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Arctic Law & Policy Year in Review: 2016

Arctic Law & Policy Institute, University of Washington

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ARCTIC LAW & POLICY YEAR IN REVIEW: 2016

Arctic Law & Policy Institute, University of Washington*

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I. INTRODUCTION: ARCTIC NEWS HIGHLIGHTS

According to the U.S. National Oceanic and Atmospheric Administration, with a boost by El Niño, 2016 set new records for global temperatures, capping three consecutive years of record global warming.¹ In Alaska, for example, the average temperature was 31.9 degrees Fahrenheit — 5.9 degrees above the long-term average.² The globally averaged sea surface temperature was the highest on record at 1.35° F above average.³ The globally averaged land surface temperature was also the highest on record at 2.57° F above average.⁴ The NOAA report records that in 2016 the Arctic experienced some of its highest air temperatures, least sea-ice (averaging just 3.92 million square miles) and earliest spring snow melt.⁵

2016 was the first full year of the United States' chairmanship of the Arctic Council.⁶ Significant achievements included coming to an agreement to enhance scientific cooperation in the Arctic (scheduled to become binding in 2017)⁷, completing the ratification process for an agreement on oil pollution preparedness and response⁸, and finishing a five-year research project to release the Arctic Resilience Report.⁹

* Craig H. Allen, Judson Falknor Professor of Law, Director, UW Arctic Law and Policy Institute, with assistance from Malina Dumas (UW Law '18).

1. NAT'L OCEANIC ATMOSPHERIC ADMIN. NAT'L CTR. FOR ENVTL. INFO., STATE OF THE CLIMATE: NATIONAL CLIMATE REPORT — ANNUAL 2016, <https://www.ncdc.noaa.gov/sotc/national/201613> (last visited Jan. 31, 2017).

2. *Id.*

3. NAT'L OCEANIC ATMOSPHERIC ADMIN. NAT'L CTR. FOR ENVTL. INFO., *supra* note 1.

4. *Id.*

5. NAT'L OCEANIC ATMOSPHERIC ADMIN. NAT'L CTR. FOR ENVTL. INFO, ASSESSING THE GLOBAL CLIMATE IN 2016, <https://www.ncei.noaa.gov/news/global-climate-201612> (last visited Jan. 18, 2017).

6. *The Arctic Council: A Background*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us> (last updated Apr. 7, 2017).

7. *Id.*

8. *Id.*

9. *Arctic Resilience Report*, ARCTIC COUNCIL, <https://oaarchive.arctic-council.org/handle/11374/1838> (last visited May 1, 2017).

Finland will succeed the U.S. as chair in May 2017¹⁰ and hopes to host a meeting between President Putin and President Trump at its first Arctic Council summit of its term.¹¹

A New Secretary-General for the U.N.

On October 13, 2016, the U.N. General Assembly appointed António Guterres to replace Ban Ki-moon as secretary-general of the United Nations.¹² Mr. Guterres served as Prime Minister of Portugal from 1995 to 2002.¹³ He has also been President of Socialist International (1999–2005)¹⁴ and the U.N. High Commissioner for Refugees (2005–2015).¹⁵ He began his five-year secretary-general term of office on January 1, 2017.¹⁶

Global Climate Change Agreement

At the high-level signing ceremony held at the United Nations on April 22, 2016, 175 nations signed the Global Climate Change Agreement.¹⁷ By December 2016, 194 nations had signed, including the United States.¹⁸ The Agreement remains open for signatures until April 21, 2017.¹⁹

10. ARCTIC COUNCIL, *supra* note 6.

11. Wikicommons, *Finland Offers to Organize Meeting Between Trump and Putin*, WORLD AFFAIRS JOURNAL (Jan. 23, 2017, 3:00 PM), <http://www.worldaffairsjournal.org/content/finland-offers-organize-meeting-between-trump-and-putin>.

12. *António Guterres Appointed Next UN Secretary-General by Acclamation*, UN NEWS CENTRE (Oct. 13, 2016), <http://www.un.org/apps/news/story.asp?NewsID=55285#.WNhcmrYrKR>.

13. *Id.*

14. *Leadership of Socialist International*, SOCIALIST INTERNATIONAL, <http://www.socialistinternational.org/about.cfm> (last visited Mar. 26, 2017).

15. *António Guterres Appointed Next UN Secretary-General by Acclamation*, *supra* note 12.

16. *Id.*

17. *List of Parties that Signed the Paris Agreement on 22 April*, SUSTAINABLE DEVELOPMENT GOALS: 17 GOALS TO TRANSFORM OUR WORLD (Apr. 22, 2016), <http://www.un.org/sustainabledevelopment/blog/2016/04/parisagreementsingatures/>.

18. *Paris Agreement – Status of Ratification*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/paris_agreement/items/9444.php (last visited Mar. 26, 2017).

19. *Opening for Signature and High-level Signature Ceremony Convened by the UN Secretary-General*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE,

Senior Arctic Officials Meetings

The Arctic Council's Senior Arctic Officials met twice in 2016.²⁰ The first SAO meeting was held in Fairbanks, Alaska, from March 15–17²¹, and the second in Portland, Maine from October 4–6.²²

Arctic Scientific Cooperation

After three years of work, the Arctic Council's Scientific Cooperation Task Force (SCTF), co-chaired by Russia, Sweden, and the United States, reached a referendum agreement on a new, legally binding "Agreement on Enhancing Arctic Scientific Cooperation" at its July 6–8, 2016 meeting in Ottawa.²³ The meeting in Ottawa brought together fifty-seven delegates representing all the Arctic States, three out of six Permanent Participants (AIA, ICC, Saami Council), one of the Arctic Council's six Working Groups (AMAP), and eleven Observers (China, France, Germany, Italy, Japan, Poland, the United Kingdom, the EU, IASC, UArctic, and WWF).²⁴ SCTF will present its report and draft

http://unfccc.int/paris_agreement/items/9511.php (last visited Mar. 26, 2017).

20. *Senior Arctic Officials Meet in Anchorage, Alaska*, ARCTIC COUNCIL (Oct. 13, 2015), <http://www.arctic-council.org/index.php/en/our-work2/8-news-and-events/366-sao-anchorage-2015>.

21. *Arctic Council Senior Arctic Officials Gather in Fairbanks, Alaska*, ARCTIC COUNCIL (Mar. 1, 2016), <http://www.arctic-council.org/index.php/en/our-work2/8-news-and-events/386-sao-march-2016>. See ARCTIC COUNCIL, SUMMARY REPORT, SAO PLENARY MEETING, ANCHORAGE, ALASKA (Oct. 2015), https://oaarchive.arctic-council.org/bitstream/handle/11374/1576/ACSAO_Anchorage_2015_SAO_plenary_final_report.pdf (summary of the Fairbanks meeting). See also ARCTIC COUNCIL, OPEN DISCUSSION OF CLIMATE CHANGE AND RESILIENCE WORK IN THE ARCTIC COUNCIL (Oct. 6, 2016), https://oaarchive.arctic-council.org/bitstream/handle/11374/1833/EDOCS-3776-v1A-ACSAOUS203_Portland_2016_5-4_Climate_change_discussion-Excerpt_from_Fairbanks_SAO_meeting_report.pdf (summary of discussion on climate change and resilience at the Fairbanks meeting).

22. *Arctic Council Advances Environmental Protection and Sustainable Development in Portland, Maine*, ARCTIC COUNCIL (Oct. 6, 2016), <http://www.arctic-council.org/index.php/en/our-work2/8-news-and-events/425-sao-oct-2016-post-release>. See also ARCTIC COUNCIL, REPORT: SAO PLENARY MEETING, PORTLAND, MAINE (Oct. 2016), https://oaarchive.arctic-council.org/bitstream/handle/11374/1834/EDOCS-3870-v5-Plenary_report_Portland_SAO_Oct2016.pdf (summary report of Portland meeting).

23. *Task Force on Scientific Cooperation Meets in Ottawa*, ARCTIC COUNCIL (July 12, 2016), <http://www.arctic-council.org/index.php/en/our-work2/8-news-and-events/408-sctf-ottawa-july-2016>.

24. *Id.*

agreement to the Council for approval at the Spring 2017 Ministerial Meeting. If approved by the Arctic Council member-States, it would be the third legally-binding agreement under the auspices of the Council. Reflecting on the negotiation process, Co-Chair Vladimir Barbin of the Russian Federation added: “The uniqueness of the process of negotiating this document was that the Permanent Participants and the Observers were given an opportunity to take part in preparing concrete provisions of this Pan-Arctic intergovernmental document. This shows once again that all Arctic countries are committed to enhancing international cooperation in the Arctic and welcome the contributions from the other interested parties.”²⁵

President Obama and Canadian Prime Minister Trudeau Issue a Joint Arctic Leaders’ Statement

On December 20, 2016, the two North American leaders released a joint statement pledging their nations to ensuring a strong, sustainable and viable Arctic economy and ecosystem.²⁶ The statement calls for a science-based approach to oil and gas in the Arctic, support for strong Arctic communities, low impact shipping corridors and science-based management of Arctic fisheries.²⁷ President Obama declared that he was designating the vast majority of the U.S. waters in the Chukchi and Beaufort Seas as “indefinitely off limits to offshore oil and gas leasing.”²⁸ Similarly, Trudeau pledged that Canada will designate all Canadian Arctic waters as indefinitely off limits to such activities, subject to five-year reviews.²⁹ The joint statement follows a pledge the two leaders made in March 2016 to combat climate change.³⁰

25. *Id.*

26. Press Release, The White House, Office of the Press Secretary, United States-Canada Joint Arctic Leaders’ Statement (Dec. 20, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/12/20/united-states-canada-joint-arctic-leaders-statement>.

27. *Id.*

28. *Id.*

29. *Id.*

30. See Press Release, The White House, Office of the Press Secretary, U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership (Mar. 10, 2016),

President Obama Invokes Executive Authority to Withdraw Arctic Waters from Leasing under the OCSLA

On December 20, 2016, President Obama issued a memorandum for the Secretary of the Interior invoking Section 12(a) of the Outer Continental Shelf Lands Act to indefinitely withdraw from future OCS oil and gas leasing nearly all of the Chukchi and Beaufort Seas Planning Areas.³¹ He added that “The withdrawal directed by this memorandum prevents consideration of withdrawn areas for any mineral leasing for purposes of exploration, development, or production.”³²

White House Actions to Protect Alaskan Arctic Ocean

In December 2016, President Obama announced the creation of the Northern Bering Sea Climate Resilience Area.³³ The Executive Order establishes a locally-tailored collection of protections related to oil and gas, shipping, and fishing and also establishes a Task Force charged with coordinating Federal activities in this area to enhance ecosystem and community resilience, conserve natural resources, and protect the cultural and subsistence values this ecosystem provides for Alaskan native communities.³⁴ Agencies must consider traditional knowledge in decision making and establish a formal consultative mechanism for engaging with regional tribal governments to seek their input on Federal activities.³⁵ This action advances science-based decision-making and engagement with Alaska Native peoples in addressing the changing Arctic in a manner consistent with the Joint Statement signed at the White

<https://obamawhitehouse.archives.gov/the-press-office/2016/03/10/us-canada-joint-statement-climate-energy-and-arctic-leadership>.

31. Press Release, The White House, Office of the Press Secretary, Presidential Memorandum -- Withdrawal of Certain Portions of the U.S. Arctic Outer Cont'l Shelf from Mineral Leasing (Dec. 20, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/12/20/presidential-memorandum-withdrawal-certain-portions-united-states-arctic>.

32. *Id.*

33. Exec. Order No. 13754, 81 Fed. Reg. 90,669 (Dec. 14, 2016).

34. *Id.*

35. *Id.* at § 6.

House Arctic Science Ministerial.

The Arctic Report Card

Arctic Ice Conditions: After only modest changes from 2013–2015, minimum sea ice extent at the end of summer 2016 tied with 2007 for the second lowest in the satellite record, which started in 1979.³⁶

Arctic Climate Conditions: The average surface air temperature for the year ending September 2016 is by far the highest since 1900, and new monthly record highs were recorded for January, February, October and November 2016.³⁷ Spring snow cover extent in the North American Arctic was the lowest in the satellite record, which started in 1967.³⁸

U.S. Oil and Gas Activities

On December 26, 2016, the price of Brent crude oil, the global benchmark for oil prices, was up to \$55.16 per barrel³⁹, compared to \$36.11 per barrel in December 2015⁴⁰.

On November 28, 2016, the Department of Interior released its final five-year plan for outer continental shelf drilling leases for 2017–2022.⁴¹ The final plan includes ten lease sales in the Gulf of Mexico and one in Cook Inlet (to be offered for sale in 2021) but eliminated two Arctic lease sales that were included in the earlier draft plan.⁴² Although environmentalists applauded the news, the decision likely reflects both a general lack of industry interest at current oil prices as well as well as

36. *Arctic Report Card: Update for 2016*, ARCTIC PROGRAM, <http://www.arctic.noaa.gov/Report-Card/Report-Card-2016> (last visited Jan. 31, 2017).

37. *Id.*

38. *Id.*

39. *Oil Gains Post-Christmas Ahead of OPEC, Non-OPEC Cuts*, REUTERS (Dec. 26, 2016), <http://www.reuters.com/article/global-oil-idUSL4N1EL2UH>.

40. Ben Meyer, *Crude Crash Continues, Brent Reaches 11-year Low*, AMERICAN SHIPPER (Dec. 23, 2015),

http://www.americanshipper.com/Main/News/Crude_crash_continues_Brent_reaches_11year_low_62512.aspx.

41. *2017–2022 OCS Oil and Gas Leasing Program*, BUREAU OF OCEAN ENERGY MGMT., <http://www.boem.gov/Five-Year-Program-2017-2022/> (last visited Apr. 28, 2016).

42. *Id.*

environmental concerns. In announcing the final plan, Secretary Jewell cited the unique and challenging Arctic environment and industry's declining interest.⁴³ Shell, Conoco-Phillips, Statoil, Chevron, BP, and Exxon have all to some degree abandoned offshore Arctic drilling.⁴⁴

Smith Bay Oil Finds: Caelus Energy Alaska announced its subsidiary, Caelus Smith Bay, made a significant light oil discovery on its state leases on Alaska's North Slope.⁴⁵ Caelus estimated the oil under the current leasehold to be six billion barrels, with about two billion barrels being recoverable.⁴⁶

Arctic Shipping

The most closely watched Arctic shipping event of 2016 was the voyage of *Crystal Serenity* and its escort vessel, RRS Ernest Shackleton. In September 2016, after more than two years of planning, the thirteen-deck cruise ship *Crystal Serenity* embarked on its sold-out voyage through the Northwest Passage.⁴⁷ The ship safely docked in New York City thirty-two days later.⁴⁸ Passengers paid between \$22,000 and \$120,000 for the trip, which included stops in secluded Inuit villages for a glimpse of life in the North.⁴⁹ *Crystal* is reportedly already booking

43. William Yardley, *Obama Administration Bans Arctic Offshore Oil Drilling Through 2022. But Will Trump Reverse It?*, L.A. TIMES (Nov. 18, 2016), <http://www.latimes.com/nation/la-na-arctic-drilling-20161118-story.html> ("Given the unique and challenging Arctic environment and industry's declining interest in the area, forgoing lease sales in the Arctic is the right path forward.").

44. Jennifer A. Dlouhy, *Big Oil Abandons \$2.5 Billion in U.S. Arctic Drilling Rights*, BLOOMBERG (May 9, 2016, 7:00 PM), <https://www.bloomberg.com/news/articles/2016-05-10/big-oil-abandons-2-5-billion-in-u-s-arctic-drilling-rights>.

45. J. Patrick Foley, *Caelus Activity Update*, ALASKA OIL AND GAS ASSOCIATION (Feb. 22, 2017), http://www.aoga.org/sites/default/files/news/02_22_17_hres_-_patrick_foley_caelus_-_presentation.pdf.

46. *Id.*

47. *Crystal Serenity NW Passage Escort Ship Announced*, CHAMBER OF SHIPPING OF BRITISH COLUMBIA (Nov. 12, 2015), <http://www.cosbc.ca/index.php/international/item/2008-crystal-serenity-nw-passage-escort-ship-announced>.

48. Jeannette Lee Falsey, *As Extravagant Cruise Ship Arrives, Nome Confronts its Future*, THE ARCTIC SOUNDER (Aug. 26, 2016), http://www.thearcticsounder.com/article/1634as_extravagant_cruise_ship_arrives_nome.

49. *Id.*

for a 2017 repeat cruise.⁵⁰

The Arctic Council Protection of the Arctic Marine Environment (PAME) working group presented a 2016 progress report at the Senior Arctic Officials Meeting in Fairbanks, Alaska and published a working group meeting report after the session held in Portland, Maine.⁵¹

Northern Sea Route (NSR): In October 2016, the NSR Administration noted that 688 permits had been issued to pass through the NSR so far in the year, including 136 for foreign ships.⁵² This number was up from 672 at the same time in 2015.⁵³ Total cargo volume through the NSR was 6.9 million tons, compared to 5.15 million tons in 2015.⁵⁴ All but 210,000 tons of that 2016 figure was destination cargo carried between Arctic ports.⁵⁵ While domestic internal traffic along the NSR increased, international transit traffic using the NSR for transport between Europe and Asia declined significantly from its peak in 2012.⁵⁶

Northwest Passage: Neither Transport Canada, NORDEG nor Canadian Coast Guard has yet to provide data on 2016 traffic through the NWP, as did their Russian counterparts. Unofficial reports suggest there were few complete transits of the passage, but increased destination traffic as a result of the commencement of Baffinland iron ore exports.⁵⁷

50. *Id.*

51. ARCTIC COUNCIL'S WORKING GROUP ON THE PROTECTION OF THE ARCTIC MARINE ENVIRONMENT, 2015 PROGRESS REPORT ON IMPLEMENTATION OF THE 2009 ARCTIC MARINE SHIPPING ASSESSMENT REPORT RECOMMENDATIONS (2015), http://www.pame.is/images/03_Projects/AMSA/AMSA_Documents/Progress_Reports/AMSArecommendations2015_Web.pdf.

52. *Northern Sea Route Traffic to Reach 6 mln t in 2016—NSR Administration*, PORTNEWS (Oct. 21, 2016), <http://en.portnews.ru/news/228305/> [hereinafter *Northern Sea Route Traffic*].

53. *Id.*

54. Av Malte Humpert, *Shipping Traffic on Northern Sea Route Grows by 30 Percent*, HIGH NORTH NEWS (Jan. 23, 2017), <http://www.highnorthnews.com/shipping-traffic-on-northern-sea-route-grows-by-30-percent/>.

55. *Northern Sea Route Traffic*, *supra* note 52.

56. Humpert, *supra* note 54.

57. See R. K. HEADLAND, TRANSITS OF THE NORTHWEST PASSAGE TO END OF THE 2015 NAVIGATION SEASON 18 (2015), <http://www.americanpolar.org/wp-content/uploads/2015/10/NWP-2015.pdf>.

During its Arctic West 2016 research cruise, the U.S. Coast Guard Cutter Healy conducted extended continental shelf (ECS) mapping surveys under the leadership of Chief Scientist Larry Mayer of the University of New Hampshire.⁵⁸

Legislation/ International Agreements

On July 16, 2015, the five Arctic littoral States agreed to ban commercial fishing in the 1.1 million-square-mile Central Arctic Ocean.⁵⁹ The so-called Arctic Ocean high seas “donut hole” covered by the Oslo declaration lies beyond the five states’ exclusive economic zones.⁶⁰ In April 2016, Canada, China, Denmark, the European Union, Iceland, Japan, South Korea, Norway, Russia and the U.S. met in Washington, D.C. to discuss ways to either encourage other countries to sign onto the agreement or create a new document.⁶¹

At the October meeting of the Senior Arctic Officials in Portland, U.S. representative Robert Papp urged other concerned states to enter into a binding international agreement banning fishing in the central Arctic Ocean.⁶² The U.S. was partially interested in getting China, Korea, Japan, and members of the EU to sign such an agreement.⁶³ Papp admitted that any such agreement was likely years away.⁶⁴ In November, three days of discussion between representatives from Canada, Denmark, Norway, Russia, and the U.S., along with

58. Meghann Myers, *Icebreaker Healy Sails to North Pole on Historic Voyage*, NAVY TIMES (Sept. 8, 2015), <http://www.navytimes.com/story/military/2015/09/08/icebreaker-healy-sails-north-pole-historic-voyage/71892802/>.

59. Yereth Rosen, *5 Nations Sign Declaration to Protect Arctic ‘Donut Hole’ from Unregulated Fishing*, ARCTIC NEWSWIRE (July 16, 2015), <https://www.adn.com/arctic/article/five-nations-sign-declaration-protect-arctic-donut-hole-unregulated-fishing/2015/07/16>.

60. *Id.*

61. Hannah Hoag, *Nations Negotiate Fishing in Arctic High Seas*, ARCTIC DEEPLY (Apr. 28, 2016), <https://www.newsdeeply.com/arctic/articles/2016/04/28/nations-negotiate-fishing-in-arctic-high-seas>.

62. Patrick Whittle, *US Wants to Strengthen Agreement to Ban Arctic Ocean Fishing*, PHYS.ORG (Oct. 6, 2016), <https://phys.org/news/2016-10-agreement-arctic-ocean-fishing.html>.

63. *Id.*

64. *Id.*

China, Iceland, Japan, South Korea, and the EU, once again failed to bring consensus between parties on the terms of such an agreement.⁶⁵

In November 2016, the International Maritime Organization's Maritime Safety Committee adopted the Polar Code STCW Amendments.⁶⁶

Passing of Edward Itta

Former North Slope Borough Mayor Edward Itta died of cancer on November 6, 2016 at the age of seventy-one.⁶⁷ A strong advocate for the inclusion of Inupiaq communities in Arctic development, Itta was perhaps best known for his involvement in negotiating with Shell when the company wanted to drill in the Arctic Ocean. "After all the battles over the wilderness and the oil are done, we are the ones that have to live with the consequences," he stated at the Arctic Encounter Symposium in 2015.⁶⁸ "We are the most directly impacted people. Decision makers, policy makers at all levels, need to understand that."⁶⁹

University of Washington Scientists Respond to Coast Guard Commandant's Request for an Ice Briefing

At the request of the Coast Guard Commandant's Advisory Group, ALPI and the Coast Guard's Center for Arctic Study and Policy (CASP) organized a briefing on Arctic ice conditions and forecasts for Admiral Paul Zukunft, Commandant of the Coast Guard.⁷⁰

65. Kevin McGwin, *No Agreement on Arctic Fisheries Moratorium*, THE ARCTIC JOURNAL (Dec. 1, 2016), <http://arcticjournal.com/business/2734/no-agreement-arctic-fisheries-moratorium>.

66. *Shipping in Polar Waters: Adoption of an International Code of Safety for Ships Operating in Polar Waters (Polar Code)*, INTERNATIONAL MARITIME ORGANIZATION, <http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx> (last visited Jan. 31, 2017).

67. Rachel Waldholz, *Edward Itta Remembered for Balancing Two Worlds*, ALASKA PUBLIC MEDIA (Nov. 7, 2016), <http://www.alaskapublic.org/2016/11/07/longtime-inupiaq-leader-and-north-slope-mayor-edward-itta-dies-at-71/>.

68. Edward Itta, Keynote Address at the Arctic Encounter Symposium, *Keynote Address: The Honorable Edward Itta*, at 27:05, YOUTUBE (Feb. 20, 2015), <https://www.youtube.com/watch?v=VnnUyyJ3U4k>.

69. *Id.*

70. *Cadet Research*, CENTER FOR ARCTIC STUDY & POLICY, UNITED STATES COAST GUARD ACADEMY, <http://www.uscga.edu/CASP/display2.aspx?id=6346> (last visited Apr.

II. TREATIES AND OTHER INTERNATIONAL AGREEMENTS

A. *U.N. Convention on the Law of the Sea*

In the 2008 *Ilulissat Declaration*, the five coastal nations bordering the Arctic Ocean (Canada, Denmark/Greenland, Norway, Russia, and the U.S.), jointly affirmed their commitment to settle any Arctic maritime disputes within the framework provided by the Law of the Sea.⁷¹ In doing so, they rejected calls for a new treaty regime, similar to the Antarctic Treaty System. The declaration concludes that the Law of the Sea 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.”⁷²

2016 brought no significant progress on possible U.S. accession to the 1982 U.N. Convention on the Law of the Sea (UNCLOS).⁷³ Opponents argue accession relinquishes too much sovereignty to a dispute resolution regime proven ineffective at checking territorial aggression, for example by China in the South China Sea.⁷⁴ Proponents—which includes every president since Bill Clinton’s presentment to Congress over 20 years ago, the Navy, the U.S. Coast Guard, and the Alaska Arctic Policy Commission—point out that accession would, among other things, help the United States maximize international recognition and legal certainty regarding the outer limits of the U.S. continental shelf.⁷⁵

28, 2016).

