but it is by no means certain that the allegedly delinquent state (even if a party to UNCLOS) would need (or choose) to accept that court's jurisdiction in such a case.[510]
- Although a Non-party State may under customary international law validly delineate a continental shelf without being obliged to submit information to the CLCS, its delineation beyond 200nm cannot benefit from Article 76 provisions, in particular Article 76(8). Therefore, it may experience difficulties in securing its claim and acceptance by the international state community.[511]
- In the event that a State Party considers a Non-party State's ECS excessive, it could attempt to bring a case before the ICJ, but the jurisdiction of the court in such a contentious case is based upon the consent of the states involved, which, in issues as fundamental to state sovereignty and possibly security as the delineation of the continental shelf, may not be forthcoming.[512]
- A Non-party State in delineation of its ECS cannot violate Article 76 *per se,* although another state may consider its ECS claim excessive. In this case the other state will face the same issues for a third Non-party State against a state Party whose claim is considered excessive, which is discussed below.
- Furthermore, it may be that the nature of the violation in relation to an ECS claim is relevant (for example, if the claim relates to the aspects of the submission by a coastal state under Article 76(8)) where a State Party may have failed either (1) to make a timely submission, or (2) to make the CLCS's recommendations 'the basis of' the

[509] On this see ILA, (2004), op. cit., at 8.

[510] The state may have subscribed to the optional clause in Article 36(2)(b) of the Statute of the International Court of Justice, but if a state party it may be bound by Articles 287-288 but equally well have made a declaration under Article 298(1)(a)(i), or if a non – state party it may have adopted a consent *ad hoc* approach. See Suarez, op. cit., at 230.

[511] Rudiger Wolfrum, "The Outer Continental Shelf: Some Considerations Concerning Applications and the Potential Role of the International Tribunal for the Law of the Sea", (2008), *a statement by the President, ITLOS at the 73rd Biennial Conference of the International Law Association, Rio de Janeiro, Brazil*, 21 August 2008, available at:
www.itlos.org/fileadmin/itlos/documents/statements_of_president/wolfrum/ila_rio_210808_eng.pdf.

[512] Relevant to the Arctic is the approach of the United States: in 1986 the United States withdrew its acceptance of the compulsory jurisdiction of the ICJ given by a declaration under Article 36(2) of the Statute of the ICJ - see: S. D. Murphy, "The United States and the International Court of Justice: Coping with Antinomies", (2009), in *The United States and International Courts and Tribunals*, (Cesare Romano, ed.), Cambridge University Press.

claimed outer limits of its continental shelf. It seems highly doubtful that a state failing to lodge its submission within the time frame established in Article 4 of Annex II of UNCLOS or failure to make the CLCS recommendations the basis of its ECS claim would forfeit a claim to its ECS.[513] Rather, as in the case of a Non-party State's ECS claim, the non-compliant state's claim would merely be deprived of the possibility of gaining what legal certainty Article 76(6) provides. It is arguable that this failure is not relevant to the validity of the ECS claim and its capability of being accepted (or not) by the community of states.[514] In the two example cases, it is unlikely a third state could establish *locus standi* in terms of such procedural 'breaches'.[515]

- Moreover, a third state would be hampered in ascertaining how the limits of the ECS were determined by the lack of public access to the detail of the CLCS recommendations and submissions, and it would be difficult for a third state to ascertain to what extent there has been a failure of the state to act 'on the basis of' recommendations prior to bringing an action.[516] Even where the third state is a State Party, access to information during litigation is not guaranteed. In the event of litigation under Part XV concerning alleged excessive ECS, Article 302 of UNCLOS is relevant. It states that:

> "Without prejudice to the right of a State Party to resort to the procedures for the settlement of disputes provided for in this Convention, nothing in this Convention shall be deemed to require a State Party …to supply information the disclosure of which is contrary to the essential interests of its security".

It is possible, if not probable, that the respondent state would invoke Article 302, and implead national security, with respect to information relating to its continental shelf. However, on the other side, Oxman considers the 'without prejudice' phrase should be understood as implying that if a state chooses to withhold information it cannot require that the case be dismissed or the issue decided in its favour merely because it has a right to withhold information necessary to proper adjudication.[517]

In order to require divulgence of the detailed data relating to the delineation of an ECS under Article 76(8), a court would have to be satisfied that the applicant state is not primarily on a 'fishing expedition' especially in regard to commercially sensitive information.

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[513] Proelss and Müller, op. cit., at 677; Wolfrum, (2008), op. cit., at 7 - 8.

[514] Wolfrum, (2008), op. cit., at 8.

[515] See Proelss and Müller, op. cit., at 675, and Rainer Lagoni, "Festlandsockel und Ausschliessliche Wirtschaftszone", (2006) in *Handbuch des Seerechts*, (Wolfgang Graf von Vitzthum, ed.), Verlag C. H. Beck Munchen, 161, at 168.

[516] Ron Macnab "The Case for Transparency in the Delimitation of the Outer Continental Shelf in Accordance with UNCLOS Article 76",(2004), *ODIL*, Vol. 35, 1 – 17.

[517] B. H. Oxman, "The Third United Nations Conference on the Law of the Sea: The Ninth Session (1980)", (1981), *AJIL*, Vol. 5, 211 at 239. The ILA stated that the same consideration would also be applicable in a case involving the outer limits of the continental shelf: ILA (2004), op. cit., at 14.

A conclusion should be recalled from the previous subsection: third states parties are generally estopped from challenging the legality of maritime delineation made on the basis of a CLCS recommendation, due to its 'final and binding' nature.[518] Whether a Non-party State is equally obliged is doubtful, although it would have to have very compelling evidence to bring an action with respect to outer limits of an ECS delineated on the basis of the recommendations of the CLCS.

- Proelss and Müller consider it necessary to distinguish carefully between the procedural level (the relationship between the state and the CLCS) and the substantive level (the relationship between the state and the community of states).[519] They conclude that, in the two examples given above, "the necessary legal interest of a third state may, arguably, not be deduced from the *mere* breach of Art. 76(8) UNCLOS" (emphasis added).[520] Thus, the following discussion will focus on substantive violation of international law regarding the delineation of the ECS.
- Finally it should be borne in mind, with respect to Arctic Ocean disputes, that both Canada and Russia made declarations on ratification of UNCLOS under Article 298 that they do not accept the compulsory procedures for the settlement of disputes with respect to sea boundary delimitations.[521] Denmark and Norway declared on ratification of UNCLOS that they did not accept an arbitral tribunal as constituted under Annex VII for Article 298 disputes, but otherwise have accepted the compulsory procedures under UNCLOS.[522] The United States withdrew its acceptance of the ICJ's compulsory jurisdiction in 1986.[523] Thus, it would seem that for three of the five Arctic Ocean states the ICJ or ITLOS will have jurisdiction only by mutual concept of the parties.

Legal disputes relating to delineation and delimitation of the ECS, including delimitation vis à vis the Area, involve two issues: the jurisdiction of the international courts and tribunals and the *locus standi* of the parties to the dispute. Given the above discussion that any cases involving an Arctic State will be brought before the ICJ or ITLOS only by mutual consent of

[518] Proelss and Müller, op. cit. at 677 - 678. See also footnote 504, supra.
[519] Proelss and Müller, op. cit., at 676. But cf. ILA, Toronto Conference 2006, Conclusion 20, at 26.
[520] Proelss and Müller, op. cit., at 678. But cf. E. D. Brown, *The Area Within National Jurisdiction*, Vol. 1, I.4 15-6.
[521] For the declarations and statements made by counters on ratification of UNCLOS see: DOALOS, *Declarations and Statements*, website updated to 29 October 2013, available at: www.un.org/depts/los/convention_agreements/convention_declarations.htm.
[522] Ibid.. Moreover Denmark has since 1956 accepted by a declaration under Article 36(2) of the Statute of the ICJ the compulsory jurisdiction of the ICJ in any dispute involving another state that accepts the same obligation - as similarly did Norway in a 1996 declaration: see ICJ, *Declarations Recognizing the Jurisdiction of the Court as Compulsory*, available at: www.icj-cij.org/jurisdiction/?p1=5&p2=1&p3=3.
[523] Reproduced in: (1986), *AJIL*, Vol. 80, 165. On the termination see: Anthony D'Amato, "The United States Should Accept, by a new Declaration, the General Compulsory Jurisdiction of the World Court", (1986), *AJIL*, Vol. 80, 331.

the parties or as a function of reciprocity under Article 298, the following subsections are restricted to addressing the general issue of *locus standi* of third states to an ECS dispute.

(2) Does Article 48 (1) of the ILC's Articles on the Responsibility of States for Internationally Wrongful Acts Provide the Answer?

Article 48(1) of the ILC's Articles on the Responsibility of States for Internationally Wrongful Acts states:

> "Article 48. Invocation of responsibility by a State other than an injured State
>
> 1. Any State other than an injured State is entitled to invoke the responsibility of another State in accordance with paragraph 2 if: (a) the obligation breached is owed to a group of States including that State, and is established for the protection of a collective interest of the group; or (b) the obligation breached is owed to the international community as a whole.
>
> 2. Any State entitled to invoke responsibility under paragraph 1 may claim from the responsible State: (a) cessation of the internationally wrongful act, and assurances and guarantees of non-repetition in accordance with article 30; and (b) performance of the obligation of reparation in accordance with the preceding articles, in the interest of the injured State or of the beneficiaries of the obligation breached.
>
> 3. The requirements for the invocation of responsibility by an injured State under articles 43, 44 and 45 apply to an invocation of responsibility by a State entitled to do so under paragraph 1." [524]

This subsection will examine whether there is some evidence of *opinio juris* in respect of Article 48 (1) of the ILC's *Articles on the Responsibility of States for Internationally Wrongful Acts* ("ILC Articles")[525], that a third state has *locus standi* in an action with respect to an alleged excessive ECS. Triggs, Oppenheim, and Caron describe the ILC Articles as a mixture

[524] *Draft articles on Responsibility of States for Internationally Wrongful Acts, with commentaries 2001*, Text adopted by the International Law Commission at its fifty-third session, in 2001, and submitted to the General Assembly as a part of the Commission's report covering the work of that session (A/56/10), available at: file:///C:/Users/Pavilion/Downloads/9_6_2001%20(1).pdf.

[525] James Crawford, *The International Law Commission's Articles on State Responsibility, Introduction, Text and Commentaries*, (2003), Cambridge University Press; James Crawford, *Brownlie's Public International Law,* (2012), 8th Edn., Oxford University Press, at 539 – 565; David D. Caron, "The ILC Articles on State Responsibility: The Paradoxical Relationship Between Form and Authority", (2002), *AJIL*, Vol. 96, 857; James Crawford, "The ILC's Articles on Responsibility of States for Internationally Wrongful Acts", (2002), *AJIL*, Vol. 96, No. 4, 874.

of codification and progressive development.[526] The question is whether they have evolved by 2015 into customary international law.

Since 2001 the ILC Articles have been the frequent subject of debate at the 6th Committee (Legal) of the General Assembly of the United Nations.[527] From a 2013 ILC discussion on the next steps for the ILC Articles, the 6th Committee reports that states expressed their various views and that four main options emerged: (1) the negotiation of an international convention on the basis of the ILC Articles, (2) the adoption of the ILC Articles by the GA in the form of a resolution or declaration, (3) further consideration of the ILC Articles prior to a decision and (4) status quo with no further action.[528] Further consideration and a decision as to the future of the ILC Articles are scheduled for the 71st session.[529] Thus, until then, generally the final form of the ILC Articles and their status remains undetermined, although clearly a good many of the provisions are statements of customary international law.

Since their adoption by the ILC, the UN General Assembly 'noting' them and appending them to a resolution in 2001[530], the ILC Articles have been referenced by international tribunals and courts and they have proved highly influential – in fact, according to Caron and Triggs, arguably too influential "if tribunals continue to adopt their terms without scrutiny".[531]

Turning to analyse the specific ILC Article relevant to the issue of *locus standi* of non-injured states: Article 48. Weiss indicates that Article 48(1)(b) was "still controversial" in 2002, and did not represent the codification of international law, but rather an innovative evolution from the *obiter dict*a of the *Barcelona Traction Case* (discussed above).[532] The ILC drew a distinction in Article 48(1) between obligations owed to particular states and those owed to

[526] Caron, op. cit., at 857; Robert Jennings and Arthur Watts, Oppenheim's International Law, (1992), 9th Edn., Vol. 1 , at 503; Triggs, op. cit., at 510.
[527] The 56th, 59th, 62nd, 65th and 68th sessions: General Assembly of the United Nations, Legal Sixth Committee, available at:
www.un.org/en/ga/sixth/68/StateRes.shtml.
[528] General Assembly of the United Nations, 68th session, (2013), available at:
www.un.org/en/ga/sixth/68/RespStatesWrong.shtml
[529] Ibid..
[530] UN GA, GA Resolution 56/83, 12 December 2001, available at:
www.un.org/docs.
[531] Triggs, op. cit., at 510. Caron discusses this issue: Caron, (2002), op. cit., Parts III and IV, at 867 – 873.
[532] Edith Brown Weiss, "Invoking State Responsibility in the 21st Century", (2002), *AJIL*, Vol. 96, 798 at 804.

'the international community as a whole'. Although the ICJ in the *obiter dicta* in the *Barcelona Traction Case* had referred to these international community obligations as *erga omnes* obligations[533], the ILC avoided the term on the grounds that it has sometimes been confused with obligations owed to all parties to a treaty (what has been termed in the thesis *erga omnes partes).* Crawford has indicated that the terminology was also chosen to widen the range of parties which can bring an action (i.e. to include Non-party States*)* and a deliberate departure from the South West Africa Case[534], where the court refused *locus standi* for 'a people'*.*[535]

Article 48(1)(b) permits states to raise claims regarding obligations owed to 'the international community as a whole'. Crawford detects and analyses a 'trajectory' of the evolution of the possibility to bring action for obligations owed to the international community as a whole.[536]

The key question is what is included in this category of obligations.[537] The ICJ in the *Barcelona Traction Case* listed several such obligations, all of which are universally considered *erga omnes* obligations: acts of aggression, genocide, slavery, and racial discrimination – in fact, the prohibition of all of these are also *jus cogens*.[538] The judgment in the *East Timor Case*[539] added the recognition of self-determination to the list. The Separate Opinion of Judge Weeramantry in the 1997 *Gabcikovo Nagymaros Case* suggests that the protection of the environment beyond national jurisdiction may have evolved to now

[533] Maurizio Ragazzi, *The Concept of International Obligations Erga Omnes*, (1997), Oxford Monographs in International Law; Alfred P. Rubin, "*Actio Popularis, Jus Cogens*, and Offences *Erga Omnes*", (2001), *New England Law Review*, Vol. 35, No. 2, 265.

[534] *South West Africa (Ethiopia v. South Africa) Second Phase* ("South West Africa Case"), (1966), Judgment of 18 July 1966, ICJ Rep. 1966, 6.

[535] Crawford, (2003), Article 25, para.1 8 (Article 25 is where the phase "international community as a whole" is first introduced). See also "Draft Articles on the Responsibility of States for Internationally Wrongful Acts with Commentaries", (2001) in *The Yearbook of the International Law Commission, 2001*, Vol. II, Part Two, at 127, available at:
http://legal.un.org/lc/texts/instruments/english/commentaries/9_6_2001.pdf.

[536] Crawford, (2012), op. cit., Chapter 27: Multilateral Public Order, at 590 – 593.

[537] Weiss, op. cit., at 804; Karl Zemanek, "New Trends in The Enforcement of erga omnes Obligations", (2000), *Max Planck Year Book* , UN L. 1, available at:
www.mpil.de/files/pdf2/mpunyb_zemaek_4.pdf

[538] See Crawford, (2012), op. cit., at 594 – 598.

[539] "Portugal's assertion that the right of peoples to self-determination...has an erga omnes character, is irreproachable": *East Timor (Portugal v. Australia), ("East Timor Case")* (1995), ICJ Rep. 90, para.29, at 102.

creating *erga omnes* obligations.[540] This view was reflected in the Crawford commentary on the 2001 ILC Articles, where it mentions rules of special importance for safeguarding the human environment and rules prohibiting large pollutions of the world as being obligations *erga omnes*.[541] However, it has not been settled judicially that generally protection of the environment beyond national jurisdiction has *erga omnes* status.[542]

More importantly, there has been no decision of an international court or tribunal on the status of the general concept of the common heritage of mankind, although in the specific context of mining activities in the Area the *obiter dicta* of the Seabed Disputes Chamber of ITLOS in the *Deep Seabed Mining Advisory Opinion*[543] can be considered indicative, and it will be examined in greater depth in the next subsection.

Crawford cautions that:

> "Such decisions [such as the ones cited above and in his list to demonstrate the 'trajectory'] confirm that the mere invocation of a peremptory norm is not an automatic answer to the question at hand [re *locus standi*]: it injects a new element into the enquiry which may be expected to be influential but not necessarily decisive"[544]

[540] "There is substantial evidence to suggest that the general protection of the environment beyond national jurisdiction has been received as obligations erga omnes": *Case Concerning the Gabcikovo Nagymaros Project (Hungary v. Slovakia), ("Gabcikovo Nagymaros Case")*, (1997), Separate Opinion of Vice-President Weeramantry, Judgment of the 25 September 1997, (1997), ICJ Rep., 7, at 85 - 116.

[541] James Crawford (Special Rapporteur), *Third Report on State Responsibility*, (2000), ILC, Doc. A/CN.4/507 and Add. 1-4, para. 88, at 30.

[542] A useful review of various juristic opinions is given by Rachel Lorna Johnstone, "*Erga omnes* obligations in international environmental law", (2013), a *presentation given at the University of Akureyi*, 9 December 2013, available at:
www.abdn.ac.uk/law/documents/Rachael_Johnstone_slides.pdf; See also: Natalie Klein and Tim Stephens, "Whaling in the Antarctic: Protecting Rights in Areas Beyond National Jurisdiction through International Litigation", (2014), in *The Limits of Maritime Jurisdiction*, (Clive Schofield, Seokwoo Lee, and Moon – Sang Kwon, eds.,), Chapter Twenty – Three, 525.

[543] Seabed Disputes Chamber ITLOS, *Advisory Opinion: Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*, ("Deep Seabed Mining Advisory Opinion"), (2011), Case No. 17, 1 February 2011, ITLOS, available at:
www.itlos.orf/fileadmin/itlos/documents/cases/case_no_17/adv_op_010211.pdf.

[544] Footnote 541, *supra*.

On this point, in 2000 Zemanek noted the ICJ's avoidance of "giving force to claims based on the *erga omnes* character of an obligation in spite of having recognised them in principle".[545] Have things changed in the last fifteen years?

It seems that issues regarding Article 48(1)(b) have been the subject of very little judicial attention since 2001 and only two cases are relevant:

(1) *Wall Advisory Opinion*[546]: the ICJ affirmed that the rules of international humanitarian law 'incorporate obligations which are essentially of an *erga omnes* character".[547]
(2) Judge Simma in his Separate Opinion in the *Congo v. Uganda Case*[548]: Judge Simma stated: "…it is to be remembered that at least the core of the obligations deriving from the rules of international humanitarian and human rights law are valid *erga omnes*".[549]

Thus, although there has been further evolution in the ICJ's thinking on *erga omnes* obligations with respect to humanitarian law and human rights, it appears much slower in other areas, even in the field of global environmental protection.

Although, as mentioned earlier, the future status of the ILC Articles and their precise form have yet to be finally determined, since their adoption at the second reading by the ILC in 2001, international courts and tribunals have taken to referring to Article 48 in their decisions, but none have indicated that Article 48 (and in particular Article 48(1)(b)) has as yet become customary international law.

It can therefore be argued that Article 48(1)(b) and its use to date, although indicative of the judicial widening of eligible *erga omnes* obligations, does not really offer much assistance in answering the specific question of *locus standi* of third Non-party States on the basis of the

[545] Zemanek, op. cit., at 11.
[546] *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, ("Wall Advisory Opinion")*,(2004), Advisory Opinion of 9 July 2004, ICJ Rep.,136.
[547] Ibid., paras. 157 and 158, at 199 - 200.
[548] *Armed Activities on the Territory of the Congo (Democratic Republic of the Congo v. Uganda)*, (*Congo v. Uganda Case*), Judgment of the 19 December 2005, Separate Opinion of Judge Simma, (2005), ICJ Rep., 168 - 186.
[549] Ibid., para. 39, at 185.

common heritage principle in respect of delineation issues. It is noteworthy, as Franckx points out, that the Crawford commentary on Article 48[550] "does not mention the common heritage principle as a possible field of application". [551]

(3) Third States and 'locus standi' Regarding Alleged Excessive ECS claims

Since it is generally agreed by authors on the topic that neither the CLCS nor the ISA have standing to challenge the delineation of the ECS by a coastal state before courts referred to in Part XV of the Convention[552], in cases of alleged excessive ECSs, it is a question of whether states, either State Parties or Non-party States, may have standing to challenge excessive delineation of an ECS before an international court or tribunal, and if so, on what basis could they do so.

Both Suarez and Wolfrum view the possibilities of third states bringing actions on the bases of special individual interests positively[553], either arguing that an excessive ECS claim has taken from the Area potential mining sites that could otherwise be exploited under Article 153 paragraph 2, or arguing that the excessive ECS claim in reducing the Area could reduce the benefits derived from economic activities in the Area and potentially its share (Article 140). The ILA agrees with these possible approaches as justifying a definite legal interest of the third state and thus conveying *locus standi*.[554] The ILA has posited that the existence of high seas freedoms in the seabed and subsoil under Article 87 will also give states a legal

[550] Crawford , (2003), . cit., at 276 - 280.
[551] Erik Franckx, "The *International* Seabed Authority and the Common Heritage of Mankind: The Need for States to Establish the Outer Limits of their Continental Shelf", (2010), *IJMCL*, 543, footnote 116, at 561 - 562. Although the Commentary does mention Article 194 of UNCLOS in relation to pollution of the high seas.
[552] G. Eiriksson, "The Case of Disagreement Between the Coastal State and the Commission on the Limits of the Continental Shelf", (2004), in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff, 251 at 256; Franckx, (2010), op. cit., at 556 -561; McDorman, (2002), op. cit., at 323 - 324; Proelss and Müller, op. cit., at 676 - 677; Suarez, op. cit., at 123 -125, Wolfrum, (2008), op. cit., at 12 - 13; A. A. Zinchenko, "Emerging Issues in the Work of the Commission on the Limits of the Continental Shelf", in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), Martinus Nijhoff, 223, at 226 – 227.
[553] Suzette Suarez, "The Outer Limits of the Continental Shelf: Legal Aspects of their Establishment", Chapter 8, (2008), in *Beiträge zum ausländischen öffentlichen Recht und Völkerrecht*, Band 199, 239, Max - Planck – Gesellschaft zur Förderung der Wissenschaften, at 250; Wolfrum, op. cit., (208), at 13 - 14.
[554] ILA, "Legal Issues of the Outer Limits of the Continental Shelf", (2004), *Report of the 71st Conference, ILA*, at 780.

interest in defining the limits of national jurisdiction.[555] This 'specific interest' approach would also be consistent with the approach adopted in Article 48(1)(a) of the ILC Articles.[556]

The ILA also asserts that, in the event a state considered these limits have not been established in accordance with the substantive or procedural requirements of Article 76, this would constitute a dispute for the purposes of Article 279 of UNCLOS, which relates to disputes on the interpretation or application of the treaty. However, dispute settlement mechanisms of Part XV are not, unless specifically provided in UNCLOS, open to Non-party States. Another possible and key option would be for the third state to attempt to justify standing by having recourse to the principle of the common heritage of mankind[557], as expressed in respect of the Area in Article 136 of UNCLOS, and to collective common

[555] ILA, *"*Legal Issues of the Outer Limits of the Continental Shelf*"*, (2004), *Berlin Conference 2004,* ILA, at 8.

[556] Article 48(1) provides that: "any State other than injured State is entitled to invoke the responsibility of a State…if: (a) The obligation breached is owed to a group of States including that State, and is established for the protection of a collective interest of the group". Pellet *et al*, Birnie *et al*, and Iwasawa all express agreement with such an approach: Patrick Daillier, Mathias Forteau and Alain Pellet, *Droit International Public*, (2009), 8eme Edn., L.G.D.J., at 899; Alain Pellet, "The ILC's Article on State Responsibility for International Wrongful Acts and Related Texts", (2010), in *The Law of International Responsibility*, (James Crawford, Alain Pellet and Simon Olleson, Oxford University Press, Chapter 9, 75; Patricia Birnie, Alan Boyle, and Catherine Redgwell, *International Law and the Environment*, (2009), 3rd Edn., Oxford University Press, at 234; Yuji Iwasawa, "The Diversity of International Obligations: with a Focus on Obligations *erga omnes*", (2008), in *Essays in Honor of Professor Yasuaki Onuma: Horizons of International Law*, (Junji Nakagawa and Koji Teraya, eds.), Toshindo, Tokyo, 123, at 144 and 158 - 159. [original in Japanese cited parts translated by friend].

[557] For authoritative expositions on the principle see: R. P. Anand, "Common Heritage of Mankind: Mutilation of an Idea, (1997), *Indian Journal of International Law*, Vol. 37, 1; Kemal Baslar, The Concept of the Common Heritage of Mankind in International Law, (1998), Martinus Nijhoff; E. D. Brown, "Freedom of the High Seas versus the Common Heritage of Mankind: Fundamental Principles in Conflict", (1982), *San Diego Law Review*, Vol. 20, 521; Vladimir – Djuro Degan, "The Common Heritage of Mankind in the Present Law of the Sea", (2002), in *Liber Amicorum Judge Shigeru Oda*, (Nisuke Ando, Edward McWhinney and Rudiger Wolfrum, eds.), Vol. 2, Brill/Nijhoff, 1363; Alex Oude Elferink, "The Regime of the Area: Delineating the Scope of Application of the Common Heritage Principle and Freedom of the High Seas", (2007), *IJMCL*, Vol. 22, 143; Christopher Garrison, "Beneath the Surface: The Common Heritage of Mankind", (2007), *Restudies*, Vol. 1 1-71; Edward Guntrip, "The Common Heritage of Mankind: An Adequate Regime for Managing the Deep Seabed?", (2003), *Melbourne Journal of International Law*, Vol. 4, 376; Christopher Joyner, "Legal Implications of the Concept of the Common Heritage of Mankind", (1986), ICLQ, Vol. 35, 190; Elizabeth Mann Borgese, "The Common Heritage of Mankind: From Non-Living to Living Resources and Beyond", (2002), in *Liber Amicorum Judge Shigeru Oda*, (Nisuke Ando, Edward McWhinney and Rudiger Wolfrum, eds.), Vol. 2, Brill/Nijhoff, 1313; P. Nanda and George (Rock) Pring, (2012), *International Environmental Law and Policy in the 21st Century*, 2nd Revised Edn., Martinus Nijhoff, #2.1.10: The Common Heritage of Mankind – 'The Global Commons'; John E. Noyes, "The Common Heritage of Mankind: Past, Present, and Future", (2012), *Denver Journal of International Law and Policy,* Vol. 40, 447; Rüdiger Wolfrum, *Die Internationalisierung staatfreier Raüme: die Entwicklung einer Internationalen Verwaltung für Antarktis, Weltraum, Hohe See und Meeresboden*, (1984), Springer; Rudiger Wolfrum, "The Principle of the Common Heritage of Mankind", (1983), *Z.f.a.o.R.VR,* Vol. 43, 312. This is a small number of key sources and each cites a significant number of sources.

interests expressed in Articles 137(2) and 140.[558] As Wolfrum points out[559], there is nothing expressly in UNCLOS[560], and the question is whether this action could be an *actio popularis* in respect of *erga omnes* obligations or whether such *actio popularis* is excluded from dispute settlement of delineation under UNCLOS.[561]

Despite early views in the 1980s and 1990s to the contrary[562], it can be argued[563] that by 2015 the common heritage of mankind principle as entrenched in Article 136 of Part XI of UNCLOS[564] had achieved the status of customary international law[565], and *de minimis* that it creates *erga omnes partes* obligations with respect to the Area and its natural resources.[566] A third state could argue that the common heritage of mankind principle of Article 136, as forming part of the regime of the international seabed area, would be affected negatively by

[558] These articles express the principle as articulated in the Declaration of Principles Governing the Seabed and Ocean Floor, UN General Assembly Resolution 2749 of 12 December 1970. (GA Resolution 2749(XXV), UN Doc. A/Res/25/2749).

[559] Which clearly have rights to bring action under UNCLOS: see for example Article 76(10).

[560] See Karaganis, op. cit., at 8.

[561] On the concept of *actio popularis* and its relation to *erga omnes* obligations see: Alfred P. Rubin, "Actio Popularis, Jus Cogens, and Offences Erga Omnes", (2001), *New England Law Review*, Vol. 35, No. 2, 265.

[562] Bradley Larschan and Bonnie C. Brennan, "The Common Heritage of Mankind Principle in International Law", (1982 -1983), *Columbia Journal of Transnational Law*, (1982-1983), Vol. 21, 306; Edward Guntrip, "The Common Heritage of Mankind: An Adequate Regime for Managing the Deep Seabed?", (2003), *Melbourne Journal of International Law*, Vol. 4, Part III E: Conclusion, available at:
www.law.unimelb.edu.au/files/dmfiles/downloadaf021.pdf;
Christopher J. Joyner, "Legal Implications of the Concept of the Common Heritage of Mankind", (1986), *ICLQ,* Vol. 35, 190; Rudiger Wolfrum, "The Principle of the Common Heritage of Mankind", (1983), *Z.f.a.o.R.VR* , Vol. 43, No. 2., 312, at 333 – 337;

[563] See Natalie Klein and Tim Stephens, "Whaling in the Antarctic: Protecting Rights in Areas Beyond National Jurisdiction through International Litigation", (2014), in *The Limits of Maritime Jurisdiction*, (Clive Schofield, Seokwoo Lee, and Moon – Sang Kwon, eds.,), Chapter Twenty – Three, 525, at 534; Although some authors have questioned this: see Edward Guntrip, "The Common Heritage of Mankind: An Adequate Regime for Managing the Deep Seabed?", (2003), *Melbourne Journal of International Law*, Vol. 4, Part IV, Conclusions, available at:
www.law.unimelb.edu.au/files/dmfiles/downloadaf021.pdf.

[564] The general concept of the common heritage of mankind is strongly arguable as not being customary international law: Mgbeoji gives an relatively thorough analysis of the principle and the key authors' opinions in: Ikechi Mgbeoji, "Beyond Rhetoric: State Sovereignty, Common Concern, and the Inapplicability of the Common Heritage Concept to Plant Genetic Resources", (2003), *Leiden Journal of International Law*, Vol. 16, 821, at 825 – 832.

[565] Noyes, op. cit., at 456; Wolfrum, op. cit., at 333 – 334 It is worth noting, as Franckx does, that UNCLOS bestows a special level of protection to the common heritage principle (Article 155(2) and Article 311(6)): Erik Franckx, "The International Seabed Authority and the Common Heritage of Mankind: The Need for States to Establish the Outer Limits of their Continental Shelf", *IJMCL*, Vol. 25, 543, at 546. Although as Shackleton describes the United States Congress argues it requires proper definition in the context of UNCLOS: Scott J. Shackleton, "The Tragedy of the Common Heritage of Mankind", (2009), *Stanford Environmental Law Journal*, Vol. 28, 109, at 7.

[566] Prows in fact considers Article 136 expresses a 'peremptory' principle: Peter Prows, "Tough Love: The Dramatic Birth and Looming Demise of UNCLOS Property Law (and What Is to Be Done About It)", (2007, *Texas International Law Journal*, Vol. 42, 241, at 287.

delineating the outer limit of the continental shelf in a manner inconsistent with Article 76 of UNCLOS.[567] However, even if an international court or tribunal accepts that the common heritage principle in UNCLOS implies obligations *erga omnes partes*[568], this arguably does not necessarily automatically imply that *all* states have legal standing on that basis in respect of an alleged excessive ECS claim[569], as will be discussed below.

Some authors, however, adopt a robust view to the question of the standing of a third party (including a Non-party State) in respect of the common heritage principle. Klein and Stephens state that:

> "Even if a State was not party to a treaty such as LOSC, its core obligations relating to the freedoms of the high seas or common heritage of humankind are so well settled as a matter of customary international law that States seeking to enforce these rights on an *erga omnes* basis would be able to demonstrate that they possess a legally protected interest".[570]

The possibility that this view, in relation to all provisions of UNCLOS, especially in relation to delineation and the common heritage principle, may be overly inclusive, will now be explored.

As discussed above, *certain* core obligations, such those relating to freedom of the high seas and activities to develop the Area or benefit from such development, may create *erga omnes partes* obligations. The harder question is whether valid *erga omnes* obligations derive from the common heritage principle and any State Party can bring an action. In 2005 Homila stated that "there are many disputed areas in relation to the 'nuts and bolts' of the concept (of the common heritage of mankind).[571] Wolfrum accepts that the Common

[567] Proelss and Müller, op. cit., at 678.
[568] Klein and Stephens, op. cit., at 534.
[569] *South West Africa (Ethiopia v. South Africa) Second Phase*, (1966), Judgment of 18 July 1966, ICJ Rep. 1966, 6, at 34, 47, and 51.
[569] G. Eiriksson, "The Case of Disagreement Between a Coastal State and the Commission on the Limits of the Continental Shelf", (2004), in (Myron H. Nordquist, John Norton Moore and Tomas H. Heidar, eds.), Martinus Rep., 6, at para. 88, 47; *Barcelona Traction, Light, and Power Company, Limited, (Belgium v. Spain)*, (1970), ICJ Rep. 3, 47; *East Timor, (Portugal v. Australia),* (1995), ICJ Rep., 90, at para. 29, 102. Ragazzi, op. cit., at 212. But see Christian J. Tams, *Enforcing Obligations Erga Omnes in International Law*, (2005), Cambridge University Press, at 161 - 192, who argues the contrary.
[570] Klein and Stephens, footnote 563, *supra,* at 534; Prows, footnote 566, *supra*, footnote 242 at 277 – 278. But cf: ILA, Toronto Conference 2006, op. cit., Conclusion 20, at 25 – 26.
[571] E. Homila, "Common Heritage of Mankind in the Law of the Sea", (2005), *Acta Societatis Martensis*, Vol. 1, 187, at 189.

Heritage principle as highlighted in Article 136 of UNCLOS falls short of qualifying as *jus cogens*.[572]

It should be recalled that customary international law obligations which are not *jus cogens* may, but do not automatically, create *erga omnes* obligations. Solely on the basis of a customary international principle, it is questionable whether Articles 136, 137 and 140 of UNCLOS create *erga omnes* obligations, allowing a third non-injured Non-party State to have *locus standi* in an action alleging an excessive ECS claim. [573]

In terms of standing, Wolfrum has challenged whether an argument excluding *actio popularis* to challenge excessive ECS claims can be sustained.[574] Article 288 of UNCLOS, he argues, gives court and tribunals referred to in Article 287 jurisdiction concerning the interpretation and application of the Convention. He stated:

> "There is no mention that the State concerned having to file a case to defend its individual interests. It is sufficient as well as necessary that there is a disagreement as to the interpretation or application of the Convention. It may be argued that the traditional restriction applying to international dispute settlement, namely that a State must defend its individual rights is not applicable in the context of the Law of the Sea Convention".[575]

It would appear, however, that since his arguments are in the context of provisions of Part XV of UNCLOS, if an *actio popularis* is allowed, it is on the basis of *ergo omnes partes* not *erga omnes* obligations. He is silent as to Non-party States actions. Birnie *et al* note that the ICJ in the *Nuclear Test Cases* was "unsympathetic to the notion of an *actio popularis* allowing high sea freedoms to be enforced by any state".[576]

In a case of an alleged excessive ECS claim, two competing principles, one of a coastal state's sovereign rights over its continental shelf and the other of the common heritage of

[572] Rudiger Wolfrum, "Common Heritage of Mankind", (last update 2009), *Max Planck Encyclopedia of Public International Law, Oxford Public International Law,* Online, at paras. 3 and 4.
[573] But cf. Wolfrum : "the prohibition of occupation and appropriation has been given a legal status the effect of which is similar to that of ius cogens": Ibid., at para. 13. This statement is arguably a step too far in respect of Non-party States.
[574] Wolfrum, (2008), op. cit., at 14 – 15.
[575] Ibid..
[576] P. Birnie, A. Boyle and C. Redgwell, *International Law and the Environment*, (2009), 3rd Edn., Oxford University Press, at 200 – 201. See also Duncan French,"From the Depths: Rich Pickings of Principles of Sustainable Development and General International Law on the Ocean Floor – the Seabed Disputes Chamber's 2011 Advisory Opinion", (2011), *IJMCL*, Vol. 26, 525 at 545 - 546.

mankind, are at play. Even if both principles have the status of customary international law, as we have noted earlier, neither has yet achieved *jus cogens* status.[577]

Although all *jus cogens* norms create *erga omnes* obligations, not all *erga omnes* obligations need to derive from *jus cogens* norms[578], and thus customary international law principles *may* give rise to *erga omnes* obligations. To better understand the current legal thinking on *erga omnes* obligations and in what circumstances customary international law principle may give rise to *erga omnes* obligations, the relevant case law to date will be briefly reviewed and, where possible, the review will examine the decisions in the context of whether the common heritage of mankind as entrenched in UNCLOS might create *erga omnes* obligations in respect of an alleged excessive ECS claim.

Before the 2012 landmark *Belgium v. Senegal Case*[579] authors were divided on whether the third state could have *locus standi* in a case of an ECS State Party allegedly violating any aspect of Article 76, such as Article 76(8). Authors such as Eiriksson[580] and Wolfrum[581] arguing *pro* and authors such a Proelss and Müller, arguing *contra*[582].

In the *Belgium v. Senegal Case* the ICJ clearly established that in the case of a common interest being a party to a convention was sufficient for a state to be entitled to bring a claim concerning alleged violations by another state of its obligations regarding this common interest under that treaty.[583] As analysed by Hamamoto[584], although the ICJ did

[577] Wolfrum continues to echo his 1983 views in more recent publications: Rudiger Wolfrum, "Common Interests in the Ocean", (2011), in *Science, Diplomacy: Antarctica, Science, and the Governance of International Spaces*, (P. A. Berkman, M. A. Lang, D. W. H. Walton, and O. R. Young, eds.), Smithsonian Institution Scholarly Press, 281, at 282. See also: Brown, (2001), at 58; Matz – Luck, op. cit. at 65.

[578] Although Crawford views *jus cogens* norms and *erga omnes* obligations as virtually co-terminus.: Crawford, 3rd Report to the ILC (2003), op. cit., at para. 88.

[579] ICJ, *Questions Relating to the Obligation to Prosecute or Extradite (Belgium v. Senegal), (the "Belgium v. Senegal Case")*, Judgment of the 20 July 2012, ICJ Rep. 2012, 422, available at: www.icj-cij.org/docket/files/144/17064.pdf.

[580] G. Eiriksson, "The Case of Disagreement Between a Coastal State and the Commission on the Limits of the Continental Shelf", (2004), in *Changes in the Arctic Environment and the Law of the Sea*, (Myron H. Nordquist, John Norton Moore and Tomas H. Heidar, eds.), Martinus Nijhoff, 251, at 258 – 259.

[581] R. Wolfrum, "The Role of International Dispute Settlement Institutions in the Delimitation of the Outer Continental Shelf", (2006), in *Maritime Delimitation*, (R. Lagoni and D. Vignes, eds.), Martinus Nijhoff.

[582] Proelss and Müller, op. cit., at 678.

[583] *Belgium v. Senegal Case*, op. cit., at paras. 68 – 69, 449 - 450 .

[584] Shotaro Hamamoto, "Procedural Questions in the Whaling Judgment: Admissibility, Intervention and Use of Experts", (2014), a presentation to the Japanese Society of International Law, *The Honorable Shigeru Oda Commemorative Lectures: ICJ Judgment on Whaling in the Antarctic: Its Significance and Implications*, 19 – 21 September 2014, Niigata, Japan, at 5 - 6, available at:

state that the prohibition was part of customary law and had become a peremptory law [*jus cogens*], these characteristics do not appear to be relevant to the core of the judgment since "it is the *erga omnes partes* character of the obligations that led the Court to find Belgium's claim admissible".[585] Certainly it would seem that the common treaty interest of Part XI would make a similar finding in terms of standing for any State Party seeking to bring an action against another State Party for an alleged violation of Article 137(1) more likely.

But, in regard to Non-party States, such as the United States, the questions of *locus standi* is more difficult to answer. In such cases it is necessary to analyse the current status of the general notion of the common heritage of mankind[586], and thereby whether it has *erga omnes* obligations[587], in order to determine whether such Non-party States could claim *locus standi* for litigation alleging excessive ECS claims.

The recent apparently liberal approach adopted by the ICJ and ITLOS to the issue of third states bringing actions in respect of activities in the High Seas and the Area – the *Whaling in the Antarctic Case*[588] and the *Deep Seabed Advisory Opinion*[589] - would *ex facie* indicate that

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www. edu.kobe-u.ac.jp/ilaw/en/whaling_docs/2014manuscript_Hamamoto.pdf.

[585] Hamamoto, op. cit., at 6.

[586] For authoritative expositions on the principle see: R. P. Anand, "Common Heritage of Mankind: Mutilation of an Idea, (1997), *Indian Journal of International Law*, Vol. 37, 1; Kemal Baslar, The Concept of the Common Heritage of Mankind in International Law, (1998), Martinus Nijhoff; E. D. Brown, "Freedom of the High Seas versus the Common Heritage of Mankind: Fundamental Principles in Conflict", (1982), *San Diego Law Review*, Vol. 20, 521; Vladimir – Djuro Degan, "The Common Heritage of Mankind in the Present Law of the Sea", (2002), in *Liber Amicorum Judge Shigeru Oda*, (Nisuke Ando, Edward McWhinney and Rudiger Wolfrum, eds.), Vol. 2, Brill/Nijhoff, 1363; Alex Oude Elferink, "The Regime of the Area: Delineating the Scope of Application of the Common Heritage Principle and Freedom of the High Seas", (2007), *IJMCL*, Vol. 22, 143; Christopher Garrison, "Beneath the Surface: the Common Heritage of Mankind", (2007), *KEStudies*, Vol. 1 1 - 71; Edward Guntrip, Edward Guntrip, "The Common Heritage of Mankind: An Adequate Regime for Managing the Deep Seabed?", (2003), *Melbourne Journal of International Law*, Vol. 4, 376; Christopher Joyner, "Legal Implications of the Concept of the Common Heritage of Mankind", (1986), *ICLQ*, Vol. 35, 190; Elizabeth Mann Borgese, "The Common Heritage of Mankind: From Non-Living to Living Resources and Beyond", (2002), in *Liber Amicorum Judge Shigeru Oda*, (Nisuke Ando, Edward McWhinney and Rudiger Wolfrum, eds.), Vol. 2, Brill/Nijhoff, at 1313; P. Nanda and George (Rock) Pring,(2012), *International Environmental Law and Policy in the 21st Century*, 2nd Revised Edn., Martinus Nijhoff, #2.1.10: The Common Heritage of Mankind – 'The Global Commons'; John E. Noyes, "The Common Heritage of Mankind: Past, Present, and Future", (2012), *Denver Journal of International Law and Policy,* Vol. 40, 447; Rudiger Wolfrum, *Die Internationalisierung staatfrier Raume: die Entwick einer Internationalen Verwaltung fur Antarkris, Weltraum, Hohe See und Meeresboden*, (1984), Springer; Rudiger Wolfrum, "The Principle of the Common Heritage of Mankind", (1983), *Z.f.a.o.R.VR,* Vol. 43, 312. This is a small number of key sources and each gives a significant number of other sources.

[587] Maurizio Ragazzi, *The Concept of International Obligations Erga Omnes*, (1997), Oxford Monographs in International Law; Alfred P. Rubin, "*Actio Popularis, Jus Cogens*, and Offences *Erga Omnes*", (2001), *New England Law Review*, Vol. 35, No. 2, 265.

[588] *Whaling in the Antarctic* (Australia v. Japan: New Zealand intervening), Judgment 31 March 2014, ICJ Rep., 2014, available at:

a positive answer for *locus standi* for all, not just States Parties, is likely. However, it can be argued that it is possible that a respondent state may seek to distinguish these cases, and arguably may be successful in doing so for a number of reasons:

Firstly, despite the paucity of case law before the *Belgium v. Senegal Case,* there are a few relevant cases that may offer some guidance on the question: *South West Africa Case*[590] and *Barcelona Traction Case.*[591].

In the 1966 *South West Africa Case* in rejecting the notion of *actio popularis* the ICJ stated that:

> "It...can take account of moral principles only in so far as they are given sufficient expression in legal form…Such interests do not in themselves amount to rules of law. All States are interested – have an interest in such matters. But the existence of an "interest" does not in itself entail that this interest is specifically juridical in character…In order to generate legal rights and obligations, it must be given juridical expression and be clothed in legal form".[592]

This may give some indication of what a principle, even one that is accepted as customary international law, such as the common heritage of mankind under UNCLOS, must satisfy in order for it to create *erga omnes obligations.* However, it should be noted that this case has been severely critiqued[593] and many authors regard the *obiter dicta* in the *Barcelona Traction Case* as an implied overruling of the *South West Africa Case.*[594]

In the *Barcelona Traction Case*, the court stated *obiter dicta*:

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www.icj-cij.org/docket/index.php?p1=3&p2=1&code=&case=148&k=64.

[589] The Seabed Authority, ITLOS, "Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area", (2011), *Advisory Opinion of 1 February 2011*, Report of Judgments, Advisory Opinions and Orders, ITLOS, List of cases: No. 17, 2011, available at: www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/17_adv_op_010211_en.pdf

[590] *South West Africa (Ethiopia v. South Africa) Second Phase*, ("South West Africa Case"), (1966), Judgment of 18 July 1966, ICJ Rep. 1966, 6.

[591] *Barcelona Traction, Light, and Power Company, Limited, (Belgium v. Spain), (New Application: 1962), Second Phase*, ("Barcelona Traction Case"), Judgment of 5 February 1970, ICJ Rep., 3. A useful commentary can be found in: Herbert W. Briggs, "Barcelona Traction: The Jus Standi of Belgium", (1971), *AJIL*, Vol. 65, 327. Klein and Stephens provide useful analyses of the two cases: Klein and Stephens, op. cit., at 533 – 535.

[592] South West Africa Case, op. cit., at 34.

[593] For example, Maurizio Ragazzi, *The Concept of International Obligations Erga Omnes*, (1997), Oxford Monographs in International Law, at 5.

[594] It was an even split court decided by the President's (Sir Percy Spender) casting vote. Dapa Akande, "Cases in which the ICJ/PCIJ were Split", (2012), *EJIL: Talk!,* (10 September 2012, available at: www.ejiltalk.org/cases-in-whic-icjpcij-were-evenly-split/.

> "33.…an essential distinction should be drawn between the obligations of a State towards the international community as a whole, and those arising vis à vis another State in the field of diplomatic protection. By their very nature the former are the concern of all States. In view of the importance of the rights involved, all States can be held to have a legal interest in their protection: they are obligations *erga omnes.*
>
> 34. Such obligations derive, for example in contemporary international law, from the outlawing of acts of aggression, and of genocide, as also from the principles and rules concerning the basic rights of the human person, including protection from slavery and racial discrimination. Some of the corresponding rights of protection have entered into the body of general international law...; other are conferred by international instruments of a universal or quasi-universal character".[595]

This judgment has itself not been immune from criticism[596], with authors questioning whether this reference to *erga omnes* obligations was necessary or appropriate for the ICJ to reach its conclusion on *jus standi* in this case.[597] Mann states that such *obiter dicta* "convey the impression of having been studiously planted in the text or artificially dragged into the arena" and that it was a reaction to the judgment in the *South West Africa Case*.[598]

Whatever its origins or rationale, the concept of an *erga omnes* obligation has been referenced in several judgments since the *Barcelona Traction Case*[599], and in 2012 in the

[595] Barcelona Traction Case, op. cit., paras. 33 and 34, at 32.

[596] For a very useful article the concept of *erga omnes* obligation see: Ardit Memeti and Bekim Nhija, "The Concept of Erga Omnes Obligations in International Law", (2013), *New Balkans Politics*, Vol. 14, available at: www.newbalkanpolitics.org.mk/item/the-concept-of-erga-omnes-obligation-in-international-law#.VTsoBycaySO.

[597] Such as McCaffrey: Stephen McCaffrey, (1989), Lexa or the Continuum of State Responsibility",(1989), in *International Crimes of State: A Critical Analysis of the ILC's Draft Article 19 of State Responsibility*, (Joseph Weiler, Antonia Cassesse and Marina Spinedi, eds.),Walter de Gruyter, 244*; Raggazzi*: Raggazzi, (2002), op. cit., at 5. For a detailed analysis of the *Barcelona Traction Case* see Tams: Christopher J. Tams, *Enforcing Obligations Erga Omnes in International Law*, (2005), Cambridge Studies in International and Comparative Law, No. 44, Cambridge University Press, at 162 - 165 and 202 – 204; and Christopher J. Tams and Antonios Tzanakopoulos, "Barcelona Traction at 40; the ICJ as an agent of legal development", (2010), *Leiden Journal of International Law,* Vol. 23(4), 781

[598] F. A. Mann, "The Doctrine of Jus Cogens in International Law, (1973), in *Festschrift Fur Ulrich Scheuner sum 70*, (Horst Emhke, Joseph H. Kaiser, Wilhelm A. Kewenig, Karl Matthias Meessen and Wolgang Rufner, eds.), 399, at 418.

[599] *Nuclear Tests Case [France v. Australia,* Judgment of 20 December 1974*,* (1974), ICJ Rep., 253], *Hostages Case*, [United States Diplomatic and Consular Staff, (1980) Judgement of 24 May 1980, ICJ Rep., 3], *East Timor Case* [Portugal v. Australia, Judgment of 30 June 1995, (1995), ICJ Rep.,90], *Gabcikovo Nagymaros Case*, [Case Concerning the Gabcikovo Nagymaros Project (Hungary v. Slovakia), (1997), Separate Opinion of Vice - President Weeramantry, Judgment of the 25 September 1997, (1997), ICJ Rep., 7], *Furundzija Case* [Prosecutor v. Anto Furundzija, (1998), the International Criminal Court for Yugoslavia, Decision of 10 December 1998, ICTY, Case No: IT-95-17/1-T, available at: www.icty.org/x/case/furundzija/tjug/en/fur-tj981210e.pdf]], *Genocide Case* [Bosnia and Herzegovina v. Serbia and Montenegro, Judgment of 26 February 2007, (2007), ICJ

Belgium v. Senegal Case the ICJ once again referenced the decision.[600] The Court analysed the concept of *erga omnes partes obligations* and found that provisions in the Genocide Convention[601] created such obligations.[602]

In the 2012 *Belgium v. Senegal Case* the ICJ noted the *jus cogens* nature of the common interest, but it is unclear if this played any implicit part in the reasoning of the court. It made no comment regarding *erga omnes* obligations. In any event, it can be argued that common interest in the global prevention/prohibition of torture and genocide is of a different nature and scale from the issue of an alleged excessive delineation of an ECS, and the potential impact of such delineation on the common heritage of mankind (which would primarily amount to be a reduction in benefits accruing to some developing nations from the exploitation of Area).

Some may consider that the recent *Whaling in the Antarctic Case*[603] *and the Deep Seabed Mining Advisory Opinion*[604] give further indications of a judicial trend towards the courts and tribunals accepting the *locus standi* of third states in enforcing common interest obligations arising under the law of the sea or in respect of the Area. This author would argue that they may not.

The *Whaling in the Antarctic Case* is notable precisely because neither the Japanese nor the ICJ challenged the *locus standi* of Australia to bring the case.[605] Certainly the ICJ analysed its jurisdiction, but only in respect of the Japanese objection to the jurisdiction of the court on the basis of a reservation that Australia had formulated with respect to its declaration

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Rep., 43], and *Nicaragua v. Honduras Case* [Border and Transborder Armed Actions, Judgement of 8 October 2007, (2007), ICJ Rep. 659].

[600] *Belgium v. Senegal Case*, op. cit., para. 68, at 449.

[601] UN, *Convention against Torture and other Cruel, Inhuman and Degrading Treatment or Punishment*, (December 1948, No.1021, (1951), UNTS, 277, available at:
https://treaties.un.org/doc/Publication/UNTS/Volume%2078/volume-78-I-1021-English.pdf

[602] Ibid., paras 68 - 70, at 449 - 450.

[603] ICJ, *Whaling in the Antarctic (Australia v. Japan: New Zealand Intervening*), ("*Whaling in the Antarctic Case*"), (2014), Judgment of 31 March 2014, ICJ, available at:
www.icj-cij.org/docket/files/148/18136.pdf.

[604] Seabed Disputes Chamber ITLOS, *Advisory Opinion: Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*, ("*Deep Seabed Mining Advisory Opinion*"), (2011), Case No. 17, 1 February 2011, ITLOS, available at:
www.itlos.orf/fileadmin/itlos/documents/cases/case_no_17/adv_op_010211.pdf.
John E. Noyes, "The Common Heritage of Mankind: Past, Present and Future", (2012), *Denver Journal of International Law and Policy,* Vol. 40, 447, at 466 - 468.

[605] Hamamoto, op. cit., at 2.

recognising the compulsory jurisdiction of the court.[606] Hamamoto contends that Japan did not raise the issue of Australia's *locus standi* deliberately as it was concerned not to create a precedent in case in the future it is an applicant rather than a respondent and it thought it would win on the merits.[607]

In 2013 the ICJ authorized New Zealand's intervention in the case[608], on the basis of Article 63(2) of the Statute of the ICJ and the fact that Japan did not object to the admissibility of New Zealand's Declaration of Intervention.[609] Article 63 of the Statute of the ICJ has been well analysed in the literature.[610] It states that a State Party other than one concerned in the case can intervene whenever the construction of a convention is in question. Article 63 is applicable only to states parties and only with respect to intervention not *locus standi*. The case adds nothing new to the jurisprudence on Article 63 of the Statute of the ICJ or the *locus standi* of third states.

Thus, the *Whaling in the Antarctic Case* is not as useful a precedent/indicator as it may first appear.

The Deep Seabed Mining Advisory Opinion is arguably also distinguishable. The Seabed Disputes Chamber indicated that obligations to protect and preserve the environment of the high seas and in the Area may be *erga omnes* (it observed that " [each] State Party may also be entitled to claim compensation in the light of the *erga omnes* character" of the environmental protection obligations)[611] and that "entities engaged in deep sea bed mining, other users of the sea and coastal states" may be able to claim compensation in the case of

[606] Footnote 603, *supra,* paras. 39 - 40, at 21 - 22.
[607] Hamamoto, op. cit., at 3 -4.
[608] ICJ, *Whaling in the Antarctic (Australia v. Japan) [Declaration of Intervention of New Zealand],* (2013), Order of 6 February 2013, 2013 ICJ Rep. 3, available at:
www.icj-cij.orh/docket/files/148/17268.pdf.
[609] Ibid., at paras.16 -20, at 8 - 9.
[610] Including R. Kolb, *The International Court of Justice*, (2013), Hart Publishing, Chapter 17, 694 seq.; S. Oda, "Intervention in the International Court of Justice. Articles 62 and 63 of the Statute", (1983), in *Volkerrecht als Rechtsordnung Internationale Gerichsbarkeit Menschenrechte, Festschrift für Herman Mosler*, (R. Benhardt *et al*), 629; Andreas Zimmermann, Christian Tomuschat, Karin Oellers – Frahm, and Christian J. Tams (eds.), *The Statute of the International Court of Justice, A Commentary,* (2012), 2nd Edn., Oxford University Press, at 1562 - 1596. These works contain further useful sources.
[611] *Deep Seabed Mining Advisory Opinion*, op. cit., para. 180, at 54.

violation of these obligations[612] (all emphases added). Some authors have read the Chamber's opinion as equating it with the classic examples of the *erga omnes* obligations identified in the *East Timor and Barcelona Traction Cases*.[613] However, it must be emphasised that (a) these comments were *obiter dicta*, and (b) the Chamber was hypothesising, using the word 'may'. Consequently, it appears that the Chamber, although indicating a possible approach, was leaving the juridical answer to a court on another day.

On the basis of the above discussion it can be argued that a judicial approach that accords a policing role to non-directly affected states parties in respect of ECS delineation, in particular in the case of an alleged excessive delineation of the continental shelf, is currently unlikely for a number of reasons.

Firstly, and crucially, it would ignore the unilateral nature of maritime delineation – it is the coastal state's inherent right as set out in Article 77. The CLCS has no legal right to challenge…merely to make recommendations under the Article 76(8) procedure. Article 134(4) on the Scope of the Area states that "[n]othing in this article affects the establishment of the outer limits of the continental shelf in accordance with Part VI or the validity of agreements relating to delimitation between State with opposite and adjacent coasts…".[614] Under Article 142 of UNCLOS the coastal states rights are also prioritised against the Area's rights, perhaps indicating further where the drafters' main concern lay. In other words it would seem that the drafters of UNCLOS gave precedence to the principle of the sovereign rights of coastal states and not the principle of the common heritage of mankind. Franckx and Noyes both conclude that the potential exists "for coastal states to

[612] *Deep Seabed Mining Advisory Opinion*, op. cit., para. 179, at 53 – 54. On the opinion see: Peter H. Henley, "Minerals and Mechanisms: The Legal Significance of the Notion of the 'Common Heritage of Mankind' in the Advisory Opinion of the Seabed Disputes Chamber", (2011), *Melbourne Journal of International Law*, 373; Tim Poisel, Deep Sea Mining: Implications of Seabed Disputes Chamber's Advisory Opinion", (2012), *Australian International Law Journal*, 213.

[613] As suggested by Anton, Makgill and Payne: Donald K. Anton, Robert A. Makgill and Cymie R. Payne, "ITLOS/ Case No.17, Seabed Mining – Advisory Opinion on Responsibility and Liability", (2011), *Environmental Policy and Law*, Vol. 41, No.2, 60, at 64.

[614] The second half of the article raisess the challenging question of whether a third state could challenge as excessive the ECSs of two coastal states whose ECSs are used in a delimitation agreement between them. Would Article 134 exclude any such action?

assert 'creeping jurisdiction' against the Area and that the international community has not provided effective legal mechanisms to challenge such encroachment".[615]

Secondly, such an approach does not take into account that delineation disputes were envisaged by the drafters of UNCLOS to be settled between opposite or adjacent states.[616] It was not envisaged that, other than interested states, any other state or any UNCLOS institution/body would need or should have the right to challenge the delineation of an ECS by a State Party.

Thirdly, there are very practical issues involved for a third state bringing such an action. For example:

- There is complexity in the nature and relationship of the two customary international law principles, in relation to Articles 76 and 137. Although the coastal state's right to a continental shelf is clear and well established in the case law as customary international law, the methodologies for its delineation are less clear and their status still undetermined - although given the large number of CLCS submissions using them, it is strongly arguable that they too have become customary international law.

  Although the exact nature of the common heritage principle in the context of law of the sea (i.e. its content) is for some authors still evolving in terms of its specific contents/elements: the common heritage principle has been described as an "inchoate principle in need of further development".[617] It should be noted that most of these authors were writing between 1982 and 2000.

  Some more recent authors, consider that, with the quasi-universal ratification of UNCLOS, not only is the common heritage principle in the law of the sea context

[615] Noyes, op. cit., at 468; Franckx, (2010), op. cit., at 566 - 567.
[616] See Articles 59, 83 and 134(4).
[617] Guntrip, op. cit. at 405; This view is shared by Joyner and Wolfrum: Guntrip, argues that even though the 1994 Agreement modified the administrative aspects of deep seabed activities it did not reconcile all the differing approaches to the principle: Guntrip, op. cit., IV at 405; Joyner concludes that the principle is too indeterminate and lacking in accompanying state practice and *opinio juris*: Joyner, (1986) op. cit., at 197 – 199; Wolfrum states that the Common Heritage of Mankind "constitutes a basic principle and provides general but not specific legal obligations…": Wolfrum, (1983), op. cit., at 336.

customary international law, but that it has clearly defined elements, arising from the UNCLOS provisions (Article 137, 140 and 141).[618]

The question can also be posed whether either principle has priority status. The Area has a 'negative' or *a contrario* definition in Article 1(1) of UNCLOS, relying on coastal states to first define their ECSs. Notice should also be taken that neighbouring states would normally negotiate maritime boundary delimitation, but under UNCLOS the boundary between the Area and national maritime zones is not negotiated.[619] Note also the provisions of UNCLOS relating to deposits straddling a boundary between a coastal state and the Area. Article 142 is clear on imposing an obligation on the ISA to conduct activities with respect to straddling resource deposits to pay due regard to the rights and legitimate interests of the coastal state. There is no explicit reciprocal obligation on the coastal state.[620]

These features with respect to ECS claims and the common heritage principle and the Area may be indicative that state sovereign right are prioritised under UNCLOS, and thus complicate the question of bringing an action of alleged encroachment by a coastal state into the Area.

- Since the CLCS submissions and recommendations are not required to be public documents, the "ping-pong process" of Article 76(8) is marked by a lack of transparency.[621]

[618] Klein and Stephens, footnote 563, *supra*.
Noyes, (2012), op. cit., at 466 – 468, but note that Noyes, even after the Deep Seabed Mining Advisory Opinion, still comments: "Even if one were to conclude that the principle today rises to the level of customary international law, one would have to be open to the possibility that some states may have persistently objected to applying the principle in particular settings." (at 455). Thus raising the possibility that the principle may not create *erga omnes* obligations for such states for all aspects of UNCLOS. Although he accepts that the regime regarding the mineral resources of the seabed in the Area could well be customary international law, he notes that "the exact content of such a norm is debatable". See also: Louis Sohn, "International Law Implications of the 1994 Agreement", (1994), *AJIL*, Vol. 88, 696; Wolfrum, (1983), op. cit., at 333- 337.
[619] See Chircop, (2011), op. cit., at 312.
[620] Raising the interesting issue whether the coastal state could access resources of the Area from within the limits of its ECS by directional drilling: see Chircop, (2011), op. cit., at 313.
[621] Macnab has expressed particular concern of this lack of transparency and called for amended procedures to require full and public disclosure of information under Article 76: Macnab, (2004), op. cit., at 14 – 16.

Thus, third states may not have access to the data on which the coastal state based its ECS claim. A third State Party would need to have significant contrary evidence to warrant mounting such a challenge of an alleged excessive ECS. This would be a highly unlikely situation, especially in hostile regions such as the Arctic Ocean where hydrographic studies can take decades and cost hundreds of millions of dollars.

- Third states may have issues actually defining the continental shelf, depending on whether they or the respondent state are parties to UNCLOS. In 2008 Wolfrum raised the question of whether the outer limits of the continental shelf beyond 200nm had come to be customary international law. But he chose not to opine on the issue – save to comment that views that it has not by then achieved this status exist, but that there are also counter – arguments to such views.[622] Given recent widespread state practice with respect to making submissions to the CLCS (over seventy)[623], it would seem likely a court would, in 2015, answer the question affirmatively. However, it is unlikely that the specific methodology for determining the limits of the ECS set out in Article 76 of UNCLOS has achieved customary international law status. This means that the third state may have to fall back on the "natural prolongation" definition in any delineation dispute, which as we saw earlier is fraught with difficulty, especially in determining the outer limits.

- Given the geography of the Arctic Ocean, none of the Arctic Five can claim an ECS which does not have an opposite or adjacent state. If such states do not challenge an ECS claim, it is highly unlikely that a third state would mount a challenge. In the Arctic Ocean who is likely to be an applicant? Perhaps China, Japan, India and South Korea are such possible applicant states with sufficient

[622] Wolfrum, (2008), op. cit., at 5 – 6.
[623] As of 17 December 2014 77 countries had lodged ECS submissions with the CLCS: See CLCS, DOALOS website at:
www.un.org/depts/los/clcs_new/commission_submissions.htm.

finances and strong Arctic interest[624], but given world geopolitics they too are unlikely to challenge all but the most excessive claim.

Finally, the Seabed Disputes Chamber in t*he Deep Seabed Mining Advisory Opinion*[625] appeared to support an adoption of a more cautious approach – it used the word 'may' in relation to *erga omnes* obligations in respect of the Area and its resources[626], and leaving it to other international court and tribunals to progress the evolution of the common heritage principle to all law of the sea issues. It would seem best not to anticipate their approach.

(4) Conclusions regarding Third States and Article 76 Disputes

From the above analysis it is possible to draw the following conclusions in respect of *locus standi* of a third state in an action before an international court or tribunal, alleging an excessive claim of an ECS by a coastal state:

1. A State Party is likely to be able to demonstrate special interest and thus establish standing.
2. It will be more difficult for a State Party to use the common heritage principle as a basis for claiming *locus standi*, but it may well be successful, given the case law on *erga omnes partes* obligations. A view supported by a number of authors including Franckx, Nelson, Noyes and Wolfrum.[627]
3. It is currently highly uncertain whether a Non-party state would be successful in establishing *locus standi*, using the common heritage principle.

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[624] All now have observer status at the Arctic Council. See: Olya Gayazova, "China's Rights in the Marine Arctic, (2013), *IJMCL*, Vol. 28, No. 1, 61; Andrea Beck, "China's strategy in the Arctic: a case of lawfare?, *(2014), The Polar Journal*, Vol. 4, No.2, July 2014, 306; Sanjay Chaturvedi, "India's Arctic Engagement: Challenges and Opportunities", (2014), *Asia Policy*, Special Round Table Issue, Polar Pursuit: Asia Engages the Arctic, Vol. 18, 5; Hee Young Cho, "Korea: Protection before development", (2014), *The Circle*, WWF magazine, No.3, 16; Aki Tonami, "Future Proofing Japan's Interests in the Arctic: Scientific Collaboration and a Search for Balance", (2014), *Asia Policy*, Special Round Table Issue, Polar Pursuit: Asia Engages the Arctic, Vol. 18, 52.

[625] Footnote 604, *supra*. For a useful analysis of the Advisory Opinion see: Tim Poisel, "Deep Sea Mining: Complications of Seabed Disputes Chamber's Advisory Opinion", (2012), Australian International Journal, Vol. 19, 214.

[626] Deep Seabed Mining Advisory Opinion, op. cit., at para. 179.

[627] Franckx, (2010), op. cit., at 562 -563; L. D. Nelson, "The Settlement of Disputes Arising from Conflicting Outer Continental Shelf Claims", (2009), *IJMCL*, Vol. 24, 409, at 420 -421, Noyes, op. cit., at 1258; Wolfrum, op. cit., at 29 - 31.

4. A third state faces significant practical difficulties in bringing an action in respect of an alleged excessive ECS claim.
5. In the Arctic Ocean any challenge other than by opposite or adjacent states is highly improbable. This conclusion mirrors the view of the Arctic Five that the Arctic Ocean's continental shelves are theirs to divide up by agreement between themselves, as illustrated by the Ilulissat Declaration[628] analysed earlier.

6.5 Article 82[629]

[628] For example in the Declaration the Arctic Five assert: "The Arctic Ocean is a unique ecosystem, which the five coastal states have a stewardship role in protecting": Ilulissat Declaration of 28 May 2008, op. cit., at 2.