71. See The Ilulissat Declaration, May 28, 2008, http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf.

72. *Id.*

73. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

74. *The United Nations Convention on the Law of the Sea: Hearing on S. Treaty Doc. No. 103-39 Before the S. Comm. on Foreign Relations*, 110th Cong. (2007) (prepared statement of John D. Negroponte, Deputy Secretary of State), <https://www.gpo.gov/fdsys/pkg/CHRG-110shrg45282/html/CHRG-110shrg45282.htm>.

75. *Id.*

B. *U.N. Framework Convention on Climate Change (UNFCCC)*

The UNFCCC, which entered into force on March 21, 1994, sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change.⁷⁶ It recognizes that the climate system is a shared resource that can be degraded by industrial and other emissions of carbon dioxide and other greenhouse gases.⁷⁷ Under the Convention, governments: (1) gather and share information on greenhouse gas emissions, national policies, and best practices, (2) launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries, and (3) cooperate in preparing for adaptation to the impacts of climate change.⁷⁸

The convention provides a framework that is then implemented by a series of protocols designed to limit average global temperature increases and the resulting climate change, and to cope with climate change impacts.⁷⁹ From November 7–18, Morocco hosted the 22nd Conference of the Parties to the UNFCC (COP21) in Bab Ighli, Marrakech.⁸⁰

C. *International Convention for Prevention of Pollution from Ships (MARPOL)*

The MARPOL Convention establishes a framework for the prevention and control of vessel-source pollution that is then implemented by six annexes.⁸¹ The U.S. is a party, and MARPOL is implemented in the U.S. by regulations promulgated under the Act to Prevent Pollution from Ships, 33 U.S.C. §§ 1901-1915. The six annexes include: Annex I

76. United Nations Framework Convention on Climate Change, May 9, 1992, S. TREATY DOC. NO. 102-38, 1771 U.N.T.S. 107.

77. *Id.*

78. *Id.*

79. *See, e.g.*, Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2303 U.N.T.S. 148.

80. *Marrakech Climate Change Conference—November 2016*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/meetings/marrakech_nov_2016/meeting/9567.php (last visited Jan. 31, 2017).

81. *See* International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 94 Stat. 2297, 1340 U.N.T.S. 1884.

Prevention of pollution by oil, Annex II Control of pollution by noxious liquid substances, Annex III Prevention of pollution by harmful substances in packaged form, Annex IV Prevention of pollution by sewage from ships, Annex V Prevention of pollution by garbage from ships, and Annex VI Prevention of air pollution from ships.⁸²

MARPOL Annex VI prescribes global limits on vessel exhaust emissions of sulfur and nitrogen oxides (SO_x and NO_x) and particulate matter, and prohibits deliberate emissions of ozone depleting substances (ODS).⁸³ It also allows states to seek IMO approval of sulfur special emissions control areas (SECA), within which stricter emission limits may be set.⁸⁴

The IMO approved an application by the U.S., Canada, and France to establish a SECA for North America in 2010.⁸⁵ It entered into force in 2011 and its 0.1 percent sulfur emissions limit went into effect January 1, 2015.⁸⁶ The North American SECA does not presently extend into the Arctic (see above). As a result, the less stringent global Annex VI emissions standards apply in those waters.⁸⁷

The IMO's MEPC set a January 1, 2020 deadline for implementing the 0.5 percent sulfur limit for marine fuel (outside of any of the Emission Control Areas, where lower limits apply).⁸⁸ The stricter requirements raised concerns about the availability of marine fuel meeting the low-sulfur content requirements.⁸⁹

82. *Id.*; *International Convention of the Prevention of Pollution from Ships (MARPOL)*, INT'L MAR. ORG., [http://www.imo.org/en/about/conventions/listofconventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-\(marpol\).aspx](http://www.imo.org/en/about/conventions/listofconventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-(marpol).aspx) (last visited Mar. 26, 2017).

83. *Id.*

84. *Id.*

85. Press Release, Int'l Mar. Org., Ships Face Lower Sulphur Fuel Requirements in Emissions Control Areas from 1 January 2015 (Dec. 23, 2014), <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/44-ECA-sulphur.aspx#.VwPqTfkrLIU>.

86. *Id.*

87. *Id.*

88. Press Release, Lars Robert Pedersen, BIMCO, BIMCO Raises Serious Concern Over Data on Available Fuel Ahead of MEPC 70 Sulphur Decision (Oct. 10, 2016), <https://www.bimco.org/News/Press-releases/20161010-MEPC-decision-on-sulphur>.

89. *Id.*

D. *Ballast Water Management Convention*

The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM), adopted in 2004, received the requisite number of ratifications and will enter into force on September 28, 2017.⁹⁰ Incoming Arctic Council Chair Finland provided the necessary ratification.⁹¹ The U.S. is not a party to the Convention.⁹²

E. *Arctic Council Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic*

The Marine Oil Pollution Cooperation Agreement was signed by all Arctic Council member-states at the 2013 ministerial meeting in Kiruna, Sweden.⁹³ The Agreement builds on frameworks established by UNCLOS, the Oil Pollution Preparedness, Response and Co-Operation Convention (OPRC)⁹⁴, and the 1969 International Convention Related to Intervention on the High Seas in Cases of Oil Pollution Casualties.⁹⁵

F. *Arctic Council Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*

The Agreement on Cooperation on Aeronautical and

90. *International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM)*, INTERNATIONAL MARITIME ORGANIZATION, [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships'-Ballast-Water-and-Sediments-\(BWM\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships'-Ballast-Water-and-Sediments-(BWM).aspx) (last visited Apr. 28, 2017).

91. Marcus Hand, *IMO Ballast Water Convention to Come into Force in 2017 as Finland Ratifies*, SEATRADE MARITIME NEWS (Sept. 8, 2016), <http://www.seatrade-maritime.com/news/americas/imo-ballast-water-convention-to-come-into-force-in-2017-as-finland-ratifies.html>.

92. *But see Ballast Water: U.S. Federal Management*, NAT'L OCEANIC AND ATMOSPHERIC ADMIN., http://www.gc.noaa.gov/gcil_ballast_federal.html (last visited Mar. 26, 2017).

93. Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, Can.-Den.-Fin.-Ice.-Nor.-Russ.-Swed.-U.S., May 15, 2013, https://oaarchive.arctic-council.org/bitstream/handle/11374/529/EDOCS-2067-v1-ACMMSE08_KIRUNA_2013_agreement_on_oil_pollution_preparedness_and_response_in_the_arctic_formatted.PDF?sequence=5&isAllowed=y.

94. International Convention on Oil Pollution Preparedness, Response and Cooperation, Nov. 30, 1990, 1891 U.N.T.S. 77.

95. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, Nov. 29, 1969, 26 Stat. 765, 970 U.N.T.S. 211.

Maritime Search and Rescue in the Arctic (SAR) was the first binding agreement negotiated under the auspices of the Arctic Council.⁹⁶ The agreement coordinates international search and rescue coverage and response in the Arctic, and establishes the area of SAR responsibility of each state party.⁹⁷

G. Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean

The Oslo Declaration, signed by five Arctic states in 2015, deters unregulated commercial fishing in the high seas waters of the Central Arctic Ocean.⁹⁸ The declaration, which is non-binding, recognizes that, although commercial fishing in Arctic waters is not imminent, the reduction of Arctic sea ice and environmental challenges in the region necessitate a precautionary approach to prevent unregulated fishing in the area.⁹⁹ Norway hosted the Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean in Tromsø from September 26–28, 2016.¹⁰⁰ The primary objective of the meeting was to develop a Joint Scientific Research and Monitoring Plan, which will be finalized prior to the 2017 scientific workshops.¹⁰¹

H. Draft Arctic Council Agreement on Marine Scientific Research

The agreement, which is described in the Introduction section above, is expected to be signed at the May 2017 Ministerial.

96. Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, May 12, 2011, 13 T.I.A.S. No. 13-119.

97. *Id.*

98. Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean, July 16, 2015, <https://www.regjeringen.no/globalassets/departementene/ud/vedlegg/folkerett/declaration-on-arctic-fisheries-16-july-2015.pdf>.

99. *Id.*

100. *Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean*, NAT'L OCEANIC AND ATMOSPHERIC ADMIN., http://www.afsc.noaa.gov/Arctic_fish_stocks_fourth_meeting/ (last visited Feb. 6, 2017).

101. *Id.*

III. STATE PRACTICE

A. *United States: Federal Government*

1. *U.S. Congress*

Arctic Caucus. Alaska Senator Lisa Murkowski and Maine Senator Angus King announced in March 2015 the creation of an Arctic caucus that will focus on building U.S. leadership in the region and provide a forum for discussion on defense, energy, environment and trade.¹⁰² Senator Murkowski called on her colleagues to take on the U.S.'s leadership role as an Arctic nation and “[e]mbrace your inner-Arctic self.”¹⁰³

Within the House, Representatives Don Young of Alaska and Rick Larsen of Washington state formed the Congressional Arctic Working Group on January 23, 2015.¹⁰⁴

Senator King joined Alaska’s and Washington’s senators to advocate for increased funding for the Coast Guard budget for construction of additional U.S. icebreakers.¹⁰⁵ These vessels, explained Senator King, are essential to maintaining shipping routes in the Northwest Passage which is the “highway of the Arctic.”¹⁰⁶

FY17 Appropriations. The \$618.7 billion National Defense Authorization Act for Fiscal Year 2017 passed by a large margin in the U.S. Senate and House of Representatives and was signed into law in December 2016.¹⁰⁷ The NDAA includes a directive to conduct an “appraisal of the Arctic ambitions of actors in the Indo-Asia-Pacific region in the context of current and projected capabilities” (Sec. 1074) and designate a Department of Defense

102. Jordain Carney, *Alaska Senator Launches Arctic Caucus*, THE HILL (Mar. 4, 2015), <http://thehill.com/blogs/floor-action/senate/234659-alaska-senator-launches-arctic-caucus>; Press Release, Angus King, Senator, Murkowski Announce U.S. Senate Arctic Caucus (Mar. 4, 2015), <http://www.king.senate.gov/newsroom/press-releases/king-murkowski-announce-us-senate-arctic-caucus>.

103. Carney, *supra* note 102.

104. CONGRESSIONAL ARCTIC WORKING GROUP, <http://congressionalarcticworkinggroup-larsen.house.gov/> (last visited Apr. 3, 2016).

105. Tom Bell, *Sen. Angus King Pursues Funding to Add Icebreakers in Arctic*, PORTLAND PRESS HERALD (Dec. 8, 2015), <http://www.pressherald.com/2015/12/08/sen-angus-king-pursues-funding-to-add-icebreakers-in-arctic/>.

106. *Id.*

107. Patricia Zengerle, *U.S. Congress Passes \$618.7 Billion Annual Defense Bill*, REUTERS (Dec. 9, 2016, 6:21 AM), <http://www.reuters.com/article/us-usa-defense-congress-idUSKBN13X26G>.

strategic Arctic port (Sec. 1095(f)).¹⁰⁸

The FY2017 Defense Appropriations Bill recommends \$1.0 billion in Navy shipbuilding funds to procure the first U.S. Coast Guard-operated icebreaker in more than twenty-five years.¹⁰⁹ The funding for the Polar Icebreaker Recapitalization Project would accelerate plans announced by President Obama in 2015 to shift planned icebreaker construction from 2022 to 2020.¹¹⁰ In addition to funding, the bill encourages actions that would facilitate an earlier construction start and long-term cost savings.¹¹¹

2. *President*

Arctic Science Ministerial. On September 28, 2016, Science Ministers from 25 governments and the European Union gathered at the White House to discuss Arctic research priorities.¹¹² Participants, including Indigenous representatives, signed a Joint Statement that emphasized increased international collaboration on Arctic science and the importance of responding to changes in the region.¹¹³ The four themes for new activities include: 1) Identifying Arctic Science Challenges and their Regional and Global Implications; 2) Strengthening and Integrating Arctic Observations and Data Sharing; 3) Applying Expanded Scientific Understanding of the Arctic to Build Regional Resilience and Shape Global Responses; and 4) Empowering Citizens through Science Technology, Engineering, and Mathematics (STEM) Education Leveraging Arctic Science. In November, the White House published a summary of the event.¹¹⁴

108. National Defense Authorization Act for Fiscal Year 2017, Pub. L. No. 114-328, §§ 1074, 1095(f) (2016).

109. Press Release, United States Senate Committee on Appropriations, Cochrane: Icebreaker Construction Funded in FY2017 Defense Appropriations Bill (May 24, 2016), http://www.appropriations.senate.gov/news/majority/cochran_icebreaker-construction-funded-in-fy2017-defense-appropriations-bill.

110. *Id.*

111. *Id.*

112. Press Release, The White House, Joint Statement of Ministers: On the Occasion of the First White House Arctic Science Ministerial (Sept. 28, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/09/28/joint-statement-ministers>.

113. *Id.*

114. U.S. ARCTIC RESEARCH COMM'N & ARCTIC EXEC. STEERING COMM., SUPPORTING ARCTIC SCIENCE: A SUMMARY OF THE WHITE HOUSE ARCTIC SCIENCE MINISTERIAL

U.S.-Nordic Agreement. In May 2016, President Obama and the leaders of five Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden) agreed to environmental protections for the Arctic that could restrict oil and gas drilling and other commercial activity in the region.¹¹⁵ Together, the six countries control about half of the Arctic's waters. In a joint statement, the countries indicated they will “work towards the highest global standards, best international practice, and a precautionary approach, when considering new and existing commercial activities in the Arctic, including oil and gas operations.”¹¹⁶

U.S.-Canada Joint Statement. The United States and Canada issued a joint statement on climate, energy, and Arctic leadership in March 2016.¹¹⁷ The statement offers support for the Paris Agreement and recognizes that Arctic Indigenous communities must be involved with decision-making regarding climate change.¹¹⁸ The governments resolved to “play a leadership role internationally in the low carbon global economy, including through science-based steps to protect the Arctic and its peoples.”¹¹⁹ This was followed by the December 20, 2016 Joint Statement described in the Highlights section above.¹²⁰

Arctic Executive Steering Committee. In January 2015, President Obama issued an Executive Order aimed at better managing U.S. Arctic policy.¹²¹ The order created an Arctic Executive Steering Committee (AESC) to guide U.S. policy and coordinate with local and Native governments, as well as

MEETING SEPTEMBER 28, 2016, WASHINGTON, DC (Oct. 2016), https://storage.googleapis.com/arcticgov-static/publications/other/Supporting_Arctic_Science.pdf.

115. Press Release, The White House, Office of the Press Secretary, U.S.-Nordic Leaders' Summit Joint Statement (May 13, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/05/13/us-nordic-leaders-summit-joint-statement>.

116. *Id.*

117. *U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership*, *supra* note 30.

118. *Id.*

119. *Id.*

120. *United States-Canada Joint Arctic Leaders' Statement*, *supra* note 26.

121. Exec. Order No. 13,689, 3 C.F.R. 13689 (2016), *reprinted in* 15 U.S.C. § 4101 at 1861–63 (2015).

research institutions, academic organizations and nonprofits.¹²²

In March 2016, the AESC released two reports: the 2015 Year in Review—Progress Report on the Implementation of the National Strategy for the Arctic Region (Year in Review); and, as an appendix to that report, the 2016 Implementation Framework for the National Strategy for the Arctic Region (Framework).¹²³ According to the implementation progress report, activity in 2015 focused on supporting the U.S. chairmanship of the Arctic Council, developing the 2015 Conference on Global Leadership in the Arctic: Cooperation, Innovation, Engagement and Resilience (GLACIER), addressing coastal erosion and oil-spill prevention and preparedness, and establishing a \$4 million Remote Alaskan Communities Energy Efficiency Competition.¹²⁴

Importantly, the 2016 implementation framework elevated the Committee's emphasis on science and research by incorporating by reference the entire Interagency Arctic Research Policy Committee's Arctic Research Plan.¹²⁵ The framework also aims to improve interagency coordination to improve efficiency in achieving the goals of the NSAR.¹²⁶

Donald Trump Elected President. Citizens of the United States elected Donald Trump to the presidency on November 8, 2016.¹²⁷ It remains to be seen how the Trump Administration will prioritize the Arctic and the extent to which it will change course on established policies. His nominations for key cabinet positions raised concerns among environmentalists.¹²⁸

122. *Id.* at 4191.

123. John P. Holdren, Amy Pope, & Mark Brzezinski, *Advancing Implementation of the National Strategy for the Arctic Region*, WHITE HOUSE (Mar. 9, 2016, 1:56 PM), <https://obamawhitehouse.archives.gov/blog/2016/03/09/advancing-implementation-national-strategy-arctic-region>.

124. *Id.*

125. *Id.*

126. INTERAGENCY ARCTIC RESEARCH POLICY COMMITTEE OF THE NATIONAL SCIENCE AND TECHNOLOGY COUNCIL, ARCTIC RESEARCH PLAN: FY2017-2021 5 (Dec. 2016), www.obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/NSTC/iarp_arctic_research_plan.pdf.

127. Nils Andreassen, *New Presidency is a Chance to Close Gap on Arctic Awareness*, ARCTIC DEEPLY, Nov. 10, 2016, <https://www.newsdeeply.com/arctic/community/2016/11/10/new-presidency-is-a-chance-to-close-the-gap-on-arctic-awareness#.WCXP8YtnOso.twitter>.

128. Mazin Sidahmed, *Climate Change Denial in the Trump Cabinet: Where do his Nominees Stand?*, THE GUARDIAN (Dec. 15, 2016, 12:55 P.M.), <https://www.theguardian.com/environment/2016/dec/15/trump-cabinet-climate-change->

3. *Department of State*

President-elect Trump nominated senior-Exxon-Mobil executive Rex Tillerson to serve as secretary of state, replacing former senator John Kerry.¹²⁹ On December 31, 2016, retired Coast Guard Admiral Robert Papp ended his tenure as the Department of State's Special Representative for the Arctic.¹³⁰

Report on Arctic Policy. In September 2016, the International Security Advisory Board (ISAB) submitted an Arctic Policy report to the State Department responding to a 2015 request that the Board complete a study “of Russia’s interests, intentions, and capabilities as it has been increasing its presence – both military and civilian – in the Arctic.”¹³¹ The report includes six primary recommendations: 1) Continue U.S. leadership in the Arctic; 2) Speed ratification of the United Nations Convention on the Law of the Sea (UNCLOS) as an urgent imperative for U.S. national interests; 3) Advance increased “presence” and “domain awareness” in the Arctic region; 4) Increase and continue cooperation among the Arctic nations; 5) Adopt appropriate policies regarding Russian interests, policies, and activities in the Arctic; and 6) Strengthen possible ‘Transparency and Confidence Building Measures’ in the Arctic region.¹³²

4. *Department of Homeland Security/ U.S. Coast Guard*

President-elect Trump nominated retired Marine Corps general and Commander of U.S. Southern Command, John Kelly, to serve as secretary of homeland security, replacing Jeh Johnson.¹³³ The U.S. Coast Guard plays a central role in federal

deniers.

129. Phil Mattingly, Jim Acosta, & Stephen Collinson, *Trump Picks ExxonMobil CEO Tillerson as Choice for Secretary of State*, CNN (Dec. 13, 2016), <http://www.cnn.com/2016/12/12/politics/donald-trump-rex-tillerson-secretary-of-state-exxonmobil-ceo/>.

130. *Robert Papp Steps Down as Top Arctic Diplomat*, ALASKA DISPATCH NEWS (January 25, 2017), <https://www.adn.com/arctic/2017/01/25/admiral-papp-steps-down-as-top-arctic-diplomat/>.

131. INT’L SEC. ADVISORY BD., U.S. DEP’T OF STATE, REPORT ON ARCTIC POLICY 1–5 (2016), <https://www.state.gov/documents/organization/262585.pdf>.

132. *Id.*

133. Jerry Markon & Dan Lamothe, *Retired Marine Gen. John F. Kelly Picked to Head Department of Homeland Security*, WASH. POST (Dec. 7, 2016), <https://www.washingtonpost.com/world/national-security/retired-marine-gen-john-f->

Arctic initiatives under President Obama's Arctic Strategy Implementation Plan.¹³⁴

Arctic Coast Guard Forum. The Department of Homeland Security released a joint statement on October 30, 2015, officially establishing the Arctic Coast Guard Forum (ACGF).¹³⁵ The ACGF is an operationally-focused, consensus-based organization with the purpose of leveraging collective resources to foster safe, secure, and environmentally responsible maritime activity in the Arctic.¹³⁶ Membership includes all eight Arctic nations: Canada, Denmark, Finland, Iceland, Norway, Sweden, the Russian Federation, and the United States.¹³⁷ At the first principals' meeting, representatives approved the ACGF Terms of Reference and a Joint Statement of the participating states.¹³⁸

From June 7–9, 2016 the U.S. Coast Guard hosted the Arctic Coast Guard Forum in Boston, MA.¹³⁹ The members began work on a process guide that will lay the basis of the logistics for the forum¹⁴⁰. They also worked on a combined operation module.¹⁴¹

Arctic Shield 2016. Air Station Kodiak crews were deployed to Forward Operating Location (FOL) Kotzebue during the summer of 2016 as part of Operation Arctic Shield, an annual operation that began in 2009.¹⁴² The aircrews responded to

kelly-picked-to-head-department-of-homeland-security/2016/12/07/165472f2-bbe6-11e6-94ac-3d324840106c_story.html.

134. Lt. Cmdr. Morgan Roper, *Below Zero: Partnership between the Coast Guard and NOAA, NAT'L OCEANIC AND ATMOSPHERIC ADMIN.* (Feb. 28, 2017), <http://response.restoration.noaa.gov/about/media/below-zero-partnership-between-coast-guard-and-noaa.html>.

135. Press Release, Dep't Homeland Security, *Coast Guard Leaders from Arctic Nations Sign Historic Joint Statement* (Oct. 30, 2015), <https://www.dhs.gov/news/2015/10/30/coast-guard-leaders-arctic-nations-sign-historic-joint-statement>.

136. *Id.*

137. *Id.*

138. Vice Admiral Charles D. Michel, Vice Commandant, Testimony at the USCG, U.S. Dep't Homeland Security (Nov. 17, 2015), <http://docs.house.gov/meetings/FA/FA14/20151117/104201/HHRG-114-FA14-Wstate-MichelC-20151117.pdf>.

139. Levon Sevunts, *Arctic Nations Deepen Coast Guard Cooperation*, BARENTS OBSERVER (June 11, 2016), <https://thebarentsobserver.com/en/security/2016/06/arctic-nations-deepen-coast-guard-cooperation>.

140. *Id.*

141. *Id.*

142. *Coast Guard Operation Arctic Shield 2016 Ends as Location Closes in Kotzebue*, ALASKA NATIVE NEWS (Oct. 31, 2016), <http://alaska-native-news.com/coast-guard-operation-arctic-shield-2016-ends-as-location-closes-in-kotzebue-24834>.

twenty-two cases, saving six lives and assisting five others.¹⁴³ Cases included missing hikers, offshore emergency beacon alerts, Alaska State Trooper agency assists, persons in the water, mayday calls, and overdue boaters.¹⁴⁴ Aircrews are expected to redeploy to Kotzebue next summer as part of Arctic Shield 2017.¹⁴⁵

In addition to FOL operations, the crews of the Coast Guard Cutters Healy, Alex Haley, Stratton and Spar deployed to the Bering, Chukchi, and Beaufort Seas for maritime domain awareness, search and rescue, community relations, and scientific research support during Arctic Shield 2016.¹⁴⁶

Proposed Rule for Polar Certificates. The Coast Guard proposed a rule that would allow recognized classification societies to issue SOLAS Polar Ship Certificates.¹⁴⁷ The proposed rule would apply to commercial cargo ships greater than 500 gross tons engaging in international voyages, and passenger ships carrying more than twelve passengers engaging in international voyages, when these ships operate within polar waters.¹⁴⁸ The comment period was open until December 22, 2016.¹⁴⁹

Coast Guard Center for Arctic Study and Policy (CASP). The Coast Guard established the Center for Arctic Study and Policy (CASP) in September 2014.¹⁵⁰ SES Michael Emerson, Director of the Coast Guard's Marine Transportation Systems Management Directorate (CG-5PW), provides overall direction for CASP.