[629] Galo Carrera, "Geographical Scope and Scientific Challenges posed by Article 76 to the United Nations Convention on the Law of the Sea", (2000), a paper presented at *UNCLOS and the Delineation of the Continental Shelf: Opportunities and Challenges to States*, an Open Meeting of the CLCS, Seventh Session, Trusteeship Council, UN Headquarters, New York, 1 May 2000; Aldo Chircop, "Operationalising Article 82 of the United National Convention on the Law of the Sea: A New Role for the International Seabed Authority", (2004), *Ocean Yearbook,* Vol. 18, 395: Aldo Chircop, "Energy Policy and International Royalty: A Dormant Servitude Relevant for Offshore Development", (2005), in *International Energy Policy, the Arctic and the Law of the Sea*, (Myron H. Nordquist, John Norton Moore and Alexander Skaridov, eds.), Martinus Nijhoff, 247; Aldo Chircop, "Managing Adjacency: Some Legal Aspects of the Relationship between the Extended Continental Shelf and the International Seabed Area", (2011), *ODIL*, Vol. 42, 307; Aldo Chircop, "Equity on the Extended Continental Shelf? How Obscure Provision in UNCLOS Provides New Challenges for Ocean Governance", (2013), Working Paper, Session 2, a presentation on 25 March 2013, at the *Professors Event, Law Institute, Dalhousie University*, available at:
http://www.draeger-stiftung.de/fileadmin/user_upload/konferenzen_2013/Presentations/Working_Paper_Session_2_Chircop.pdf;
Aldo Chircop and Bruce Marchand, "Ocean Act: Uncharted Seas for Ocean Development in Atlantic Canada*", Dalhousie Law Journal*, (2001), Vol. 24, 23; Aldo Chircop and B. Marchand, "International Royalty and Continental Shelf Limits: Emerging Issues for the Canadian Offshore", (2003), *Dalhousie Law Journal,* Vol. 26, 273; Steven Groves, "The Law of the Sea: Costs of U.S. Accession to UNCLOS", (2012), Report, *Testimony to a Hearing before the United States Senate Committee on Foreign Relations*, 14 June 2012, available at:
www.heritage.org/researchrestiminy/1012/06/law-of-the-sea-convention-treaty-doc-103-39;
International Law Association ("ILA"), *Report on Article 82 of the 1982 UN Convention on the Law of the Sea (UNCLOS*), (2008), Rio de Janeiro Conference (2008), Outer Continental Shelf, available at:
www.ila-hq.org/download.cfm/docid/E24DB320-90E0-4E69-88DD511A6330BC85, ("ILA, (2008) ") ;
International Seabed Authority, *Issues Associated with the Implementation of Article 82 of the United Nations Convention on the Law of the Sea*, (2009), ISA Technical Study No. 4, UN, ("ISA, (2009)") available at:
www.isa.org/jm/files/documents/EN/Pubs/Article82.pdf;
International Seabed Authority, *Non - Living Resources of the Continental Shelf Beyond 200 Nautical Miles: Speculations on the Implementation of Article 82 of the United Nations Convention on the Law of the Sea*, (2010), Technical Study No. 5, available at:
www.is.org.jm/sites/default/files/files/documents/techstudy5.pdf.
International Seabed Authority, *Implementation of Article 82 of the United Nations Convention on the Law of the Sea*, (2013), *Report of an International workshop arranged by the International Sea-bed Authority in collaboration with the People's Republic of China*, 26 - 30 November 2013, ISA Technical Study No. 12, UN, ("ISA, (2013)") available at:
www.isa.org/jm/files/documents/EN/Pibs/TS12-web.pdf;

6.5.1 Introduction

Article 82 appears to be a little analysed provision of UNCLOS[630] and one that has surprising implications for the issue of title to petroleum produced from an ECS. The analysis below will demonstrate how this provision, with its fixed percentage payment requirements, may act as a significant disincentive to the exploitation of Arctic ECSs. UNCLOS provides little guidance as to how Article 82 should be implemented in practice and it will be shown that it poses crucial implementation issues which impact inter *alia* on various aspects of title to ECS petroleum.

Article 82 of UNCLOS states:

> Article 82: Payments and contributions with respect to the exploitation of the continental shelf beyond 200 nautical miles
>
> 1. The coastal State shall make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.

Michael Lodge, "The International Sea-bed Authority and Article 82 of the United Nations Convention on the Law of the Sea", (2006), *IJMCL*, Vol. 21, No. 3, 323; Michael Lodge, "The International Seabed Authority – Its Future Directions", a paper presented at the *Conference on Legal and Scientific Aspects of the Continental Shelf*, Reykjavik, 25 – 27 June 2003; Ted L. McDorman, "The Entry into Force of the 1982 LOS Convention and Article 76 Outer Continental Shelf Regime", (1995), *IJMCL*, Vol. 10, No.2, 165; McDorman, (2012), op. cit., at 751; George Mingay, "Article 82 of the Law of the Sea Convention – Revenue Sharing - The Mining Industry's Perspective", (2006), *IJMCL*, Vol. 21, No. 3,335; David M. Ong, "A Legal Regime for the Outer Continental Shelf? An Inquiry as to the Rights and Duties of Coastal States within the Outer Continental Shelf", (2003), a paper presented to the *3rd Biennial ABLOS Scientific Conference Monaco 2003*, available at:
www.biicl.org/files/6210_ong_-_draft_paper.pdf;
Oude Elferink, (2006), op. cit., at 282; Lindsay Parson, "Technical Study of issues relevant to Article 82 of the Law of the Sea Convention", a working paper presented at the *Chatham House Seminar on Issues Associated with the Implementation of Article 82*, 11 - 13 February 2009; Cleo Pascal and Michael Lodge, "A Fair Deal on Seabed Wealth: The Promise and Pitfalls of Article 82 on the Outer Continental Shelf", (2009), *Chatham House Briefing Paper*, February 2009, EEDP BP 09/01, available at:
www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/bp0209seabed.pdf;
Alan T. Pettie, "Are Royalty Agreements Required For Canada East Coast Offshore Oil and Gas", (2001), *Dalhousie Law Journal*, Vol. 4, 151; Proelss and Müller, op. cit., at 681; Rodgers Oil and Gas Consulting, *United Nations 'Royalty': Potential Impacts on Future Deep Water Investments from Article 82 of the United Nations Convention on the Law of the Sea*, (2015), available at:
www.bgrodgers.com/wp-content/uploads/2015/02/UNCLOS-Royalty15.02.01.pdf.

[630] On this point see: Michael Lodge, "The International Seabed Authority and Article 82 of the UN Convention on the Law of the Sea", (2005), a paper presented to *the Symposium on Problems on the Outer Continental Shelf International Tribunal for the Law of the Sea (ITLOS)*, Internationale Stiftung für Seerecht, Hamburg, 25 September 2005, reproduced in (2006), *IJMCL*, Vol. 21, No 3, Special Issue: Symposium on the Outer Continental Shelf, 323.

> 2. The payments and contributions shall be made annually with respect to all production at a site after the first five years of production at that site. For the sixth year, the rate of payment or contribution shall be 1 per cent of the value or volume of production at the site. The rate shall increase by 1 per cent for each subsequent year until the twelfth year and shall remain at 7 per cent thereafter. Production does not include resources used in connection with exploitation.
>
> 3. A developing State which is a net importer of a mineral resource produced from its continental shelf is exempt from making such payments or contributions in respect of that mineral resource.
>
> 4. The payments or contributions shall be made through the Authority, which shall distribute them to States Parties to this Convention, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the land-locked among them.

Generally speaking Article 82 of UNCLOS requires that an ECS state makes annual payments or contributions in kind with respect to production from its ECS 'through' the International Seabed Authority ("ISA")[631], which is tasked with its distribution to the least developed and the land locked of developing states parties. It is important to note the very limited role of ISA under Article 82: it acts only as a receiver and distributor of the ECS payments, and this limited mandate will be further discussed in sections 6.5.6 and 6.6.7.

The negotiations of Articles 76 and 82 of UNCLOS were very tightly interlinked: Article 82 was seen as part of a tradeoff between the broad margin states and the other states[632], or part of a 'package deal'.[633] Chircop describes it as a "new rule of equity in the form of a unique royalty payment in international law applicable to non-living resources of the ECS".[634]

It should be noted that the provisions of the 1994 Agreement on Part XI do not affect Article 82.[635] The Article has been the subject of several reports of the ILA and ISA and juristic comments and these detailed analyses will not be repeated here.[636] With respect to analysis of the thesis topic it suffices to summarise the following key issues and conclusions.

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[631] Established by Article 156 of UNCLOS. For details of its powers, functions, organs and other features see Articles 157 – 191 of UNCLOS.

[632] Satya N. Nandan and Shabtai Rosenne, eds., *United Nations Convention on the Law of the Sea 1982: A Commentary*, (1993), Vol. 2, Martinus Nijhoff, at 930 - 947; ILA, (2009), op. cit., section 1.3, at 2.

[633] S. C. Vascianne, *Land-Locked and Geographically Disadvantaged States in the International Law of the Sea*, (1990), Clarendon Press, at 127.

[634] Chircop, (2011); op. cit., at 309.

[635] UN, *Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982*, (17 August 1994), UN GA Resolution A/Res/48/263, Annex, ("1994 Implementation Agreement"), available at:
http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N94/332/98/PDF/N9433298.pdf?OpenElement.

[636] See the reports listed in footnote 629, *supra*.

It is worth noting that

6.5.2 Poor Drafting Causes Implementation Difficulties

The text of Article 82 is marked by vagueness and ambiguity, and numerous undefined key terms and phrases that generate a high level of uncertainty in interpretation.[637] For example 'resource', 'all production', 'site', 'developing state', 'net importer', 'value', 'volume', 'equitable sharing criteria', 'payments', 'contributions in kind', 'non-living resources'[638], and so on. Two ISA Technical Studies in 2004 and 2013 and an ILA report in 2008 analysed these terms in some detail, and identify many interpretive issues, which, until a common understanding is reached by the party states and the ISA, will clearly complicate the implementation of Article 82.[639]

The 2004 and 2013 ISA Technical Studies on Article 82 in their examination of many of the issues arising in the interpretation and implementation of Article 82, have provided lists of tasks and issues for the ECS states and the ISA to resolve[640], but to date no guidelines have been drafted nor has a Model Agreement been agreed.

In the context of petroleum exploitation on the ECS, the generally vague and poorly defined Article 82 gives rise to numerous practical implementation questions, including:

- How to define 'all production': understanding what will be included is crucially important to evaluation of an ECS project's commercial viability.[641]

  The ILA concluded that "all production" at site[642] refers to gross production, rather than net.[643]

[637] ILA, (2008), op. cit., at 3 - 9; ISA, (2004), op. cit., xv – xvii; ISA, (2013), op. cit., Annex 1, Part II Terminology, at 20 - 22; Mingay, op. cit., at 294 – 294.
[638] Which the ILA concludes clearly includes 'natural resources' but is wider, see: ILA, (2008), op. cit., at 8.
[639] ISA (2004), op. cit., at xv, ISA (2013), op. cit. at 20 - 22; and ILA (2008), op. cit., at 3 - 10.
[640] ISA, (2004), Annex I and Annex II, at 69 -76; ISA, (2013), Annex IV, op. cit., at 35 - 68.
[641] Spicer explains how a financial investment decision is made and how such factors are crucial in calculating the rate of return on a project – W. Wylie Spicer (Q.C., Norton Rose Fulbright), "Status of Offshore Oil and Gas and Considerations Relating to Article 82: An Industry Perspective", (2014), a presentation to the *ISA, Sensitization Seminar, N. Y.*, 16 April 2014, at 16 – 17, available at: www.isa.org.jm/files/documents/EN/Seminars/2014/SpicerNYC.pdf.

But this does not answer the question fully, for how is the Article 82(2) exemption for resources used in connection with exploitation to be interpreted? For example, does all gross production include: test/appraisal production, flared gas, reinjected petroleum to enhance production, wastage, spillage, and so on?[644]

- How would ISA 'receive' a contribution in kind without facilities (storage, tankers, pipeline transportation etc.) and oil trading expertise? Can ISA contract out such activities to a third party? Who will cover the costs of these activities and associated administration?[645] Spicer raises the question of whether there is an upper limit to the amount of the resource a producer can consume.[646] From the ISA Technical Studies and related discussions it would appear not.

  The payment of these activities would not pose a serious problem, as neither the ECS state nor the ISA is permitted to deduct such costs from the Article 82 payments/contributions made or received.[647]

  The implication of these difficulties is that it is highly unlikely that contributions in kind are ever going to be the chosen method of meeting the Article 82 obligation: thus in reality it is not a viable option.

- How is the value of the petroleum produced to be calculated for the purposes of Article 82?

  This question raises many aspects of valuation. To give a few examples: firstly is it to be the well-head value? Secondly, as there are many different types of crude, against which traded (marker) crudes will the specific product be priced? Thirdly, when will it be valued? At the moment of production, daily, or as a monthly or annual average?

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[642] A secondary question in this context relates to the meaning of 'site': for example, what if there are multiple producing wells on one lease? See Spicer, op. cit., at 20. Also depending on the interpretation of 'site' by an ECS state there could be difficulties in its implementation of Article 82 : for example in the case of a straddling reservoir (ECS-EEZ), where the state chooses to exploit the reservoir entirely from the EEZ side using directional drilling – does this 'capture' constitute exploitation of the ECS?

[643] ILA, (2008), op. cit., at 4.

[644] Spicer lists these as examples: Spicer, op. cit., at 21.

[645] A question posed by Pascal and Lodge, op. cit., at5.

[646] Spicer, op. cit., at 21.

[647] Pascal and Lodge, op. cit., at 6.

Article 82 is also silent as to when such payments should be made - other than they are to be paid annually. Is the applicable year the calendar year or the fiscal year or based on the anniversary of the commencement of production?

As Chircop and Marshand comment, the timing of payments and contributions may have a significant effect on the ultimate value given commodity price fluctuations.[648] The ILA concluded in 2008 that it is the coastal state which decides the method to be used in the calculation of payment/contribution due.[649] The timing of valuation raises the question of whether the ISA mandate could be stretched to include risk management (e.g. futures trading), in order to mitigate the effect of these fluctuations.

- How will the differing tax regimes handle 'valuation'? The various national petroleum taxation/royalty regimes may result in very different outcomes for the valuation of ISA payments.

  When making Article 82 payments currency issues arise e.g. should it be a convertible currency?[650] Should it be the currency in which the petroleum is produced or the currency it is traded in? Who will bear the exchange risk and administration costs involved? The ISA has indicated that it considers that "although the LOS Convention does not stipulate a rule on currency, but given the purposes of the payments and contributions to benefit other states, an international or widely – used currency could be implied". A counter argument could be made that since the ECS State would not be permitted to deduct exchange costs, requiring it to convert to a currency of the ISA's choice would add effectively to the payments, which is not provided for in Article 82.[651]

  Definitional adequacies such as described above are not uncommon in UNCLOS, in keeping with the compromise nature of the Convention, but some do raise significant difficulties for the practical implementation of the provisions. Article 82 is such a

[648] Chircop and Marchand, op. cit., at 297.
[649] ILA, (2008), op. cit., Conclusion 4, at 6.
[650] ISA, (2004), op. cit., at xv.
[651] Ibid..

case[652], and Subsection 6.3.6.5 will demonstrate that these conceptual and drafting issues are not purely theoretical but have serious practical implications and require addressing urgently as the first of the Arctic Five will need to take Article 82 into account for the planned development of offshore Newfoundland Canada.

6.5.3 Need for more Elaborated Guidelines

ISA studies/reports and commentators indicate that there is a great need for the rules and procedures for making Article 82 payments to be clarified, and further developed, as soon as possible.[653]

The *2004 ISA Technical Report* listed proposed tasks and issues for the ECS states and the ISA to consider.[654] Regrettably, from the 2013 ISA Technical Report little concrete progress on many key issues appears to have been made,[655] although some progress on agreeing to draft a Model Agreement appears to have been achieved.[656] It appears that, while some of the above issues are essentially of an administrative nature and soluble at the ISA level, there are, very importantly, some significant issues that need to be resolved by the State Parties to the Convention on the Law of the Sea.[657]

6.5.4 Need to Better Conceptualise and then Formalise the Relationship between the ISA and the ECS State

As payment is made "through" the ISA (note not 'to' the ISA), the implementation of Article 82 entails establishing a cooperative relationship between the ECS state and the ISA.[658] ISA has been studying what structure and process would be optimal for this relationship. In

[652] For lists of issues and tasks, see: ISA, (2004), op. cit., Annexes I and II; ISA, (2013), op. cit., Annex IV.
[653] For example, Michael Lodge, "The International Seabed Authority – Its Future Directions", a paper presented at the *Conference on Legal and Scientific Aspects of the Continental Shelf,* Reykjavik, 25 – 27 June 2003; ISA, (2013), op. cit., at 12; George Mingay , "Article 82 United Nations Convention on the Law of the Sea (UNCLOS) – Revenue Sharing, The Mining Industry's Perspective", (2005), a paper presented to *the Symposium on Problems on the Outer Continental Shelf International Tribunal for the Law of the Sea (ITLOS)*, Internationale Stiftung für Seerecht, Hamburg, 25 September 2005, reproduced in (2006), *IJMCL*, Vol. 21, No 3, Special Issue: Symposium on the Outer Continental Shelf, 323; Chircop, op. cit., at 310.
[654] ISA, (2008), Annex I and Annex II, op. cit., at 69 - 76.
[655] Ibid..
[656] ISA, (2013), op. cit., Annex IV. It should be noted that Annex IV indicates what was presented at the BeijingWorkshop and not what was accepted or agreed upon.
[657] ISA, (2013), op. cit., at 15.
[658] ISA, (2004), Conclusion, op. cit., bullet point 4, at 68

2004 an ISA working group recommended that either a model Agreement between an ECS state and the ISA, or some specific guidance document (voluntary) be developed.[659] The 2012 ISA Workshop examined the feasibility and possible contents of a Model Agreement between the ISA and an ECS state - a framework Model Agreement had been drafted for discussion.[660] The 2013 ISA Technical Report proposed that steps be taken to develop further the drafting of a Model Agreement.[661] However, since many of the key aspects of Article 82 are not within the jurisdiction of the ISA, it remains up to the State Parties to agree a common approach if they so choose and until then these remain matters for each relevant coastal state.

6.5.5 Practical Implementation Issues are Numerous and must be Resolved before the first ECS state is required to meet its Article 82 obligations

Many issues exist in the practical aspects of the implementation of Article 82: for example, in terms of ISA being in a position to receive payments and contributions, in particular contributions in kind. Although ISA has been working on the development of guidelines for the implementation of its 'payment' task under Article 82 for over fifteen years, it is still very much work in progress.[662]

For over thirty years the ISA appears to have adopted an unhurried approach to its clarifying the mechanisms to fulfill its task under Article 82, perhaps assuming that the development of the ECSs would not occur in the near future. The ISA still continues a very considered approach to establishing Article 82 payment rules and procedures[663], and its deliberations may be overtaken by practical reality.

Statoil has started appraisal drilling in a licence area on the Canadian ECS (270nm off Newfoundland).[664] If field appraisal confirms the commerciality of the fields in the licenced area, then development could commence within the next few years - Statoil estimates that

[659] It is listed as an ISA task in: ISA, (2008), Annex 1, op. cit., at 75
[660] ISA, (2013), Annex I, op. cit., at 255
[661] ISA, (2013), op. cit., Annex 1, at point 4
[662] ISA, (2013), Background point 14, at 15 - 16, and Annex, I, at point 5.
[663] On the dormancy of Article 82 and ISA, see: Chircop,(2011), op. cit., at 309; ISA, (2009), op. cit., at 68.
[664] Alister Doyle, "Statoil Runs into UNCLOS Liability as Canada Extends Seabed Territories", (2014), *Captain*, 17 November 2014, available at:
http://gcaptain.com/statoil-runs-UNCLOS-liability-canada-extends-seabed-territories/.

the combined Bay du Nord and Mizzen fields over 15 years could yield 400 – 800m barrels of recoverable oil and would yield a significant payment to ISA (over $1bn). Since annual payments (on a sliding scale from 1% in the sixth year of production first year increasing annually to 7%) are to begin 5 years after the commencement of production, it does appear that ISA will need to accelerate the finalisation of its revised guidelines and model agreement for them to be in place in time for the first country to be liable for the Article 82 payments (which is Canada).

It is possible to conclude from the above that in respect of the implementation of Article 82 the ISA is currently not prepared for large scale Arctic ECS development, in part resulting from its limited capacity and mandate and in part due to its slow progress in acting on matters. Perhaps it is just as well that the time scales for exploration and development in the Arctic are very long and that this issue may prove to be an academic point, since the USGS has estimated that most of the prospective petroleum regions in the Arctic Ocean are within 200nm of the coasts[665] and the timescale for the 'ping-pong process' of CLCS submissions and recommendations is increasingly protracted[666] – these factors coupled with the high costs (front and back end capital costs as well as running costs) and risks of central Arctic operations[667] suggests that there may be very little ECS development in the Arctic for a very long time.[668]

6.5.6. The Limited Role and Mandate of the ISA is Problematic in Effective Implementation of Article 82

It should also be noted that the ISA has a very limited role in implementing obligations under Article 82 - McDorman characterises it as it being "only a recipient of payments or

[665] Donald L. Gautier, Kenneth J, Bird, Ronald R. Charpentier, Arthur Grantz, David W. Houseknecht, Timothy R. Klett, Thomas E. Moore, Janet K. Pitman, Christopher J. Schenk, John H. Schuenmeyer, Kai Sorensen, Marilyn E. Tennyson, Zenon C. Valin, and Craig J. Wandrey, "Assessment of Undiscovered Oil and Gas in the Arctic", (2009), USGS, *Science*, Vol. 324, No. 5931, 1175; Karl Hinz, "Es gibt keinen Wettlauf um die Arctic", (2011) *Logbuch Arktis, Osteurope*, Vol. 61, 2 -3/2011; USGS, *USGS World Petroleum Assessment 2000*, (2000), USGS Digital Data Series DDS60, 2000, available at:
http://pubs.usgs.gov/dds/dds-060/; McDorman, (2009), op. cit., at 157.

[666] UN, "Confronting Heavy Workload, Commission on Limits of Continental Shelf Draws Proposals from Law of Sea States Parties on Eve of Elections", (2012), *UN Meetings Coverage and Press Releases*, 5 June 2012, available at:
www.un.org/press/en/2012/sea1969.doc.htm.

[667] ISA, (2010), op. cit., at 33; Spicer, op. cit., at 16 – 17.

[668] McDorman, (2008), op. cit., 751; ISA, (2010), op. cit., at 20.

contributions and distributor to developing states".[669] The role of the ISA in Article 82 contrasts significantly with its stronger and more involved role in relation to marine environmental protection regarding deep seabed mining activities in the Area.[670] With respect to Article 82 the ISA has not been mandated with an assessment power in respect of the determination of the precise amount of payment or contribution in kind due.[671] Certainly, it has not been expressly tasked or conferred with powers for monitoring and compliance in the implementation of Article 82.[672] The ISA 2012 Technical Study examines this issue and makes the point that some level of information and data flow will be necessary in order that ISA performs its functions under Article 82.[673]

This raises the issue of the ISA having access to commercially sensitive information, which the coastal state may wish to protect and which the ISA may argue it requires to effectively discharge its responsibilities. However, the ECS state has no express duty under Article 82 to inform the ISA on any ECS matter, with the exception of actual payments or contributions that are due.[674] In fact, Pascal and Lodge speculate that it may "not be possible to compel an ECS state to disclose the information needed for the Authority to perform its role".[675] Information flow will therefore be on a voluntary basis and may raise complications in the implementation of Article 82.

6.5.7 Issues of Monitoring and Enforcement

Another legal question arises: what happens if an ECS state does not cooperate or fulfil its obligations under Article 82?

The issue of settlement of disputes arising under Article 82 is far from clear. It does seem that the ISA has not been assigned any formal role in debt collection.[676] The ILA 2008 Report concluded that in case of a dispute the ISA's scope for action is very limited, and, in

[669] McDorman, (2012), op. cit., at 751.
[670] On this point see the *Deep Seabed Mining Advisory Opinion*, op. cit., paras. 26, 41 - 43, 101 - 102, and 142 - 143 , at 14 -15, 17 -18, 32 -33, and 43 -43 respectively.
[671] Pascal and Lodge, op. cit., at 5.
[672] Ibid..
[673] ISA, (2013), Annex 1, op. cit. points 19 - 22, at 22 - 23.
[674] Pascal and Lodge, op. cit., at 6.
[675] Ibid..
[676] Although McDorman considers it may do, arising from its powers under Article 82(4) - McDorman, (1995), op.cit., at 175.

fact, is restricted to seeking an advisory opinion from the Sea-Bed Disputes Chamber under Article 191 UNCLOS.[677] Thus, it would seem that 'policing' Article 82 is in the hands of States Parties, who can utilise the dispute settlement procedures under Part XV against a coastal state "to settle any dispute between them concerning the interpretation or application of this Convention".[678]

The question can be posed whether the failure of a coastal state to meet its Article 82 obligations would affect the title to the petroleum produced from the ECS by a licenced oil company and the answer is no. Under Article 77 of UNCLOS the coastal state has the exclusive right to exploit petroleum in ECS and thus has clear title to petroleum produced there – all of these title rights it can legally transfer by licence/lease to an oil company. Failure to honour its Article 82 obligations does not directly affect its Article 77 rights, as such obligations do not attach to specific volumes of oil produced but are to be settled annually in cash or kind. Thus, any attempt by another state to initiate action must (1) be against the recalcitrant coastal state and (2) cannot be by injuncting/attaching any cargoes of petroleum of a producing oil company.[679]

6.5.8 National Implementation of Article 82

Article 82(1) establishes the principle that it is the coastal state which exploits the natural resources of the continental shelf beyond 200nm from the territorial sea baseline is obliged to make "payment or contributions in kind" in respect of such exploitation, not the producer oil companies. [680]

Firstly, it should be noted that as yet none of the Arctic Five have enacted provisions in their domestic laws, in particular in their licensing or petroleum taxation and royalty regimes to implement the obligations under Article 82 of UNCLOS.[681] Moreover, implementation of

[677] ILA, (2008), Section 4, op. cit., at 10 - 12.
[678] ILA, (2008), Conclusion 12, op. cit., at 12.
[679] In other words no parallel conclusions can be drawn from the 'hot oil 'cases of the late 1970s. See: USDS, *Statement on Policy on 'Hot' Libyan Oil,* (1974) ILM, Vol. 13, 767.
[680] This was the conclusion of the ILA 2008 Report: ILA, (2008), Conclusion 1, at 4.
[681] As of 27 April 2015. A review of the Oil and Gas Regimes and the key applicable fiscal legislation revealed nothing: the Canadian Petroleum and Gas Revenue Tax Act 1985 (as amended), [R.S.C., 1985, c.P-12]; the Greenlandic Mineral Resources Act 2009 (as amended), [Act No. 7, of 7 December 2009]; the Norwegian Petroleum Tax Act 1975 (as amended), [Act No 35 of 13 June 1975]; the Russian Tax Code 1998 (as amended), [Tax Code of the Russian Federation (second part), Law No. 117-FZ, 5 August 2000]; and the United States' Tax

Article 82 may involve in Federal states such as Canada subnational government units, who might be called upon to share the Article 82 costs, thus necessitating sub-unit – federal agreements.[682] As yet in the Arctic Ocean, however, as described in earlier Chapters, devolution has not extended to offshore jurisdiction and rights, but it may be an issue for the future.

Currently, with respect to the domestic implementation of this Article, it would seem that many coastal states are intending to pass the Article 82 obligations on to the producers: certainly three of the five Arctic Ocean states have clearly signaled this intention in their licensing areas beyond 200nm elsewhere[683], as only one of the Arctic Five has as yet licenced for production an area beyond 200nm in the Arctic (Shtokmanskoye Field[684]and that project has now been suspended).[685] Canada and Norway have now included a clause in the bid notices for licences in areas beyond 200nm warning licensees of the Article 82

Code, Chapter 202: Oil Production Tax (as amended), [Internal Revenue Code, 26 U.S.C., Title 26] and their implementing regulations.

[682] The Canadian Foreign Affairs spokesman John Babcock was reported stating in October 2013: "The manner in which Article 82 of the United Nations Convention on the Law of the Sea will be implemented in Canada has not yet been determined and Federal Natural Resources Minister John Efford warned in 2004: "this issue bears significant federal-provincial impacts. Rob Atile, "Ottawa, NL unsure who will pay UN tax on new oil fields", (2013), *CBC News,*28 October 2013, available at:

[683] See for example:

Canada: the note at the bottom of all Licence Information maps on the cnlopb website, available at: www.cnlopb.ca.

Norway: Section 4(c) of the *Invitation to apply for petroleum production licences*, Norwegian Petroleum Directorate, Ministry of Petroleum and Energy, 23rd Licencing Round Announcement, 20 January 2015, available at:

www.npd.no/en/Topics/Production-licences.

United States: Stipulation No. 5, in MMS, *Lease Stipulations Central Gulf of Mexico Oil and Gas Lease Sale 198*, (2006), Final Notice of Sale, Leasing Activities Information, BOEM, 15 March 2006, available at:

www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Regional-Leasing/Gulf-of-Mexico-Region/Lease-Sales/198/fstips198-pdf.aspx;

Stipulation 3, in BOEM, *Lease Stipulations, Western Planning Area, Oil and Gas Lease Sale 229*, Proposed Notice of Sale, Leasing Activities Information, (2012), available at:

www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Regional-Leasing/Gulf-of-Mexico-Region/Lease-Sales/229/pstips229-pdf.aspx.

Case study presentations on the Canadian (by Ted McDorman) and Norwegian (by Harald Brekke) practice and experience in its domestic licencing regime and views on implementation of Article 82 were given in 2012 to the ISA Workshop: ISA (2013), op. cit. at 18.

[684] Arctic Info, *The Shtokman Project,* (2012), Arctic, available at: www.arctic-info.com/Projects/Page/the-shtokman-project.

[685] Arctic Info, "Gazprom announced the suspension of development of the Shtokman field", (2012), *Arctic*, 29 August 2012, available at:

www.arctic-info.com/news/29-08-2012/gazprom-announced-the-suspension-of-development-of-the-shtokman-field.

obligations, and the possibility they may be required to make the payments on behalf of the state. [686]

In the case of Norway, in all recent invitations to apply for production licences for blocks beyond 200nm, the Ministry of Petroleum and Energy has stated that as part of the terms and conditions of an award "[t]he licensee may be required to cover this expense. In this case the cost can be deducted under the petroleum taxation". [687]

Since 2013, Canada has also warned potential licensees of the implementation of Article 82 royalty in the licensing of the exploitation of the Canadian ECS, and that they may be liable to pay it in order that Canada can meet its Article 82 obligations.[688] No mention is made of recouping such payment through the Canadian petroleum taxation regime.

Various organisations, politicians and academic writers have expressed concerns regarding potential issues that would arise in the event the United States becomes a party to UNCLOS in respect of lease areas beyond 200nm which have already been granted prior to such ratification.[689] In fact, the United States has adopted a very cautious approach to licencing all areas beyond 200nm: in any notice of a federal lease sale for offshore blocks beyond 200nm in any part of its ECS in the Gulf of Mexico, there is a stipulation, applicable to leases granted under that notice, that if the United States becomes a party to UNCLOS during the lease period (or extension), then royalty payment lease provisions will apply to leases so issued and that an Article 82 royalty payment will be payable by the lessees.[690] No mention

[686] See Spicer (2014), op. cit., at 15.

[687] See for example: Section 4(c) of the *Invitation to apply for petroleum production licences*, Norwegian Petroleum Directorate, Ministry of Petroleum and Energy, 23rd Licencing Round Announcement, 20 January 2015, available at:
www.npd.no/en/Topics/Production-licences.

[688] See the note at the bottom of all Licence Information maps on the cnlopb website, available at:
www.cnlopb.ca.

[689] On potential problematic legal questions arising in the event that the federal government imposes a domestic royalty/tax on production to mirror and fund its obligations under Article 82, and in the event a state becomes a party to UNCLOS after issuing leases, see: Chircop and Marchand, op. cit. at 298 - 299.

[690] See, for example: Stipulation No. 5, in MMS, *Lease Stipulations Central Gulf of Mexico Oil and Gas Lease Sale 198*, (2006), Final Notice of Sale, Leasing Activities Information, BOEM, 15 March 2006, available at:
www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Regional-Leasing/Gulf-of-Mexico-Region/Lease-Sales/198/fstips198-pdf.aspx;
Stipulation 3, in BOEM, *Lease Stipulations, Western Planning Area, Oil and Gas Lease Sale 229*, Proposed Notice of Sale, Leasing Activities Information, (2012), available at:
www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Regional-Leasing/Gulf-of-Mexico-Region/Lease-Sales/229/pstips229-pdf.aspx.

is made of whether such payments will be deductible under the United States petroleum taxation regime.

It can safely be presumed a very similar approach would be adopted in the case of lease sales in the United States' Arctic ECS.

Neither Russia nor Greenland have as yet introduced specific provisions in their licensing regime (or licences) relating to Article 82.

In the case of Denmark, it has to date issued no offshore petroleum licences for blocks beyond 200nm, and neither has Greenland. Given the very harsh Arctic conditions of offshore Greenland, it is unlikely that the Bureau of Mines ("BM") will consider licencing on the Greenlandic ECS in the near future - especially until more prospective continental shelf areas within 200nm are fully explored.

For Greenland there is another legal issue: once it is independent, i.e. qualifies as a state, it may then be eligible for exemption from the Article 82 payment obligation under Article 82(3).[691] The two criteria for exemption under Article 82(3) are: (1) being a developing state and (2) being a net importer of the produced natural resource. An independent Greenland would certainly meet both these criteria in respect of oil. However, as there is currently no market for, or consumption of, natural gas in Greenland, it would fail to meet the criterion of being a net importer – although by the time of independence Greenland's energy consumption profile may have changed.

Thus, the BM would be well advised to follow the Canadian, Norwegian and American approaches and require future licensees of blocks beyond 200nm to pay a royalty equivalent to the payments/contributions due under Article 82, but possibly reserving the right to waive such payments in the event of Greenland achieving independence.

[691] Denmark itself is a net exporter of both oil and natural gas, see: IEA, *Oil and Gas Security 2011, Denmark*, (2011), IEA, Tables at 2, available at: www.iea.org/publications/freepublication/publication/denmark_2011.pdf.

Serious considerations will have to be given to whether the licensees can (as with the Norwegians) or cannot (as with the United States) deduct the cost of such payments under its petroleum taxation regime, and if so, the timing of such deductions.

It seems that the situation for Greenland is somewhat that of a chicken and egg: in order to achieve independence and gain the Article 83(2) exemption, it needs to be economically viable and hence it is hopeful that it has large recoverable petroleum reserves on its continental shelf, including its ECS. Until their discovery, Greenland is unlikely to be able to have a viable economy, and therefore will remain part of the Kingdom of Denmark and dependent on considerable Danish subsidisation. In such circumstances it cannot benefit from the Article 82(3) exemption.

However, as Greenland cannot currently afford to pay the Article 82 royalty, it will require the oil companies to pay it on its behalf. As it requires the full income to achieve a viable national income from petroleum exploitation, it cannot allow the royalty paid by companies to be deducted from tax obligations. Therefore, it seems, at least for the first projects on the Greenlandic ECS, that, unless there have been substantial preceding projects within 200nm, an ECS project's reserves must very large (i.e. the field is what is termed an 'elephant') in order that the commercial viability of the project is secure. Given the current oil price and the costs of such projects in Greenland's Arctic ECS, this seems unlikely.

Article 82(3) was clearly designed to assist developing countries, but, as seen in the case of Greenland, in practice it does not assist in achieving independence through the exploitation of the ECS of a Home Rule dependency of a state.

Russia has already issued licences for exploration and production on its ECS: e.g. for the Shtokmanskoye Field.[692] As discussed above, Russia only licences 'state companies' (Rosneft and Gazprom) to explore and exploit its Arctic offshore region. At first sight therefore, domestic Russian implementation of the Article 82 payment obligation would appear

[692] The exploration and production licence issued by the Ministry of Natural Resources was held first by Rosshelf, then transferred to Sevemorneftgas, and then reassigned to Gazprom Neft Shelf LLC, all subsidiaries of OAO Gazprom. However, after the suspension of development in 2012, Gazprom requested the terms and conditions of the licence be amended allowing for an extension of the term of the licence, which it got, see: Trude Pettersen, "Gazprom wants new licence for Shtokman", (2012), *Barents Observer*, 26 October 2012, available at:
http://barentsobserver.co./en/energy/gazprom-wants-new-lisense-shtokman-26-10.

academic. For what does it matter which organ of the Russian state meets the Article 82 payment obligation?

However, these 'state companies' are in fact not wholly owned by the Russian state. Gazprom is only just over 50% owned by the Russian Federation[693], and Rosneft is just under 70% state owned.[694] Thus, whether it is the Russian State or the producer companies which end up paying the royalty does make a difference, and may affect the view of the company as to the commercial viability of an ECS Arctic project.

Fortunately, the one Russian Arctic ECS petroleum production licence issued to date has been put on hold.[695] The Shtokmanskoye field, which was to have been developed by a joint venture between Statoil (24%), Total (25%) and Gazprom (51%) (as licence holder), appears to have been shelved indefinitely, and both Statoil and Total have withdrawn from the project's joint venture company.[696] But the fact that there still exists any ECS licence issued for the Russian ECS which does not have provisions for royalty payment in respect of Article 82 obligations, raises two other legal questions:

1. Any imposition of a royalty payment obligation (to cover Russian Article 82 obligations) on a producer whose licence is already issued can be argued, especially by foreign shareholders of the state companies, to constitute an expropriation without compensation[697]: a clear example how Article 82 and its implementation may affect title to petroleum produced in the ECS of a State Party.

[693] In 2014, 50.23% shareholding of Gazprom was controlled by Russian State, 25 - 78% ADR holders, and 23.54% other holders: see, *Gazprom, Equity capital structure*, available at: www.gazprom.com/investors/stock/structure/.

[694] As of 1 March 2015 Russian state holding (via primarily OJSC Rosneftegaz) is 69.51%, and other shareholders have 30.49%, including a 19.75% shareholding owned by BP: See, *Rosneft, Shareholder Structure, (*2015), available at: www.rosneft.com/Investors/structure/share_capital/.

[695] Arctic Info, "Gazprom announced the suspension of development of the Shtokman field", (2012), *Arctic*, 29 August 2012, available at: www.arctic-info.com/news/29-08-2012/gazprom-announced-the-suspension-of-development-of-the-shkotman -field.

[696] Arctic Info, *The Shtokman Project,* (2012), *Arctic*, available at: www.arctic-info.com/Projects/Page/the-shtokman-project.

[697] Chircop and Marchand, op. cit., at 298.

2. The Russian petroleum tax regime would also require amendment to allow for retrospective taxes to be imposed on the licensee.[698] In doing so the Russian government may wish to consider a tradeoff between an increase in exempted production volumes from mineral extraction tax[699] and the royalty payment being paid by the producer companies.

Thus, Russia would be well advised to consider including provisions relating to Article 82 payment obligations in any future ECS licences/licence agreement with its state companies, following the Canadian, Norwegian and American approaches. It also should seriously consider reviewing all existing exploration licences with a view in future rounds of including a warning regarding Article 82 and possible liabilities. At all costs it should avoid retrospective imposition of any Article 82 payment obligations on existing ECS licences, as the possibility of this constituting expropriation is highly arguable (going to the basics of good title) and undesirable when seeking foreign investors to participate in Russian ECS development.

Conclusions

It can be seen from the analysis above that the formal implementation of Article 82 obligations into domestic law has not yet been enacted by any of the Arctic Five, although the oil industry in three of the Arctic Five has been put on notice in their exploration licences that such obligations will attached to production from any ECS area for which they have been awarded an exploration licence. Until the Article 82 obligations are fully determined at the domestic level, oil companies will perceive uncertainties in their rights to the petrol they produce on an ECS, which may affect their investment decisions. [700]

6.5.9 The Legal Status of Article 82 and Implications for Non-party States

[698] Currently Russian Arctic petroleum production has reduced export duties and exemption from the mineral extraction tax for a large initial volume of production: for example, Prirazlomnoye field has a 50% reduced export duty and an exemption from the mineral extraction tax for the first 257m bbls of oil produced. See: David Bizley, "Russian Arctic oil: tax relief is the best option", (2013), *Oilfield Technology*, 24 October 2012, available at:
www.com/upstream/exploration/24102013/Russian_Arctic_oil_tax_relief_is)the_best_option/.
[699] Ibid..
[700] Ong comes to a similar conclusion, op. cit., at 48.

In respect of Non-party States, the question arises whether Article 82 is now customary international law, and therefore are they obliged to make payments through ISA?

According to Burmester in 1995: "The provisions of Article 82 of UNCLOS on this matter [revenue sharing] are not regarded as declaratory of customary international law, even in principle, let alone as to the precise figures involved".[701]

Has anything happened in the last 20 years to indicate that it has become customary international law?

Kanehara analyses in detail the drafting process of Article 76 and 82 and concludes that it was the result of political compromise between broad margin states and developing states[702]: that in fact Article 76 and 82 were a package deal and that revenue sharing from ECS exploitation was *quid pro quo* for coastal states' ECS rights, but of a political rather than legal nature.[703] So the two provisions stand separately and are not legally interlinked. Thus, although Article 76 is now considered customary international law[704], it is possible that Article 82 has not achieved that status.

In analysing this question the requirements and criteria for customary international law status set out in the *North Sea Continental Shelf Cases* will now be considered and applied with respect to Article 82: the treaty provision must be fundamentally norm – creating, there must be state practice that is widespread and sufficiently representative, and there must be *opinio juris sive necessitatis*, for which uniform and consistent practice is necessary

[701] Henry Burmester, "Australia and the Law of the Sea", (1995) in *The Law of the Sea in the Asian Pacific Region: Developments and Prospects*, (1995), (James Crawford and Donald R. Rothwell, eds.), Martinus Nijhoff, 51, at 58.

[702] This is fact a widely accepted view, see: Mingay, op. cit., at 339; Vascciannie, op. cit., at 127; Chircop, (2013), op. cit., at 1.

[703] Atsuko Kanehara, "Revenue Sharing Scheme with Respect to the Exploitation of the Outer Continental Shelf under Article 82 – A Plethora of Entangling Issues", (2008), a presentation to *the Seminar on the Establishment of the Outer Limits of the Continental Shelf beyond 200 Nautical Miles under UNCLOS – Its Implications for International Law*, 27 February 2008, Tokyo, Japan, Ocean Policy Research Foundation, at 7 - 8, available at: www.sof.or.jp/en/topics/pdf/aca.pdf.

[704] Even by the United States: The Interagency Group on the Law of the Sea and Ocean Policy of the United States, issued a memorandum dated 17 November 1987 stating as United States' policy that "the provisions of Article 76…reflect customary international law…" - see, *Memorandum from Assistant Secretary Of State John D. Negroponte to Deputy Legal Advisor Elizabeth Verville*, 17 November 1987, State Dep. File No. P89 0141-0428. II Cumulative Digest 1878.

and must be carried out in such a way as to be evidence of a belief that this practice is rendered obligatory by the existence of a rule of law requiring it.[705]

In its 2008 report on Article 82, the ILA chose explicitly not to address the issue of the legal status of Article 82, although it acknowledged the question of whether it represented customary international law was relevant.[706] Perhaps this signaled that the question did not have a clear straightforward answer.

Ex facie Article 82 is not a likely candidate for customary law status. Given the non-normative nature of Article 82(2) - 82(4) and that, while the reasons for the existence of the key principle of revenue sharing in Article 82(1) are clear, the provisions on the *modus operandi* are not,[707], the question reduces to determining whether Article 82(1) can be ascribed customary international law status.

There are 166 state parties to UNCLOS[708], so certainly there is widespread state acceptance of its provisions. In the Arctic only the United States is not a party to UNCLOS. The US Commentary on Article 82 drew a clear distinction between Article 82 and Part XI. It took the view that it was "part of a package that establishes with clarity and legal certainty the control of coastal states over the full extent of their continental margins" – a certainty which the oil companies have clearly indicated is essential in making large scale investment decisions for offshore Arctic development. In fact, the Commentary argues that "[o]n balance, the package contained in the Convention, including revenue sharing at the modest rate set forth in Article 82, clearly serves United States interests".[709] But it seems that it only does so if the United States becomes a party to UNCLOS for, as discussed earlier, all federal ECS lease sale notices for the Gulf of Mexico warn future lessees of the application of a payment obligation in the case of the United States becoming a party to UNCLOS. From this practice, it would seem that the United States does not view Article 82(1) as customary

[705] *North Sea Continental Shelf Cases (Germany v. Denmark, Germany v. Netherlands), ("North Sea Continental Shelf Cases"),* (1969), Judgment of 20 February 1969, ICJ Rep., 3, paras. 72 and 76 – 77, at 43 – 45, available at: www.icj-cij.org/document/file/51/5535.pdf.
[706] ILA, (2008), op. cit., section 1.2, at 2.
[707] Chircop, (2011), op. cit., at 309.
[708] Out of 193 member states of the United Nations there are 167 parties to UNCLOS including the EU.
[709] Fiona Macmillan, *Risk, Uncertainty and Investment Decision – Making in the Upstream Oil and Gas Industry,* (2000), PhD Thesis, University of Aberdeen, October 2000, available at: www.palantirsolutions.com/getattachment/c31dadea-e465-4df1-aa00-0434704f39bb/Risk,-Uncertainty-and-Investment-Decision-Making-i.pdf.

international law. This approach has, it should be noted, not met with any adverse criticism from either the ISA or other States. However such objection by a key maritime power like the United States would appear to make the fulfilment of the state practice requirement from the *North Sea Continental Shelf Cases,* as discussed earlier, problematic.

Thus, it would seem difficult to argue convincingly that Article 82(1) has become customary international law. In such case, there is no obligation on Non-party States to make any payments/contribution to ISA in respect of the exploitation of their ECSs. Such a situation clearly creates an unlevel playing field for states (parties and non-parties to UNCLOS) on the ECS.

6.5.10 Is Article 82 a Disincentive to the Exploitation of the ECS?

The question arises whether Article 82 is a serious disincentive to:

(a) United States becoming a party to UNCLOS?
(b) deep water, and in particular Arctic, ECS development?

(a) Brownfield describes Article 82 as "[o]ne of the more nefarious and insidious of its [UNCLOS's] provisions, which requires the United States to forfeit royalties generated from oil and gas development on the continental shelf beyond 200 nautical miles …to the International Seabed Authority".[710]

This view echoes the written testimony given by Steven Groves to the 2012 United States Senate hearings on UNCLOS.[711] Groves argues that "since the value of the hydrocarbons lying beneath the United State ECS may be worth trillions of dollars, the amount of royalties that the United States Treasury would be required to transfer to the Authority would be substantial. In any event United States accession would amount to an open-ended commitment to forgo an incalculable amount of royalty revenue for no appreciable

[710] Mile Brownfield, "Morning Bell: The Danger of Article 82 and Obama's Latest Treaty", (2012), *The Daily Signal,* available at:
http://dailysignal.com/print/?post_id=98596.
[711] Steven Groves, "The Law of the Sea: Costs of U.S. Accession to UNCLOS", (2012), *Hearing before the United States Senate Committee on Foreign Relations*, 14 June 2012,available at:
www.heritage.org/research/testimont/2012/06/the-law-of-the-sea-convention-treaty-doc-103-39.

benefit".[712] He reaches the conclusion that UNCLOS offers no appreciable benefit because he argues that the United States, under international law and as a result of its long-standing policy and practice, already has established its rights over its ECS.[713] On this point he is correct. Article 77 of UNCLOS, which is universally accepted as declarative of customary international law[714], provides that the coastal state has sovereign rights over the continental shelf for the purpose of exploring and exploiting its natural resources. These sovereign rights of a coastal state over its continental shelf exist *ab initio* and *ipso jure* regardless of the extent of the continental shelf and regardless of the outer limits of the continental shelf beyond 200nm, and hence the state is entitled to exercise those rights without establishing final and binding limits under Article 76(8).

Groves challenges the 2007 view of Negroponte (of the USDS) that, in the absence of limits of the ECS established on the basis of 76(8), United States ECS limits would lack international recognition and legal certainty, and therefore oil companies "are unlikely to secure the necessary financing and insurance to exploit energy resources on the extended continental shelf".[715] He considers that unchallenged bilateral maritime boundary agreements with opposite and adjacent states will be sufficient for that purpose.[716]

Groves also expresses concern that there is a possibility that ISA may distribute the royalties to developing nations that may be "corrupt, undemocratic, or even sponsors of terrorism such as Cuba and Sudan".[717] Although Grove's concern may be a scare tactic and unjustified, given such testimony, it is perhaps not surprising that the Senate once again refused United States accession to UNCLOS.[718] Thus, it appears that Article 82 may be a significant factor in the Senate's refusal to permit the United States to become a party to UNCLOS.

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[712] Ibid., at 1.
[713] Ibid., at 1 – 2.
[714] North Sea Continental Shelf Cases, (1969), op. cit., para. 19, at 22, and para. 37 at 28. Although he appears to be omitting the boundary with the Area, which as shown elsewhere will be extremely difficult to challenge.
[715] Ibid., at 4.
[716] Ibid., at 4 – 6.
[717] Groves, op. cit., at 2.
[718] On 16 July 2012, 34 Republican Senators signed a letter to U.S. Senate Foreign Relations Committee Chairman John Kerry pledging to vote against ratification of UNCLOS by the United States. Because treaty ratification requires 2/3rds of the U.S. Senate to vote for approval, the 34 signatories were enough to stop ratification. See: Kristina Wong and Sean Lengell, "De Mint: Law of the Sea Treaty Now Dead", (2012), *Washington Times*, 6 July 2012, available at:
www.washingtontimes,com/news/2012/jul/16/demint-says-law-sea-treaty-now-dead/?page=all.

(b) Although some authors consider the Article 82 payments are not particularly onerous (mainly writing in the 1980s and 1990s), other (more recent) authors caution that the commercial potential of the ECS resources may be seriously affected by them.[719]

The five year exemption period and percentages in Article 82 were calculated over 30 years ago, and are arguably no longer appropriate for the economic realities of the 21st Century petroleum extractive industry. As Pascal and Lodge point out, the five year grace period may be insufficient, in the modern context with the high costs and risks of deep water or Arctic drilling and related operations, to enable cost recovery for the producer in that timeframe.[720] Moreover, Mingay conjectures that the graduated percentage formula is arguably not flexible enough to allow for the cyclic nature of the petroleum industry and could in fact adversely affect the cycle.[721]

It may be that these formulae need to be reassessed by the international community, as there is a real danger that some deposits could become marginal, especially in hostile regions such as the Arctic Ocean.[722]

6.5.11 Problems of Straddling Deposits and the Implementation of Article 82

Straddling deposits can pose a number of issues and these depend on the nature and location of the overlapping deposit. There are numerous possible scenarios for a straddling deposit in respect of Article 82[723], and the figure below illustrates the major ones:

1. Where the deposit straddles the ECS of State A and the ECS of State B, when both States A and B are parties to UNCLOS and have an Article 82 obligation.
2. Where the deposit straddles the ECS and the EEZ of State B.

[719] Rainer Lagoni, Comments, Discussion following the *Presentation of Preliminary Report of the ILA on Legal Issues of the Continental Shelf*, New Delhi 741, at 769; David Ong, (2003), op. cit. At 6 – 8; Pascal and Lodge , op. cit., at 5; J. R. V. Prescott, "National Rights to Hydrocarbon Resources of the Continental Margin beyond 200 Nautical Miles", (1998), in *Boundaries and Energy: Problems and Prospects*, (Gerald Blake, Martin Pratt, Clive Schofield and Janet Allison Brown, eds.), Kluwer, 51, at 79.
[720] Pascal and Lodge , op. cit., at 5.
[721] Mingay, op. cit., at 344. But cf. Barry Rodgers, Rodgers Oil and Gas Consulting, "United Nations "Royalty": Potential Impacts on Future Deep Water Investments from Article 82 of the United Nations Convention on the Law of the Sea", available at:
www.bgrodgers. Com/wp-content/uploads/2015/02/UNCLOS-Royalty15.02.01.pdf.
[722] Mingay, op. cit., at 343.
[723] Pascal and Lodge, op. cit., at 5.

3. Where the deposit straddles the ECS (and the EEZ) of State B and the EEZ of State C, which is a party to UNCLOS.
4. Where the deposit straddles the ECS of State C and the Area.
5. Where the deposit straddles the ECS of State C and the ECS of State D a Non-party to UNCLOS.
6. Similar to 5, where State E is a party to UNCLOS and having an Article 82 obligation.
7. Where the deposit straddles the ECS of State E and the ECS of State F which is a party to UNCLOS but exempt from Article 82 payment as a net importing developing country.

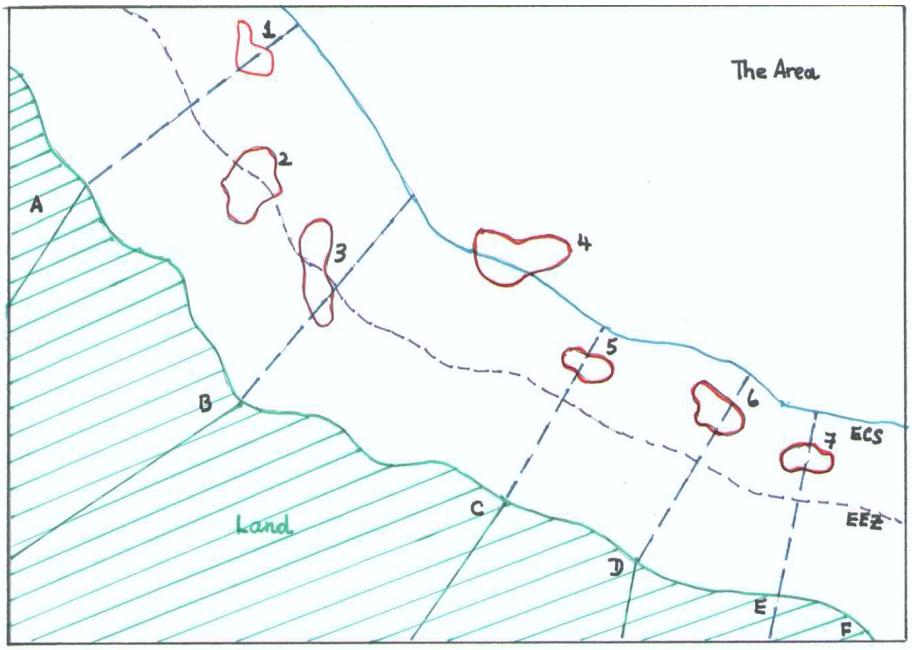

Figure 6.19: Possible scenarios for straddling deposits[724]

It is clear that all these scenarios are potentially problematic, for example, in determining if and when payments are due, by whom and in what amount.

The 2004 ISA Technical Study examined the issue of straddling deposits and concluded that where two States were involved there was a presumption that "the development trans-

[724] ©B. Sas 2015.

boundary deposit will be unitised as a matter of good practice", and hence there is no real problem.[725]

However, this ISA argument is weak. Firstly, international judicial and arbitral decisions and Articles 74(3) and 84(3) only encourage joint cooperative approaches to trans-boundary deposits and view unitisation as a provisional measure and not as a permanent solution.[726] Although there is a bilateral treaty practice of making provision for joint development of straddling deposits, it is neither universal nor uniform. Unitisation is not a principle or custom of international law[727], any more than the rule of capture.[728] This leaves the regime for straddling deposits somewhat uncertain. This uncertainty in turn may affect the good title to petroleum, as well as the payment of royalty.

As will be discussed further in Chapter 7, in the Arctic Ocean there are still two unresolved maritime boundary disputes within 200nm, and all overlapping ECS boundaries between the Arctic Five will have to be negotiated. It remains to be seen how the Arctic Five will handle straddling deposits in their overlapping ECSs. Certainly, if the maritime boundary agreements currently in place between Arctic Five states are any indication, it is likely that straddling deposits will be addressed in the future overlapping ECS agreements in a similar manner to them – but there is no legal obligation to do so.

In respect of a deposit straddling the ECS of a State Party and the Area (which situation has been analysed in some depth by the 2004 ISA Technical study[729]), it should be recalled that

[725] ISA, (2004), op. cit., at 61 - 63.

[726] For a thorough review of the relevant case law, State Practice and *opinio juris*, see: Ana E. Bastida, Adoeze Ifesi – Okoye, Salim Mahmu, James Ross and Thomas Walde, "Cross – Border Unitization and Joint Development Agreements: An International Law Perspective, (2007), *Houston Journal of International Law*, 2006 – 2007, Vol. 29., 355, and in particular Part III: Is There an Obligation to Cooperate Under Customary International Law?, at 375 - 419.

[727] Basida *et al*, (2007), op. cit., at 420; Rodman R. Bundy, "Natural Resources Law (Oil and Gas) and Boundary Disputes, in The Peaceful Management of Transboundary Disputes", (1995), in *The Peaceful Management of Transboundary Resources*, (Gerald H. Blake, William J. Hildesley, Martin A. Pratt, Rebecca J. Ridley and Clive H. Schofield, eds.), Kluwer/ Martinus Nijhoff , at 18; David Ong, "Joint Development of Common Offshore Oil and Gas Deposits: 'Mere' State Practice or Customary International Law", (1999), *AJIL*, Vol. 93, 771.

[728] Masahiro Miyoshi, "The Basic Concept of Joint Development of Hydrocarbon Resources on the Continental Shelf", *IJECL*, Vol. 3, 1, at 18; Masahiro Miyoshi, "Basic Legal Issues of Joint Development of Offshore Oil and Gas in relation to Maritime Boundary Delimitation", (1999), Maritime Briefing, Vol. 2, No. 5, IBRU at 4; Dominic Roughton, "The Rights and Wrongs of Capture: International Law and Its Implications of the Guyana/Suriname Arbitration", (2008), *Herbert Smith Online*, at available at: http://hsfnotes.com/arbitration/wp-content/uploads/sites/4/2012/11/document.ashx_.pdf.

[729] ISA, (2004), op. cit., at 61 - 63.

Article 142(2) requires the prior consent of the coastal state concerned before any activities in the Area that may result in exploitation of resources lying within national jurisdiction, but there is no corresponding right for ISA consent by the coastal state.[730] This means that the Area can only develop legally the straddling deposit either unilaterally with the consent of the ECS state or in a joint venture with the ECS state. The lack of the required consent would lead to serious issues regarding the "good title" to petroleum produced by the Area.

6.5.12 Article 82 and Title to Petroleum Issues

In the case of contribution in kind the question is: when, how and by whom will title to the petroleum be transferred to ISA? On what legal basis will this transfer of title be effected? Article 82 and the ISA Guidelines do not address these issues. Moreover, the Model Agreement working paper by Chircop does not expressly address the title issue (rather he talks of receipts for deliveries) and suggests this aspect needs to be addressed in future proposals.[731]

The clear transfer of title to the ISA in respect of contribution in kind petroleum needs to be examined in the context of the ISA mandate and institutional constitution.

Questions which arise regarding this issue include:

(1) can the ISA 'own' the petroleum and then transfer title onto the beneficiary countries, as under Article 82(4) states contributions shall be made 'through' the ISA and not 'to' the ISA?;

(2) when will the title pass to the ISA – at the well head or on delivery?;

(3) since distribution to beneficiary countries is the ISA's responsibility under Article 82, how is the ISA to receive and then distribute these contributions without storage and transportation facilities – if it is to contract out for such facilities, how will it meet the costs?;

[730] Ong, (2008), op. cit., at 5 - 6.
[731] ISA, (2013), Annex I, op. cit., at 51 - 52.

(4) can the ISA engage in commercial activities, including oil trading? – for example, can it participate in oil swaps to minimise delivery distance or in risk management to hedge risks?

On the key issue of the transfer of title to petroleum the ISA should consult the oil industry and the State Parties, and then draft and get agreed whatever further additions to its rules, procedures and guidelines and any changes to its mandate are required, as well as a detailed model agreement, in order to provide a workable regime with solutions that are acceptable to the ISA, the States Parties and their producers. Finally these arrangements need to be implemented at the domestic level.

6.5.13 General Conclusions on Article 82

From the above discussion it can be seen that Article 82 and its implementation can have direct and indirect impacts on title to ECS petroleum including:

1. The poor drafting of Article 82 makes it difficult to implement, creating an uncertain 'royalty' regime in which ECS exploitation can take place. The Article 82 royalty payments/contributions affect the amount of petroleum produced on its ECS to which an ESC state can have unfettered title – thus any uncertainty as to the royalty obligation under Article 82 impacts negatively on the certainty of the ECS state's title to the petroleum it produces. This uncertainty then has follow on consequences that go to the fundamentals of petroleum investment. It be may that Article 82 should be included in Flemming's proposed list of 'Unfinished Business of UNCLOS III' and the royalty payment provisions revised to take into account specific circumstances (especially costs) of the production in ECSs.[732]
2. The uncertainty will be passed on to the ECS state's producers. As discussed above it is likely that ECS states will pass the payment obligation on to the producer oil companies, and hence these companies will find themselves having to use some of the produced ECS petroleum either to realise and make payments or to make contributions in kind to the ISA. Thus, their title to the

[732] Brian Flemming, "Completing the Unfinished Business of UNCLOS III", (2013), in *The Regulation of Continental Shelf Development, Rethinking International Standards*, (Myron H. Nordquist, John Norton Moore, Aldo Chircop, Ronan Long, eds.), Martinus Nijhoff, 355 at 357 – 358.

petroleum is conditioned on making such payments, through licence/lease terms and conditions, and this will be a major factor in any Financial Investment Decision ("FID"). In hostile ECS regions such as the Arctic, where exploration, capital costs and running costs and risks are very high by industry averages, the uncertainty of conditions, the levels and the grace period will be particularly significant factors in the making of any FID.[733]

3. Article 82 obligations may prove to be a significant disincentive:
   a. for the United States to accede to UNCLOS, leaving title issues to petroleum produced on its ECS less certain and clear for producers on the United States' ECS;
   b. for an ECS State Party to proceed with an ECS project if the Article 82 payments/contributions would dramatically reduce the state's return from such projects; and,
   c. for potential ECS producers to proceed if payments/contributions would affect the commercial viability of a project.

   Such disincentives, at least in the Arctic Ocean, may lead to no development of its ECSs, which would then defeat the drafters' intentions with respect to Articles 76 and 82, i.e. to allow coastal states to exploit their ECSs and to share the benefits derived from that ECS exploitation with developing countries.

4. There are potentially serious title issues (such as expropriation) connected with any retrospective imposition on petroleum companies of payments/contributions in kind to the ISA, in order that the ECS state meets its Article 82 obligations.
5. Straddling deposits are left to the ECS states to handle and potentially could raise some interesting title issues and be problematic as to the level and allocation of Article 82 liabilities.

[733] For an interesting article on the commercial viability of oil projects in the Arctic Ocean, see: Mikael Holter and Niklas Magnusson, "Arctic Oil still seen as Decades Off as Producers Balk at Costs", (2014), *Bloomberg View*, 24 February 2014, available at: www.bloomberg.com/news/22014-02-23/arctic-oil-still-seen-decades-away-as-producers-balk-at-costs.html.

6. The making of contributions in kind also raises the issue of the transfer of title to the ISA, how it can best be affected and on what legal basis. This key issue has not yet been resolved by the ISA.

In conclusion, it can be argued that international law as expressed in Article 82 of UNCLOS has proved to be surprisingly inadequate and the cause of multiple unresolved issues that will affect the attainment and enjoyment of clear title to ECS resources by any ECS state and its producers.

6.6 Arctic Continental Shelves, National Petroleum Regimes and Title to Petroleum

Article 77(1) grants to a coastal state sovereign rights to explore and exploit its continental shelf. Article 77(2) states that these rights are exclusive. These rights are inherent and under Article 77(3) do not depend on occupation, effective or notional, or any express proclamation.

Thus, Article 77 grants to a coastal state sovereign rights to explore and exploit petroleum deposits in its continental shelf, which in turn allows the coastal state to licence areas to oil companies to produce petroleum from the licenced area. The hostile conditions, high cost and risks and the onerous and complex administrative/regulatory regimes are significant factors that will affect the FID for any continental shelf project in the Arctic Ocean, but the fundamental issue for an oil company, as in any other region, is whether it has good title to the petroleum produced from its licenced areas. The first question is whether the licensing state has good title, which was addressed in the previous section above. The next is whether the national legal regime and its licence transfer this title in an unchallengeable manner to the oil company.

From Figure 7.20 below it can be seen that the national regimes of the Arctic Five draw no distinction between the continental shelf within and the continental shelf beyond 200nm of the territorial sea baselines either in terms of the domestic implementation of their sovereign rights or the applicable licensing regime for the exploration and exploitation of petroleum located on the continental shelf.

Country	Key Legislation	Relevant Sections and Comments
Canada	1. Oceans Act 1996.[734]	1. Section 17 (1) defines the continental shelf of Canada as "the seabed and subsoil of the submarine, area…that extend beyond the territorial sea of Canada throughout the natural prolongation of the land territory of Canada…(a)…to the outer edge of the continental margin, determined in the manner under international law that results in the maximum extent of the continental shelf of Canada…(b) to a distance of 200nm if the outer edge of the continental margin does not extend up to that distance…". Section 18 states that Canada has sovereign rights over the continental shelf for the purpose of exploring and exploiting the mineral and other non-living resources of the seabed and subsoil of the continental shelf of Canada…" Article 19 vests any rights of Canada in the continental shelf in Her Majesty in right of Canada - in other words in Federal Canada. It appears that as yet the Federal Government and the Provinces have yet to agree who will pay the UN Article 82 contribution.[736] It has been reported that Canadian exploration licensees for areas beyond 200nm are now warned of that production licences may contain provisions relating to the Article 82 payment.[737]
	2. The Canadian Petroleum Resources Act.[735]	2. Section 2 defines "frontier areas" which includes "lands that belong to Her Majesty in

[734] C.31. S.C. 18 December 1996.
[735] Canadian Petroleum Resources Act, (1985), c.45, S.C., 18 December 1986, available at: www.law-lois.justice.gc.ca/PDF/C-8.5.pdf.

		right of Canada, or in respect of which Her Majesty in right of Canada has the right to dispose of or exploit the natural resources and that are situated in…(b) submarine areas, not within a province, in …the continental shelf of Canada". Thus, frontier land includes the continental shelf in the Arctic Ocean area. The Act regulates petroleum activities in these frontier areas. Section 37(1) states that a production licence issued in accordance with the Act confers on the licensee, "with respect to frontier lands to which the license applies, …(d) title to the petroleum so produced". Note that detailed regulations with regard to Article 82 have not as yet been issued.
Denmark/Greenland	1. (Denmark) Royal Decree of 7 June 1963 concerning the exercise of Danish sovereignty over the Continental Shelf.[738] 2. (Denmark) Act No. 259 of 9 June 1971 (as amended by act No. 298 of 7 June 1972 and No.	1. Article 1 asserts that Danish sovereignty shall be exercised, in so far as the exploitation of natural resources over the portion of the continental shelf which 'belongs' to Denmark under the 1958 Convention on the Continental Shelf. This law applies to Greenland. 2. Paragraph 1 states the natural resources of the continental shelf are the property of the State of Denmark.

[736] Atle reports a statement by the spokesperson for Canadian Department of Foreign Affairs, Françoise Lasalle: Rob Atle, "Ottawa, N.L. unsure who will pay UN tax on new oil fields", *CBC News*, 28 October 2013, available at:
www.cbc.ca/news/canada/newfoundland-labrador/ottawa-n-l-unsure-who-will-pay-tax=-on-new-oil-finds-1.2251838.

[737] Charles Lafkoff, Houston Energy Report, Report No. 53, Section 1.3, 30 November 2014, presented to the Korean Consulate General in Houston, available at:
http://usa-houston.mofa.go.kr/webmodule/common/download.jsp?boardid=13871&tablename=TYPE_LEGATION&seqno=fa0fd402ffce019062fa6fe7&fileseq=048fc2f9807e047f85fa5fa6#_Toc405647013.

[738] Available at:
www.un.org/Depts/los/LEGISLATIONANDTREATIES/STATEFILES/DNK.htm.

	654 of 21 December 1977).[739] 3. (Denmark) Act on Greenland Self-Government 2009 (as amended), ("SGA").[740] 4. Mineral Resources Act 2009 ("MRA"):[741]	Paragraph 2 empowers the Minister to issue a concession or permit whereby property rights to the produced 'raw material' pass (subsection 3). This law applies to Greenland. 3. Under Article 3(2) 'fields of responsibility' from List II of the Schedule to the Act are to be transferred to the Greenland Self Government authorities at points of time determined by them. Number 26 on List II is "The mineral resource area". It should be noted that (1) under Chapter 4 (Articles 11 – 16) Denmark retains international affairs powers (including those relating to law of the sea) and (2) although Greenland has the right to use of and the right exploit natural resources Article 2(1) SGA and Article 2 MRA (see below), actual sovereignty/sovereign rights over them was retained by the Crown. 4. Mineral Resources is defined to include oil and natural gas - Article 5(1) and (2). The Licensing Authority is the Mineral Resource Authority (which includes the Licence and Safety Authority) was formerly the Bureau of Minerals and Petroleum - Article 3 MRA. Each offshore licensing round bid package includes a model exclusive licence for the exploration for, and exploitation of, hydrocarbon in the licence area. They are relatively standard. Such a model licence[742] includes provisions relating, *inter alia*,

[739] Ibid..
[740] Act No. 473 of 12 June, available at: www.stm.dk/multimedi/GR_s=Self-Government_UK.doc
[741] Greenland Parliament Act No. 7 of 7 December 2009, On Mineral Resources and Mineral Resource Activities, an unofficial translation available on BMP website at: www.govmin.gl/images/faelles/mineral_resources_act_inofficial_translation.pdf.
[742] For the purposes of this table the model licence from the 2014 Open Door Procedure for Offshore Areas in South West Greenland round is used, ("Model Licence"): available at: www.govrnin.gl/images/stories/petroleum/udbud/udbud_2018_2018/South_West_Greenland/Model_Licence_2014_South_West_Greenland.pdf.

		to the exploitation licence, which is defined as an extension of the exploration licence for the purpose of exploitation in an area - Article 1 MRA. Note that there is no express granting of rights in the licences re produced petroleum other than the right to 'exploit' the resource, which mirrors the terminology in Article 56 UNCLOS. This means the acquisition of title when the petroleum is reduced to possession. Note that detailed regulations with regard to Article 82 have not as yet been issued.
Norway	1. Royal Decree of 31 May 1963 Relating to the Sovereignty of Norway over the Seabed and Subsoil outside the Norwegian Coast.[743] (as amended/partially repealed) 2. Act of 21 June 1963 Relating to Exploration and Exploitation of Submarine Natural Resources.[744] (as amended/ partially repealed) 3. Royal Decree of 13 April 1965 relating to Exploration for and exploitation of Petroleum in the Seabed and Subsoil on the	1. This law claimed a continental shelf in accordance with the 1958 Geneva Convention on the Continental Shelf Articles 1 and 2. (Partially repealed in respect of UNCLOS) 2. Article 2 vests in the State the right to submarine resources on the continental shelf of Norway, and the right to delegate this right to companies. Article 3 empowers the State to establish a legal regime for the exploration and exploitation of submarine natural resources located in the continental shelf of Norway. 3. This law establishes a petroleum licensing regime for the Norwegian Continental Shelf.

[743] Available at: www.un.org/depts/los/LEGISLATIONANDTREATIES/STATEFILES/NOR.htm.
[744] Ibid..

	Norwegian Continental Shelf.[745] 4. Continental Shelf Act, Act No. 72 of 29 November 1996 relating to petroleum activities (as amended by Act No. 34 of 24 June 2011).[746]	4. Section 1 states that the State has the proprietary right to subsea petroleum deposits and the exclusive right to resource management. Section 2 states that the Act applies, *inter alia,* to "the Norwegian continental shelf to the extent such application follows from international law or from agreement with a foreign state". Section 3-3 states: A production licence entails an exclusive right to exploration, exploration drilling and production of petroleum deposits in areas covered by the licence. The licensee becomes the owner of the petroleum produced. Since 2012, invitations to apply for petroleum production licences in areas beyond 200nm now warn applicants that their application will be accepted based on the proviso that : "These blocks are located outside of the 200 nautical miles economic zone…As regards production of petroleum in areas outside 200nm, in accordance with the UN's Law of the Sea Convention of 1982 Article 82, Norway is required, from and including the sixth year of production, to render an annual contribution through the International Seabed Authority which was established under the Convention. The licensee may be required to cover this expense. In this case, the cost can be deducted under the petroleum taxation".[747] Note, however, that as yet detailed regulations with regard to Article 82 have not been issued.
Russia	1. Decree of the President of 6 February 1968 on the Continental Shelf[748]	1. Article 3 states that the natural resources of the continental shelf are the State property of the USSR.

[745] Ibid..
[746] Available at:
www.npd.no/en/Regulations/Acts/Petroleum-activities-act/#1-1.
[747] See the Invitation for the 23rd Licensing Round: NPD, *Invitation to apply for petroleum production licences*, 21 April 2015, Clause 4(c), available at:
www.npd.no.Global/Engelsk/2-Topics/%5BLicenc-awards%5D/23-round/Invitation2015.pdf.
[748] Available at:

	2. The *Russian Constitution* 1993[749]	2. Under Article 67(2) of the *Russian Constitution* the sovereign rights and the exercise of jurisdiction on the continental shelf is vested in the Russian state, in accordance with international law. Under Article 71(m) the jurisdiction of the Russian Federation includes, *inter alia*, the determination of the status and protection of the continental shelf.
	3. Law of the Russian Federation on the Continental Shelf of the Russian Federation, No. 187-FZ, of 30 November 1995.[750]	3. Article 8 empowers the authorised government bodies of the federal government to licence petroleum activities to use the subsoil of the continental shelf. The rights and obligations granted by such licences are to be in accordance with the licensing provisions set out in the 1992 *Subsoil Law*. (See 4. below).
	4. *Subsoil Law* 1992.[751]	4. Under Article 1.2 of the *Subsoil law* the resources in the subsoil are State owned. A subsoil licence (issued under Article 11) shall, under Articles 12(7), provide that, once petroleum has been extracted under a subsoil production licence, the proportion agreed under the licence (and subsoil use agreement) is owned by the licensee. Following the sequence of cross referral (Articles 11 and 12) a subsoil licence grants the licensee (there is also a subsoil use agreement

www.un.org/depts/los/LEGISLATIONANDTREATIES/STATEFILE/RUS.htm.

[749] *The Constitution of the Russian Federation ("Russian Constitution"),* available in English at: http://www.constitution.ru/en/10003000-01.htm.

[750] Ibid..

[751] The Law of the Russian Federation No.2395-1 "On Subsoil, ("*Subsoil Law")*21 February 1992, unofficial English version available at: http://ci-legislation.com/document.fwx?rgn=1494. On the Subsoil Law see: Maya Mahklina, "How to be a subsurface user in the Russian Federation", (1993), *OGLTR*, Vol. 11, 291; Vitaly Melgounov, "Transfer of subsoil use right under Russian Federation Law, (2009) *Justitias Welt,* available online at: http://justitiaswest.com/Aufsaetze/AS16200902; A. I. Perchik, "Critical Interpretation of the 'Subsoil Law': Notions, institutions and terminology", (2007), *Oil and Gas: Law*, Vol. 2, No. 3 (translation of original Russian text).

		which exists in parallel enlarging on the rights and obligations) title to the "agreed amount"(in the licence and subsoil use agreement) of produced petroleum. The Subsoil law also establishes that subsoil use licences for deposits on the continental shelf are to be issued to entities that fulfill the special criteria that permit offshore subsoil rights to be awarded without tender or auction on decision of the federal government (Article 9). Note that detailed regulations with regard to Article 82 have not as yet been issued.
United States	1. The Truman Proclamation 1945.[752] 2. Outer Continental Shelf (OCS) Lands Act ("OCSLA") 1953.[753]	1. The President of the United States proclaimed that the United States "regards the natural resources of the subsoil and seabed of the continental shelf beneath the high seas but contiguous to the coasts of the United States, subject to jurisdiction and control". 2. Section 1331(a) OCSLA defines Outer Continental Shelf as all submerged lands lying seaward and outside the lands within the adjacent state's 3nm jurisdiction and of which the subsoil and sea appertain to the United States and are subject to its jurisdiction and control - in other words it includes the Continental Shelf. Section 1332(1) and Section 1332(3) establishes the federal right of jurisdiction and control over

[752] Proclamation 2667 of 28 September 1945, Policy of the United States with respect to the Natural Resources of the Subsoil and Seabed of the Continental Shelf, 10 Fed. Reg. 12, 305, (1945) - Codified as Executive Order 9633 of September 28, 1945, (the "Truman Proclamation"), available at: http:oceancommission.gov/documents/gov_ocean/truman.pdf.

[753] 43 U.S.C. c. 29, Subchapter III, available at: www.boem.gov/Outer-Continental-Shelf-Lands-Act/.

		the seabed of the outer continental shelf and the natural resources thereunder. The Secretary of State is authorised to grant mineral leases on the Outer Continental Shelf for oil and gas development. The Department of the Interior is responsible for implementing the OCSLA in US waters, including in the Arctic Ocean. The Bureau of Ocean Energy Management (BOEM) in the US Department of Interior ("USDI") oversees the leasing process on the continental shelf. Sections 1334 and 1337 of OCSLA. Section 1344 requires USDI to prepare a 5 year programme for lease sales. A lease granted to the winner of a lease sale conveys the right to explore for, develop and produce oil and gas within the lease area. under Section 1337(b)(4) OCSLA. The lease then specifies these rights – see for example S. 2 Rights of Lessee in a typical offshore lease).[754] Note that detailed regulations with regard to Article 82 have not as yet been issued.

Figure 6.20: Table showing each Arctic Five's National Regime for the Continental Shelf and its Exploitation[755]

From Figure 6.20 it is clear that, once the CLCS procedures are completed and, where required, delimitation agreements are in place, the national regimes implementing the international sovereign rights of coastal states in respect of continental shelves will provide

[754] See for example, U.S. Department of Interior, BOEM, the 2005 Oil and Gas Lease of Submerged Lands under the Outer Continental Shelf Act, Form BOEM-2005, (October 2011) available at: www.boem.gov/BOEM-2005/.

[755] © B.Sas 2015.

clear and effective legal chains of transfer of title to the oil produced on the Arctic ECSs down to the producing company level.

Only one ECS offshore area, Svalbard, is currently problematic under the five Arctic coastal states' regimes.

As described earlier, Norway avoided declaring an EEZ around Svalbard, but on 27 November 2006 Norway made its Continental Shelf Submission to the CLCS in respect of ECS areas, including in the Arctic Ocean resulting from baselines located on Svalbard. None of the *Notes Verbales* – from Denmark, Iceland, Russia, and Spain – actually challenged Norway's right to claim a continental shelf for Svalbard, its choice of baselines for the claim, or the manner (use of criteria and constraints) by which it did so: two (Denmark and Iceland) drew the CLCS's attention to unresolved delimitation issues beyond 200nm and two (Russia and Spain) raised the issue of their rights in regard to the Svalbard shelf, which they allege arises under provisions of the Svalbard Treaty 1920 (discussed earlier in Chapters 4, 5 and 6).

The *CLCS Recommendations Norway 2009* made some amendments to the Norwegian submission limits mainly relative to a western area called the 'Banana Hole' (involving a dispute between Iceland, Greenland and Norway). Just prior to its submission Norway had entered into a delimitation Agreement with Denmark concerning the fisheries zones and continental shelf between Greenland and Svalbard. It still had an outstanding dispute with Russia concerning the "Loop Hole" area in the Barents Sea and Western Nansen Basin of the Arctic Ocean, which would be resolved in 2010 with the Barents Sea Treaty, as will be discussed in Chapter 7. Norway appears to have accepted the CLCS recommendations, and adjusted its maps accordingly taking into account the Barents Sea Treaty 2010 and agreed adjustments with Denmark and Iceland regarding delimitation.[756] It can be seen from the recent map of the ECS used by the NPD (see Figure 6.21 below) that Norway does claim an ECS north of Svalbard, but the Norwegian ECS is "bounded to the North by the Gakkel Ridge, which is the only active oceanic spreading ridge in the Arctic".[757] With Norway claiming an

[756] Steinar Nja, *Licensing System in Norway*, NPD, 29 November 2013, at 28, available at: www.isa.org.jm/files/documents/EN/Workshops/2012/Norwy.pdf.
[757] *Norwegian CLCS Submission 2006,* op. cit., Section 7.2, at 14.

ECS that is based on the 2009 CLCS Recommendations, it would seem that the Norwegian ECS claim is, under Article 76(8), now 'final and binding'.

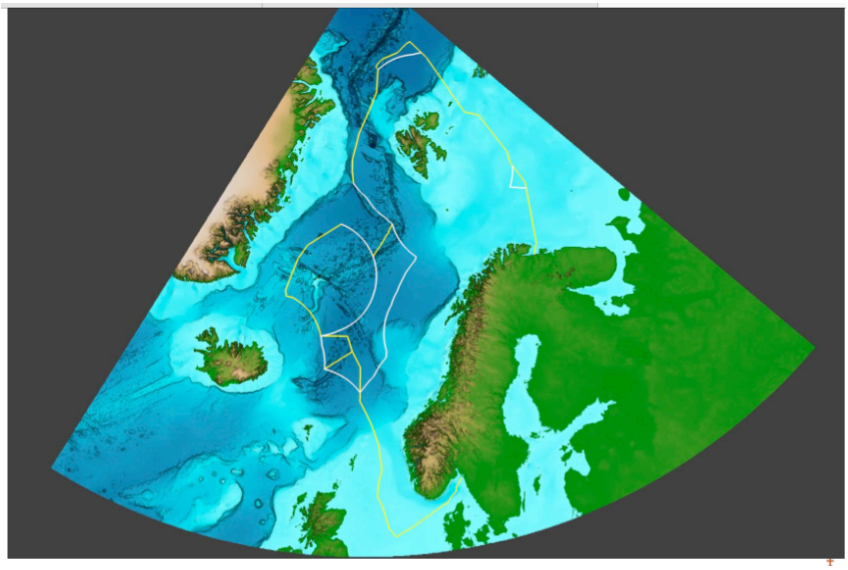

Figure 6.21: Map of Norwegian ECS limits[758]

From the general international community's acquiescence to the *Norwegian CLCS Submission 2006*, which used Svalbard baselines to claim the northern part of the ECS, it seems, and many authors conclude, that Norway's jurisdiction over the maritime areas around Svalbard, including over the Svalbard shelf, is now confirmed.[759]

Although the jurisdiction of Norway over the continental shelf of Svalbard ("Svalbard Shelf") is now apparently settled, the outstanding question relating to the applicability of the Svalbard Treaty 1920 to the Svalbard Shelf, including its ECS, is not. The Svalbard Treaty was

[758] ©NPD. Public Domain, 2013, available in footnote 746, *supra*, at 28.

[759] On this see: D. H. Andersen, "The status under International Law of the Maritime Areas around Svalbard", a paper presented to the Symposium, *Politics and Law – Energy and Environment in the Far North*, Norwegian Academy of Science and Letters, 24 January 2007, at 14, available at: www.dnva.no/binfil/download.php?tid=27096;
Ida Caracciolo, "Unresolved controversy: the legal situation of the Svalbard Islands maritime areas: an interpretation of the Paris Treaty in the light of UNCLOS 1983, a paper presented to IBRU Conference on *Disputed Territory and Maritime Space*, 2 April2010, available at: www.dur.ac.uk/resources/ibru/conferences/sos/ida_caracciolo_paper.pdf;
Torbjorn Pedersen, "The Svalbard Continental Shelf Controversy: Legal Disputes and Political Rivalries", (2007), *ODIL*, Vol.37, No. 3-4, 339, at 353; Ida Catherine Thomassen, *The Continental Shelf of Svalbard: Its Legal Status and Legal Implications of the Application of the Svalbard Treaty Regarding Exploitation of Non – Living Resources*, Master's Thesis, University of Tromso, Norway, at 48, available at: http://munin.uit.no/bistream/handle/10037/6168/thesis.pdf?sequence=1&isAllowed=y.

discussed extensively earlier, and so it is only its relevance to Norwegian rights on the Svalbard Shelf that will be considered here.

The real issue comes down to the resource management off Svalbard by Norway. There are some authors[760] and several states[761] who argue convincingly for the acceptance of the inter-temporal interpretation of the Svalbard Treaty in the light of the development of new maritime zones under the international law of the sea. If this approach is correct, then the Svalbard Treaty, by allowing freedom of exploration and exploitation of resources for all States Parties under an equitable regime, would, according to one author, create "a sort of *ante litteram* joint development regime"[762] - a regime which would have to be coordinated, intergovernmental agreements reached and regulations enacted reflecting the provisions of the Svalbard Treaty before any development could be contemplated. Other authors[763], and Norway[764] and several other countries[765] argue the opposite: that it is Norway that has sole and exclusive sovereign rights over the Svalbard Shelf and that the provisions of the Svalbard Treaty 1920 do not apply to this maritime zone. The resolution of this issue remains outstanding.

[760] A. N. Vyelegzhanin and V. K. Zilanov, *Spitsbergen: legal regime of adjacent maritime areas,* (2007), (W. Butler translator and editor), Eleven, at 57; Alexander Oreshenkov, "Arctic Square of Opportunities: North Pole and 'Shelf' of Svalbard Cannot be Norwegian", (2010), *Russia in Global Affairs*, 25 December 2010, at 4 - 6, available at:
http://eng.globalaffairs.ru/Arctic-Square-of-Opportunies-15085.

[761] Such as Iceland, Netherlands, Spain and the UK: see Pedersen, op.cit., at 242 and 251; Robin Churchill and Geir Ulfstein, "The Disputed Maritime Zones Around Svalbard", (2010), in *Changes in the Arctic Environment and the Law of the Sea*, (Myron H. Nordquist, John Norton Moore and Tomas H. Heidar, eds.), Martinus Nijhoff, 551, at 564 – 566.

[762] Caracciolo, op. cit., at 20.

[763] Carl August Fleischer, "The Question of Earlier Treaty Rights applied to the New Maritime Zones – Spitsbergen and the Law of the Sea", (1978), *Iranian Review of International Relations*, 245; Also Churchill and Ulfstein, footnote 761*, supra.*

[764] Rolf Einar Fife, "Svalbard and the Surrounding Maritime Areas", (2010), Ministry of Foreign Affairs, available at:
www.regjeringen.no.en/dep/ud.selected-topics/cibil-rights/spesiell-folkerett/folkerettslige-sporsmal-i-tilknytning-ti.html?id=537481.
The Norwegian position, as stated in the above by Rolf Einar Fife of the Ministry of Foreign Affairs, is that the continental shelf of Svalbard derives from the main continent, not from Svalbard.This is reflected in the 2009 Norwegian CLCS Submission, op. cit/, at 9, and was not challenged by by te CLCS recmmendations. See also Churchill and Ulfstein, op. cit, at 561.

[765] Such as Canada and Finland: see Churchill and Ulfstein, op. cit., at 564.

Ulfstein stated in 2013 that the issue of petroleum development could trigger a serious dispute regarding Svalbard[766] and this perspicacious comment became fact in 2015. On 20 January 2015, the NPD invited applications for 34 Arctic Blocks, of which 8 were north of the 74th parallel, and 12 were on the ECS. – see Figure 6.22 below.

The announcement triggered a somewhat slow and surprisingly muted response from the Russians. A 'sharp' diplomatic note dated 3 March 2015 was delivered by the Russian Embassy to Norway stating that three of the blocks offered in the 23rd Round of Licensing by Norway are on the Svalbard Shelf, and that such licensing violates the provisions of the Svalbard Treaty.[767] Russia apparently invited Norway to enter into negotiations for an agreement on economic activity around Svalbard in what they term the 'Svalbard Square'.[768] To date Norway appears to have ignored the invitation and is continuing with the application process which is open until December 2015. [769]

[766] Geir Ulfstein, "The Oil Interests May Trigger the Svalbard Dispute", (2013), a paper presented to *the Arctic Frontiers Conference*, January 2013, Tromso, available at: http://ulfstein.net/2013/01/10/the-oil-interests-may-trigger-the-svalbard-dispute/.

[767] Alf Bjarne Johnsen, "Russland protester mot oljeboring I Svalbard-sonen, UD mottok skarp note fra Moskva", (2015), *VG Nyheter*, 2 May 2015, available at: www.vg.no/nyheter/innenriks/norsk-politikk/russland-protesterer-mot-oljeboring-svalbard-sonen/a/23444540/; Trude Pettersen, "Russia Protests Drilling in Svalbard Zone", (2015), *Barents Observer*, 5 May 2015, available at: http://barentsobserver.com/en/energy/2015/05/russia-protests-drilling-svalbard-zone-05-05.

[768] Ibid..

[769] Lars U.L. Vegstein and Henrik A. Haanes, "Bitter oljestrid om Svalbard", (2015), *Klassekampen,* 28 February 2015, available at: http://klassekampen.no/article/20150228/Article/150229811.

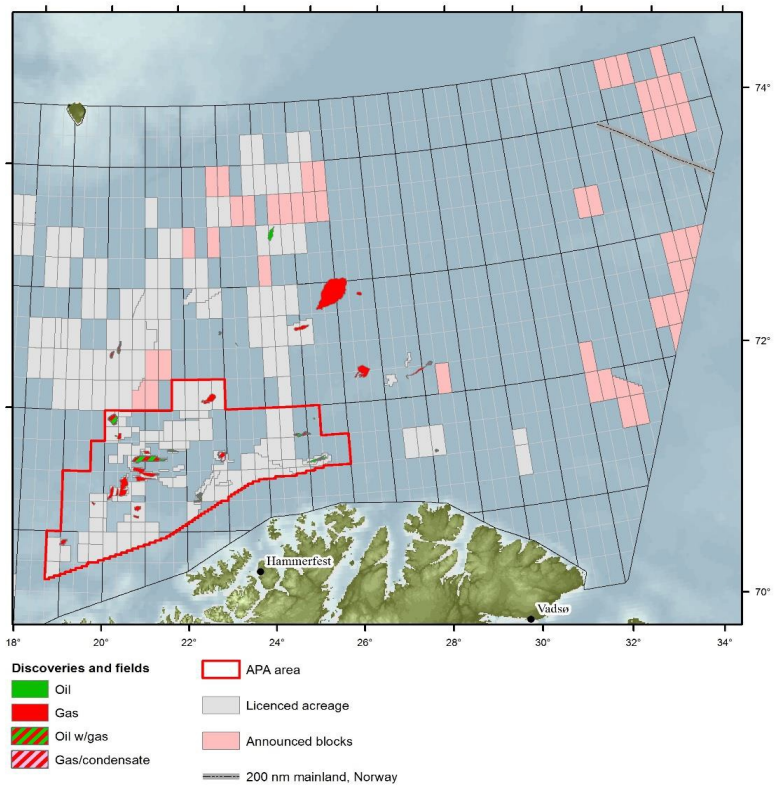

Figure 6.22: Map of Blocks announced in 23rd Norwegian Licensing Round[770]

Then later, on 18 April 2015 the Deputy Prime Minister of Russia, Dimitri Rogozin visited Svalbard, without his visit being agreed by the Norwegian government (as he is on the list of people sanctioned after the Russian annexation of Crimea), sparking a very minor diplomatic incident.[771] This was followed by the First Deputy Chairman of the State Duma Committee on International Affairs, Leonid Kalashnikov, issuing a statement questioning Norway's sovereignty over Svalbard.[772] The Norwegian response appears to be also muted with the Foreign Minister, Borge Brende, reported as making the following statement:

> "it is the Norwegian government alone which manages resources on the Norwegian continental shelf…For that reason it is not of interest to consult with other countries' governments on the allocation of licences on the Norwegian continental shelf. This is in line with the Law of the Sea and the attitude of

[770] ©NPD, 2015. Public Domain, available at: www.npd.no/en/Topics/Production-licences/Theme-article/Licensing-rounds/23rd-Licencing-round?announcement.
[771] Thomas Neilsen, "Norway Summons Russian Ambassador", (2015), *Barents Observer*, 20 April 2015, available at: http://barentsobserver.com/politics/2015/04/norway-summons-russian-ambassador-20-04.
[772] Ibid..

all Norwegian governments since the announcement of licences on the Norwegian continental shelf began 50 years ago".[773]

Since late April there has been silence on both sides. The protest does however add uncertainty to the licensing process for these blocks. It is unclear whether (a) any oil company will apply for these blocks and (b) whether Norway may simply not award these blocks irrespective of whether it receives any applications for them. One can speculate whether this licensing round was a gentle testing of the waters.[774] It is interesting to note that so far only Russia has protested and that so far even the protest and the response have been relatively muted.[775]

Norway may well choose for now not to proceed with awarding the disputed blocks preferring to continue to concentrate on the considerable available and prospective unlicensed acreage in the south Barents Sea and off western Norway, which are less hostile and remote locations. Nonetheless, the NPD has estimated that a total of 290m m^3 of oil equivalents are located in the Barents Sea around Svalbard[776] and also indicated that there are some very large petroleum deposits in the north Barents Sea.[777] However, Norway will probably at some point wish to proceed to extensively develop this maritime area.

Thus, it seems likely that if the Svalbard issue can be resolved it will be by political and diplomatic rather than legal approaches[778] and that there may be some economic trade - offs necessary to facilitate that resolution, such as joint Russian participation in the Svalbard Zone, or Norwegian investment in Russian Arctic projects.

[773] Trude Pettersen, "Russia protests oil development in Svalbard Zone, (2015), *Alaska Dispatch News*, 7 May 2015, available at:
www.adn.com/article/20150507/russia-protests-oil-development-svalbard-zone.
[774] Aril Moe, "Russian and Norwegian petroleum strategies in the Barents Sea", (2010), *Arctic Review on Law and Politics*, Vol.1, No. 2, 225, available at:
http://site.uit.no/arcticreview/files/2012/11/AR2010-2_Moe.pdf.
[775] It might be speculated that the Russians are more concerned with the Ukrainian crisis, and did not wish to further antagonise Norway who is applying sanctions against Russia, or complicate any further relations in the Arctic Council, especially during the presidency of the United States.
[776] Pedersen, op. cit., at 348.
[777] NPD, "Nye grunne boringer I Barentshavet nord", (2005), *NPD Press Release*, 17 August 2005.
[778] However Jensen and Rotten argue it is both a political *and* a legal issue, but one that will be resolved by peaceful rather than military means: Oystein Jensen and Svein Vigeland Rottem, "The politics of security and international law in Norway's Arctic waters", (2009), *Polar Record*, Vol. 46 (236), 75, at 79 - 82.

From the perspective of title to petroleum produced on the Svalbard shelf aspect it will be interesting to see whether any oil company will bid for the blocks in the Svalbard zone, except for perhaps the Norwegian state companies, and if so whether title to the petroleum will be challenged, whether through the courts[779] or politically.

6.7 General Thesis Conclusions regarding the Continental Shelf, International Law and Title to Petroleum

The Law of the Sea (arising from conventions, customary international law and judicial decisions) defines specific maritime zones and allocates jurisdiction, while attempting to balance the principles of freedom of navigation, sovereignty and the common heritage of mankind.

The Law of the Sea concerning continental shelves is now considered to be generally codified in Part VI of UNCLOS, which sets out the rights and obligations of coastal states in this maritime zone. Particularly relevant to assessing the ability of an oil company to acquire good title to petroleum it produces from the continental shelf are Articles 76 and 77.

Article 76 defines the continental shelf zone limits and the limits and constraints for the outer edge of the continental shelf, while Article 77 sets out the rights and obligations of the coastal state with respect to the continental shelf.

Article 77 clearly and unambiguously grants to a coastal state the right to exercise over the continental shelf its exclusive sovereign rights for the purposes of exploring it and exploiting its natural resources. But this is where the clarity of the provisions of Part VI ends.

The analysis in this chapter demonstrates that the definition of the continental shelf, as set out in Article 76, is a complex, lengthy, ambiguous, sometimes ill-defined fusion of science and law, which results in uncertainty for operational implementation of the continental shelf regime. Article 76 frequently utilises scientific terminology, but often a legal and non-scientific meaning is ascribed and on occasions terms are ambiguous or undefined. Within 200nm these definitional difficulties have little impact as there the continental shelf is defined purely by distance from the territorial baselines. The real difficulties occur in

[779] Perhaps in a manner pursued by BP against Libya in the 1980s, where it took out injunctions at every port where Libyan oil from its expropriated fields were unloading?

defining the continental shelf beyond 200nm, termed the extended continental shelf ("ECS"): a major national policy and security priority for all of the Arctic Five. Regrettably there is little or no assistance available from judicial decisions or the writings of international authorities.

Key concepts such as 'seabed' and 'subsoil' are particularly lacking in formal legal definition, and, as discussed in the chapter, this may potentially cause significant issues in the delineation of the ECS in the Arctic Ocean. The case of the thawing subsea permafrost and the resultant potential for "ambulatory continental shelves" highlights that the definitional provisions of Article 76 are insufficient for purpose. Other key terms fundamental in ECS delineation, such as the 'continental margin', 'natural prolongation' and the 'foot of the slope' are also imprecise and uncertain, and thus subject to possible multiple competing interpretations.

In the Arctic Ocean these definitional issues are further compounded by implementation difficulties. Article 76(4) CLCS submissions on the delineation of a coastal state's ECS require high quality evidence of the nature of key features of the seabed. In the Arctic Ocean data gathering is extremely difficult and costly due to the extremely hostile environment and technological limitations, and this difficulty is then complicated by a lack of standardised methodologies for interpretation of such data, leading potentially to differing conclusions. The CLCS, the organisation established to give scientific and technical advice and to confirm the coastal state's results/delineation, issued Guidelines in 1999. The CLCS Guidelines are generalistic and do not specifically address many of the definitional issues of Article 76. The CLCS Guidelines are arguably in need of substantial updating and upgrading.

The CLCS process under Article 76(8) suffers from a lack of transparency. The submissions and CLCS recommendations are not publicly available in full, and the executive summaries are generally terse and uninformative, with much needing to be deduced from the accompanying maps of the ECS. What is missing is the rationale and evidential basis of submissions and recommendations. The chapter also identifies the difficult issues of CLCS selection and the relationship of Non-party States to the Article 76(8) process.

The analysis of the Russian, Norwegian, and Greenlandic submissions demonstrates the crucial role certain subsea features such as ridges and elevations may play in the delineation

of the ECSs of the Arctic Ocean. Neither of these subsea features is clearly defined under UNCLOS (or in fact otherwise under international Law of the Sea) and the problems this poses were examined in some detail, and point to the CLCS process being, as Macnab coins it, a poker game with the subsea features being wild cards.

A developmental feature of Part VI of UNCLOS is Article 82, under which the coastal state is required to make payments through the ISA in respect of petroleum produced on its ECS. Although the principle set out in Article 82(1) is clear, the other paragraphs of Article 82 suffer from definitional problems, which are analysed in the Chapter. Moreover, there are issues connected with the legal status of the Article, its applicability to Non-party States, and the role of the ISA. The author questions whether the detailed setting of the universally applicable rate of payment will deleteriously affect the financial return from an ECS project in the Arctic Ocean (either for the state or oil company, if the payment obligation is passed on to it with no tax relief) to such an extent that it renders the project commercially non-viable. This would defeat the object of Article 82.

Given that there may be disputes arising in relation to delineation of the ECS by coastal states, the necessity to have appropriate and clear dispute settlement mechanisms is important. The chapter once again identified weaknesses in the UNCLOS regime, relating, inter alia, to issues of compulsory jurisdiction and *locus standi*.

The Chapter examined the incorporation by the Arctic Five of the international continental shelf regime into the national legal regimes of the Arctic Five, and identified only one current problematic issue with respect to such incorporation. Usually the coastal state's title to petroleum produced on its continental shelf is passed through licensing/leasing regimes to the licensed oil company. Only the Norwegian right to licence petroleum development activities on the Svalbard Shelf remains unsettled[780] and is currently being tested by the Norwegians.

What can be concluded from the analysis?

- Crucially international law establishes the principle of the sovereign rights of coastal states to the natural resources on their continental shelves.

[780] Although, as discussed, its jurisdiction is longer formally challenged.

- Unfortunately, the provisions relating to the implementation of this principle are deleteriously affected by:
    - Ambiguous and some poorly defined key terminology;
    - The role and functioning of the CLCS.
    - The lack of clear guidelines regarding the nature and quality of evidence for submissions in respect of ECS claims.
    - Slightly problematic dispute resolution provisions, although it should be emphasised that the UNCLOS does provide a relatively solid basis for the peaceful resolution of disputes.The peaceful resolution of disputes approach is also expressly reflected in the Ilulissat Declaration.[781]
    - Payment obligations to the ISA for ECS projects that may render development of the Arctic Ocean non-viable.
    - Lacunae, especially in respect of features such as submarine ridges and elevations or circumstances such as subsea permafrost and its thawing that were not contemplated by the drafters of UNCLOS and which should be addressed by the ILC in the near future.
    - The need for updating the CLCS Guidelines and possibly the selection of the CLCS.
- The domestic continental shelf and petroleum regimes of the Arctic Five are well drafted and clear, and provide for the transfer of the coastal state's title to the petroleum produced on its continental shelf to the licensee/lessee.

In conclusion it can be said that international law played the fundamental role in the establishment of the incontestable right of a coastal state to the petroleum in its continental shelf. However, it then complicated the exercise of this right by the coastal state by some poorly drafted provisions in UNCLOS. As Proelss and Müller argue in regard to ECS provisions, the current international law with regard to the continental shelf and especially the ECS is not perfect and without criticism, but it is constantly used in practice by the international community and the CLCS.[782] It may be that, since UNCLOS was a compromise text adopted by consensus, the drafters were well aware of its limitations, and hoped that

[781] Betsy Baker, "Oil, Gas and the Arctic Continental Shelf: What Conflict?", (2012), *OGEL*, Vol. 10, No.2, 1, at 17.
[782] Proelss and Müller, op. cit., at 668.

state practice, judicial decisions, and the non-binding guidelines of the CLCS would add clarity and certainty. To date, it can be argued, that it is happening very slowly.

In the Arctic Ocean and continental shelf delineation is a mixed tale. Within 200nm the continental shelf regime is unproblematic. It is in regard to the ECS that the weaknesses of the international legal regime affect continental shelf delineation dramatically. In particular in the Arctic, the definitional ambiguities of Article 76 provide the coastal states, with the opportunity to attempt to greatly optimise their continental shelves, while conversely they provide other states with the opportunity to challenge claims. The Chapter concludes that international law establishes the fundamental principles and basic regime of coastal states' rights to the petroleum located in the seabed and subsoil of their continental shelves. The problems arise in the detail of the provisions and in the practical implementation of the provisions relating to the exercise of these rights. As reflected in the Ilulissat Declaration, it is therefore not surprising that the Arctic Five would prefer to solve any issues arising with respect to the delineation and delimitation in the Arctic Ocean in a piecemeal as necessary fashion between themselves using the current framework rather than attempt to convince the international community to amend UNCLOS, agree supplementary provisions for UNCLOS, or agree a region - specific Arctic OceanTreaty.

The uncertainties and problems under the continental shelf regime in the Arctic Ocean are far from an ideal situation. Any uncertainty in regard to an ECS claimed by a coastal state will result in consequential uncertainty in respect of the coastal state's title to petroleum produced there, and this uncertainty will then be transferred down the title chain. It is unlikely that an oil company would contemplate investing in any acreage in the Arctic Ocean where the ECS state had uncertain title. It is perhaps fortunate therefore that the USGS estimates that most petroleum in the Arctic Ocean is located within the 200nm limit.[783]

[783] Also see: Macnab, Neto, and van de Poll, (2001), op. cit., at 88.

Chapter 7 Maritime Delimitation in the Arctic Ocean: Implications for Title to Petroleum

Summary:

This Chapter provides observations and conclusions with respect to aspects of maritime delimitation, international law, and the acquisition of good title to oil produced by an oil company in the Arctic Ocean. Due to a number of significant recent studies on maritime delimitation in the Arctic Ocean, this Chapter will not repeat their basic information on the topic.

The Chapter observes that all the Arctic Five States have honoured the international law obligation to settle maritime disputes by peaceful means. It notes that despite UNCLOS providing a general framework for maritime delimitation and dispute resolution, there are weaknesses and lacunae in international law in respect of delimitation in the Arctic Ocean, which the Chapter identifies and analyses. These include definitional and conceptual issues, the legal status of 'special areas', problems of unitisation, and unresolved delimitation disputes – problematic issues which international law has contributed little to resolving.

Generally, it can be said that an Arctic coastal state's title to petroleum produced in its EEZ is clearly established under international law. Problems, however, do occur in a few areas of overlapping EEZ claims, and oil companies should exercise caution, even where there are delimitation agreements, as some are vague and unclear in the detail.

Potentially, there will also be the issue of several overlapping ECS claims in the Arctic Ocean and the Chapter concludes by highlighting the key considerations that would go to resolving such disputes.

7.1 Introduction

Numerous books and articles[1] have analysed the general international law of the sea and case law relating to boundaries between coastal states that adjoin or are opposite each other. This extensive body of research, together with recent studies relating to maritime delimitation in the Arctic Ocean[2] means that it is only necessary in this Chapter to identify

[1] Such as Robin Churchill and Vaughan Lowe, The Law of the Sea, (1999), 3rd Edn., Manchester University Press, Melland Schill Studies; James Crawford, *Brownlie's Principles of Public International Law*, (2012), 8th Edn., Oxford University Press, Part IV, at 255 - 332; D. P. O'Connell (I. A. Shearer, ed.), *The International Law of the Sea,* (1982), Clarendon Press; Donald R. Rothwell and Tim Stephens, *The International Law of the Sea,* (2010), Hart Publishing; Yoshifumi Tanaka, *The International Law of the Sea,* (2012), Cambridge University Press.

[2] The most recent and useful being: Michael Byers, *International Law and the Arctic,* (2013), Cambridge University Press, Chapter 2, at 28 - 55; Calderbank *et al*, op. it., at 161 - 165; Alex Oude Elferink, "Arctic Maritime Delimitations: The Preponderance of Similarities With Other Regions", (2001), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, (2001), (Alex Oude Elferink and Donald R. Rothwell, eds.), Martinus Nijhoff, Chapter 10, at 179 - 199; David H. Gray, "Canada's Unresolved Maritime Boundaries", (1997), *IBRU,* Boundary and Security Bulletin, Vol. 5, No. 3, 61, available at: www.dur.ac.uk/resources/ibru/publications/full/bsb5-3_gray.pdf.

the key observations and conclusions relevant to maritime delimitation in the Arctic Ocean and the thesis topic.

There are six maritime boundary agreements in relation to the Arctic Ocean:

a. 1973 Canada - Denmark Boundary Treaty[3]

b. 1990 Bering Sea Treaty[4]

c. 1993 Greenland - Jan Mayen Delimitation[5]

d. 2006 Greenland - Svalbard Boundary Treaty[6]

e. 2010 Barents Sea Boundary Treaty[7]

f. 2013 Lincoln Sea Boundary Tentative Agreement[8]

This Chapter relies heavily on the information in the above cited works.

[3] Agreement between the Government of the Kingdom of Denmark and the Government of Canada relating to the Delimitation of the Continental Shelf between Greenland and Canada, 17 December 1973, in force since 14 March 1974, available at:
www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/DNK-CAN1973CS.PDF.
It should be noted that this and all other Arctic delimitation treaties are listed and examined in: Nigel Bankes and Timo Koivurova, "Chapter Six: Legal System", (2015), at 223 - 254, in *Arctic Human Development, Regional Process and Global Linkages*, (2014), No. ii, (Joan N.Larsen and Gail Fondahl, eds), Tema Nord, Nordic Council.

[4] Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, I June 1990, available at:
www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/USA-RUS199MB.PDF.
Since its signature the 1990 Bering Sea Treaty has effectively entered into provisional force by virtue of an exchange of letters between the United States and Russia which provide for the interim implementation of the 1990 Bering Sea Treaty pending its entry into force. On the exchange of diplomatic notes between James Baker and Edward Shevardnadze of 15 June 1990, see: D. Dimitrakis, "Sovereignty Matters in the Arctic", *SSRN*, 5 January 2015, at 13, available at:
http://papers.ssrn.com/so13/papers.cfm?abstract_id_=2545668; John H. McNeill, America's Boundary with the Soviet Union, (1991), Chapter 16, *Readings on International Law*, Vol. 68, US Naval War College, 289.

[5] Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the delimitation of the continental shelf in the area between Jan Mayen and Greenland and concerning the boundary between the fisheries zones in the Area, 18 December 1995, and the Additional Protocol to the Agreement of 18 December 1995 between the Kingdom of Norway and the Kingdom of Denmark on the Delimitation of the Continental Shelf in the Area between Jan Mayen and Greenland and the boundary between Fishery Zones in the Area, 11 November 1997, both available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/STATEFILES/DNK.htm.

[6] Agreement Between the Government off the Kingdom of Norway on the one hand and the Government of the Kingdom of Denmark with the Home Rule Government of Greenland on the other hand concerning the delimitation of the continental shelf and the fishery zones between Greenland and Svalbard, 20 February 2006, UNTS, Vol. 2378, 1-42887, 21, available at:
http://treaties.un.org/Publications/UNTS/Volume%202378/v2378.pdf.

[7] Agreement between the Kingdom of Norway and the Russian Federation Concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, 2010, available in English at:
www.regjeringen.no/upload/ud/vedlegg/folkerett/avatle_engelsk.pdf.

[8] Canadian Department of Foreign Affairs, "Canada and the Kingdom of Denmark Reach Tentative Agreement on Lincoln Sea Boundary", (28 November 2012), *News Release Department of Foreign Affairs (Canada*), available at:
www.international.gc.ca/media/aff/news-communiques/2012/11/28a,aspx?lang=eng.

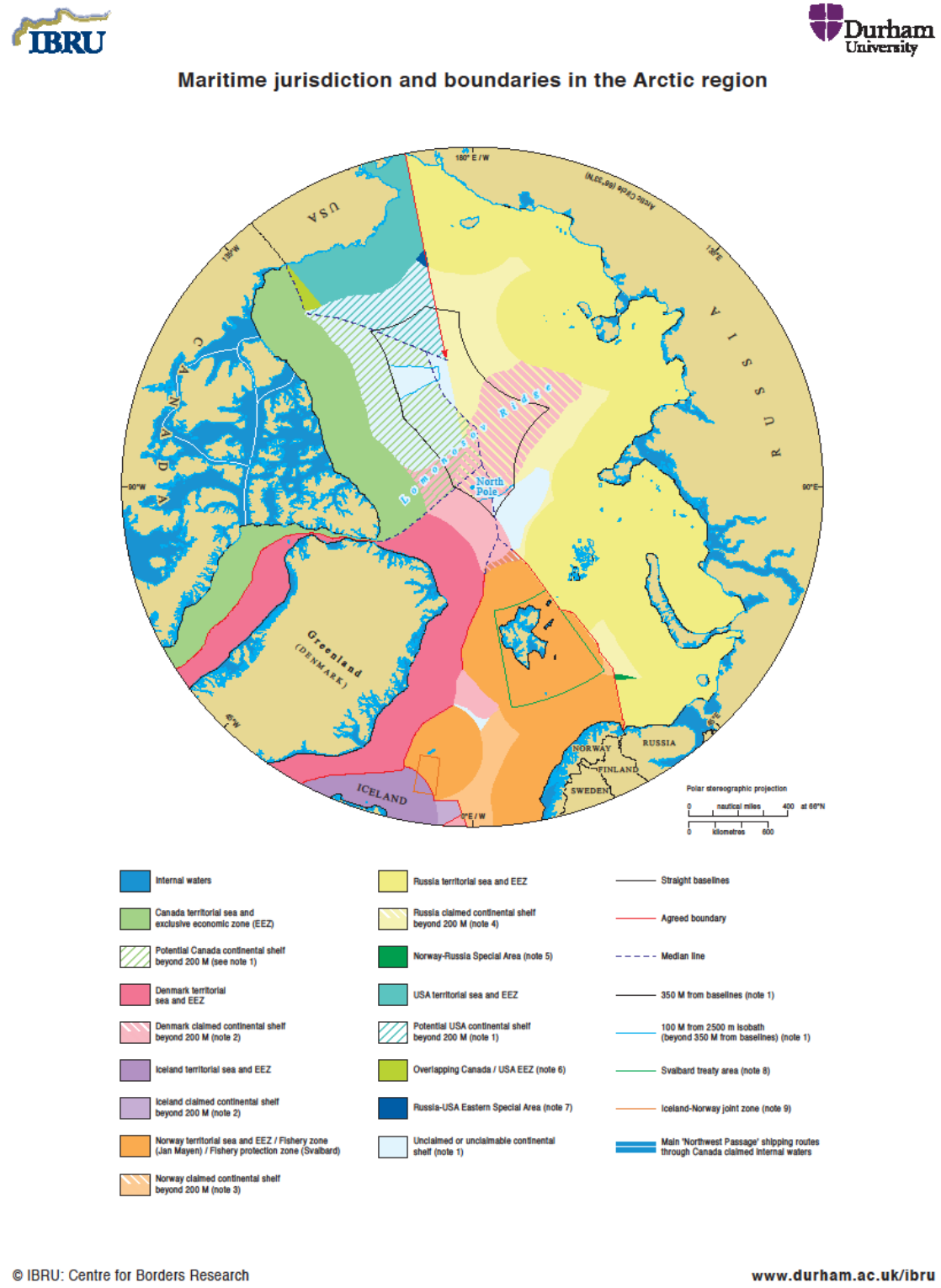

Figure 7.1: IBRU Map of Maritime Jurisdiction and Boundaries in the Arctic[9]

[9] © IBRU, Durham University 2015. General permission for academic use of map granted by IBRU. The map together with a very useful set of notes (downloaded on the 17 August 2015) is available at: www.dur.ac.uk/resources/ibru/resources/ibru_arctic_map27-02-15.pdf.

Figure 7.1 gives a very clear depiction of the maritime boundaries listed above and Figure7.2, reproduced below, is the 2008 USGS map and information on potential oil and gas provinces located in the Arctic Ocean, which emphasises the importance of clear delineation and delimitation of maritime zones in this region.

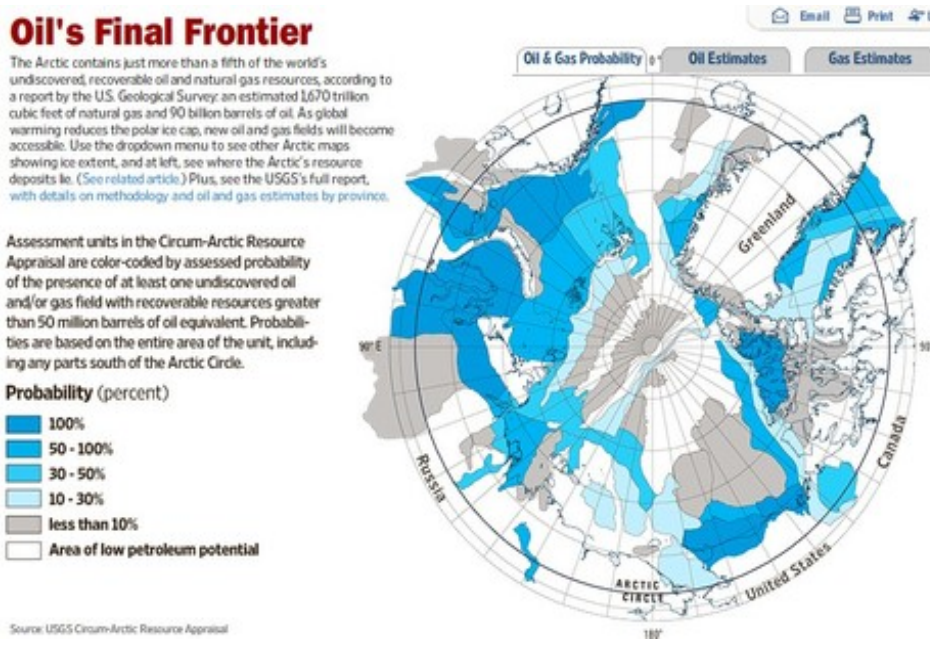

Figure 7.2: USGS Map of Assessment of oil and gas resource potential[10]

The six Arctic Ocean delimitation agreements listed above have been extensively analysed by numerous authors, in particular by Byers who dedicates a major chapter in his 2013 book to them.[11] As a result it is not necessary for this thesis to elaborate further on these agreements and their background. Nonetheless, for the sake of completeness, Annex 8 provides brief summaries of the key aspects of each agreement.

Currently there is only one major maritime boundary dispute in the Arctic Ocean within 200nm of the coasts of the littoral states[12] - that between the United States and Canada in

[10] © USGS. Public Domain. USGS, *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle*, (2008), Figure 1, available at: http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf.

[11] Byers, op. cit., Chapter 2, at 28 - 56.

[12] There are a few other minor unsettled areas: (1) there is also the small maritime areas between the delimitation points 122 and 123 and the low-water line on Hans Island. This issue will in all probability be addressed in the future Lincoln Sea treaty; (2) agreement on the location of the tripoint between Greenland, Iceland and Norway. There will also probably be a number of overlapping ECS claims – as raised in Chapter 6.

the Beaufort Sea.[13] This dispute has been examined extensively[14], in particular by McDorman[15] and Byers.[16]

7.2 Observations

7.2.1 The Peaceful Resolution of Maritime Delimitation in the Arctic Ocean

7.2.1.1 Delimitation Dispute Resolution and UNCLOS

The settlement of disputes section of UNCLOS (Part XV, Articles 279 – 299) sets down general principles and also provides judicial forums for disputes arising from the interpretation and application of the convention. However, many authors on the subject have noted that these UNCLOS dispute resolution provisions are weak in relation to sea boundary delimitation, due to the 'opt out' provisions of Article 297 and 298.[17]

In the case of the Arctic Five, Canada and Russia have opted out completely under Article 298 UNCLOS for all disputes relating to sea boundary delimitations of the compulsory procedure entailing binding decisions for the consideration of sea boundary delimitation disputes under Articles 287 UNCLOS, and Denmark and Norway have chosen only the ICJ for the settlement of disputes, expressly rejecting (under Article 298) Annex VII arbitral tribunals for delimitation disputes.[18] Although the smorgasbord approach to adjudication of Article 287 may have general appeal, such 'opt outs' may complicate any future adjudication of delimitation disputes in the Arctic Ocean.

Furthermore, the non-participation of the United States in UNCLOS raises issues regarding the dispute resolution provisions in Part XV of UNCLOS. As Koivurova and Molenaar point

[13] See authors in footnote 2, *supra*, and especially, Byers, op. cit., Chapter 3: The Beaufort Sea Boundary, at 56 – 91; and Ted McDorman, *Salt Water Neighbors: International Ocean Law Relations between the United States and Canada*, (2009), Oxford University Press.

[14] An updating article by the thesis author revisiting the dispute is scheduled for publication in Spring 2016. See: B. Sas, "The Beaufort Sea Dispute Revisited", accepted for publication in *OGEL: Special Edition on Polar Law and Energy,* Tina Hunter (ed.), Spring 2016.

[15] McDorman, ibid., at 181 - 190.

[16] Ibid..

[17] Robert C. Beckman and Leonardo Bernard, "Disputed Areas in the South China Sea: Prospects for Arbitration or Advisory Opinion", (2011), a presentation to the Third International Workshop, The South China Sea: Cooperation for Regional Security and Development, Hanoi, 3-5 November 2011, Session V, at 10 - 19; Natalie Klein, *Dispute Settlement in the UN Conventions on the Law of the Sea,* (2005), Routledge, at 51 - 58.

[18] Details of the Declarations and Statements on Ratification of UNCLOS are available at: www.un.org/depts/los/convention_agreements/convention_declarations.htm.

out, the mechanism for dispute resolution in Part XV is not able to become customary international law by reason of its procedural nature.[19]

As this part is seen as a key integral part of the UNCLOS package deal, the possibility that the United States as a non – Party to UNCLOS may neither invoke nor benefit from its provisions can be seen as a significant lacuna. To quote Koivurova and Molenaar:

> "The non-applicability of the dispute settlement mechanism of Part XV of the LOS Convention between the United States and other parties to the LOS Convention, including the other Arctic Ocean coastal states, is therefore a significant gap in the extensive international legal framework referred to in the Ilulissat Declaration".[20]

While this may be true, practically the actual impact of this gap may not be as significant as Koivurova and Molenaar suggest. A key point is that, based on over fifty years of state practice in the Arctic Ocean, adjudication of any maritime boundary dispute in the Arctic is extremely unlikely and for any such dispute the most probable solution will be a negotiated bilateral treaty based on some form of adjusted equidistance/median line delimitation close to, if not mirroring, those of either the 1990 Bering Sea Treaty or the 2010 Barents Sea Treaty.

7.2.1.2 The Peaceful Resolution of Disputes: Article 279 UNCLOS and Article 33(1) UN Charter

It should be noted that in practice all of the Arctic Five have honoured the obligation to settle maritime disputes by peaceful means under Article 279 UNCLOS[21] and Article 33(1) of the UN Charter. With respect to the outstanding dispute in the Beaufort Sea, both governments and their officials have repeatedly emphasised that this dispute will be settled

[19] Timo Koivurova and Erik J. Molenaar, *Governance and Regulation of the Marine Arctic*, (2009), a report prepared for the WWF International Arctic Programme, at 38, available at: www.wwf.se/source.php/1223579/International%20Governance%20and%20Regulation%20of%20the%20Marine%20Arctic.pdf.
But see cf.: Ted McDorman, "Global Ocean Governance and International Adjudicative Dispute Resolution, (2000), *Ocean and Coastal Management*, Vol. 43, 255, at 259.

[20] Koivurova and Molenaar, op. cit., at 39.

[21] Also Article 33(1) of the Charter of the United Nations, available at: www.un.org/en/documents/charter/charter6.shtml.
It is worth noting that in addition to conventional international courts and tribunals, dispute settlements methods have included quasi-judicial procedures, such as those used in the Jan Mayen Dispute, (the Conciliation Commission). On the Conciliation Commission see: Egilsdottir, (2013), op. cit., at 20-23.

by peaceful negotiations.[22] The importance of this strong commitment should not be underestimated given the important political, economic, security, and strategic aspects of the Arctic Ocean for the Arctic Five.

The peaceful resolution of delimitation disputes has brought a certain level of security in the Arctic for petroleum companies. This approach has been complemented by the 'feel good' factor for international political risk that has been generated over the past ten years by *inter alia* the cooperative Arctic sea-bed mapping, collegiate work on the Committees of the Arctic Council, the rapid achievement of an IMO Polar Code, and the relatively easy negotiation of much needed international agreements on fishing, search and rescue and oil spill preparedness and management in the Arctic Ocean.

However, the Crimea crisis in the Ukraine could risk, if not very carefully managed, spilling over into the Arctic[23] and damaging the last fifteen years of progress in cooperation and the peaceful resolution of disputes in the Arctic.[24]

The Crimea has certainly provided a salutary lesson that Russian will protect what it considers is rightfully hers.[25] To date no moves to exclude Russia from any aspect of the Arctic Council have been mooted.[26] In early 2015 the United States assumed the chairmanship, and it remains to be seen whether the previously high level of cooperation will continue[27], although early signs are good[28], and the nascent security/political dilemma

[22] See Annex 8.

[23] Bennett comments on the Ukrainian situation that "The biggest crisis in relations between Russia and the US and Europe since the Cold War may bode ill for the Arctic": Mia Bennett, " Russia Puts Countries on Edge in the Arctic", (2014) *Cryopolitics*, 18 March 2014, available at:
http://cryopolitics.com/ctegory/geopolitics.

[24] Marina Koren, "Is Vladimir Putin Coming for the North Pole Next?", (2014), *National Journal,* 27 March 2014, available at:
www.nationaljournal.com/politics/is-vladimir-putin-coming-for-the-north-pole-next-20140327.

[25] See the most recent statements by Sergei Lavrov on 9 July 2015, on Ministry of Foreign Affairs of the Russian Federation official website at:
http://archive.mid.ru/BDOMP/Brp_4.nsf/arh/FD6501445381B22343257E7E00231C69?OpenDocument.

[26] Atle Staalesen, "Hilary Warns against Russia in Arctic", (2014), *Barents Observer*, 03 April 2014, available at:
http://barentsobserver.com/en/arctic/2014/04/hilary-warns-against-russia-in-arctic-03-04;
Sarah Norris, "Despite Crimea, Western-Russian Cooperation in the Arctic Should Continue", (2014), *Carnegie Endowment for International Peace: Eurasia Outlook*, 27 March 2014, available at:
http://m.ceip.org/2014/03/27/despite-crimea-western-russian-cooperation-in-the-arctic-should-continue/h5xf&land=en.

[27] Hilary Clinton, a probable Democratic Presidential candidate in 2016, has been warning that the Arctic is vulnerable to Russian expansionism and that Canada and United States should forge a united front against Russia in the region - Staalesen, op. cit., footnote 26.

in the Arctic appears now to be dissipating.[29] For without Russia, the state with the largest Arctic territory (about half), there can be no meaningful international Arctic cooperation. As Bennett comments:

> "The US and Canada …cannot solve all the Arctic's problems without the help of Russia…The region will suffer environmentally, politically and economically if it reverts to being a frozen, Cold War–era no-man's land".[30]

Such political instability in the Arctic Ocean could have serious spin-off consequences, including for petroleum development there.

It is likely that oil and gas companies would, in the short term, seek more stable political environments elsewhere to develop. In the medium term, when they return, in order to prevent any problems regarding title, they will probably select acreage closer to shore well within the EEZs of the states, well away from borders or disputed areas.

As a result of recent United States actions against Russia regarding Crimea (especially the sanctions), it is also clear that the status of the 1990 Bering Sea Treaty will remain, at least for the next few years, in limbo, as will be discussed further below in the next section. Given current tensions, it is highly unlikely that either state would risk offering licence areas anywhere near the formerly disputed area.

The Beaufort Sea dispute is set to drag on for the next few years - at least until the mapping of the relevant Arctic seabed is completed to a satisfactory standard for their respective

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Betsy Baker and James Kraska, "Emerging Arctic Security Challenges", (2014), *Center for New American Security,* 25 March 2014, available at:
www.cnaa.org/Emerging_arctic-Security-Challenges.

[28] On the 16 July 2015, after a hiatus in negotiation of a year caused by the Crimean crisis, the Arctic Five agreed to ban their fishing fleets from the Arctic Ocean's high seas: Alister Doyle, "Russia, US agree fishing ban in Arctic as sea ice melts", (2015), *Reuters*, 16 July 2015, available at:
http://uk.reuters.com/article/2015/07/16/uk-russia-arctic-idUKKCNOPQ15L20150716; Yereth Rosen "5 Nations sign declaration to protect Arctic 'donut hole' from unregulated fishing", (2015), *Alaska Dispatch,* 16 July 2015, available at:
www.adn.com/article/20150616/5-nationa-sign-declaration-protect-arctic-donut-hole-unregulated-fishing.

[29] Kristian Atland, "Russia-Western Relations in the Arctic: Perceptions, Policies, and Prospects", (2014), *European Leadership Network*, 25 March 2014, available at:
www.europeanleadershipnetwork.org/russian-western-relations-in-the-arctic-perceptions-policies-and-prospects

[30] Mia Bennett, "Russia puts countries on edge in the Arctic", (2014*), Cryopolitics,* 22 March 2014, available at: http://cryopoltics.com/2014/03/22/russia-puts-countries-on-edge-in-the-arctic/.

CLCS claims and/or submissions.[31] Although unsettled, the Beaufort Sea dispute is considered to be a 'well-managed dispute'[32], with both Canada and the United States having adopted temporary measures of a practical nature to prevent harming the other state's interests, in keeping with Articles 74(3) and 83(3) UNCLOS[33], each having declared a *de facto* moratorium on hydrocarbon development in the disputed area.[34]

However, it is interesting to speculate whether the Ukrainian crisis may stimulate both sides to come to the negotiating table sooner than previously envisaged. It may be that the politicians decide to settle the Beaufort Sea dispute now, in order to show Russia a united front in the northern Arctic Ocean, in particular with respect to the probable overlap of the extended continental shelves. Perhaps, given the Crimean crisis, compromise solutions may also be more easily 'saleable' (as a national security issue) to the general public, particularly in Canada.

[31] Betsy Baker and Randy Boswell, "Canada non-committal over U.S. position on Beaufort Sea Dispute", (2010), *Canwest News Service*, 9 March 2010, available at:
www.canada.com/technology/Canada+commital+over+position+Beaufort+dispute.
Statement by the Canadian Foreign Minister to the Canadian Standing Committee on National Security and Defence, 1 November 2010, Canada Government, Proceedings of the Standing Senate Committee on National Security and Defence, Issue 8, available at:
www.parl.gc.ca/Content/SEN/Commitee/403/defe/08evb-e.htm?Language=E&Parl=40&Ses=3&comm_id=76.

[32] Catherine Loubier, a spokeswoman for the Department of Foreign Affairs of Canada is reported as stating on 17 February 2010: "Canada favours a resolution of the dispute. The issue has been well managed by Canada and the US, and will be resolved on its own merits when both parties are ready to do so"- reported by B. Baker in "Canada favors resolution of Canada - US Beaufort Sea joint maritime boundary", *Arctic Mapping and the Law of the Sea*, (21 February 2010), available at:
http://arctic-healy-baker-2008.blogspot.com.au/2010/02/canada-favors-resolution-of-canada-us.html.
Department of Foreign Affairs, *Statement on Canada's Arctic Foreign Policy*, (2010), at 7, available at:
www.international.gc.ca/arctic-arctique/assets/pdfs/canad_arctic_foreign_policy-eng.pdf] – this document states that the first priority is the resolution of all Arctic boundary disputes including the one in the Beaufort Sea, which its describes as "well managed, neither posing defence challenges for Canada nor diminishing Canada's ability to collaborate and cooperate with its Arctic neighbours.".
In her paper Baker concludes that one of the reasons for the slow resolution of the boundary dispute is that "…it is not particularly contentious and is considered by diplomats in both states to be well-managed" – see: Betsy B. Baker, *Filling an Arctic Gap: Legal and Regulatory Possibilities for Canadian – U.S. Cooperation in the Beaufort Sea*, (2010), Vermont Law School Legal Studies Research Paper Series, Research Paper No. 10 – 37, 26 March 2010, at 70; Ian G. Brosnan, Thomas M. Leschine and Edward L. Miles, "Cooperation or Conflict in a Changing Arctic?", (2011), *Ocean Development and International Law*, Vol. 41, No. 1 - 2, 173, at 187; McDorman, (2009), op. cit., at 118.

[33] General Assembly Resolution 3129, Cooperation in the field of the environment concerning natural resources shared by two or more countries, (1973), UN General Assembly, 2199th Plenary Meeting, 13 December 1973, para. 1, available at:
http://daaccess-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/282/01/IMG/NR028201.pdf/OpenElement.

[34] McDorman , op. cit., at 188- 189; Baker and Byers, op. cit., at 73;

7.2.2 Lacunae in the International Legal Framework for Delimitation in the Arctic Ocean

Different types of inadequacies, with different levels of significance, do remain in the international law framework for delimitation issues in the Arctic Ocean, and these include:

(1) A lack of several key technical definitions in the relevant UNCLOS provisions

This is part of a wider issue, and one that prompted a ten year study by the Law of the Sea Committee of the American Branch of the International Law Association, which left most of the terms it examined unsettled.[35]

In the context of delimitation there are several technical terms in UNCLOS that are undefined but highly relevant, such as 'geographic(al) coordinates'', 'isobath', 'basepoint/point', 'equidistance/median line', and 'geodetic datum'. Some of these terms have been clarified by case law, others by authoritative publications, such as those of the International Hydrographic Organisation ("IHO")[36], while others remain unclear.

Take for example the words 'geodetic datum', used in Articles 16, 75 and 84 UNCLOS in relation to delimitations of maritime zones. Although the general meaning is well understood[37], the specific meaning in the context of the UNCLOS is not, that is which geodetic datum should be used.

This issue has relevance in the Arctic as in the case of the *1973 Greenland - Canada Treaty* where the difficulty of two countries using different geodetic datums[38] in defining their maritime zones was evident. Such differing geodetic datums can have significant effects on the positions of the maritime zones' lines.[39] The international law of the sea (in both treaties and case law) has not addressed this technical issue, nor has the international community

[35] The study resulted in a 2012 report in which 200 words and phrases used in UNCLOS, but not defined, were analysed and defined based on usage. See: George K. Walker (ed.), *Definitions for the Law of the Sea, Terms Not Defined by the 1982 Convention*, (2012), Martinus Nijhoff.

[36] See IHO, International Hydrographic Bureau, *Manual on Technical Aspects of the United Nations Convention on the Law of the Sea – 1982*, Appendix 1: Glossary, Special Publication No. 51, 4th Edn., (March 2006), ¶ 40, available at:
http:/ohi.schom.fr/publicat/free/files/S-51_Ed4-EN.pdf.

[37] Walker, op. cit., at 212.

[38] On the meaning of "geodetic datum" see: Walker, (2012), at 210 - 211.

[39] The issue of differing datums used in the Canada - Greenland delimitation is described in detail by Calderbank *et al*, (2006), at 163 - 164.

agreed on a single datum to be used uniformly in all maritime delimitations.[40] Since the term geodetic datum is used in Articles 16, 75 and 84 UNCLOS in respect of geographical coordinates of points for baselines and delimitation lines, this gap in the legal framework could have significance. Fortunately, delimitation agreements can be worded appropriately to take this issue into consideration, either by agreeing on a mutually acceptable single datum to be used for the delimitation, or having provisions for the eventual agreement of a single datum when scientific data/method permits. To date all parties to Arctic Ocean delimitation agreements have done exactly this.

(2) The law of the sea provides a framework of definitions and principles, but frequently not legal rules or precise methods for delimitation

In all the delimitations in the Arctic Ocean, the methodology for defining the maritime boundary between opposite and adjacent states has, at least initially, been problematic. In one instance the dispute resulted in adjudication by the ICJ, the *1993 Greenland - Jan Mayen Island Case*, followed by an agreement on the maritime boundary between Greenland and Jan Mayen Island based on that decision.[41] Since then, however, the Arctic Five appear to have expressed a preference against adjudication, as emphasised in their Ilulissat Declaration.

Article 15 of UNCLOS sets out clearly that to delimit the territorial seas of two opposite or adjacent states the median line method is to be used except "where it is necessary by reason of historic title or other special circumstances to delimit the territorial seas of the two States in a way which is at variance therewith". Although the key method is clear, the exception is vague. Historic title has long been, and remains, the subject of controversy.[42] The term 'special circumstances', although undefined in UNCLOS, has been the subject of considerable jurisprudence of the ICJ and ITLOS, which although not exhaustive has clarified to some degree the term.[43] But how, and to what extent, the median line is to vary to take

[40] Chris Carleton and Clive Schofield, *Developments in the Technical Determination of Maritime Space: Charts, Datums, Baselines, Maritime Zones and Limits*, (2001), IBRU Maritime Briefing, Vol. 3, No. 3, IBRU, available at: www.dur.ac.uk/ibru/publications/download/?id=242.