The CASP mission is to promote academic research on Arctic policy and strategy by facilitating collaboration, partnerships, and dialogue among specialists from academia, government, tribal organizations, NGOs, industry, and the Coast Guard.¹⁵¹

143. *Id.*

144. *Id.*

145. *Id.*

146. *Id.*

147. Adding the Polar Ship Certificate to the List of SOLAS Certificates and Certificates Issued by Recognized Classification Societies, 81 Fed. Reg. 83,786 (Nov. 22, 2016) (to be codified at 46 C.F.R. pt. 2 and 8).

148. *Id.* at 83,787.

149. *Id.* at 83,786.

150. *History*, CENTER FOR ARCTIC STUDY & POLICY U.S. COAST GUARD ACADEMY, <http://www.uscga.edu/CASP/display2.aspx?id=6336> (last visited Feb. 2, 2017).

151. CENTER FOR ARCTIC STUDY & POLICY U.S. COAST GUARD ACADEMY,

The core CASP team is assisted by four research fellows: Roger Rufe (Vice Admiral, U.S. Coast Guard, retired and former president of Ocean Conservancy),¹⁵² Lawson W. Brigham¹⁵³, James B. Ellis¹⁵⁴, and Craig H. Allen Sr.¹⁵⁵

On June 7–9, 2016, the CASP fellows attended the Arctic Coast Guard Forum meeting in Boston, MA described above.

DHS Arctic Domain Awareness Center. The Department of Homeland Security's Arctic Domain Awareness Center (ADAC) is a research and development center currently located at the University of Alaska Anchorage.¹⁵⁶ Although a formal ribbon-cutting ceremony was held in Anchorage in 2015, the Center has been operating since August 2014, bringing together academics, industry groups, stakeholders, and government agencies working on technology in the Arctic.¹⁵⁷ Reportedly, the Center will offer scholarships and other opportunities for studies to research navigation simulation and Arctic modeling.¹⁵⁸

Other Coast Guard Developments. Congress enacted legislation authorizing a fourth star for the Vice Commandant of the Coast Guard.¹⁵⁹ On June 1, 2016, Vice Commandant Charles Michel was promoted from Vice Admiral to Admiral.¹⁶⁰

<http://uscga.edu/casp/default.aspx> (last visited Feb. 2, 2017).

152. *Roger T. Rufe, Jr.*, CENTER FOR ARCTIC STUDY & POLICY U.S. COAST GUARD ACADEMY, <http://uscga.edu/CASP/display2.aspx?id=66193> (last visited Mar. 27, 2017).

153. *Dr. Lawson W. Brigham*, CENTER FOR ARCTIC STUDY & POLICY U.S. COAST GUARD ACADEMY, <http://uscga.edu/CASP/display2.aspx?id=6590> (last visited Mar. 27, 2017).

154. *James B. Ellis*, CENTER FOR ARCTIC STUDY & POLICY U.S. COAST GUARD ACADEMY, <http://uscga.edu/CASP/display2.aspx?id=6592> (last visited Mar. 27, 2017).

155. *Prof. Craig H. Allen*, CENTER FOR ARCTIC STUDY & POLICY U.S. COAST GUARD ACADEMY, <http://uscga.edu/CASP/display2.aspx?id=6592> (last visited Mar. 27, 2017).

156. *Arctic Domain Awareness Center (ADAC)*, HOMELAND SECURITY UNIVERSITY PROGRAMS, <https://www.hsuniversityprograms.org/centers/adac-arctic-domain-awareness/> (last visited May 19, 2017).

157. Asaf Shalev, *Coast Guard Anticipates High-tech Future with New Arctic R&D Center*, ARCTIC NEWSWIRE (Nov. 1, 2015), <http://www.adn.com/article/20151101/coast-guard-anticipates-high-tech-future-new-arctic-rd-center>.

158. *Id.*

159. Coast Guard Authorization Act, H.R. 4188, 114th Cong. (2015); Coast Guard Authorization Act, S. 1611, 114th Cong. (2015).

160. Megan Eckstein, *Coast Guard Adm. Michel Promoted as Vice Commandant Billet Becomes a Four-Star Job*, USNI NEWS (June 2, 2016), <https://news.usni.org/2016/06/02/coast-guard-adm-michel-promoted-vice-commandant-billet-becomes-four-star-job>.

Rear Admiral Michael F. McAllister succeeded Rear Admiral Dan Abel as Commander of Coast Guard District 17, with responsibility for the Alaska region.¹⁶¹

Admiral Zukunft's 2016 State of the Coast Guard address once again recognized U.S. accomplishments and priorities in the North, highlighting that President Obama's budget includes funding for new heavy icebreakers.¹⁶² Admiral Zukunft also noted the achievement of Coast Guard Cutter Healy in becoming the first U.S. surface ship to independently lead a scientific mission to the North Pole.¹⁶³

August 2016: Coast Guard Cutter Healy (WAGB 20) hosted a research team tasked with surveying the U.S. extended continental shelf.¹⁶⁴

5. *Department of Commerce/NOAA*

President-elect Trump nominated banker Wilbur Ross to serve as secretary of commerce, replacing Penny Pritzker.¹⁶⁵

The National Oceanic and Atmospheric Administration (NOAA) released its annual Arctic Report Card on December 6, 2016.¹⁶⁶ According to the report, Arctic air temperatures continue to increase at double the rate of the global temperature increase and the average annual surface air temperature anomaly (+2.0° C relative to the 1981-2010 baseline) over land north of 60° N between October 2015 and September 2016 was by far the highest in the observational record beginning in

161. USDHS, *Rear Admiral Michael F. McAllister*, U.S. COAST GUARD, <https://www.uscg.mil/flag/biography/MichaelMcAllister.pdf> (last visited Mar. 27, 2016).

162. Adm. Paul F. Zukunft, Commandant, U.S. Coast Guard, *Address of the State of the Coast Guard 2016* (Feb. 23, 2016), <https://www.uscg.mil/seniorleadership/DOCS/2016SOTCG.pdf>.

163. *Id.* at 2.

164. *What Lies Beneath: Mapping the Arctic Sea Floor*, NAT'L OCEANIC AND ATMOSPHERIC ADMIN., <http://oceanservice.noaa.gov/news/weeklynews/aug09/arcticmap.html> (last visited March 27, 2016).

165. Josh Boak, *Trump Taps Billionaire Investor Ross for Commerce Secretary*, NPR: THE TWO-WAY (Nov. 24, 2016), <http://www.npr.org/sections/thetwo-way/2016/11/30/503253374/trump-taps-billionaire-investor-wilbur-ross-for-commerce-secretary>.

166. J. Richter-Menge, J.E. Overland & J. Mathis, *Executive Summary, Arctic Report Card: Update for 2016*, NOAA ARCTIC PROGRAM (Dec. 6, 2016), <http://www.arctic.noaa.gov/Report-Card/Report-Card-2016/ArtMID/5022/ArticleID/270/Executive-Summary>.

1900.¹⁶⁷ Winter air temperatures greatly exceeded the previous record, with several locations showing January temperature more than 8° C above the norm.¹⁶⁸

NOAA continued to implement its 2014 Arctic Action Plan.¹⁶⁹ The plan is directly responsive to the President's Arctic Strategy Implementation Plan. The plan includes eighty-eight milestone actions for 2014 and 2015 that "will evolve with Administration budgets, Congressional appropriations, and national priorities."¹⁷⁰ Many actions support the development of better baseline understanding of the Arctic. They include preparing a baseline monitoring report for all managed fish stocks, and conducting synoptic bioeffects sampling studies for baseline sediment chemistry, benthic community assessment, and sediment toxicity in the Bering, Chukchi, and Beaufort Seas.¹⁷¹ NOAA also has an Arctic Theme Page that serves as the focal point for Arctic observations, from which interested parties can access data and reports from NOAA and non-NOAA sources.¹⁷²

Charting the Arctic. No developments to report.

Ocean Acidification. No developments to report.

Ringed Seal Critical Habitat. In December 2014, NOAA proposed to designate roughly 350,000 square miles of Alaska's north and west coasts as critical habitat for ringed seals.¹⁷³ The public comment period closed on March 31, 2015. No further action has been reported.¹⁷⁴

Ringed seals are a primary food source for polar bears, and share the polar bears' reliance on ice and snow in the Bering, Chukchi, and Beaufort Seas.¹⁷⁵ The seals are designated as threatened or endangered under the Endangered Species Act,

167. *Id.*

168. *Id.*

169. NOAA's *Arctic Action Plan*, NOAA ARCTIC PROGRAM (Nov. 8, 2016), <http://www.arctic.noaa.gov/Arctic-News/ArtMID/5556/ArticleID/308/NOAAs-Arctic-Action-Plan>.

170. Kathryn D. Sullivan, *NOAA's Arctic Action Plan: Supporting the National Strategy for the Arctic Region*, NOAA ARCTIC PROGRAM (Nov. 2014), <http://www.arctic.noaa.gov/NOAAarcticactionplan2014.pdf>.

171. *Id.*

172. NOAA ARCTIC PROGRAM, <http://www.arctic.noaa.gov/> (last visited Apr. 28, 2016).

173. *Id.*

174. Press Release, Julie Speegle, NOAA, NOAA Fisheries Extends Comment Period on Proposed Arctic Ringed Seal Critical Habitat (Jan. 30, 2015), <https://alaskafisheries.noaa.gov/node/15295>.

175. *Id.*

which requires designation of critical habitat areas. The proposed designation includes “no regulatory restrictions, only a consultation requirement for federal agencies.”¹⁷⁶

Beluga Whales. The National Marine Fisheries Service (NMFS) designated the Sakhalin Bay-Nikolaya Bay-Amur River stock of beluga whales as a depleted stock under the Marine Mammal Protection Act (MMPA).¹⁷⁷ The final rule was effective November 28, 2016.¹⁷⁸

Ocean Noise Strategy Roadmap. NOAA released the final Ocean Noise Strategy Roadmap, which will guide the agency’s efforts to manage ocean noise effects on marine life.¹⁷⁹ The Roadmap highlights a path to expand NOAA’s historical focus on protecting specific species by additionally addressing noise impacts on high value acoustic habitats.¹⁸⁰ According to NOAA, the Strategy Roadmap will serve as an organizing tool to rally its multiple agency offices that address ocean noise impacts around a more integrated and comprehensive approach.¹⁸¹ The roadmap suggests key roles for continuing partnerships and starting new ones with other federal agencies, industries, academic researchers, environmental advocates, and others.¹⁸²

6. *Department of Interior/BOEM/BSEE/USGS*

President-elect Trump nominated Montana congressman Ryan Zinke, a retired Navy SEAL commander, to serve as secretary of interior, replacing Sally Jewell.¹⁸³

176. Press Release, Julie Speegle, NOAA, NOAA Fisheries Proposes Arctic Ringed Seal Critical Habitat, Seeks Public Comment (Dec. 2, 2014), <https://alaskafisheries.noaa.gov/node/3204>.

177. Designating the Sakhalin Bay-Nikolaya Bay-Amur River Stock of Beluga Whales as a Depleted Stock Under the Marine Mammal Protection Act (MMPA), 81 Fed. Reg. 74,711 (Oct. 27, 2016) (to be codified at 50 C.F.R. pt. 216).

178. *Id.*

179. J. Gedamke, et al., *Ocean Noise Strategy Roadmap*, NOAA, (Sept. 2016), http://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf.

180. *Id.* at 1.

181. *Id.*

182. *Id.*

183. Juliet Eilperin, *Trump Taps Montana Congressman Ryan Zinke as Interior Secretary*, WASHINGTON POST (Dec. 13, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/12/13/trump-taps-montana-congressman-ryan-zinke-as-interior-secretary/?utm_term=.07bd9258332e.

A widely cited 2008 report on the oil and gas potential north of the Arctic Circle by the DOI's U.S. Geological Survey (USGS) concluded that the area north of the Arctic Circle has an estimated ninety billion barrels of undiscovered, technically recoverable oil, 1,670 trillion cubic feet of technically recoverable natural gas, and forty-four billion barrels of technically recoverable natural gas liquids in twenty-five geologically defined areas.¹⁸⁴ That represents 13 percent of the undiscovered oil, 30 percent of the undiscovered natural gas, and 20 percent of the undiscovered natural gas liquids in the world.¹⁸⁵ About 84 percent of the estimated resources are expected to occur offshore.¹⁸⁶

In July 2015, USGS issued its Arctic Science Strategy 2015–2020.¹⁸⁷ The Strategy supports five of the goals established by the President's National Strategy for the Arctic Region.

2012–2017 OCS Lease Cancellations. In mid-October 2015, the Department of Interior announced that the lease sales in the Beaufort and Chukchi Seas planned under the 2012–2017 leasing program were being cancelled, reportedly due to lack of interest.¹⁸⁸

Draft 2017–2022 OCS Lease Program. Oil and Gas leasing under the Outer Continental Shelf Lands Act begins with a five-year plan developed by the Department of Interior.¹⁸⁹ On March 15, 2016, Secretary Jewell announced the Proposed Program for 2017–2022.¹⁹⁰ As planning got underway, there were thirteen potential lease sales in four program areas in all or parts of six

184. Press Release, Jessica Robertson, U.S. Geological Survey, 90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic (July 23, 2008), <https://www.usgs.gov/media/audio/90-billion-barrels-oil-and-1670-trillion-cubic-feet-natural-gas-assessed-arctic>.

185. *Id.*

186. U.S. GEOLOGICAL SURVEY, CIRCUM-ARCTIC RESOURCE APPRAISAL: ESTIMATES OF UNDISCOVERED OIL AND GAS NORTH OF THE ARCTIC CIRCLE USGS FACT SHEET 2008-3049 (2008), <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.

187. U.S. GEOLOGICAL SURVEY, USGS ARCTIC SCIENCE STRATEGY FACT SHEET, USGS 2015-3049 (2015), <https://pubs.er.usgs.gov/publication/fs20153049>.

188. Press Release, Dep't of the Interior, Interior Department Cancels Arctic Offshore Lease Sales (Oct. 16, 2015), <https://www.doi.gov/pressreleases/interior-department-cancels-arctic-offshore-lease-sales>.

189. *2017–2022 OCS Oil and Gas Leasing Program*, BUREAU OF OCEAN ENERGY MGMT., <http://www.boem.gov/Five-Year-Program-2017-2022/> (last visited Mar. 28, 2017).

190. *Id.*

outer continental shelf planning areas.¹⁹¹ That includes ten sales in the combined Gulf of Mexico Program Area, and one sale each in the Chukchi Sea, Beaufort Sea, and Cook Inlet Program Areas offshore Alaska.¹⁹² No lease sales are proposed for the Pacific or Atlantic OCS.¹⁹³ The public comment period for the Draft Programmatic Environmental Impact Statement (EIS) ran from March 18, 2016 to May 2, 2016.

According to the Department, the Arctic sales were not scheduled until late in the five-year program in order “to provide additional opportunity to evaluate and obtain information regarding environmental issues, subsistence use needs, infrastructure capabilities, and results from any exploration activity associated with existing leases.”¹⁹⁴ However, President Obama later struck most of the Beaufort and Chukchi Seas Planning Areas from the list of BOEM sites.¹⁹⁵

Final Arctic Drilling Regulations. In July 2016, the U.S. Department of Interior issued final regulations governing future oil and natural-gas drilling in the Arctic Ocean.¹⁹⁶ The regulations, which were first proposed in February 2015, will require extensive contingency plans to ensure that companies are prepared to rapidly contain any potential oil spill.¹⁹⁷ The Director of the Interior Department’s Bureau of Ocean Energy Management explained that the regulations “are carefully tailored to ensure that any future exploration activities will be conducted in a way that respects and protects this incredible ecosystem and the Alaska Native subsistence activities that depend on its preservation.”¹⁹⁸ Currently, no companies are expressing interest in drilling for oil or gas in the area.¹⁹⁹

The Draft Arctic Oil & Gas Rule. As previously reported, the Bureau of Safety and Environmental Enforcement (BSEE) and the Bureau of Ocean Energy Management (BOEM) released

191. *Id.*

192. *Id.* at S-2.

193. *Id.*

194. *Id.* at S-5.

195. *Id.* at 12-1.

196. Amy Harder, *Obama Administration Issues Final Arctic Drilling Regulations*, WALL STREET J. (July 7, 2016), <https://www.wsj.com/articles/obama-administration-issues-final-arctic-drilling-regulation-1467920367>.

197. *Id.*

198. *Id.*

199. *Id.*

the proposed regulations on February 20, 2015.²⁰⁰ If finalized, the new rules will apply to offshore exploration by Mobile Offshore Drilling Units (MODUs) in the Beaufort and Chukchi Sea Planning Areas.²⁰¹ No further activity was taken on the proposed rule in 2016.

Equipment Failure Data. The Bureau of Safety and Environmental Enforcement (BSEE) announced the expansion of the SafeOCS program to include confidential collection of equipment failure data in an effort to further reduce the risk of offshore incidents.²⁰²

7. *Department of Defense*

President-elect Trump nominated retired Marine Corps general and commander of U.S. Central Command, James Mattis, to serve as secretary of defense.²⁰³

The Department of Defense's Arctic Strategy sets out the Department's desired end-state for the Arctic: a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively to address challenges.²⁰⁴ It articulates two main supporting objectives: (1) ensure security, support safety, and promote defense cooperation, and (2) prepare to respond to a wide range of challenges and contingencies—operating in conjunction with other nations when possible, and independently if necessary—in order to maintain stability in the region.²⁰⁵

200. Press Release, Bureau of Safety and Environmental Enforcement, BOEM Issue Proposed Regulations to Ensure Safe and Responsible Exploratory Drilling Offshore Alaska (Feb. 20, 2015), <http://www.bsee.gov/BSEE-Newsroom/Press-Releases/2015/BSEE-BOEM-Issue-Proposed-Regulations-to-Ensure-Safe-and-Responsible-Exploratory-Drilling-Offshore-Alaska/>.

201. Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf; Proposed Rule, 80 Fed. Reg. 9916, 9942 (proposed Feb. 24, 2015).

202. Press Release, Bureau of Safety and Environmental Enforcement, BSEE Expands Safe OCS Program (Oct. 26, 2016), <https://www.bsee.gov/newsroom/latest-news/statements-and-releases/press-releases/bsee-expands-safeocs-program>.

203. Lolita C. Baldor, *Trump to Nominate Retired Gen. James Mattis to Lead Pentagon*, WASH. POST (Dec. 1, 2016), https://www.washingtonpost.com/world/national-security/trump-has-chosen-retired-marine-gen-james-mattis-for-secretary-of-defense/2016/12/01/6c6b3b74-aff9-11e6-be1c-8cec35b1ad25_story.html.

204. U.S. DEPT OF DEFENSE, ARCTIC STRATEGY 2, 5–6 (2013), http://www.defense.gov/Portals/1/Documents/pubs/2013_Arctic_Strategy.pdf.

205. *Id.* at 7–11.

The strategy identifies the ways and means DoD intends to use to achieve these objectives as it implements the National Strategy for the Arctic Region.²⁰⁶ The ways include (1) exercise sovereignty and protect the homeland, (2) engage public and private sector partners to improve domain awareness in the Arctic, (3) preserve freedom of the seas in the Arctic, (4) evolve Arctic infrastructure and capabilities consistent with changing conditions, (5) support existing agreements with allies and partners while pursuing new ones to build confidence with key regional partners, (6) provide support to civil authorities, as directed, (7) partner with other departments and agencies and nations to support human and environmental safety, and (8) support the development of the Arctic Council and other international institutions that promote regional cooperation and the rule of law.²⁰⁷

The United States Navy, in its Arctic Roadmap, predicts that the region will remain a low threat security environment characterized by peaceful resolution of differences.²⁰⁸ The Navy considers its present Arctic posture sufficient for near-term defense requirements, but recognizes that increased activity in shipping, oil and gas development, and fishing will alter the strategic importance of the Arctic.²⁰⁹ With particular attention on increasingly open Arctic Sea shipping routes, the Navy's objectives seek to ensure Arctic sovereignty and homeland defense, provide naval forces ready to respond to crisis and contingencies, preserve freedom of the seas, and promote international partnerships.²¹⁰

In a September 12, 2016 speech to the Center for American Progress, U.S. Chief of Naval Operations (CNO) John Richardson observed that melting polar caps would have a profound impact on how the Navy does business.²¹¹ He acknowledged that the U.S. Navy's presence in the Arctic has been limited due to constrained budgets and urgent needs elsewhere in the world, but stated that future ships should still

206. *Id.*

207. *Id.* at 7–11.

208. U.S. NAVY, THE UNITED STATES NAVY ARCTIC ROADMAP FOR 2014 TO 2030 6 (2014), http://www.navy.mil/docs/USN_arctic_roadmap.pdf.

209. *Id.* at 6–7.

210. *Id.* at 15.

211. CENTER FOR AMERICAN PROGRESS, *Naval Strategy in Asia and the Arctic*, YOUTUBE (Sept. 12, 2016), https://www.youtube.com/watch?v=VNa9_gRgKJg.

be designed with potential Arctic operations in mind.²¹²

On November 18, 2016, Rear Adm. David J. Hahn, a decorated submarine commander and naval acquisition officer, was sworn in as the new Chief of Naval Research (CNR) of the Office of Naval Research (ONR).²¹³ As new head of ONR, Hahn will oversee the roughly \$2 billion Department of the Navy budget for naval science and technology programs.²¹⁴ Hahn succeeds Rear Adm. Mathias W. Winter.²¹⁵

The United States hosted a live international SAR exercise in the summer of 2016 (See Arctic Shield 2016 above).

Deep-Water Arctic Ports Feasibility Study Put on Hold.

The Army Corps of Engineers and the Alaska Department of Transportation and Public Facilities released a draft report on the continuing Deep-Draft Arctic Port System Study in February 2015.²¹⁶ After spending several years considering possible locations, the study recommended expanding the capacity of Nome Harbor,²¹⁷ and found no significant adverse impact on species or historic sites protected under various federal laws.²¹⁸ The plan objectives included addressing the need for enhanced marine infrastructure to support multiple maritime missions, facilitating holistic economic growth, being compatible with cultural, subsistence and natural resources, taking into account existing land uses, encouraging shared responsibility for development in the Arctic, and allowing for multi-purpose use of Arctic resources.²¹⁹

The estimated project cost, which includes lands, easements, facilities, and construction of general navigation features, is \$210.8 million with an estimated additional \$8.3 million for

212. *Id.*

213. NAVY LEAGUE OF THE UNITED STATES, *Hahn Sworn in as New Chief of Naval Research*, SEAPOW, (Nov. 18, 2016, 4:50pm), <http://seapowermagazine.org/stories/20161118-onr.html>.

214. *Id.*

215. *Id.*

216. U.S. ARMY CORPS OF ENGINEERS ALASKA DISTRICT, ALASKA DEEP-DRAFT ARCTIC PORT SYSTEM DRAFT INTERIM INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT (Feb. 2015), <http://www.poa.usace.army.mil/Portals/34/docs/civilworks/arcticdeepdraft/ADDMainReportwithoutappendixes.pdf>.

217. *Id.* at 72.

218. *Id.* at 32.

219. *Id.* at Executive Summary.

deepening the navigation features, and roughly \$244,000 in annual operation and maintenance costs.²²⁰ These costs would be apportioned between Federal and non-Federal sources in accordance with the Water Resources Development Act of 1986 (see below).²²¹

The estimated project cost, which includes lands, easements, facilities and construction of general navigation features, is \$210.8 million, with an estimated additional \$8.3 million for deepening the navigation features, and roughly \$244,000 in annual operation and maintenance costs.²²² These costs would be apportioned between Federal and non-Federal sources in accordance with the Water Resources Development Act of 1986 (see below).²²³

| Portion of Project | Fed % | Non % |
|-----------------------------------|-------|-------|
| General Navigation Features | 65 | 35 |
| Dredging to minus 20 feet | 80 | 20 |
| Dredging from minus 20 to 45 feet | 65 | 35 |
| Local Service Facilities | 0 | 100 |
| Aids to Navigation | 100 | 0 |

In October 2015, the Army Corps of Engineers suspended work on the Nome deep-water feasibility study,²²⁴ following Shell's September 28th announcement that it was suspending its Arctic exploration activities for the "foreseeable future."²²⁵ The twelve-month delay will give the Corps time to reconsider

220. *Id.*

221. *Id.*

222. *Id.* at Executive Summary.

223. *Id.*

224. Alex DeMarban, *Work Toward Deep-Water Port in Alaska Arctic on Hold, Army Corps Says*, ARCTIC NEWSWIRE (Oct. 26, 2015), <http://www.adn.com/article/20151026/work-toward-deep-water-port-alaska-arctic-hold-army-corps-says>.