[41] Discussed in Chapter 4.

[42] Clive R. Symmons, *Historic Waters in the Law of the Sea, A Modern Re-Appraisal*, (2008), Martinus Nijhoff, especially at 283 – 300.

[43] North Sea Continental Shelf Cases, (1969) ICJ Reports, 3; Tunisia v. Libya, (1982), ICJ Reports, 1; Gulf of Maine, (1984), ICJ Reports, 246; Libya v. Malta, (1985), 13; Guinea-Guinea-Bissau Maritime Delimitation,

into account the exceptions is not elaborated in Article 15.This leaves it to the international courts and tribunals (in the exercise of what Jennings terms 'judicial discretion'[44]), or the states between themselves, to fill in this definitional lacuna.

Article 74 of UNCLOS, on the delimitation of the EEZ between States with opposite or adjacent coasts, merely states that the delimitation "shall be effected by agreement on the basis of international law…in order to achieve an equitable solution". Article 83 on the delimitation of the continental shelf between States with opposite or adjacent coasts is similarly worded. The wording in both articles is vague and lacking clear definition.

Jennings[45], Higgins[46], and Triggs[47] have all been critical of the ICJ's jurisprudence on the concepts of an 'equitable solution', 'equitable principles', and 'special circumstances' that are to be taken into account in adjusting the equidistance line to achieve an equitable solution. Triggs considers that there has been a tendency of the ICJ "to speak in generalities", that its decisions are unclear and often confusing[48], and that the "[A]doption of a test of equitability has also been criticised as subjective and leading to 'pure judicial discretion' in making choices".[49]

The lack of clarity of these key concepts has led different states to adopt differing approaches to "special circumstances" to achieve what they consider to be 'equitable solutions'. Since each state will naturally maximize its claim this lack of clear rules has led to competing claims and disputes. In order to clarify the situation the ICJ has, as discussed

(1985), ILR, Vol. 77, 635; Jan Mayen Case, (1993) ICJ Reports, 38; Qatar v. Bahrain, (2001), ICJ Reports, 40; Cameroon v. Nigeria, (2002), ICJ Reports, 303; Barbados v. Trinidad and Tobago (Permanent Court of Arbitration), (2006), ILR, Vol. 139, 449; Nicaragua v. Honduras, (2007) ICJ Reports, 659; Black Sea (Ukraine v. Romania) Case, (2009), ICJ Reports, 61, Bangladesh v. Myanmar, (2012), ITLOS Case No. 16, available at: www.itlos.org/fileadmin/itlos/documents/cases/case_no_16/1-C16_Judgment_14_02_2012.pdf.
For comments see: Rothwell and Stephens, op. cit., at 403 - 404.

[44] Sir Robert Jennings, "Equity and Equidistance Principles", (1986), *Annuaire Suisse de Droit International*, Vol. 4227, at 31.

[45] Ibid..

[46] Rosalyn Higgins, *Problems and Process: International Law and How to Use It,* (1993), Oxford University Press, at 227.

[47] Gillian Triggs, *International Law, Contemporary Principles and Practice*, (2006), Lexis Nexis, Butterworths, at 296 -297.

[48] Ibid., at 296.

[49] Ibid., at 297.

earlier, developed considerable jurisprudence relating to 'special circumstances' and the adjustment of the equidistance/median line.[50]

The history of Arctic delimitation has been one where, in the main, compromise bilateral agreements on delimitation have been reached, and these have generally reflected the ICJ's jurisprudence.

All of the Arctic Ocean boundary agreements in force have adopted an equidistance/median line method adjusted to take into account special circumstances, with the possible exception of the 2010 Barents Sea Treaty. However, even the Parties to the 2010 Barents Sea Treaty are at pains to emphasise that its boundary delimitation is based on the principles of international law of the sea and Article 76.[51] Thus, the combination of case law and the provisions of the law of the sea conventions appear to have been sufficient to have allowed the Arctic Ocean states to settle almost all the delimitation boundaries within 200km of their Arctic coasts, with two notable exceptions: the maritime boundaries in the Bering and Beaufort Seas.

The legal status of the *1990 Bering Sea Treaty* is uncertain. The Russian Duma has repeatedly condemned the agreement as 'unfair' and not in the national interest, and therefore it has refused to allow the ratification of the Treaty. Nonetheless, for almost 25 years Russia has taken no formal actions: neither has it denounced the agreement[52], nor has it requested that negotiations be re-opened. But the Treaty delimitation boundary's apparent use in various fishing agreements in the Bering Sea between the United States and Russia/USSR[53] may mean that such Russian acquiescence could result in Russia being

[50] Ibid., at 296 - 297.
[51] See preamble of *2010 Barents Sea Treaty*.
[52] Without ratification the Treaty is not formally in force [Article 14 of the 1969 Vienna Convention on the Law of Treaties of 22 May 1969, ("VCLT"), (155 UNTS, 331) and in order to be formally terminated it needs to follow specific notification procedures, see Articles 61 -62 VCLT]. The Russian government has, however, taken no steps to terminate the provisional application of the Agreement: see V. A Konstantinov, "Kogda Soefinennye Shtaty Prekratiat Unizhat Rossiiu?", (2000), *Moskovskii Zhurnal Mezhdunarodnogo Prava*, Vol. 1, No.37, 143, at 153-154 – in fact, the Executive Summary of the Russian 2015 CLCS Resubmission specifically notes the 1990 Agreement.
[53] For example, the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea 1995, uses the 1990 Treaty's delimitation line to define the area of international waters in the Central Bering Sea (the "Donut Hole") where the provisions apply. The Convention is available at: www.afsc.noaa.gov/REFM/CBSA/Docs/Convention%20Convention%20on%20Conservation%20of%20Pollock%20in%20Central%20Bering%20Sea.pdf.

estopped from denying the key features of the treaty (including the delimitation) should they be litigated.

These circumstances thus leave the status of the agreement, the boundary defined therein, and the exact extent of the sovereign rights of each state to explore for and exploit petroleum, open to question.

The lack of any boundary agreement between Canada and the United States in the Beaufort Sea gives rise to uncertainty as to the sovereign rights of each state in the disputed area. Even with the ICJ's elaboration of a three step delimitation method discussed earlier, the United States and Canada have not yet resolved the long standing Beaufort Sea dispute: perhaps it is not a question so much of ability or lack of legal tools, but rather of political willingness and timing.

(3) Certain specific areas/issues are not addressed

Analysis of the Arctic delimitation agreements has also highlighted some areas of further uncertainties:

- 'Special Zones'

  Both the *1990 Bering Sea Treaty* and the *2010 Barents Sea Treaty* created 'special zones' where the United States and Russia granted EEZ areas to the other Party to try to optimise the total EEZ areas of both of the Parties in the delimitation.[54] The status in international law of the sea of such 'special zones' is uncertain, and it may be the case that they are not opposable to third states.[55]

See also: William V. Dunlap, "Bering Sea", (1995*), International Journal of Marine and Coastal Law*, Vol. 10, 114.

[54] A. A. Kovalev, *Contemporary Issues of the Law of the Sea: Modern Russian Approaches*, (2004), Eleven Publishing, (William E. Butler, translator and editor), at 67 - 68; Clive Schofield, "Dividing and Managing Increasingly International Waters, Delimiting the Bering Sea, Strait and Beyond", a paper presented at *Science, Technology, and New Challenges to Ocean Law*, 11 - 12 October 2013, Berkeley California, in Session 8, Regional Issues, Part I - The Bering Sea and the Arctic, 12 October 2013.

[55] D. A. Colson, "The Legal Regime of Maritime Boundary *Agreements", (1993), International Maritime Boundaries*, (J. I. Charney and L. M. Alexander, eds.), Martinus Nijhoff, 41, at 69; Alex G. Oude Elferink, *The Law of Maritime Boundary Delimitation: A Case Study of the Russian Federation,* (1994), Martinus Nijhoff, at 273; Kovalev, ibid., at 67 - 68; L. H. Lagault and B. Hankey, "From Sea to Seabed: The Single Maritime Boundary in the Gulf of Maine Case", (1985), *AJIL*, Vol. 79, 961, at 988; A. A. Saguirian, "Russia and Some

- Unitisation

Cross-boundary deposit exploitation was an issue considered by the Arctic Five necessary to address in their delimitation agreements. Guidance on the subject is woefully lacking in international law.[56] Provisions addressing this issue are non-existent in the 1958 Geneva Conventions, and UNCLOS also says next to nothing. Articles 74(3) and 83(3) UNCLOS require only that:

> [the states] "act in a spirit of understanding and cooperation …[to] make every effort to enter into provisional arrangements of a practical nature and during this transitional period, not to jeopardise or hamper the reaching of the final agreement".[57]

Moreover, UNCLOS does not offer any non-contentious forum or a procedure for reaching such provisional agreements.[58]

Universally, writers agree that international law does not create a legal obligation for states with straddling deposits to unitize the reservoir.[59] Nonetheless, as described earlier, there is a significant body of state practice on trans-boundary deposits and unitisation. However, since the state practice lacks consistency and is not universally accepted, it fails to meet the requirements for becoming customary international law.

Despite this lacuna in international law, all of the agreements for Arctic Ocean delimitation reviewed above contain some form of unitisation provisions for deposits straddling boundaries. Although the form and terms of unitisation vary between the

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Pending Law of the Sea Issues in the North Pacific: Controversies over High Seas Fisheries Regulation and Delimitation of Marine Spaces", (1992), *Ocean Development and International Law,* Vol. 23, 1, at 10.

[56] See Annex 8 for a brief discussion on unitisation agreements.

[57] Echoing General Assembly Resolution 3129 of 13 December 1973, Cooperation in the Field of the Environment Concerning Natural Resources Shared by Two or More States, available at: www.un.org/documents/ga/res/28/ares28.htm.
This resolution imposes no affirmative obligation beyond 'cooperation'. Although Article 3 of the 12 December 1974 UN Charter of Economic Rights and Duties of States elaborates on the meaning of 'cooperation' only Russia of the Arctic Five voted in favour of the Charter. S. K. Chatterjee, "The Charter of Economic Rights and Duties of States: An Evaluation after 15 Years", (1991), *ICLQ,* Vol. 40, No. 3, 669.

[58] Timothy J. Tyler, James L. Loftis, and Emilie Hawker, "Gaps in the Ice: Maritime Boundaries and Hydrocarbon Field Development", (2012), *OGEL*, at 5 - 6.

[59] An excellent summary of the international law aspect of unitisation can be found in: Phillip Weems and Archie Spalding, "Strategies for Development of Cross-Border Petroleum Reservoirs", (2012), *King and Spalding Energy Newsletter,* May 2012, available at: www.kslaw.com/library/newletters/EnergyNewsletter/2012/May/article2.htm.

different agreements, all respect the principle of the 'unity of deposit' and are fully consistent with the principles set out in Articles 74(3) and 83(3) of UNCLOS.

Unitisation provides an excellent example of the fact that, when Arctic states encounter a gap in the international legal framework, if it is in their primary interest to do so, they will negotiate a solution between themselves.

- Svalbard Issues

  As discussed extensively in Chapters 5 and 6, Norway's right to declare maritime zones beyond the 'territorial waters' for Svalbard has been contentious. International law offers little assistance in the interpretation of the 1920 Svalbard Treaty.

  However, the opposite/adjacent states, Russia and Denmark, have in their boundary agreements with Norway implicitly accepted that the Svalbard Archipelago does generate EEZ and continental shelf zones over which Norway exercises full jurisdiction. The problem still remains whether the 'equal treatment' provisions of the 1920 Svalbard Treaty extend to these zones. This, depending on the nationality of the oil company, may have significance for the terms on which they obtain licence acreage.

- The Legal Status of Ice and Baselines along ice-covered coasts in the Arctic

  This topic was discussed in Chapter 3, which concluded that there are some significant legal issues connected with the use of ice features as loci for territorial sea basepoints and the dramatic erosion of Arctic coastlines. On these issues all sources of international law have been silent, except for juristic writings which have been extremely varied in their conclusions. It was argued in Chapter 3 that these issues may result in some invalid sections of the territorial sea baselines for four of the Arctic Five, or at least render them vulnerable to challenge by other Arctic states.

  Thus, in any feasibility study for an Arctic petroleum project, the legal team should at least be aware of these issues, and evaluate carefully any acreage at the edge of the EEZ or extended continental shelf to ensure that its client will have clear title to the oil it produces. In fact, given the scale of Arctic melt and the issues with baselines, they

are probably well advised to recommend that oil companies avoid acreage within 50nm of such edges.

7.2.3 Extended Continental Shelves and Delimitation in the Arctic

As discussed by Byers[60], it is clear that as a result of subsea ridges and elevations the Arctic Five have extended continental shelves the limits of which are yet to be determined, as discussed in Chapter 6. As the ECS for each of the Arctic Five is settled, it will be inevitable that there will be some overlapping ECS claims.

Delimitation boundaries between some Arctic ESCs are effectively already resolved. For example, *the 1990 Bering Sea Agreement*[61] continues the delimitation line "as far as permitted under international law" and the *2010 Barents Sea Treaty*[62] extends the delimitation line beyond the EEZs to a terminal point which is the intersection of the respective extended delimitation lines of each country.

There will remain, however, some overlapping claims that will need to be resolved:

1. Denmark - Norway

   Based on the *2014 Danish CLCS Submission*[63] and *2009 CLCS Norwegian Recommendations*[64] there will be a very small area of overlapping ECSs of Denmark (Greenland) and Norway (Svalbard). In a communication to the CLCS on 17 December 2014 Norway drew to the CLCS's attention the fact that the *2006 Greenland - Svalbard Treaty* left unresolved delimitation of the continental shelf beyond 200nm and that this constituted a maritime dispute under UNCLOS rules.[65]

2. Denmark - Canada

   It will be recalled that the delimitation boundary under the *1973 Canada - Denmark Boundary Treaty* stopped at 82°13'N. The *2013 Lincoln Sea Boundary Tentative*

[60] Byers, op. cit., at 92 - 125.
[61] Annex 8.
[62] See Annex 8.
[63] As discussed in Chapter 6
[64] As discussed in Chapter 6.
[65] Communication available at: www.un.org/depts/los/cics_new/submissions_files/dnk76_14/2014_12_17_nor_nv_dnk4_001.pdf.

Agreement reportedly delimited the EEZs of the two countries.[66] The *2014 Danish CLCS Submission*[67] relies on the Lomonosov Ridge and the future Canadian submission is likely to similarly include a large portion of it, thus creating overlapping ECS claims which will require a delimitation boundary to be agreed. Given the aversion of the Arctic Five to litigation, the boundary will most probably be negotiated with the final agreement in all likelihood having the delimitation provisions resembling those of the *1990 Bering Treaty* or the *2010 Barents Sea Treaty*.

3. Denmark - Russia

The *2014 Danish CLCS Submission* claims an ECS extending across the Arctic Ocean as far as the Russian 200nm limit, overlapping with the ECS claimed by Russia in 2001. It is also extremely likely that the future Russian CLCS resubmission will extend the Russian claim well beyond the North Pole possibly all the way to the Danish 200nm. This would indeed create a sizeable overlap to which Article 83 of UNCLOS will apply. As Byers suggests[68], it is likely that an agreement will be negotiated using the adjusted median delimitation approach.[69]

4. Canada - Russia

As raised earlier in Chapter 6, the Canadian government is intending to make a CLCS submission that will include the North Pole.[70] The IBRU map in Figure 7.1 above shows a relatively small area of ECS overlap in the Central Arctic between Canada and Russia. This overlap will also need require negotiation.

[66] See Annex 8.
[67] As discussed in Chapter 6.
[68] Byers, op. cit., at 121.
[69] Also discussed in Chapter 6. It is noticeable that an orderly settlement atmosphere is reflected in various CLCS Submissions: for example, the 2014 Danish Submission outlines the exchange of notes with Russia and the 2015 Russian Partial Submission did similarly.
[70] It is highly questionable where such a claim can be validly made. Byers is reportedly sceptical that Canada can attain the necessary solid evidence necessary for such an extended claim: "Canada to include the North Pole in its claim for Arctic territory, resources", (2015), *RT Question More*, News, 10 December 2013, available at:
www.rt.com/news/canada-arctic-north-pole-claims-965/;
Associated Press Toronto, "Canada to claim north pole as its own", The Guardian, 10, December 2013, available at:
www.theguardian.com/world/2013/dec/10/canada-north-pole-claim.

Byers discusses quite extensively potential options for the resolution of these disputes.[71] His favoured option optimistically suggests the possibility that Russia, Canada and Denmark might agree to submit to some form of voluntary adjudication or arbitration.[72] This author considers this option's chances as very low, given the Ilulissat Declaration and past Arctic state practice. More probable is that either nothing will happen for a long time (like the Beaufort Sea Dispute), or if and when there is a maritime boundary agreement it will be agreed on the basis of a form of adjusted median line delimitation (like the Barents Sea Treaty), or (for adjacent states) the EEZ boundary line will be extended "as far as is permitted under international law". Such an agreement would also no doubt address the issue of straddling deposits, but if the previous Arctic agreements are any indication the unitisation/JZD provision will be overly general and weak, as discussed in subsection 7.2.2 above.

What is certain is that, until such delimitation agreements (or some provisional agreements) are in place for the overlapping areas, and jurisdiction and sovereign rights more clearly established, no commercial petroleum development will occur in them.

7.3 Conclusions

Of the possible seven Arctic Ocean maritime boundaries (within 200nm), (1) four have bilateral treaties that have been signed and ratified[73], (2) two have been 'agreed' to some extent[74], and (3) one remains unresolved. Three of the four treaties follow the delimitation methodology set out in Articles 15, 74 and 83 of UNCLOS, as supplemented by the jurisprudence of the international courts and tribunals. The *2010 Barents Sea Treaty* delimitation methodology can best be described as opaque, with general references to UNCLOS. For example, the preamble refers generally to the provisions of UNCLOS and Article 1 states that the limits of the boundary of the extended continental shelf is "established in accordance with Article 76 and Annex II of the Convention", but with no further explanation. However, in some circumstances an equal division of the overlapping

[71] Byers, op. cit., at 109 - 124.
[72] Byers, op. cit., at 124.
[73] Denmark/Greenland - Norway/Jan Mayen, Denmark/Greenland - Norway/Svalbard, Denmark/Greenland - Canada (not including the Lincoln Sea) and Norway - Russia (Barents Sea).
[74] *The 1990 Bering Sea Agreement,* which was signed by both countries but ratified only by the United States and the Canada - Denmark/Greenland agreement regarding the Lincoln Sea which has only been agreed 'in principle'.

continental shelf claims may be seen by the ICJ[75] as the optimal 'equitable solution'[76], and it may be that the *2010 Barents Sea Treaty* is just such an example.

The key pattern regarding resolution of delimitation issues in the Arctic Ocean has been, with the notable exception of the *1993 Greenland - Jan Mayen Case*, that the states have settled their disputes between themselves by bilateral agreements, which in the main reflect the current international law of the sea. This approach, it can be argued, reflects the Arctic Five's view that they have 'stewardship' over the Arctic Ocean and that they will settle peacefully all issues of sovereignty and sovereign rights between themselves by negotiation.[77] In fact, it may be that most gaps in the international law framework with respect to delimitation methodology suit the Arctic Five very well, in allowing them to agree delimitations as they more or less wish within the rather generous guidelines of the framework, and, where necessary, to fill in any gaps themselves.

7.4 What do these conclusions imply for oil companies in their search for good title to petroleum produced in the Area of the Arctic Ocean?

Petroleum exploitation arrangements between oil companies and states may be in one of three basic forms[78], but irrespective of the form of the agreement, the security of title over petroleum produced rests on the premise that the authorizing state exercises sovereignty or sovereign rights over the concession/licence area and its subsoil. No oil company, its investors, or its insurers will proceed if there is any uncertainty as to the good title to the company's share of petroleum it may produce from the authorised area. Hence, the issue of the authorising state's sovereign rights of the licensing/concession state over the licenced area is crucial – and defined maritime boundaries are fundamentally important in achieving this.

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[75] See for example, Libya v. Malta, Judgment of 3 June 1985, op. cit., at 47, paras. 62 - 63.

[76] Triggs, (2011), op. cit., at 380. See also the North Sea Continental Shelf Cases 1969, op. cit., at 36, para. 57.

[77] As stated in the 2008 Ilulissat Declaration. On the extended continental shelf, they accept that the CLCS has to make a technical/scientific assessment/determination of their claims, but overlapping claims are, under UNCLOS, left to the states to resolve themselves: see Chapter 6, *supra*.. It also remains to be seen what impact the Crimean crisis will have on this collective stewardship approach.
The question of the international community having a wider interest and whether it has *locus standi* to challenge any agreement between Arctic States which it considers detracts from the common heritage of mankind is examined in Chapter 8.

[78] That is, Concession, Production Sharing, Licence/Tax and Royalty regimes.

Certain inadequacies of varying significance in the legal framework for maritime delimitation in the Arctic which have implications for the oil companies can be identified:

First, even for the EEZs delimited by the four ratified delimitation agreements, there remain some problematic issues.

For example, there may be a tripoint issue in respect of the Greenland - Jan Mayen Island delimitation and Iceland. Oil companies are therefore likely to avoid acquiring acreage in the unsettled tripoint's vicinity.

However, generally the four delimitation agreements establish clearly defined EEZs, where the states can exercise their sovereign rights and through their petroleum regimes pass good title to the oil company of its share of the petroleum produced. This is important since over 87% of all petroleum in the Arctic Ocean has been estimated by the USGS to lie within 200nm from the coasts of the Arctic Five.[79] Thus, there are plenty of highly prospective areas located fully in each state's undisputed jurisdiction for the oil companies to occupy their efforts in the medium term, without entering into or bordering problematic maritime areas.

That said, even in these well-defined EEZs, oil companies are likely to be wary of acquiring licence areas in, or close to, the 'special areas' due to their unclear legal status. Moreover, although each delimitation agreement has provisions for the management of trans-border deposits, oil companies, for practical and operational reasons, may also prefer acreage well away from the boundary lines, unless there is a real prospect of at least a straddling "elephant"[80] oil field but preferably a straddling "giant"[81] oil or gas field.

Second, for the unsettled but 'agreed' boundaries of the Lincoln and the Bering Seas the situation is complicated both legally and practically for oil companies. The Lincoln Sea is an

[79] Deducible from Figure1 in: USCS, *Circum-Arctic Resource Appraisal*, (2008), available at: http://pubs.usga.gov/fs/2008/3049/fs2008-3049.pdf.

[80] An elephant oil field is defined in the oil industry as one containing >100 million barrels of oil recoverable. See: "Glossary", *cgx Energy Inc. online*, available at: www.cgxenergy.com/Glossary.aspx.

[81] A giant petroleum field is one containing >500 million barrels of oil recoverable or >3 trillion cubic feet of natural gas. Michel. T. Halbouty, "Giant Oil and Gas Fields of the 1990s: An Introduction" (originally a presentation to the Symposium of the Association of American Petroleum Geologists Convention, Denver, Colorado, 2001), (2003), *AAPG Memoir No. 78*, 1 - 13 .

extremely difficult and hostile environment, and it is unlikely that there will be any exploration for petroleum there in the near, or even medium, term, even when the boundary agreement is signed and ratified.

The uncertain legal status of the 1990 Bering Sea Treaty (and its 'special areas') may result in oil companies being highly reluctant to invest in exploration in, or near, the formerly disputed area (or the 'special areas'). Only in the unlikely event that Russia ratifies the agreement, or in the more likely event of eventual amendment of the current agreement, will oil companies be prepared to invest in the formerly disputed area, and even then it is likely they will avoid, at least initially, acreage in, or bordering, the 'special areas'.

Third, in the case of the Beaufort Sea dispute, even if there was no moratorium on oil exploration and exploitation activities, no oil company would choose now to acquire a licence area in, or possibly bordering, the currently disputed area.

Fourth, in the case of future overlapping ECS claims, it may be that for a considerable period of time the Arctic Five opt to do nothing. Eventual negotiations are probable, but are likely to be lengthy. It is unlikely that there will be any provisional agreements in the Arctic Ocean. Until the jurisdiction and rights of coastal states in these overlapping areas are settled, licensing or leasing of acreage in such areas is highly improbable, especially when so much of the Arctic Ocean EEZs is available and generally far more prospective than the central Arctic Ocean.

Thus, it can be concluded that international law has played a crucial role in establishing the legal framework for EEZs regimes in the Arctic Ocean and that when Arctic states encounter a gap or inadequacy in this international legal framework, or a maritime dispute needs to be resolved, provided it is in their primary national interests to do so, and it is possible, they will generally negotiate a solution between themselves.

There remain a few inadequacies and gaps in the international law framework for maritime delimitatation (identified above), which, despite the claims of the Ilulissat Declaration and the foreign ministers of Norway and Denmark, are unresolved and, thus, there are a few Arctic maritime areas with unsettled maritime boundaries. These outstanding issues may result in uncertain sovereign rights for the coastal states in some EEZ areas and an inability

to secure clear title to oil produced there. Clearly any instability or any diminution in cooperation in the Arctic region only exacerbates the effect of these issues.

Chapter 8: International Law and the Area in the Arctic Ocean: Sovereignty and Title to Petroleum

Summary

This Chapter first provides a brief overview of the legal regime for the area of the seabed and subsoil of the Arctic Ocean beyond national jurisdiction ("the Area"). The regime for the Area was problematic from its inception and the United States is still not a party to UNCLOS or the 1994 Implementation Agreement primarily because of concerns among a small number of United States Senators[1] in respect of the UNCLOS regime for the Area. The Area is defined passively, depending on the delineation of the coastal states' maritime zones – thus, in the Arctic, the Area will not be defined until all ECS claims and potential overlapping claims are settled. Consequently, the delineation of the Area in the Arctic Ocean will be a long and complex process and the Chapter examines various possible outcomes.

The Chapter reviews the powers, functions and rights of the International Seabed Authority ("ISA") in respect of the Area.[2] Under Article 136 of UNCLOS the petroleum located in the seabed and subsoil of the Area is designated as the common heritage of mankind. All rights in the resources of the Area are vested in mankind as a whole, on whose behalf the ISA acts [Article 137(2)]. The exploration for, and exploitation of, petroleum resources therein fall within ISA's jurisdiction and it is empowered to create and administer a regulatory regime for such activities. The analysis examines the work to date of the ISA and notes that (1) more than 20 years since its establishment, the ISA has not commenced drafting such regulations, and (2) given the long lead time such regulations take, it is unlikely that they will be in place much before 2030. The Chapter identifies and examines the limitations of the ISA's remit and powers – in particular its *locus standi* in respect of any alleged excessive ECS claim by a coastal state.

The issue of the role of the Enterprise (the implementing organ of ISA) in petroleum development in the Area in the Arctic Area is found to be highly problematic – any requirement for it to be a carried joint venture partner would probably be a deal breaker. The Chapter raises the possibility that the Area in the Arctic Ocean may never be developed for petroleum activities, as its probable future area is considered to have low prospectivity and has a very vulnerable ecosystem.

The problem of a petroleum deposit straddling the boundaries of the Area and the ECS of a coastal state is explored, since, due to the probable relatively small size of the future Area, the likelihood is high that such straddling will occur.

The Chapter reaches the conclusion that international law as it currently stands, although playing a crucial role in the initial creation of a legal regime for the Area, also leaves its implementation somewhat problematic and

[1] As will be discussed in the Chapter successive Republican and Democratic Presidents have supported ratification. However, a small but powerful group of Senators have prevented it.

[2] For a useful overview: Michael W. Lodge, "The International Seabed Authority and the Arctic", (2011), in *Arctic Science, International Law and Climate Change – Legal Aspects of Marine Science in the Arctic Ocean*, (Susanne Wasum-Rainer, Ingo Winkelmann and Katrin Tiroch, eds.), Springer, 175.

uncertain. The likelihood of an oil company considering engaging in oil production in the Area until all delineation issues in the Arctic Ocean are resolved is nil. Even with such issues resolved, the other problematic issues identified need to be actioned, prior to any petroleum development in the Arctic Area being feasible.

As the North Pole is so controversial and highly politicised, the Chapter briefly explores its legal status and possible ways of depoliticising the issue over who has jurisdiction over it.

8.1 General Introduction: The Area[3]

Article 1.1 of UNCLOS defines the Area as "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction".[4] The same definitional issues in regard to the terms 'seabed',' subsoil' and 'ocean floor' apply to this article as in Article 76, which were analysed in Chapter 6. It is a passive definition, dependent on the prior establishment by coastal states of the outer limits of their continental shelves. Under Article 134(4) of UNCLOS nothing with respect to Part XI of the Area can affect the establishment of the outer limits of the continental shelf in accordance with Part VI or the validity of delimitation agreements between States with opposite and adjacent coasts.

Article 136 states that the Area and it resources are the 'Common Heritage of Mankind', enshrining the same statement from the 1970 *UN Declaration of Principles Governing the Seabed and the Ocean Floor and Subsoil Thereof Beyond the Limits of National Jurisdiction*.[5] The nature and status of this Common Heritage principle in the context of the law of the sea was examined in Chapter 6, and there it was concluded that the principle is customary international law, but that it did not create *erga omnes* obligations. The possibility of having *locus standi* to bring an action against a coastal state for an alleged excessive ECS was shown to be unlikely to be successful except in the case of an adjacent or opposite state.

[3] There is a substantial amount of literature on the Area, including: D. H. Anderson, "Resolution and Agreement Relating to the Implementation of Part XI of the UN Convention on the Law of the Sea: General Assessment", (1995), *ZaoRV,* Vol. 55, 275; E. D. Brown, *Sea-Bed Energy and Minerals: The International Legal Regime*, (2001), Kluwer; Churchill and Lowe, op. cit., at 224; Crawford, op., cit., 326 - 330; Christopher Joyner and P. Levy, "The International Sea Bed Area",(1991), in *A Handbook on the New Law of the Sea*, (R. Dupuy and D. Vignes. Vol. 1, 595; A. G. Oude Elferink and E. J. Molenaar (eds.), *The International Legal Regime of Areas beyond National Jurisdiction: Current and Future Developments*, (2010), Martinus Nijhoff; B. H. Oxman, "The 1994 Agreement and the Convention", (1994), *AJIL*, Vol. 88, 687; Rothwell and Stephens, op.cit., at 120 - 144; L. B. Sohn, "International Law Implications of the 1994 Agreement", (1994), *AJIL*, Vol. 88, 696; Tanaka, op. cit., at 170 - 185; Triggs, op. cit., at 419 - 426.

[4] Article 1.1(i) of UNCLOS

[5] UN GA Resolution No 2749 (XXV), 12 December 1970, declaration #1, available at: www.un-documents.net/a25r2749.htm.

This aspect of the application of the principle will not be re-examined further in this Chapter.

Under Article 133(a) resources means "all solid, liquid or mineral resources *in situ* in the Area at or beneath the seabed…". Thus, petroleum located under the seabed of the Area is included in the term 'resources'.

The regime established for the Area and its resources under Part XI of UNCLOS was in 1982 innovative, but proved problematic. Nearly all western industrialised states, including the United States, objected to major elements of Part XI. The United States voted against the Convention, while most of the others abstained and did not ratify UNCLOS. The impasse was broken finally by the adoption on 28 July 1994 by the UN General Assembly of the *1994 Implementation Agreement*.[6] This agreement has ten articles and an Annex. Under Article 2 of the Annex of the *1994 Implementation Agreement*, Part XI of UNCLOS and the *1994 Implementation Agreement* are to be interpreted and applied as a single instrument and in the event of inconsistency between them the provisions of the *1994 Implementation Agreement* are to prevail.[7]

Article 137(1) establishes that no state shall claim or exercise sovereign rights over any part of the Area or its resources. It is the International Seabed Authority ("the ISA"), established under Article 156, which is empowered by Articles 153(1) and 157(1) to organise, carry out, and control 'Activities in the Area'[8] and which acts on behalf of mankind as a whole, in whom all rights to mineral resources of the Area are vested under Article 137(2).

Thus, the exploration for, and exploitation of, petroleum located under the seabed of the Area falls within the jurisdiction of the ISA, which has legislative powers to create a regulatory regime for such activities in the Area.

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[6] *Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982,* ("*1994 Implementation Agreement*"), 28 July 1994, available at; www.un.org/depts/los/convention_agreements/texts/unclos/closindxAgree.htm.
The Agreement entered into force provisionally on 16 November 1994, and definitively on 28 July 1996, in accordance with its unusual terms.

[7] Tanaka provides a very useful summary of the modifications of the original regime of Part XI made by the *1994 Implementation Agreement,* see: Tanaka, op. cit., at 178 - 182.

[8] 'Activities in the Area' are defined in Article 1(1) as "all activities of exploration for and exploitation of, the resources of the Area".

Since 1994 when the ISA came into existence more than 166 States Parties have become members of the ISA[9]. Activities in the Area are to be carried out by the Enterprise, an operational organ of the ISA, and other commercial operators[10] in accordance with Article 153(2) and provisions in the Annex in the *1994 Implementation Agreement.*

The ISA's powers and functions are limited to those expressly conferred by UNCLOS and the 1994 *Implementation Agreement.* The ISA has legislative and enforcement jurisdiction with respect to activities in the Area, and Article 137(1) provides that it shall adopt and uniformly apply rules, regulations and procedures in accordance with paragraphs 2(f) (ii) and 2(o)(ii) of Article 160 of UNCLOS for the exercise of its functions under Part XI. Under Articles 160(2)(f)(ii) and 162(2)(o)(ii) of UNCLOS, the ISA has the power to adopt rules regulations and procedures relating to prospecting, exploration and exploitation in the Area.[11]

It should be noted that Article 162(2)(o)(ii) requires that priority be given to the establishment of a regulatory regime for the exploration for and exploitation of polymetallic nodules. Three sets of regulations for deep-sea mining have been approved by the ISA: in 2000 *Regulations on Prospecting for Polymetallic Nodules in the Area*[12], in 2010 *Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area*[13]*, and in 2012 Regulations on Prospecting and Exploration for Cobalt – rich Ferromanganese Crusts in the Area.*[14] (collectively termed "the ISA Regulations").

The ISA Regulations give rise to four comments:

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[9] The State of Palestine ratified UNCLOS on 2 January 2015 and is listed on the UN DOALOS website as the 167th state to do so. Only States Parties can be members of the ISA and all States Parties are *ipso facto* members of the ISA.

[10] Which can include States Parties, State Enterprises, natural and juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals: Article 153(2) of UNCLOS.

[11] The *ITLOS Seabed Disputes Chamber Advisory Opinion* indicates several, albeit general aspects of the role of ISA, see: ITLOS, Responsibilities and Obligations of States Sponsor Persons and Entities with Respect of Activities in the Area (Advisory Opinion), Case No. 17, 11 February 2011, available at: https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/17_adv_op_010211_en.pdf.

[12] ISA, *Regulations in Prospecting and Exploration for Polymetallic Nodules in the Area*, ("*the Mining Code*"), 13 July 2000, ISBA/19/C/17, available at: www.isa.org.jm/files/documents/EN/Regs/MiningCode.pdf.

[13] ISA, *Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area,* 7 May 2010, ISBA/16/A/12REV.1, available at: www.isa.org.jm/sites/default/files/files/documents/isba-16a-12rev1_0.pdf.

[14] ISA, *Regulations on Prospecting and Exploration for Cobalt – rich Ferromanganese Crusts in the Area,* 26 July 2012, ISB/18/A/11, available at: www.isa.org.jm/sites/default/files/files/documents/isba-18a-11_0.pdf.

(1) The time it has taken to draft and approve each of them is over 6 years[15];

(2) It appears that the Enterprise is to become a joint venture partner at exploitation phase with a form of carried interest.[16] If mirrored into a petroleum regime for the Area, such a requirement may deleteriously affect the rate of return on petroleum development projects in the Area of the Arctic Ocean (" "), rendering them non-viable commercially [17];

(3) Despite the titles of the ISA Regulations referring to prospecting and exploration, their provisions do make mention of applying for "a plan of work for exploitation"[18]. There is very little information in the Regulations on the nature of such applications, or on the rights and obligations that will attach to the approval of an exploitation plan. Exploitation is defined in Regulation 1 of each set of the ISA Regulations, but the ISA Regulations do not have special regimes elaborated for this phase of activity.

However, the Agenda of the Legal and Technical Commission of the ISA for the 21st Session of the ISA scheduled for 13-24 July 2015 listed as item D the "consideration and approval of draft regulations for exploitation of mineral resources in the Area".[19] It seems these will be universal regulations, but one can reasonably conjecture these regulations will be oriented to mining rather than petroleum activities and may be as 'sketchy' as the ISA Regulations are for mining. However, it is unlikely that any petroleum company would be prepared to make the billions of dollars of investment necessary to explore the Arctic Area if the applicable regulatory regime and the conditions of exploitation contracts/

[15] ISA, "Adoption of Regulations for Prospecting and Exploration for Polymetallic Sulphides – A Milestone in the Progressive Development of the "Mining Code", *International Seabed Authority News*, No. 6, June 2010, available at:
ww.isa.org.jm/files/documents/EN/Newsletter/V6-Jun10.pdf.

[16] See for example, Regulation 18 Section 3 and Regulation 15 Section 2 of the *Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area*.

[17] Nakhle and Shamsutdinova provide a very useful analysis of the key variables that shape a FID in the Arctic: Carole Nakhle and Inga Shamsutdinova, "Arctic Oil and Gas Resources: Evaluating Investment Opportunities", (2012), *OGEL*, Vol. 10, No. 2, *OGEL Special Issue*: "Arctic Region: Boundaries, Resources, and the Promise of Cooperation, February 2012, 1 - 21.

[18] See for instance, Regulation 26 Section 1 and Regulation 31 Section 7 of *the Mining Code*.

[19] ISA, Legal and Technical Commission, Provisional Agenda of the Legal and Technical Commission, 19 January 2015, *D: Draft Regulations for Exploitation*, ISBA/21?LTC/L.1*, available at:
www.isa.org.jm/sites/default/files/files/isba-21ltc-l1_1.pdf.

agreements were not *ab initio* clear, detailed and not subject to unilateral variation during the exploratory phase or subsequently.

(4) The ISA has entered into twenty two 15-year contracts for the exploration of various minerals under the three regulations to date.[20] However, there appears to be no publically available model contract and, moreover, what contracts have been agreed are likely to be similar to typical mining contracts, rather than petroleum agreements, hence providing little useful precedent.

In summary, it would seem that the ISA has not yet begun to contemplate the deep-sea development of petroleum resources in the Area. Such development would require a regulatory regime and agreements specific to petroleum exploration and exploitation activities, and these will probably take about 10 years to draft and agree once the decision to do so is made. In the Arctic, given the timescale for the CLCS process, this slow progress is not problematic, and may in fact be advantageous to the quality of any eventual regulatory regime.

Article 145 requires that necessary measures shall be taken with respect to Activities in the Area "to ensure effective protection for the marine environment from harmful effects which may arise from such activities" and that the ISA shall adopt a regulatory regime for "the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment". It should be recalled that the seabed of the central Arctic Area is considered a site of significant and unique biodiversity and genetic resources.[21] Thus, the central Arctic Ocean may be considered by the ISA to be such a highly sensitive and important environment, that sustainable development of oil and gas resources is, at least for the foreseeable future, not attainable, and so the ISA may decide not to develop petroleum resources in the Arctic Area as a matter of policy.

[20] See: ISA, *Overview*, available at: www.isa.org.jm/deep-seabed-minerals-contractors/overview.

[21] CAFF, *Arctic Biodiversity Trends - Selected Indicators of Change, Conservation of Arctic Flora and Fauna Working Group* ("CAFF"), Arctic Council, (2010), available at: www.arcticdiversity.is/index.php/en/home.

It is also possible that the Arctic Area and its superjacent waters could become a Marine Protected Area ("MPA").[22] A network of such MPAs in the Arctic Ocean was first envisaged in the Arctic Environmental Protection Strategy in 1991[23]; numerous studies, Arctic Council expert groups, reports, and recommendations have followed advocating its creation.[24] It may be that such an MPA in the Arctic Area would generate little political opposition from the Arctic Five or the international community, and could be realised without significant difficulty, in which case it would be highly unlikely that hydrocarbon, or any other natural resource, exploitation would be allowed in the Arctic Area. It has been suggested that three critical requirements for the creation of any MPA are: a legal mandate, the need for a governance framework including coordinated legal arrangements, and settled jurisdictional boundaries.[25] The last requirement indicates that it would be necessary, prior to the establishment of such a MPA, that the Arctic Area has settled boundaries. As will be shown in the following section it is going to be a very long term process for these boundaries to be settled.

8.2 The Area in the Arctic Ocean

Some authors have suggested that "it may be possible for the coastal states to advance legitimate claims to most of the seabed of the Arctic Ocean".[26] The IBRU map in Figure 8.1 illustrates this.

However, the entitlement and the extent of ECSs of the Arctic Five are far from settled. The entitlement to an ECS requires that the CLCS confirms the categorisation of the subsea features used by the coastal states in their delineation. The extent of the ECS may also be affected by the formulae and constraints chosen by the coastal state to define the limits of its continental shelf. All these factors have led to several proposed maps of the possible extent of the Area, which vary significantly, depending on the assumptions made on the

[22] For a thorough review of MPAs in the Arctic, see: Suzanne Lalonde, "Marine Protected Areas in the Arctic", (2010) in *The Law of the Sea and the Polar Regions: Interactions between Global and Regional Regimes,* (Erik J. Molenaar, Alex G. Oude Elferink, Donald R. Rothwell, eds.), Martinus Nijhoff, 85. See also: Timo Koivurova, "Governance of Protected Areas in the Arctic", (2009), *Utrecht Law Review*, Vol. 5. No. 1, 44.

[23] Arctic Council, *Arctic Environmental Protection Strategy*,("AEPS"), 14 June 1991, available at: www.arctic-council.org/index.php/en/document-archive/category/4-founding-documents?download=53:aeps.

[24] For a detailed review of these see Lalonde, op. cit., at 85 - 111.

[25] Ibid., at 9.

[26] Potts and Schofield, op. cit., at 163; Alex G. Oude Elferink, "The Outer Continental Shelf in the Arctic: The Application of Article 76 of the LOS Convention in a Regional Context", (2013), in *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, (A. G. Oude Elferink and D. Rothwell, eds.), 139.

categorisation of the subsea features and assumed choice of formulae/criteria for establishing the outer limits of the continental shelves.

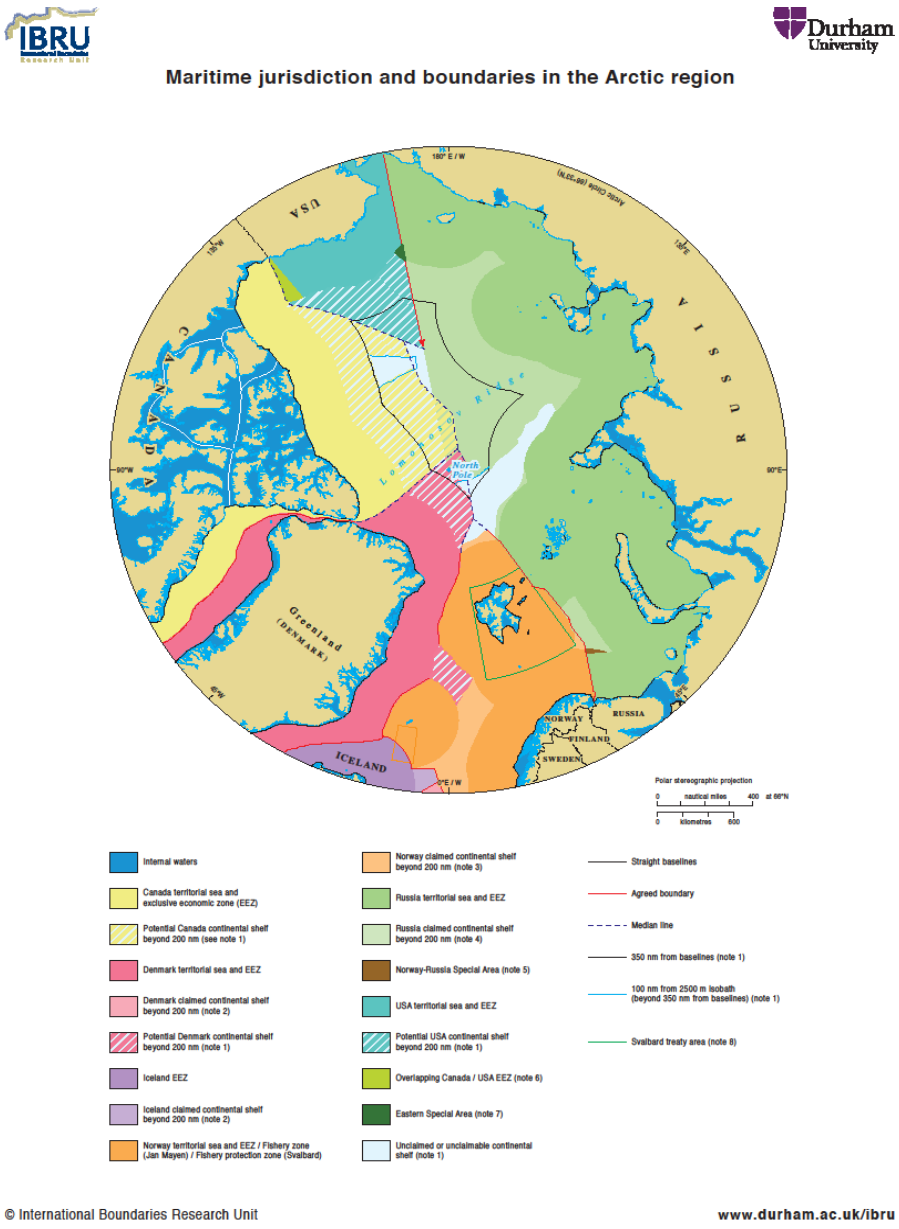

Figure 8.1: Map of probable continental shelf claims in the Arctic by IBRU[27]

From the IBRU map (Figure 8.1) it can be seen that there is a small part of the 'Banana Hole'[28] in the Norwegian and Greenland Seas (parts of the Arctic Ocean) that will probably

[27] ©IBRU, Durham University. Permission granted online for non-commercial use, see: http://www.durham.ac.uk/ibru/resources/arctic.

be part of the Arctic Area. Figures 12 and 13 in the *CLCS Recommendations Norway 2009* clearly indicate a northern part of the "Banana Hole" which does not fall within Norway's ECS, and Figure 1 in *the Danish CLCS Submission 2013*[29] shows Greenland has claimed an ECS occupying most of that northern part of the Banana Hole, but leaving the small part as beyond its ECS. If the CLCS in their future recommendations accepts the Danish submission with respect to this area, it will result in a small residual part of the Banana Hole being included in the Area, as depicted in the IBRU map.

In 2001 Macnab, Neto, and van de Poll suggested that the whole of the central Arctic Ocean could be subject to coastal state claims, with the exception of two 'donut holes' beyond national jurisdiction in the central Arctic Ocean[30] (see Figure 8.2 below, and the IBRU map above which mirrors this view). It was based on the assumption that the Lomonosov and Alpha Mendeleev Ridges are submarine elevations and are legitimate prolongations of the land masses of the surrounding coastal states.[31] In Figure 8.2, the smaller donut hole is bounded by segments of the 350nm limit and the 2500m isobath plus 100nm; these are the outer limits of Canada, Russia, and the United States. The larger donut is bounded by segments of the 200 and 350nm limits, the 2500m isobath plus 100nm, and the lines constructed in accordance with the distance and sediment thickness formulae, these are the outer limits of Denmark, Norway, and Russia.

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[28] Defined as a high seas area surrounded by the EEZs of Norway, Iceland, and Denmark (Faroe Islands and Greenland), see: Ministry of Foreign Affairs, Norway, "The Loophole and the Banana Hole", (2013), *Barents Watch*, 20 May 2013, available at:
www.barentswatch.no/en/Tema/Law-of-the-sea/Sea-borders/The-Loophole-and-the-Banana-Hole/.

[29] *Partial Submission by the Government of Kingdom of Denmark together with the Government of Greenland to the Commission on the Limits of the Continental Shelf in Respect of The North-Eastern Continental Shelf of Greenland, ("Danish CLCS Submission 2013"),* 26 November 2013, Executive Summary, available at:
www.www.un.org/depts/los/clcs_new/submissions_files/dnk68_13/DNK2013_ES.pdf.

[30] Ron Macnab, Paul Neto and Rob van de Poll, "Cooperative Preparations for Determining the Outer Limit of the Juridical Continental Shelf in the Arctic Ocean: A Model for Regional Collaboration in Other Parts of the World?", (2001), *IBRU Boundary and Security Bulletin,* Spring 2001, 86, at 92 - 93.

[31] This categorisation of these ridges accords with that in the *2015 Russian Resubmission,* see: Chapter 6. footnote 332, *supra.*

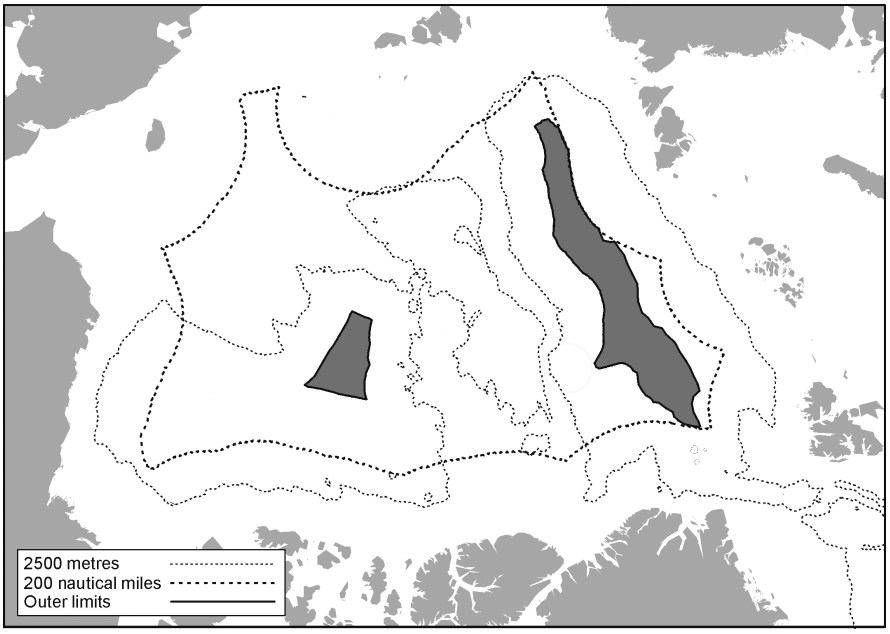


Figure 8.2: Map by Macnab et al in 2001 of suggested continental shelves of five costal states.[32]

After the *CLCS Recommendations Russia 2002* and the CLCS's failure to accept the Russian submission characterisation of the Lomonosov and Alpha - Mendeleev Ridges, Macnab modified his previous analysis in 2004 by excluding the ridges beyond 350nm, i.e. based on the assumption that these subsea features are submarine ridges and not elevations.[33] The revised assessment results in a map that now identifies four possible 'donuts': see Figure 8.3 below. This view was adopted by Potts and Schofield in 2008.[34]

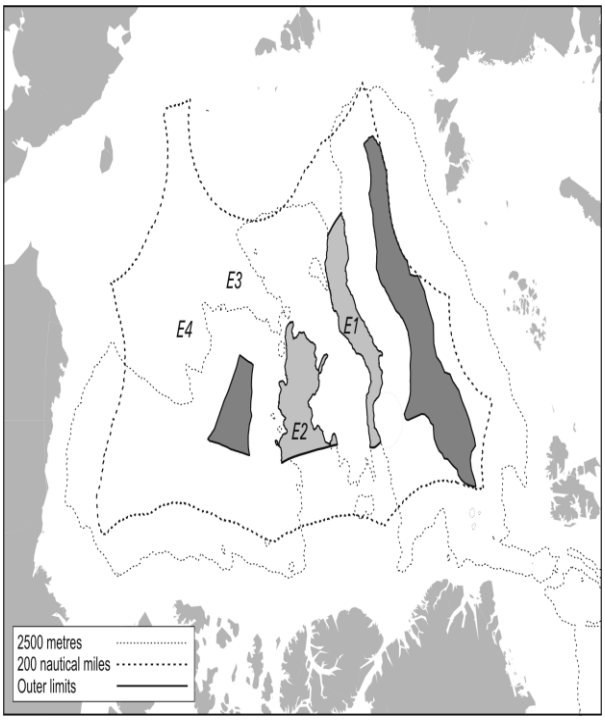
In 2008 Proelss and Muller argued that the practice of cutting out the submarine ridge does not withstand closer analysis[35], based on the assumption that the decisive issue for ECS delineation involving a submarine ridge is whether a coastal state can base its claim on a 2500m isobath line established along the outer edge of a submarine elevation beyond its 350nm constraint.

[32] © Macnab, Neto and van de Poll, 2001, IBRU. Use permitted as "Fair Use" by IBRU, "Conditions of Use", at:www.dur.ac.uk/ibru/publications/conditions. This map is Figure 10 in Macnab, Neto, and van de Poll, op. cit., at 95.

[33] Ron Macnab, "The Outer Limit of the Continental Shelf in the Arctic Ocean", (2004), in *Legal and Scientific Aspects of Continental Shelf Limits*, (Myron H. Nordquist, John Norton Moore, and Tomas H. Heidar, eds.), 301.

[34] Potts and Schofield, op. cit., at 164 - 165. This categorisation accords with that in the *2015 Russian Resubmission,* see: Chapter 6*,* footnote 332, *supra.*

[35] Proelss and Muller, op. cit., at 669.



The Alpha Ridge (E2), the Lomonosov Ridge (E1), the Mendeleev Ridge (E3), and the Chukchi Plateau.

Figure 8.3: Revised Version of Macnab Map 2004[36]

Then, assuming that the purpose of Article 76(6) is "to prevent States from artificially extending their continental shelves by reliance on submarine ridges", they argue that, rather than just cutting out the submarine ridges beyond 350nm, "a combined reference to the 2500m isobaths plus 100nm rule and the 350nm cut off line should be adopted". This is an approach that would result in a significantly larger Area.

However, their arguments may be fundamentally flawed. For example, they refer to the isobaths as being related either to the coastline ("taking the coastline as point of origin") or the edge of the submarine ridge ("where the edge of a ridge served as the basis for drawing the 2500m isobaths") and this may be a misunderstanding of how the isobath constraint is applied. It is notable that no one has commented on, or adopted, their suggestion, although on other aspects their article has been very positively referenced. Since 2008 their arguments may in fact have become moot.

[36] © Ron Macnab, (2004), permission to use this map was granted by the copyright holder in an email on 18 May 2015.

As discussed earlier in Chapter 6, in the last decade significantly more and better quality data on the Arctic Ocean floor has become available, and this has led most experts and Arctic governments (even the United States) to reconsider their negative comments/views on the 2001 Russian Submission's approach to the nature of the Lomonosov and Alpha - Mendeleev Ridges.

In fact, since 2009, Macnab[37] returned to using a two donut holes map[38], as can be seen from Figure 8.4 below.

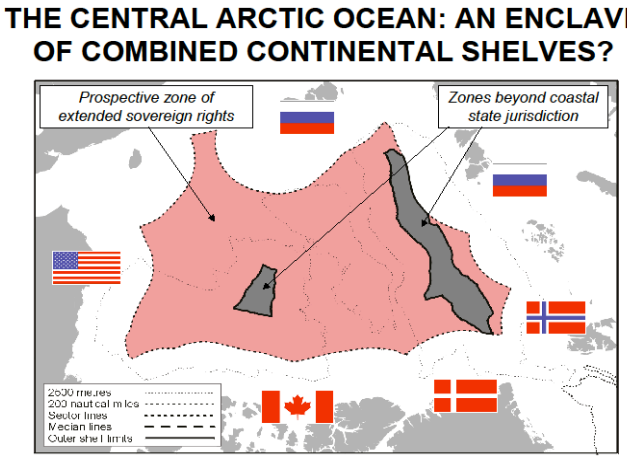


Figure 8.4: Map by Macnab 2009[39]

This 2001/2009 Macnab approach is reflected in the IBRU Map in Figure 8.1 above, which was last updated on 27 February 2015.[40]

If, in the future, the CLCS makes recommendations which confirm Macnab's 2001 assumptions regarding the Lomonosov and Alpha Mendeleev Ridges, then the Arctic Area will be, in total area, only a relatively small part of the Arctic Ocean.

8.3 The North Pole

[37] Probably the leading expert on this topic.

[38] See Ron Macnab, "Complications in Delimiting the Outer Continental Shelf", (2009), a presentation to *Changes in the Arctic Environment and the Law of the Sea, 33rd Annual Conference of the Center for Ocean Law and Policy. 20 -23 May 2009, Seward, Alaska,, available at: www.virginia.edu/colp/pdf/Macnab-outer-c.s.pdf.*

[39] © Ron Macnab. Permission for its use in this thesis was granted by Ron in an email dated 18 May 2015. Ibid., Slide 25,

[40] Again this reflects *2015 Russian Resubmission* (Chapter 6, footnote 332*, supra),* which occurred after the cut-off date of the thesis.

The geographic north pole is the northernmost point on earth ("North Pole"). It defines the geodetic latitude of 90^0N and it is currently almost covered by drifting sea pack, although the melting of Arctic ice is affecting even the North Pole.[41] The North Pole is over 700km from the nearest land (Nunavut, Canada).

Figure 8.5: Map showing geographic North Pole[42]

8.3.1 General Background and Claims to the North Pole

No aspect of the delineation of the Arctic Five's ECSs in the Arctic Ocean has been more political and sensitive than the question of who has jurisdiction over the North Pole.[43] The Arctic Ocean had acquired particular geostrategic importance during the Cold War[44], and although the increased scientific and other cooperation in the Arctic, the creation and work of the Arctic Council, and the Ilulissat Declaration (discussed in earlier chapters) all served to defuse much of the tension, when it comes to the issue of who controls the North Pole, three of the Arctic states appear to re-engage in political posturing[45], mostly it must be said for the benefit of the domestic audience.[46]

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[41] See Chapter 4 *supra.* Rob Huebert, *Canadian Arctic Sovereignty and Security in Transforming A Circumpolar World, July 2009, Canadian International Council*, available at: http://opencanada.org/wp-content/uploads/2011/05/Canadian-Arctic-Sovereignty-and-Security-Rob_Huebert1.pdf.

[42] © Graphic Arts, World Atlas, 2015. Map provided as clipart by www.worldatlas.com and may be used without written approval according to the Usage Policy, see: www.worldatlas.com/clipart.htm
www.worldatlas.com/webimage/counties/polar/northpole.htm.

[43] Huebert, op. cit., at 245 -248.

[44] Ibid..

[45] A very balanced and measured view of the Russian statements and sabre rattling actions can be found in an article by a senior research scientist at the Davis Center for Russian and Eurasian Studies, Harvard University: Dimitri P. Gorenburg, "How to Understand Russia's Arctic Strategy", (2014), *Washington Post*, The Monkey Cage, 12 February 2014, available at:

This posturing has been exacerbated by tension among the Arctic Five arising from the recent Ukrainian crisis, the sanctions against Russia, and the resultant rhetoric, especially from the Canadians. However at the Arctic Council the various workshops have continued their cooperative work, and, in April 2015, it has been reported that Canada (the member which was raising the Ukrainian crisis at the Arctic Council) was warned by the Obama administration "to back off Russia", as "Arctic cooperation must continue" at the Arctic Council and the Obama administration considers Arctic cooperation vital for the world's environment and climate change.[47] If it is continued, this United States approach bodes well for maintaining the positive collaboration in the region and the peaceful resolution of any territorial disputes in the Arctic Ocean, including any relating to the North Pole.

Legally, what is important is that the North Pole is located on floating sea ice, which the analysis in Chapter 3 concluded should be assimilated to the sea and not the land. The waters beneath the North Pole are high seas under Article 86 of UNCLOS, being well beyond the EEZs of all the Arctic Five. Thus, legally the North Pole is a *point* located in the *high seas* of the Arctic Ocean. Under Article 89 of UNCLOS (which is customary international law[48]) no state may validly purport to subject any part of the high seas to its sovereignty. This prohibition applies to the North Pole and settles the debate: there can be no claim of sovereignty by any state over the North Pole proper.

However, the claims of the Arctic states have primarily related to the seabed beneath the North Pole. These claims have been in the headlines on several occasions since 2 August 2007, when a Russian flag was planted on the ocean floor directly under the North Pole - see Figure 8.6.[49] While the episode met with protests from the other Arctic Five[50], it is best

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www.washingtonpost.co./blogs/monkey-cge/wp/2014/02/12/how-to-understand-russias-arctic-strategy/.

[46] Huebert, op. cit., at 1 and 7.

[47] Margo McDiarmid, "Arctic Council tensions threaten environment as Canada exits chair", *CBC News*, 24 April 2015, available at: www.cbc.ca/news/politics/arctic-council-tensions-threaten-environment-as-canada-exits-chair-1.3045975.

[48] Churchill and Lowe, op. cit., at 205 – 206; O' Connell, (Shearer), (1984), op, cit., at 792 - 796; Tanaka, op. cit., at 150 - 151.

[49] Martz – Luck examines the legal issues connected with the planting of the Russian flag: Nele Matz – Luck, "Planting the Flag In Arctic Waters: Russia's Claim to the North Pole", (2009), *Gottingen Journal of International Law,* Vol. 1, No. 2, 235.

[50] "Canada Rejects Flag-Planting as 'Just a Show', (2012), *Independent Online*, 3 August 2012, available at: www.iol.co.za/news/world/canada-rejects-flag-planting-as-just-a-show-1.364759#.UHgzYo4_5UQ.

seen, as argued by Metz-Luck[51], as an act of political symbolism, as much for the domestic audience as the international.[52]

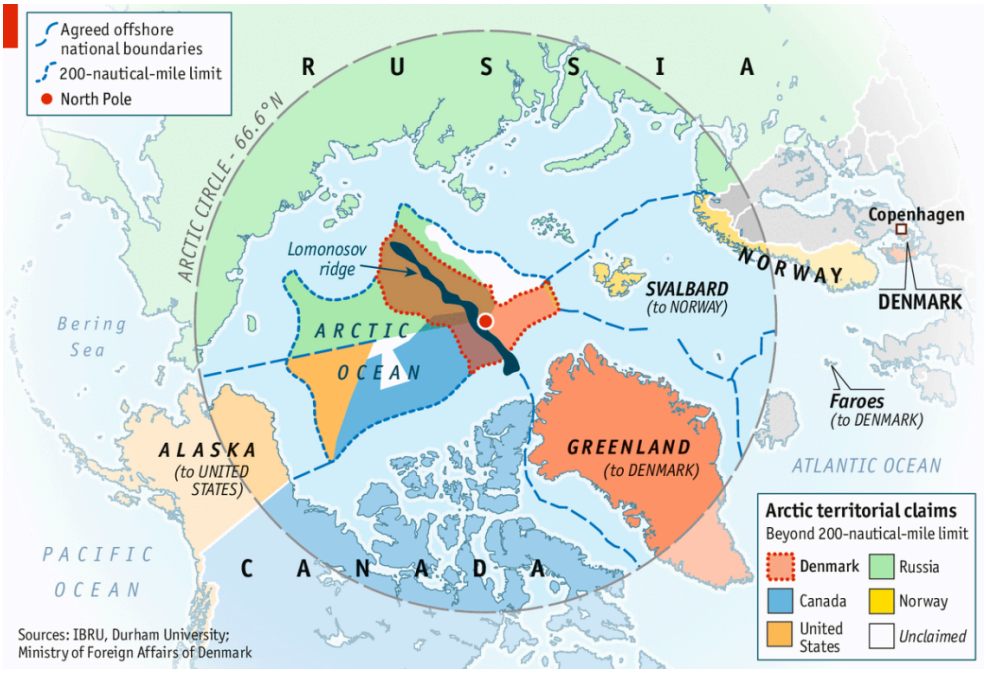
Figure 8.6: Image of Russian Submersible Mir-1 planting flag on seabed under North Pole[53]

Since Russia is a party to UNCLOS, it is well aware that the ECS is not claimed by flag planting or 'occupation', but that the continental shelf, including the ECS, is an inherent right to be delineated in accordance with the provisions of Article 76. The Russian action should be seen in the same light as the United States planting its flag on the moon despite being a party to the 1966 UN Treaty on Outer Space[54], which under Article 2 precludes any such territorial claim.

The flag planting action may, nonetheless, be of interest as a signal of Russian intention in regard to its future CLCS resubmission and a possible extension of its ECS claim. In this regard it will be recalled that the Russian CLCS Submission 2001 did not extend the Russian ECS to include the North Pole.[55] Given the delineation of the Danish ECS relating to Greenland in the *Danish CLCS Submission 2014* extends up to the Russian EEZ[56], the

[51] Ibid, at 234.
[52] Huebert, footnote 41, *supra*.
[53] © Ministry Foreign Affairs, RF. Public Domain. Available at: www.naval-technology.com/uploads/feature//feature1940/3-russian-flag-on-arctic.jpg.
[54] Available at: www.unoosa.org/pdf/publications/STSPACE11E.pdf.
[55] And on 3 August 2015 Russia claimed a significantly increased ECS. See Chapter 6, footnote 332, *supra.*
[56] IBRU, "Denmark/Greenland make Arctic Ocean continental shelf submission", (2014), *IBRU Boundary News*, 15 December 2015, available at: www.dur.ac.uk/ibri/news/boundary_news/?itemno=23226.

likelihood of Russia extending it ECS claim has increased substantially[57] - see Figure 8.7 below.



Map 8.7: Map of possible ECS claims relative to the North Pole[58].

The *Norwegian CLCS Submission 2006* and *CLCS Recommendations Norway 2009* both delineate the Norwegian ECS to fall far short of reaching the North Pole. In a 2009 Reuters interview the Norwegian Minister of Foreign Affairs Jonas Gahr Store has been quoted as stating in a discussion about who owns the North Pole, "…it's definitely not us".[5960]

In 2013, the Prime Minister of Canada is reported to have required that a partial submission to the CLCS be made without data relating to the Arctic Ocean, as it did not include the

[57] This came to pass on the 3 August 2015, when Russia claimed a significantly increased ECS extending beyond and including the North Pole, see: Figure 1, Executive Summary, at 7, *2015 Russian Resubmission*, Chapter 6, footnote 332, *supra.*

[58] © IBRU. Public Domain. See Max Fisher, *40 more maps that explain the world,* (2014), Washington Post, 13 January 2014, available at: www.washingtonpost.com.news/workdviews/wp/2014/01/13/40-more-mps-that-explain-the-world/. Indeed it did so in its CLCS resubmission of the 3 August 2015. IBRU has published a map showing the new Russian 2015 ECS claims, available at: www.dur.ac.uk/resources/ibru/resources/ArcticmapRussianonlyclaims05_08_15.pdf. From the 2015 IBRU map Russia has extended its ECS claim to include the North Pole.

[59] © IBRU and Ministry of Foreign Affairs Denmark, 2014. Public Domain (Denmark), and permitted use by IBRU, Durham University for academic and non-commercial purposes, available at: http://cdn.statis-economist.com/sites/default/files/imagecache/original-size/images/print-edition/20141220_IRM937.png.