225. Juliet Eilperin & Steven Mufson, *Royal Dutch Shell Suspends Arctic Drilling Indefinitely*, WASHINGTON POST (Sept. 28, 2015), <https://www.washingtonpost.com/news/energy-environment/wp/2015/09/28/royal-dutch-shell-suspends-arctic-drilling-indefinitely/>.

the project's justification and the underlying economic assumptions.

8. *National Aeronautics and Space Administration*

The National Aeronautics and Space Administration's Cryospheric Science Program is a major contributor to the nation's Arctic science effort. Among other missions, NASA provides ice observations by satellite and aircraft observations.

In 2016, NASA scientists created the first 3-D model of the Greenland ice sheet, using decades of observations.²²⁶ The model shows how distinct layers of ice were laid down over time and suggests how today's ice sheet may respond to climate change.

9. *Environmental Protection Agency*

President-elect Trump nominated Oklahoma Attorney General Scott Pruitt to serve as Administrator of the EPA.²²⁷

On February 9, 2016, the U.S. Supreme Court stayed the EPA's Clean Power Plan, which sets state-specific limits on CO₂ emissions from the power sector.²²⁸ On September 27, challenges to the plan were heard by an en banc panel of the Court of Appeals for the D.C. Circuit.²²⁹

On May 12, 2016, the EPA imposed limits on methane emissions from the oil and gas sector.²³⁰ Several states announced they would challenge the rule.²³¹

226. *NASA Scientists Create First 3-D Model of Greenland Ice Sheet*, NATIONAL GEOGRAPHIC (2016), <http://video.nationalgeographic.com/video/news/150827-nasa-mapping-greenland-ice-sheet-vin>.

227. Chris Mooney, Brady Dennis & Steven Mufson, *Trump Names Scott Pruitt, Oklahoma Attorney General Suing EPA on Climate Change, to Head the EPA*, WASHINGTON POST, (Dec. 8, 2016), <https://www.washingtonpost.com/news/energy-environment/wp/2016/12/07/trump-names-scott-pruitt-oklahoma-attorney-general-suing-epa-on-climate-change-to-head-the-epa/>.

228. *West Virginia v. EPA*, __ U.S. __, 136 S. Ct. 1000 (2016) (mem.) (staying EPA's "Carbon Pollution/Emission Guidelines," 80 Fed. Reg. 64,662 (Oct. 23, 2015), pending disposition in the U.S. Court of Appeals for the D.C. Circuit).

229. Transcript of Oral Argument, *West Virginia v. EPA*, 788 F.3d 330 (D.C. Cir. 2016) (No. 15-1363).

230. Press Release, EPA Releases First-Ever Standards to Cut Methane Emissions from the Oil and Gas Sector, EPA (May 12, 2016), <https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector%20>.

231. Devin Henry, *Thirteen States Sue Over EPA Methane Rule*, THE HILL (Aug. 2,

10. Significant U.S. Court Decisions

On February 13, 2016 Supreme Court Justice Antonin Scalia passed away.²³² President Obama nominated Merrick Garland, Chief Judge for the U.S. Court of Appeals for the D.C. Circuit, to replace Justice Scalia,²³³ but the senate failed to take action on the nomination.²³⁴

***Alaska Wilderness League v. Jewell*, No. 15-35559 (9th Cir. Dec. 29, 2015).** The Ninth Circuit denied a rehearing en banc after environmental groups lost their challenge to Shell's offshore drilling activities in the Chukchi Sea.²³⁵

***Alaska Oil and Gas Ass'n v. Jewell*, No. 13-35619.** The Ninth Circuit reversed a lower court decision and reinstated the U.S. Fish and Wildlife Service's (FWS) designation of a critical habitat for protection of the polar bear.²³⁶ Previously, the lower court had agreed with Alaska state officials and energy industry groups that protections for the bears ordered by the FWS six years ago were too arbitrary to be enforced.²³⁷ The Ninth Circuit disagreed, stating that while use of land by polar bears is a sufficient basis to designate habitat, it is not a necessary basis.²³⁸ The decision will affect all proposed greenfield and expansion projects along the Beaufort and Chukchi seas north of Alaska and east of Russia, although existing projects are

2016), <http://thehill.com/policy/energy-environment/290159-thirteen-states-sue-over-epa-methane-rule>.

232. Adam Liptak, *Antonin Scalia, Justice on the Supreme Court, Dies at 79*, N.Y. TIMES (Feb. 13, 2016), <https://www.nytimes.com/2016/02/14/us/antonin-scalia-death.html>.

233. Juliet Eilperin & Mike DeBonis, *President Obama Nominates Merrick Garland to the Supreme Court*, WASH. POST (Mar. 16, 2016), https://www.washingtonpost.com/world/national-security/president-obama-to-nominate-merrick-garland-to-the-supreme-court-sources-say/2016/03/16/3bc90bc8-eb7c-11e5-a6f3-21ccd5f74e_story.html.

234. Jess Bravin, *President Obama's Supreme Court Nomination of Merrick Garland Expires*, WALL STREET J. (Jan. 3, 2017), <https://www.wsj.com/articles/president-obamas-supreme-court-nomination-of-merrick-garland-expires-1483463952>.

235. *Alaska Wilderness League v. Jewell*, 788 F.3d 1212, 1220 (9th Cir. 2015).

236. *Alaska Oil & Gas Ass'n v. Jewell*, 815 F.3d 544 (9th Cir. 2016).

237. Kartikay Mehrotra & Jennifer A. Dlouhy, *Polar Bear Critical Habitat in Alaska Restored by Appeals Court*, BLOOMBERG (Feb. 29, 2016), <https://www.bloomberg.com/news/articles/2016-02-29/polar-bear-critical-habitat-in-alaska-restored-by-appeals-court>.

238. *Jewell*, 815 F.3d at 544.

likely to be grandfathered in.²³⁹ A petition for certiorari was filed with the U.S. Supreme Court in November 2016.²⁴⁰

Alaska Oil & Gas Ass'n v. Pritzker, No. 14-35806 (9th Cir. Oct. 24, 2016). The Ninth Circuit reinstated a decision protecting bearded seals in Alaska under the Endangered Species Act.²⁴¹ The October 2016 decision reversed a lower-court ruling and accepted that projections of climate change present a long-term threat to the ice-dependent species.²⁴² The opinion was based on whether the National Marine Fisheries Service can list an animal population as endangered that is not currently endangered but is likely to suffer a population decline in decades to come.²⁴³ The decision is similar to an earlier legal battle over the polar bear, which is now listed as threatened because of projections modeled out to 2050.²⁴⁴

11. *U.S. Arctic Research Commission*

The U.S. Arctic Research Commission (USARC) was established by the Arctic Research and Policy Act of 1984.²⁴⁵ Its principal duties are to (1) establish the national policy, priorities, and goals necessary to construct a federal program for basic and applied scientific research with respect to the Arctic, including natural resources and materials, physical, biological and health sciences, and social and behavioral sciences; (2) promote Arctic research, to recommend Arctic research policy, and to communicate our research and policy recommendations to the President and the Congress; (3) work with the National Science and Technology Council and the National Science Foundation as the lead agency responsible for implementing the Arctic research policy and to support cooperation and collaboration throughout the Federal Government; (4) give guidance to the Interagency Arctic

239. Mehrotra, *supra* note 237.

240. See *Alaska v. Zinke*, SCOTUSBLOG (Nov. 4, 2016), <http://www.scotusblog.com/case-files/cases/alaska-v-jewell-2/>; *Alaska Oil & Gas Ass'n v. Jewell*, 815 F.3d 544 (9th Cir. 2016), *cert. denied*, *Alaska v. Zinke*, __ U.S. __ (mem.) (2017) and *Alaska Oil & Gas Ass'n v. Zinke*, __ U.S. __ (mem.) (2017).

241. *Alaska Oil & Gas Ass'n v. Pritzker*, 840 F.3d 671 (9th Cir. 2016).

242. *Id.*

243. *Id.*

244. See *In re Polar Bear Litig.*, 709 F.3d 1 (D.C. Cir. 2013).

245. 15 U.S.C. §§ 4101–4111 (2012).

Research Policy Committee to develop national Arctic research projects and a five-year plan to implement those projects (see White House National Science and Technology Council, Arctic Research Plan 2013–2017);²⁴⁶ and (5) interact with Arctic residents, international Arctic research programs and organizations and local institutions including regional governments in order to obtain the broadest possible view of Arctic research needs.²⁴⁷ The Commission held its 105th Meeting on March 16, 2016 in Fairbanks, Alaska and its 106th Meeting from September 29–30, 2016, in Washington, DC.²⁴⁸

12. National Ocean Council

President Obama issued the “National Ocean Policy” in 2010²⁴⁹ and the “National Ocean Policy Implementation Plan” in 2011.²⁵⁰ Under the policy, the U.S. marine and Great Lakes waters were divided into nine planning regions.²⁵¹ Federal, state and tribal governments in those regions were invited to submit regional Marine Spatial Plans to the National Ocean Council for approval.²⁵² On February 12, 2016, the Council released its 2016 Annual Work Plan and Guidance on Marine Plans.²⁵³

On May 26, 2016, the Northeast Regional Planning Body—composed of representatives from the six New England states, six federally recognized tribes, nine Federal agencies, and the

246. NATIONAL SCIENCE AND TECHNOLOGY COUNCIL, EXEC. OFFICE OF THE PRESIDENT, ARCTIC RESEARCH PLAN: FY 2013–2017 (2013), https://www.whitehouse.gov/sites/default/files/microsites/ostp/2013_arctic_research_plan.pdf.

247. *About USARC*, U.S. ARCTIC RESEARCH COMMISSION, https://www.arctic.gov/about_usarc.html (last visited May 2, 2016).

248. *Meetings Archive*, U.S. ARCTIC RESEARCH COMMISSION, https://www.arctic.gov/meeting_archive.html (last visited Feb. 3, 2017).

249. Exec. Order No. 13,547, 75 Fed. Reg. 43,023 (July 19, 2010) (revoking Exec. Order No. 13,366, 69 Fed. Reg. 76,591 (Dec. 17, 2004)).

250. *Obama Administration Releases Plan to Promote Ocean Economy and Reliance*, WHITE HOUSE COUNCIL ON ENVTL. QUALITY (Apr. 16, 2013), https://www.whitehouse.gov/sites/default/files/final_marine_planning_handbook.pdf.

251. Exec. Order No. 13,547, 75 Fed. Reg. 43,023 (July 19, 2010) (revoking Exec. Order No. 13,366, 69 Fed. Reg. 76,591 (Dec. 17, 2004)).

252. *Id.*

253. Beth Kerttula, *Releasing New Guidance Under the National Ocean Policy*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA (Feb. 12, 2016, 10:43 AM), <https://obamawhitehouse.archives.gov/blog/2016/02/12/releasing-new-guidance-under-national-ocean-policy>.

New England Fishery Management Council—released the draft Northeast Regional Ocean Plan, the Nation’s first draft regional marine plan.²⁵⁴

On July 13, 2016, the Mid-Atlantic Regional Planning Body released the nation’s second draft marine plan for public comment.²⁵⁵ To date, Alaska has declined to participate in the process (or the Coastal Zone Management Act).

13. *Committee on the Marine Transportation System*

The Committee on the Marine Transportation System (CMTS), established by President George W. Bush in 2004, is a federal cabinet-level, inter-departmental committee chaired by the Secretary of Transportation.²⁵⁶ Its purpose is to create a partnership of federal departments and agencies with responsibility for the Marine Transportation System (MTS).²⁵⁷

The secretary of transportation directed the Committee on the Marine Transportation System (CMTS) to complete three items required by the president’s National Strategy for the Arctic Region (NSAR) Implementation Plan (2014) related to the U.S. Arctic maritime domain.²⁵⁸ The second task was completed on April 15, 2015, with the publication of the CMTS “Ten-year Prioritization of Infrastructure Needs in the U.S. Arctic.”²⁵⁹ In response to its third task, on October 24, 2016, CMTS circulated a draft report on “Recommendations and Criteria for Using Federal Public-Private Partnerships to

254. NORTHEAST REGIONAL PLANNING BODY, DRAFT NORTHEAST OCEAN PLAN (2016), <http://marineprotectedareas.noaa.gov/fac/history/ocean-plan0516.pdf>.

255. Jennifer Lee and Deerin Babb-Brott, *Mid-Atlantic Regional Planning Body Releases its Draft Regional Ocean Action Plan for Public Comment*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA (July 13, 2016, 10:26 AM), <https://obamawhitehouse.archives.gov/blog/2016/07/13/mid-atlantic-regional-planning-body-releases-its-draft-regional-ocean-action-plan>.

256. *What We Do*, COMM. ON MARINE TRANSP. SYS., <http://www.cmts.gov/About/Index.aspx> (last visited Feb. 3, 2017).

257. *Id.*

258. ARCTIC STEERING COMM., IMPLEMENTATION FRAMEWORK FOR THE NATIONAL STRATEGY FOR THE ARCTIC REGION (2016), [https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/National%20Strategy%20for%20the%20Arctic%20Region%20Implementation%20Framework%20\(Appendix%20A\)%20Final.pdf](https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/National%20Strategy%20for%20the%20Arctic%20Region%20Implementation%20Framework%20(Appendix%20A)%20Final.pdf).

259. COMM. ON MARINE TRANSP. SYS. ARCTIC MARINE TRANSP. INTEGRATED ACTION TEAM, A TEN-YEAR PRIORITIZATION OF INFRASTRUCTURE NEEDS IN THE U.S. ARCTIC (2016), http://www.cmts.gov/downloads/NSAR_1.1.2_10-Year_MTS_Investment_Framework_Final_5_4_16.pdf.

Support Critical U.S. Arctic Infrastructure.”²⁶⁰ The public comment period closed on November 23.

14. *National Academies Transportation Research Board*

The Transportation Research Board published Transportation Research Circular Number E-C206, “Trends and Issues in Marine Transportation and the Environment,” in April 2016.²⁶¹ The publication includes a section on marine transportation and the Arctic.

B. *United States: Alaska*

In 2015, Alaska’s legislature passed a resolution declaring 2015–2017 the “Years of the Arctic.”²⁶²

At 586,400 square miles, Alaska is more than twice the size of Texas, the second largest state, and is larger than all but eighteen of the nations in the world. The state has more shoreline (34,000 miles) than the rest of the nation combined. Alaska has produced over seventeen billion barrels of oil. From 1980–2000 Alaska accounted for twenty percent of the U.S. domestic oil production.²⁶³ More than half of the fish harvested in the U.S. are taken from the federal and state waters off Alaska.²⁶⁴ Cruise ships carry some one million passengers to Alaska each year.²⁶⁵

260. COMM. ON MARINE TRANSP. SYS. ARCTIC MARINE TRANSP. INTEGRATED ACTION TEAM, RECOMMENDATIONS AND CRITERIA FOR USING FEDERAL PUBLIC-PRIVATE PARTNERSHIPS TO SUPPORT CRITICAL U.S. ARCTIC INFRASTRUCTURE (DRAFT) (2016), http://www.cmts.gov/downloads/CMTS_Recommendations_and_Criteria_for_Using_Federal_P3_Public_Comment_Draft_October_21_2016_v2.pdf.

261. TRANSPORTATION RESEARCH BOARD, TRENDS AND ISSUES IN MARINE TRANSPORTATION AND THE ENVIRONMENT (Number E-C206 2016), <https://www.nap.edu/catalog/23620/trends-and-issues-in-marine-transportation-and-the-environment>.

262. Press Release, Alaska House of Representatives, Legislature Declares 2015-17 as “Years of the Arctic” (Apr. 9, 2015), <http://www.housemajority.org/2015/04/09/legislature-declares-2015-17-as-years-of-the-arctic/>.

263. *Alaska’s Oil & Gas Industry: Facts and Economic Impact*, RESOURCE DEV. COUNCIL FOR ALASKA, <http://www.akrdc.org/oil-and-gas> (last visited Apr. 9, 2016).

264. *Alaska’s Fishing Industry: Background*, RESOURCE DEV. COUNCIL FOR ALASKA, <http://www.akrdc.org/fisheries> (last visited Apr. 9, 2016).

265. *Alaska’s Tourism Industry: Facts and Economic Impact*, RESOURCE DEV. COUNCIL FOR ALASKA, <http://www.akrdc.org/tourism> (last visited Apr. 9, 2016).

Alaska's Coastal Zone Management (CZM) Program, in place since 1977, was allowed to sunset on July 1, 2011.²⁶⁶ In 2012, Alaska voters overwhelmingly (62 percent to 38 percent) rejected an initiative (Ballot Measure 2) that would have restored the CZM Program.²⁶⁷ As a result, Alaska is the only coastal state in the U.S. that does not have a CZM plan developed and approved under the federal Coastal Zone Management Act of 1972.²⁶⁸ Reportedly, the state has also declined to participate in the voluntary regional marine spatial planning called for by the President's National Ocean Policy. Whether Governor Walker will reverse that stand is unclear.

Veto of Permanent Fund Upheld. On November 17, 2016, Judge William Morse of the Anchorage Superior Court upheld Governor Walker's veto of the 2016 Alaska Permanent Fund, which cut this year's dividend in half.²⁶⁹

Alaskan Village Relocation. Residents of Shishmaref, a coastal village on an Alaskan island just north of the Bering Strait, voted to relocate to the mainland as a result of climate change.²⁷⁰ The area has been eroding for decades but relocation will be incredibly expensive for a community that is already racked by poverty.²⁷¹ The most recent estimate of the cost of relocating, from a 2004 Army Corps of Engineers study, was \$180 million.²⁷² The U.S. Government Accountability Office (GAO) said Shishmaref is one of thirty-one villages that face "imminent threats" from flooding and coastal erosion.²⁷³

266. Richard Mauer, *Loss of Coast Zone Program Hurts State's Beluga Whale Case*, ALASKA DISPATCH NEWS (Oct. 30, 2011), <https://www.adn.com/alaska-news/article/loss-coast-zone-program-hurts-states-beluga-whale-case/2011/10/31/>.

267. Alyssa Carducci, *Alaska Voters Reject Coastal Management Program*, HEARTLAND INSTITUTE (Oct. 10, 2012), <https://www.heartland.org/news-opinion/news/alaska-voters-reject-coastal-management-program>.

268. See *Coastal Zone Management Programs*, NOAA OFFICE OF COASTAL MGMT., <http://coast.noaa.gov/czm/mystate/> (last visited Apr. 9, 2016).

269. *Judge Tosses Lawsuit Challenging Alaska Gov. Walker's PFD Veto*, ALASKA DISPATCH NEWS (Nov. 17, 2016), <https://www.adn.com/politics/2016/11/17/judge-hears-arguments-over-gov-walkers-partial-veto-of-pfds/>.

270. Amanda Holpuch, *Alaskan Village Threatened by Rising Sea Levels Votes for Costly Relocation*, THE GUARDIAN (Aug. 16, 2016), <https://www.theguardian.com/us-news/2016/aug/18/alaska-shishmaref-vote-move-coastal-erosion-rising-sea-levels>.

271. *Id.*

272. *Id.*

273. *Id.*

According to officials, it would cost \$110 million to implement the necessary environmental protections that would allow the community to safely remain.²⁷⁴

Northern Forum. In July 2016, Alaskan Governor Bill Walker signed a declaration making Alaska a member of the Northern Forum, a nonprofit organization made up of regional governments from eight countries, including Russia.²⁷⁵ Walker stated that a reinvigorated Northern Forum should deliver tangible benefits to help lower rural energy costs, diversify economies, and improve environmental and human safety.²⁷⁶

Pipeline Settlement. After a decade of negotiations, the owners of the trans-Alaska pipeline and three Alaskan municipalities approved a settlement agreement setting its worth at \$8 billion through 2020 for property tax purposes, which is reportedly a much higher amount than what the industry previously sought.²⁷⁷ In a separate agreement, the parties and the state agreed to dismiss unresolved disputes related to assessments between 2007 and 2015.²⁷⁸ Representatives with BP, ConocoPhillips, and ExxonMobil said the agreement provides a reliable tax structure for the municipalities, the state and the pipeline owners.²⁷⁹ The Alaskan Attorney General's office stated that the settlements "bring certainty and an end to these long, ongoing cases, so [Alaska] can move forward."²⁸⁰

C. Canada

Canada is a party to UNCLOS and a member, and immediate-past Chair, of the Arctic Council. Canada's extended continental

274. *Id.*

275. Liz Raines, *Networking with Arctic Neighbors: Alaska Rejoins the Northern Forum*, KTVA ALASKA (July 26, 2016), <http://www.ktva.com/networking-with-arctic-neighbors-alaska-rejoins-the-northern-forum-709/#.V5iw7KiIMoQ.twitter>.

276. Yereth Rosen, *After Hiatus, Alaska Returns to Northern Forum*, ALASKA DISPATCH NEWS (July 26, 2016), <https://www.adn.com/arctic/2016/07/26/after-hiatus-alaska-returns-to-northern-forum/>.

277. Alex DeMarban, *Trans-Alaska Pipeline Owners, Municipalities End Litigation, Set Line's Value at \$8 Billion*, ALASKA DISPATCH NEWS (last updated Sept. 28, 2016), <https://www.adn.com/energy/article/pipeline-owners-municipalities-end-litigation-set-lines-value-8-billion/2016/03/01/>.

278. *Id.*

279. *Id.*

280. *Id.*

shelf submission to the Commission on Limits of the Continental Shelf is detailed in Section IV.G.

Oceans Protection Plan. Partly in response to the October 13, 2016 foundering of the U.S. flag tugboat Nathan E. Stewart near Bella Bella, British Columbia, which resulted in a 25,000 gallon oil spill,²⁸¹ Canadian Prime Minister Trudeau announced his Oceans Protection Plan (OPP) on November 7, 2016.²⁸² The OPP commits \$1.5 billion to improve marine safety and responsible shipping, protect Canada's marine environment, and offer new possibilities for Indigenous and coastal communities.²⁸³

It is not clear what effect the OPP will have on Trudeau's October 2015 directive²⁸⁴ to the Minister of Transport to impose a moratorium on crude oil tanker traffic in northern British Columbian waters, which was not mentioned in the OPP announcement.

Research Mission: Arctic Ownership. In September 2016, Canadian researchers finished a three-year mission to map the limits of the Arctic continental shelf and scientifically prove Canada's claim over a resource-rich area leading up to the North Pole.²⁸⁵ Due to favorable ice conditions, the team was able to acquire four times the amount of data it collected in the previous two years.²⁸⁶ Before Canada can make a submission to the United Nations Commission on the Limits of the Continental Shelf, the researchers will need to analyze the data, which could take about two years. Relations with Russia might further influence the timeline given the possibility that the two countries' claims could overlap.²⁸⁷

Adoption of UNDRIP. In May 2016, Canada announced it

281. Justine Hunter, *The Sinking of the Nathan E. Stewart*, GLOBE AND MAIL (Nov. 4, 2016), <http://www.theglobeandmail.com/news/british-columbia/inside-the-response-to-a-tug-boat-sinking-off-bcs-northerncoast/article32672711/>.

282. OFFICE OF THE PRIME MINISTER, CANADA'S OCEANS PROTECTION PLAN (2016), <http://www.tc.gc.ca/media/documents/communications-eng/oceans-protection-plan.pdf>.

283. *Id.*

284. Jeremy Nuttall, *No Tanker Ban in Trudeau's \$1.5-Billion Coastal Protection Plan*, THE TYEE (Nov. 7, 2016), <https://thetyee.ca/News/2016/11/07/No-Tanker-Ban-Trudeau-Plan/>.

285. Elyse Skura, *'All High Fives': Canada Wraps Up Research Mission to Prove Arctic Ownership claims*, CBC NEWS (Sept. 23, 2016), <http://www.cbc.ca/news/canada/north/unclos-arctic-research-mission-wraps-1.3774985>.

286. *Id.*

287. *Id.*

will fully support the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).²⁸⁸ The announcement reversed the position of the previous government, which rejected the document nine years ago.²⁸⁹ Signed in 2007 by 144 countries (excluding Canada, the United States, Australia, and New Zealand at the time) UNDRIP recognizes Indigenous peoples' rights, including language, identity, culture, health, education, and includes the norm of free, prior, and informed consent to development on Indigenous lands, which was initially put forth by the International Labor Organization (ILO).²⁹⁰ Although Canada endorsed the declaration in 2010, the government referred to it as an "aspirational document" and did not fully adopt its principles until this year.²⁹¹

Shell Canada Lawsuit. In April 2016, the World Wildlife Fund (WWF) filed a lawsuit in Federal Court alleging that 30 permits held by Shell Canada at the eastern gate of the Northwest Passage lapsed in 1979 and were never renewed.²⁹² WWF intends to quash Arctic oil and gas exploration permits that continue to obstruct conservation efforts in Lancaster Sound, Nunavut.²⁹³

Arctic Surveillance. Ottawa plans to spend \$133 million over five years to research and develop a new surveillance system that will improve Canada's Arctic surveillance in the air, on the land, and underwater.²⁹⁴ The program description states that "surveillance solutions explored will support the Government of Canada's ability to exercise sovereignty in the North, and will provide a greater whole-of-government awareness of safety and security issues, transportation and

288. Tamara Khandaker, *Canada Adopts UN Declaration on Indigenous Peoples, but Some Are Skeptical Anything Will Change*, VICE NEWS (May 10, 2016), <https://news.vice.com/article/canada-finally-endorses-un-declaration-on-indigenous-people>.

289. *Id.*

290. *Id.*

291. *Id.*

292. The Canadian Press, *Environmental Group Files Lawsuit over 'Expired' Shell Arctic Oil Permits*, CBC NEWS (Apr. 12, 2016), <http://www.cbc.ca/news/canada/north/shell-arctic-oil-lawsuit-1.3531597>.

293. *Id.*

294. *Canada Earmarks \$133 Million for Beefed-Up Arctic Surveillance*, NUNATSIQA NEWS (Apr. 14, 2016), http://www.nunatsiaqonline.ca/stories/article/65674feds_earmark_133_million_for_bee-fed-up_arctic_surveillance/.

commercial activity in Canada's Arctic."²⁹⁵

Indigenous Languages Act. In December 2016, Prime Minister Trudeau announced that the government will introduce an Indigenous Languages Act to help preserve First Nations, Metis and Inuit languages in Canada.²⁹⁶

D. China

China became a permanent observer at the Arctic Council in 2013.²⁹⁷ A May 20, 2013 article in the government-controlled Beijing Review titled "How China became an Arctic State" asserted that "China has ultimately managed to re-shuffle the Arctic balance of power in record time."²⁹⁸ China now refers to itself as a "near Arctic state" (jin beiji guojia) and an "Arctic stakeholder" (beiji lihaiguanxguo).²⁹⁹ President Xi Jinping has referred to China as a "polar great power" (jidi daguo).³⁰⁰

Several future scenarios have highlighted China's increasing overtures to Greenland's inhabitants and the possibility that the economic opportunities provided by China — particularly, Chinese mining entities — may encourage Greenlanders to declare their full independence from Denmark.³⁰¹

First Survey in Arctic Circle. China Oilfield Services Limited's (COSL) most advanced 12-streamer seismic vessel HYSY 720 completed a survey of two blocks in the Barents Sea

295. *All Domain Situational Awareness S&T Program*, DEFENSE RESEARCH AND DEVELOPMENT CANADA, <http://www.drdc-rddc.gc.ca/en/partnerships-partenariats/all-domain-situational-awareness-connaissances-situation-domaines.page> (last visited Feb. 3, 2017).

296. The Canadian Press, *PM Trudeau Announces Indigenous Languages Act*, CTV NEWS (Dec. 6, 2016), http://www.ctvnews.ca/politics/pm-trudeau-announces-indigenous-languages-act-1.3191946#_gus&_gucid=&_gup=twitter&_gsc=eTmuBOY.

297. Steven Lee Myers, *Arctic Council Adds Six Nations as Observer States, Including China*, N.Y. TIMES (May 15, 2013), <http://www.nytimes.com/2013/05/16/world/europe/arctic-council-adds-six-members-including-china.html>.

298. Mikå Mered, *How China Became an 'Arctic State'*, BEIJING REVIEW (May 20, 2013), http://www.bjreview.com.cn/expert/txt/2013-05/20/content_544897.htm.

299. Andreas Kuersten, *Russian Sanctions, China, and the Arctic*, THE DIPLOMAT (Jan. 3, 2015), <http://thediplomat.com/2015/01/russian-sanctions-china-and-the-arctic/>.

300. Jane Perlez, *China, Pursuing Strategic Interests, Builds Presence in Antarctic*, N.Y. TIMES (May 3, 2015), <http://www.nytimes.com/2015/05/04/world/asia/china-pursuing-strategic-interests-builds-presence-in-antarctica.html>.

301. See Will Hickey, *China Targets Greenland for Mining*, YALE GLOBAL ONLINE (Apr. 18, 2013), <http://yaleglobal.yale.edu/content/china-targets-greenland-mining>.

on August 9, 2016.³⁰² The operation lasted for 100 days and set a new monthly seismic data acquisition record for China at 703 square miles.³⁰³ This was China's first attempt at performing 3D seismic data collection in ultra-high latitude and ultra-low-temperature waters.³⁰⁴

New Law on Deep Sea Exploration. China adopted a new law to protect the interests of Chinese citizens and organizations in their search for resources and in deep sea surveys.³⁰⁵ China is a signatory to UNCLOS and it is unclear how the new domestic law will interact with China's international treaty obligations.³⁰⁶ China has been increasingly active in deep sea exploration through use of its Jiaolong manned submersible vehicle, which the country used to plant a national flag beneath the disputed South China Sea in 2010.³⁰⁷

E. Denmark/Greenland

New Arctic Strategy. In November 2016, Denmark's Education and Research Ministry launched a new Arctic strategy for the purpose of advancing the country's position as a leader in Arctic research.³⁰⁸ The strategy seeks to promote high-quality research and education that is relevant to society, increase Denmark's visibility as a key international partner in this area, and ensure responsible and sustainable societal development in the Arctic region.³⁰⁹ The document also outlines specific initiatives, such as charting Arctic interests in strategic countries that have established innovation centers and working to make Arctic data more visible and accessible to researchers on a national and global level.³¹⁰

302. *COSL Completes China's First Survey in Arctic Circle*, THE MARITIME EXECUTIVE (Aug. 9, 2016), <http://www.maritime-executive.com/article/cosl-completes-chinas-first-survey-in-arctic-circle>.

303. *Id.*

304. *Id.*

305. Michael Martina, *China Adopts Law on Deep Sea Exploration*, REUTERS (Feb. 26, 2016), <http://in.reuters.com/article/china-lawmaking-seas-idINKCN0VZ1IOS>.

306. *Id.*

307. *Id.*

308. MINISTRY FOR HIGHER EDUCATION AND SCIENCE, STRATEGY FOR RESEARCH AND TRAINING RELATING TO THE ARCTIC (2016), http://ufm.dk/publikationer/2016/filer/fi_rapport_arktisk_strategi_web.pdf.

309. *Id.* at 6.

310. *Id.*

Denmark's extended continental shelf claim is covered below in Section IV.G.

Nuuk Cargo. Royal Arctic Line, Greenland's nationally controlled seaborne freight company, is reportedly considering whether to establish cargo facilities in Nuuk, Greenland, that would enable the company to accommodate direct cargo shipments in Nuuk, thus obviating re-shipment through Aalborg, Denmark.³¹¹

F. Finland

Finland's Strategy for the Arctic Region was issued in 2013.³¹² The objectives of the policy are to strengthen multilateral Arctic cooperation, take part in the shaping of the EU's Arctic policy, and raise Finland's profile as an expert in Arctic issues.³¹³ Finland served as chair of the Barents Euro-Arctic Council (BEAC) for the 2013–2015 term.³¹⁴ Finland is also preparing to assume the chairmanship of the Arctic Council in 2017.³¹⁵

Finnish Foreign and Security Policy Report. In June 2016, Finland published the "Government Report on Finnish Foreign and Security Policy," which refers to the Arctic in a number of sections but also includes a specific directive to focus attention on the future of the Arctic region.³¹⁶ In the report, the government prioritizes the promotion of stability and security in the region, as well as sustainable development and infrastructure projects and protection of Indigenous rights.³¹⁷

311. Kevin McGwin, *A Farewell to Aalborg?*, THE ARCTIC JOURNAL (Dec. 9, 2015, 9:41 PM), <http://arcticjournal.com/business/2025/farewell-aalborg>.

312. FINLAND PRIME MINISTER'S OFFICE, FINLAND'S STRATEGY FOR THE ARCTIC REGION 2013 (2013), <http://vnk.fi/documents/10616/334509/Arktinen+strategia+2013+en.pdf/6b6fb723-40ec-4c17-b286-5b5910fbecf4>.

313. *Id.* at 17–19.

314. *See Barents Cooperation: Barents Cooperation Adds a Regional and Practical Perspective to the Broader Arctic Cooperation*, MINISTRY FOR FOREIGN AFFAIRS OF FINLAND, <http://formin.fi/public/default.aspx?nodeid=49551&contentlan=2&culture=en-US> (last updated Jan. 23, 2017).

315. ARCTIC COUNCIL, *supra* note 6.

316. FINLAND PRIME MINISTER'S OFFICE, GOVERNMENT REPORT ON FINNISH FOREIGN AND SECURITY POLICY (2016), <http://valtioneuvosto.fi/documents/10616/1986338/VNKKJ092016+en.pdf/b33c3703-29f4-4cce-a910-b05e32b676b9>.

317. *See id.* at 25.

The report references Finland's upcoming chairmanship of the Arctic Council, stating that Finland will emphasize the importance of implementing the Paris Agreement on climate change and the goals of the 2030 Agenda for Sustainable Development in Arctic cooperation.³¹⁸

G. Iceland

New President of Iceland. President Grimsson stepped down after twenty years in power and Guðni Thorlacius Jóhannesson was sworn in as the sixth President of Iceland on August 1, 2016.³¹⁹ Jóhannesson is an Oxford-educated historian and former docent at the University of Iceland who ran as an Independent.³²⁰ Grimsson remained Chairman of the Arctic Circle, presiding over its meeting from October 7-9, 2016.³²¹

Arctic Circle Conference. The 2016 Arctic Circle Conference was held in Reykjavik on October 7–9.³²² The annual conference brought together international observers and participants to address healthcare, global warming, and other issues facing the Arctic region. The organizers encouraged organizations, forums, think tanks, corporations, and public associations to conduct meetings within the conference in order to increase participation and dialogue among stakeholders.³²³

H. Japan

The Arctic Council approved Japan's application for Permanent Observer status in May 2013.³²⁴ In 2014, Japanese shipping company Mitsui OSK Lines Ltd. announced plans to begin regular transport of liquefied natural gas through the

318. *Id.*

319. *News and Publications: Guðni T. Jóhannesson Sworn in as President*, MINISTRY FOR FOREIGN AFFAIRS (Feb. 8, 2016), <https://www.mfa.is/news-and-publications/gudni-th-johannesson-sworn-in-as-president>.

320. *Id.*

321. *Board: Structure*, ARCTIC CIRCLE, <http://www.arcticcircle.org/about/board/> (last visited Mar. 29, 2017); *2016 Assembly*, ARCTIC CIRCLE, <http://www.arcticcircle.org/assemblies/2016> (last visited Mar. 29, 2017).

322. *2016 Assembly*, ARCTIC CIRCLE, <http://www.arcticcircle.org/assemblies/2016> (last visited Mar. 29, 2017).

323. *About*, ARCTIC CIRCLE, <http://www.arcticcircle.org/about> (last visited Mar. 29, 2017).

324. Myers, *supra* note 297.

Arctic Ocean in 2018.³²⁵ The plan envisions construction of three ice-breaking tankers for year-round operations between the Yamal Peninsula and Europe, and summer operations to Northeast Asia.³²⁶ Once operational, Mitsui expects to transport roughly three million tons of LNG along the route annually.³²⁷

Led by Prime Minister Shinzo Abe, Japan formally announced the release of its first white paper for Arctic development in October 2015 at the Japanese Headquarters for Ocean Policy.³²⁸ The policy seeks the country's active participation in the process of creating international rules in the Arctic region, as well as for investment in projects to develop oil, gas and other natural resources, consideration of an international resources management framework, and establishment of a sea route connecting Asia and Europe.³²⁹

The provisional English translation of the white paper discusses the rapidly changing environment and increasing interest in the Arctic, as well as Japan's need to address seven Arctic issues: global environment, Indigenous peoples, science and technology, ensuring the rule of law and promoting international cooperation, Arctic Sea route, natural resources development, and national security.³³⁰

The white paper goes on to explain Japan's history in the Arctic. Beginning in the 1950s, Japan carried out research in the Arctic, maintaining a high level of scientific interests in the changing environment. In 1991, Japan was the first non-Arctic state to station an observation base in the Arctic, as well as join the International Arctic Science Committee.³³¹

Japan further discusses the importance of cooperating with Arctic Ocean coastal states to ensure the balance between the freedom and safety of navigation, while protecting and preserving the marine environment under the rule of

325. *Mitsui O.S.K. to Pioneer Arctic Route for LNG*, THE JAPAN TIMES (July 9, 2014), <http://www.japantimes.co.jp/news/2014/07/09/business/corporate-business/mitsui-o-s-k-pioneer-arctic-route-lng/#.VTwZJiFViko>.

326. *Id.*

327. *Id.*

328. The Headquarters for Ocean Policy, *Japan's Arctic Policy (Provisional English Translation)*, Arctic Portal Library (Oct. 16, 2015, 10:13 AM), <http://library.arcticportal.org/1883/> [hereinafter *Japan's Arctic Policy*]

329. *Id.*

330. *Id.* at 3–6.

331. *Id.* at 1–2.

international law in the Arctic.³³² Japan plans to contribute its scientific and technological knowledge to further increase the activities of the Arctic Council, and actively engage in other international forums.³³³

Additionally, the white paper discusses the importance of national security and the risk of opening new shipping routes that may cause “friction among states.”³³⁴ Japan asserts the importance of preventing “moves to strengthen military presence in the [Arctic] region from leading to tension and confrontations.”³³⁵ Despite this possible friction, Japan emphasizes the importance of promoting cooperation with the Arctic and other states.³³⁶

Financing Extraction of Natural Gas. The Japan Bank for International Cooperation reportedly will provide \$400 million in financing to Novatek OJSC-led Yamal LNG, the biggest project to produce liquefied natural gas in the Arctic.³³⁷ The loan agreement follows \$12 billion in financing from the Export-Import Bank of China and the China Development Bank Corp.³³⁸ With the JBIC loan, as well as Russian funding, Yamal will secure about \$18.8 billion in loans for the \$27 billion project.³³⁹

I. Norway

Environmental Lawsuit Against Norway. In October 2016, environmental groups Nature and Youth and Greenpeace filed a lawsuit against Norway claiming that oil extraction in the Barents Sea is irreconcilable with the maximum two degrees Celsius increase in global temperatures agreed to in the Paris Agreement.³⁴⁰ The lawsuit also makes a constitutional

332. *Id.* at 5.

333. *Id.* at 2.

334. *Id.* at 6.

335. *Id.*

336. *Id.*

337. Anna Andrianova & Elena Mazneva, *Japan Makes Arctic Gas Move With \$400 Million Yamal LNG Loan*, BLOOMBERG MARKETS (Sept. 1, 2016), <https://www.bloomberg.com/news/articles/2016-09-02/japan-makes-arctic-gas-move-with-400-million-yamal-lng-loan>.

338. *Id.*

339. *Id.*

340. Thomas Nilsen, *Groundbreaking Lawsuit Filed against Norway over Arctic Oil Drilling*, BARENTS OBSERVER (Oct. 18, 2016),

argument claiming that “the climate impacts of the Licensing Decision constitute an infringement of the fundamental constitutional right to a healthy environment (including a stable climate) for present and future generations enshrined in the Norwegian Constitution Article 112.”³⁴¹

Polar Certification. On November 24, 2016, the Norwegian Maritime Authority issued its first certification of a Norwegian vessel in compliance with the Polar Code.³⁴²

J. South Korea

Domestic turmoil in South Korea continued in 2016 with the December 9, 2016 vote by the National Assembly to impeach President Park Geun-hye.³⁴³

The Arctic Council admitted The Republic of Korea, along with Japan and Singapore, as a Permanent Observer in May 2013.³⁴⁴ Two months later, Korea announced the Pan Government Arctic Development Plan, setting up comprehensive plans regarding sea routes, energy, and resource development in the Arctic.³⁴⁵ Korea hopes to become Northeast Asia’s oil hub as Arctic shipping increases.

South Korea has a long record of scientific undertakings in the Arctic. The Korean icebreaker Araon generally conducts Arctic scientific research missions each year from July to October.³⁴⁶

South Korea has proposed utilizing the Arctic’s Northern Sea Route to strengthen its connections in the Polar region, and the country’s Minister of Foreign Affairs, Yun Byung-se, stated in July of 2015 that South Korea is committed “to contributing to the science of climate change, as well as to broader research on

<https://thebarentsobserver.com/en/ecology/2016/10/groundbreaking-lawsuit-field-against-norway-over-arctic-oil-drilling>.

341. *Id.*

342. *Norwegian Maritime Authority Issues the First Polar Certification for Norwegian Vessel*, PORTNEWS (Nov. 27, 2016), <http://www.en.portnews.ru/news/230267/>.

343. Choe Sang-Hun, *South Korea Enters Period of Uncertainty With President’s Impeachment*, N.Y. TIMES (DEC. 9, 2016), <https://www.nytimes.com/2016/12/09/world/asia/south-korea-president-park-geun-hye-impeached.html>.

344. Myers, *supra* note 297.

345. Yoon Sojung, *Korea Announces Comprehensive Arctic Policies*, KOREA.NET (July 30, 2013), <http://www.korea.net/NewsFocus/policies/view?articleId=110561>.

346. *Id.*

the polar regions.”³⁴⁷

South Korea’s Daewoo Shipbuilding and Marine Engineering is at work building a planned fleet of 15 Arctic-capable LNG carriers to service the Yamal LNG project in the Russian Arctic.³⁴⁸ The 300 meter vessels will reportedly be capable of operating in second year ice up to 2.5 meters thick.³⁴⁹

In an early November 2015 summit in Seoul, South Korea and Iceland agreed to cooperate on developing the Northern Sea Route to connect Asia and Europe. The NSR would allow ships to reach Rotterdam in the Netherlands from South Korea in thirty days, cutting travel time by ten days and travel distance by close to ten thousand miles.³⁵⁰

In 2016, a South Korean icebreaker found new gas hydrate reserves in the East Siberian Sea, which could improve the country’s self-sufficiency in natural gas.³⁵¹

K. *Russia*

Sixty percent of the Arctic falls within Russia’s land and maritime borders. Russia continues its efforts to push out those limits. In April 2014 Russia filed an application with the Commission on the Limits of the Continental Shelf (CLCS) to establish its rights to an area in the Sea of Okhotsk, which was unanimously approved.³⁵² In October 2014, the Russian navy completed a cartographic survey of a newly discovered island that could add 1,165 square kilometers of territorial waters to

347. Martin Kossa, *South Korea’s Positioning in the Arctic*, WORLD POLICY BLOG (Sept. 30, 2015, 9:00 AM), <http://www.worldpolicy.org/blog/2015/09/30/south-korea%E2%80%99s-positioning-arctic>.

348. Eugene Gerden, *Russian Shipping Companies Seek Larger International Share*, PACIFIC MARITIME MAGAZINE (Dec. 1, 2015), <http://www.pacmar.com/story/2015/12/01/features/russian-shipping-companies-seek-larger-international-share/394.html>.

349. Karen Thomas, *Bureau Veritas Will Class DSME-Built Yamal LNG Carriers*, LNG WORLD SHIPPING (Oct. 24, 2015), http://www.lngworldshipping.com/news/view,bureau-veritas-will-class-dsmebuilt-yamal-lng-carriers_40695.htm.

350. Hege Eilertsen, *Iceland and South Korea Join Forces to Develop Northern Sea Route*, HIGH NORTH NEWS (Nov. 11, 2015), <http://www.highnorthnews.com/iceland-and-south-korea-join-forces-to-develop-northern-sea-route/>.

351. *S. Korean Icebreaker Finds Gas Hydrates in Arctic Sea*, THE KOREA HERALD (Sept. 12, 2016), <http://www.koreaherald.com/view.php?ud=20160912001066>.

352. *Russia Files New Bid with UN for Expansion of Arctic Continental Shelf*, TASS (Aug. 4, 2015, 9:17 AM), <http://tass.ru/en/russia/812402>.

Russian territory.³⁵³

Russia also continues its efforts to extend its continental shelf boundary to the North Pole. Noted Canadian Arctic scholar Michael Byer's assessment that "[e]ssentially, Russia's claim will stop at the North Pole, despite the fact that it might have been able to make a scientific case to seabed closer to Canada or to Greenland,"³⁵⁴ was proven correct in August 2015, when Russia submitted its claims for additional territories in the Arctic including the Mendeleev and Lomonosov Ridges.³⁵⁵ The CLCS will eventually determine if Russia's submission is consistent with the LOS Convention. This submission, if approved, would expand Russia's Arctic territory by 1.2 million square kilometers.³⁵⁶

Revised Foreign Policy Strategy. President Putin adopted a revised foreign policy strategy on December 1, 2016.³⁵⁷ The document reflects similar goals as the 2008 and 2013 iterations, highlighting cooperation with other Arctic countries and strengthening collaboration in cooperative bodies like the Arctic Council and the Barents Euro-Arctic Council.³⁵⁸ The Northern Sea Route remains a foreign policy priority, and the strategy reflects a heightened focus on issues related to climate change.³⁵⁹

For a report on the Northern Sea Route see Section V.A.

The Russian military posture is examined in Section V.H.

L. Sweden

Sweden, a full member of the Arctic Council, was chair of the

353. Mia Bennett, *Arctic Satellite Image of the Week: Russia Discovers a New Island in its Arctic*, CRYOPOLITICS (Nov. 16, 2014), <https://cryopolitics.com/2014/11/16/arctic-satellite-image-of-the-week-russia-discovers-a-new-island-in-its-arctic/>.

354. Marc Jacobsen, *High North Dialogue 2015: Interview with Michael Byers*, ARCTIC INSTITUTE (Oct. 9, 2014), <http://www.thearcticinstitute.org/hnd-michael-byers/>.

355. Atle Staalesen, *Russia Submits Claim for North Pole*, BARENTS OBSERVER (Aug. 4, 2015), <http://barentsobserver.com/en/arctic/2015/08/russia-submits-claim-north-pole-04-08>.

356. *Id.*

357. Atle Staalesen, *This Is What Russia's New Foreign Policy Strategy Says About the Arctic*, BARENTS OBSERVER (Dec. 2, 2016), <https://thebarentsobserver.com/en/arctic/2016/12/what-russias-new-foreign-policy-strategy-says-about-arctic#.WebVZdfg154.twitter>.

358. *Id.*

359. *Id.*

Council from 2011 to 2013.³⁶⁰ The nation is home to 20,000 of the 70,000 Sami peoples.³⁶¹

Sweden issued its Strategy for the Arctic Region in 2011.³⁶² The strategy is based on the process of far-reaching change in the Arctic region.³⁶³ Climate change is creating new challenges, but also new opportunities. Sweden promotes economically, socially and environmentally sustainable development throughout the Arctic region. Sweden also works to ensure that the Arctic remains a region where security policy tensions are low, and for these objectives sees a need of a strengthened Arctic Council.

NATO Cooperation. In May 2016, Sweden ratified an agreement that will allow NATO to operate more easily on Swedish territory during training activities and in the event of a possible conflict.³⁶⁴ Polls indicate that more Swedes are now in favor of joining NATO than against it, but Russia has strongly warned Sweden not to do so.³⁶⁵

Sami Win Land Use Case. A decision in Gällivare district court in February 2016 granted the Sami village of Girjas exclusive rights to control fishing and hunting in the area, restoring powers that were stripped from the Sami people by Sweden's Parliament in 1993.³⁶⁶ Judge Niklas Lind told reporters that the main reason for the decision was that the Sami population had been using the land since 500 A.D., much longer than the Swedish state.³⁶⁷ Sweden appealed the case in

360. ARCTIC COUNCIL, *supra* note 6.

361. *Sweden*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/member-states/sweden> (last updated Sept. 10, 2015).

362. GOVERNMENT OFFICES OF SWEDEN, SWEDEN'S STRATEGY FOR THE ARCTIC REGION (2011), <http://www.openaid.se/wp-content/uploads/2014/04/Swedens-Strategy-for-the-Arctic-Region.pdf>; *see also Sweden*, *supra* note 361.

363. SWEDEN'S STRATEGY, *supra* note 362, at 4.

364. Charles Duxbury, *Sweden Ratifies NATO Cooperation Agreement*, WALL STREET J. (May 25, 2016, 12:58 PM), <https://www.wsj.com/articles/sweden-ratifies-nato-cooperation-agreement-1464195502>.