[60] Thomas Nilsen, "Limits of Norway's Arctic seabed agreed", (2009), *Barents Observer*, 16 April 2009, available at: http://barentsobserver.com/en/node/19278.

seabed of the North Pole.[61] He is reported as having then instructed his government departments to craft a more expansive ECS claim for the Arctic Ocean which includes the North Pole.[62] However, it is highly dubious that such a Canadian claim (based on a delineation involving the Lomonosov Ridge) would be successful.[63] Furthermore, even if it was, this would result in overlapping claims with the Greenlandic ECS or an extended resubmitted Russian ECS.[64] It can be strongly argued that, whether these overlapping claims would be settled by negotiation or an international court, using the accepted median line/equidistance method for delimitation[65], the North Pole seabed would not be located in the Canada ECS[66]. The IBRU map reflects this conclusion, and locates the North Pole seabed in the Greenlandic ECS as drawn in the *Danish CLCS Submission 2014*.[67]

8.3.2 The Future of the North Pole - Fast forward to 2050

NASA satellites have been monitoring the sea ice growth and retreat since 1978, and since then a significant long term decline in both the extent and thickness of the sea ice has been observed. [68] It appears that the 'permanent sea ice cap' is changing to a seasonally ice-free sea. According to NSIDC, the long term prediction is that the downward trend in ice extent

[61] Steve Chase, "Harper orders new draft of Arctic seabed claim to include North Pole", (2013), *The Globe and Mail,* 4 December 2013, available at:
www.theglobeandmail.com/news/politics/harper-orders-new-draft-of-arctic-seabed-claim-to-include-north-pole/article 15756108/.

[62] Ben Makuch, "Canada wants to Scientifically Prove it Owns the North Pole", (2014), *Motherboard*, 12 August 2014, available at:
http://motherboard.vice.com/canada-wants-to-scientifically-prove-it-owns-the-north-pole;
Sean Kilpatrick, "Canada makes territorial claim for North Pole", (2013), *Toronto Star*, available at:
http://t.thestar.com/#/article/news/queenspark/2013/12/09/canada_makes_territorial_claim_for_north_pole.html.

[63] Ron Macnab, "North Pole not ours, despite Harper's bluster", (2014), *The Chronicle Herald*, 30 December 2014, available at:
http://thechronicleherald.ca/opinion/1260127-north-pole-not-ours-despite-harper%E2%80%99s-bluster;
Ilker Basaran, "The Lomonosov Ridge; The Lomonosov Ridge and the Overlapping Outer Continental Shelf Claim to the North Pole", (2015), *Seanews*, 02 April 2015, available at:
www.seanews.com.tr/article/COLUMNISTS/ILKERBASARAN/146032/Lomonosov-Ridge-North-Pole/.

[64] A possibility mooted in both the *2014 Danish CLCS Submission (*Chapter 6, footnote 392, *supra,* at 17 and 18*)* and the *2015 Russian Resubmission* (Chapter 6, footnote 332, *supra,* at 11).

[65] Tanaka, op. cit. at 213 - 215.

[66] See Macnab, footnotes 38 and 63, *supra*.

[67] A conclusion also arrived at by the representative of the United States Office of Ocean and Polar Affairs, Brian Van Pay: "National Maritime Claims in the Arctic", a presentation to the *Changes in the Arctic Environment and the Law of the Sea Meeting*, 33rd COLP Conference, Seward, Alaska, 21 May 2009, Slide 27, available at:
www.virginia.edu/colp/pdf/Van_Pay-Arctic-Claims.pdf.

[68] On sea ice melting see the NSIDC and NASA websites at:
http://nsidc.org/cryosphere/quickfacts/seaice.hml;
http://earthobservatory.nasa.gov/Features/WorldOfChange/sea_ice.php.

in the Arctic Ocean will lead to an ice-free Arctic Ocean summer in the middle of this century.[69] Thus, in 35 years in summer the North Pole will be a point in the high seas of the Arctic Ocean and there will be no question of states raising the question of jurisdiction over the floating ice as it will no longer be present.

And what about the status of the seabed under the North Pole?

Various possibilities arise:

- It will be under the jurisdiction of one of the Arctic Five, most probably Greenland/Denmark. But it may be that Greenland could be magnanimous and be prepared to create a seabed nature reserve in a small zone around the seabed of the North Pole - say with a 25-50nm radius.[70] As has been proposed by Gayazova, this could become an internationalised zone.[71]

- It may be that the international community will create an MPA in the high seas around the North Pole.[72]

- It may be that, in the spirit of Gorbachev's suggestion "Let the North Pole be a pole of peace"[73], an internationalised columnar zone extending from the seabed to the surface of the high seas with a radius of say 25-50nm[74] around the North Pole could be created by Greenland and the international community: a form of *corpus separatum*[75] *oceanus arcticus.* The column would be placed under UN jurisdiction, it would be a demilitarised zone, and one where no fishing or other

[69] NSIDC, "New study: Seasonal Arctic summer ice still hard to forecast", (2014), *NSIDC Newsroom*, 27 March 2014, available at:
http:nsidc.org/news/newsroom/2014_seasonalseaice_PR.html.
[70] Gayazova suggests a zone north of the $88^0$20'N: Olya Gayazova, "The North Pole Seabed Nature Reserve as a Provisional Arrangement", (2012), *IJMCL*, Vol. 27, 97.
[71] Ibid., at 123 -124
[72] The process has commenced to attempt to draft/negotiate an agreement to protect the biodiversity in the area beyond national jurisdictions. A successful conclusion of which would make this more of a possibility. See Betsy Baker, "Interlinkages in International Law: The Convention on Biological Diversity as a Model for Linking Territory, Environment and Indigenous Rights in the Marine Arctic", (2015), Chapter 2, 41 - 60, in *Diplomacy on Ice: Energy and the Environment in the Arctic and Antarctic,* (2015), (Rebecca H. Pincus, Saleen H. Ai, eds.), Yale University Press.
[73] Paul Arthur Berkman, "Race for the Arctic: Let the North Pole be a pole of peace", (2011), *Global, the International Briefing*, Vol. 3, 12, available at:
www.global-briefing.org/2011/07/let-the-north-pole-be-a pole-of peace/.
[74] This is an arbitrary figure but one chosen to indicate a small but significant radius.
[75] As envisaged by the United Nations for Jerusalem in UN GA Resolutions 181 of 29 November 1947 and 194 of 11 December 1948.

exploitation of living or non-living natural resources would be permitted. Access to the columnar zone would be only for scientific research, to be conducted by international research bodies approved by the Arctic Council, and whose findings are to be made publically available.

Such possibilities would be political gestures which would have the effect of the de-politicisation of the North Pole. It would indeed have virtually no impact on the exercise of sovereign rights by any of the Arctic Five's ECSs, but there may be significant environmental benefits, especially in the preservation of rare marine life forms uniquely located in the seabed area near the North Pole.[76]

8.4 Conclusions

Due to the geographical configuration of the Arctic Ocean there are likely to be only three relatively small areas of the seabed of the Arctic Ocean/Norwegian Sea making up the Arctic Area.

International law clearly defines the Area in general terms, but its practical delineation is reliant on the delineation by the coastal states of their ECSs. This process in the Arctic Ocean, as was described in Chapter 6, is likely to be a very long and complex process under the regime established under Article 76(8).

When at last the Arctic Area is defined, it is unambiguous, under the combined effect of Articles 136, 137, 153, and 157 of UNCLOS, that title to any petroleum produced in the Area is vested in the ISA acting on behalf of Mankind as a whole and that the regulatory regime for the exploration and exploitation of petroleum in the Arctic Area is to be established by the ISA. After 20 years of UNCLOS being in force such a regime is yet to be put in place. It is likely that it will take some special impetus (such as new technology for hostile deep water development) for it to be drafted and put into practice. The regulatory regime, it is suggested, should be drafted by petroleum and environmental lawyers and experts. The Part XI regime appears more suitable for mining than petroleum operations. It can also be envisaged that negotiations for the agreements between the ISA and the oil companies would be likely to be difficult, protracted and expensive. It would seem that the Area is another zone where international law has established a general principle and framework,

[76] Gayazova, op. cit., at 99.

but where the difficulties of implementation may be, if not unsurmountable, deleterious to the establishment of a workable regime that results in the oil company acquiring clear title to its share of the petroleum it produces.

It is perhaps fortunate that at the current moment it is highly unlikely that oil companies would wish to develop petroleum in the Arctic Area in the foreseeable future[77], due to the fact that there are large expanses of available and very prospective Arctic Ocean within 200nm of the coasts of the Arctic Five.

Jurisdiction over the North Pole is high level symbolic politics, involving issues of national pride, sovereignty, and security. It may be that, once the issue of which of the Arctic Five has jurisdiction over the North Pole's seabed is settled, there will be sufficient goodwill and cooperation in the Arctic that some imaginative and cooperative internationalisation of a small area around the North Pole might be feasible. It is likely, however, that, just as in the case of Jerusalem, the (Arctic) states' national interests will prevail.

If such internationalisation does not occur and the seabed and subsoil beneath the North Pole is finally determined to be located in the Greenlandic ESC, then perhaps this outcome can be considered most appropriate. Given that Greenland's population is over 85% Inuit, who would be a better custodian of this symbolic location than a people whose traditional homeland is the Arctic?[78]

No matter who has sovereign rights over the North Pole seabed, it is clear from the discussion that petroleum development in this location is highly unlikely. Therefore it is a case where other factors (political, technical, geological, and environmental) impinge on these sovereign rights to such an extent as to practically preclude their exercise.

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[77] Probably at least 25+ years.

[78] As Mary Simon, former president of the Inuit Circumpolar Conference, put as long ago as 1989: "For thousands of years, the Inuit have used and continue to use the lands, waters and sea ice in circumpolar regions. As Aboriginal people, we are the Arctic's legitimate spokespersons": Mary Simon, "Security, Peace and the Native Peoples of the Arctic", (1989), in The *Arctic: Choices for Peace and Security - A Public Enquiry*, Gordon Soules Book Publishers, 31 - 36.
The Inuit have long espoused a policy to create an Arctic Zone that transcends national boundaries and is one of peace: The Inuit Circumpolar Conference, *Principles and Elements for a Comprehensive Arctic Policy*, (1992), Centre for Northern Studies and Research, McGill University, at 10 and 17. On the relationship between the Inuit and the Arctic Ocean see: Barry Scott Zellen, *On Thin Ice, the Inuit, the State, and the Challenge of Arctic Sovereignty*, (2009), Lexington Books - particularly relevant to the North Pole is the Afterword by Ed Struzik "The Next Chapter in Arctic History Must be Co-Authored by Northern Peoples" (Zellen, op. cit., at 181 - 184).

Chapter 9: Conclusions and a Look Forward

Having traced title to petroleum and its transfer down the title chain from the international level to the oil company in all jurisdictions of the Arctic Ocean, and having explored the issues that arise in the process, this Chapter revisits and addresses the questions posed in the introduction to this study:

(1) Can an oil company acquire good title to the oil it produces in the Arctic Ocean?

(2) What role does the international law of the sea play in securing this?

(3) What influence/impact does international law, especially environmental protection or indigenous rights law, have on the acquisition, transfer and exercise of title rights?

The thesis has shown that these apparently straightforward questions actually generate far more complex answers than would at first be envisaged. One common theme has emerged throughout the analysis, namely that the devil is often in the detail of the definitions, procedures, application, and implementation mechanisms.

9.1 A Review of the Specific Findings

9.1.1 Arctic Ocean Governance

As discussed in Chapter 2, there is no overarching treaty regime for the Arctic Ocean, unlike Antarctica. In terms of delineation, delimitation, and rights to natural resources located in its seabed and subsoil, the international law applicable to the Arctic Ocean is the international law of the sea, treaty law, and the delimitation agreements between the coastal states.

The only Arctic-specific organisation is the Arctic Council, which is a high level intergovernmental forum. It constitutes an exercise in regional cooperation through soft law. Moreover, its mandate is limited to topics relating to sustainable development and environmental protection and to overseeing and coordinating the programs of the various workshops established under the Arctic Environmental Protection Strategy (AMAP, CAFF, PAME and EPPR).Therefore, its work can only impinge indirectly on the exercise of petroleum rights, and cannot address the issue of the acquisition of such rights in the maritime zones arising under international law.

In Chapter 2 it was argued that participation in the creation of the Arctic Council was an astute move by the Arctic Five, consolidating their control over the seabed and subsoil of most of the Arctic Ocean and effectively institutionally marginalising other interested parties, while permitting those who become Observers to help to fund research through participation in Working Groups.

The Arctic Five's 2008 Ilulissat Declaration asserted the Arctic Five's sovereignty, sovereign rights and jurisdiction over most of the Arctic Ocean and their "stewardship" of the Arctic Ocean. Unambiguously they closed the door on any overarching 'Arctic Treaty', declaring that the existing international law regime, in particular the law of the sea, provides a sufficient legal framework, and that, should any gaps appear, the Arctic Five will resolve the issues themselves. In Chapter 2 it was suggested that this Declaration might be seen as a cynical pre-emptive move to further consolidate the Arctic Five's dominant position over the Arctic Ocean and its subsea resources. What is even more telling was the absence of any protest from other states – in other words the tactic appears to have worked and has served well the Arctic Five's collective interests.

The study has demonstrated that the fact that the United States is not a party to UNCLOS impacts surprisingly little on the applicable law of the sea in the Arctic Ocean, except in relation to certain aspects of the regime for the outer limits of the continental shelf.

The thesis adopted a top down approach examining the transfer of title from the international law level down to the oil company. Thus, the starting point for the analysis of the questions is the international law of the sea which applies to coastal states' sovereignty and sovereign rights in the Arctic Ocean.

UNCLOS provisions, Articles 2, 55, and 76(1), defining the territorial sea, EEZ and continental shelf of a coastal state are universally accepted as codifying customary international law, and UNCLOS establishes the basic framework and legal regime for each of these maritime zones and the coastal state's rights in respect of the natural resources located in their seabed and subsoil. States have found these UNCLOS regimes generally workable, moreover the extensive adoption of UNCLOS by the international community (167 out of 193 UN Member States) has resulted in the peaceful resolution of almost all maritime disputes in the Arctic Ocean. That said, as demonstrated in Chapters 3-8, the operation of the UNCLOS

regimes and mechanisms is not unproblematic. The work reveals that there are significant issues that can affect the issue of title to petroleum, especially in the conceptualisation, definition, lacunae, and implementation of the UNCLOS provisions.

9.1.2 Problematic Areas

As discussed in Chapter 2, a coastal state can only transfer as good a title to petroleum as it has itself. Thus, problematic issues regarding jurisdiction and title of a coastal state, impact on the title chain down to the oil company, and this subsection summarises the findings of the analysis regarding the thesis questions in each maritime zone with respect to these problematic areas.

9.1.2.1 UNCLOS Provisions: Definitional Issues

It was demonstrated that the issue of inadequate or unclear definitions in UNCLOS provisions occurs in all the maritime zones, but most extensively and with the most serious ramifications in respect of the continental shelf. Such definitional weaknesses impact on certain delineations of maritime zones, and thereby impact on the extent of jurisdiction and rights of the coastal state.

Two examples of the devil being in the detail were analysed with respect to definitions:

- The definition of continental shelf in Article 76 of UNCLOS was found to be a complex and not wholly successful admixture of science and law. The definition of continental shelf itself and its key terms were found to be often vague, ambiguous, and difficult to apply. These definitional difficulties were found to result in very practical problems of implementation of the regime: for example, in regard to subsea ridges and elevations. The absence of clear definitions turns them into “wild cards” in the “poker game” of claiming an ECS in the Arctic Ocean. Unsettled ECS delineations and overlapping claims until finally resolved will leave the jurisdiction over large areas of the central Arctic Ocean unsettled and title rights to petroleum therein uncertain.

- The terms ‘seabed’ and ‘subsoil’ are used in the UNCLOS definitions of all maritime zones. Yet, these key terms remain undefined, and therefore are the source of significant uncertainty in the delineation of Arctic continental shelves. For example, in the case of the new geographical/geological circumstances resulting from the thawing of subsea permafrost, the study argues for the possibility of ambulatory continental shelves.

9.1.2.2 UNCLOS Provisions: Conceptualisation Issues

The analysis found two types of problematic conceptualisation in the UNCLOS provisions. The first is where the drafters of UNCLOS agreed compromise texts for contentious issues, such as in balancing the interests of the coastal states and the Common Heritage of Mankind. Particularly poorly conceived are the overly specific payment provisions of Article 82(2), which, as shown in Chapter 6, are likely to act as a major disincentive to ECS Arctic development – thus defeating the key objective of the Article that mankind may share the benefits of such development.

The second type is simply suboptimal conceptualisation and drafting. For example, this was examined in various aspects of Articles 76 and 133-137: this was evidenced, *inter alia*, in the lack of transparency in the process of submission and recommendations, the role and functioning of the CLCS (e.g. adequate funding and competence), the passive definition of the Area, and in the failure to address the question of who will protect Common Heritage interests with respect to excessive ECS claims.

9.1.2.3 Problematic Lacunae in International law

UNCLOS dates back to 1982. Due to the history of its lengthy negotiation and “package deal” nature, any amendment of the Convention’s provisions relevant to the subject matter of this thesis is extremely unlikely, with States Parties reluctant to open up provisions to possible renegotiation. As a result, major developments over the past 30 years, such as those resulting from climate change in the Arctic Ocean region, are neither addressed by the Convention nor likely to be addressed soon, even using the mechanism of a supplementary agreement. It may be that an Arctic regional environmental treaty is possible, but its scope will be limited and will certainly not affect the fundamental jurisdiction and the sovereign

rights of the coastal states, thus not addressing some of the key legal issues arising from climate change.

In this context, the thesis examined in detail the issue of the legal status of ice formations and their use as loci for basepoints in the Arctic region and how this use could impact on the validity of sections of territorial baselines and therefore affect maritime zones defined in relation to those baselines. A similar problem arose in relation to thawing coastal permafrost and severely ambulatory Arctic Ocean coastlines. However the thesis suggests that it is unlikely that the Arctic Five will challenge each other's baselines regarding such issues, and that if the *status quo* continues for another 10 - 20 years, it could be argued that regional customary law has emerged so that the baselines defined between 1985 and 1995 are then fixed. This would thereby fulfil the assertion of the Ilulissat Declaration that the Arctic Five will resolve problems and gaps in the legal regime themselves *inter se*.

The study also illustrated that the international courts, juridical institutions and professional organisations (such as the ILA) appear to be reluctant to address such issues, thus leading to the outcome that the international legal regime applicable in the Arctic Ocean appears not to be evolving and responding to new challenges and needs.

9.1.2.4 Implementation Issues

The work identifies, in each maritime zone, numerous difficulties in the implementation of the relevant UNCLOS provisions on the territorial seas, EEZs and continental shelves, which include the following:

(1) Practical Difficulties

The practical difficulties of gathering appropriate and sufficient evidence in the hostile and ice-covered Arctic Ocean in order to satisfy the CLCS requirements using Article 76's complex and sometimes unclear formulae and limits to define the ECS were discussed in the thesis. It was found that these coastal state difficulties, when claiming an ECS, are then further compounded by the CLCS's work overload, underfunding and the questionable competence of its relevant subcommittees.

(2) Organisational Weaknesses

In addition to the CLCS weaknesses, the functioning of the ISA was also shown to be problematic: the passive definition of its jurisdiction, the inactivity of ISA in drafting relevant oil and gas regulations, its merely recipient role under Article 82, and a lack of *locus standi* for the ISA with respect to allegedly excessive ECS claims.

9.1.3 National Implementation Issues

These include:

9.1.3.1 National Maritime and Petroleum Regimes

The examination of the national maritime and petroleum regimes of the Arctic Five found that domestic law strongly reflected international law. Even the requirement of the Article 82 payment is now a condition in the licences/leases in two of the Arctic Five. The licensing and leasing regimes were analysed and all were found to contain well drafted provisions regarding the transfer of title to the producing licensee/lessee - as summarised in several tables in the work.

Although the implementation of international law into the national regimes of the Arctic Five was found in this study to have been generally successful, with the resultant licences/leases granting to oil companies title to the petroleum produced in their licenced areas, some problematic areas were identified and include:

9.1.3.2 Possible Impact of Sub-units

The question of devolution and sub-units and their impact on the 'title to petroleum' chain was studied for each of the Arctic Five. It was found that there is no devolution of offshore jurisdiction or resource rights to any sub-unit in three of the five Arctic coastal states (Canada, Norway and Russia). Two of the Arctic Five, the United States and Denmark, do devolve powers and rights to sub-units.

Under the United States Constitution and the Alaska Act, the State of Alaska has both jurisdiction and title to the petroleum *in situ* in a nearshore 3nm zone of the United States'

territorial sea. In this zone, as discussed in Chapter 7, this division of the territorial sea is a complicating factor in delineation, delimitation and petroleum licensing, posing potential issues in respect of ambulatory Arctic coastlines, both domestic and international straddling deposits, and the future settlement of the Beaufort Sea dispute.

Denmark is the only one of the Arctic states to proceed extensively down the devolution route stopping only just short of independence. Under Self-Rule Greenland has been delegated by Denmark full jurisdiction over the offshore maritime zones and the right to explore for, and exploit, petroleum in them. However, the actual proprietary rights in offshore petroleum and international affairs remain with the Danish Crown, and this will remain so until Greenland achieves independence.

There have been concerns expressed about Greenlandic competence in the management of offshore development but Denmark continues to assist and promote Greenlandic devolution. However, a similar concern has been raised in the Canadian debate regarding possible offshore devolution to its Territories, resulting in such devolution being put on the backburner. The thesis suggests that until all Arctic Ocean claims are resolved, it is unlikely that federal Canada will be willing to seriously entertain any offshore devolution to the Territories, especially with respect to petroleum rights.

9.1.3.3 Indigenous Peoples and Self-Determination

Chapter 4 describes the general reluctance of the Arctic Five to become parties to key treaties relating to indigenous peoples' rights and self-determination. Even when they are parties, their implementation is minimised, and none have given offshore petroleum rights to their indigenous peoples – although, through devolution, since the population is over 85% Inuit, Greenland may be the exception. It was of interest to note that in terms of self-determination the Inuit Circumpolar Council has indicated that the Inuit themselves are not pursuing independence, but support the concept of internal self-determination.

The thesis has shown that where other indigenous rights have been given nearshore to Inuit peoples in the United States and Canada, such rights have been used to try to stop or cause

revision of the licensing and leasing of certain vulnerable offshore areas in the Arctic Ocean thereby indirectly affecting the *exercise* of title rights.

The study concluded that generally it can be said that, with the exception of Greenland, international law on indigenous peoples and self-determination has had no real impact on domestic regimes and indigenous peoples' rights to offshore Arctic petroleum. It appears that indigenous Arctic peoples have not become stakeholders in offshore petroleum in the Arctic Ocean, and are unlikely to do so in the near future.

9.1.3.4 Environmental Protection

It was described how the different Arctic States are parties to varying combinations of general treaties (including UNCLOS itself) relating to the protection of the marine environment. As described in Chapters 3 - 6, all of the Arctic Five prohibit to some extent petroleum operations in particularly sensitive Arctic marine environments – some based on long established national law (e.g. zapovedniks) and others on international law (MPAs). These areas are then acreage that is not available for petroleum development, so the issue of title to petroleum located therein is academic.

All of the Arctic Five have requirements for Environmental Impact Assessments (EIAs) in their domestic licensing regimes and the Arctic Five, under the aegis of the Arctic Council, have agreed non-binding Arctic EIA Guidelines and Arctic Offshore Oil and Gas Guidelines (PAME 2009), which recommends practices and strategic actions in the regulation of offshore Arctic oil and gas operations. The requirements in, and procedures for, such EIAs have provided both environmental activists and indigenous peoples with the legal basis to challenge offshore Arctic Ocean licences and leases issued by two of the Arctic Five. Thus, the exercise of sovereign rights over petroleum may be *indirectly* affected by international law on environmental protection.

The thesis considers that, although the Arctic Five have made commitments to the goal of sustainable development, their first priorities are their sovereignty and security in the Arctic

Ocean, followed closely by the optimisation of the socio-economic-political benefits derived from maximal possible exploitation of their petroleum resources.

9.1.4 Maritime Delimitation Issues

The analysis noted that the Arctic Five have resolved all but one active delimitation dispute - evidencing their will to settle all disputes *inter se* peacefully. The remaining Beaufort Sea dispute is considered by both governments and commentators to be 'well managed'. It is likely that any overlapping ECS claims will be similarly handled using the international law principles elaborated by the ICJ for maritime delimitation. Thus, this is an area where international law does and will continue to be a major influence on the acquisition of jurisdiction and sovereign rights in maritime zones in the Arctic.

This is not to say there are no problematic issues in regard to maritime delimitation in the Arctic Ocean. It was seen that two of the delimitation agreements (the Bering Sea and Barents Sea Treaties) created 'Special Areas' where the states 'swapped' jurisdiction and rights – the thesis argued that the legality of these 'swaps' is questionable and therefore oil companies would be well advised to avoid this acreage and any bordering these areas. Unitisation provisions in the delimitation agreements were reviewed and were found to be overly general and abstract, leaving essential details to be negotiated effectively after the identification of a straddling deposit – an undesirable situation for potential licensees.

The analysis also found that although Norway's claim of maritime zones for Svalbard is no longer challenged, the rights of parties to the 1920 Svalbard Treaty in these zones remain unsettled. The current impasse is unlikely to be resolved by amendment of the Svalbard Treaty – it is more probable that over time there will be other agreements with trade-offs (at least for Russia) and the situation may slowly creep to resolution. Svalbard is a case where international law, in the form of the Svalbard Treaty, by its poor conceptualisation and drafting, is actually the cause of problems.

A number of issues were analysed in the context of ECS claims, including *locus standi* with respect to actions for alleged excessive claims and the nature of ridges and elevations. All such problematic areas create uncertainty in a coastal state's rights and therefore in any transfer of good title to petroleum down through the chain.

9.2 Conclusions

Returning to the thesis questions, the following general conclusions can be drawn:

(a) The role of international law in establishing a regime for securing title to petroleum in the Arctic Ocean is a mixed story: initially significant, but subsequently generally weak.

(b) The thesis identified a considerable number of limitations and weaknesses in the law of the sea, in particular that of UNCLOS, in the context of coastal state jurisdiction and title to petroleum.

(c) Most of the Arctic Ocean's seabed is, or perhaps more accurately will be, under the control and management of the Arctic Five where:

- International law, having played a major initial role in the states acquiring sovereignty/sovereign rights over territory in the Arctic and hence petroleum rights and in dispute resolution, is then weak in influencing implementation of these rights in national regimes.
- The Arctic Five have successfully limited the influence of international law through:
  - the promotion of soft law alternatives for cooperation, and,
  - *de minimis* implementation of the law regarding environmental protection and indigenous rights.

(d) Climate change in the Arctic Ocean, in particular the melting of ice and thawing of permafrost, is creating unstable ambulatory coasts and seabeds, and gives rise to major legal issues in the definition of territorial sea baselines and limits to the continental shelves, which currently remain unaddressed by international law.

(e) Although rights to petroleum located in maritime zones are clearly established under international law, problems arise in defining and delimiting these zones, in part arising from the current inadequacies and limitations of UNCLOS.

(f) The implementation into national regimes has been relatively successful, the laws usually importing and mirroring UNCLOS provisions, although complications do arise in some limited cases.

(g) International law regarding self-determination, indigenous rights and environmental protection has also had mixed fortune in the Arctic. The Arctic Five appear to perceive the maritime zones as the exclusive preserve of the central/federal state government. Even Greenland has only been delegated jurisdictional and beneficial rights to the offshore zones and the resources located thereunder, sovereignty and sovereign rights remain with the Danish Crown. Environmental protection of the Arctic Ocean has been to a greater extent incorporated in the national regimes and does impact on the availability of acreage for petroleum development and oil and gas operations.

9.3 Looking Forward – Through a Glass Darkly[1]

It would seem from the study that any macro scale proposal relating to further devolution, extension of self-determination and indigenous peoples' offshore rights, or a moratorium on development in the Arctic Ocean region requires a reality check, and any future attempt at a major limitation or clawback of these Arctic sovereign rights granted under international law, given that two of the Arctic States are major superpowers, is highly unlikely.

Any future amendment of the current international regime will arguably: (a) depend on the acquiescence of all of the Arctic Five, (b) be limited to issues of sustainable development (in particular environmental protection), (c) be as *ad hoc* topic specific agreements rather than an overarching regional treaty, and (d) will not affect in any way the sovereignty, sovereign rights especially title to petroleum produced from a coastal state's maritime zones, or jurisdiction of the Arctic Five.

However, that does not mean that nothing will not, or at least could not, be done.

Over the next 30 years, it is likely that:

(a) the Arctic ECSs will be established and overlapping claims resolved. In terms of overlapping claims, it may be that a regional Arctic approach to the issue

[1] 13 Corinthians 13:12.

emerges – probably using the adjusted median/equidistance approach and agreeing *inter se* how Arctic-specific features will affect the adjustment.

(b) the CLCS will play a major role in clarifying the nature of ridges and elevations and their role in Arctic ECS delineation – which is why the competence of its subcommittees is so crucial. It may be that the UNCLOS States Parties will promote more funding for the CLCS, an enlargement of its membership and the introduction of more stringent selection requirements for key subcommittees.

(c) once the Arctic ECSs are 'final and binding' under Article 76(8), the Arctic Five may choose to address the issues of the legal status of ice and its use as loci for basepoints. It may be that they will then push for the issue of ambulatory baselines caused by climate change to be addressed, fixing them permanently along the lines of Article 7(2) – possibly with a jaundiced eye towards Antarctica.

(d) the Arctic Five will probably agree various *ad hoc* sectoral regional treaties on any aspects of the existing applicable regime in the Arctic Ocean which the Arctic Five deem as in their collective national interests to resolve, probably in relation to environmental protection, or oil operation issues.

(f) the international community may, possibly through the work of the ILC, and drawing on the work of professional societies including the ILA, be able to:

1. 'Tidy up' some definitional issues of UNCLOS such as seabed and subsoil, whose definitions may acquire increasing importance in respect of biodiversity, especially in the Arctic Ocean;
2. Address the payment provisions in Article 82 and get a more commercially viable provision, possibly through a supplementary agreement[2];
3. Create an internationally agreed model unitisation agreement and model clause for delimitation agreements for straddling deposits in the Arctic Ocean, which would make clear the rights and obligations for oil companies from the exploration stage.

[2] This would be the exception to an apparent general aversion to using this mechanism.

4. Speed up the drafting of the petroleum regulations for the Area, at least in time for when technological advancements make the exploitation of the central Arctic Ocean sustainable.

(g) depending on the outcome of the ECS delineations and political factors (especially those of Greenland) it may be that a zone of the seabed around the North Pole may become protected with a moratorium on any petroleum development. Possibly, it may even become an international 'zone of peace', or 'zone of international scientific cooperation', thereby depoliticising this symbolic location.

However, it should be emphasised, that all of the above will only be possible with the agreement of all of the Arctic Five.

9.4 Final Words

The thesis has demonstrated that, although initially international law played a fundamental role in establishing coastal states' jurisdiction and rights in maritime zones that cover almost all the Arctic Ocean, this is where its real influence stops in relation to title to petroleum located there.

It would seem that despite international law developments in indigenous peoples' rights and environmental protection, the Nation States of the Arctic Ocean have the stewardship and management of its subsea resources firmly locked in. The international community and law can now only impact on this management to the extent the Arctic Five allow.

The thesis has identified numerous issues that can give rise to serious concerns in the acquisition of title to petroleum for each of the Arctic Five and which may result in uncertain title.

For oil and gas practitioners advising on projects in the Arctic Ocean, caution should therefore be exercised. These issues should best be investigated for each project in the Arctic Ocean in order to assess the degree of significance and risk for that specific project, and, if necessary, they can be raised with the licencing or leasing state to ascertain what guarantees can be offered or what other risk management mechanisms can be devised.

Echoing the sentiments of Chapter 1, it is hoped that this thesis has provided a fresh and perhaps more thorough analysis of some issues, identified and examined new potentially problematic areas, and hypothesised objectively in looking forward in the context of the acquisition of title to petroleum in the Arctic Ocean and the role of international law in securing it.

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Annex 2: Basic Background Information on Ice, Permafrost and the Melting/Thawing of the Arctic

A2.1 Types of Ice in or abutting the Arctic Ocean, their Characteristics and the melting of such ice in the Arctic Ocean

A2.1.1 Types of Ice in or abutting the Arctic Ocean and their Characteristics

Ice is the frozen crystalline solid form of water. Much of the ice in the Arctic is subject to seasonal variation, both in terms of extent and thickness[1], although in the central part of the Arctic Ocean there is multi-year ice (also termed "perennial ice").

Ice in the Arctic can generally be categorized into two types[2]: *continental* (also termed *"glacial"*) *ice* and *sea ice*.[3] The main difference between the two types of ice, due to their different origins, is their initial level of salinity[4]: one originates from fresh water sources and the other from sea water. It should be noted that during the process of formation and packing of sea ice a large proportion of the salt content is eliminated.[5] Thus, although sea ice forms in a very different way to continental ice, it, in particular multiyear pack ice, can also be virtually fresh water.[6]

Continental Ice is freshwater ice that originates terrestrially and takes the form of ice sheets, ice caps, glaciers and ice shelves.[7]

An *ice sheet* is a mass of continental ice covering the surrounding terrain and $\geq$ 50,000km^2.[8] In the Arctic there is only one ice sheet remaining, the Greenland ice sheet, which occupies 82% of the island with an area of approximately 1,726,000km^2.[9] Some scientists have predicted that, despite its average thickness of over 2km, at the current estimated rate of ice melt of 239km^2 per annum, the over-110,000-year old Greenland ice sheet will have completely vanished within 2000 years, and such melt they estimate will cause a rise in the world sea level of over 7m.[10] However, 2012 scientific

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[1] Norman Davis, "Arctic Oceanography, Sea Ice, and Climate", Chapter 4, *The Arctic: Environment, People, Policy*, (2000), (Mark Nutall and Terry V. Callaghan, eds.), Harwood Academic Publishers, at 99 - 101;
J. A. E. Gibson and M. O. Jeffries, "Ice - shelf collapse, climate change, and habitat loss in the Canadian high Arctic", (2001), *Polar Record*, Vol. 37, No. 201, 133;
Peter Wadhams, *Ice in the Ocean*, (2000), CRC OPA N.V., at 56 - 57 and 140 - 145.

[2] Rothwell, op. cit., at 26.

[3] The Russian scientist Vladimir Vise researched extensively Arctic sea (in particular pack) ice and developed the "Scientific Prediction of Ice Conditions Theory" for which he received international acclaim. His classic work on the subject is: Vladimir Vise, *Morya Sovetskoy Arktiki*, 3rd Edn., (1948), Moscow-Leningrad;
See also Pier Horensma, *The Soviet Arctic*, (1991), Routledge.

[4] Dowdeswell and Hambrey, op. cit., at 138.

[5] Ibid.. It is possible to melt perennial sea ice and drink it.

[6] Sale, op. cit., at 47 - 49.

[7] Ralf Greve and Heinz Blatter, "Ice in the Climate System", (2009), *Dynamics of Ice Sheets and Glaciers,* Springer, at 1 – 3.

[8] Greve and Blatter, ibid., at 1. A very useful description of ice sheets and their properties has been prepared by the National Snow and Ice Data Centre of the University of Colorado, (Boulder, USA), available on its website at: www.nsidc.org/cryosphre/quickfacts/icesheets.html.

[9] Julian Dowdeswell and Michael Hambrey, *Islands of the Arctic,* (2002), Cambridge University Press, at 85.

[10] Julian A. Dowdeswell, "The Greenland Ice Sheet and Global Sea-Level Rise", (2006), *Science,* 17 February 2006, available at:
www.sciencemag.org/content/311/5763/963;

studies of the Greenland Ice Sheet[11] have now challenged these predictions about the ice sheet's 'imminent' demise due to increasing global temperatures, as it has been found that historically it melts in large spurts, often refreezing, and, furthermore, that it behaves much more dynamically, and is able to stabilise itself more quickly, than previously predicted.[12]

An *ice cap* is a mass of continental ice covering land that is < 50,000km^2, while a smaller mass of continental ice constrained by topological features (e.g. mountains) is a termed a *glacier*.[13]

There are significant ice caps in Canada. The largest ice caps are on Ellesmere Island with three that exceed 20,000 km^2, and there are also other large ice caps on Axel Heiberg, Devon and Baffin Islands.[14] The Austfonna ice cap on the island of Nordaustlandet (Svalbard) is the largest in Eurasia at 8,120km^2. Russian ice caps are primarily located on the offshore islands of Novaya Zemlya, Svernaya Zemlya, and the Franz Josef Land Archipelago.[15] Komsomolets Island is mainly covered by the "Academy of Sciences" Ice Cap, which is Russia's largest ice cap being 819m thick and 5,575km^2 in

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J. T. Houghton, Y. Ding, D. T. Griggs, M. Naguet, P. J. van der Linden, X. Dai, K. Maskell and C. A. Johnson, *Climate Change 2001: the Scientific Basis, Contribution of Working Group to the Third IPPC Assessment Report of the Intergovernmental Panel on Climate Change (UNEP),* (2003), Cambridge University Press, at Chapter 2.2.5;

A. Robinson, R. Calor, and A. Ganopolski, "Multi-stability and critical threshold of the Greenland Ice Sheet 3", *Climate Change Research*, (2012), Potsdam Institute, doi:10.1038/NCLIMATE1449, available at:
www.nature.com/nclimate/journal/n6/full/nclimate449.html.

[11] H. J. Zwally, Jun Li, Anita C. Brenner, Matthew Bechley, Helen G. Cornejo, John Di Marzio, Mario B. Giovinetto, Thomas A. Neuman, John Robbins, Jack L. Saba, Donghui Yi, and Weili Wang, "Greenland ice sheet mass balance, distribution of increased mass loss with climate warming: 2003 - 2007 versus 1992 - 2002", (2011), *Journal of Glaciology*, Vol. 57, No. 271, 88, available at:
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Few mainline western newspapers reported the good news - see: "Greenland ice sheet won't disappear all at once", *Tehran Times*, (2012), Science Desk, 03 August 2012, available at:
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"Greenland ice sheet not going anywhere in a hurry says boffins", *The Register, Energy*, 3 August 2012, available at:
www.register.co.uk/2012/08/03/greenland-ice-sheet-not-about-to-disappear/.

[12] The reality is probably somewhere in between the two camps. See Eric Rignot and Pannir Kanagaratnam, "Changings in the velocity structure of the Greenland Ice Sheet", (2006), *Science*, Vol. 311, No. 5763, 982, doi:10.1126/science.1121381, available at:
www.sciencemag.org/content/311/5763/986.abstract;

However, the most recent study by Andrew Shepherd, Erik R. Ivins and forty five other experts shows that ice sheet melt contributions to sea level rise are currently at the upper end of the 2007 Intergovernmental Panel on Climate Change ("IPCC") predictions, see their report in: *Science,* 30 November 2012, Vol. 338, No. 6111, 1183;

Ian Joughin, Richard B. Alley, and David M. Holland, "Ice-Sheet Response to Oceanic Forcing", (2012), *Science,* 30 November 2012, Vol. 338, No. 6111, 1172, available at:
www.sciencemag.org/content/338/6111/1172.short.

[13] Greve and Blatter, op. cit., at 1 - 2.

[14] Alex S. Gardner, Geir Moholdt, Bert Wouters, Gabriel J. Wolken, David O. Burgess, Martin J. Sharp, J. Graham Cogley, Carsten Braun, and Claude Labine, "Sharply increased mass loss from glaciers and ice caps in the Canadian Arctic Archipelago", (2011), *Nature*, Vol. 473, at 357 - 360, available at:
www.nature.com/nature/journal/v473/n7347/nature10089/metrics/citations?page=2;

On Canadian glaciers see: Dowdeswell and Hambrey, op. cit., at 89 – 90;

Roy M. Koerner, "Glaciers of Canada, Glaciers of the Arctic Islands, Glaciers of the High Arctic Islands", (2000), *US Geophysical Survey Professional Paper*, J-1, at J-111 seq., available at:
www.usgs.gov/pp/p1386/hiarctic/hiarctic-lores.pdf.

[15] Julian A. Dowdeswell, A. F. Glazovsky and Y. Y. Macheret, "Ice Divides and Drainage Basins on the Ice Caps of Franz Josef Land", (1995), *Arctic and Alpine Research,* Vol. 27, No. 3, 264, at 267, available at:
www.jstor.org.ezproxy!.library.usyd.edu.au/stable/10.2307/1551957.

area.[16] There are a very large number of continental ice glaciers in all the five Arctic states[17], and, as will be seen below, all these ice caps and glaciers are currently melting at what the scientists consider a significantly fast rate.[18]

Another form of continental ice is the *ice shelf.*[19] An ice shelf (also termed a "tongue" when originating in a glacial fiord) is floating continental ice attached to the land and nourished by the inflow from the adjacent ice sheet, ice cap or glacier or attaching sea ice[20]. Ice shelves can have varying thicknesses from 100m to 1000m. Although ice shelves mainly occur in Antarctica, there are Arctic ice shelves occurring primarily in Canada and Greenland, but these are much smaller than their Antarctic counterparts.[21] Floating ice shelves fringe much of the northern coast of Ellesmere Island, eastern Greenland and the eastern side of Severnaya Zemlya.[22] The physical scale of these ice formations is quite remarkable: some of the Greenland ice shelves or tongues can be over 80kms long, with their height varying from 100m to 1000m, and their width sometimes vast (the Canadian ice shelves spread approximately 480kms along the coast).[23]

There are two remaining types continental of ice formations, *icebergs* and *ice islands* to describe briefly.

Icebergs and ice islands, though oceanic features, are formed from freshwater ice derived from the calving of tidewater glaciers and ice shelves.[24] Their 'terrestrial' origin distinguishes them from the other forms of ice found in the Arctic Ocean that arise from frozen sea water and which will be described in the next sub-section.

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[16] Although the "Severny Island Ice Cap" (in the Novaya Zemlya Archipelago) covers 40% of the island (with an area of 20,500km^2), it is technically a glacier.

[17] There are over 446 glaciers in the Kamchatka region of Russia alone.

[18] For a detailed technical general report by NASA in 2012 see: Josefino C. Comiso, "Large Decadal Decline of the Arctic Multiyear Ice Cover", (2012), *Journal of Climate*, Vol. 25, 1175 - a useful summary of which is available at: http://dxdoi.org/10.1175/JCLI-D-11-00113.1.
In July 2012 the summer melt zone covered 97% of the ice sheet of Greenland – see Scott Neumann, "Massive Ice Melt in Greenland Worries Scientists", (2012), *NPR News*, 25 July 2012, available at:
www.npr.org/2012/07/25/157375057/massive-ice-melt-in-greenland-worries-scientists;
Martin Sharp, David O. Burgess, J. Graham Cogley, Miles Ecclestone, Claude Labine, and Gabriel J. Wolken, "Extreme melt on Canada's Arctic Ice caps in the 21st Century", *Geophysical Research Letters,* (2011), Vol. 38, L 11501, doi:10.1029:2011GL04738, available at: www.agu.org/pubs/crossref/20122GL047381.shtml.

[19] For a useful description of ice shelves and their properties see information by the *National Snow and Ice Data Centre of the University of Colorado (Boulder, USA)*, available at:
nsidc.org/cryosphere/quickfacts/iceshelves.html.

[20] Gerald Graham, "Ice in International Law", (1969), *AJIL,* Vol. 54, 477, provides an early description of ice shelf characteristics and legal issues; Lemmen, Evans and England suggested the categorisation of ice-shelves, depending on the origin of the component ice, into three categories - sea ice, glacial and composite.
Ellesmere Island has all three types of ice shelves, see: D. S. Lemmen, D. J. A. Evans and John England, "Ice-shelves of northern Ellesmere Island, N.W.T. - Canada landform examples", (1988), *Canadian Geographic*, Vol. 32, No. 4, 363, available only in hard copy.

[21] A. P. Crary, "Ice Island and Ice Shelf Studies: Part II", (1960), *Arctic,* Vol. 13, March 1960, 32, available at:
http://arctic.synergiesprairies.ca/arctic/index.php/arctic/view/3731, provides very useful background material.

[22] A seminal work on Arctic ice shelves and ice islands can be found in L. S. Koenig, K. R. Greenway, Moira Dunbar and G. Hattersley – Smith, "Arctic Ice Islands", (1952), *Arctic,* Vol. 5, 67, available at:
http://arctic.synergiesprairies.ca/arctic/index.php/arctic/article/view/3901.

[23] They are often constrained within the deep fjords.

[24] Dowdeswell and Brambley, op. cit., at 140 - 145; Sale, op. cit., at 54 - 57.

The size and shape of Arctic icebergs varies enormously, as do the estimates of their numbers (30,000 – 60,000 annually).[25] In addition to small and medium size icebergs, large ice islands are regularly calved off the ice shelves or the tidewater face of outlet glaciers.[26] Arctic ice islands are usually smaller than their Antarctic counterparts[27], although there have been some notable exceptions: for example, in 2010 and 2012 Greenland's Petermann Glacier calved ice islands measuring approximately 250 km^2 and 125 km^2 [28], and there have also been some major calving off the Canadian shelves.[29]

Ice islands[30] have been used for scientific and military stations[31] and have given rise to a number of events, such as dramatic rescues during disintegration of an ice island and even murder.[32] Ice islands pose a number of interesting legal questions: such as: Are they *res communis or res nullius* and subject to sovereign claims? Who has jurisdiction over them – the state of origin or the state to which they have drifted on the currents? – but these issues, interesting as they be, are beyond the scope of interest of this thesis.

Currently most large icebergs are calved from the surge outlet glaciers[33] of the Greenland Ice Sheet (especially the Jacobshavn Glacier which produces about 10% of the Greenland icebergs annually)[34] and the glaciers of Franz Josef Land and Severnaya Zemlya, which are the two major sources of ice islands[35] in the Eurasian part of the Arctic Ocean.[36]

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[25] Sale, op. cit., at 55.

[26] Major calving events in the Arctic have included:

(i) Ward Hunt Shelf: 600km^2 sometime in 1961 – 1962

(ii) Ayles Ice Shelf: 66.5km^2 in 2005

(iii) Petermann Glacier: 250km^2 in 2010 and 125km^2 in 2012.

[27] Ice islands arising in Antarctica can be gigantic: for example, the ice island which calved off the Ross Shelf in 2000, B-15A, was 295km long and 37km wide with an estimated mass estimated at over 3 billion tonnes. A sense of the scale of B-15A can be seen in the images by NASA: see NASA, "B-15A Antarctic Iceberg Makes a Break for it", (2000), available at: nasa.gov/vision/earth/lookinatearth/ny_iceberg.html.

[28] BBC News, "Iceberg breaks off from Greenland's Petermann Glacier", available at: www.bbc.co.uk/news/world_europe.18896670;
Also the citations in footnotes 385 - 387, op. cit..

[29] Bassford, Siegert, Dowdeswell, Oelemanns, Glazovsky and Macheket, op. cit., at 1.

[30] Pharand, op. cit. (1973), gives a comprehensive list of ice island stations and their activities until 1969.
Wood Hole Oceanographic Institute, "North Pole Drifting Stations (1930s - 1980s)", *Wood Hole Oceanographic Institute,* available at:
www.whoi.edu/beaufortgyre/history/history_drifting.html.
For a superb account of the Soviet drifting stations see: I. P. Romanov, Yu B. Konstantinov, and N. A. Kornilov, "North Pole Drifting Stations (1937 – 1991)", (1997), *St. Petersburg Gidrometeoizdat*, available (as a condensed English version) at:
www.aari.ru/resources/m000l/Meteorology/HTML/HISTORY/COLLECTION/NPhistory.htm.
A comparison of Soviet and USA findings from drifting stations can be found in: First Lieutenant Charles I. Smith, "Drifting Ice Stations", (1966), *Air University Review*, Sept - Oct 1966, available at:
www.airpower.maxwell.af.mil/airchronicles/airreview/1966/sept-oct/smith.html.

[31] Joyner, op. cit., at 41 – 47, at 41.

[32] Ibid., at 45. On the criminal murder case see: D. Pharand, "State Jurisdiction over Ice Island T – 3: The Escamilla Case", (1971), *Arctic*, Vol. 24, No. 2, 81, available at:
Arctic.synergiesprairies.ca/arctic/index.php/arctic/article/download/3118/3094.
These jurisdictional issues over floating ice formations will be examined further in the next section on the legal status of ice.

[33] Which often flow at speeds of several kilometres per year.

[34] Joyner, op. cit., at 36.

[35] Usually smaller than those of Greenland or Canada.

[36] A. I. Sharov, H. Raggam and M. Schadt, "Satellite Hydrographic Monitoring along the Russian Arctic Coast", (2000), *International Archives of Photogrammetry and Remote Sensing*, Vol. XXXIII, Part BA, 947, available at:
www.isprs.org/proceedings/XXXIII/congress/part4/947_XXXIII-part4.pdf;

Once icebergs or ice islands have broken off they drift under the influence of the Arctic Ocean currents[37] and wind. Currents play a stronger influence on the course the icebergs take due to the huge underwater bulk of these icebergs. In the Arctic there are two main currents: the Beaufort Gyre[38], and the Transpolar Drift[39] and about six other significant currents in the Arctic Ocean. A chart of these currents is reproduced below.[40]

A. I. Sharov (ed.), *Satellite Monitoring and Regional Analysis of Glacier Dynamics in the Barents – Kara Region*, (2010), Reproteam, Joanneum Research, available at:
http://dib.joanneum.at/smaragd/downloads/SMARAGD_Brochure_10060_ed_title.pdf.
Despite the melting, sea ice is still reported to surround the main islands even in summer, see Chillymanjaro, "The Glaciers in the Island of Franz Josef Land are currently in a state of retreat", (2011), *Arctic and Antarctic Climate Change, 20 August 2011,* available at:
the watchers.adorraeli.com/category/earth-changes/arctic-antarctic.
Tabular ice islands from the archipelago are usually less than 400km^2, i.e. relatively small by Antarctic standards. It should be noted that only 20% of the Franz Josef Land Archipelago is land, the rest is sea, ice and snow. For a very stark pictorial view of the shrinkage see: A. Sharov, "Franz Josef Land Region: Glacier Changes 1950s- 2000s", (2008), *Joanneum Research,* available at:
http://dib.joanneum.at/smargd/downloads/Eurasian_Arctic_5mio_100908_web.pdf.
For Severnaya Zemyla see:
R. P. Bassford, M. J. Siegert, J. A. Dowdeswell, J. Oerlemans, A. F. Glazovsky, Y. and Y. Macheket, "Quantifying the Mass Balance of Ice Caps on Severnaya Zemyla, Russian High Arctic I: Climate and Mass Balance of Vavilov Ice Cap", (2006), *Arctic, Antarctic and Alpine Research*, Vol. 38, No. 1, 1, available at:
www.cpom.org/researching/mjs-aaar38c.pdf;
A. I. Sharov, "Severnaya Zemlya: Glacier changes in the 1980s - 2000s", (2009), *Joannuem Research*, available at:
dib.joannuem.at/smaragd/downloads/SZ_1min_light_CS-ed140809_web.pdf.

[37] Lawrence A. Mysak, "Patterns of Arctic Circulation", (2001), *Science*, New Series, Vol. 293, No. 5533, 1269, available at:
www.sciencemag.org/content/2935533/1269.short;
R. M. Koerner, "The mass balance of sea ice of the Arctic Ocean", (1973), *Journal of Glaciology,* Vol. 12, No. 65, 17, available at:
www.igsoc.org/joural.old/12/65/igs_journal_vol12_issue065_pg173-185.pdf.

[38] M. Dunbar and W. Wittmann, "Some features of ice movement in the Arctic Basin", (1963), *Proceedings of the Arctic Basin Symposium*, October 1962, The Arctic Institute of North America, Washington, 90 ;
For detailed geophysical information on the Beaufort Gyre see website: The Beaufort Gyre Exploration Project: the Woodhole Oceanographic Institution, available at:
www.edu?beaufort.gyre/.

[39] Arthur Dyke, John England, Erik Reimitz, and Helene Jette, "Changes in Driftwood Delivery to the Canadian Arctic Archipelago: the Hypothesis of Postglacial Oscillation of the Transpolar Drift", (1997), *Arctic*, Vol. 50, 1, available at:
arctic.synergiesprairies.ca/arctic/index.php/arctic/article/download/1086/1112.

[40] The creator of the graph, 'Ocean Currents and Sea Ice Extent', was Phillipe Redecewicz, *UNEP/GRID-Arendal*, Public Domain, available at:
http://www.grida.no/graphicslib/detail/ocean-currents-and-sea-ice-extent_4aa6.
Reproduced with permission.

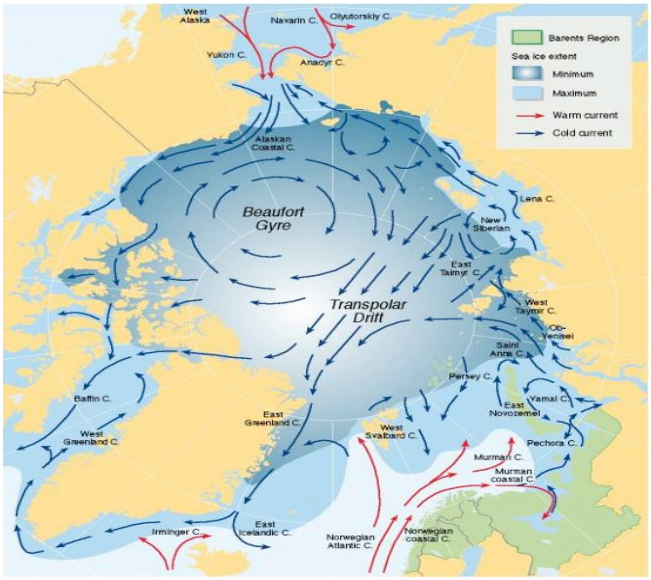

Figure A2.1: Map of Ocean Currents and Sea Ice Extent[41]

The drift patterns of icebergs and ice islands have been the subject of extensive study since the 1950s[42], and some large icebergs can drift for up to three decades before finally melting and breaking up.[43]

Icebergs and ice islands are eroded by a combination of sunlight, wind and water action below the surface and eventually they disintegrate into the sea. When differential erosion makes icebergs unstable they roll over and fragment, which can be very dangerous.[44]

Together with the larger icebergs, there are also smaller fragments of glacier ice – usually a couple of meters in length. These typically arise from glaciers grounded to the sea floor, and are the result of the faster forward movement towards the top of the glacier face, which results in the face leaning forward and collapsing into the sea. They are quaintly termed "bergy bits", and are often floating low in the water. Icebergs of high density, which are almost submerged, are known as "growlers".[45] All icebergs are clearly hazards to shipping, but bergy bits and growlers are particularly difficult to detect and avoid. It is for this reason, *inter alia*, that all ships operating in the Arctic should be double hulled and ice strengthened.[46]

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[41] Ibid..

[42] The drift patterns are described in: Totgny E. Vinje, "The Drift Pattern of Sea Ice in the Arctic with Particular Reference to the Atlantic Approach", (1982), Chapter 4, *The Arctic Ocean: The Hydrographic Environment and the Fate of Pollutants*, (Louis Rey, ed.), Macmillan Press, 83, at 94 - 96.

[43] Christopher Joyner, (2001), op. cit. at 41.

[44] Either for people on them, or for vessels in the vicinity.

[45] Such semi submerged icebergs are particularly hazardous for shipping. It is thought that in 1912 the Titanic collided with a growler.

[46] The basic requirements for shipping in the Arctic can be found in provisions, protocols, and agreements of the International Convention on Safety of Life at Sea (1974, as amended), (mandatory for all signatories), the International Convention for the Prevention of Pollution from Ships (1973 as modified by the 1978 Protocol, as further amended) and the 2002 IMO Guidelines for Ships Operating in Arctic Ice-Covered Waters (MSC/Circ.1056/MEPC/Circ.399) and the IMO 2010 Guidelines for Ships Operating in Polar Waters, available at:
www.imo.org/Publications/Documents/Attachments/Pages%20from%20E190E.pfd.
The classification of "Polar Class" vessels has been developed by the International Association of Classification Societies – see:

Icebergs and ice islands also pose dangers for rigs located in the Arctic and present a very significant hazard to structures on the sea floor, such as wellheads manifolds, and pipelines, as the bottom of their keels often may go down to over 200m deep[47] and gouge huge furrows in the sea bed.[48] Thus, any oil and gas structures in the Arctic Ocean are susceptible to damage by icebergs and ice islands.[49]

There are two forms of ***sea ice*** in the Arctic Ocean: land-fast ice (commonly called '*fast ice'*), and *drift ice*. *Fast ice* is sea ice that has frozen along the coast and is either attached to the coast or to the shallow parts of the seafloor and extends out from land to the sea. It does not move with the currents or winds. It has minimal horizontal movement but may float and fluctuate marginally vertically. On occasions, however, fast ice has been documented as moving tens of metres during one season according to thermal and mechanical stresses[50], and that way as jeopardizing the safety of offshore structures.[51] *Drift* ice is sea ice that floats in the ocean unattached to land. When it is packed together in large masses it is termed '*pack ice'*. An *ice floe* is a floating mass of pack ice less than 10km in its greatest dimension and a bigger mass is termed an *ice field*[52]. Pack ice is not flat, compact, uniform, permanent, or immobile. It moves about with the winds and currents.[53] Where

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http://aaa.iacs.org.uk.

The new 2010 Polar Guidelines' provision G - 2.1 states that: "Only those ships with a Polar Class designation or a comparable alternative standard of ice-strengthening appropriate to the anticipated ice conditions should operate in polar ice-covered waters", and section 3.4 of the Guidelines requires double skin and strengthened bottom construction for Polar Class ships.

[47] There is evidence of archaeological scouring to depths of 600m - 850m. Antarctic scouring is deeper than Arctic and scouring up to a depth of 350m has occurred there relatively recently. In the Arctic the depth is normally less than 170m. Paul Barrette (NRC), "Scouring icebergs and buried pipelines", a 2009 presentation, the Canadian Hydraulics Centre, available at:

ftp://ftp2.chc.nrc.ca/CRTreports/PERD_09_Ice_Engineering.pdf.

[48] The issue for petroleum industry structures is how deep can icebergs gouge the bottom. A study over eleven years of data (1979 - 1990) found that at 150 - 170m depths the maximum scour depth was 7m, and at 90 - 110m the maximum scour depth was 3m, with the maximum with 200m and maximum length 9400m at the same depth - see: K. R. Croasdale, "Study of Iceberg Scour and Risk in the Grand Bank Region", (2000), a *Report by Croasdale and Associates, PERD*, available at:

ftp://ftp2.chc.nrc.ca/CRTreports/PERD/Scour_00.pdf.

A recent analysis of the issue can also be found in: Paul Barrette, "Offshore pipeline protection and seabed gouging by ice: An Overview", (2011), *Cold Region Science and Technology,* Vol. 69, 3, at 7, available at:

www.deepdyve.com/lp/elesevier/offshore-pipeline-protection-against-seabed-gouging-by-ice-an-overview-q4y0VpMjMz.

We will return to this issue when examining ISO 19906, 2010 for Arctic Offshore Structures Standards in Chapter 4.

[49] Dowdeswell, Islands of the Arctic, op. cit., at 127 - 128.

[50] Pointed out by Franckx, op. ci., at 14; See W. Tucker, A. Kovacs, A. J. Gow, "Nearshore Ice Motion at Prudhoe Boay, Alaska", (1980), *Sea Ice Processes and Models*, (Robert. S. Pritchard,ed.), The Proceedings of the Arctic Ice Dynamics Joint Experiment International Commission on Snow and Ice Symposium, University of Washington Press, 261, at 270.

[51] Tucker, ibid., at 271.

[52] Interestingly Joyner in "The Status of Ice in International Law", [(2004), Oude Elferink and Rothwell, op. cit.] stated at 29: "The Arctic polar ice cap field encompasses over 4.7 million square kilometres…of polar ice 10 to 20 feet thick that *never melts*". How times have changed. In a study by NASA in 2012 (only 8 years later) it was found that the old and thickest (i.e. the polar ice cap field) was melting even faster than younger and thinner pack ice: NASA, "NASA Finds Thickest Part of Arctic Cap Melting Faster", (2012), *NASA*, available at:

nasa.gov/topics/earth/feature/thick-melt.html

See also the SWIPA Report 2011, *Arctic Climate Issues 2011: Changes in Arctic Snow, Water, Ice, and Permafrost*, available at:

amap.no/swipa/SWIPAOverviewReport.pdf.

The SWIPA findings are salutary and include, *inter alia,* that there is an accelerating decrease in the extent and duration of sea ice, that the largest and most 'permanent' bodies of Arctic ice are melting significantly faster since 2000 than they did the previous decade, and that the temperature of Arctic permafrost has gone up by 2^{o}C in the past decade.

[53] M. C. Coon, "Mechanical Behaviour of Compacted Arctic Ice Floes", (1974), *Journal of Petroleum Technology*, Vol. 26, No. 4, 466, at 466, available at:

www.onepetro.org/mslib/servilet/onepetropreview?id=00003956.

fast ice *meets* pack ice a transition zone, or *shear*, exists, and it is marked by rafting[54], hummocks[55], and ridging[56]. Ice floes are also not joined together and usually are separated by *leads* (fissures) and *polynyas* (areas of sea water surrounded by sea ice).[57]

A2.1.2. Changing characteristics of Ice in and abutting the Arctic Ocean: The great Arctic Melt

(a) The Arctic Ocean's sea/pack ice is melting

The Arctic Ocean at its winter season maximum can be approximately 90% covered by sea ice.[58] Sea ice is frozen sea water. In the process of its formation and subsequent thickening and compacting, however, sea ice loses most of its salinity. [59] Its extent varies seasonally[60], with summer melting and winter freezing[61], and its area ranges from a winter average of approximately 15.6 million km^2 to a summer average of about 3.4 million km^2.[62] Both the thickness and the extent[63] of Arctic sea ice have decreased significantly over the past thirty years: scientists estimate that the decrease in the extent is on average about 3% per decade (in contrast to the Antarctic which has increased on average by about 1.5% per decade).[64] The satellite measurements of extent of sea ice taken on the 16 December 2012 illustrate clearly how the Poles differ: the North Pole recorded a new record minimum summer ice level while the Antarctic recorded a new record maximum sea ice level. [65] Over the past decade Arctic summer sea ice has declined by approximately 91,000 km^2 while Antarctic winter sea ice has increased by approximately 16,000 km^2.[66] From the data it is clear that global warming has most effect in the Arctic. Scientists have identified a number of factors at play which may be causing, to a greater or lesser extent, the differing sea ice responses at the two Poles: including the 'albedo effect' at the North Pole (warming) and the spring ozone hole at the South Pole

[54] This is "the pressure process by which one piece of floating ice overrides another" or fast ice it encounters: see Franckx, op. cit., at 14.

[55] Which are mounds of sea ice. When inverted they are referred to as 'bummocks', and can be hazardous to oil and gas operations (e.g. to pipelines and other submarine equipment).

[56] This designates "a wall of broken floating ice forced up by pressure. Usually a corresponding ridge occurs on the underside of the ice ("the ice *keel*"), Franckx, op. cit., at 14.

[57] There are two types of polynyas: latent heat polynyas and sensible heat polynyas - one is wind driven, the other results from oceanic temperature - both occur in the Arctic, see: W. J. Stringer and J.E. Groves, "Location and Areal Extent of Polynyas in the Bering and Chukchi Seas", (1991), *Arctic,* Vol. 44, Suppl. 1, 164, at 164, available at: http://pubs.aina.ucalgary.ca/arctic/Arctic44-S-164.pdf.

[58] There is an excellent website for Arctic sea ice data by the National Snow and Ice Data Center, available at: http//nsidc.org.; Another useful site is called Cryosphere Today (which follows current Arctic sea ice conditions), available at: http//arctic.atmos.uiuc.edu/cryosphere.

[59] Richard Sale, *The Arctic: the Complete Story*, (2008), Francis Lincoln, at 48 – 50. Sale describes the technical process whereby the salt leeches out of the ice. The Arctic Ocean has a salinity of about 33ppt, while perennial sea ice has a salinity count of about 2ppt.

[60] The summer ice cover in the Arctic is currently about 40%.

[61] Konstantin Y. D. J. Cavalieri, P. G. Loersen, C. L. Parkinson, J. C. Comiso, and H. J. Zwally, "Observed Hemispheric Asymmetry in Global Sea Ice Changes", (1997), *Science*, Vol. 278, No. 5240, 1104, available at: www.sciencemag.org/content/278/5340/1104.abstract.

[62] Ibid.

[63] A very useful explanation of the difference between area and extent can be found at: nsidc.org/arcticseaicenews/faq/#area_extent.

[64] See National Snow and Ice Data Center ("NISDIC"): Updated minimum sea ice extent, available at: http://nsidc.org/arcticseaicenews/2012/09/arctic-sea-ice-extent-settles–at-record-seasonal minimum/.

[65] Ibid..

[66] Josefino C. Comiso, "Large Decadal Decline of the Arctic Multiyear Ice Cover", (2012), *Journal Climate*, Vol. 25, 1176, available at: http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-11-00113.1?prevSearch=comiso&searchHistoryKey=.

(cooling).[67] This difference is one example of why drawing parallels between the two Poles needs to be very carefully done, if at all.[68]

Two satellite images of the Arctic Ocean taken in 2012 and 2007 are reproduced below and when viewed together they demonstrate clearly how rapidly the extent of the sea ice in the Arctic is declining.[69]

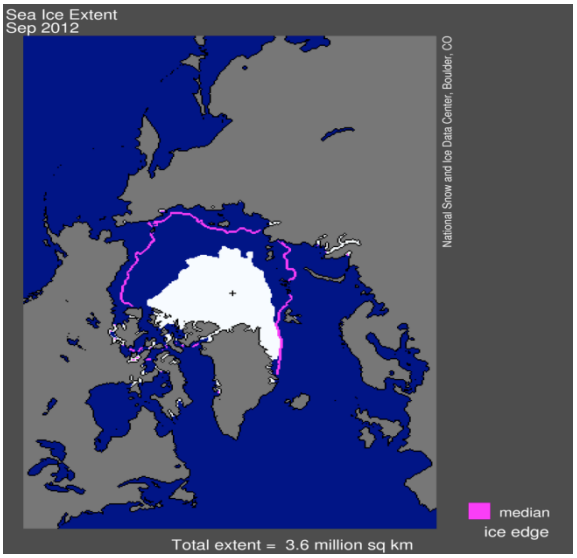

Figure A2.2: Map of Sea Ice Extent[70]

[67] NSIDC, "Poles Apart: A record-breaking summer and winter", 2 October 2012, available at: nsidc.org/arcticseaicenews/2012/poles-apart-a-record-breaking-summer-and winter/;
NASA, "Arctic Sea Ice Hits Smallest Extent in Satellite Era", 19 September 2012, available at: www.nasa.gov/topics/earth/features/2012-seaicemin.html;
Pete Aldhous, "Why sea ice records are poles apart", (2012), *New Scientist*, 8 October 2012, available at: www.newscientist.com/article/dn22349-why-sea-ice-records=are–poles-apart.html.

[68] For an interesting discussion of comparatives in respect of the Arctic and Antarctic, see: Tim Stephens, "The Arctic and Antarctic Regimes and the Limits of Polar Comparatives", *German Yearbook of International Law*, Vol.54, (2011), op. cit., especially his conclusions at 32.