365. Radio Sweden, *More Swedes Are for Joining NATO Than Against*, BARENTS OBSERVER (May 10, 2016), <https://thebarentsobserver.com/en/security/2016/05/more-swedes-are-joining-nato-against#.Vz2-DHOwDmc.twitter>.

366. Trude Pettersen, *Sami win historic land use case over Sweden*, BARENTS OBSERVER (Feb. 3, 2016), <https://thebarentsobserver.com/en/society/2016/02/indigenous-sami-win-historic-land-use-case-over-sweden>.

367. *Id.*

March.³⁶⁸

Arctic Strategy for Northern Sweden. The region of Norrbotten released a strategy document outlining its intention to become a leader in the Arctic.³⁶⁹ Sweden's Ambassador to the Arctic Council noted that such regional efforts to combine economic development and environmental sustainability are unique.³⁷⁰

M. The European Union

The European Union's application for Arctic Council permanent observer status remains under consideration. 2014 reports suggested that the Council withheld approval pending resolution of a dispute with Canada over an EU seal products ban (see the section on the World Trade Organization below).³⁷¹ The EU and Canada reached a seal agreement in October 2014, but Leona Aglukkaq (the former Canadian Arctic Council Chair) maintained that the two issues are not related.³⁷² In May 2015, the Arctic Council postponed the EU's application for observer status for another two years. The Council explained that it needed to review observer issues before issuing its decision.

EU Arctic Policy. In April 2016, the European Commission presented its new, integrated policy on the Arctic that promotes sustainable use of resources in the Arctic and encourages international cooperation and engagement with Indigenous peoples.³⁷³ The policy outlines three priority areas: 1) Climate Change and Safeguarding the Arctic Environment; 2) Sustainable Development in and Around the Arctic; and 3)

368. Trude Pettersen, *Sweden Appeals Sami Land Use Case*, EYE ON THE ARCTIC (Mar. 11, 2016), <http://www.rcinet.ca/eye-on-the-arctic/2016/03/11/sweden-appeals-sami-land-use-case/>.

369. Atle Staalesen, *An Arctic Strategy for Northern Sweden*, BARENTS OBSERVER (Nov. 7, 2016), <https://thebarentsobserver.com/en/arctic/2016/11/arctic-strategy-northern-sweden#.WCckjJ6mYA4.twitter>.

370. *Id.*

371. *See, e.g.*, Chris Plecash, *Seal Deal Clears Way for EU Observer Status at Arctic Council*, EMBASSY, Oct. 22, 2014, at 4, [http://static.ow.ly/docs/102214_em%20\(2\)_2DrL.pdf](http://static.ow.ly/docs/102214_em%20(2)_2DrL.pdf).

372. *Id.*

373. EUROPEAN COMMISSION, AN INTEGRATED EUROPEAN UNION POLICY FOR THE ARCTIC (2016), http://eeas.europa.eu/archives/docs/arctic_region/docs/160427_joint-communication-an-integrated-european-union-policy-for-the-arctic_en.pdf.

International Cooperation on Arctic Issues.³⁷⁴ Federica Mogherini, High Representative of the Union for Foreign Affairs and Security Policy/Vice-President of the European Commission, said: “A safe, sustainable and prosperous Arctic not only serves the four million people living there, our European Union and the rest of the world. It is a region of immense environmental, social, and economic importance to us all. The steps taken today underline our commitment to the region, its States and its peoples, and to ensuring that the region remains an example of constructive international cooperation. Because the Arctic is also crucial in terms of regional and global security, and a strategic component of our foreign policy.”³⁷⁵ Another draft of the policy was issued on October 12, 2016 and a plenary for the first reading of the revised document is scheduled for March 2017.

N. *United Kingdom*

In a national referendum held on June 23, 2016, UK voters voted to leave the European Union.³⁷⁶ Prime Minister David Cameron tendered his resignation and Theresa May was elected to replace him, and to negotiate the terms of the withdrawal.³⁷⁷

In the 2016 Arctic Yearbook, Adam Stepień and Andreas Raspotnik discuss Brexit’s potential impact on Arctic affairs.³⁷⁸ The authors note that the UK’s 2013 Arctic Policy did not focus on the EU as a key element, unlike the Finnish, French, and German statements, indicating that departure from the Union might not have a significant impact on the country’s Arctic strategy.³⁷⁹ Although the authors predict that Brexit is unlikely to impact the EU’s priorities in the region, they do note that the process of withdrawal will consume many EU institutions and leave fewer resources to expend on marginal issues like the

374. *Id.* at 4.

375. *E.U. Presents New Arctic Policy*, MARITIME EXECUTIVE (Apr. 27, 2016), <http://www.maritime-executive.com/article/eu-presents-new-arctic-policy>.

376. Alex Hunt & Brian Wheeler, *Brexit: All You Need to Know About the UK Leaving the EU*, BBC News (Mar. 30, 2017), <http://www.bbc.com/news/uk-politics-32810887>.

377. *Id.*

378. Adam Stepień & Andreas Raspotnik, *The EU’s Future Following the Spring of Statements*, in ARCTIC YEARBOOK 396 (Lassi Heininen, et al. eds. 2016), http://www.arcticyearbook.com/images/Articles_2016/briefing-notes/10-AY2016-Stepien.pdf.

379. *Id.* at 399.

Arctic.³⁸⁰ Furthermore, British polar research institutions and economic activities have constituted a key part of the EU's northern credentials and the UK's departure will impact how the EU is perceived as an Arctic actor.³⁸¹ Cuts to the EU budget, likely extending to Arctic initiatives, can also be expected as the UK will no longer be providing financial contributions. The UK will likely participate in the successor of the Horizon 2020 program, however, which would help keep research funding for the region stable.³⁸²

IV. INTERNATIONAL ORGANIZATIONS

A. *United Nations*

Recognizing the need for an ongoing periodic review of law of the sea issues, in 1999 the U.N. General Assembly established the Open-Ended Informal Consultative Process on Oceans and the Law of the Sea (ICP). The U.N. Division for Ocean Affairs and the Law of the Sea (DOALOS) plays a key facilitation role in the annual ICP process. DOALOS is also responsible for preparing the U.N. Secretary-General's annual report on ocean affairs and the law of the sea.³⁸³ The annual Secretary General's reports, the ICP reports, and the U.N. General Assembly resolutions on law of the sea matters document the practice of states and international organizations and collect relevant research and analysis.

On June 19, 2015, the U.N. General Assembly passed Resolution 69/292, calling for development of an international binding instrument under UNCLOS on the conservation and sustainable use of biological diversity in areas beyond national jurisdiction (ABND).³⁸⁴ As with past proposals, it would provide for sharing the benefits of marine genetic resources.³⁸⁵

COP22. Representatives from almost 200 countries gathered

380. *Id.*

381. *Id.*

382. *Id.*

383. *See, e.g.*, U.N. Secretary-General, *Annual Report on Oceans and the Law of the Sea*, U.N. Doc. A/69/71/Add.1 (Sept. 1, 2014), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N14/523/40/PDF/N1452340.pdf?OpenElement>.

384. G.A. Res. 69/292 (June 19, 2015), http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/69/292.

385. *Id.* at ¶2.

in Marrakesh, Morocco for COP22 in November 2016.³⁸⁶ Negotiators at the annual climate change conference worked on the implementation plan for the Paris Agreement and published the “Marrakech Action Proclamation for Our Climate and Sustainable Development,” which generally reaffirms commitments and goals from the Paris Agreement.³⁸⁷ The proclamation also calls on non-state actors to mobilize and join in “immediate and ambitious” action, building off the Marrakech Partnership for Global Climate Action.³⁸⁸ During the meeting, participating countries approved a five-year work plan on “loss and damage,” which will launch in 2017.³⁸⁹ The work plan calls on countries to start formally addressing topics such as slow-onset impacts of climate change, non-economic losses (such as loss of culture or identity), and migration.³⁹⁰ The Government of Fiji was nominated to serve as President for the sessions to be held in 2017.³⁹¹

B. Arctic Council

In 1996, representatives of Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden, and the U.S. met in Ottawa to form the Arctic Council.³⁹² In addition to the eight circumpolar member-states and six Indigenous community-

386. *Marrakech Climate Change Conference — November 2016*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/meetings/marrakech_nov_2016/meeting/9567.php (last visited May 3, 2017).

387. *Marrakech Action Proclamation for Our Climate and Sustainable Development*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/marrakech_action_proclamation.pdf.

388. *Id.*

389. *Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (Nov. 14, 2016), <http://unfccc.int/resource/docs/2016/sb/eng/108.pdf>.

390. *Report of the Executive Committee for the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (Oct. 14, 2016), <http://unfccc.int/resource/docs/2016/sb/eng/03.pdf> (last visited May 3, 2017.)

391. *Fiji Awarded Presidency for 2017 UN Climate Summit (COP 23), Calls on Donald Trump to Visit Fiji*, PAC. GUARDIANS (Nov. 19, 2016), <http://pacificguardians.org/blog/2016/11/19/fiji-awarded-president-for-2017-un-climate-summit-cop-23-calls-on-donald-trump-to-visit-fiji/>.

392. See Declaration on the Establishment of the Arctic Council, Sept. 19, 1996, 35 I.L.M. 1387 [hereinafter Ottawa Declaration].

permanent participants, there are twelve permanent observer states: China, France, Germany, India, Italy, Japan, South Korea, Netherlands, Poland, Singapore, Spain, and the United Kingdom.³⁹³ Although not a legally binding treaty, the Ottawa Declaration serves as the council's charter.³⁹⁴ Under the declaration, the council chair rotates among the eight member-states, with each of the eight taking two-year terms. Current and upcoming chairmanships are as follows:

2015–2017: United States

2017–2019: Finland

2019–2021: Iceland

United States Chair Term Continued. On April 24, 2015, the eight Arctic States and six Permanent Participants gathered in Iqaluit, Nunavut, Canada for the Ministerial meeting to conclude Canada's 2013-2015 Chairmanship term. Outgoing Canadian chair, Leona Aglukkaq, passed the ceremonial "gavel" to the incoming U.S. chair, John Kerry.

The assembled ministers issued the Iqaluit Declaration of 2015.³⁹⁵ The Declaration reaffirmed: the Council's commitment to maintaining peace, stability and constructive cooperation in the Arctic; and, commitment to sustainable development in the region. The Declaration also reaffirmed the importance of Indigenous peoples of the Arctic, and emphasized the unique role Indigenous voices play in increasing global knowledge and respect for the region.

The U.S. delegation to the Arctic Council selected three goals to guide its 2015–2017 chairmanship: (1) improving Arctic Ocean safety, security, and stewardship; (2) improving economic and living conditions for people in the Arctic; and (3) addressing climate change impact in the Arctic.³⁹⁶

Various programs and projects have been instituted to carry

393. *Observers*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/arctic-council/observers> (last updated May 18, 2017).

394. *Frequently Asked Questions*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/arctic-council/faq> (last updated Nov. 4, 2016).

395. Iqaluit Declaration 2015, Ninth Ministerial Meeting of the Arctic Council (Apr. 24, 2015) https://oaarchive.arctic-council.org/bitstream/handle/11374/662/EDOC3431-v1-ACMMCA09_Iqaluit_2015_Iqaluit_Declaration_original_scanned_signed_version.PDF?sequence=7&isAllowed=y.

396. *U.S. Chairmanship of the Arctic Council*, U.S. DEPT OF STATE, <https://www.state.gov/e/oes/ocns/opa/arc/uschair/> (last visited Apr. 12, 2017).

out these three goals. One such program, the promotion of mental health and suicide prevention in the region, the U.S. carried over from the past Canadian chairmanship.³⁹⁷ To this end, the U.S. has formed the Reducing the Incidence of Suicide in Indigenous Groups—or RISING SUN—which held its first workshop in Anchorage, Alaska in September 2015.³⁹⁸

Projects to carry out these goals are undertaken through the Arctic Council's six working groups, three temporary task forces, and one expert group.³⁹⁹ The State Department maintains a list of these projects and has grouped them into issue areas:

Search and Rescue: The United States will lead a search and rescue exercise (SAREX) comprised of Arctic States, regional, tribal and industry stakeholders, and Arctic Council Observers.⁴⁰⁰ The U.S. Government will generate an after-action report, including recommendations for further steps, for delivery by the end of the U.S. Chairmanship.⁴⁰¹ We will encourage the tradition of Arctic Council chair countries holding SAREXs in accordance with the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic and sharing the results with EPPR (Emergency Prevention, Preparedness and Response Working Group) and other relevant Arctic groups.⁴⁰²

Marine Environmental Protection: The Arctic Council plans to build upon existing preparedness and response programs by placing greater emphasis on research and information sharing regarding the effects of spills and effectiveness of countermeasures; the identification and mobilization of the resources necessary to mitigate the effects of a pollution incident; and the development of international guidelines for preparedness and response in this logistically challenging region.⁴⁰³ The Council will strive for increased sharing of

397. *Chairmanship Projects*, U.S. DEPT OF STATE, <http://www.state.gov/e/oes/ocns/opa/arc/uschair/248957.htm> (last updated Oct. 29, 2015).

398. *Id.*

399. *Id.*

400. *Id.*

401. *Id.*

402. *Id.*

403. *Id.*

scientific information related to oil and hazardous substance spill response, identify spill response resources for the creation of a specialized equipment inventory and implement the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic and related operational guidelines.⁴⁰⁴

Marine Protected Areas: The Arctic Council will enhance its Working Group on the Protection of the Arctic Marine Environment's (PAME) work on a Pan-Arctic Network of Marine Protected Areas (MPAs).⁴⁰⁵ During the U.S. Chairmanship, PAME will create an inventory and map of existing Arctic MPAs; perform a "desktop study" of area-based conservation measures and their linkages with categories of Arctic biodiversity to create a toolbox in support of MPAs and MPA networks; and identify examples and best practices for stakeholder engagement and communication as a part of the project on Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities.⁴⁰⁶

Ocean Acidification: The Arctic Council's initiative on ocean acidification seeks to achieve more comprehensive monitoring of ocean acidification throughout the Arctic Ocean.⁴⁰⁷ There are three main efforts to this initiative: expand the reach of the Global Ocean Acidification Observing Network (GOA-ON); increase the number of stakeholders trained to use and understand monitoring techniques, including from Indigenous communities; and raise public awareness of the issue.⁴⁰⁸ This effort also is intended to contribute to and enhance the efforts to develop a second Arctic Monitoring and Assessment Program (AMAP) Arctic Ocean Acidification Assessment.⁴⁰⁹

Clean Energy Access: Energy security and improved economic development for residents in remote Arctic communities can be strengthened through increasing the use of renewable energy and energy efficiency.⁴¹⁰ The Sustainable Development Working Group (SDWG) will work on exploring and developing projects

404. *Id.*

405. *Id.*

406. *Id.*

407. *Id.*

408. *Id.*

409. *Id.*

410. *Id.*

which enhance energy security through these measures over the course of the U.S. chairmanship and beyond.⁴¹¹ This work will include a project aimed at developing a modular system pairing renewable energy technology with diesel generators and energy-storage devices to power micro-grid systems in small Arctic communities.⁴¹² This project cluster may be expanded into a mechanism for clean energy practitioners to share knowledge and promote capacity building in rural communities.⁴¹³ Other projects that address energy security in Arctic communities may also be added to this project cluster.⁴¹⁴

Water and Sanitation: Capitalizing on the results of the Alaska Water and Sewer Challenge, this project will focus on decentralized water and wastewater treatment, recycling and usage efficiency.⁴¹⁵ A workshop will be convened to facilitate collaboration between researchers, engineers, manufacturers, vendors and health experts on measures to increase access to, and reduce the operating costs of, in-home running water and sewer in remote communities, attract investment, improve public health, and spur public-private partnerships.⁴¹⁶ The workshop will also serve as a platform to report on a circumpolar health assessment of existing community systems, water quality and quantity, utilization of traditional water sources and related health indicators.⁴¹⁷

Mental Wellness: The RISING SUN project (Reducing the Incidence of Suicide in Indigenous Groups—Strengths United through Networks) aims to create common metrics for evaluating suicide prevention efforts in the Arctic as a key component of scaling up and evaluating interventions across the circumpolar region.⁴¹⁸ Complementing the mental health work completed under the Canadian chairmanship, the common metrics, developed through engagement with Permanent Participants and community leaders, will aid health workers and policy-makers in measuring progress and identifying

411. *Id.*

412. *Id.*

413. *Id.*

414. *Id.*

415. *Id.*

416. *Id.*

417. *Id.*

418. *Id.*

challenges by facilitating data sharing and pooling, evaluation, and interpretation across service systems.⁴¹⁹

Climate Resilience and Adaptation: The Arctic Council will advance understanding of changes and vulnerabilities in the Arctic and support best practices for community and ecosystem resilience by completing the Arctic Resilience Report and Adaptation Actions for a Changing Arctic (Part C) assessment.⁴²⁰ In addition to supporting action on the ground, these two assessments will produce recommendations for the Arctic Council and national and sub-national governments.⁴²¹ The Arctic Council will improve community-based environmental monitoring efforts through the circumpolar expansion of the Local Environmental Observers Network.⁴²² It will also promote climate data sharing and will develop and promote decision-making tools and services, in part through the expansion of the Arctic Adaptation Exchange Portal.⁴²³ The Arctic Council will assess likely pathways for the introduction of invasive species as a result of climate change, and will develop a pan-Arctic action plan for preventing and managing these potential invasions.⁴²⁴ The Arctic Council will also draw upon efforts to institutionalize the “One Health” approach to enhance the underlying resilience of Arctic communities and ecosystems.⁴²⁵

One Health: One Health is an interdisciplinary approach to assess health issues at the interface between humans, animals and ecosystems.⁴²⁶ By the end of the U.S. chairmanship, the SDWG will have taken steps to institutionalize the practice of One Health across the Arctic region, and will have contributed key findings to Arctic Council reports, as well as relevant meetings.⁴²⁷ Hubs will be designated to serve as Points of Contact for the Arctic States and Permanent Participants.⁴²⁸ A

419. *Id.*

420. *Id.*

421. *Id.*

422. *Id.*

423. *Id.*

424. *Id.*

425. *Id.*

426. *Id.*

427. *Id.*

428. *Id.*

circumpolar-agreed checklist will be developed to measure progress towards on-the-ground implementation of One Health, inform priority-setting and facilitate non-expert engagement with the initiative.⁴²⁹

Circumpolar Local Environmental Observers (CLEO) Network: The Arctic Council will expand the coverage of an existing Alaska-based monitoring tool, the Local Environmental Observer (LEO) network that links traditional knowledge and scientific analysis, across the Arctic.⁴³⁰ Trained traditional knowledge experts are able to record their observations in the LEO database.⁴³¹ These observations are reviewed by the Alaska Native Tribal Health Consortium (ANTHC), which serves as a secretariat.⁴³² ANTHC is able to share observations of concern with regulators, academics and others who can in turn provide technical assistance to local communities when needed.⁴³³

During Phase I of the project, Arctic Contaminants Action Program (ACAP) will create a North American CLEO “Hub”, including Indigenous communities in the Alaskan and Canadian Arctic for delivery to the 2017 Ministerial.⁴³⁴ Phase II of the project will establish a CLEO Hub in the Nordic region, as appropriate and explore options for linking with Russian Indigenous communities.⁴³⁵ Phase III of the project will look at interoperability of the CLEO Hubs and/or related observational networks.⁴³⁶ The CLEO project is also captured in the Resilience project description.⁴³⁷

Climate Change Indicator System: The Arctic Council will build on the set of climate change indicators currently under development by the United States Global Climate Change Research Program (USGCRP) to indicate the status and trends of change in key physical, biological, social and economic

429. *Id.*

430. *Id.*

431. *Id.*

432. *Id.*

433. *Id.*

434. *Id.*

435. *Id.*

436. *Id.*

437. *Id.*

parameters related to climate impacts and effects.⁴³⁸ This activity will involve all Arctic States and Permanent Participants to link a subset of indicators focused on climate change into a single pan-Arctic network, the Climate Change Indicator System for the Arctic (CCISA).⁴³⁹ Planned work includes contributing to the development of the framework for the CCISA and illustrating the potential for an Arctic Indicators Network by identifying a subset of Arctic-relevant indicators from the larger USGCRP effort.⁴⁴⁰

Digital Elevation Model: The Arctic Council will promote the extension of the high-resolution pan-Arctic digital elevation model being developed for Alaska to the broader Arctic, to improve the quality of topographic information and capitalize on the Arctic Spatial Data Infrastructure (ASDI), an initiative led by the mapping agencies of the Arctic States.⁴⁴¹

Freshwater Synthesis: The Adaptation Actions for a Changing Arctic (AACA) will contain an Arctic Freshwater Synthesis (AFS).⁴⁴² The AFS will examine issues such as: the role of freshwater in Arctic systems, historical changes to the Arctic freshwater system and key drivers of such changes and projected changes to the Arctic freshwater system and drivers of such changes.⁴⁴³ The AFS will be the first-ever examination of the freshwater picture in the Arctic and could serve as the basis for a broader, in-depth Arctic Freshwater Assessment in the future.⁴⁴⁴

Arctic Water Resources Vulnerability Index: This project will internationalize the University of Alaska-Fairbanks Arctic Water Resource Vulnerability Index (AWRVI) to provide Arctic communities with a valuable tool to assess the status of their freshwater resources.⁴⁴⁵ The expanded assessment will then feed into the Arctic Adaptation Exchange Portal, allowing local government officials, researchers and residents to evaluate their communities' freshwater resiliency and address

438. *Id.*

439. *Id.*

440. *Id.*

441. *Id.*

442. *Id.*

443. *Id.*

444. *Id.*

445. *Id.*

vulnerabilities.⁴⁴⁶

Telecommunications: The Task Force on Telecommunications Infrastructure in the Arctic, consisting of representatives of the Arctic States, Permanent Participations, the telecommunications industry and end user groups, will provide the Council in 2017 with a circumpolar assessment of existing telecommunications infrastructure and networks potentially to include identification of unmet requirements and community needs (such as health services, broadband connectivity, scientific observations transmissions and support for emergency search and rescue and oil spill response).⁴⁴⁷ The Task Force will aim to include, among other things, recommendations for public-private partnerships to enhance telecommunications access and service in the Arctic.⁴⁴⁸ The results of this assessment would be presented at the appropriate international fora with a strong message from the Arctic States to make the Arctic a top priority for future telecommunications investment.⁴⁴⁹

Arctic Marine Cooperation: Arctic Council Ministers established the Task Force on Arctic Marine Cooperation to “assess future needs for a regional seas program or other mechanism, as appropriate, for increased cooperation in Arctic marine areas.”⁴⁵⁰ Looking ahead to the future of the Arctic Ocean, the Task Force is assessing the needs for international cooperation to meet these future challenges and opportunities.⁴⁵¹ Based on this needs assessment, the Task Force will make recommendations for new mechanisms for international cooperation, as appropriate, to meet these future needs.⁴⁵²

Scientific Cooperation Task Force (SCTF): The Scientific Cooperation Task Force is working on arrangements to improve scientific research cooperation among the eight Arctic States in the Arctic region, through discussions of shared concerns including access to data, access to scientific infrastructure and

446. *Id.*

447. *Id.*

448. *Id.*

449. *Id.*

450. *Id.*

451. *Id.*

452. *Id.*

research areas, and simplification of movement of scientists and their equipment and samples.⁴⁵³ In 2016, the Task Force completed a draft text for a legally binding Agreement on Enhanced International Arctic Scientific Cooperation.⁴⁵⁴

Black Carbon and Methane Expert Group (BCMEG): In order to understand trends in emissions of black carbon and methane in or near the Arctic, and to promote enhanced action over time, the Arctic Council launched an Expert Group to periodically assess the progress made under the Framework for Action on Black Carbon and Methane.⁴⁵⁵ Arctic States and participating Observer States will submit national reports on their existing and planned actions to address black carbon and methane, including national inventories.⁴⁵⁶ The Expert Group will analyze the national reports to draw conclusions and make recommendations for further voluntary action, captured in a report to inform the Arctic Ministers in 2017.⁴⁵⁷ The work of the Expert Group will include identifying options for consideration in order to establish a collective baseline for black carbon emissions, as well as undertaking analysis and identifying options for quantitative goal(s) as described in “the common vision” of the Framework.⁴⁵⁸ The United States, as the chair of the Expert Group, also intends to convene a high-level policy forum to explore opportunities for further collaboration based on the above-referenced recommendations.⁴⁵⁹

Arctic Resilience Report. On November 25, 2016, the Arctic Council released its Arctic Resilience Report.⁴⁶⁰ The report identifies nineteen tipping points that can and have occurred in Arctic marine, freshwater, and terrestrial ecosystems.⁴⁶¹ Produced by an international team of researchers under the auspices of the Arctic Council, it is the first comprehensive assessment of ecosystems and societies in the

453. *Id.*

454. *Id.*

455. *Id.*

456. *Id.*

457. *Id.*

458. *Id.*

459. *Id.*

460. *Arctic Resilience Report Launched*, ARCTIC COUNCIL (Nov. 30, 2016), <http://www.arctic-council.org/index.php/en/our-work/2/8-news-and-events/432-arr-launch>.