[69] Since most scientists agree that the decline is in all probability due to some combination of factors, it would be more interesting to know (but clearly much more difficult to ascertain) what percentage is attributable to which variable (CO_2 emissions, earth orbit, feedbacks, changes in wind patterns, or solar activity).
In April 2010 the European Space Agency launched the Cryosat-2 satellite, which for two months measured the thickness of the polar sea ice cover using a SAR/Interferometric Radar Altimeter, which is able to measure the difference between the height of the surface of sea ice and the water in open leads. Since 7/8ths of sea ice is on average under water it is a relatively simple calculation to get the height. Thus, the first map showing the whole of the Arctic Ocean's sea ice was produced in 2011. However, what are needed are further such maps to monitor the year to year changes. Regrettably this was a one off mission. See: Johnathon Amos, "Cryostat mission delivers first sea ice map - Arctic sea ice thickness, Jan - Feb 2011", *BBC*, June 2011, available at: www.bbc.co.uk/news/science-environment-13829785.

[70] Credit for the above map -The National Snow and Ice Center, Boulder Colorado. Reproduced with general permission, available at:
http://nsdic:.org/data/seaice_index/Archives/images_select.html.

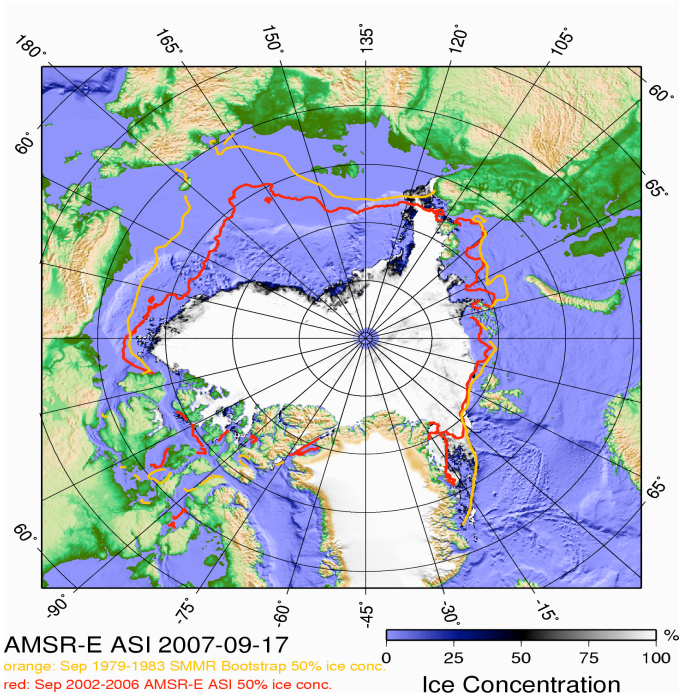

Figure A2.3: Map of Minimum Sea Ice Extent 2007[71]

Unlike the extent of sea ice, which we will look at next, the thickness of sea ice has proved rather difficult to measure comparatively over time.[72] Nonetheless, studies of sea ice thickness reduction using upward – looking sonar from submarines have provided over 30 years of data on sea ice draft (the component- circa 90% - that projects below the water surface).[73] Comparison between two study periods, (1958 – 1976) and (1993 – 1997),[74] has indicated reductions of approximately 1.3m in mean late summer ice draft over much of the central Arctic Ocean, although sparse samplings and lack of full data have complicated the interpretation of the data. However, results from an ice-tracking algorithm applied to satellite data between 1978 and 2003 confirm a decreasing coverage of old thick ice[75], as have other later studies.[76]

[71] The above image shows the sea ice minimum in September 2007, and also marks the mean September 2002-2006 (red) and September 1979-1983 (orange sea ice extents). Credit - G.L. Spreen and G. Heygster, "Sea ice remote sensing using AMSR-E 89 GHz channels", (2008), *Journal of Geophysical Research*, Vol. 113 C02S03,doi:10:1029/2005JC003384. The image is available for general use at:
www.iup.uni-bremen.de:8084/amsr/amsre.html.

[72] Mark C. Serreze, Marika M. Holland, and Julienne Stroeve, "Perspectives on the Arctic's Shrinking Sea-Ice Cover", (2007), *Science,* Vol. 315, 1533, at 1533, available at:
ftp://ftp.shef.ac.uk/pub/uni/academic/D-H/geog/felix/PAC_Summer_Reading/serreze_etal_2007.pdf.

[73] D. A. Rothrock, Y. Yi, and G. A. Maykut, "Thinning of the Arctic sea-ice cover", (2000), *Geophysical Research Letters*, Vol. 26, No. 23, 3469, available at:
www.agu.org/pubs/crossref/199/199GL010863.shtml.

[74] A recent study placed the Ice Sat (2003-2008) data in the context of the 42 years of submarine records, and it estimated that the overall mean winter thickness of Arctic sea ice had declined by 1.95m, see: R. Kwok and D. A. Rothrock, "Decline in the Arctic sea ice thickness from submarine and Ice Sat records 1959-2008", *Geophysical Research Letters,* (2009), Vol. 36, L15501, available at:
www.agu.org/pub/crossref/2009/2009GL051035.

[75] G. L. Spreen and G.Heygster, "Sea Ice Remote Sensing Using AMSR-E-89 GHz Channel", (2007), *Journal of Geophysical Research*, Vol. 13, C02S03, available at:
www.iup.uni-bremen.de:8084/amsr/amsre.html.

Sea ice is categorized into one year ("new") ice and multi-year (sometimes termed "perennial") ice which is 2 years old or more. The trend has been in the Arctic that the ratio of new to multiyear ice is changing rapidly with the trend to increasing amounts of one year ice.[77] One year ice is relatively thin with an average thickness of around 1m, while multiyear ice can be up to 30m thick. Currently 38% of Arctic sea ice is multi-year, although the amount of sea ice older than 2/3 years is in rapid decline.[78] The geophysical implications of the reduction in the extent of summer sea ice will be described below in in the subsection on permafrost.

With the increased summer melting of the pack ice, the number and extent of polynyas has increased dramatically, and to such an extent that in the summer many have effectively joined to become large expanses of open sea.[79]

This increased amount of larger areas of open sea in the Arctic Ocean is causing what is termed "a positive albedo effect feedback", which in turn causes further warming and hence further melting. *Albedo* is a measure of how well a surface reflects solar energy; it ranges from 0 to 1. The most reflective measure is 1 (white), with snow being 0.9, ice between 0.5 and 0.7, and sea around 0.06). Thus, the polynyas and open sea (where previously sea ice would have existed) now absorb solar energy[80], warming the water and increasing the melt and becoming a positive feedback cycle.[81] Some scientists argue that the *albedo effect feedback* in the Arctic Ocean has reached a tipping

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Similar findings are to be found in: J. A. Maslanik, C. Fowler, J. Stroeve, S. Drobbot, J. Zwally, D. Yi, and W. Emery, "A younger, thinner Arctic Ice cover: Increased potential for rapid, extensive sea-ice loss", *Geophysical Research Letters*, (2007), Vol. 34, L24502, available at:
www.agu.org/pubs/crossref/2007/2007Gl032043.shtml - which found old thick multi-year ice was disappearing (they found that 50% of Arctic multiyear sea-ice is now 2/3 years old ice, compared to 35% in the mid-1980s).
See also: W. N. Meier, J. Stroeve, and F. Fetterer, "Whither Arctic Sea Ice? A clear signal of decline regionally, seasonally, and extending beyond the satellite record", (2007), *Annals of Glaciology,* Vol. 46, No. 1, 428, available at:
www.ingentaconnect.com/content/igsoc/agl/2007/00000046/00000001/art00063.

[76] S. V. Nghiem, I. G. Rigor, D. K. Perovich, P. Clement-Colon, J. W, Weatherly, and G. Neima, "Rapid Reduction of Arctic perennial sea ice", Geophysical Research Letters, Vol. 34, L19504, available at:
http://seaice.apl.washing.edu/Papers/NghiemEtal2007_Myreduction.pdf.
In the article Ngheim *et al* suggest that there is only a 0.01% probability that the 30 year decline in sea ice in the Arctic is due *solely* (my emphasis) to natural variables.

[77] See Arctic Sea Ice, News and Analysis, NSIDC data, October 2012, available at:
www.nsidc.org/arcticseaicenews.

[78] Josefino Comiso, "Large Decadal Decline of Arctic Multiyear Ice", (2012), *Journal of Climate*, Vol. 25, 1176, abstract available at:
http://dx.doi.org/10.1175/JCLI-D-11-00113.1;
Nicola Jones, "Arctic ice turns to the dark side", (2012), *Nature Climate Change*, Vol. 2, No. 7, 479, available at:
www.nature.com/nclimate/journal/v2/n7/full/nclimate160.html;
J. Stroeve, V. Kattsov, A. Barrett, M. Serreze, T. Pavlova, M. Holland and W. N. Meier, "Trends in Arctic sea ice extent from CMIP5, CMIP3, and observations", (2012), *Geophysical Research Letters*, Vol. 39, L16502, available at:
http://agu.org/pubs/crossref/2012/2012GL052676.shtml.

[79] M. M. Holland, C. M. Bitz, and B. Tremblay, "Future abrupt reductions in the summer Arctic sea ice", (2006), *Geophysical Research Letters*, Vol. 33, L23503, at 5, available at:
http://shadow.eas.gatech.edu/~kcobb/abrupt/holland06.pdf.

[80] Nicola Jones, "Arctic ice turns to the dark side", (2012), *Nature Climate Change,* Vol. 2, No. 7, 479, (26 June 2012), available at:
www.nature.com/nclimate/archive/type.htmltype=Snapshot.

[81] See NSIDC, "All about Sea Ice: Thermodynamics: Albedo", available at:
nsidc.org/cryosphere/seaice/processes/albedi.html;
Perovich and Polashensko found that seasonal albedos are consistently less than those for multiyear ice and conclude that the shift from multiyear to seasonal ice in the Arctic has significant implications for the heat and mass budget of Arctic sea ice - D. K. Perovich and C. Polashenski, "Albedo evolution of seasonal Arctic sea ice", (2012), *Geophysical Research Letters*, Vol. 39, L08501, available at:
www.agu.org/pubs/crossref/2012/2012GL051432.shtml.

point, but others do not agree.[82] Most experts do, nonetheless, agree that, somewhere between 2015 and 2030, unless there are dramatic changes in the factors causing the Arctic warming, the Arctic Ocean will be virtually ice free in the summer[83], thereby permitting transarctic shipping and facilitating oil and gas development.[84] On the negative side a summer-time ice free Arctic Ocean would result in: (1) a significant acceleration of global warming[85], and (2) an increase in the numbers of severe summer Arctic storms[86], surge waves[87], 'ivus'[88], and severe winter storms with increased

[82] Lindsay and Zhang conjecture the tipping point was reached in the late 1980s or early 1990s – see: R. W. Linsay and J. Zhang, "The Thinning of Arctic Sea Ice, 1988-2003", (2005), *Journal Climate*, Vol. 18, No. 22, 4879, available at: jhttp://journal.ametsoc.org/doi/abs/10.1175/JCL13587.1;
Other scientists disagree: Amstrup, DeWeaver, Douglas, Marcot, Durner, Blitz and Bailey suggest that sea-ice thermodynamics can overcome albedo feedback purported to cause sea ice tipping points see: S. C. Amstrup, E. T. DeWeaver, D. C. Douglas, B. G. Marcot, G. M. Durner, C. M. Bitz, and D. A. Bailey, "Greenhouse gas mitigation can reduce sea-ice loss and increase polar bear persistence", (2010), *Nature*, Vol. 468, No. 7326, 955, available at: www.nature.com/nature/journal/v468/n7326/full/nature09653.html.

[83] Professor Peter Wadhams is reported as stating that, if no global significant reduction in CO_2 emissions occurs, the Arctic could be free of summer sea ice as early as 2015, see: John Vidal, "Arctic Expert predicts final collapse of sea ice within 4 years", (2012), *The Guardian*, 17 September 2012, available at: www.guardian.co.uk/environment/2012/sep/17/arctic-collapse-sea-ice.
Others have been far more cautious with their estimated dates, see, for example: a 2030 estimate - Quintin Schlermeier, "Ice loss shifts Arctic cycles", (2012), *Nature,* Vol. 489, No. 7415, 185, available at: www.nature.com/news/ice-loss-shifts-arctic-cycles-1.11387; and for a 2050 estimate - L. H. Smedsrud, A. Sorteberg and K. Kloster, "Recent and future changes of the Arctic sea-ice cover", (2008), *Geophysical Research Letters*, Vol. 35, L20503, at 1 and 5, available at: www.agu.org/pubs/crossref/2008/2008GL034813.shtml.

[84] David Biello, "What Will Ice Free Arctic Summer Bring?", (2012), *Scientific American,* 24 September 2012, available at: www.scientificamerican.com/article.cfm?id=arctic-sea-ice-loss-implcations.

[85] For example, sea ice plays an important role in moderating global climate. Under normal condition sea ice reflects solar energy and thus resulting in extremely cold and dense Arctic waters that sink into the deep ocean and create a worldwide 'conveyer belt' of heat exchanging currents - i.e. it is the basic driver of ocean currents around the planet. Maggie Villiger, "Hot Times in Alaska: The Arctic - our Global Thermostat", (2004), Web Feature, 15 June 2004, *Scientific American: Frontiers,* at: www.pbs.org/saf/1405/features/thermostat.htm.

[86] Such as the cyclone which formed on 5 August 2012, see: NASA, "Strong Summer Cyclone Churns Over Arctic", (2012), *Earth Observatory*, 10 August 2012, available at: http://earthobservatory.nasa.gov/IOTD/view.php?id=78808;
Chillymanjaro, "Great Arctic Cyclone of 2012 - Rare and unusually strong storm formed over Arctic", (2012), *The Watchers*, 10 August 2012, available at: http://thewatchers.adorraeli.com/2012/08/10/great-arctic-cyclone-of-2012-rare-and -unusually-strong-storm--formed-over-arctic/.
On increased frequency and intensity of Arctic summer storms in the Arctic see: X. Zhang and J. E. Walsh, "Climatology and Inter-annual Variability of Arctic Cyclone Activity 1948 - 2002", *Journal Climate,* Vol. 17, No. 12, 2300, available at: http://journal.ametsoc.orh/doi/abs/10.1175/1520=0042%282004%29017%3C2300%3ACAIVOA%3E2.0.CO%3B2;
Yvan J. Osoloni and Asgeir Sorteberg, "Projected changes in Eurasian and Arctic summer cyclones under global warming in the Bergen climate model", (2009), *Atmospheric and Ocean Sciences Letters*, Vol. 2, No. 1, 62, available at: http://folk.uib.no/gbsag/arctic.html.

[87] S. A. Ogorodov, N. G. Belova, A. M. Kamlov, A. I. Noskov, N. N. Volobueva, M. N. Grogoriev, S. Wetterich and P. P. Overduin, "Storm surges, as a forcing factor of coastal erosion in the western and eastern Russian Arctic", (2010), a paper to the *Storm Surges Congress,* Hamburg, Germany, 13 - 17 September 2010, available at: http://epic.awi.de/23490.
Their study showed that in half the sites studied over thirty years there was an increase in the intensity of surge waves (due to the *fetch* - i.e. the gap between shore and the pack ice - increasing), but not an increase in wind-wave activity. Their conclusion was that "expectations of catastrophic acceleration of coastal erosion in Arctic are probably exaggerated". However this is not the same conclusion drawn by all scientific studies on the subject, see*: Land Ocean Interactions in the Coastal Zone, Arctic Monitoring and Assessment Programme*, International Permafrost Association, (2011), (I. D. L. Forbes, ed.), International Arctic Science Committee, Helmholtz-Zentrum, Geesthacht, Germany, at available at: http://ipa.arctic portal.org/files/sac/state%20of%20the%20arctic%20rept.pdf – see 'Key findings' on vii, 2, at 12 - 13, and a very useful section 2.1.2 on arctic waves.
The interaction of wind and waves is considered to be a constant operational hazard to oil and gas operations in the Arctic, where their interaction with sea ice can threaten structures and complicate platform evacuation. A fascinating article on

strength of arctic winds, [89] - all of which, in turn, may make oil and gas development and shipping in the Arctic much more difficult.

b. Major Arctic ice features are melting away.

It is of significant relevance to the analysis of the legal status of ice to understand what is currently happening to the key ice formations in the Arctic described above, in particular the ice shelves and the outlet glacier tongues. A 2015 publication described extensively the current physical state of the melting ice shelves and major outlet glaciers in the five Arctic Ocean states, and the resultant implication for the analysis of legal issues connected with their use in drawing territorial sea baselines[90]: a summary table is provided in Chapter 3.

A2.2 Permafrost[91] and issues connected with the thawing of permafrost of Arctic Ocean coasts

Permafrost (or "cryotic soil") is soil at or below, the freezing point of water (0^{o}C).[92] It covers 24% of the exposed land in the Northern hemisphere and all the land in, or bordering, the Arctic Ocean is

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arctic waves and their impacts is: D. Dumont, V. Squire, S. Sandven, H. Sagen and L. Bertino, "Forecasting Wave-in-ice for Arctic Operations", (2009), Exploration and Production, Regional Focus-Arctic, *Touch Briefings*, Vol. 9, No. 1, 18, available at:
www.nersc.no/sites/www.nersc.no/files/Dumont+Final.pdf.
A study in 1978 indicated that 'killer waves' in the Arctic could be up to 198 feet, see: T. Neil Davis, "Alaska Killer Waves", (1978), *Alaska Science Forum*, available at:
http://www2.gialaska.edu/ScienceForum/ASF2/225.html.

[88] Ivu is the Inuit (Inupiaq) word to describe the potentially lethal event in which a large jumble of near-shore floes is pushed at speed onto the land - see: Sale, op. cit., at 51. It is caused by high winds, strong currents and thick multiyear ice pushing floes shoreward. Sometimes termed in the press as a 'frozen tsunami', and by scientists as 'ice ride up and pile up' or 'shore ice override', ivus have regularly affected the north coast of Alaska and Canada, see: Colin Whiteman, *Cold region hazards and risks*, (2011), Wildey, at section 2.5.3: Shore ice override, at 27 - 29. The two classic works on the subject are: (1) A. Kovacs, *Onshore Ice Ride - Up and Pile - Up Features, Part 1: Alaska's Beaufort Sea coast*, (1984), CRREL Report, CR-83-9-PT-1, US Army Cold Regions Research and Engineering Laboratory, Hanover, N.H. (available as photocopy from the University of Wisconsin – Madison),and (2) A. Kovacs and D. Sodhi, "Shore ice pile - up and ride – up: Field observations, models, theoretical analyses", (1980), *Cold Regions Science and Technology*, Vol. 2, 210, available at:
www.sciencedirect.com/science/article/pii/0165232X80900762.
The two ivus on the 23 and 24 January 2006 near the town of Barrow, Alaska, were well documented, but it is thought that many occur where there are no human habitations. The Barrow ivus pushed about 100 feet onshore with ice piled 15-40 feet high, closing a road, destroying buildings and threatening the pump station. – see: NBCNews.com, "Arctic ice crashes on Alaskan shores", (2006), (27 January 2006), available at:
www.msnbc.msn,com/id/11064216/#/UMwK3nwaySM.

[89] Xhang and Walsh, op. cit., at 2300;
J. E. Overland and M. Walsh (NOAA), "Large scale atmospheric circulation changes are associated with the recent loss of Arctic sea ice, (2010), Tellus, Ser. A, 62, available at:
http://tellus.net/index.php/tellusa/article/downlaod/15661/1753.

[90] Clive Schofield and Blanche Sas, "Uncovered and Unstable Coasts: Climate Change and Territorial Sea Baselines in the Arctic.", *The Arctic Ocean – Essays in Honour of Donat Pharand*, (2015), (Ted McDorman and Suzanne Lalonde, eds.), Martinus Nijhoff, Brill, Section 4, Baselines Practice of the Arctic States, at 22 – 51 (this section was authored by Sas).

[91] Much of the general information in the following paragraphs has been sourced from the following:
(1) For an excellent easy informative read on permafrost, related current Arctic developments and their implications see: UNEP, Policy *Implications of Warming Permafrost*, (2012), (Kevin Schaefer lead author), available at: , www.unep.org/pdf/permafrost.pdf; and,
(2) NASA, "Nasa Study Finds Rising Arctic Storm Activity: Swap Sea Ice Climate", (2008), available at: www.nasa.gov/topic/earth/feature/arctic-storm.html.

[92] Ibid., in Section 2.1: What is Permafrost?, at 2.

covered by permafrost.[93] In this region the permafrost was traditionally deemed 'continuous' [94], and varies in depth from 20m to 400m - 600m in northern Canada and Alaska, with depths of even 1500m in northern Siberia.[95] Permafrost is ice together with the contents of the ground before it was frozen, which includes bedrock, gravel, silt, sediment and organic material.[96] Trapped in the permafrost are large quantities of anthropogenic greenhouse gases, including CO_2 and methane.[97]

Teams of scientists have documented the increase in the temperature of permafrost in the Arctic (an average of approximately 2^0C[98]).[99] Permafrost degradation commences with the active layer thickening and not refreezing in winter, followed by the thawing of the upper layers of permafrost.[100] Two-thirds of the Arctic coastline is held together and protected by ice of some form, and so when permafrost on the land adjacent to the Arctic Ocean thaws it renders the remaining soil soft and porous and unable to withstand the onslaught of the winter waves and storms[101], which are becoming increasingly severe.[102]

As discussed above with respect to sea ice, the thawing of the permafrost along the Arctic Ocean coastline[103] is well documented with the Arctic coastline in Russia[104] and Alaska[105] being considered particularly vulnerable[106].

Some parts of the Arctic Ocean coastline have been retreating at what scientists have described as an alarming rate,[107] and the US Army Engineer Corps estimated in 2010 that over 160 communities

[93] Ibid., in Foreword. The vertical structure of permafrost is from the bottom of an active layer to the permafrost base. The active layer often thaws in the summer and refreezes in the winter (at 2) - on the Arctic coast it is about 30cm - 35cm thick (at 3). There is a difference between this thaw and the melting of the permafrost below the active level.
[94] As an opposite view that it is discontinuous - see: UNEP, (2012), op. cit., at 4.
[95] Ibid., at 4.
[96] Ibid., at 4 - 5.
[97] Ibid., at 17.
[98] SWIPA, *SWIPA Overview Report - Arctic Climate: Issues 2011: Changes in Arctic, 2005 - 2010, (2011)*, Key Finding No. 2, at vi, and at 16, available at:
http:/amap.no/swipa/SWIPAOverviewReport.pdf.
[99] UNEP, (2012), op cit., at 10.
[100] Ibid., at 11.
[101] Ibid., at 10 - 11; SWIPA, (2011), op. cit., at 14 - 16.
[102] UNEP, (2012), op. cit., in section 3.3: Erosion, at 11 - 12;
SWIPA, (2010), op. cit., at viii.
[103] SWIPA, op. cit., in section 1.4: Permafrost is Thawing, at 14 and 15.
[104] A. Instanes and O. Anisimov, "Climate Change and Arctic Infrastructure", a paper to the Ninth International Conference on Permafrost, at 5, available at:
http://permafrost.su/sites/default/files/Inst&Anis_rev3.pdf
[105] S. L. Smith, V. E. Romanovsky, G. D. Clow, K. Yoshikawa, and J. Throop, "Thermal State of Permafrost in North America: A Contribution to the International Polar Year", *Permafrost and Processes Proceedings*, Vol. 21, 117, available at:
http://arcus.org/files/page/documents/1622/vladimirromoanovskybackground material.pdf.
[106] SWIPA, (2011), at viii.
[107] Ed Struzik, "As Arctic Ice Retreats Storms Take Toll on Land", (2011), *Environment 360*, (6 June 2011), available at:
http://e360.yale.edu/feature/as_arctic_sea_ice_retreats_storms_take_toll_on_the_land/2412/;
D. L. Forbes (ed.), *State of the Arctic Coast 2010*, (2011), IASC, IPA, LOICZ, and AMAP, at iii – ix, available at:
www.arcticcoasts.org/

in Alaska are vulnerable to erosion, and their partial or full relocation is being planned.[108] For Arctic hamlets such as Shishmaref and Tuktoyakuk it may already be too late.[109]

This dramatic erosion of the Arctic coastline has major implications for the drawing of territorial sea baselines which is analysed in Chapter 3.

[108] Ibid.; Sea Grant Alaska, "Sea Level Rise and Storm Surges: What it means to Alaskans and how we can Adapt", (March 2012), available at:
http://seagrant.uafedu/bookstore/download/index.php?loc=fla/M-140%2FM-140PDF.pdf&pub=M-140PDF&title=Sea+Level+Rise+and+Storm+Surge%3A+What+It+Means+to&bypasss=TRUE.

[109] At Shishmaref, Alaska, the coast is retreating an average rate of 35m per year. The town's homes, buildings, water system, power poles and roads are undermined – see: NOAA, Arctic Change (2011), "Human and Economic Indicators: Shishmaref", available at:
www.arctic.noaa.gov/detect/human-shishmaref.shtml;
In Tuktoyaktuk, Canada, it's a similar story – see: CBC NEWS, "Tuktoyaktuk on the front line of climate change", (September 2009), *CBC*, available at:
www.cbc.ca/news.technology/story/2009/09/08/climate-change-tuktoyaktuk-erosion.html.

Annex 3: An example of a melting Russian ice feature used as a locus for basepoints for a territorial sea

According to Kaye[1], there are two Russian basepoints located on ice features, and both of these are located on Severnaya Zemlya archipelago, namely basepoints Nos. 218 and 219.[2] Decree 4450 of 1985[3] identifies them as the western and eastern extremities of the Polyarny Glacier.[4]

Kaye commented that, although the basepoints appear to be located near the Arctic Cape (on Komsomolets Island), "a search for information on the current state of this formation failed to locate a feature by this name". He speculated that an outlet glacier called the Arktichevsky Institut Glacier[5], which is in close proximity to the basepoints' coordinates, may be the "Polyarny Glacier" in question.

As Kaye remarked, it is certainly difficult to ascertain the location and state of the Polyarny Glacier. Unfortunately the satellite image of the Arctic Cape by the US Geological Survey just misses the area of the basepoints, and therefore offers no useful information[6], and searches through UK Admiralty charts and other hydrographic sources in English also prove equally unhelpful.

However, it is possible to ascertain that the ice formation located on the northernmost part of Severnaya Zemlaya Archipelago, the Komsomolets Island, with the coordinates given in the 1985 Decree is, in fact, the Polyarny (better known as the Molotov, or Arctic) Ice Cap.[7] The ice cap (which is not an outlet glacier, or in fact technically not a glacier at all, although often so designated in the Russian literature) was estimated in the 1980s to be about 106km^2, and has been represented on all topological (1:100000, 1:1200 000) maps issued by the Russian Hydrographic Service since the 1950s. A publicly available map issued in 1959 of Komsomolets Island and the Polyarny Ice Cap – visible with considerable magnification - is reproduced in Figure A3.1 below.

[1] Stuart Kaye, "Territorial Baselines along Ice Covered Coasts: International Practice and Limits of the Law of the Sea", (2003), Third Biennial Conference of ABLOS, *Addressing Difficult Issues in the Law of the Sea*, 28 – 30 October 2003, International Hydrographic Bureau, Monaco, section 4.2, at 13, available at: www.gmat.unsw.edu.au/ablos/ABLOS03Folder/PAPER4-2.PDF.

[2] With coordinates 81.13.2°N 95.064°E and 81°13.8°N 95.067°E respectively.

[33] *Declaration 4450, Decree of the UUSR Council of Ministers*, 15 January 1985, available at: www.un.org/depta/depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1985Declaration.pdf.

[4] Kaye appeared to have had difficulty locating the glacier - Kaye, ibid., at 13.

[5] Kaye, op. cit., at footnote 69.

[6] V. M. Kolyakov et al, "Glaciers of Asia – Glaciers of the Former Soviet Union", USGS Professional Paper 1386 F, F 1 Russia, in *Satellite Image Atlas of Glaciers of the World* (eds. Richard S. W. Williams Jr. and Jane G. Ferrigno), available at: pubs.usgs.gov/pp/p1386f/pdf/F1_Russia.pdf.

[7] The eastern part of which is in fact visible in the satellite image of northern Komsomolets island, in ibid, (once one knows what it is).

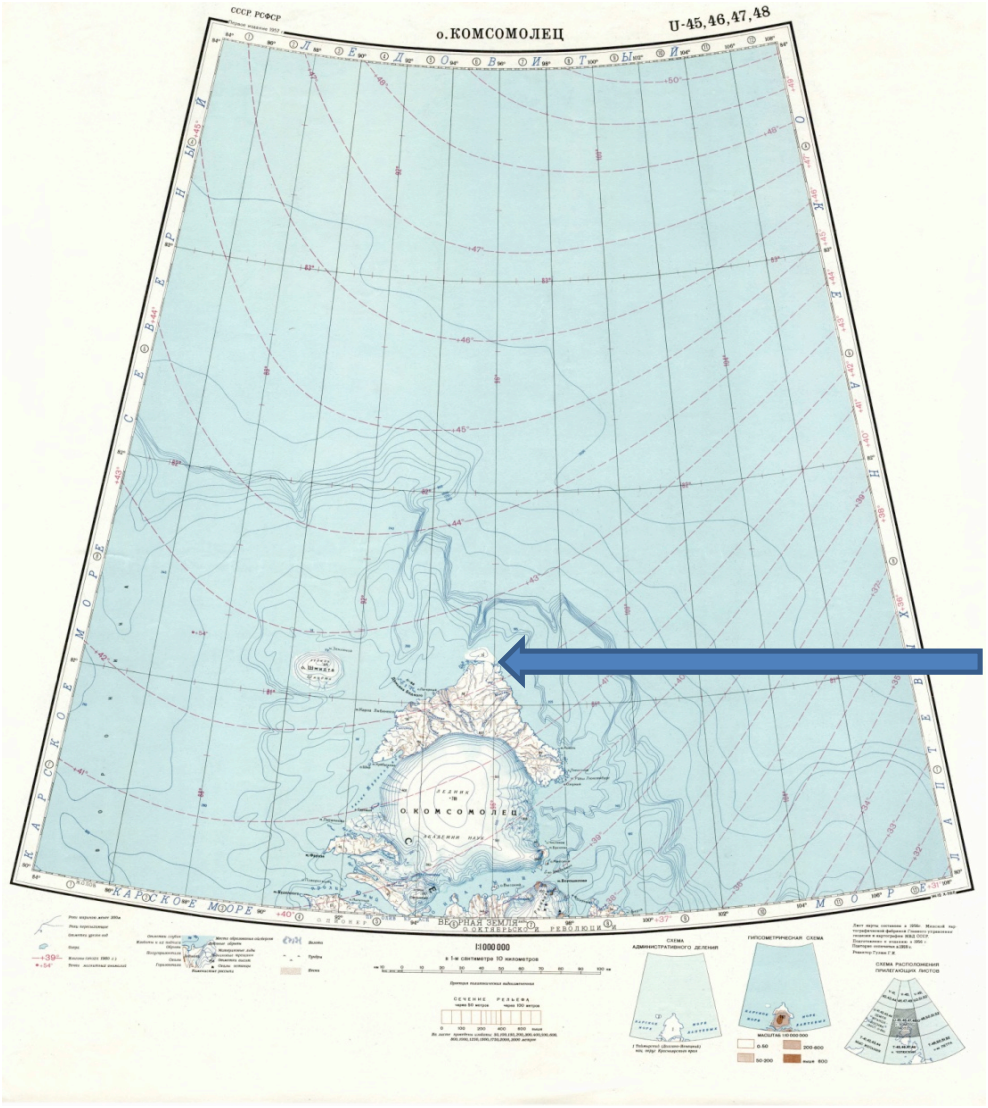


Figure A3.1: 1959 Map of Komsomolets Island[8]

Fortunately, far clearer is a map obtained by remote sensing of northernmost part of Komsomolets Island and the Molotov or Arctic Ice Cap (or so-called Polyarny Glacier) [9], reproduced in Figure A3.2 below.

[8] © Russian Hydrographic Service of the Department of Navigation and Oceanography of the Russian Federation Ministry of Defence. Public Domain. Provided by Aleksy I. Sharov, Joanneum Research Institute, Vienna, by email on 3 November 2012.

[9] Stalin had termed it Molotov Ice Cap, but it is the Arctic Cap when described in the *Catalogue of USSR's Glaciers*, Vol. 16. (1980), (V. Kotlyakov, ed.),1978, Girometereoizdat, Leningrad.

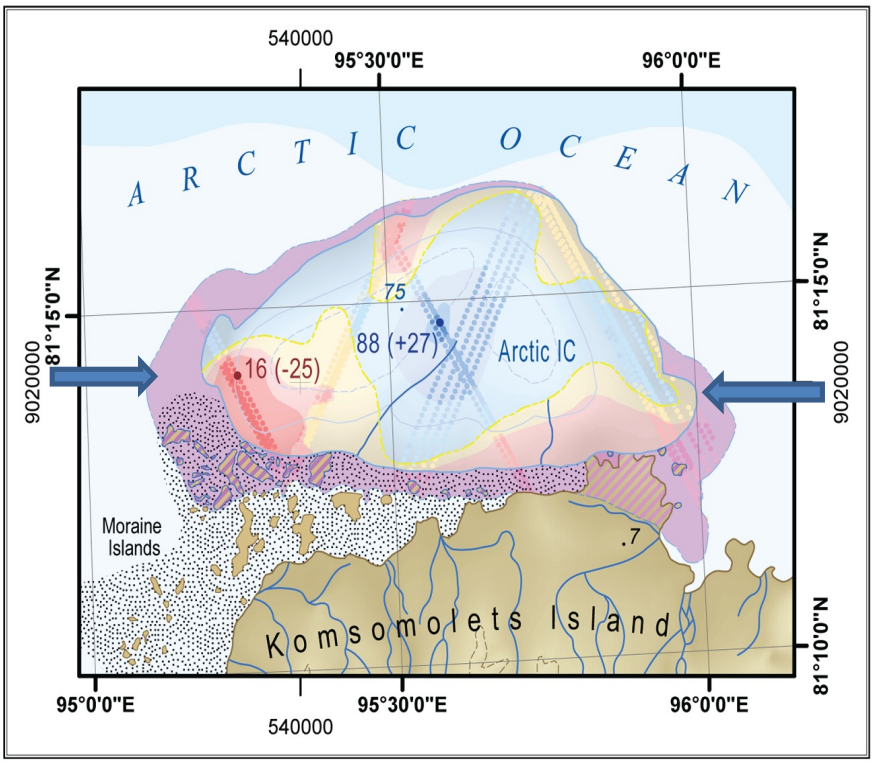


Figure A3.2: 2012 Remote Sensing Map of the northernmost part of Komsomolets Island[10]

* The legend for the map denotes the purple areas as melted ice areas that are now "sea"
** The arrows show the approximate location of the basepoints.

It may be that this cap would be even more clearly marked on current Russian State hydrographic charts (1:500000), but they are classified and cannot be released abroad. Nonetheless, the above remote sensing map gives a clear enough picture of the ice cap to identify where the coordinates would currently be located (i.e. in the purple area), although the current exact geographical nature of their locations is more difficult to ascertain. According to one of the authors of the 2012 remote sensing map:

> "…the area of this ice cap decreased for approx. 30km^2 in the past decades and I am nearly sure that the basepoints specified in the Decree of 15.01,1985 are not on the glacier surface. Yet, I cannot tell you whether these points are "onshore" or "offshore". This is because of shallow waters, numerous drying lands and essential sediment (moraine?) deposits surrounding the ice cap. Besides we suggest an isostatic adjustment in the area. Unfortunately, we cannot see all these low-contrast lands in our remote sensing data". [11]

These comments lead to several possibilities in respect of the status of basepoints Nos. 218 and 219 specified in the Decree 4450 - namely,

[10] This is Map 8 in a presentation by Dimitry Nikoskiy, Aleksy I. Sharov, Vasiliy A. Mallinnikov and Marina N. Ukulova, "Dual – sensory mapping of mass balance on Russia's northernmost ice caps", (2012), European Geosciences Union General Association Assembly, 22 - 27 April 2012, *Remote Sensing of the Cryospace*, Vienna, available at: http//presentation.copernicus.org/EGU2012-2S1_presentation.
The authors' permission to use the map in this thesis was granted by email by Aleksy Sharov dated 4 December 2012. The map is provisional, as it is based only on remote sensing information without field surveys and does not show exact drying areas, moraines, or rocks.

[11] Stated in the e-mail from A. Sharov, ibid..

1. They are now at sea (most likely);

2. They are now located on 'drying lands" or rocks, surrounded by water, icebergs and pack ice (possible);

3. They are now on 'new land' (very tiny islands) that has risen due to isostatic adjustment (highly unlikely but possible).

So, in addition to the questionable legality of the original use of an ice feature to define basepoints, there are now further legal questions and issues, as the Polyarny 'Glacier' has retreated, and any one of the possible situations given above may appertain to basepoints No. 218 and 219 of the 1985 Decree. The most likely scenario is that these basepoints are now located in the sea, raising the question of their current validity as basepoints.

Given that these basepoints are the northernmost basepoints of the Russian territorial sea baseline, located at 81.13.8^{o}N 95.67^{o}E and 81.13.2^{o}N 96.064^{o}E respectively, the location of these basepoints may have major implications not only for the delineation of the Russian territorial sea but also for the delineation of the Russian EEZ and ECS.

Annex 4: Examples of melting Canadian ice features used as loci a locus for basepoints for territorial sea baselines

Canada has drawn straight baselines around the entire Arctic Archipelago – in the *1985 Arctic Basepoints Regulation* [1] These baselines have, however, been challenged: the USA has not only protested with respect to the actual drawing of the baselines but also the assertion of internal waters of waters landward of them,[2] and the EU has protested against the legality of the baselines, but neither objected on any ground specifically relating to the choice of basepoints.[3]

Figure A4.1: Map of 1985 Canadian Arctic Baselines

Although Kaye states that the baselines "… do not appear to rely upon permanent ice to define them"[4], according to Franckx[5]and Killas[6], there are eight basepoints, namely basepoints Nos. 68 to

[1] *The Territorial Sea Geographic Coordinates (Area 7) Order* of 10 September 1985, ("*1985 Arctic Basepoints Regulation"),* the text of which is available in: *The Canadian Gazette*, Part II, of 2 October 1985, SOR/85-872, (hereinafter referred to as "the 1985 Regulation"), available at:
www.laws.lois.justice.gov.ca/eng/regulations/SOR-85-872/FullText.hml;
See also: The Ocean Act, (S. C. 1996, c. 31), in particular, sections 4, 5 and 25(a), available at:
http://laws-lois.justice.gc.ca/eng/acts/O%2D2.4/.

[2] USDS, Limits in the Sea, No.112, at 29, available at:
www.state.gov/documents/organisations/58381.pdf.

[3] Ibid..

[4] Kaye, op. cit, section 4.4, at 14.

[5] Erik Franckx, *Maritime Claims in the Arctic in the Arctic: Canadian and Russian Perspectives*, (1993), Martinus Nijhoff, at 98

[6] Michael Killas, "The Legality of Canada's Claim to the Waters of the Arctic Archipelago", (1987), *Ottawa Law Review,* Vol. 19, 95, at 128, available at:
www.rdo.oir.otawa.ca/index2.php?option=com_sobi2&sobi2ask=dd_download&fid=444&Itemid=789.

75 in the *1985 Arctic Basepoints Regulation* that are located on the outer edge of ice shelves along the northernmost coastline of Ellesmere Island.[7]

Canadian expeditions to Ellesmere Island studied the geophysical characteristics of the ice shelves of Ellesmere Island, and the detailed geological composition of seven out of the eight sites of the ice shelves was described in the 1955 article.[8]

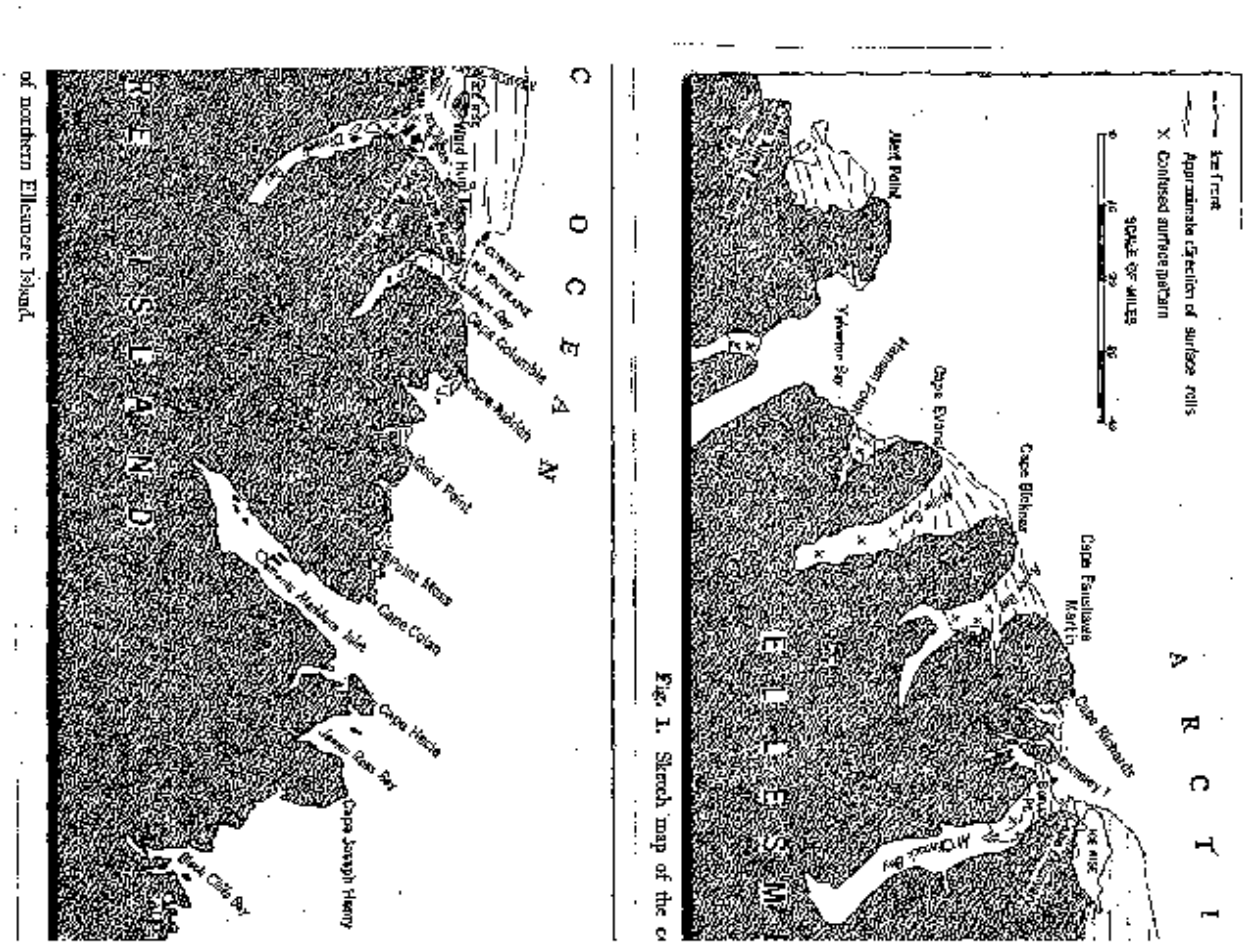


Figure A4.2: Hattersley–Smith's Sketch Maps of the Ellesmere Island ice shelves 1955[9]

However, when checking these basepoints, against the very detailed Hattersley – Smith sketch maps of the coastline in 1953 (in particular Figure A4.2), which is reproduced above), that show the locations to which the *1985 Arctic Basepoints Regulation* coordinates of basepoints 64 - 75 refer[10],

[7] Namely the following basepoints: 68 – Cape Alert; 69 - Cape Bicknor; 70 – Cape Fanshawe Martin; 71 Cape Richards; 72 – Cape Discovery; 73 – Ward Hunt Ice Island; 74 – Cape Nares; 75 – Cape Aldrich, - all defined in *1985 Arctic Basepoints Regulation.*

[8] The 1954 sub-report of Christie which is contained in the 1955 article cited in footnote 7, op. cit.. at 31 – 33.

[9] See HS Map 2, i*nfra* footnote 8.

[10] Map 1: G. F. Hattersley – Smith, A. P. Clary, and R. L. Christie," Northern Ellesmere Island, 1953 and 1954", (1955), *ARCTIC*, Vol. 8, No. 1, 1, Figure 2 at 4, (hereinafter referred to as " HS Map 1"); and, Map 2: G. Hattersley - Smith, " The Rolls of on the Ellesmere Ice Shelf", (1957), *ARCTIC,* Vol. 10, No. 1, 32, at 32 and 33, (hereinafter referred to as "HS Map 2), available at:
http://arctic.synergiesprairies.ca/arctic/index.php/arctic/article/download/3753/3727.
Reproduced with permission of *ARCTIC* : email of 17 December 2012.

and from other information contained in the article reporting on the expeditions in 1953 and 1954 to the coast between Cape Aldrich and Alert Point[11], the named points are in locations of prominent land sites.

Figure A4.3 below sets out relevant information contained the 1955 article and discernible from the Hattersley - Smith Maps in respect of the base points, their locations and geological nature, and a 2011 satellite image of the Ellesmere Island ice shelves.[12]

Basepoint number	**Name**	**Coordinates**	**Composition**	**Comments re location– using the HS Maps cited in footnote 8**	**Comments re 2011 MODIS Image of Ellesmere Island Ice Shelves – see footnote 11**
68	Alert Point	82^{0}27'30"N 85^{0}47'00"W	Quartzite/ underlain in part by sandstone.	The HS Maps clearly show the location as land – but it is very near an ice shelf south west of it (Alfred Ernest).	The nearby ice shelf has subsequently all but melted away (two small separate bits left).
69	Cape Bicknor	82^{0}48'54"N 81^{0}31'00"W	Gneiss	From the HS Maps the location appears to be the cape on the land mass 'separating' the Milne and Ayles Ice Shelves, although the HS Maps are not detailed enough to show whether the ice shelves meet across the northern edge of the cape or to	The Ayles ice shelf has melted away and the Milne Ice Shelf although significantly reduced is still present in vicinity of the northern edge of the cape. Location of position coordinates still unclear.

Maps 1 and 2 collectively hereinafter referred to as the "Hattersley – Smith Maps".

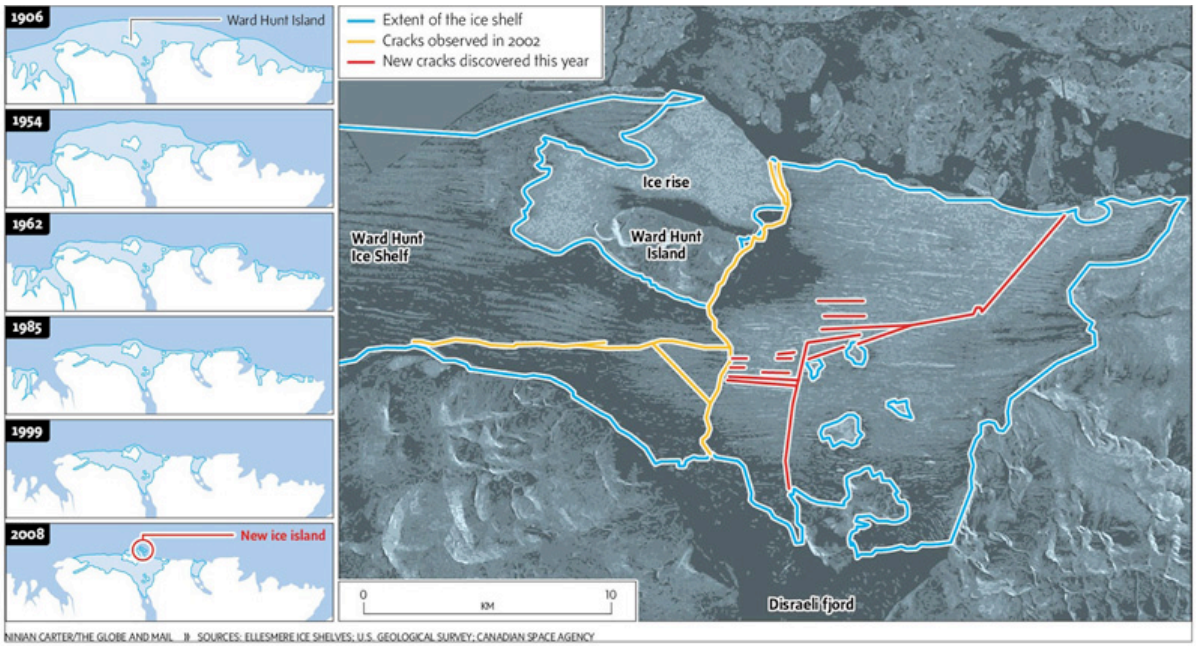
[11] Hattersley – Smith, (1955), op. cit., footnote 7.

[12] MODIS Image of Ellesmere Ice Shelves, 26 August 2011, image from the Rapid Response Project at NASA/GSFS, available at:
http://http-server.carlton.ca/~dmueller/iceshelves/EllesmereIS2011.html.

				determine where exactly the coordinates would be positioned.	
70	Cape Fanshawe Martin	82^{0}56’50”N 79^{0}53’00”W	Granite, quartz, norites and peridotites	North of the Ayles Ice Shelf, this cape appears from the HS Maps to be clearly land. A cairn was erected on it by Aldrich in 1909.	Ayles Ice Shelf has melted away
71	Cape Richards	82^{0}58’20”N 79^{0}22’00”W	Granite, quartz, norites and peridotites	The HS Maps show the cape to be land with small ice shelf below northern part of cape.	Ice shelf has melted away
72	Cape Discovery	83^{0}05’20”N 76^{0}53’00”W	Not described in the report.	This Cape is less clearly distinguished on the HS Maps which show an ice rise and ice shelf at the northern end of the cape – it is therefore difficult to ascertain the exact position of this basepoint in 1985.	It appears that a small remnant of an ice shelf is located on the western to south western side of the cape.
73	Ward Hunt Island	83^{0}08’10”N 74^{0}07’30”W	Gneiss overlain by limestone	The HS Maps show the island as land surrounded by ice shelf. The 1955 article mentions ice free parts of	Same as before. Ward Hunt Ice Shelf has melted significantly although from map there is remaining ice shelf north of the island.

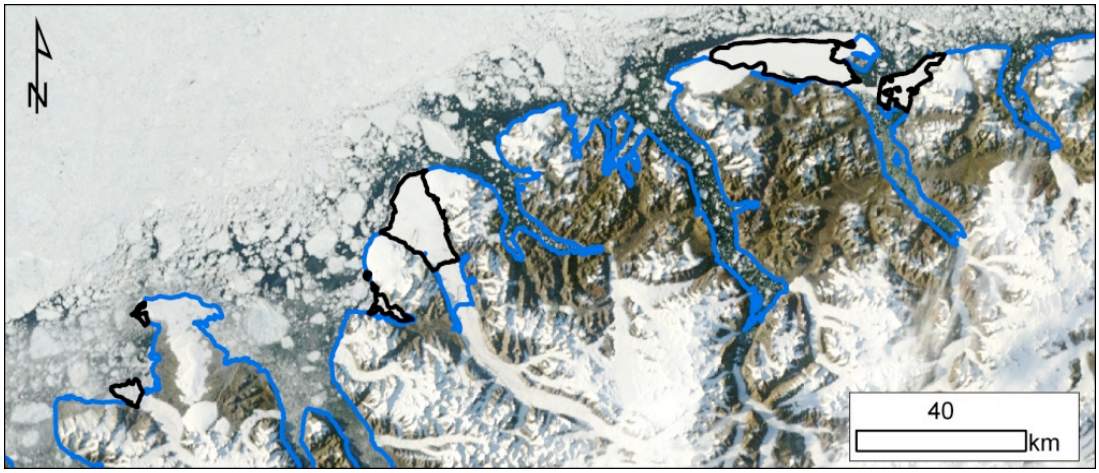
				island, at 20.	
74	Cape Nares	83^{0}05’55”N 71^{0}33’00”W	Gneiss overlain with limestone.	A picture of the steep Headland (with ice rise etc.) – is Figure A4.1 The HS Maps show it as land bounded by ice shelves (Markham and Ward Hunt). The exact position of coordinates very difficult to locate on the HS Maps.	Markham Ice shelf has melted away and Ward Hunt Ice Shelf also retreated to the west of the cape. Not able to use accessible data to ascertain current position of basepoint.
75	Cape Aldrich	83^{0}06’40”N 69^{0}42’00”W		The HS Maps show it clearly as land. There is a cairn on it.	Unchanged

Figure A4.3: Table of Information on basepoints 68 -75 Ellesmere Island



***The left hand column shows the dramatic reduction of its ice extent between 1906 and 2008**

Figure A4.4: Ward Hunt Ice shelf – ice extent



***Ice shelves are outlined in black. Land is outlined in blue. The images shows significant melting of the ice shelf since 2008**

Figure A4.5: Satellite Image 2011 of Ellesmere Island and the ice shelves.[13]

It should also be noted that basepoint 73, which Kellas identified as Ward Hunt *Shelf*, is, in fact, defined by the *1985 Arctic Baseline Regulation* as the Ward Hunt *Island*. If basepoint 73 is located on Ward Hunt Island then being located on land it would pose no problem as a locus of a basepoint.

In terms of the other question of whether or not Canadian ice shelves may extend beyond the claimed baselines, the situation has changed over the last 30 years. In 1973 Pharand identified only two Canadian ice shelves that could do so. He noted that, using traditional closure techniques across the fjord entrances, both the Ward Hunt and Milne ice shelves would extend beyond the baseline so drawn - he estimated 1 - 2nm for Milne and 4nm for the Ward Hunt.[14] Because of the existence of Ward Hunt Island at the mouth of the parent Disraeli fjord, he estimated that the Ward Hunt ice shelf would only project 1 - 2nm beyond a baseline using the island. From the 2011 MODIS image reproduced in Figure A4.5, it can be seen that both ice shelves continue to extend beyond the baselines but to a far lesser extent.[15] The scale of the retreat of these ice shelves is illustrated for the Ward Hunt ice shelf in Figure A4.4.

Given the use of Ward Hunt Island as a basepoint in *1985 Arctic Basepoints Regulation*, and the significant calving and melting of both ice shelves over the past four decades that continues today at an accelerated pace[16], it would seem highly unlikely that either of these two ice shelves will continue

[13] © NASA 2011. Public Domain. Accredited to D. Mueller, available at: http://earthobservatory.nasa.gov/IOTD/view.pdf?id=9066.
[14] Donat Pharand, *The Law of the Sea of the Arctic: With Special Reference to Canada*, (1973), University of Ottawa, at 187.
[15] For more pictures see: "Huge Ice chunk breaks off Ellesmere Island", (2010), *CBC News*, 29 August 2010, available: cbc.ca/news/canada/north/story/2010/08/24/elleesmere-ward-hunt-ice-shelf.html. It would seem that there is still ice shelf north of Ward Hunt Island but that the middle part is now missing and the remnants have large fissures/fractures.
[16] NASA, (Mahon Scott), "Rapid Retreat: Ice Shelf Loss Along Canada's Ellesmere Coast", (2008), *Earth Observatory*, 5 September 2008, available at: http://earth observatory.nasa.gov/Features/Ellesmere/.

to project beyond the 1985 straight baselines for much longer. Thus, the legal status of attached ice has become academic.

Although it would appear from the Figure A4.2 that all of the 1985 basepoints do relate to specific land locations, it is not possible with the scale and detail of 1953 maps, the MODIS 2011 image, and chart 7052 (Ellesmere Island) of the Canadian Hydrographic Service[17], and other information available, to discern whether or not in 1985 the coordinates would have been located on the actual land formations, or, in some cases, on an abutting ice shelf or possibly fast ice. Some of the basepoints seem from the 1953 HS Maps that they were, in 1985, very highly likely to have been located on land, such as Point Alert, Ward Hunt Island, and Capes Fanshawe Martin, Richards and Aldrich. Others, however, are less easy to determine in respect of their 1985 positions. It would seem that in 1985 the basepoint coordinates for Capes Bicknor, Discovery and Nares were the most likely, if indeed any were, to have been located on an ice shelf or fast ice attached to the specific land formation.

Although the question of whether the seven remaining basepoints identified by Franckx and Killas were in 1985, or currently are, on an ice feature[18] is difficult to answer definitively, it would seem highly unlikely that by 1985, three years post UNCLOS, Canadian ice shelves or fast ice would generally be involved in defining any of the basepoints.[19] It may be, nonetheless, that one or two of them were located on some form of abutting ice formation (either an ice shelf or fast ice) at that time. To answer the question much depends on the exact location of the coordinates in relation to the named locations, and in order to determine such positions some extremely accurate charts for 1985 and 2012 are needed. Certainly, if the coordinates were located at the bottom edge of the Capes, it may be that fast ice, or in a few cases an ice shelf was involved, as it was, and still is, is extremely difficult to ascertain where ice and land begin and end.

Moreover, with the melting of the sea ice and erosion of coastline in the last 40 years, combined with the melting and receding of the ice shelves, it is interesting to conjecture where the 1985 coordinates would currently be located. Unfortunately to date there is insufficient information available to the author to answer this question conclusively.

It would seem from the above analysis that Franckx and Killas are partially incorrect, as we have ascertained land at or in very close proximity to many of the coordinate positions. On the other hand Kaye's assertion that no ice feature was involved cannot be confirmed on the basis of the data available to the author, although from the information it seems unlikely.

Moreover, if any basepoints were originally located on an ice shelf or on fast ice near land and given the melting of the ice shelves and fast ice over the last 30 years (as set out in Table A4.1 above), it would seem that these basepoints are likely to now be located in the sea. Such basepoints would be invalid, potentially causing legal uncertainty as to the territorial baselines, and even to the delineation of other maritime zones.

[17] Available digitally from any dealer listed by Canadian Hydrographic Service at:
www. charts.gc.ca/dealer – depositaire/locator-localisateur-eng.asp.

[18] The experts included two academics specialising in law of the sea and the Canadian Arctic, and two at the Canadian Hydrographic Agency.

[19] Given, as we have seen, the melting of the ice shelves was by then well underway.

In conclusion, all that can be said is that there may be an issue as Canada may well have used ice features as basepoints for one or two locations on Ellesmere Island.

Comment:

Canada has not changed its basepoints in the Arctic since 1985, and this may perhaps be due to concern that such base points could in some way affect the future Canadian submission under Article 76 UNCLOS with respect to its extended continental shelf claim. As the CLCS cannot challenge the territorial sea baselines, if Canada delineates its Arctic ECS on the basis of the CLCS's recommendations, the outer limits of the ECS become final and binding. This would then nullify any issues regarding the location of the basepoints.

Annex 5: Table of Information on the territorial sea claims and legal regimes for the territorial seas of the Arctic Five

Country	Breadth	Legislative Basis
Canada	12nm	S. 4 Oceans Act[1] defines the territorial sea of Canada and sets the breadth of the territorial sea at 12nm. The 1985 Territorial Sea Geographic Coordinates (Area 7) Order[2] [PC 1985-2739, 10 September 1985 by SOR/85-872] defines the territorial sea baselines in the Arctic.
Denmark/Greenland	3nm	Ss. 1.2 and 2 of the Royal Decree No. 191, 27 May 1963 on the Delimitation of the Territorial Waters of Greenland [as amended by Royal Decree No. 636 of 6 September 1991 and Royal Decree No. 1004, of 15 October 2004] define the territorial sea and the baselines of Greenland.
Norway **Svalbard and Jan Mayen Island**	Both 12nm	S.1 of the Act of 27 June 2003, No. 57 relating to Norway's territorial waters and contiguous zones[3] extended the breadth of Norwegian territorial sea from 4nm to 12nm and s. 5 states that the Act applies to Svalbard and Jan Mayen. The most recent set

[1] The Oceans Act, (1996), C.31, SC 18 December 1996, as amended, available at: laws-lois.justice.gc.ca/eng/acts/O-2.4/page-1.html.
[2] The 1985 Territorial Sea Geographic Coordinates (Area 7) Order, PC 1985-2739, 10 September 1985 by SOR/85-872.
[3] *Law of the Sea Bulletin*, (2004), No. 54, at 97.

		of coordinates for drawing the baselines around Svalbard and Jan Mayen Island are listed in the Law of the Sea Bulletin No 54, 2004.
Russia	12nm	S. 2.1 of the Federal Act of 16 July 1998 on the internal waters, territorial sea and contiguous zone of the Russian Federation[4] set the 12nm breadth. Ss. 2, 3, and 4 of the Act contain provisions on the definition of territorial sea, limits, delimitation and baselines.
United States	12nm	Presidential Proclamation No.5928, of 27 December 1988 [1988, Law of the Sea Bulletin, No. 12, 18] established the 12nm breadth. Questions as to the authority of the President to extend the territorial sea and the effect of this Proclamation were examined by the US Department of Justice in 1988[5].

Figure A5.1: Table of the Breadth of Territorial Seas of the Arctic Five and the National Territorial Sea Regimes of the Arctic Five

[4] Available in: *Law of the Sea Bulletin*, (2004), No. 54, at 16.

[5] Office of Legal Counsel, US Department of Justice, *Legal Issues Raised by the Proposed Presidential Proclamation to Extend the Territorial Sea*, (4 October 1988), Memorandum for Abraham D. Sofaer, Legal Advisor, Department of Justice, available at:
www.gc.noaa.gov/documents/10048-doj-legal.pdf.
In respect of presidential authority it answered absolutely positively to claims of jurisdiction and almost totally positively to claims of sovereignty. It considered that some existing laws that referenced territorial seas would not be amended to extend jurisdiction without legislative amendment (e.g. the Coastal Zone Management Act 1972).

Annex 6: Summary on Danish Sovereignty over Greenland

Greenland ("Kallaallit Nunaat" in Inuit) is an autonomous overseas territory within the Kingdom of Denmark lying between the Atlantic and the Arctic Oceans, east of the Canadian Arctic Archipelago. It lies between latitudes 59° and 84° N and 11° and 14° W. It is the world's largest non-continent island[1], with a land area of approximately 2,166, 086km[2.] The ice sheet covering about 80% of Greenland is the second largest ice sheet in the world (the largest being the Antarctic Ice Sheet)[2]. Greenland has a flat to gradually sloping ice cap covering all but a narrow mountainous and barren coastline. The climate is arctic to subarctic.

Originally Greenland was under Norwegian sovereignty until, in 1536, Denmark and Norway were united by a personal union and Greenland fell under Danish control. For several centuries Greenland was then literally forgotten. In 1721 missionaries returned to Greenland (in part to find the lost Norse people and ensure their return to Christianity) and a period of Danish colonisation began.[3]

As a result of the Napoleonic wars Norway was ceded to Sweden under the 1814 Treaty of Kiel and the colonies, including Greenland, remained in Danish possession.

The late 19th and early 20th Centuries were marked by significant Arctic exploration and in particular around Greenland.[4] An American Robert Peary explored the, until then, unchartered northern coast of Greenland and it was on this basis that the United States made territorial claims to northern Greenland, that were dropped when, in 1917, Denmark sold the Virgin Islands to the United States[5]. In 1946, recognising the post WWII geopolitical and strategic situation of Greenland, the United States offered to buy Greenland for $100 million. Although it did not sell Greenland, Denmark did allow in 1951 the establishment of an American airbase at Thule[6], which has been a major source of friction between the Inuit community and the Danish Government.[7]

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[1] Although scientists postulate that the Greenland ice sheet covering the country may, in fact, conceal three separate land masses that have been bridged by glaciers: Robert Lee Hotz, "Greenland's Ice Sheet is Slip-Sliding Away", *Los Angeles Times*, 25 June 2006, available at:
http://articles.latimes.com/2006/jun/25/science/sci-greenland25.

[2] In the event that the Greenland ice shelf should melt, it is estimated that the world's seas will rise by about 7m.

[3] F. W. Garforth, *The Story of Hans Egede: Explorer, Colonizer, Missionary,* (1968), Gospel Fellowship Association Missions, Greenville, South Carolina, available at:
www.gfamissions.org/missionary-biographies/egede-hans.1686-1768.html.

[4] See Palle Lauring, *A History of Denmark*, 3rd Edn., (1995), Host.

[5] Convention between the United States and Denmark for the cession of the Danish West Indies, (1916), Statutes at Large (USA), Vol. 39, Part 2, 1706.

[6] By an Agreement between Denmark and USA with respect to Greenland, (94 UNTS, 35, 27 April 1951), and this base became part of NATO's Strategic Programme.

[7] Particularly after the crash of a B-52G bomber carrying four nuclear bombs on 21 January 1968. The legality of the 1951 Agreement was challenged in the Danish courts by the Thule Inuit, and in 2003 the Supreme Court of Denmark rejected the Thule tribe's claim that the 1951 US - Denmark Agreement, which had expropriated traditional hunting grounds and led to the relocation of over 100 Thule Inuit, contravened the Danish constitution, although it did grant further minimal compensation (Supreme Court of Denmark Decision, 28 November 2003, Cases 489/1999 and 480/1999, Hingitaq 53 v. The Danish Prime Minister's Office, reproduced in English in full in the ECHR decision). The Inuit then took their claim to the European Court of Human Rights, but failed on the admissibility of the application (Hingitaq 53 and Others v. Denmark, No 18584/04, ECHR 2006-I).

When Norway regained its independence in 1905 it challenged Danish sovereignty over eastern Greenland. The sovereignty dispute was eventually settled by a judgement of the Permanent Court of International Justice, *the Eastern Greenland Case 1933*[8]. The case was decided in Denmark's favour and with that judgement all challenges from other states to Denmark's sovereign claims over the territory of Greenland ceased.[9]

Denmark in its ratification of the 1989 ILO Convention No. 169 on Indigenous and Tribal Peoples also made a declaration on behalf of Greenland.[10] It has also ratified (albeit with reservations) the ICCPR (in 1972) and the ICESCR (in 1968). It voted in favour of the 2007 UN Declaration on the Rights of Indigenous Peoples. The Supreme Court of Denmark used these international conventions and principles in the case involving forced relocation in 1953 of the Thule tribe.[11]

From the 1950s pressure from the UN and judgements of the ICJ for decolonisation and self - determination,[12] led to Greenland's colonial status being formally abolished in 1953, when it became an integral part of the Kingdom of Denmark as a county[13]. Over the next twenty five years Greenlandic nationalist movements and political awareness emerged and pressed for Home Rule negotiations, and in the late 1970s Home Rule commission of Greenlandic and Danish politicians was established.[14] In 1978 Greenland was granted Home Rule by the Danish Parliament under the he Greenland Home Rule Act ("GHRA")[15] and in 2009 was granted further self-rule powers, with only the constitution, foreign affairs, defence and security[16], financial/fiscal policy, the Supreme Court, and nationality and immigration remaining under Danish control (albeit all to be conducted in consultation with the Home Rule Government of Greenland).[17] In particular Greenland assumed responsibility for both its offshore and onshore mineral resources.[18] The move from 'Home Rule' to 'Self Governance' and all the nuances which that entitled, including the recognition of Greenlanders

[8] The Legal Status of Eastern Greenland, (1933), ("*Eastern Greenland Case 1933"),* available at: www.icj-cij.org/pcij/serie-AB/AB-53/01_Groenland_Oriental_Arret.pdf.

[9] With the minor exception of Hans Island, discussed above in the section on Canada.

[10] On 22 February 1996. The declaration was made together with the Greenland Home Rule Government and stated that there is only one indigenous people in Denmark, the Inuit of Greenland and that there is no private right of ownership of land in Greenland. See, ILO, Representation (article 24) – Denmark – C169 – 2001, point 14, available at: www.ilo.org/dyn/nornlex/en/f?p=1000.50012:0:NO:50012:P50012_complaint_procedure_id,P50012_Lang_CODE:2507219,en:NO.