461. *Id.*

region.⁴⁶² It is the concluding product of the Arctic Resilience Assessment, a project launched during the Swedish Chairmanship of the Arctic Council.⁴⁶³

2016 Senior Arctic Officials Meetings. The first Senior Arctic Officials (SAO) meeting of 2016 took place in Fairbanks, Alaska from March 16–17.⁴⁶⁴ The Arctic Council's work regarding climate change and resilience was in the spotlight as participants placed current and past efforts within the context of the COP21 climate agreement.⁴⁶⁵ The meeting also addressed the Council's continued efforts to prevent oil pollution in the Arctic marine environment and its work on economic issues through the Arctic Economic Council.⁴⁶⁶

From October 4–6, 2016, the SAO met in Portland, Maine.⁴⁶⁷ David Balton, who is chair of the group for the duration of the U.S. chairmanship, noted that “what happens in the Arctic doesn't stay in the Arctic” and places like Maine will feel a more substantial connection with the Arctic as climate change continues.⁴⁶⁸ Participants took steps forward in adopting an Arctic Science Agreement, which could become the third binding agreement to emerge from the Council.⁴⁶⁹

Update on the Arctic Oil Pollution Response Agreement. In late March 2016, the ratification process for the Arctic Council's 2014 Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic was completed.⁴⁷⁰ The first exercise under the Agreement consisted

462. *Id.*

463. *Id.*

464. *Report: SAO Plenary Meeting*, ARCTIC COUNCIL (Mar. 2016), <http://hdl.handle.net/11374/1762>.

465. *Id.*

466. *Id.*

467. *Arctic Council Advances Environmental Protection and Sustainable Development in Portland, Maine*, ARCTIC COUNCIL (Oct. 6, 2016), <http://www.arctic-council.org/index.php/en/our-work/2/8-news-and-events/425-sao-oct-2016-post-release>; *Report: SAO Plenary Meeting*, ARCTIC COUNCIL (Oct. 2016), <http://hdl.handle.net/11374/1834>.

468. Penelope Overton, *Scientific Treaty Emerges from Arctic Council*, PORTLAND PRESS HERALD (Oct. 7, 2016), <http://www.pressherald.com/2016/10/07/scientific-treaty-emerges-from-arctic-council/>.

469. *See id.*; *see also* Hannah Hoag, *Arctic Council Hails New Scientific Partnership*, NEWS DEEPLY: ARCTIC DEEPLY (July 26, 2016), <https://www.newsdeeply.com/arctic/articles/2016/07/26/arctic-council-hails-new-scientific-partnership?platform=hootsuite>.

470. *Ratification Completed for Agreement on Oil Pollution Preparedness and*

of a communications exercise.⁴⁷¹ In September 2015, the U.S. hosted a workshop at U.S. Coast Guard Headquarters to prepare for the second exercise.⁴⁷² The workshop addressed the identification of the highest-risk Arctic spill scenarios, and reviewed lessons learned from the 2014 Canadian-led exercise.⁴⁷³

Arctic Council Working Group Activities

ACAP: In June 2016, the Arctic Council's Arctic Contaminants Action Program (ACAP) convened a workshop on CLEO Network in Inari, Finland.⁴⁷⁴ The LEO (Local Environmental Observer) Network, "currently active in Alaska, uses web-accessible maps to collect, display, and share local observations of unusual environmental events."⁴⁷⁵

AMAP: The Arctic Monitoring and Assessment Program (AMAP) published the "AMAP Assessment 2015: Radioactivity in the Arctic"⁴⁷⁶ and a report titled "The Arctic Freshwater System in a Changing Climate."⁴⁷⁷

EPPR: From May 9 to June 13, 2016, the Arctic Council's Working Group on Emergency Prevention, Preparedness and Response (EPPR) conducted a three-stage table-top exercise led by representatives from the U.S. Coast Guard's Office of Marine Environmental Response.⁴⁷⁸ The exercise engaged EPPR member state representatives whose countries could be impacted by an oil spill that would be large enough to require the implementation of the multilateral Agreement on

Response, ARCTIC COUNCIL (June 6, 2016), <http://www.arctic-council.org/index.php/en/our-work2/8-news-and-events/401-mospa-ratification>.

471. *Id.*

472. *Id.*

473. *Id.*

474. *ACAP Workshop on CLEO Network Beginning in Inari, Finland*, ARCTIC COUNCIL (June 2, 2016), <http://www.arctic-council.org/index.php/en/our-work2/8-news-and-events/400-cleo-inari>.

475. *Id.*

476. ARCTIC MONITORING & ASSESSMENT PROGRAMME, AMAP ASSESSMENT 2015: RADIOACTIVITY IN THE ARCTIC (2016), <http://www.amap.no/documents/download/2772>.

477. ARCTIC MONITORING & ASSESSMENT PROGRAMME, THE ARCTIC FRESHWATER SYSTEM IN A CHANGING CLIMATE (2016), <http://www.amap.no/documents/download/2628>.

478. LT Katie Braynard, *Recap of Recent Exercise for Oil Pollution Preparedness and Response in the Arctic*, COAST GUARD MARITIME COMMONS (Aug. 3, 2016), <http://mariners.coastguard.dodlive.mil/2016/08/03/832016-recap-of-recent-exercise-for-oil-pollution-preparedness-and-response-in-the-arctic/>.

Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA Agreement) and associated regulations.⁴⁷⁹ Among other positive outcomes, the exercise provided an opportunity for the participants to forge lasting working relationships with their counterparts in other federal, state and local agencies across the Arctic Council.⁴⁸⁰ The EPPR met from December 6–8, 2016 in Copenhagen, Denmark.⁴⁸¹

PAME: The Arctic Council's Working Group on the Protection of the Arctic Marine Environment (PAME) met in Stockholm in February 2016 to discuss a project to implement a shipping database for the Arctic in 2018.⁴⁸² The objective of the Arctic Ship Traffic Data (ATSD) project, outlined during the Senior Arctic Officials (SAO) meeting in March, is "to develop a long-term, sustainable collection of Arctic shipping activities consisting of a data repository with selected ship traffic information provided by the Arctic Council governments and a web application/tool to extract information from the repository, allowing for periodic trend analysis."⁴⁸³ PAME announced its approval of the second phase of the project at the SAO meeting in October 2016.⁴⁸⁴ The Norwegian Coastal Administration will host and oversee the database within its current marine database platform, which will be compatible with other systems such as the Arctic SDI platform and the Arctic biodiversity data service.⁴⁸⁵

Arctic Council at 20. The Arctic Yearbook 2016 examines "20 Years of Regional Cooperation and Policy-Shaping."⁴⁸⁶ For

479. *Id.*

480. *Ratification Completed for Agreement on Oil Pollution Preparedness and Response*, *supra* note 470.

481. *Next EPPR Meeting in Copenhagen, Kingdom of Denmark December 6–8, 2016*, ARCTIC COUNCIL, <https://arctic-council.org/eppr/next-eppr-meeting-in-copenhagen-kingdom-of-denmark-december-6-8-2016/> (last visited Mar. 24, 2017).

482. PROT. OF THE ARCTIC MARINE ENV'T, PAME-I 2016: WORKING GROUP MEETING REPORT 3 (2016), http://www.pame.is/images/02_Document_Library/Meeting_Reports/2016/PAME_I_2016_Meeting_Report.pdf.

483. PROT. OF THE ARCTIC MARINE ENV'T, ARCTIC SHIP TRAFFIC DATA (ASTD) PROJECT PLAN 2 (2016), <http://hdl.handle.net/11374/1746>.

484. PROT. OF THE ARCTIC MARINE ENV'T, PAME PROGRESS REPORT AND LIST OF DELIVERABLES FOR 2017 MINISTERIAL 1 (2016), <http://hdl.handle.net/11374/1802>.

485. *Report: SAO Plenary Meeting*, *supra* note 467, at 14.

486. *Arctic Yearbook 2016: "The Arctic Council: 20 Years of Cooperation and Policy-Shaping"*, UARCTIC (Oct. 31, 2016), <http://www.uarctic.org/news/2016/10/arctic-yearbook-2016-published/>.

further information, please refer to the Arctic Council website.⁴⁸⁷

C. *International Maritime Organization (IMO)*

In 2015, the IMO Assembly unanimously endorsed the appointment of Mr. Kitack Lim from the Republic of Korea as Secretary-General of the IMO effective January 1, 2016, for a term of four years.⁴⁸⁸

IMO and Climate Change. During its 70th session meeting in London, the IMO Marine Environment Protection Committee (MEPC) set January 1, 2020 as the implementation date for a global sulphur cap of 0.50 percent m/m (mass/mass).⁴⁸⁹ According to IMO Secretary-General Kitack Lim, “The reductions in sulphur oxide emissions resulting from the lower global sulphur cap are expected to have a significant beneficial impact on the environment and on human health, particularly that of people living in port cities and coastal communities, beyond the existing emission control area.”⁴⁹⁰

Polar Code Update. In 2014, the International Maritime Organization’s Maritime Safety Committee (MSC) adopted the SOLAS “Safety” measures forming Part I of the mandatory International Code for Ships Operating in Polar Waters (the “Polar Code”).⁴⁹¹ In May 2015, the IMO’s Marine Environment Protection Committee (MEPC) adopted the pollution prevention measures forming Part II of the Polar Code.⁴⁹² At its June 2015 meeting, the MSC approved, for later adoption, amendments to the STCW Convention and Code that will implement training requirements for vessel officers and crew members to obtain a

487. ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/> (last visited Mar. 24, 2017).

488. *IMO Assembly Confirms Mr. Kitack Lim as Secretary-General*, INT’L MAR. ORG. (Nov. 26, 2015), <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/50-kitack-lim-SG-.aspx>.

489. *IMO Sets 2020 Date for Ships to Comply with Low Sulphur Fuel Oil Requirement*, INT’L MAR. ORG. (Oct. 28, 2016), <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/MEPC-70-2020sulphur.aspx>.

490. *Id.*

491. International Maritime Organization Res. MSC.385(94) (Nov. 21, 2014).

492. *Draft Polar Code Approved by IMO’s Marine Environment Protection Committee*, MAR. CYPRUS (Oct. 23, 2014), <https://maritimecyprus.com/2014/10/23/draft-polar-code-approved-by-imos-marine-environment-protection-committee/>.

certificate of proficiency for service in waters covered by the Polar Code.⁴⁹³

According to the IMO, this collection of safety and environmental rules covers “the full range of shipping-related matters relevant to navigation in waters surrounding the two poles—ship design, construction and equipment; operational and training concerns; search and rescue; and, equally important, the protection of the unique environment and ecosystems of the polar regions.”⁴⁹⁴

The Polar Code will be phased in beginning January 1, 2017.⁴⁹⁵ It will apply in Antarctica south of 60° S, and in the Arctic north of 60° N, with a cutout across the generally ice-free North Atlantic Ocean south of Greenland’s southeast coast and specifically excluding Iceland, Norway, and Russia’s Kola Peninsula.⁴⁹⁶ For a detailed analysis of the Code, see the ALPI Year in Review for 2014.⁴⁹⁷

In 2016, DNV GL issued guidance on how to comply with the Code and noted that the safety part of the Polar Code applies to ships certified under SOLAS, i.e., cargo ships of 500 GT or more and to all passenger ships.⁴⁹⁸ Clean Ship Scandinavia prepared advice on the pollution prevention requirements of the Polar Code⁴⁹⁹ and Lloyd’s Register offered compliance support and an interactive guidance tool.⁵⁰⁰

493. *Maritime Safety Committee (MSC), 95th Session, 3–12 June 2015*, INT’L MAR. ORG. (June 12, 2015), <http://www.imo.org/en/mediacentre/meetingsummaries/msc/pages/msc-95th-session.aspx>.

494. *Adoption of an International Code of Safety for Ships Operating in Polar Waters (Polar Code)*, INT’L MAR. ORG., <http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx> (last visited Mar. 26, 2017).

495. *Id.*

496. See MARINE ENV’T PROT. COMM., *International Code for Ships Operating in Polar Waters (Polar Code)*, at 8–9 (June 5, 2015), <http://www.imo.org/en/MediaCentre/HotTopics/polar/Documents/POLAR%20CODE%20TEXT%20AS%20ADOPTED.pdf>.

497. ARCTIC LAW & POLICY INST., *ARCTIC YEAR IN REVIEW: 2014 32–33* (2015), <https://www.law.washington.edu/arcticlaw/reports/ArcticLawYearReview2014.pdf>.

498. *The IMO Polar Code in Force, Beginning 1 January 2017: How to Comply*, DNV GL (Dec. 21, 2016), <https://www.dnvgl.com/news/the-imo-polar-code-in-force-beginning-1-january-2017-how-to-comply-83230>.

499. Niclas Karlsson, Owner, Clean Ship Scandinavia AB, Presentation at 9th Arctic Shipping Summit 2016: IMO Polar Code, (Sept. 22, 2016).

500. *Polar Code*, LLOYD’S REGISTER, <http://www.lr.org/en/marine/operation/standards-schemes-codes-and-directives/polar->

Arctic Oil Spill Response Guide. The IMO and the EPPR commissioned the Arctic Oil Spill Response Guide⁵⁰¹ and the IMO will issue a supplement that includes the Antarctic and other subarctic areas affected by ice.⁵⁰² The objective of the Arctic version of the guide is to identify and describe those aspects of planning and operations that are directly associated with a response to an Arctic oil spill in ice and snow conditions.⁵⁰³

New Mandatory Data Collection System. In October 2016, the IMO's Marine Environment Protection Committee (MEPC) adopted a requirement that ships of 5,000 gross tonnage and above will have to collect consumption data for each type of fuel oil they use, as well as other, additional, specified data including proxies for transport work.⁵⁰⁴ These ships account for approximately 85 percent of CO₂ emissions from international shipping.⁵⁰⁵ The data collected will provide a critical foundation for the IMO to develop additional measures in this area.⁵⁰⁶ The MEPC also approved a roadmap (2017 through 2023) for developing a "Comprehensive IMO strategy on reduction of GHG emissions from ships."⁵⁰⁷ The roadmap indicates that an initial greenhouse gas strategy will be adopted in 2018.⁵⁰⁸

Increased Indigenous Representation. On October 25, 2016, IMO Secretary-General Kitack Lim received a delegation of Arctic Indigenous leaders at IMO headquarters in London.⁵⁰⁹

code/ (last visited Mar. 26, 2017).

501. *IMO Publishes Guide to Spill Response in Ice*, OFFSHORE SUPPORT J. (June 7, 2016), http://www.osjonline.com/news/view,imo-publishes-guide-to-spill-response-in-ice_43225.htm; ARCTIC COUNCIL, *GUIDE TO OIL SPILL RESPONSE IN SNOW AND ICE CONDITIONS IN THE ARCTIC* (2015), https://oaarchive.arctic-council.org/bitstream/handle/11374/403/ACMMCA09_Iqaluit_2015_EPPR_Guide_to_Oil_Spill_Response_Report.pdf?sequence=1&isAllowed=y.

502. *IMO Publishes Guide to Spill Response in Ice*, *supra* note 501.

503. *Id.*

504. *New Requirements for International Shipping as UN Body Continues to Address Greenhouse Gas Emissions*, INT'L MAR. ORG. (Oct. 28, 2016), <http://www.imo.org/en/MediaCentre/PressBriefings/Pages/28-MEPC-data-collection-.aspx#>.

505. *Id.*

506. *Id.*

507. *Id.*

508. *Id.*

509. INT'L MAR. ORG., *CURRENT AWARENESS BULLETIN: OCTOBER 2016* (2016), <http://www.imo.org/en/KnowledgeCentre/CurrentAwarenessBulletin/Documents/CAB>

In this unprecedented meeting, the delegates discussed a wide range of issues, including their concerns regarding the impacts of Arctic shipping on Indigenous communities.⁵¹⁰ The group of Indigenous representatives hopes to achieve permanent status for Indigenous communities in this international forum in order to be party to decisions that will increasingly affect their livelihoods.⁵¹¹

D. Food & Agriculture Organization Committee on Fisheries

The Food and Agriculture Organization and its Committee on Fisheries (COFI) “is the only global inter-governmental forum where major international fisheries and aquaculture problems and issues are examined,” and where recommendations are developed for governments, regional fishery bodies, NGOs, and fish-workers.⁵¹² COFI’s 31st Session (a biennial event) in June 2014 did not directly address the Arctic, and its next session will be in 2016.⁵¹³

Although it was not negotiated under the auspices of the FAO, the five states bordering the Arctic Ocean (Canada, Denmark/Greenland, Norway, Russia, and the United States) signed a declaration in Oslo on July 16, 2015, agreeing to ban commercial fishing by their vessels in the high seas waters of the Central Arctic Ocean until more scientific research can be done on how warming seas and melting ice are affecting fish stocks.⁵¹⁴ The declaration is examined in Part II above.

E. International Whaling Commission (IWC)

The International Whaling Commission (IWC) was

%20239%20October%202016.pdf; Levon Sevunts, *Arctic Indigenous Leaders to Push for Permanent Voice in World Maritime Body*, RADIO CAN. INT’L (Oct. 20, 2016), <http://www.rcinet.ca/en/2016/10/20/arctic-indigenous-leaders-to-push-for-permanent-voice-in-world-maritime-body/>.

510. Sevunts, *supra* note 509.

511. *Id.*

512. INT’L COLLECTIVE IN SUPPORT OF FISHWORKERS, SAMUDRA REPORT, NO. 53 52 (2009), http://www.icsf.net/images/samudra/pdf/english/issue_53/3346_art_roundup.pdf.

513. See Comm. on Fisheries, Rep. of the 31st Session, U.N. Doc. 2015/23 (June 2014), <http://www.fao.org/3/a-ml770e.pdf>.

514. *Arctic Fisheries*, U.S. DEP’T OF STATE, <https://www.state.gov/e/oes/ocns/fish/regionalorganizations/arctic/index.htm> (last visited Mar. 26, 2017).

established by the 1946 International Convention for the Regulation of Whaling (ICRW).⁵¹⁵ The convention's purpose is to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry.⁵¹⁶ The IWC headquarters is in Impington, near Cambridge, England.⁵¹⁷

The Commission member-states met for IWC66 in Portoroz, Slovenia from October 20–28, 2016, where it adopted seven resolutions, including one on Cetaceans and Ecosystem Services.⁵¹⁸

In 1982 the IWC member-states adopted a moratorium on commercial whaling, which entered into force in 1986.⁵¹⁹ Japan, Norway, Peru, and the Soviet Union lodged formal objections (and were therefore not bound by the moratorium under the ICRW).⁵²⁰ Japan and Peru later withdrew their objections.⁵²¹ In 1994, the IWC established the Southern Ocean Whale Sanctuary in the Antarctic.⁵²²

Iceland, which did not lodge an objection to the 1982 moratorium, withdrew from the IWC in 1992; however, it then re-adhered to the 1946 ICRW in 2002.⁵²³ Its 2002 instrument of adherence included a reservation to the commercial whaling

515. International Convention for the Regulation of Whaling, Dec. 2, 1946, 62 Stat. 1716, 161 U.N.T.S. 72.

516. *Id.* at 3.

517. *Contacting the IWC Secretariat*, INT'L WHALING COMM'N, <https://iwc.int/contact> (last visited May 3, 2017).

518. INT'L WHALING COMM'N, SUMMARY OF MAIN OUTCOMES, DECISIONS AND REQUIRED ACTIONS FROM THE 66TH ANNUAL MEETING 1 (2016), https://iwc.int/private/downloads/StI1_9iNdpWlnmS7jUUtXg/RS6360_66_Main_OutcomesV2.pdf.

519. *Commercial Whaling*, INT'L WHALING COMM'N, <https://iwc.int/commercial> (last visited Mar. 24, 2017).

520. INT'L WHALING COMM'N, INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING, 1946: SCHEDULE 5 (2014), <https://archive.iwc.int/pages/download.php?ref=3606&size=&ext=pdf&k=&alternative=2187&usage=-1&usagecomment=> [hereinafter INT'L WHALING COMM'N, CONVENTION SCHEDULE].

521. *Id.*

522. Lokal Profil, *Southern Ocean Whale Sanctuary*, ANTARCTIC & S. OCEAN COAL., <http://www.asoc.org/advocacy/antarctic-wildlife-conservation/southern-ocean-whale-sanctuary> (last visited Mar. 24, 2017).

523. *Iceland*, INT'L WHALING COMM'N, <https://iwc.int/iceland> (last visited Mar. 24, 2017).

moratorium.⁵²⁴ The reservation was not acceptable to all IWC member governments.⁵²⁵ However, in 2002, a majority of the ICRW parties voted to accept Iceland back as an IWC member.⁵²⁶ In 2013, taking advantage of its reservation to the moratorium, Iceland resumed whaling.⁵²⁷

The IWC allows non-zero whaling quotas for aboriginal subsistence.⁵²⁸ In 2012, the commission voted 48-10 to uphold new catch limits for Arctic subsistence whaling communities, which were set to expire in 2012.⁵²⁹ The vote came on a joint request from the U.S. and Russia to set catch limits for aboriginal subsistence whaling on bowhead whales.⁵³⁰ The commission adopted catch limits for 2013 through 2018 that allow Alaskan and Chukotka native whalers to land up to 336 whales to meet their subsistence needs.⁵³¹ The U.S. and Russia allocate the available strikes between Alaska Eskimos and Chukotka natives under a bilateral agreement.⁵³²

Under the ICRW, member states may issue “scientific permits” to their citizens.⁵³³ Japan has issued such “scientific whaling” permits since 1986.⁵³⁴ In a challenge by Australia and New Zealand, the International Court of Justice held on March 31, 2014, that Japan’s whaling activities in the Southern Ocean did not fall within the ICRW’s article on scientific whaling and were therefore not exempt from the global moratorium on

524. *Id.*

525. *Id.*

526. *Id.*

527. See John Vidal, *Iceland Resumes Fin Whale Hunting After Two-year Break*, *GUARDIAN* (June 19, 2013),

<http://www.theguardian.com/environment/2013/jun/19/iceland-fin-whale-hunting-greenpeace>.

528. *Catch Limits & Catches Taken*, INT’L WHALING COMM’N, <https://iwc.int/catches#aborig> (last visited Mar. 24, 2017).

529. Press Release, Alaska Eskimo Whaling Comm. & N. Slope Borough Office of the Mayor, Int’l Whaling Comm’n 64th Annual Meeting (July 3, 2012), <http://www.north-slope.org/assets/images/uploads/Press%20Release%20-%20AEWC%20%20NSB%20-%20IWC64.pdf>.

530. *Id.*

531. *Id.*

532. *Id.*

533. See *Special Permit Whaling*, INT’L WHALING COMM’N, <https://iwc.int/permits> (last visited Mar. 24, 2017).

534. See *Catches Taken: Special Permit*, INT’L WHALING COMM’N, https://iwc.int/table_permit (last visited Mar. 24, 2017).

commercial whaling.⁵³⁵ However, after modifying its program, Japan resumed “scientific whaling” in the Southern Ocean in 2015 and continued its whale harvests in 2016.⁵³⁶

F. North Atlantic Marine Mammal Commission (NAMMCO)

The North Atlantic Marine Mammal Commission is self-described as an international body for cooperation on the conservation, management, and study of marine mammals in the North Atlantic.⁵³⁷ The NAMMCO Agreement was signed on April 9, 1992 by Norway, Iceland, Greenland and the Faroe Islands, and entered into force on July 8, 1992.⁵³⁸ Its headquarters is in Tromsø, Norway.⁵³⁹ Norway has been whaling commercially since 1994, consistent with its “objection” to the IWC moratorium.⁵⁴⁰

The 24th meeting of the NAMMCO Council took place in Oslo, Norway from February 10–11, 2016 under the chairmanship of Ásta Einarsdóttir (Iceland).⁵⁴¹ The NAMMCO Scientific Committee meeting was held in Nuuk, Greenland from November 4–7, 2016.⁵⁴²

535. Whaling in the Antarctic (Austl. v. Japan: N. Z. intervening), Judgment, 2014 I.C.J. 226, 298 (Mar. 31), <http://www.icj-cij.org/docket/files/148/18136.pdf>; see also Cymie R. Payne, *ICJ Halts Antarctic Whaling—Japan Starts Again*, 4 TRANSNATIONAL ENVTL. L. 181, 182 (2015), https://www.researchgate.net/publication/275247577_ICJ_Halts_Antarctic_Whaling_-_Japan_Starts_Again.