[11] Supreme Court of Denmark, Decision of 3 November 2003, Cases 489/1999 and 490/1999, Hingitaq 53 v. Danish Prime Minister's Office, available at: www.elaw.org/node/3933.

[12] Timo Koivurova, "The International Court of Justice and Peoples", (2007), *International Community Law Review*, Vol. 9, 157.

[13] Under the 1953 Constitution of Denmark, (5 June 1953).

[14] Groenlandsk-dansk selvestyre-kommission, Groenlandsk-dansk selvestyre-kommissions betoenkning om selvstyre in Groenland: Resume, (2008), available at: http://dk.nanoq.gl?emner/Landsstyre/Departementer?landsstyreformandens%20Department/Selvstyrekontor/~/media/D77831364B83409D2CF4C08D170288.ashx. For a history, see: Naja Dyrendom Graugaard, "National Identity in Greenland in the Age of Self-Government", (2009), Working Paper 09/5, Centre for the Critical Study of Global Power and Politics, at 14 - 17, available at: www.trentu.ca/globalpolitic/documents/Graugaard095.pdf.

[15] The Greenland Home Rule Act, No. 577, 29 November 1978, available at: www.stm.dk/_p_12712.html.

[16] Frederick Harhoff, "Sécurité et politique de l'Arctique - une perspective groenlandaise", (1989), *Etudes Internationales,* Vol. 20, No. 1, 45.

[17] Act on Greenland Self-Government Act, No. 473 of 12 June 2009, available at: www.stm.dk/a_2957.html.

[18] Listed as a field for transfer of responsibility in List II of the Schedule of SGA.

as a 'people', has been analysed extensively, and most writers have concluded that Greenland's self-governance still falls short of self-determination for its inhabitants.[19] In the context of our analysis two issues are salient: (a) that the SGA was a Danish Law, and that Greenland itself has no constitution; and (b) that fundamental issues were not dealt with by SGA, especially questions of sovereignty and land ownership.[20] We will now briefly examine the issue of land ownership.

Currently Greenland remains a part of the Kingdom of Denmark and Queen Margarethe II is its Head of State. Although numerous competences have been transferred to the Greenland Self-Government, important major competences, as listed earlier, are retained by Denmark.[21]

In conclusion, despite significant devolution to Greenland self-rule authorities, sovereignty over the territory of Greenland remains Danish. Denmark acquired this sovereignty through claim and effective occupation, and its sovereign claim to eastern Greenland was confirmed by the landmark ICJ case. It is clear that international law played a significant role in respect of the establishment of Danish sovereignty over Greenland and also in the evolution of self - government.

International law on indigenous people's rights has also played an important role in the fashioning of the Danish approach to devolution and the transfer of control and management of land and natural resources (including subsoil ones) to the Greenland Self Rule government.

[19] J. Dahl, *Artisk Selvstyre*, (1986), Akademisk Forlag, Viborg; Guargaard, op. cit.; F. Hansen and T. O. Neilsen, "Nordic Amnesia : An Introduction to Rethinking Nordic Colonialism", (2008), *Rethinking Nordic Colonialism website*, available at : http://www.rethinking-nordic-colonialism.org/files/index.htm;
A. E. Lynge, "The Best Colony in the World" (2006), *Rethinking Nordic Colonialism. Act 2 : Greenland*, available at : http://www.rethinking-nordic-colonialism.org/files/pdf/ACT2?ESSAYS?Lynge.pdf;
N. Loukacheva, *The Arctic: legal and political autonomy of Greenland and Nunavut*, (2007), University of Toronto; R. Petersen, Colonialism as seen from a former colonised area", (1995), Arctic Anthropology, Vol. 32, No. 2, 118 and available at :
arcticcircle.uconn.edu/HistoryCulture/petersen.html; A. K. Sprensen, Denmark – Greenland in the Twentieth Century, (2007), Tusculanum Press, University of Copenhagen.

[20] Although right to revenues from the exploitation of minerals, including petroleum, were transferred to the Greenland Self-government Authorities by Section 7(1) SGA.

[21] Annex 1 of the Self-Government Agreement 2008,op. cit. lists the fields of competence of the Greenland Self - Government. See also M. Nuthall, "Self-Government in Greenland; Towards the World's First Independent Inuit State", (2008), *Indigenous Affairs*, Vol. 33, 64, available at:
www.wgia.org/iwgia-files-publications-files/1A_3_08_Greenland.pdf.

Annex 7: Summary History of Norwegian Indigenous Peoples and their Rights

There are currently over 75,000 people living in Finnmark, but mostly in the south western coastal area along the Norwegian Sea, and the south eastern coastal area near Russia[1], leaving the northern Arctic Ocean/Barents Sea coast very sparsely inhabited. There are three key ethnic groups in Finnmark: the Sami, the Norwegians, and the Kven.

It has been suggested by some experts that Norwegians may have had settlements along the coast for as long as the Sami.[2] The coastal areas of Finnmark had certainly been colonised by Norwegians by the 10th Century, and were actively settled from the 15th Century. This ethnic group forms the majority of inhabitants of Finnmark today, although exact division of population along ethnic lines is difficult due to the high degree of intermarriage between the three main peoples of Finnmark.[3]

Figure A7.1 Map of main conglomerations of Kven speaking people[4]

The Kven people are descended from Finnish immigrants (farmers and inshore fishermen) of the 18th and 19th Centuries, and are legally recognised as an 'ethnic minority' by Norway.[5] It has been

[1] As of 2013. Over 40% of Finnmark lives in two south western communes of Vest Finnmark (Hammerfest) (10,000+) and Alta (20,000+). See Statistics Norway (Statistisk sentralbyra) at: www.ssb.no/en/folkendrhist.

[2] Eide, op. cit., at 274.

[3] Gro Ween and Marianne Lien, "Decolonisation in the Arctic? Nature Practices and Land Rights in the Norwegian High North", (2012), Journal of Rural and Community Development", Vol. 7, 93, at 97; M. Lien, "Shifting Boundaries of a Coastal Community: Tracing Changes on the Margin", (2003), *Globalisation: Studies in Anthropology*, (T. H. Eriksen, ed.), Pluto Press, London, at 93 - 122.

[4] ©Norwegian Government. Public Domain. Available at: http://www.regjeringen.no/upload/kilde/kkd/rap/2003/0001/ddd/pdfv/193348-kvenrapport_hyltenstam_slutversion_oktober.pdf

[5] As a result of Norway becoming a party to the Council of Europe's 1995 Framework Convention for the Protection of National Minorities on 7 March 1999. The Convention is available at:

estimated there are about 10-15,000 ethnic Kvens in Norway today, although it is thought that only 2,000 - 8,000 of them speak the Kven language.[6] Due to an active government assimilation policy ("fornorskningspolityikka" – "norwegianisation") in the 19th and early 20th Centuries, the Kven have largely become integrated into mainstream Norwegian society, with significant intermarriage with local Sami and Norwegians.[7] Although the first wave (around 1720) of Kven people settled in south western Finnmark, the second mid - 19th Century wave of Kven immigrants settled in eastern Finnmark and it is there that the main body of ethnic Kvens still survive speaking the Kven language.[8] Although as an ethnic minority in Norway they have certain special rights (regarding the preservation of their language and culture), they do not attract any land claim rights as would an indigenous people, and therefore have no special claims on Norwegian sub-surface petroleum.

It has been estimated that the Sami[9] have been in Finnmark for around 2000 years.[10] The Sami are a Fino-Ugrian people[11] and in Finnmark divide into two key groups: the Mountain Sami of the interior (nomadic reindeer herders) and the Sea Sami of the coastal area (fishermen establishing permanent settlements).[12] The two groups have distinct linguistic and cultural differences, although belonging to the same ethnic grouping.[13] The Sea Sami inhabit permanent settlements along the coastal areas of Finnmark, but have significantly assimilated into general Norwegian society and intermarried with local Norwegians.[14] Owing to such factors identifying the Sami population has been difficult, but

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http//:conventions.coe.int/Treaty/en/Treaties/Html/157.htm.
They also achieved legal protection of their language and culture in 2005, within the framework of the European Charter for Regional or Minority Languages,

[6] UNHRC, *World Directory of Minorities and Indigenous Peoples – Overview*, (2007), Refworld, available at: www.refworld.org/docid/4954cdff23.html.

[7] On various aspects of such intermarriage see: Hilde L. Jastad, "Viewing Ethnicity from the Perspective of Individuals and Households: Finnmark During the Late Nineteenth Century", (2013), *Indigenous Peoples and Demography: the Complex Relation between Identity and Statistics*, (Per Axelsson and Peter Skold, eds.), Berghahn Books, Chapter 8, at 149 - 162; Bjorn Evjen, "Finn in Flux: 'Finn' as a Category in Norwegian Populations Censuses of the Nineteenth and Twentieth Centuries", (2013), *Indigenous Peoples and Demography: the Complex Relation between Identity and Statistics*, (Per Axelsson and Peter Skold, eds.), Berghahn Books, Chapter 9, at 163 - 172.

[8] Although there are pockets round Alta, and elsewhere, most are in the Nord- and Sor- Varanger, Tana, Gamvik and Nesseby communes in Eastern Finnmark. See Kenneth Hyltenstam, *Kvenskans status*, (2003), University of Stockholm, a report prepared for Kommunal- og regionaldepartementet och Kultur- og kirkedepartementet i Norge, October 2003, available at:
http://www.regjeringen.no/upload/kilde/kkd/rap/2003/0001/ddd/pdfv/193348-kvenrapport_hyltenstam_slutversion_oktober.pdf

[9] A useful short description and history of the Sami people can be found in: Gail Osherenko and Oran Young, "On Sami", (1989), *The Age of the Arctic*, Cambridge University Press, at 86 - 90.

[10] Eide, op. cit., at 274. Useful histories of the Sami in Norway can be found in: G. Gjessing, *Norge i sameland,* (1973, Gyldendal; and O. M. Haeta, *Samene. Nordkalottens urfolk,* (2002), Hoyskoleforlaget, Kristiansand.

[11] The first written record of them ("Fenni") dates back to 98 A.D.: Publius Cornelius Tacitus, *De Origine et Situ Germanorum*, at XLVI, translation available at:
http://www.crtpesaro.it/Materiali/Latino/De%20Origine%20Et%20Situ%20Germanorum.php

[12] Elna Hellander, *The Sami of Norway*, (2013), Reiservett, at:
www.reiservett.no.norway/facts/culture_science/sami.html#2;
Eide, op. cit., at 273.

[13] Moreover as Hansen and Midtgard state: "It is essential to understand that, even though they are said to be one people, the Sami do not represent one homogenous opinion…" – see: Ove Heitmann Hansen and Mette Ravn Midtgard, "Going North, The new petroleum province of Norway", (2008), *Arctic Oil and Gas, Sustainability at Risk?*, (Aslaug Mikkelsen and Oluf Langhelle, eds.), Routledge, Chapter 9, 200, at 223.

[14] Reida(Mindt Eiermann), *The Coastal Sami of Norway*, University of Texas at Austin online, available at:

generally there are thought to be around 30,000 - 40,000 Sami in Norway[15], and some 20,000 – 25,000 Sami in Finnmark.[16] Difficulties have arisen on agreeing the objective criteria to be used to define who is a Sami[17], and there has been a reluctance to identify as Sami by some who may have had Sami parents or grandparents (a consequent effect of past discrimination and the 19th Century Norwegian assimilation policy).[18] The Sami are estimated to constitute about 25-30% of the population of Finnmark, with their towns and settlements scattered between Norwegian and Kven conglomerations.[19] There are several coastal municipalities in Finnmark where Sami is an official language, including Gamvik, Nesseby, Porsanger, Tana, Tysfjord, Langenen, and Smasa, but there are also significant numbers of Norwegian and Kven people living in many of these municipalities.[20]

The question has been posed of whether or not the Sami are an Arctic indigenous people.[21] Although most of the regions inhabited by Sami are sub-Arctic, there are nonetheless Sami who live north of the Arctic Circle; although it must also be said that there has been considerable 'blending' of the Sami with ethnic Norwegians, especially the Sea Sami. However, despite these factors, the Sami have now been recognised internationally as an indigenous Arctic people,[22] and by Norway itself as an indigenous people.[23] The relevant key legislation relating to the rights of the Sami, land rights, self - government and self - determination are:

1. The Sami Act 1987[24]

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www.utexas.edu/courses/sami/dieda/hist/nor-sami.htm.

[15] Boreale, *An Introduction to the Sami People,* (2001), available at: http://boreale.konto.itv.se/samieng.htm.

[16] Oyvind Ravna, "Legal Protection of Coastal Sami Culture and Livelihood in Norway", (21012), *The Yearbook of Polar Law,* Vol. 4, at 261 -278.

[17] Act No. 56, 12 June 1987, defines as a Sami a person who either:

- has Sami as a first language;
- considers himself a Sami and lives in entire accordance with Sami rules and who is recognised by the representative Sami body as a Sami ; or,
  has a parent who satisfies the two above criteria.

[18] Asbjorn Eide, "Indigenous Self- Government in the Arctic, and their Right to Land and Natural Resources, (2009), the Yearbook of Polar Law, (Gudmundur Alfredsson and Timo Koivurova,eds.), Martinus Nijhoff, Vol. 1, 245, at 273 -280.

[19] There is only a very small percentage of Sami who earn their primary income from traditional Sami industry (reindeer husbandry or inshore fishing) – see: Lars –Nila Lasto and Gail Osherenko, "The Sami People and the Northern Sea Route: Juridical, Social and Cultural Concerns", (1999), INSROP Working Paper No. 154, IV.4.1.

[20] For example Portsanger has three official languages (Norwegian, Northern Sami and Kven), and Tana has a mixed population of the three peoples, while Tysfjord is primarily Lule Sami and Gamvik is primarily Northern Sami. – see Jon Todal, "The impact of Norwegian language policy at the micro – level: Saami language maintenance and school-based revitalisation", (2014), Transcending Monolingualism: Linguistic Revitalisation in Education, Leena Huss, Antoinette Camilleri Grima, and Kendakk A. King, eds.), Routledge, 117, at 119 - 120.

[21] Eide, op. cit., at 273.

[22] The Sami Council is an Indigenous Peoples Organisation that participates in the work of the Arctic Council through of the Arctic Council Indigenous Peoples Secretariat.

[23] Norway became a party to the ICCPR and in 1980 a Commission on Sami issues, relying heavily on Article 27 ICCPR concluded the Sami must be able to preserve the land which is a basis of their culture. [NOU 1984:18: Om sames rettstilling (On the Legal Situation of the Sami), Oslo, available at: regjeringen.no/nb/dep/kmd/tema/sameplitikk/midtspalte/nou-198418-om-samenes] and in 1988 it was made a constitutional requirement. – see: Eide, op. cit., at 277.

[24] Act No.56 of 12 June 1987, Concerning the Sameting and other Sami Legal Matters, ("The Sami Act"), available at: www.regjeringen.no/en/doc/laws/acts/the-sami-act.html?id=449701.

This act established the Sami Parliament, which is primarily an advisory body, and has little decision making power. The scope of authority of the Sami Parliament is much less than the self – government of Greenland and the governments of the Yukon, Northwest Territories and Nunavut. Its prime activities relate to strengthening Sami cultural institutions, language, education and small businesses.[25]

2. The amendment of the Norwegian Constitution 1814[26]

In 2005 the Constitution was amended to include a new Article 100a, which states:

"It is the responsibility of authorities of the State to create conditions enabling the Sami people to preserve and develop its language, culture and way of life."

3. The Finnmark Act 2005[27]

The Act's key provision transfers title in all Norwegian state land located in Finnmark to the Finnmark Estate (Finnmarkseiendommen), which was a purpose-created entity to administer and manage such land.[28] The Finnmark Estate is governed by a board: three members appointed by the Sami Parliament and three by the Finnmark County Council.[29] The Act provides that the Sami people, through prolonged use of land and water, have acquired rights to land in Finnmark.[30] A commission has been established to survey these rights.[31] All Finnmark residents are given the rights to exploit natural resources *on* the land.[32] Importantly the Finnmark Act does not include subsurface or offshore rights, but rather usufructuary rights to engage in traditional use of the land/resources.[33] It is debatable whether the Act adequately fulfills Norwegian obligations under Articles 14 and 15 of the ILO Convention No. 169[34], but it is seen by the government as doing so substantially.[35]

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[25] Eide, op. cit. at 279 - 280.

[26] The Norwegian Constitution, 17 May 1814, as subsequently amended, available at: www.stortinget.no/en/In-English/About-the-Storting/The-Constitution/tion/TheConstitution/.

[27] Act No. 85 of 17 June 2005, relating to Legal Relations and Management of Land and Natural Resources in the County of Finnmark, ("The Finnmark Act"), available at: www. wipo.int/wipolex/en/details.jsp?id=11129. See also Ministry of Justice and the police and the Ministry of Local Government and Regional Development, The Finnmark Act – A Guide, (2008), available at: www.gaidu.org/govat/doc/brochure_finnmark_act.pdf.

[28] Sections 6 – 20, ibid..

[29] Section7, ibid..

[30] Section 1, ibid..

[31] Section 29, ibid..

[32] On the equal treatment for all Finnmark residents see: Gro B. Ween and Marianne Lien, "Decolonisation in the Arctic? Nature Practices and Land Rights in Norwegian High North", (2012), *Journal of Rural and Community Development*, 93.

[33] Jeremie Gilbert*, Indigenous Peoples' Land Rights Under International Law, From Victims to Actors*, (2012), Transnational Publishers, "i. The Saami Parliaments: Usufructuary Rights", at 236 – 237; and Eide, op. cit., at 278.

[34] Oyvind Ravna, "The Process of Identifying Land Rights in parts of Northern Norway: Does the Finnmark Act Prescribe an Adequate Procedure within the National Law", (2011), *The Year Book of Polar Law*, Gudmundur Alfredsson and Timo Koivurova, eds.), Martinus Nijhoff, Vol.3, 422, at 452.

[35] Which Include: (a) the requirement of recognition by the State of indigenous peoples' rights of ownership and possession over traditional lands and effective protection of these rights (Art. 14); and (b) the requirement to specifically safeguard their rights concerning natural resources pertaining to their lands and where the State retains ownership of subsurface minerals/resources (as in Norway) the government shall consult these peoples

Independence does not appear to be on the Sami agenda[36], perhaps due to the high level of integration of Sami into the mainstream Norwegian society and the fact that Sami settlements are scattered and interspersed between the Norwegian and Kven of Finnmark, making a geographical region as a Sami homeland virtually impossible. Thus, it is unlikely that further evolution of self-government towards independence will occur.[37]

Under the Finnmark Act, in recognition that the Sami through traditional use of land and waters areas[38], *all* the residents of Finnmark have achieved a form of collective ownership and the rights to use lands and waters of Finnmark county.[39] The exact extent of the rights in respect to "land and water" under the Act is gradually being defined. [40]

The Finnmark Act has faced massive criticism and various NGO, Sami representatives and academics have argued that the Sami's rights should include resources in and below Sami land areas and in the sea (at least internal waters and the territorial sea), to varying extents.[41] The Sami Parliament considers first and foremost that regulations should ensure Sami consultation and participation in oil and gas developments in the region (including its offshore) and that the Saami should receive a share of the financial benefits from such activities.[42] To date it appears that the Norwegian government has not been willing to consider such extension of rights.[43] However, Sami pressure regarding a co-management right to the utilisation of natural resources and a share of profits continues.[44] The impetus of the Draft Nordic Sami Convention[45], which appeared in 2005 to herald significant progress on many of these issues,[46] appears to have slowed significantly.[47] However,

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and ensure protection of their interests in undertaking the exploration for or exploitation of these resources and wherever possible ensure they participate in the benefits of such activities (Art.15). See Ravna, op. cit., at 451 – 453.

[36] Eide, op. cit., at 281. The Sami appear to aiming at most for 'internal self-determination", as set out in Article 3, of the Draft Nordic Sami Convention [An English text is available at:
www.regjeringen.no/upload/BLD?Nordic%20Sami%20Convention.pdf,
and discussed in the Commentary to Article 3. This issue is discussed by Koivurova – see "The Draft for a Nordic Saami Convention", (2006/2007), *European Yearbook of Minority Issues*, Vol. 6, 103, at 115 - 116.

[37] John B. Henriksen, "Sami Self – Determination, Land and Traditional Livelihoods Self-Determination and the Media", (2011), *Galdu Cala, Journal for the Rights of Indigenous Peoples*, No.1/2011,

[38] O. Ravna, *Recognition of Indigenous Peoples' Land Rights through Modern Legislation, The Case of the Sami People in Norway*, (2006), Ministry of Foreign Affairs, Oslo.

[39] Eide, op. cit., at 279

[40] Article 278 – 280.

[41] Hansen and Midtgard, op.cit., 224 – 226.

[42] Aili Keskitalo (President Sami Parliament);
www.nordlys.no, on 15 August 2006 and Aftenposten, 1 February 2006 : Johan Mikkel Sara (Vice President of the Sami Parliament):
www.aftenposten.no, on 12 May 2006. Cited by Hansen and Midtgard, ibid..

[43] Hansen and Midtgard quote several representatives of government, op. cit., at 225 - 226

[44] Limited levels of both aspects were proposed in the Draft Nordic Sami Convention, Article 36 and 37. The only provision with respect to offshore aspects and natural resources is Article 38, which addresses fishing issues in 'coastal areas'

[45] Available at:
www.regjeringen.no/upload/BLD/Nordic%20Sami%20Convention.pdf. A detailed examination of the draft convention can be found in: Mattias Ahren, Martin Scheinin and John B. Henriksen, "The Nordic Sami Convention: International Human Rights, Self-Determination and Other Central Provisions", (2007), *Galdu Cala, Journal of Indigenous Peoples Rights*, No. 3/2007.

[46] See Ahren, Svheinin and Henriksen, op. cit., at Section 4.2.11, 26 – 30 and Section 6.3.2 at 94 – 95; Timo Koivurova, "Draft Nordic Saami Convention", (2006/2007), European Yearbook of Minorities Issues, Vol. 6, 103

whatever is finally agreed, its provisions do give some clues as to the limits of concessions on these issues that the Nordic governments were prepared to consider[48]: rights regarding traditional lands, fishing in fjords and coastal seas, consulatation re subsurface exploitative activities on or under (lands or sea) areas owned or used by Sami.[49] Thus, no subsurface rights to petroleum even under traditional lands are contemplated.

[47] Timo Koivurova, "The Draft Nordic Saami Convention: Nations Working Together", (2008), *International Community Law Review*, Vol.10, 279, at 292 -293.

[48] Nigel Bankes and Timo Koivurova, "Conclusion", (2013), *The Proposed Nordic Saami Convention*, (Nigel Bankes and Timo Koivurova, eds.), Hart Publishing, at 404.

[49] In particular: Articles 34 – 37.

Annex 8: Summary Descriptions of the Maritime Delimitation Agreements in the Arctic Ocean

The purpose of this annex is to provide the reader with basic background information on the maritime delimitation agreements in the Arctic Ocean and synthesises the information of various key authors, including Byers, Gray, Ulfstein and Churchill, McDorman, and Oude Elferink.[1]

There are six maritime boundary agreements in relation to the Arctic Ocean:

a. 1973 Canada-Denmark Boundary Treaty[2]

b. 1990 Bering Sea Treaty[3]

c. 1993 Greenland-Jan Mayen Delimitation[4]

d. 2006 Greenland-Svalbard Boundary Treaty[5]

e. 2010 Barents Sea Boundary Treaty[6]

f. 2013 Lincoln Sea Boundary tentative agreement.[7]

The following is a short summary of each agreement together with an analysis of the provisions therein that are relevant to oil and gas licensing and operations in the area of each agreement.[8]

A8.1 1973 Canada- Denmark Boundary Treaty[9]

A8.1.1 General Background

[1] See Annex 1: Bibliography.

[2] Agreement between the Government of the Kingdom of Denmark and the Government of Canada relating to the Delimitation of the Continental Shelf between Greenland and Canada, 17 December 1973, in force since 14 March 1974), available at:
www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/DNK-CAN1973CS.PDF.

[3] Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, I June 1990, available at:
www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/USA-RUS199MB.PDF.

[4] Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the delimitation of the continental shelf in the area between Jan Mayen and Greenland and concerning the boundary between the fisheries zones in the Area, 18 December 1995, and the Additional Protocol to the Agreement of 18 December 1995 between the Kingdom of Norway and the Kingdom of Denmark on the Delimitation of the Continental Shelf in the Area between Jan Mayen and Greenland and the boundary between Fishery Zones in the Area, 11 November 1997, both available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/STATEFILES/DNK.htm.

[5] Agreement Between the Government of the Kingdom of Norway on the one hand and the Government of the Kingdom of Denmark with the Home Rule Government of Greenland on the other hand concerning the delimitation of the continental shelf and the fishery zones between Greenland and Svalbard, 20 February 2006, UNTS, Vol. 2378, 1-42887, 21, available at:
http://treaties.un.org/Publications/UNTS/Volume%202378/v2378.pdf.

[6] Agreement between the Kingdom of Norway and the Russian Federation Concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, 2010, available in English at:
www.regjeringen.no/upload/ud/vedlegg/folkerett/avatle_engelsk.pdf.

[7] Canadian Department of Foreign Affairs, "Canada and the Kingdom of Denmark Reach Tentative Agreement on Lincoln Sea Boundary", (28 November 2012), *News Release Department of Foreign Affairs (Canada*), available at:
www.international.gc.ca/media/aff/news-communiques/2012/11/28a,aspx?lang=eng.

[8] This review relies significantly on the

[9] Gray, op. cit., at 68; Byers, op.cit., at 29 – 32.

This agreement settled the delimitation of the area between Canada and Greenland in the Baffin Bay and Davis Strait, but stopped at the northernmost part of the Nares Strait ($83^0$13.0'N).

The Parties used the median line/equidistance method: 109 out of the 127 "turning points" (Nos. 1 – 109 in Baffin Bay and the Davis Strait up to 75^0N) were an equal distance from the nearest point on each of the opposing coasts, and the other points (most in the difficult northern sections) were either adjusted from the true equidistance line (Nos. 109-113 in the Davis Strait) or arbitrarily picked near the centre of the channel (No. 114-127 in the Nares Strait).[10] Therefore, not surprisingly, the Parties recognised these difficulties, and that the following issues would require subsequent amendment to the agreement:

1. The use of charts drawn on two datum systems (the North American and the Oornoq) complicated the drawing of the boundary. In the event of new surveys, or resulting maps or charts, Article 4(2) of the Agreement allows for dividing line adjustment on the basis of the same principles used in the Agreement.

2. The extension of the territorial sea to 12nm by Canada would affect the median line delimitation.

3. Article 3 recognised "…the inadequacies of existing hydrographic charts for certain areas and (*the*) failing (*of*) a precise determination of the low-water line in all sectors along the coast of Greenland and the eastern coasts of the Canadian Arctic Islands…" (italics added).

It should be noted that in 1973, in an 'Understanding', the Parties to the 1973 Agreement also agreed a "set-back" zone of a width of 2nm on either side of the dividing line, and which was maintained in 2004 when the dividing line coordinates in Article 2 of the Agreement (Nos. 1 - 109) were replaced by agreement in an exchange of diplomatic notes.[11] This replacement was the result of a joint Canadian-Danish project by their experts who recomputed the equidistance line using recent methodology that allowed the interrelation of the datum systems of Oornoq, NAD 1927 and 1983, and World Geodetic System 1984, and thus Enclosure 5 of the Report by the experts[12] replaced the coordinates in Article 2 of the 1973 agreement (as permitted under Article 4.2 of the Agreement).

The delimitation line actually consists of two geodesic lines one stopping at point no. 122 and the other starting at point 123, effectively hopping over Hans Island. As Byers comments, although the intention was to locate these points on the low water mark on shores of Hans Island, as a result of later surveys it has transpired that they are slightly off the low water marks.[13] However, given the

[10] Byers, op. cit., at 30.

[11] Exchange of Notes Constituting an Agreement to Amend the Agreement Between the Government of Canada and the Government of the Kingdom of Denmark Relating to the Delimitation of the Continental Shelf Between Greenland and Canada done at Ottawa on 17 December 1973, available at:
http://www.treaty-accord.gc.ca/text-texte.aspx?id=104991.

[12] Report on the Determination of the Boundary between Canada and Greenland in World Geodetic System, April 1984, referred to in the letters from and to the Minister of Foreign Affairs of Denmark (Per Stig Moller) and the Counsellor and Consul of Canada in the Canadian Embassy, Copenhagen (Brian Herman), of the 5 April 2004 and 20 April 2004, ibid..

[13] See Byers, op. cit., footnote 14 at 30.

clear common intent to delimit the entire maritime boundary, Byers sees no significant consequences arising from this minor flaw.[14]

As Gray points out, both countries not only recognise the delimitation line for continental shelf purposes but have used the same line to define their respective fishing zones. Thus by long term usage the delimitation line is legally (regional custom) becoming (or possibly has become) a single maritime boundary.[15]

The negotiators of the Agreement stopped delineation of the continental shelf north of $82^0$13.0'N, where the Nares Strait opens out into the Lincoln Sea. This led, according to Byers, to two issues.[16] The first resulted from a dispute regarding the use by Greenland of Beaumont Island in determining its straight baselines which will be examined below in respect of the Lincoln Sea agreement. The other issue relates to the necessity of agreeing the delimitation with respect to the extended continental shelves, once they have been claimed by both Canada and Denmark, which will be analysed in the subsection on the Lincoln Sea Agreement below.

A8.1.2 *Aspects of the 1973 Canada – Denmark Boundary Agreement relevant to petroleum activities*

Under Article 3 of the Agreement "neither Party shall issue licences for exploitation of mineral resources in areas bordering the dividing line without the prior agreement of the other Party as to exact determination of the geographic coordinates of points of that part of the dividing line bordering upon the areas in question".

A couple of points are worth a comment. Firstly, note that it is only at the production stage ("exploitation") that the adjoining state's agreement should be obtained. The second point relates to the meaning of "bordering": for example, if the licence area stops half a kilometer from the dividing line is the licence area to be considered "bordering? It is reasonable to suggest that an area beyond the set-back zone is sufficiently distant not to be bordering. However, an oil company would be well advised to a) be aware of the issue, and b) choose licence areas well away from the dividing line if possible.

Furthermore, under Article 5 of the Agreement, if a petroleum structure straddles the dividing line and "…the part of such structure or field which is located on one side of the dividing line is exploitable, wholly or in part, from the other side of the dividing line, the Parties shall seek to reach an agreement as to the exploitation of such structure or field…" A further couple of points are worth noting.

Firstly, Article 5 of the Agreement appears to reflect Articles 74(3) and 83(3) UNCLOS and the rules of customary international law for common petroleum deposits, as enunciated by Onorato.[17] What it does not expressly provide for is a solution in the case where the two parties cannot reach agreement. Lagoni considers that in such a case the exploitation of the deposit cannot proceed as it

[14] Ibid..
[15] Gray, op. cit., at 68.
[16] Byers, op. cit., at 32.
[17] William T. Onorato, "Apportionment of an International Common Petroleum Deposit", (1977), *ICLQ*, Vol. 26, 324.

would create an immediate risk of prejudicial or wasteful action, which is, he argued, against the basic principles of international law.[18]

Secondly, the combined effect of Articles 3 and 5 of the Agreement is to create the legal basis for a cross-border unitization.[19] A cross border unitization is characterized by a settled boundary, and typically relates to one specific field or deposit/reservoir, and, although it has some common characteristics with a joint development zone ("JDZ"), this author, as do several authoritative writers[20], considers it to be a different though similar legal concept. In a later section on continental shelf issues we will return to examine in some detail the potential use of JDZs and unitisations as ways of cooperation and resolving existing and potential future maritime delimitation disputes in the Arctic Ocean Region.

A8.2 1990 Bering Sea Treaty: USA and USSR/Russia[21]

A8.2.1 General Review

[18] Ranier Lagoni, "Interim Measures Pending Maritime Delimitation Agreements", (1984), *AJIL*, Vol. 78, No. 2, 345, at 354 - 355.

[19] Lerer makes clear legal distinction between cross-border unitisation and joint development: D. Lerer, "Joint Development Zones, Negotiating and Structuring a Joint Development Agreement, (2003), *OGEL*, Vol.1, No.5, 1, at 2. Weaver, Asmus, Walde, Ifesi, Mahmud, Bastida, and Ross, in their authoritative paper also adopt a strict definition of unitisation: Jacqueline Land Weaver, David F. Asmus, Thomas Walde, Salim Mahmud, Adaeze Ifesi, Elizabeth Bastida, and James G. Ross and, Association of International Petroleum Negotiators, "International Unitisation of Oil and Gas Fields: the Legal Framework of International Law, National Laws and Private Contracts", (2007), *OGEL*, Vol. 2, 1 - 213, at 74 - 76, where in contrast to unitisation, they define a joint development agreement as an arrangement between two countries to develop and to share in agreed proportions any petroleum found within the geographic area that has disputed sovereignty. This highlights the key differences: unitisation is where the boundary is settled, and related to a specific identified straddling reservoir, a joint development zone is for a dispute area and is either related to existing or future deposits located in this area and it is not a question of the deposit straddling a boundary (examples of which are the Timor Sea Treaty 2003 (and the 2007 Treaty on Certain Maritime Arrangements in the Timor Sea), and the 2011 Treaty Nigeria-Sao Tome and Principe on the Joint Development of Petroleum and other Resources in respect of Areas of the EEZ of the Two States).

[20] In addition to Lerer (ibid.) and Weaver *et al* (ibid.) see also: E. Bastida, Salim Mahmud, Thomas Walde, and Adaeze Okoze, "Cross-border Unitisation and Joint Development Agreements: An International Law Perspective", (2007), *Houston Journal of International Law,* Vol. 29, No. 2, 355; Rodman R. Bundy, "Natural Resource Development (Oil and Gas) and Boundary Disputes", (1995), *The Peaceful Management of Transboundary Resources*, (Gerald H. Blake, William J. Hildesky, Martin A. Pratt, Rebecca J. Rickey and Clive H. Schofield, eds.), Graham and Trotman, 23; Ian Townsend - Gault and William G. Stormont, "Offshore Petroleum Joint Development Arrangements: Functional Instrument?, Compromise?, Obligation?", (1995), *The Peaceful Management of Transboundary Resources,* (Gerald H. Blake, William J. Hildesky, Martin A. Pratt, Rebecca J. Rickey and Clive H. Schofield, eds.), Graham and Trotman, 51, at 55 - 77; K. Hober, "Territorial Disputes and Natural Resources: the Melting of the Ice and Arctic Disputes", (2012), *OGEL*, Vol. 10, No.2, 1; Natalie Klein, "Provisional Measures and Provisional Arrangements in Maritime Boundary Disputes", (2006), *ILMCL*, Vol. 21, 423; Ranier Lagoni, "Interim Measures Pending Maritime Delimitation Agreements", (1984), *AJIL*, Vol. 78, No. 2, 345; David M. Ong, "Joint Development of Common Offshore Oil and Gas Deposits: Mere State Practice or Customary International Law", (1999), *AJIL*, No. 93, 771; William Onorato, "Apportionment of an International Common Petroleum Deposit", (1977), *ICLQ*, Vol. 26, 324; Peter Reid, "Petroleum Development in Areas of International Seabed Boundary Disputes: Means for Resolution 1984 - 1985), *Oil and Gas Law and Taxation Review,* Vol. 8, 214, at 214 - 216; Susan J. Rolston and Ted L. McDorman, "Maritime Boundary Making in the Arctic Region", (1987), *Ocean Boundary Making*, (Douglas Johnson and Phil Saunders, eds.), Ocean Boundary Making: Regional Issues and Developments, University of British Columbia University Press, at 32 - 37; Michael Valencia, "Taming Troubled Waters: Joint Development of Oil and Mineral Resources in Overlapping Claim Areas, (1986), *San Diego Law Review*, Vol. 23, No. 3, 661; Phillip R. Weems and Denis Archie Fallon, "Strategies for development of cross-border petroleum reservoirs", (2012), *Energy Newsletter*, King and Spalding, May 2012, available at: www.lkslaw.com/library/newsletters/Energy/Newslette/2012/May/article2.html.

[21] Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, 1 June 1990, at: www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/USA-RUS199MB.PDF.

The history, since the USA purchased Alaska in 1867, of the delimitation of the boundary between the USSR/Russia and the USA in the Bering Sea, Bering Strait and Chukchi Sea has been extensively described in the literature and will not be repeated here.[22]

It is sufficient for the purposes of the thesis to note that in 1990 the USA and the USSR agreed a single maritime boundary in the Bering Sea, Bering Strait, Chukchi Sea and Arctic Sea based to a great degree on the dividing line described in the 1867 Treaty[23], rather than the equidistance line, as will be discussed below. The Treaty is a maritime boundary between the two states for their EEZs and also beyond 200nm for their extended continental shelves as "far as permitted under international law".[24]

On 1 June 1990 the USA and USSR signed the Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary. Concurrent with the signature of the Agreement, the USSR and the USA entered into an exchange of notes whereby the Parties agreed to abide by the terms of the Agreement as of 15 June 1990 pending its entry into force.[25] The USA, which considered the agreement a very favourable outcome in terms of US strategic and resource interests[26], ratified the agreement quickly on 16 September 1991.[27] The Soviet Union/Russia has not yet ratified the Agreement, and the State Duma has repeatedly rejected draft federal laws on ratification of the agreement, which is considered by many Russian officials, parliamentarians and academics as unjust.[28] The Treaty from the Russian point of view appears to remain in limbo. Some Russian jurists argue that the possibility of terminating the operation of the agreement still exists under international law.[29]

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[22] Camille Antinori, "The Bering Sea: A maritime dispute between the US and the Soviet Union", (1987), *Ocean Development and International Law,* Vol. 18, No.1, 1-47 (for historical background); Byers, op. cit., at 32-36; Alex G. Oude Elferink, *The Law of Maritime Boundary Delimitation: A Case Study of the Russian Federation,* (1994), Martinus Nijhoff, at 255 – 274; Vlad M. Kaczynski, "US-Russian Bering Sea Marine Border Dispute: Conflict over Strategic Assets, Fisheries and Energy Resources", (2007), *Russian Analytical Digest*, 20/07, 2, at 2-4.

[23] Treaty concerning the Cession of the Russian Possessions in North America, 20 June 1867, available at: http://avalon/law.yale.edu/19th_century/treatywi.ap. See Byers, op. cit., at 33 – 34 and Oude Elferink, op. cit., at 356 - 269.

[24] Article 2.1

[25] The notes are reproduced in Appendices 2 and 3 of Alex G. Oude Elferink, "The 1990 USSR-USA Maritime Boundary Agreement", (1991), *International Journal of Estuarine and Coastal Law,* Vol. 6, 41.

[26] For USA government reactions see Elizabeth Verville, United States - Soviet Union, Report 1-6, Region (01), (1992), *International Maritime Boundaries*, (Lewis M. Alexander and Jonathon. I. Charney, eds.), Martinus Nijhoff, Vol. 1, at 447-460, now available online at: njhoffonline.nl/book?id=IMBO_IMBO-Book-1.

[27] Alex G. Oude Elferink, "The Law and Politics of the Maritime Boundary Delimitations of the Russian Federation: Part 2", (1997), I*JMCL*, Vol. 12, No.1, 5, at 24.

[28] For immediate criticism post signature in the media see: V. Zilanov, "A Posle Alaski Eshjo Odna Klyaksa [After Alaska Yet Another Blot]", *Rossisskaya Gazeta,* 14 January 1997; K. Bekiashev, "Chto Zhe Priobreli I Chto Poteriali [What is acquired and what is lost]", (1991), *Sovetskaya Rossiia,* (22 March 1991), 4; Iu. Katasonov, "Tainy Beringova Morya [Mysteries of the Bering Sea]", *Sovetskaya Rossiia*, (7 February 1991), 3; A. Polikarpov, "Peregovorny – Eto Vsegda Torg [Negotiation is always negotiable]", (1991), *Rossisskaya Gazeta*, (22 March 1991) [First cited by Oude Elferink, (1997), op. cit., at 25, footnote 93]. For view of Russian Minister of Foreign Affairs at the time see: S. N. Karev, Ostaiutsia li Tainy u Beringova Moria? Ustupiv Kolichestvo, Vygadali Kachestvo "Do secrets remain in the Bering Sea? Lower numbers, poorer quality", *Sovetskaya Rossiya*, (22 March 1991), 4. For academic criticism, see: Kovalev, op. cit., at 67 and 68; A. S. Shcherbakov,"Gosudarstvenniaia Granitsa Rossii I Pravo", (1995), *Gosudarstvo I Pravo*, Vol. 9, 90, at 96; V. A. Konstantinov, "Kogda Soedinennye Shtaty Prekratiat Unizhat' Rossiiu?", (2000), *Moskovskii Zhurnal Mezhdunarodnogo Pravo,* Vol. 1, No. 37, 149, at 153 -154.

[29] Kovalev, op. cit., at 68.

Figure 1 – Depiction of the Differences Between the Bering Sea Marine Boundary Using Rhomb and Geodetic Lines on a Mercator Projection

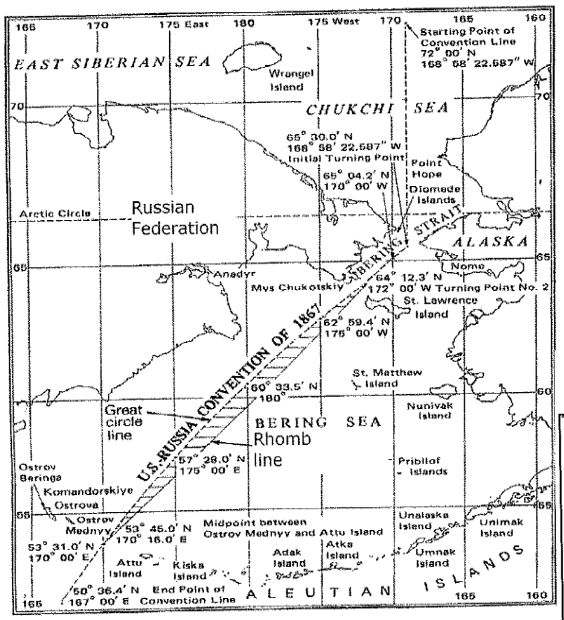

Figure 2 – Map Showing the 1990 Marine Boundary Line with the Special Areas

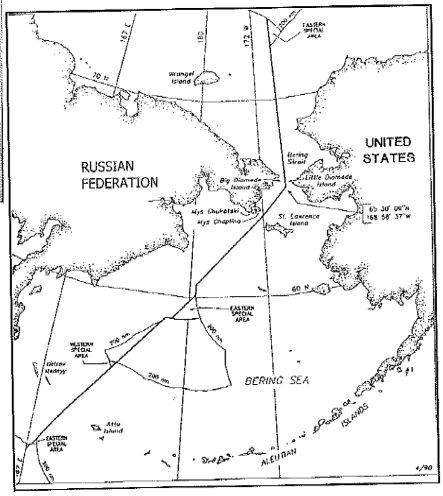

Figure 3 – Map Showing Difference Between 1990 Marine Boundary Line and Equidistant Line

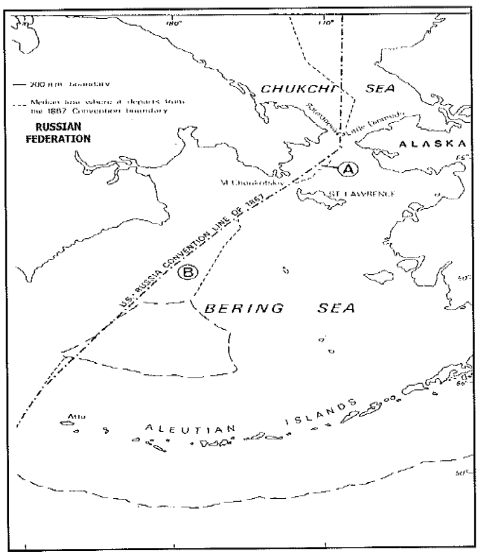

Figure A8.1: The three figures above show various aspects of the 1990 Bering Sea Delimitation Agreement[30]

[30] © Vlad Kaczynski, Professor Warsaw School of Economics. As appeared in "US-Russian Bering Sea Marine Border Dispute: Conflict Over Strategic Assets, Fisheries and Energy Resources", (2007), *Russian Analytical Digest,* No.20. 2 - 5. Permission to reproduce the figures in the thesis was received from Professor Kaczynski by e-mail dated 17 February 2014.

However, the USA has steadfastly continued to abide by and enforce its provisions – perhaps its continued position and enforcement of the boundary is an attempt at slowly building up evidence of general state practice. However, the CIA Factbook (2014) in the Russia section notes under '*Disputes-International*' that the Agreement remains unratified.[31]

On the other hand, since 1990, Russian state practice has been inconsistent. In the main map in its 2001 submission to the CLCS on its extended continental shelf claim, Russia indicated with a dotted line (rather than bold one) the 1990 agreement's maritime boundary, although it also appeared to be claiming as continental shelf only areas lying west of the agreement's boundary line in the "doughnut hole" region[32] in the central Bering Sea.[33]

In 2002 the Duma voted 327-0 for a resolution stating that the US-USSR agreement was unbalanced and violated national interests, and urging the government to determine its position in line with national interests and to draft proposals to the USA to remedy the defects in the agreement.[34] Since 2001, Russian fishing vessels have repeatedly challenged the boundary by fishing over the boundary line. According to Kaczynski encounters with US enforcement efforts have become belligerent[35], with the Russians refusing inspections by the US Coast Guard and the US detaining Russian fishing vessels found on the US side of the Agreement's boundary line.[36]

Kaczynski reported that in 2007 discussions between the USA and Russia had reopened "in an attempt to resolve the issue". As of 1 January 2014, there has been no such resolution: the USA appears to remain resolute that the 1990 Agreement is binding and constitutes the maritime boundary between the two countries, while Russia continues to maintain that there is no definitive agreement.

In terms of whether currently the Agreement can be considered final and binding there are various juristic views: Oude Elferink, who has written extensively on the Agreement, describes it as "applied provisionally"[37], which is consistent with Article 25(1)(b) of the Vienna Convention on the Law of Treaties, 1969.

Byers states: "…There is no Arctic boundary dispute between Russia and the United States because the two countries negotiated a 1600-nautical-mile all-purpose maritime boundary in the Bering Sea,

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[31] CIA, *The World Factbook*, (2014), Russia, available at www.cia.gov/library/publications/the world-factbook/geos/rs.html.

[32] The "doughnut hole" is an area in the Bering Sea beyond the EEZs of Russia and the USA that is high seas. In 1994 (under Article 63 and 118 UNCLOS 1982) the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea was agreed between USA, Russia, Japan, South Korea, Poland and China to regulate fishing in this area and the area is now closed for fishing (the "Bering Sea Doughnut Hole Convention") – see W. V. Dunlap, "Bering Sea: The Donut Hole Agreement", (1995), *IJMCL*, Vol.10, 114; David A. Balton, "The Bering Sea Doughnut Hole Convention: Regional Solution, Global Implications", (2001), *Governing High Seas Fisheries – The Interplay of Global and Regional Regimes*, (O. S. Stokke, ed.,) Oxford University Press, Chapter 5, 143.

[33] David A. Colson, "The Delimitation of the Outer Continental Shelf Between Neighboring States", (2003), *AJIL*, Vol. 97, 91, Notes and Comments, at 97.

[34] Moscow Times, "US Fishing Agreement Slammed by State Duma", (17 June 2002), available at: www.themoscowtimes.com/business/article/us-fishing-agreement-slammed-by-state-duma/245882.html?ask-mobile=Y.

[35] Kaczynski, op. cit., at 4.

[36] See: www.geopoliticsnorth.org/index.php?option=com+content&view=article&id=139%3Athe-maritime-delimitation-treaty&catid=1%3Alatest-news&showall=1.

[37] Oude Elferink, (2001), op. cit., at 183.

Bering Strait, and Chukchi Sea in 1990".[38] Under Article 18 (b) of the 1969 Vienna Convention on the Law of Treaties, Russia is obliged, due to the Exchange of Notes, to refrain from any action that would defeat the object and purpose of the treaty as it "expressed its consent to be bound pending the entry into force of the treaty and *provided that such entry into force is not unduly delayed*" (my emphasis). What exactly "unduly delayed" means is unclear. It raises the question whether 24 years is sufficiently long that the entry into force is "unduly delayed". The vagueness and ineffectiveness of Article 18 has long been the subject of academic analysis, and the case law offers little indication of what exactly constitutes "unduly delayed".[39]

The next question is whether provisional application can be terminated and how. Kaczynski (a Polish-American academic) considers that "international law favours the US position" which is that the Agreement is final and binding on both parties and as a boundary treaty cannot be unilaterally terminated. This argument would seem flawed if the Agreement is considered provisional. To the contrary Kovalev (a Russian jurist) makes a persuasive case for the ability of Russia to 'terminate' the provisional agreement, (which he terms "unjust and disgraceful for Russia") under Article 25 of the 1969 Vienna Convention on the Law of Treaties[40].[41] Under Article 25(2) of the 1969 Convention a state may terminate the provisional application of a treaty or part of a treaty by notifying the other states between which the treaty is being applied provisionally of its intention not to become a party to the treaty.[42] However to date Russia has not issued any such formal notification.

What is clear from the above is that absent both parties ratifying the 1990 agreement (possibly with some amendment) the maritime boundary remains at best provisional and at worst subject to change or termination.

The 1990 Agreement has numerous interesting features:

1. The 1867 Treaty[43] was silent on the type of line (rhomb or geodetic), map projection (Mercator or conical), and horizontal datum to be used in depicting the boundary described in Article 1. Consequently Russia and the USA each interpreted the line differently[44] and the result was a disputed zone of approximately 15,000nm^2, [45] - see figure 1 above. The 1990 Agreement divided this zone approximately in half with the new line delimiting a single maritime boundary. This line is significantly west of where an equidistance line would have been – see figure 3 above. Opponents of the agreement attribute this cession of territory to the very weak negotiating position of the USSR, which was, as Byers puts it, "literally disintegrating as the talks were concluding". [46] The boundary and the Agreement have met

[38] Byers, (2012), op. cit., at 32 – 33.
[39] Paolo Palchetti, "Article 18 of the 1969 Vienna Convention: A Vague and Ineffective Obligation or a Useful Means for Strengthening Legal Cooperation", (2012), *The Law of Treaties Beyond the Vienna Convention*, Oxford University Press, Chapter 2, at 25.
[40] "3 May 1969, available at:
Treaties.un.org/doc/Treaties/1980/01/109800127%2000-%2%20AM/Ch_XIII_01p.pdf.
[41] A. A. Kovalev, *Contemporary Issues of the Law of the Sea: Modern Russian Approaches*, (2004), Eleven Publishing, (William E. Butler, translator and editor), at 67 - 68.
[42] Curtis A. Bradly, "Unratified Treaties, Domestic Politics and the U.S. Constitution, (2007), *Harvard International Law Journal*, Vol. 48, 307.
[43] See footnote 964, *supra.*
[44] Kaczynski describes the Russian and USA approaches and their consequences: see Kaczynski, op. cit., at 2 - 3.
[45] Kaczynski, op. cit., 2 - 3.
[46] Byers, op. cit., at 34.

with considerable opposition in both USSR and subsequently Russia, and it seems unlikely that in its present form it will ever be ratified by the Russian Duma.

2. The northward end of the 1990 Agreement's boundary is of significance. Northwards of $65^{0}30'00''$N the boundary follows the $168^{0}58'37''$W meridian into the Arctic Ocean "as far as permitted under international law". According to Byers the negotiators took into account the future application of Article 76 which allows for extended continental shelves in certain circumstances. It is possible that a resolution of the Canada – USA Beaufort Sea dispute could result in Canada having sovereign rights over the continental shelf as far west as the $168^{0}58'37''$meridian. As Byers comments[47], then the Russia - USA boundary would extend only as far north as the USA jurisdiction and there would be an unresolved boundary between Russia and Canada.

3. The 1990 Agreement created two special zones – see figure 2 above. These were areas on either country's side of the 1867 marine boundary but beyond 200nm from the baseline. In the Bering Sea there were three such areas on the USA side of the boundary called "the eastern special areas" and one on the Russian side called the "western special area".[48] Under Article 3 of the 1990 Agreement Russia ceded all claims to sovereign rights and jurisdiction in the eastern areas to the USA and conversely the USA cedes all claims to sovereign rights and jurisdiction in the western special area. There is a small but similar special area in the Chukchi Sea where the USA cedes its rights to Russia.

   Kovalev argues that this attempt to create such special areas is contrary to customary international law and UNCLOS.[49] When examining the question of whether the assignments of EEZ sovereign rights in the special areas are opposable to third states, Byers concludes that: "Two decades later it seems open to the United States and Russia to argue that the rights have become generally opposable as a result of acquiescence" and become customary international law.[50]

4. Under the Treaty "the end point of the 1990 line is uncertain, since the extent of the USA's shelf beyond 200nm is not clear and Canada may become involved regarding shelf areas in the Alpha Ridge region that may necessitate a trijunction point involving the three states".[51] As Byers has noted, although Russia in its 2001 CLCS submission limited its assertion of continental shelf to those areas west of the $168^{\circ}58'37''$ W meridian, as agreed under the 1990 Bering Sea Treaty, it cannot be assumed that this self-limitation will continue in the event Canada asserts rights over the Alpha-Mendeleev Ridge and certainly it will not continue if Canada asserts any rights west of the

[47] Byers, op. cit., at 35.
[48] Schofield describes these areas in detail in: Clive Schofield, "Dividing and Managing Increasingly International Waters, Delimiting the Bering Sea, Strait and Beyond", a paper presented at *Science, Technology, and New Challenges to Ocean Law*, 11-12 October 2013, Berkeley California, in Session 8, Regional Issues, Part I – The Bering Sea and the Arctic, Saturday 12 October 2013.
[49] Kovalev, op. cit., at 67.
[50] Byers, op. cit., at 36.
[51] Ted McDorman and Clive Schofield, "Maritime Limits and Boundaries in the Arctic Ocean: Agreements and Disputes", (2014) a pre –publication paper, to which the authors kindly allowed access.

168°58'37''W meridian.[52] This possibility of Canada sharing an extended continental shelf boundary with Russia raises the probable necessity to negotiate a tripoint agreement

A8.2.2 Aspects of the 1990 Agreement relevant to petroleum activities

As discussed above there are three issues arising from the 1990 Agreement that are pertinent to an oil company wishing to conduct petroleum production in the Bering Sea, Bering Strait or Chukchi Sea:

1. Until ratification by both Parties there is a question mark over the legal status of the Agreement and hence the maritime boundary between the USA and Russia.

2. As we saw above there is a question as to the legal validity of the assignment of sovereign rights in the special areas created by the Agreement.

3. The northern part of the boundary will in all likelihood be affected by extended continental shelf claims and any future settlement of the Canada – USA Beaufort Sea Dispute (to be analysed in the next subsection).

These issues indicate that oil companies should be very cautious regarding the location of their licencing areas. It may well be advisable to avoid (1) the contentious area between the 1867 Treaty boundary line and the equidistance line, (2) the 'special areas', and (3) the area to which Canadian jurisdiction may extend in the future in the event of a settlement of the Beaufort Sea dispute, until all aspects of the Agreement discussed above are settled.

A8.3 Denmark/Greenland – Norway/Jan Mayen Island Agreement 1995[53] ("1995 Denmark - Norway Agreement").[54]

A8.3.1 General Review

The 1995 Denmark-Norway Agreement implemented the 1993 judgement of the ICJ in the Jan Mayen case[55]. As Oude Elferink points out, the 1997 Boundary Agreement between Denmark/Greenland and Iceland, made it possible for the three countries to agree upon the delimitation of the tri-point[56] of their boundaries[57], and this resulted in a 1997 Additional Protocol to

[52] Byers, op.cit,., at 106 – 107.

[53] The Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the delimitation of the continental shelf in the area between Jan Mayen and Greenland and concerning the boundary between fishery zones in the area, 18 Dec. 1995, available at:
www.un.org/depts/los/LEGISLATIONANDTREATIES/STATEFILES/NOR.htm.

[54] For writings on the Agreement see: Byers, op. cit., at 38 - 39; Oude Elferink, op. cit., (2001), at 183 – 185, Ted L. McDorman, "Setting the State: The Continental Shelf and Marine Science in the Arctic Ocean", (2012), *Arctic Science, International Law and Climate*, (Susanne Wasum – Rainer. Ingo Winklemann, and Katrin Tiroch, eds.), Springer, at 131 – 133; D. H. Anderson, "Denmark (Greenland)–Norway (Jan Mayen) Agreement", (1998), *International Maritime Boundaries,* (J. I. Charney and L. M. Alexander, eds.), Vol. II, 2507; Odd G. Skagestad, "The Scope for Norwegian Commitments Related to International Research on Jan Mayen Island", (2003), *Jan Mayen Island in Scientific Focus*, NATO Science Series, IV Earth and Environmental Sciences, Vol. 45, Kluwer, Chapter 25, at 271 - 274.

[55] Judgment of 14 June 1993, [1993] ICJ Reports 38, available at:
www.icj-cij.org/docket/files/78/6743.pdf.

[56] On tri-points and the issues associated with them see: Coalter G. Lathrop, "Tri-point Issues in Maritime Boundary Delimitation", (2005), *Maritime Boundary Delimitation*, (D. A, Colson and R. W. Smith, eds.), Brill/Martinus Nijhoff, at 3305 – 3375, available at:
http://scholarship.law.duke.edu/faculty_scholarship/1122.

the 1995 Denmark-Norway Agreement identifying the tri-point.[58] Despite being agreed simultaneously in three bilateral agreements, the tri-point is described by Lathrop as an extreme example of a '*presumed*' tri-point, because of the absence of a trilateral specific agreement on the tri-point.[59] This issue has, however, little practical importance in terms of the three states' sovereignty over their agreed continental shelf areas, or title to petroleum produced therefrom, unless one of the states chooses to licence blocks in the tri-point's proximity.

The 1995 Denmark - Norway Agreement established a single maritime boundary based on an adjusted median (equidistance) line[60], as set out in the ICJ judgement.[61] Initially in the dispute Denmark had challenged the legal status of Jan Mayen Island as a 'legal island', (rather than a rock incapable of sustaining human habitation or having an economic life of its own) which is capable of having its own maritime zones under international law.[62] This issue was resolved prior to the submission of the Denmark/Greenland – Norway/Jan Mayen dispute to the ICJ on 16 August 1988. It is highly likely that the 1981 Iceland-Norway (Jan Mayen) Delimitation Agreement, whereby Iceland accepted Jan Mayen's status as a legal island, was the decisive factor for Denmark in accepting Jan Mayen's status.[63] In the 1995 ICJ judgement the Court never queried the right of Jan Mayen to generate maritime zones.

The ICJ had, as a first step, determined the median line, and then, in order to ensure the delimitation was 'equitable',[64] it took into account 'special circumstances' in adjusting the median line.[65] In relation to 'special circumstances' the ICJ did examine the issues of (1) the lack of permanent human habitation on Jan Mayen[66], and (2) the fact that drift ice might substantially affect the rights of sovereignty, or their exercise, in respect of Jan Mayen. In its judgement it recognised that, although a 'special geographic feature' of the Arctic[67], ice did not affect access to the fisheries, which was the main underlying issue for both parties in the dispute[68], and it avoided any further analysis of the legal status of ice or how it might affect the drawing of baselines or access for the exploitation of non-living natural resources.[69] The Court did however shift the median line eastwards towards Jan Mayen, in recognition of the significantly greater length of the 'facing' coast of Greenland, which it considered a 'special circumstance'.[70]

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[57] Oude Elferink, op. cit., at 184.

[58] Additional Protocol to the Agreement of 18 December 1995 between the Kingdom of Norway and the Kingdom of Denmark concerning the delimitation of the continental shelf in the area between Jan Mayen and Greenland and the Boundary between the fishery zones in the area, 11 Nov. 1997, available at:
un.org/depts./los/LEGISLATIOANDTREATIES/PDFFILES/TREATIES/NOR-DNK19997cs.PDF.

[59] Lathrop, op. cit., at 3336, footnote 141.

[60] Para. 59, Judgment, footnote 1021, supra. Alex G. Oude Elferink, "Maritime Delimitation Between Denmark/Greenland and Norway/Jan Mayen", (2007), *Ocean Development and International Law*, Vol. 38, 375, at 375 and 376.

[61] Article 1, the 1995 Denmark - Norway Agreement, op. cit..

[62] Finn Sollie, "Jan Mayen Sonen: forhandlinger med Island", (1981), *Internasjonal Politikk,* 383.

[63] Agla Margret Egilsdottir, *Agreement between Iceland and Norway on the Continental Shelf Between Iceland and Jan Mayen*, (2013), MA Thesis, University of Reykjavik, at 17 - 18, available online at:
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[64] Para. 48, Judgment, footnote 1021, *supra.*

[65] Paras. 59-71, Judgment, footnote 1021, supra.

[66] Paras. 75-76, Judgment, footnote 1021, *supra.*

[67] Paras. 77-78, Judgment, footnote 1021, *supra.*

[68] Para. 78, Judgment, footnote 1021, *supra.*

[69] Para. 91, Judgment, footnote 1021, *supra*.

[70] Para. 69, Judgment, footnote 1021, *supra.*

Thus, the 1995 Denmark – Norway Agreement, based on the ICJ judgement, was able to establish clear areas of sovereign rights over continental shelves in the marine area between Greenland and Jan Mayen Island, with the possibility of a lack of legal certainty in any licence block in close proximity to the tri-point.

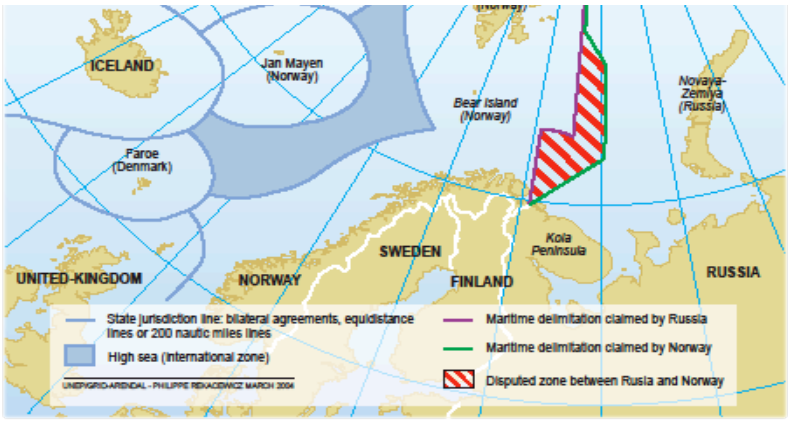

Figure A8.2: Map of the Maritime Boundary between Denmark/Greenland and Norway/Jan Mayen[71]

A8.3.2 Aspects of the 1995 Denmark - Norway Agreement relevant to petroleum activities

Article 2 of the 1995 Denmark - Norway Agreement, sets out procedures in the case of a straddling petroleum reservoir, and provides the legal basis for negotiation of an agreement concerning the development of the reservoir. The wording of Article 2 however falls just short of imposing mandatory actions: for example, the requirement to enter into deliberations on the straddling resource is conditional on the potentially affected state submitting its opinion that it will be affected together with the evidence on which it based its opinion. Moreover, the agreement concerning the exploitation of the straddling resource "shall be made, *at the request of either of the Parties*". Furthermore, it does not set out any requirements as to the areas to be covered by the agreement, what happens if the parties fail to agree, or what is required if the area straddles three States continental shelves near the tri-point. The nature of the agreement envisaged by Article 2 would be that of a cross – border unitization agreement. Such agreements have become relatively standardized[72], and both Denmark and Norway have experience of negotiating similar such agreements.[73]

The 1995 Denmark - Norway Agreement, as shown in the map above, creates clearly defined maritime zones for Denmark/Greenland and Norway/Jan Mayen Island in which both have sovereign rights to exploit the natural resources therein. To date the Norwegian government has refrained from issuing exploration licences in offshore areas west of Jan Mayen Island.

[71] UNEP/GRID-ARENDAL, Phillipe Rekacewicz, March 2004. Reproduced under the UN terms and conditions of use, available at:
www.un.org/en/aboutun/terms/

[72] For a summary analysis of the general structure of these agreements see: Bastida, Ifesi-Okoye, Mahmud, Ross and Walde, op. cit., at Section C, 414 - 420.

[73] For example, Norway is a party to the Unitisation Agreements for the Frigg and Statfjord Fields – see Bastida, Ifesi-Okoye, Mahmud, Ross and Walde, op. cit., at sections B. 1. a (i) and a (ii)., 391 – 396. Denmark agreed with the UK in 1999 to a shared fisheries jurisdiction straddling an agreed continental shelf boundary between the Faroe Islands and the UK.

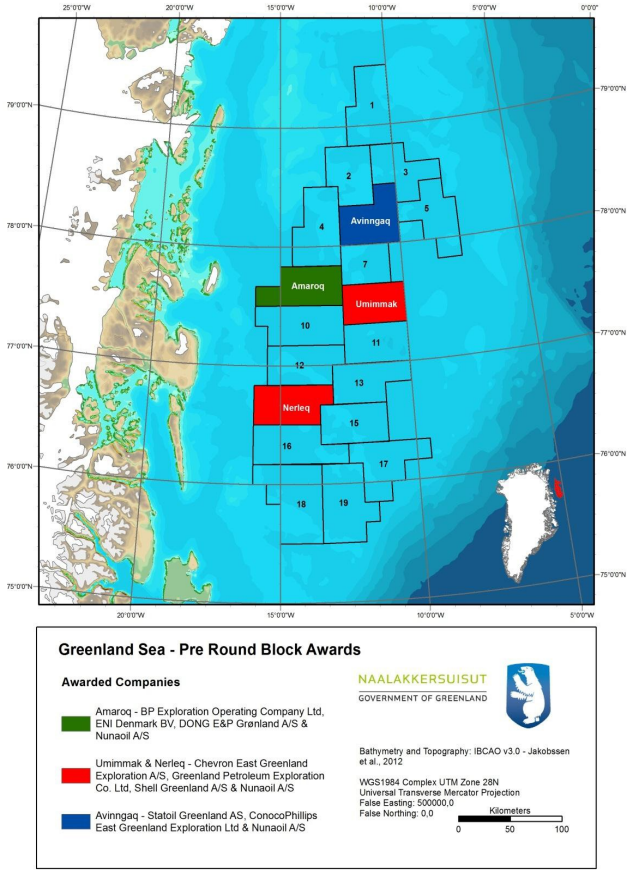

Figure A8.3: Map of licence blocks in the Greenland Sea[74]

In 2013, on the other hand[75], Greenland adopted a different approach when the Bureau of Mining and Petroleum ("BMP") of the Greenland government held a licensing round for offshore blocks north east of Greenland in the Greenland Sea and awarded exploration and exploitation licences for blocks No. 6, 8, 9 and 14 to three consortia of major oil companies, as shown in the map below.[76] These blocks are at significant distance from the boundary of the 1995 Agreement, and indeed from the single maritime boundary agreed between Greenland and Norway for the area between blocks give rise to any issues in respect of possible future straddling reservoirs, or being in proximity to the tri-point

[74] ©BMP, Public Domain, Contained in Government of Greenland, Press Release, "Three Consortia are granted exploration and exploitation licences on the Greenland Sea", (20 Dec. 2013), Journal No, 2013 -092065, Doc. No. 1387791, available at: www.govmin.gl/images/stories/petroleum/exploration-exploitation/2013-13/PM_N%c3%98_uk_20_12_2013.pdf.

[75] Terry McAllister, "Greenland explores Arctic mineral riches amid fears for pristine region", (6 January 2014), *the Guardian*, available at: ww.theguardian.com/world/2014/jan/05/Greenland-mines-arctic-fears-pristine-environment?INTCMP=ILCNETTXT3487.

[76] Derrick Online, "Greenland Awards Exploration Licences to ENI, Chevron", (23 Dec, 2013), available at: www.1derrick.com/greenland-awards-exploration-licences-to eni-chevron/12362.

A8.4 Denmark/Greenland – Norway/ Svalbard Agreement 2006 ("Greenland – Svalbard 2006 Agreement")[77]

A8.4.1 General Review

As discussed in Chapter 5, Norwegian sovereignty, albeit conditioned, was established under the 1920 Spitsbergen Treaty.[78] The legal regime of adjacent marine areas of Svalbard has also been extensively analysed in the literature.[79]

We shall not analyse the issues here - other than to note that the claim by Norway of an EEZ and continental shelf around the Svalbard Archipelago has been highly contentious.

Article 1 of the Greenland – Svalbard 2006 Agreement between Denmark, the Home Rule Government of Greenland and Norway establishes a 430km single maritime boundary in the area between Greenland and Svalbard, as shown in the map in subsection b. on Jan Mayen above. The delimitation is based on the median line adjusted slightly to take into account Tobias Island which lies 38nm off Greenland's coast.[80]

Since 1963 Norway's domestic legislation on the continental shelf has consistently been based on the premise that there is a continuous continental shelf extending from the coast of the Norwegian mainland.[81] This approach has been much analysed by international law of the sea experts particularly interested in the Arctic, including Churchill[82], Anderson[83], Oreshenko[84], Vylegzhanin and

[77] An English translation of the original languages versions is attached to Alex G. Oude Elferink, "Maritime Delimitation Between Denmark/Greenland and Norway", (2007), *Ocean Development and International Law*", Vol. 38, No. 4, 375, Appendix 1, at 378. Literature on the subject includes:
A. N. Vylegzhanin and V.K. Zilanov, *Spitsbergen, Legal Regime of Adjacent Marine Areas,* (2007), (Edited and translated by William E. Butler), Eleven Publishing; Johnson Theutenberg, "The Arctic Law of the Sea", (1983), *Nordsskrift International Ret*, Vol. 52, 3, at 27 - 31; D. H. Anderson, "The Status under International Law of the Maritime Areas around Svalbard", (2007), a paper presented to the Symposium on 'Politics and Law – Energy and Environment in the Far North', held at the Norwegian Academy of Science and Letters on 24 January 2007, available at:
www.dnva.no/binfil/download.php?tid=27096;
Susanne Roston and Ted L. McDorman, "Maritime Boundary Making in the Arctic Region", *Ocean Boundary Making: Regional Issues and Developments*, (1988), (Douglas M. Johnson and Phillip M. Saunders), Croom Helm, Chapter Two, 16 at 39 - 41; Robin Churchill and Geir Ufstein, "The Disputed Maritime Zones Around Svalbard", (2010), *Changes in the Arctic Environment and the Law of the Sea*, Panel IX, Martinus Nijhoff, 551; Rolf Einar Fife, "Svalbard and the Surrounding Maritime Areas, Background and Legal Issues - frequently asked questions", (2013), website of Norwegian Ministry of Foreign Affairs, available at:
www.regjeringen.no/en/dep/ud/selected-topic/civil-rights/spesiell-folkerett/folkerettslige-sporsmal-i-tilknytning-ti.html?id=537481;
Alexander Oreshenkov, "Arctic Square of Opportunities, North Pole and "Shelf" of Svalbard Can Not be Norwegian", (25 December 2010), *Russia in Global Affairs*, No. 1, January/March 2013, available at:
http://eng.globalaffairs.ru/number/Arctic-Square-of-Opportunities-15085;
Bjorn Geir Harsson and George Preiss, "Norwegian Baselines, Maritime Boundaries and the UN Convention on the Law of the Sea", (2012), *Arctic Review on Law and Politics*, Vol. 3, No. 1, 108, at 124 – 126.
[78] The Svalbard Treaty, 14, August 1920, available in English in Vylegzhanin and Zilanov, ibid., Annex 8, 100 - 107.
[79] See literature in footnote 1058, *supra*.
[80] On this and generally on the delimitation see: Oude Elferink, (2007), op. cit., 375 seq.
[81] As elaborated by Rolf Fife, Director General of Legal Affairs Department of the Ministry of Foreign Affairs - Fife, op. cit., footnote 325; and Professor Carl August Fleischer, special consultant to the Ministry of Foreign Affairs - C. A. Fleischer, "Norges rettigheter i 200 mils sonen ved Svalbard", (1983), *Fiskevernsonen ved Svalbard*, (G. Ulfstein, ed.) University of Tromso, 2 - 24.
[82] Churchill and Ulfstein, op. cit., at 560 - 568.
[83] Anderson, op. cit., at 6 - 9.
[84] Oreshenko, op. cit., at 4.

Zilanov[85], Rolston and McDorman[86], and Oude Elferink[87]. The main argument against the Norwegian approach is that it contradicts Article 121 UNCLOS (discussed earlier).

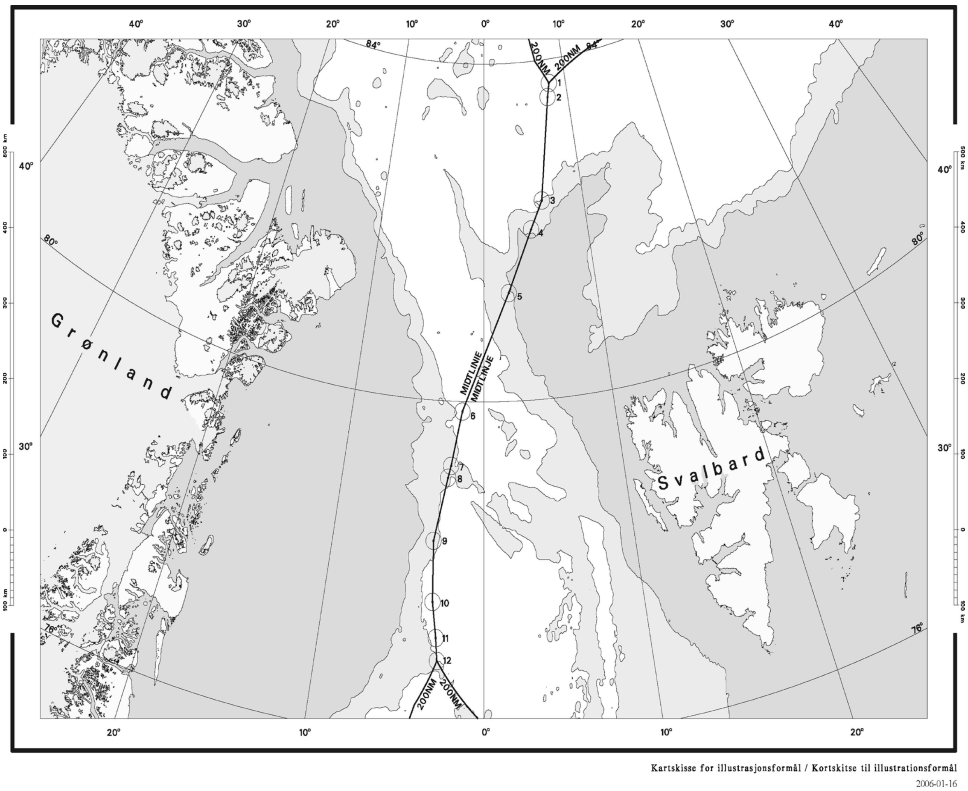

Figure A8.4: Map of the Maritime Boundary between Denmark/Greenland and Norway/Svalbard[88]

In practice Norway now seems to have abandoned its argument that Svalbard has no continental shelf. In 2006 Norway made a submission to the CLCS in respect of, *inter alia*, the continental shelf beyond 200 miles north of Svalbard. The map accompanying the submission shows that the area marked as the 'Continental Shelf beyond 200 miles' is measured from Svalbard's territorial sea baselines, thus indicating that Svalbard has a continental shelf to extend.[89] In 2009 the CLCS gave its recommendations which did not challenge the Norwegian claim to an extended continental shelf north of Svalbard based on measurement from the territorial sea baselines of Svalbard.[90]

Moreover, the boundary established by Article 1 of the Greenland – Svalbard 2006 Agreement is also clearly based on the method of equidistance between the nearest basepoints located in Greenland

[85] Vylegzhanin and Zilanov, op. cit., at 53 – 59.
[86] Rolston and McDorman, op.cit., at 40 – 44.
[87] Oude Elferink, op. cit., at 376.
[88] © Public Domain. Map accompanied the 2006 Greenland –Svalbard Agreement. For an English translation of the original languages versions and the map see: Alex G. Oude Elferink, "Maritime Delimitation Between Denmark/Greenland and Norway", (2007), *Ocean Development and International Law*, Vol. 38, No.4, 375, Appendix 1, 378 with the map at 380.
[89] On this point see Churchill and Ulfstein, op. cit. at 567 – 568.
[90] Commission on the Limits of the Continental Shelf, *Summary of the Recommendations of the Commission on the Limits of the Continental Shelf in Regard to the Submission Made by Norway in respect of Areas in the Arctic Ocean, the Barents Sea and the Norwegian Sea on 27 November 2006*, (27 March 2009), UN, available at: www.un.org/depts/los/clcs_new/submissions_files/ nor06/nor_rec_summ.pdf

and Svalbard.[91] As Oude Elferink argues, the boundary established under the Greenland – Svalbard 2006 Agreement is entirely consistent with substantive delimitation law as developed by international jurisprudence and two clearly defined areas of continental shelves where each state can exercise its sovereign rights to explore and exploit petroleum resources.[92] The question arises whether there are any limitations on the exercise by Norway of its sovereign rights arising from the ST.

Article 3 of the Greenland – Svalbard 2006 Agreement indicates that the agreement is without prejudice to the Parties' views on questions not governed by the agreement. Such questions include the delimitation of the continental shelf beyond 200nm and the interpretation of the exercise of sovereignty by Norway over Svalbard and its territorial waters.[93]

Byers considers, that by concluding the treaty Denmark has "…implicitly recognized Norway's claim ….that Svalbard generates an EEZ and continental shelf".[94] This author would argue a stronger case: that by the wording used in the Agreement [such as in Article 2: "…on the continental shelf of one of the Parties…"] Denmark has explicitly recognised that Svalbard has a continental shelf and that Norway has sovereign rights to explore for and exploit natural resources located therein.

Article 3 also recognises that there may be a potential dispute between Norway (Svalbard) and Denmark (Greenland) regarding declared continental shelf areas beyond 200nm, as does the 2006 Norwegian submission to the CLCS.[95] As McDorman and Schofield describe Denmark did not raise any objection to the Norwegian CLCS submission, nor indeed did Norway raise any objections when in 2013 Denmark made its submission to the CLCS in regard to northeast Greenland.[96] It is clear from the submissions that there will be an overlap of extended continental shelves, and the 2013 Danish submission indicates that the resolution of the overlap, once the CLCS has completed its work, will be negotiated between the two states.[97]

Given that Russia (the only other state with opposing coasts), by agreeing the 2010 Barents Sea Agreement (to be discussed in the next sub-section), has accepted that Svalbard has a continental shelf and that Norway has jurisdiction over it and sovereign rights regarding natural resources therein, it would seem that the east and west continental shelf issues for Svalbard are now settled. No third state**,** even a 1920 Svalbard Treaty contracting party, would be able to successfully challenge this position.

A8.4.2 Aspects of the Greenland – Svalbard 2006 Agreement relevant to petroleum activities in the delimited areas.

The question may arise , however, whether the equal rights provisions with regard to the exercise of specified economic activities guaranteed by the 1920 Svalbard Treaty (discussed in Chapter 5), extend to the fishery zone and the continental shelf around Svalbard. Norway considers the 1920

[91] Anderson, op. cit., at 8.
[92] Oude Elferink, (2007), op.cit., at 376
[93] Ibid..
[94] Byers, op. cit., at 38.
[95] Norway, *Continental Shelf Submission*, 2006, Executive Summary, at 11 – 12, available on the CLCS website: www.un.org/depts/los/clcs_new/clcs_home.htm.
[96] McDorman and Schofield, (2014), op. cit., footnote 933.
[97] Denmark, *Continental Shelf Submission,* (Northeast of Greenland), Executive Summary, at 15, available on CLCS website: www.un.org/depts/los/clcs_new/clcs_home.htm

Svalbard Treaty provisions do not apply to these areas while other contracting Parties, such as the UK, consider they do.[98]

Article 3 of the Greenland – Svalbard 2006 Agreement leaves this issue unsettled and "without prejudice". Several of the authors writing on the subject consider it uncertain whether in the exercise of its sovereign rights Norway continues to be under an "equal treatment" obligation.[99] Churchill and Ulfstein have suggested various ways in which the issue could be resolved, but conclude that "only if, or when, there becomes a pressing desire to explore for and exploit any oil and gas reserves on the continental shelf around Svalbard will the parties be faced with a real need to resolve the dispute".[100]

Article 2 of the Greenland – Svalbard 2006 Agreement makes provision for straddling petroleum reservoirs. As with the very similar provision in the 1995 Norway – Denmark Agreement, which was discussed in subsection c above, either party can initiate discussions on potential cooperative solutions and an agreement on how to exploit the reservoir "shall be reached at the request of one of the parties". The Article provides the basis for a unitisation agreement, although, as Byers comments, it does not *commit* the parties to any such result,[101] and is therefore a relatively weak provision.

But currently such issues from a Norwegian perspective are academic. To date no commercial exploration has occurred on the Svalbard continental shelf. In 1985 the Norwegian government announced the 'opening' of a new exploration area in the Barents Sea, crossing over the southern limit of what is term the 'Svalbard Box'.[102] The announcement sparked warnings from the USSR and a sharp note from the UK. To date no exploration blocks have been announced in the Svalbard area – see map below for current licence areas and note in left map the clear avoidance of any licensing over the southern limit of the Svalbard continental shelf.

Moreover, as Wolf points out, no foreign state has made any attempt to exploit Svalbard's continental shelf by invoking either the ST or claiming it as a part of the Area under UNCLOS.[103] Furthermore as discussed above in relation to Jan Mayen, the new Norwegian government has agreed (under a quadripartite agreement with three other political parties for four years) not to allow petroleum exploration activities in the environmentally sensitive High Arctic areas such as Svalbard and its maritime areas.

Thus, until such time as the uncertainty concerning the exercise of Norwegian sovereign rights on the continental shelf of Svalbard is sufficiently settled to the satisfaction of its legal advisors and the environmental issues of drilling in such sensitive areas are resolved, it is unlikely any oil company contemplating exploration on the Norwegian side of the boundary will proceed, without significant guarantees from the licensor.

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[98] Churchill and Ulfstein, op. cit., at 588.
[99] Churchill and Ulfstein, op. cit., at 593.
[100] Ibid..
[101] Byers, o. cit., at 39.
[102] Discussed in T. Pedersen, " The Svalbard's Continental Shelf Controversy: Legal Disputes and Political Rivalries", (2006), *Ocean Development and International Law*, Vol. 37, 347.
[103] Sarah Wolf, *Svalbard's Maritime Zones, their Status under International Law and Current and Future Dispute Scenarios,* (2013), SWP Working Paper FG2, 2013/Nr.02, January 2013, SWP Berlin, at 26, available at: www.swp-berlin.org/fileadmin/contents/products/arbeitspapiere/WP_Wolf_2_2013.pdf

As we saw in relation to the 1995 Denmark-Norway Agreement, Greenland has only engaged in licensing eastern blocks that lie very close to its shores well away from the boundary lines with Norway.

A8.5 Russia – Norway Barents Sea Boundary Treaty 2010[104]

A8.5.1 General Review

The 2010 Barents Sea Treaty put an end to over 40 years of negotiations to agree a maritime boundary between Russia and Norway in the Barents Sea and Arctic Ocean.[105] Article 1 of the Treaty establishes a single maritime boundary for both the EEZ and continental shelf (both the continental shelf within 200nm and the extended continental shelf). It would appear that the delimitation which split the dispute zone in half is "…the triumph of the negotiation principle at the expense of the median and sector line pretentions".[106] Orebech examines in detail this resultant "half-way solution" between two politically based claims, the sector line (Russia) and the median line (Norway), and concludes that this result of long-standing talks according to the 'negotiation principle' (manifested in Articles 74 and 83 UNCLOS) is fully consistent with international law.[107]

Byers considers the categorisation of the boundary of "limited interest", arguing that "the line seems to have resulted from a straight forward application of the principle of equity, which in the case of judicial or arbitral decisions involving maritime boundaries, has frequently resulted in a splitting of the difference of opposing claims".[108] His arguments have persuasive force.

A significantly more interesting feature of the agreement is that in Article 3 the parties create a 'special area' to maximise the combined extent of their sovereign rights. The special area is within 200nm of Norway but beyond 200nm from Russia. Under the Treaty Russia exercises sovereign rights and jurisdiction over this area derived from the delegation of Norway's jurisdiction arising from its EEZ jurisdiction that it would otherwise be entitled to exercise. As we have seen with the 1990 Bering Sea Treaty, such special areas give rise to legal uncertainties. Kovalev argued in respect

[104] An unofficial translation of the 2010 Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic can be found in: Tore Henriksen and Geir Ulfstein, "Maritime Delimitation in the Arctic: The Barents Sea Treaty", (2011), *Ocean Development and International Law*, Vol. 42, 1, Appendix 2, at 11 – 17.

[105] Surprisingly relatively little literature is available on the issues, claims and proposals made over the years. The most useful legal background analysis in English can be found in: Alex G. Oude Elferink," The Barents Sea, the Chukchi Sea and the North Pacific Region", (1994), Chapter VII, *The Law of Maritime Boundary Delimitation: A Case Study of the Russian Federation,* Martinus Nijhoff, 232 – 241. For a cross section of useful publications, see: K. Traavik and W. Ostreng, "Security and Ocean Law: Norway and the Soviet Union in the Barents Sea", (1977), *Ocean Development and International Law*, Vol. 4, 343; W. Ostreng, "Norwegen und die Sowjetunion in der Barentsee, (1980), *Europa Archiv*, Vol. 23, 711; Theutenberg, (1983), op. cit., at 25 - 27; H. O. Bergesen, A. Moe and W. Ostreng, *Soviet Oil and Security Interests in the Barents Sea*, (1987), Frances Pinter, London; P. Tresselt, "Norsk-sovjetiske forhandlinger om avgrensning av kontintalsokler og oekonomiske soner", (1988), *Internasjonal Politikk,* Vol. 2 - 3, 75; Arnfinn Jorgensen - Dahl, "The Soviet – Norwegian Maritime Disputes in the Arctic: Law and Politics,(1990), *Ocean Development and International Law*, Vol. 21, No. 4, 411; R. R. Churchill and G. Ulfstein, *Marine Management in Disputed Areas: The Case of the Barents Sea*, (1992), Routlege; V. Zilanov, "Nedelimoe More: Territorial'nomu Sporu Rossii s Norvegiei Poshei Tretii Desiatok Let", (1993), *Feratsiia*, Vol. 35,7; Oude Elferink, (2001), op.cit., at 185 – 190; Tore Henriksen and Geir Ulfstein, "Maritime Delimitation in the Arctic: The Barents Sea Treaty", (2011), *Ocean Development and International Law,* Vol. 42, 1 .

[106] Peter Orebech, "The Barents Sea 2010 Norway - Russia Border: The Triumph of the Negotiation Principle at the Expense of the Median – and Sector Line Pretentions", (2012), *The Yearbook of Polar Law*, Vol. 4, (Editors-in-Chief Gudmundur Alfredsson and Timo Koivurova, Special Editor Waliul Hasanat), Martinus Nijhoff, 505, at 505.

[107] Orebech, op. cit., at 517.

[108] Byers, op. cit., at 43. Byers cites in support of his argument Prosper Weil, *The Law of Maritime Delimitation – Reflections,* (1989), Grotius, Cambridge, at 9 -14.

of the special areas provision in the 1990 Bering Sea Treaty that the attempt to use special areas, where sovereign rights are 'assigned', is contrary to customary international law and UNCLOS.[109] This view is supported by Saguirian[110] and Legault and Hankley[111], but not by Colson who considers that there are no rules of international law compelling the parties to regulate this matter in any specific way[112]. However, Oude Elferink draws attention to criticism of the transfer of EEZ rights "… as 'a highly dangerous precedent' as a state may not confer its EEZ rights to any other state and behave as if they were their sovereign territory".[113] He further elaborates that this transfer of undisputed areas of a state's EEZ may influence the existence or not of a surplus of the total allowable catch, thus affecting third states access to the surplus under Article 62 UNCLOS. Following these arguments it may be concluded that there is some merit in Kovalev's concern.

Figure A8.5: Map of Barents Sea Single Maritime Boundary Norway – Russia[114]

With respect to the 1990 Bering Sea Treaty on this point, Byers considers that after over thirty years, since no third state has protested against these special areas, it would be open to the USA and Russia to plead acquiescence[115] in the establishment of customary international law, a view

[109] Kovalev, op. cit., at 67 - 68.
[110] A. A. Saguirian, "Russia and Some Pending Law of the Sea Issues in the North Pacific: Controversies over High Seas Fisheries Regulation and Delimitation of Marine Spaces", (1992), *Ocean Development and International Law,* Vol. 23, 1, at 10.
[111] L. H. Lagault and B. Hankey, "From Sea to Seabed: The Single Maritime Boundary in the Gulf of Maine Case", (1985), *AJIL*, Vol.79, 961, at 988.
[112] D. A. Colson, "The Legal Regime of Maritime Boundary Agreements*", (1993), International Maritime Boundaries*, (J. I. Charney and L. M. Alexander, eds.), Martinus Nijhoff, 41, at 69.
[113] Oude Elferink, (1994), op. cit., at 273.
[114] © Norwegian Petroleum Directorate/OGRI RAS, Public Domain available at: www.npd.no/Templates/OD/Article.aspx?id=3725&epslanguage=en.
[115] Byers, op. cit., at 36.

supported by Kaczynski.[116] This approach, however, would not be applicable to the recent 2010 Barents Sea Treaty, leaving a question mark over whether such assignments of EEZ rights in 'special areas' are contestable by third states.

Article 6 is also worth noting as it states that this Treaty shall not prejudice rights and obligations under other international treaties to which both Russia and Norway are parties and which are in force at the date of coming into force of the 2010 Barents Sea Treaty. The Article thereby appears to leave the issue of equal treatment arising from the 1920 Svalbard Treaty still open and unsettled.

The Treaty not only delineates the boundary of the EEZs but also areas of the continental shelf beyond 200nm. The terminal point of the delimitation line is defined as:

> "the point of intersection of a geodetic line drawn through points 7 and 8 [defined in Article 1] and a geodetic line connecting the eastern most point of the outer limit of the continental shelf of Norway and the westernmost point of the outer limit of the continental shelf of the Russian Federation, as established in accordance with Article 76 and Annex II of the Convention".

The Treaty thus establishes a clear single maritime boundary between Russia and Norway in the Barents and Arctic Seas.

However, from the above analysis it can be concluded that, although the Agreement brings a great deal of certainty to the delimitation of areas of sovereign rights in most of the Barents and Arctic Seas lying between Norway and Russia, oil companies would in the short term at least still be well advised to exercise caution regarding licensing blocks in or in close proximity to the special area.

Reaching agreement on the treaty entailed a great deal of compromise and, from the Russian perspective, is seen by many analysts of this region and the delimitation issue, as driven, not by energy development considerations, but, as part of a broader Russian strategy to secure resource rights and stability in the Arctic Ocean.[117] Certainly Moe argues that for Russia "…it is important to support the United Nations Convention on the Law of the Sea" and to expand its successful cooperation in the Barents Sea region with Norway.[118] Moreover, President Medvedev commented shortly after signing the treaty: "…Uncertainty over territorial borders and maritime space, with any doubt, had casted a shadow over big energy projects in the region".[119] The Treaty is also considered to have wider implications in the Arctic region: for example, just days after its agreement the then Canadian Foreign Minister Lawrence Cannon publicly urged the USA to reach a compromise in the dispute in the Beaufort Sea.[120] Thus, initially the 2010 Barents Sea Treaty was seen not only to

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[116] Kaczynski, op. cit., at 5.

[117] Arild Moe, "Russian and Norwegian petroleum strategies in the Barents Sea", *Arctic Review on Law and Politics*, Vol. 1, No. 2, 225.
For a review of the geopolitics of the Barents Delimitation dispute see: Ole Gunnar Austvik, "The Geopolitics of Barents Sea Oil and Gas: the Mouse and the Bear", (2007), International Association for Energy Economics, Newsletter, 3Q, 19

[118] Thomas Nilsen, "Oil hunger not reason for Barents treaty", (12 August 2013), *Barents Observer*, available: www.barentsobserver.com/en/energy/2013/08/oil-hunger-not reason-barents- treaty-12-08.

[119] As quoted in: Arctic Forum Foundation, "Delimitation agreement: a new era in the Barents Sea and the Arctic?", (2012), *Arctic Forum*, available at:
http://eu-arctic-forum.org/allgemein/delimitation-agreement-a-new-era-in-the-barents-sea-and-the-arctic.

[120] As reported in: Randy Boswell, Can West News Service, "Canada ready to settle Beaufort Sea Dispute with US: Cannon", (14 May 2010), *Who Owns the Arctic?,* (M. Byers, ed.), available at:
http://byers.typepad.com/arctic/2010/05/canada-ready-to-settle-beaufort-sea-dispute-with-us-cannon.html.

provide an example of "good practice" in the resolution of bilateral boundary disputes[121], but to demonstrate how international law of the sea, diplomatic courtesy, mutual interest, sustainable development and cooperation can combine to establish a workable regulatory regime in the Arctic Ocean.[122] As Byers comments:

> "if little Norway (population 5 million) can negotiate a win-win boundary agreement with powerful Russia (population 140 million) there is no reason for any other Arctic boundary dispute to remain unresolved"[123]

However, it has been almost four years now and still there is no sign that the Beaufort Sea dispute will be resolved soon, that the Russian Duma will ratify the 1990 Bering Sea Treaty, or that the other spin off effects that were hoped for will be realised. It would seem therefore that the initial response as to the wider possible influence of this Treaty was overly optimistic.

A8.5.2 Aspects of the 2010 Barents Sea Treaty Relevant to Petroleum Activities

Article 5 and Annex II of the 2010 Barents Sea Treaty address the issue of transboundary hydrocarbon deposits. Article 5, although resembling similar such articles in the 1995 Denmark - Norway Agreement and the 2006 Greenland - Svalbard Agreement, is much more developed and mandatory. Article 5(3) states that the exploitation of a straddling hydrocarbon deposit "may only begin as provided for in the Unitisation Agreement".

Article 5(2) is specific about the form the agreement between the parties should take:

> "If the hydrocarbon deposit extends to the continental shelf of each of the Parties and the deposit on the continental shelf of one Party can be exploited wholly or in part from the continental shelf of the other Party, or the exploitation of the hydrocarbon deposit on the continental shelf of one Party would affect the possibility of exploitation of the hydrocarbon deposit on the continental shelf of the other Party, *agreement on the exploitation of the hydrocarbon deposit as a unit,* including its apportionment between the Parties, shall be reached, at the request of one of the Parties (hereinafter "the Unitisation Agreement") *in accordance with Annex II."* (emphasis added).

Article 1 of Annex II sets a framework of contents and rights and obligations of the parties for the unitisation agreement. Unitisation agreements are a well-established form of intergovernmental agreement in the oil industry and the required provisions set out in the Annex are relatively standard.[124] Articles 2 and 3 of Annex II set out provisions relating to the case when the parties fail to agree the Unitisation Agreement. Under Article 3 if the disagreement is not settled within 6 months following the date of request to commence negotiations by a Party, then either Party can submit the

[121] Sergei Lavrov and Jonas Gahr Store, "Canada Take Note: Here's how to Resolve Maritime Disputes," (2010), *Globe and Mail,* (21 September 2010), available at:
www.globeandmail.com/commentary/canada-take-note-heres-how-to-resolve--maritime-disputes/article4326372.
[122] See footnote 1096, *supra*.
[123] Byers, op. cit., at 46. *Caveat* - he was writing prior to the deterioration of West-Russian relations occasioned by the Ukrainian crisis of 2014.
[124] See articles in footnotes 960 and 961, *supra*. An example of a unitisation agreement is the Agreement between the Government of Australia and the Government of the Democratic Republic of Timor – Leste relating to the Unitisation of the Sunrise and Troubadour Fields, which is available at;
www.aistlii.edu.au/au/other/dfat/treaties/2007/11.html.

dispute to an *ad hoc* arbitral tribunal, whose decisions shall be binding on both. The exception to Article 3 occurs where the dispute arises in relation to the apportionment of the deposit, where under Article 4 an independent mutually acceptable expert shall be appointed and whose decision "shall be binding on the Parties".

Crucially important is that Article 1(6) obliges each Party to require the relevant legal persons holding the rights to explore for and exploit hydrocarbons (i.e. the respective licensees) on either side of the delimitation line to enter into a Joint Operating Agreement ("JOA") to regulate the exploitation of the transboundary hydrocarbon deposit as a unit in accordance with the Unitisation Agreement, [Article 1(6)(a)]. The licensees are then required to submit the JOA to both Parties for their approval and the Parties are to issue such approval with no undue delay and not to unduly withhold it [Article 1(6)(b)]. It should be noted that the term Joint Operating Agreement is capitalised in Annex II but not defined. This is probably because JOA is a well understood term of art in the oil industry – in fact it is one of the most commonly used forms of contract in oil and gas law.[125] There are several versions of a model/standard JOA currently available for use: the 2006 OGUK Standard JOA[126], the 2011 AMPLA Model Petroleum JOA[127], and the 2012 AIPN Model JOA[128]. In fact, Norway's Ministry of Energy and Petroleum provides a standard JOA as part of the documentation issued in licensing rounds. [129]

It is of interest to examine what effect in practice the Treaty has had in almost 4 years. To date neither party to the Treaty has licenced a block with a field that is near or straddling[130] the boundary line, and it would appear that both sides are proceeding cautiously.

It is not surprising that, for a straddling reservoir on the border of two States with two separate and quite different legal and taxation regimes (in particular petroleum legislation), the Treaty parties chose the Unitisation Agreement/JOA structure. Article 15(4) of the 1993 Constitution of the Russian Federation[131] states that all international law is part of the Russian domestic legal system. It then establishes that treaty provisions have a higher normative status than contrary domestic laws. The Russian courts have developed an extensive jurisprudence on the implementation of these provisions, making the provisions in Article 15(4) effective in Russian legal practice.[132] Thus, Russian

[125] See, for example, Michael Taylor and Sally Tyne, *Taylor and Windsor on Joint Operating Agreements*, (1992), Longman; Martyn R. David, *Upstream Oil and Gas Agreements*, (1996), Sweet and Maxwell; and Peter Roberts, *Joint Operating Agreements: A Practical Guide*, (2010), Global Law and Business, Wildy.

[126] Standard Joint Operating Agreement (2007), *Oil and Gas UK*, which was revised in 2008, accompanied by Guidance Notes in 2011, and had an amendment to Clause 22 in 2013, and is available (for purchase) at: www,oilandgasuk.co.uk.

[127] AMPLA, Model Petroleum Agreement Approved Version 1, (2011), *AMPLA,* available at: www.ampla.org.au/documents/item/1621.
A useful analysis of its provisions can be found in: J. G. Grace, "The AMPLA Model Petroleum Joint Operating Agreement", (2011), *AMPLA Yearbook*, 366.

[128] Association of International Petroleum Negotiators, *Model Joint Operating Agreement, (2012).* AIPN. The model JOA and Guidance Notes are available (for purchase) at: www.aipn.org/mcvisitors,aspx.

[129] See: www.regjeringen.no/upload/OED/Vedlegs/Konsejonsverk/K-verk/vedlegs-1-2-eng.pdf.

[130] Maps by Russian authorities have shown that there are prospects of considerable size within the former disputed area - for example, the gas field North Kildinskaya appears to straddle into the former disputed area: Halfdan Carstens and Mona Holte, "More Giants to be Found", (2005), *GEO ExPro,* Vol. 2, No. 1, available at: www.geo365.no/sfiles/3/51/6/file/The_Barents_Sea.pdf.

[131] Konstitutsia Rossiiskoy Federatsii 1993, *Rossiiskaya Gazeta*, 25 December 1993, Col. 1, 3.

[132] Gennady M. Danilenko, "Implementation of International Law in Russia and other CIS States", (1998), NATO, pdf article available at:

domestic laws on offshore petroleum development (discussed above) that would preclude such a joint venture structuring in the Russian offshore are not valid where contrary to the provisions of the 2010 Barents Sea Treaty.

Despite the clearly defined sovereign maritime areas and the more elaborated (in line with good oil field practice) legal structure for cross border deposits, it would seem that the oil companies are reluctant to drill for petroleum anywhere near the boundary line, or in the special areas.[133] Some western oil companies have expressed scepticism about cross-border developments with Russian counterparts, due to Russian lack of experience in this area.[134] Nonetheless, as perhaps a gentle stepwise progression, fifteen oil majors appear willing, as requested to do by the Norwegian Ministry of Energy and Petroleum,[135] to share the cost of a two-year joint 3D seismic acquisition in 2014 in a southeastern Barents Sea area (but away from the boundary line), despite being warned that some of the fields may straddle the boundary line.[136] The Norwegian Ministry of Energy and Petroleum has explained it wants to have available extensive exploratory studies as a pre-cursor to licensing activities in the southeastern Barents Sea.[137]

On the Russian side of the border, the possibility of deposits "of elephant proportions" in the boundary area[138] has tempted some majors: for example Eni is engaging with Rosneft[139] in joint seismic studies of the Hjalmar Johansen/Fedinsky High area[140], as part of the 2012 Strategic Cooperation Agreement between the two companies.[141]

Thus, it would seem that both Norwegian and Russian licensing authorities are proceeding in their production licensing to exhaust prospective areas in the Barents Sea that are located well away from the border and, in Norway's case as discussed above, well away from the waters off Svalbard and Jan Mayen or the ice edge.[142] Meanwhile, they are gently exploring future possibilities in border areas through medium-term seismic and other exploratory studies, which will take 4+ years, during which time *inter alia* Rosneft will have gained increasing commercial expertise and joint venture experience.

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www.nato.int/acad/fellow/96-98/danilen.pdf.

[133] Atle Staalesen, "Drilling along Russia's border might be too risky" (06 Nov. 2013), *Barents Observer*, available at: http://barentsobserver.com/en/energy/2013/11/drilling-along-reussias-border-might-be-too-risky-06-11.

[134] The policy requirement is 50km away from the ice edge.

[135] The Norway Post, "Seismic Cooperation in the Barents Sea", (12 Dec. 2013), *Norway Post*, available at: www.norwaypost.no/index.phd/news/latest-news/29313;

[136] First Break, "Norway opens up Eastern Barents frontier in latest licensing round", (Oct. 2013), *First Break*, Vol. 31, No.10, available at:
http://fb.eage.org/publication/content?id=71510.

[137] IAGC, "Geophysical Industry Voices Concern About 2014 Barents Sea 'Group Shoot'", (16 Dec. 2013), *The Voice of the Geophysical Industry*, available at:
www.iage.org/articles/geophysical-industry-voices-oncern-about-2014-barents-sea-group-shoot/.

[138] Alte Staalesen, "What are the secrets of the Fedynsky High?", (09 July 2013), *Barents Observer*, available at: http://barentsobserver.com/en/energy/2013/07/what-are-secrets-fedynsky-high-09-07.

[139] Eni Press Release, "Eni and Rosneft start seismic operations in the Russian Offshore", (08 July 2013), *Eni*, available at: www.eni.com/en_IT/attachments/media/press-release/2013/07/PR-Eni-Rosneft.pdf.

[140] Rosneft has estimated the field as having a potential of 18.7 boe, while the NPD (post two 2D seismic studies) estimates 1.9 boe of exploitable resources.

[141] Eni Press Release, "Eni sign Strategic Cooperation Agreement with Rosneft", (25 April 2012), *ENI,* available at: www.eni.com/en_IT/attachments/media/press-release/2012/04/PR_eni_rosneft_ENG.pdf.

[142] Staalesen, op. cit., footnote. 1111, *supra*,

One can postulate, in conclusion, that, in the next ten years, in the event a major straddling field is identified, it is likely that Statoil (possibly with major oil company partners thereby spreading risk) would be prepared to enter into a joint venture with Rosneft (possibly also with major oil company partners) under the *aegis* of the Unitisation Agreement/JOA regime of the 2010 Barents Sea Treaty – probably providing that it is the operator, production is conducted in the Norwegian sector and the split is positive in its favour.

A8.6.1 Canada – Denmark/Greenland Lincoln Sea Tentative Agreement 2013[143]

A8.6.1 General Review

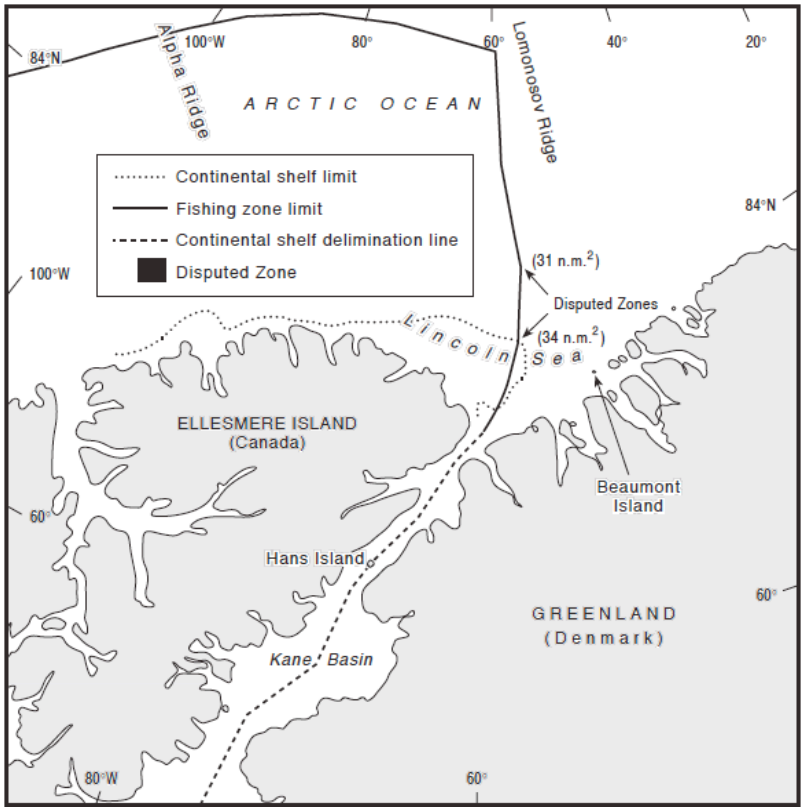

Figure A8.10: Map of the Lincoln Sea and the Disputed Areas[144]

It will be recalled from the discussion of the 1973 Canada-Denmark Treaty above that the maritime boundary between Canada and Greenland stopped at $82^{0}13'$N (point No. 127)) where the Nares Strait opens into the Lincoln Sea. As a result nearly 200nm of continental shelf EEZ boundary to the north was left unresolved: the 1972 Treaty stated that "for the time being the Parties have not deemed it necessary to draw the dividing line further north than point No. 127". From the late 1970s the parties had agreed that the boundary should be based on the equidistance principle, but there were technical issues as to how the line should be drawn, primarily relating to the use by Denmark

[143] David Gray, *Canada's Unresolved Maritime Disputes*, (1997), IBRU Boundary and Security Bulletin, No. 5, No.3, 61; Byers, (2013),op cit., at 46 – 54;. Oude Elferink (2001), at 194 - 195; Calderbank *et al*, op. cit., (2006), op. cit., at 162 -163; Jacques Hartmann, "Canada and Denmark Reach Agreement on the Lincoln Sea Boundary", (2013), *European Journal of International Law Talk*, 10 Jan. 2013, available at:
www.ejiltalk.org/canada-and -denmark-reach-agreement-on-the-lincoln-sea-boundary/.

[144] ©David Gray, op.cit., Permission for use granted by David Gray in an email dated 18 March 2014.

of Beaumont Island, an isolated uninhabited island 4 miles square, which was used as a basepoint in the 1980 straight baselines of Greenland. Canada objected formally to the 1980 Greenland baselines on 3 September 1980 and argued that they were unacceptable for the following reasons: (a) Beaumont Island was not part of a fringe of islands; (b) the 1980 baselines were too long and do not follow the trend of the coast; (c) they do not cross the mouths of intervening fjords but are farther ashore; and (d) Beaumont Island is a rock not an island under Article 1 UNCLOS.[145] The straight baselines drawn between Beaumont Island and other points on the coast result in extending westward the equidistance line in two tear drop areas measuring approximately 31 and 34nm^2. Oude Elferink and Byers both argue that these differences relating to Danish straight baselines are a minor issue compared to the Danish agreement to use an equidistance line, unadjusted to take into account features favourable to Denmark (the lengths and concavity of the relevant coasts).[146]

However, although the parties met formally from time to time to try to resolve this low profile dispute, the boundary remained unsettled for forty years.[147] Increasingly joint hydrographic studies in the Nares and Davis Straits have been conducted successfully between Canada and Greenland, increasing the levels of cooperation in the region.[148]. In 2004 Denmark issued a new modified straight baseline regime for Greenland.[149] The 40.9nm baseline east of Beaumont Island was replaced by a series of shorter baselines, including one connecting it to John Murray Island, the next island in the chain.[150] These Danish changes reduced the size of the northernmost area to virtually nothing.[151] It is notable that Canada apparently has made no formal protest of the 2004 Greenland baselines.[152]

On the 28 November 2012 the Foreign Ministers of Canada and Denmark announced that negotiators had reached "… a tentative agreement on where to establish the maritime boundary in the Lincoln Sea."[153] It is understood that the sole outstanding issue is a joint management regime for any straddling petroleum deposits. As explained by Byers this will entail the involvement in further negotiations on the matter of the Greenlandic Self-Rule Government, which, has been delegated exclusive control over natural resources of Greenland, including those located on the continental shelf.[154] Commentators expect a Lincoln Sea boundary delimitation treaty to be signed sometime in 2014.[155] It should be noted that such agreement will relate to continental shelf up to 200nm from

[145] Gray, op. cit., at 9
[146] Oude Elferink, op. cit., at 194; Byers, op. cit., at 52.
[147] Gray, op.cit., at 65 gives an example of a meeting in March 1982.
[148] Hartmann, op .cit..
[149] Royal Decree on Amendment of Royal Decree on Delimitation of the Territorial Waters of Greenland, 15 October 2004, (2005), *Law of the Sea Bulletin*, No. 56, 126, available at:
www.un.org/Depts/los/doalos/_publications/LOSBulletins/bulletinpdf/bulletin56e.pdf.
[150] The changes are described in detail in Byers, op. cit., at 47.
[151] Byers, op. cit., at 48.
[152] Byers, op. cit., at 54.
[153] Canadian Department of Foreign Affairs, New Release, "Canada and the Kingdom of Denmark Reach Tentative Agreement on Lincoln Sea Boundary", (2012), *Department of Foreign Affairs (Canada),* available at:
www. international.gc.ca/media/aff/news-communiques/2012/11/28a.aspx?lang=eng.
[154] Byers, op. cit., at 54.
[155] Kim MacKrael, "Canada, Denmark closer to settling border dispute", (29 November 2012), *Globe and Mail,* available at:
www.theglobeandmail.com/news/national/canda-denmark-closer-to-settling-border-dispute/article5831571/?page=all.

the territorial sea baselines. It is expected that claims by Canada and Denmark to extended continental shelves will require a northern extension of their maritime boundary.[156]

A8.6.2 Aspects of the future agreement relevant to petroleum activities.

As Byers has commented: since "…joint maritime regimes have become a standard part of maritime boundary treaties...models of best practice are easy to find".[157] The choice of joint management structure for straddling deposits would appear somewhat academic.

As the Lincoln Sea has not been the subject of almost any significant hydrocarbon exploration, geophysicists have speculated about its prospectivity but do not appear overly optimistic for the existence of many large deposits.[158] Thus, given the extreme Arctic conditions of this area[159], it is not likely that petroleum licensing there, by either state, will be a priority.

Therefore, the future agreement, although adding to the increasingly determined and stable division of maritime areas in the Arctic Ocean by the Arctic Five, will have little practical importance for the oil industry in the medium to long term.

[156] Canada submitted a partial claim to the UN CLCS in December 2013, however it did not include Arctic areas, for which it will make a later submission. Denmark made its CLCS submission for the Greenlandic ECS in December 2014 (See Chapter 6).

[157] Byers, op. cit., at 54.

[158] Kai Sorensen and Don Gautier, Janet Pitman, H. Ruth Jackson and Trine Dahl-Jensen, "Chapter 44: Geology and Petroleum Potential of the Lincoln Basin, Offshore North Greenland", (2011), *Memoirs 2011*, Geological Society, London, Vol. 35, 673. They 'guestimate' that in the Lincoln Sea Basin there are "risked resources" on the order of 1 x 10^9 barrels of oil, and an equivalent amount of natural gas [converted ~ 0.1637 x 10^9 cm^3]. To get this in perspective: the Schtokman field is estimated to contain 3.8 x 10^9 m^3 of natural gas and Prirazlomnoye Field is estimated at 0.576 x 10^9 barrels of oil.

[159] Even with the Arctic melt, it is currently covered by the thickest sea ice in the Arctic Ocean (up to 15 m thick) year-round, making oceanographic surveying virtually impossible: see, C. Hendricks Haas and M. Doble, "Comparison of the sea ice thickness distribution in the Lincoln Sea and adjacent Arctic Ocean in 2004 and 2005", (2006), *Annals of Glaciology*, Vol. 44, 247, available at:
www.epic.awi.de/`14873/1/Haa2006c.pdf.

Annex 9: Summary History of Norwegian Indigenous Peoples and their rights

There are currently over 75,000 people living in Finnmark, but mostly in the south western coastal area along the Norwegian Sea, and the south eastern coastal area near Russia[1], leaving the northern Arctic Ocean/Barents Sea coast very sparsely inhabited. There are three key ethnic groups in Finnmark: the Sami, the Norwegians, and the Kven.

It has been suggested by some experts that Norwegians may have had settlements along the coast for as long as the Sami.[2] The coastal areas of Finnmark had certainly been colonized by Norwegians by the 10th Century, and were actively settled from the 15th Century. This ethnic group forms the majority of inhabitants of Finnmark today, although exact division of population along ethnic lines is difficult due to the high degree of intermarriage between the three main peoples of Finnmark.[3]

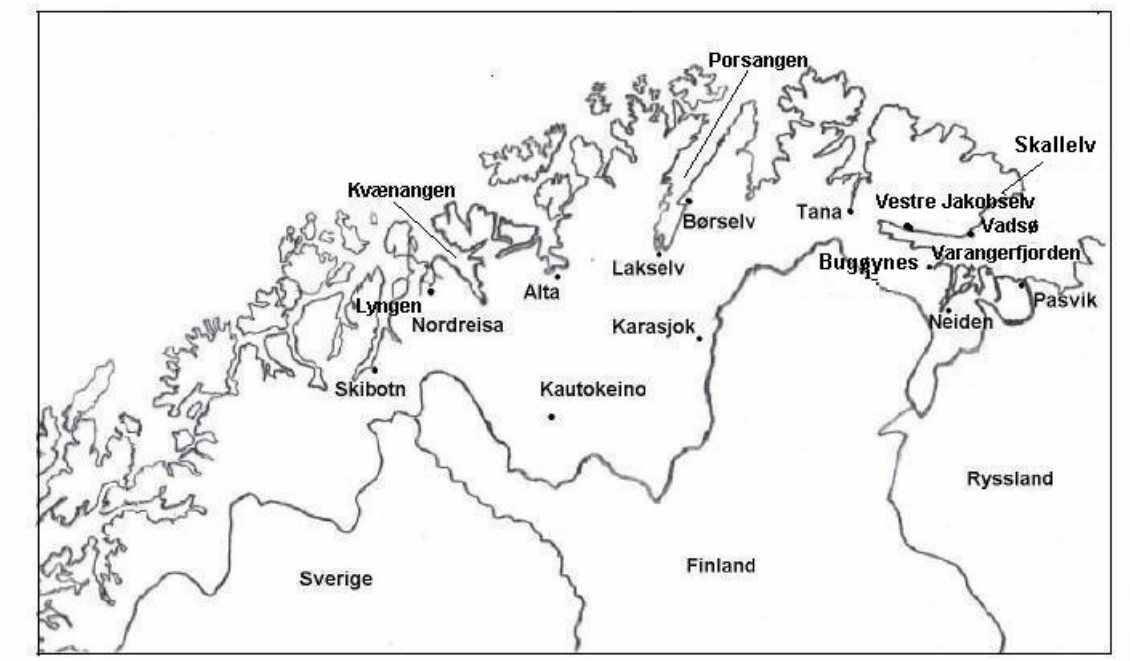

Figure A9.1 Map of main conglomerations of Kven speaking people.[4]

The Kven people are descended from Finnish immigrants (farmers and inshore fishermen) of the 18th and 19th Centuries, and are legally recognised as an 'ethnic minority' by Norway.[5] It has been

[1] As of 2013. Over 40% of Finnmark lives in two south western communes of Vest Finnmark (Hammerfest) (10,000+) and Alta (20,000+). See: *Statistics Norway (*Statistisk sentralbyra) at: www.ssb.no/en/folkendrhist.

[2] Asbjorn Eide, "Indigenous Self – Government in the Arctic, and their Right to Land and Natural Resources, in *The Yearbook of Polar Law*, (2009), (Gudmundur Alfredsson, Timo Koivurova and David Leary, eds.), Martinus Nijhoff, Vol. 1, 245, at 274.

[3] Gro Ween and Marianne Lien, "Decolonisation in the Arctic? Nature Practices and Land Rights in the Norwegian High North", (2012), *Journal of Rural and Community*, Vol. 7, 93, at 97; M. Lien, "Shifting Boundaries of a Coastal Community: Tracing Changes on the Margin", (2003), *Globalisation: Studies in Anthropology*, (T. H. Eriksen, ed.), Pluto Press, London, at 93 - 122.

[4] ©Norwegian Government. Public Domain. Available at: http://www.regjeringen.no/upload/kilde/kkd/rap/2003/0001/ddd/pdfv/193348-kvenrapport_hyltenstam_slutversion_oktober.pdf.

estimated there are about 10-15,000 ethnic Kvens in Norway today, although it is thought that only 2,000 - 8,000 of them speak the Kven language.[6] Due to an active government assimilation policy ("fornorskningspolityikka" – "norwegianisation") in the 19th and early 20th Centuries, the Kven have largely become integrated into mainstream Norwegian society, with significant intermarriage with local Sami and Norwegians.[7] Although the first wave (around 1720) of Kven people settled in south western Finnmark, the second mid - 19th Century wave of Kven immigrants settled in eastern Finnmark and it is there that the main body of ethnic Kvens still survive speaking the Kven language.[8] Although as an ethnic minority in Norway they have certain special rights (regarding the preservation of their language and culture), they do not attract any land claim rights as would an indigenous people, and therefore have no special claims on Norwegian sub-surface petroleum.

It has been estimated that the Sami[9] have been in Finnmark for around 2000 years.[10] The Sami are a Fino- Ugrian people[11] and in Finnmark divide into two key groups: the mountain Sami of the interior (nomadic reindeer herders) and the Sea Sami of the coastal area (fishermen establishing permanent settlements).[12] The two groups have distinct linguistic and cultural differences, although belonging to the same ethnic grouping.[13] The Sea Sami inhabit permanent settlements along the coastal areas of Finnmark, but have significantly assimilated into general Norwegian society and intermarried with

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[5] As a result of Norway becoming a party to the Council of Europe's 1995 Framework Convention for the Protection of National Minorities on 7 March 1999. The Convention is available at: http//:conventions.coe.int/Treaty/en/Treaties/Html/157.htm.
They also achieved legal protection of their language and culture in 2005, within the framework of the European Charter for Regional or Minority Languages,

[6] UNHRC, *World Directory of Minorities and Indigenous Peoples – Overview*, (2007), Refworld, available at: www.refworld.org/docid/4954cdff23.html.

[7] On various aspects of such intermarriage see: Hilde L. Jastad, "Viewing Ethnicity from the Perspective of Individuals and Households: Finnmark During the Late Nineteenth Century", (2013), *Indigenous Peoples and Demography: the Complex Relation between Identity and Statistics*, (Per Axelsson and Peter Skold, eds.), Berghahn Books, Chapter 8, at 149 - 162; Bjorn Evjen, "Finn in Flux: 'Finn' as a Category in Norwegian Populations Censuses of the Nineteenth and Twentieth Centuries", (2013), *Indigenous Peoples and Demography: the Complex Relation between Identity and Statistics*, (Per Axelsson and Peter Skold, eds.), Berghahn Books, Chapter 9, at 163 - 172.

[8] Although there are pockets round Alta, and elsewhere, most are in the Nord- and Sor- Varanger, Tana, Gamvik and Nesseby communes in Eastern Finnmark. See Kenneth Hyltenstam, *Kvenskans status*, (2003), University of Stockholm, a report prepared for Kommunal- og regionaldepartementet och Kultur- og kirkedepartementet i Norge, October 2003, available at: http://www.regjeringen.no/upload/kilde/kkd/rap/2003/0001/ddd/pdfv/193348-kvenrapport_hyltenstam_slutversion_oktober.pdf.

[9] A useful short description and history of the Sami people can be found in: Gail Osherenko and Oran Young, "On Sami", (1989), *The Age of the Arctic*, Cambridge University Press, at 86 - 90.

[10] Eide, op. cit., at 274. Useful histories of the Sami in Norway can be found in: G. Gjessing, *Norge i sameland,* (1973, Gyldendal; and O. M. Haeta, *Samene. Nordkalottens urfolk,* (2002), Hoyskoleforlaget, Kristiansand.

[11] The first written record of them ("Fenni") dates back to 98 A.D.: Publius Cornelius Tacitus, *De Origine et situ germanorum*, at XLVI, translation available at: http://www.crtpesaro.it/Materiali/Latino/De%20Origine%20Et%20Situ%20Germanorum.php

[12] Eide, op. cit., at 273; Elna Hellander, *The Sami of Norway*, (2013), Reiservett, at: www.reiservett.no.norway/facts/culture_science/sami.html#2.

[13] Moreover, as Hansen and Midtgard state: "It is essential to understand that, even though they are said to be one people, the Sami do not represent one homogenous opinion…" – see: Ove Heitmann Hansen and Mette Ravn Midtgard, "Going North, The new petroleum province of Norway", (2008), *Arctic Oil and Gas, Sustainability at Risk?*, (Aslaug Mikkelsen and Oluf Langhelle, eds.), Routledge, Chapter 9, 200, at 223.

local Norwegians.[14] Owing to such factors identifying the Sami population has been difficult, but generally there is thought to be around 30,000 - 40,000 Sami in Norway[15], and some 20,000 – 25,000 Sami in Finnmark.[16] Difficulties have arisen on agreeing the objective criteria to be used to define who is a Sami[17], and there has been a reluctance to identify as Sami by some who may have had Sami parents or grandparents (a consequent effect of past discrimination and the 19th Century Norwegian assimilation policy).[18] The Sami are estimated to constitute about twenty – five (to thirty) percent of the population of Finnmark, with their towns and settlements scattered between Norwegian and Kven conglomerations.[19] There are several coastal municipalities in Finnmark where Sami is an official language, including Gamvik, Nesseby, Porsanger, Tana, Tysfjord, Langenen, and Smasa, but there are also significant numbers of Norwegian and Kven people living in many of these municipalities.[20]

The question has been posed whether or not the Sami are an Arctic indigenous people.[21] Although most of the regions inhabited by Sami are sub-Arctic, there are nonetheless Sami who live north of the Arctic Circle; although it must also be said that there has been considerable 'blending' of the Sami with ethnic Norwegians, especially the Sea Sami. However, despite these factors, the Sami have now been recognised internationally as an indigenous Arctic people,[22] and by Norway itself as an indigenous people.[23] The relevant key legislation relating to the rights of the Sami, land rights, self - government and self - determination are:

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[14] Reida (Mindt Eiermann), *The Coastal Sami of Norway*, University of Texas at Austin online, available at: www.utexas.edu/courses/sami/dieda/hist/nor-sami.htm.

[15] Boreale, *An Introduction to the Sami People,* (2001), available at: http://boreale.konto.itv.se/samieng.htm.

[16] Oyvind Ravna, "Legal Protection of Coastal Sami Culture and Livelihood in Norway", (21012), *The Yearbook of Polar Law,* Vol. 4, at 261 -278.

[17] Act No. 56, 12 June 1987, defines as a Sami a person who either:

- has Sami as a first language;
- considers himself a Sami and lives in entire accordance with Sami rules and who is recognised by the representative Sami body as a Sami ; or.
  has a parent who satisfies the two above criteria.

[18] Eide, op. cit., at 273 -280.

[19] There is only a very small percentage of Sami who earn their primary income from traditional sami industry (reindeer husbandry or inshore fishing) – see: Lars –Nila Lasto and Gail Osherenko, "The Sami People and the Northern Sea route: Juridical, Social and Cultural Concerns", (1999), *INSROP Working Paper No. 154*, IV.4.1.

[20] For example Portsanger has three official languages (Norwegian, Northern Sami and Kven), and Tana has a mixed population of the three peoples, while Tysfjord is primarily Lule Sami and Gamvik is primarily Northern Sami. – see Jon Todal, "The impact of Norwegian language policy at the micro – level: Saami language maintenance and school-based revitalisation", (2014), in *Transcending Monolingualism: Linguistic Revitalisation in Education,* Leena Huss, Antoinette Camilleri Grima, and Kendakk A. King, eds.), Routledge, 117, at 119 - 120.

[21] Eide, op. cit., at 273.

[22] The Sami Council is an Indigenous Peoples Organisation that participates in the work of the Arctic Council through of the Arctic Council Indigenous Peoples Secretariat.

[23] Norway became a party to the ICCPR and in 1980 a Commission on Sami issues, relying heavily on Article 27 ICCPR concluded the Sami must be able to preserve the land which is a basis of their culture. [NOU 1984:18: *Om sames rettstilling* (On the Legal situation of the Sami), Oslo, available at: regjeringen.no/nb/dep/kmd/tema/sameplitikk/midtspalte/nou-198418-om-samenes] and in 1988 it was made constitutional requirement. – see: Eide, op. cit, at 277.

- The Sami Act 1987[24]

  This act established the Sami Parliament, which is primarily an advisory body, and has little decision making power. The scope of authority of the Sami Parliament is much less than the self – government of Greenland and the governments of the Yukon, Northwest Territories and Nunavut. Its prime activities relate to strengthening Sami cultural institutions, language, education and small businesses.[25]

- The amendment of the Norwegian Constitution 1814[26]

  In 2005 the Constitution was amended to include a new Article 100a, which states:

  "It is the responsibility of authorities of the State to create conditions enabling the Sami people to preserve and develop its language, culture and way of life."

- The Finnmark Act 2005[27]

  The Act's key provision transfers title in all Norwegian state land located in Finnmark to the Finnmark Estate (Finnmarkseiendommen), which was a purpose-created entity to administer and manage such land.[28] The Finnmark Estate is governed by a board: three members appointed by the Sami Parliament and three by the Finnmark County Council.[29] The Act provides that the Sami people, through prolonged use of land and water, have acquired rights to land in Finnmark.[30] A commission has been established to survey these rights.[31] All Finnmark residents are given the rights to exploit natural resources *on* the land.[32] Importantly the Finnmark Act does not include subsurface or offshore rights, but rather usufructuary rights to engage in traditional use of the land/resources.[33] It is debatable

[24] Act No.56 of 12 June 1987,Concerning the Samething and other Sami legal Matters, ("The Sami Act"), available at:
www.regjeringen.no/en/doc/laws/acts/the-sami-act.html?id=449701.
[25] Eide, op. cit. at 279 - 280.
[26] The Norwegian Constitution, 17 May 1814, as subsequently amended, available at:
www.stortinget.no/en/In-English/About-the-Storting/The-Constitution/tion/TheConstitution/.
[27] Act No. 85 of 17 June 2005, relating to Legal Relations and Management of Land and Natural Resources in the County of Finnmark, ("The Finnmark Act"), available at:
www. wipo.int/wipolex/en/details.jsp?id=11129. See also Ministry of Justice and the police and the Ministry of Local Government and Regional Development, The Finnmark Act – A Guide, (2008), available at:
www.gaidu.org/govat/doc/brochure_finnmark_act.pdf.
[28] Sections 6 – 20, ibid..
[29] Section 7, ibid..
[30] Section 1, ibid..
[31] Section 29, ibid..
[32] On the equal treatment for all Finnmark residents see: Gro B. Ween and Marianne Lien, "Decolonisation in the Arctic? Nature Practices and Land Rights in Norwegian High North", (2012), *Journal of Rural and Community Development*, 93.
[33] Jeremie Gilbert*, Indigenous Peoples' Land Rights Under International Law, From Victims to Actors*, (2012), Transnational Publishers, "i. The Saami Parliaments: Usufructuary Rights", at 236 – 237; and Eide, op. cit., at 278.

whether the Act adequately fulfills Norwegian obligations under Articles 14 and 15 of the ILO Convention No. 169[34], but it is seen by the government as doing so substantially.[35]

Independence does not appear to be on the Sami agenda[36], perhaps due to the high level of integration of Sami into the mainstream Norwegian society and the fact that Sami settlements are scattered and interspersed between the Norwegian and Kven of Finnmark, making a geographical region as a Saami homeland virtually impossible. Thus, it is unlikely that further evolution of self-government towards independence will occur.[37]

Under the Finnmark Act, in recognition that the Sami through traditional use of land and waters areas[38], *all* the residents of Finnmark have achieved a form of collective ownership and the rights to use lands and waters of Finnmark county.[39] The exact extent of the rights in respect to "land and water" under the Act is gradually being defined. [40]

The Finnmark Act has faced massive criticism and various NGO's, Sami representatives and academics have argued that the Sami's rights should include resources in and below Sami land areas and in the sea (at least internal waters and the territorial sea), to varying extents.[41] The Sami Parliament considers first and foremost that regulations should ensure Sami consultation and participation in oil and gas developments in the region (including its offshore) and that the Saami should receive a share of the financial benefits from such activities.[42] To date it appears that the Norwegian government has not been willing to consider such extension of rights.[43] However, Sami pressure regarding a co-management right to the utilisation of natural resources and a share of

[34] Oyvind Ravna, "The Process of Identifying Land Rights in parts of Northern Norway: Does the Finnmark Act Prescribe an Adequate Procedure within the National Law", (2011), *The Year Book of Polar Law*, Gudmundur Alfredsson and Timo Koivurova, eds.), Martinus Nijhoff, Vol.3, 422, at 452.

[35] Which Include: (a) the requirement of recognition by the State of indigenous peoples' rights of ownership and possession over traditional lands and effective protection of these rights (Art. 14); and (b) the requirement to specifically safeguard their rights concerning natural resources pertaining to their lands and where the State retains ownership of subsurface minerals/resources (as in Norway) the government shall consult these peoples and ensure protection of their interests in undertaking the exploration for or exploitation of these resources and wherever possible ensure they participate in the benefits of such activities (Art.15). See Ravna, op. cit., at 451 - 453.

[36] Eide, op. cit., at 281. The Sami appear to aiming at most for 'internal self-determination", as set out in Article 3, of the Draft Nordic Sami Convention. An English text is available at:
www.regjeringen.no/upload/BLD?Nordic%20Sami%20Convention.pdf;
This issue is discussed in the Commentary to Article 3 and by Koivurova – see "The Draft for a Nordic Saami Convention", (2006/2007), *European Yearbook of Minority Issues*, Vol. 6, 103, at 115 – 116.

[37] John B. Henriksen, "Sami Self – Determination, Land and Traditional Livelihoods Self – Determination and the Media", (2011), *Galdu Cala, Journal for the Rights of Indigenous Peoples*, No.1/2011,

[38] O. Ravna, *Recognition of Indigenous Peoples' Land Rights through Modern Legislation, The Case of the Sami People in Norway*, (2006), Ministry of Foreign Affairs, Oslo.

[39] Eide, op. cit., at 279.

[40] Article 278 – 280.

[41] Hansen and Midtgard, op.cit., 224 – 226.

[42] Aili Keskitalo (President Sami Parliament): *www.nordlys.no*, on 15 August 2006 and *Aftenposten,* 1 February 2006: Johan Mikkel Sara (Vice President of the Sami Parliament):
www.aftenposten.no, on 12 May 2006. Cited by Hansen and Midtgard, ibid..

[43] Hansen and Midtgard quote several representatives of government, op. cit., at 225 - 226

profits continues.[44] The impetus of the Draft Nordic Sami Convention[45], which appeared in 2005 to herald significant progress on many of these issues,[46] appears to have slowed significantly.[47] However, whatever is finally agreed, its provisions do give some clues as to the limits of concessions on these issues that the Nordic governments were prepared to consider[48]: rights regarding traditional lands, fishing in fjords and coastal seas, consultation re subsurface exploitative activities on or under (lands or sea) areas owned or used by Sami.[49] Thus, no subsurface rights to petroleum even under traditional lands are contemplated.

[44] Limited levels of both aspects were proposed in the Draft Nordic Sami Convention, Articles 36 and 37. The only provision with respect to offshore aspects and natural resources is Article 38, which addresses fishing issues in 'coastal areas'.

[45] Available at:
www.regjeringen.no/upload/BLD/Nordic%20Sami%20Convention.pdf.
A detailed examination of the draft convention can be found in : Mattias Ahren, Martin Scheinin and John B. Henriksen, "The Nordic Sami Convention: International Human Rights, Self Determination and other Central Provisions", (2007), *Galdu Cala, Journal of Indigenous Peoples Rights*, No. 3/2007.

[46] See Ahren, Svheinin and Henriksen, op. cit, at Section 4.2.11, 26 – 30 and Section 6.3.2 at 94 – 95; Timo Koivurova, "Draft Nordic Saami Convention", (2006/2007), *The European Yearbook of Minorities Issues*, Vol. 6, 103.

[47] Timo Koivurova, "The Draft Nordic Saami Convention: Nations Working Together", (2008), *International Community Law Review*, Vol.10, 279, at 292 -293.

[48] Nigel Bankes and Timo Koivurova, "Conclusion", (2013), in *The Proposed Nordic Saami Convention*, (Nigel Bankes and Timo Koivurova, eds.), Hart Publishing, at 404.

[49] In particular Articles 34 – 37.

Annex 10: Author Contribution Statement by Professor Clive Schofield

A copy of the scanned statement is on next page

Author Contribution Statement

Candidate Name: Blanche Sas

Degree Title: PhD

Paper Title: "Uncovered and Unstable Coasts: Climate Change and Territorial Sea Baselines in the Arctic".

Publication: Chapter 15 in *International Law and Politics of the Arctic Ocean: Essays in Honour of Donat Pharand*, 2015, Suzanne Lalonde and Ted L. Mc Dorman Eds., Brill/Nijhoff, at 291 -414.

As the corresponding author of the above paper, I confirm that the above candidate has made the following contributions to the above paper title:

- Main contributor to the conception and design of the research
- Main contributor to the analysis and research (70%)
- Main contributor to the writing of the paper (70%).

Signed: C.H. Schofield

Name: Professor Clive H. Schofield

Date: 16/7/15