536. See *Japan Plans Unilateral Restart to Antarctic Whaling in 2015, Says Official*, GUARDIAN (June 20, 2015), <http://www.theguardian.com/environment/2015/jun/20/japan-plans-unilateral-restart-to-antarctic-whaling-in-2015-says-official>; *Japan to Face Criticism at International Summit for Flouting Whaling Ruling*, GUARDIAN (Oct. 20, 2016), <https://www.theguardian.com/environment/2016/oct/20/japan-to-face-criticism-at-international-summit-for-flouting-whaling-ban-iwc>.

537. N. ATLANTIC MARINE MAMMAL COMM’N, <http://www.nammco.no/> (last visited Mar. 26, 2017).

538. David D. Caron, *The International Whaling Commission and the North Atlantic Marine Mammal Commission: The Institutional Risks of Coercion in Consensual Structures*, 89 AM. J. INT’L L. 154, 163 (1995).

539. N. ATLANTIC MARINE MAMMAL COMM’N, *supra* note 537.

540. *Whaling in Norway*, WHALE & DOLPHIN CONSERVATION, <http://us.whales.org/issues/whaling-in-norway> (last visited Mar. 26, 2017); see also INT’L WHALING COMM’N, CONVENTION SCHEDULE, *supra* note 520, at 5.

541. Press Release, N. Atlantic Marine Mammal Comm’n, Whales and Seals: Management Matters! (Feb. 11, 2016), <http://www.nammco.no/assets/About-NAMMCO/Press-Releases/NAMMCO-PR-post-Council-24-final-rev-2.pdf>.

542. N. ATLANTIC MARINE MAMMAL COMM’N, REPORT OF THE 23RD MEETING OF THE

G. *Commission on Limits of the Continental Shelf (CLCS)*

On September 21, 2016, the chairman of the Commission on the Limits of the Continental Shelf issued a comprehensive statement (CLCS/95) on the work of the Commission and its subcommissions during the forty-first session.⁵⁴³

Background and Legal Basis. A widely-circulated Foreign Policy article titled *Frozen Assets* by James Bamford provides a very readable introduction to the extended continental shelf claims process.⁵⁴⁴

Under the 1982 U.N. Convention on the Law of the Sea (UNCLOS), all coastal states have sovereign rights in the natural resources of their continental shelf.⁵⁴⁵ A coastal state's continental shelf extends at least 200 nm seaward from the baseline.⁵⁴⁶ A complex formula in Article 76 of UNCLOS provides a basis for some "geographically advantaged" states to assert claims to an "extended" continental shelf beyond 200 nautical miles, if, among other things, certain geologic features are proven continental extensions.⁵⁴⁷

Article 76 and Annex II of UNCLOS call for a Commission on the Limits of the Continental Shelf (CLCS).⁵⁴⁸ Its function is to make recommendations to coastal states on matters related to the establishment of the outer limits of their continental shelf.⁵⁴⁹ CLCS recommendations are not binding on states.⁵⁵⁰ However, outer limits on the shelf established by a coastal state on the basis of CLCS recommendations are final and binding.⁵⁵¹

NAMMCO SCIENTIFIC COMMITTEE,

<http://www.nammco.no/assets/Publications/Scientific-Committee-Reports/SC23-2016-Report-COMPRESSED.pdf>.

543. U.N. Convention on the Law of the Sea, Statement of the Chair of the Comm'n on the Limits of the Cont'l Shelf on Its Forty-First Session, U.N. Doc CLCS/95 (Sept. 21, 2016), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N16/294/97/PDF/N1629497.pdf?OpenElement>.

544. James Bamford, *Frozen Assets*, FOREIGN POL'Y (May 11, 2015), <http://foreignpolicy.com/2015/05/11/frozen-assets-arctic-espionage-spying-new-cold-war-russia-canada/>.

545. UNCLOS, *supra* note 73.

546. *Id.* at art. 76.

547. *Id.*

548. *Id.* at art. 76(8), Annex II.

549. *Id.*

550. *See id.*

551. *Id.*

According to Michael Byers, author of *International Law and the Arctic*, “The commission does not adjudicate overlapping claims. These must be resolved through negotiation or recourse to an international court.”⁵⁵²

Canadian Claims. On December 6, 2013, after ten years of surveys and research at a cost of some \$200 million, Canada submitted to the CLCS 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 in the Atlantic Ocean.⁵⁵³ Canada notified the Commission that this was a partial submission, and that it intended to submit information on the limits of the continental shelf beyond 200 nautical miles in the Arctic Ocean at a later date.⁵⁵⁴

In August 2014, Canada launched the first of its additional surveys to complete its Arctic submission. A second was conducted in 2015. The Harper administration had earlier hinted at a North Pole claim, based on a connection between the Lomonosov Ridge and Ellesmere Island.⁵⁵⁵ It is not clear whether the new Trudeau government will pursue such a claim.

Denmark Claims. On November 26, 2013, Denmark submitted to the CLCS information on the limits of the continental shelf in respect to the North-Eastern Continental Shelf of Greenland.⁵⁵⁶ On December 15, 2014, Denmark submitted to the CLCS information on the limits of the continental shelf beyond 200 nautical miles in respect of the Northern Continental Shelf of Greenland.⁵⁵⁷

552. Michael Byers, *The North Pole is a Distraction*, GLOBE & MAIL (Aug. 20, 2014), <http://www.theglobeandmail.com/opinion/the-north-pole-is-a-distraction/article20126915/>.

553. U.N. Convention on the Law of the Sea, Receipt of the Submission Made by Canada to the Comm'n on the Limits of the Cont'l Shelf, U.N. Doc. CLCS.70.2013.LOS (Dec. 9, 2013), http://www.un.org/depts/los/clcs_new/submissions_files/can70_13/clcs70_2013.pdf.

554. *Second Formative Evaluation*, GLOBAL AFFAIRS CAN., http://www.international.gc.ca/department-ministere/evaluation/2011/ceesp_ppcec11.aspx?lang=eng (last updated July 22, 2014).

555. News Release, Global Affairs Canada, Harper Government Launches First of Two Scientific Surveys to Complete Canada's Arctic Continental Shelf Submission (Aug. 8, 2014), <http://news.gc.ca/web/article-en.do?nid=874469>.

556. U.N. Convention on the Law of the Sea, Receipt of the Submission Made by the Kingdom of Denmark to the Comm'n on the Limits of the Cont'l Shelf, U.N. Doc. CLCS.68.2013.LOS (Dec. 6, 2013), http://www.un.org/depts/los/clcs_new/submissions_files/dnk68_13/clcs68_2013.pdf.

557. U.N. Convention on the Law of the Sea, Receipt of the Submission Made by the

Denmark claims the Lomonosov Ridge is an extension of Greenland.⁵⁵⁸ Its submission encompasses the North Pole, extends to the outer boundary of Russia's EEZ (200 nm from the baseline), overlaps the claimed continental shelf of Norway and Russia, and is expected to overlap with Canada's continental shelf.⁵⁵⁹

Russian Claims. In response to an August 2015 re-submitted extended continental shelf (ECS) claim by Russia and a similar claim in December 2014 by Denmark (and an expected submission by Canada), the Commission on the Limits of the Continental Shelf will play the key role in determining whether any state's continental shelf claims extend to the seabed under the North Pole.⁵⁶⁰ At issue is the geologic origin of an undersea mountain range, the Lomonosov Ridge.⁵⁶¹

The CLCS issued recommendations for Russia's original December 20, 2001 submission on June 27, 2002.⁵⁶² Those recommendations included a suggestion that Russia make a partial Sea of Okhotsk claim that "shall not prejudice questions relating to the delimitation of boundaries between States in the south for which a submission may be made later. . . ."⁵⁶³ Pursuant to that recommendation, Russia submitted a partial revised claim for the Sea of Okhotsk on February 28, 2013.⁵⁶⁴

Kingdom of Den. to the Comm'n on the Limits of the Cont'l Shelf, U.N. Doc. CLCS/76.2014.LOS (Dec. 15, 2014), http://www.un.org/depts/los/clcs_new/submissions_files/dnk76_14/dnk4_clcs76_2014_en_fr.pdf.

558. *Denmark Challenges Russia and Canada Over North Pole*, BBC NEWS (Dec. 15, 2014), <http://www.bbc.com/news/world-europe-30481309>.

559. *Id.*

560. U.N. Deputy Spokesman for the Secretary-General, Daily Press Briefing by the Office of the Spokesperson for the Secretary General (Aug. 4, 2015), <http://www.un.org/press/en/2015/db150804.doc.htm>. See also Asaf Shalev, *Russia Just Claimed a Broad Swath of the Arctic Shelf; Why Isn't the U.S. Doing the Same?*, ARCTIC NEWSWIRE (Aug. 8, 2015), <https://www.adn.com/arctic/article/russia-just-claimed-broad-swath-arctic-shelf-why-isnt-us-doing-same/2015/08/09/>.

561. BBC NEWS, *supra* note 558.

562. Barbara Kwiakowska, *Submissions to the UN Commission on the Limits of the Continental Shelf*, 28 INT'L J. MARINE & COASTAL L. 219 (2013).

563. *Id.*

564. COMM. ON THE LIMITS OF THE CONTINENTAL SHELF, SUMMARY OF RECOMMENDATIONS OF THE COMMISSION ON THE LIMITS OF THE 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, U.N. DOC. CLCS/83 (adopted with amendments Mar. 11, 2014), http://www.un.org/Depts/los/clcs_new/submissions_files/rus01_rev13/2014_03_13_CO

After several amendments, the Commission adopted Russia's revision on March 11, 2014.⁵⁶⁵

On August 3, 2015, Russia delivered its 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.⁵⁶⁶ Reportedly, the 2015 Russian resubmission is among the most detailed ECS claims submitted to the CLCS. It includes a tectonic history of the evolution of the Arctic Ocean seabed and subsoil over the past 130 million years.⁵⁶⁷ Russia acknowledges that its claim overlaps with the ECS claim by Denmark and the expected ECS claim by Canada.⁵⁶⁸ In a prior diplomatic note, Canada, Denmark and Russia agreed not to object to ECS submissions by the other two states, subject to the understanding that delimitation of any overlapping continental shelves of the three states will be determined subsequently. The CLCS began its consideration of Russia's submission at its 41st Meeting in the summer of 2016; however, a Russian report indicated that resolution of the claim will likely take at least five more years.⁵⁶⁹

United States Claims. The President's National Strategy for the Arctic Region Implementation Report estimates that the continental shelf off Alaska probably extends more than 600 nautical miles.⁵⁷⁰ However, the situation of the United States is complicated by the fact that it has not yet acceded to UNCLOS.⁵⁷¹

M_REC_RUS_Summary.pdf.

565. *Id.*

566. MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT OF THE RUSSIAN FEDERATION ET AL., PARTIAL REVISED SUBMISSION OF THE RUSSIAN FEDERATION TO THE COMMISSION ON THE LIMITS OF THE CONTINUAL SHELF IN RESPECT OF THE CONTINENTAL SHELF OF THE RUSSIAN FEDERATION IN THE ARCTIC OCEAN (2015), http://www.un.org/depts/los/clcs_new/submissions_files/rus01_rev15/2015_08_03_Exec_Summary_English.pdf.

567. *Id.* at 13, 18, 22.

568. *Id.* at 9.

569. *Donskoi: The UN Commission Will Adopt a Decision on Russia's Submission in No Sooner than Five Years*, THE ARCTIC (Nov. 29, 2016), <http://arctic.ru/geographics/20161129/504805.html>.

570. John P. Holdren, Amy Pope, & Mark Brzezinski, *Advancing Implementation of the National Strategy for the Arctic Region*, WHITE HOUSE: BLOG (Mar. 9, 2016, 1:56 PM), <https://obamawhitehouse.archives.gov/blog/2016/03/09/advancing-implementation-national-strategy-arctic-region>.

571. *Charting the Arctic: Security, Economic, and Resource Opportunities: Joint*

In the summer of 2016, the U.S. Coast Guard icebreaker Healy conducted ECS surveys in the Arctic.⁵⁷² The research team was headed by Dr. Larry Mayer, of the University of New Hampshire's Center for Coastal and Ocean Mapping/Joint Hydrographic Center.⁵⁷³

The U.S. Extended Continental Shelf Project is a multi-agency collaboration whose mission is to determine and define the extent of the U.S. continental shelf beyond 200 nautical miles consistent with international law.⁵⁷⁴ In congressional testimony, Admiral Robert Papp, the U.S. Special Representative for the Arctic, explained the current U.S. position on continental shelf claims in the Arctic and the importance of the U.S. acceding to the 1982 UNCLOS.⁵⁷⁵ Admiral Papp explained:

The United States, like the other Arctic States, has made significant progress in determining its ECS. All of the necessary data collection to delineate the U.S. ECS in the Arctic Ocean has been completed through tremendous efforts by the U.S. Coast Guard, the National Oceanic and Atmospheric Administration (NOAA), the United States Geological Survey (USGS), and the Department of State. Nine successful cruises were completed in the Arctic Ocean over 12 years, and four of those missions were jointly conducted with Canada.

In 2014, the Office of Ocean and Polar Affairs at the Department of State established the ECS Project Office at a NOAA facility in Boulder, Colorado. This office is dedicated to completing the data analysis and documentation necessary to establish the limits of the U.S. ECS in the Arctic and for other U.S. ECS areas, such as the Bering Sea, Atlantic Ocean, and the Gulf of Mexico.

Hearing Before the Subcomm.'s on Europe, Eurasia, and Emerging Threats, and Western Hemisphere of the H. Comm. on Foreign Affairs, 114th Cong. 9 (2015) (statement of Admiral Robert J. Papp, Jr.).

572. *Extended Continental Shelf*, OFF. OCEAN EXPLORATION, <http://explore.noaa.gov/Exploration/ExtendedContinentalShelf.aspx> (last visited Apr. 17, 2017).

573. Lauren Steenson, *Mapping the Extended Continental Shelf in the Arctic*, COAST GUARD: COMPASS (Nov. 28, 2016), <http://coastguard.dodlive.mil/2016/11/mapping-the-extended-continental-shelf-in-the-arctic/>.

574. *About*, U.S. EXTENDED CONTINENTAL SHELF PROJECT, <http://www.continentalshelf.gov/about/index.htm> (last visited Feb. 4, 2017).

575. *Statement of Admiral Robert J. Papp, Jr.*, *supra* note 571.

While the United States has a significant amount of ECS in the Arctic, as a non-party to the Law of the Sea Convention, the U.S. is at a disadvantage relative to the other Arctic Ocean coastal States. Those States are parties to the Convention, and are well along the path to obtaining legal certainty and international recognition of their Arctic ECS.

Becoming a Party to the Law of the Sea Convention would help the United States maximize international recognition and legal certainty regarding the outer limits of the U.S. continental shelf, including off the coast of Alaska, where our ECS is likely to extend out to more than 600 nautical miles. U.S. accession is a matter of geostrategic importance in the Arctic (where all other Arctic nations, including Russia, are Parties). The Administration remains committed to acceding to the LOS Convention.

Overlapping continental shelves are inevitable in the Arctic Ocean, as elsewhere. Where boundaries have not yet been concluded, we expect that neighboring States will continue to work together on a bilateral basis to reach agreement on what are often complex and time-consuming processes. It is important to keep in mind this is not a question of first-come, first-served.

We have two maritime boundaries in the Arctic, one with Russia and one with Canada. The United States and the Soviet Union signed a maritime boundary agreement in 1990. Although only provisionally in force, Russia has respected this maritime boundary, and has not defined an ECS on the U.S. side of the boundary. The United States is taking the same approach.

Canada and the United States have yet to agree to a maritime boundary that would divide our overlapping ECS. We have made this a key objective for implementation of our National Strategy for the Arctic Region, and this will be an important future effort. Nonetheless, we have managed to work together to collect mutually beneficial data necessary to define our respective ECS areas.⁵⁷⁶

For more detailed and up-to-date information on the United

576. *Statement of Admiral Robert J. Papp, Jr., supra note 571.*

States' ECS, see U.S. Extended Continental Shelf Project.⁵⁷⁷

H. UNESCO / IOC / ICES / PICES

The United Nations Educational, Scientific and Cultural Organization (UNESCO) describes its mission as building solidarity among nations by fostering information exchange across a number of disciplines.⁵⁷⁸ In 2011, after UNESCO's governing board voted to recognize Palestine as a state and admit it to the organization, President Obama announced that the United States was immediately cutting off funding for the organization.⁵⁷⁹ At the time, the United States payments constituted 22 percent of UNESCO's budget.⁵⁸⁰

The Intergovernmental Oceanographic Commission (IOC) is part of UNESCO.⁵⁸¹ It is recognized through the United Nations Convention on the Law of the Sea as the competent organization in the fields of Marine Scientific Research (Part XIII) and Transfer of Marine Technology (Part XIV).⁵⁸²

The International Council for Exploration of the Sea (ICES) is an organization of twenty member states that develops science and advice to support the sustainable use of the oceans, with particular emphasis on the North Atlantic.⁵⁸³ Its purpose is to promote an integrated ecosystem understanding of marine environments by coordinating research and advising international commissions and governments on marine policy and management.⁵⁸⁴ ICES calls the Arctic a "research priority,"

577. U.S. EXTENDED CONTINENTAL SHELF PROJECT, <https://www.continentalshelf.gov> (last visited Feb. 4, 2017).

578. UNESCO, Universal Declaration on Cultural Diversity, Adopted by the 31st Session of the General Conference of UNESCO (Nov. 2, 2001), http://portal.unesco.org/en/ev.php-URL_ID=13179&URL_DO=DO_TOPIC&URL_SECTION=201.html.

579. Steven Erlanger & Scott Savare, *UNESCO Accepts Palestinians as Full Members*, N.Y. TIMES (Oct. 31, 2011), http://www.nytimes.com/2011/11/01/world/middleeast/unesco-approves-full-membership-for-palestinians.html?_r=0.

580. *Id.*

581. See *Intergovernmental Oceanographic Commission*, UNESCO, <http://www.unesco.org/new/en/natural-sciences/ioc-oceans/> (last visited Mar. 26, 2017).

582. UNCLOS, *supra* note 73.

583. *Who We Are*, INT'L COUNCIL FOR THE EXPLORATION OF THE SEA, <http://www.ices.dk/explore-us/who-we-are/Pages/Who-we-are.aspx> (last visited Mar. 26, 2017).

584. *Id.*

with projects on subarctic fisheries, Barents Sea Ecosystem Assessment, hydrography and warming of the Arctic Ocean, marine spatial planning, and risk evaluations for Arctic shipping, oil and gas development, and non-native species invasion.⁵⁸⁵ ICES publishes an annual Report on Ocean Climate for the North Atlantic each December.⁵⁸⁶

The North Pacific Marine Science Organization (PICES) is an intergovernmental science organization that promotes and coordinates marine research in the northern North Pacific.⁵⁸⁷ Members are Canada, Japan, China, Korea, Russia, and the United States.⁵⁸⁸ Whereas ICES extends work into the Arctic, PICES 2014 report indicates that “PICES will not initiate projects related to the Arctic, as the Convention covers only the temperate subarctic and adjacent seas, but this does not preclude the exchange of scientific knowledge between North Pacific and Arctic waters.”⁵⁸⁹

I. World Trade Organization

The World Trade Organization is, among other things, a forum for governments to negotiate trade agreements and settle trade disputes.⁵⁹⁰ For example, on November 25, 2013, a World Trade Organization panel upheld the European Union’s 2010 ban on trade in seal products (Regulation (EC) No 1007/2009).⁵⁹¹ The WTO, while finding that the EU’s so-called Seal Regime had violated international trade agreements, determined that the

585. *Action Areas*, INT’L COUNCIL FOR THE EXPLORATION OF THE SEA, <http://www.ices.dk/explore-us/Action%20Areas/Pages/Arctic.aspx> (last visited Mar. 26, 2017).

586. *ICES Report on Ocean Climate (IROC)*, INT’L COUNCIL FOR THE EXPLORATION OF THE SEA, <http://ocean.ices.dk/iroc/> (last visited Feb. 4, 2017).

587. *About PICES*, NORTH PACIFIC MARINE SCI. ORG., <https://www.pices.int/about/default.aspx> (last visited Apr. 17, 2017).

588. *Id.*

589. North Pacific Marine Sci. Org., Report of the 2014 Inter-Sessional Science Board Meeting (2014), [https://www.pices.int/publications/annual_reports/Ann_Rpt_14/2014-
ISB.pdf](https://www.pices.int/publications/annual_reports/Ann_Rpt_14/2014-
ISB.pdf).

590. *What We Do*, WORLD TRADE ORGANIZATION, https://www.wto.org/english/thewto_e/whatis_e/what_we_do_e.htm (last visited Apr. 17, 2017).

591. Panel Report, *EC-Seal Products*, WT/DS400/R, WT/DS401/R (Nov. 25, 2013) [hereinafter *Panel Report*]. The EU’s seal regulatory regime was composed of two primary regulations: A Basic Regulation and an Implementing Regulation. *Panel Report* ¶¶ 2.2, 2.4.

ban was valid under the public morals clause.⁵⁹² The EU ban, which principally targets Canadian sealing practices, is reportedly a principal reason the EU's request to be granted Permanent Observer status at the Arctic Council was "deferred" in 2013.⁵⁹³

Article XX of the General Agreement on Tariffs and Trade (GATT) exempts specific kinds of regulations from certain GATT rules, including measures "necessary to protect public morals," "necessary to protect human, animal or plant life and health," and those "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption."⁵⁹⁴ Such exceptions must comply with the Article XX chapeau (introduction): they must not arbitrarily or unjustifiably discriminate.⁵⁹⁵

The WTO Appellate Body upheld the EU ban in a May 2014 decision, but also found the EU embargo "constitutes a means of arbitrary or unjustifiable discrimination."⁵⁹⁶ The Seal Regime bans products from commercial hunts, but exempts products from certified traditional Inuit hunts.⁵⁹⁷ Canada argued that it is arbitrary to exempt products based only on the identity of the hunter, when Inuit hunts may share every other characteristic with Canadian commercial hunts.⁵⁹⁸

The Appellate Body found the ban allowable under Article XX, but unfairly favorable to Greenlandic seal products in violation of the chapeau.⁵⁹⁹

592. *Seal Product Ban Upheld on 'Ethical' Grounds*, CBC NEWS (Nov. 25, 2013), <http://www.cbc.ca/news/canada/newfoundland-labrador/seal-product-ban-upheld-oneethical-grounds-1.2438904>; Andreas Østhagen, *In or Out? Symbolism of the EU's Arctic Council Bid*, The Arctic Institute, <http://www.thearcticinstitute.org/in-or-out-symbolism-of-eus-arctic/> (last visited Mar. 26, 2017).

593. Sebastian Knecht, *New Observers Queuing Up: Why the Arctic Council Should Expand – and Expel*, ARCTIC INSTITUTE (Apr. 20, 2015), <http://www.thearcticinstitute.org/new-observers-queuing-up/>. Under the Ottawa Declaration, council decisions are made by consensus, creating a one-state veto.

594. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 State. A-11, 55 U.N.T.S. 194.

595. *Id.*

596. Appellate Body Report, *EC-Seal Products*, WT/DS400/AB/R, WT/DS401/AB/R (May 22, 2014).

597. *Id.*

598. *Id.*

599. *Id.*

Canada and the EU agreed in September 2014 that the EU would bring its regulation into conformity with GATT obligations by October 2015.⁶⁰⁰ The measures ultimately adopted by the European Parliament and Council, and implemented by Commission regulation deleted an exception to the ban for hunts to protect fish stocks; however, it preserved an amended exception for hunts by Inuit and other Indigenous communities.⁶⁰¹ The exception requires that the hunting methods used must have due regard for animal welfare, be part of their hunters' tradition, and contribute to their subsistence.

J. International Tribunals

The International Tribunal for the Law of the Sea (ITLOS) issued an advisory opinion regarding illegal, unreported, and unregulated (IUU) fishing on April 2, 2015.⁶⁰² While the opinion has no direct application in the Arctic, it articulated principles based on treaties or customary international law that will apply to vessels fishing in any state's exclusive economic zone (EEZ).

The Sub-Regional Fisheries Commission (SRFC), comprised of seven West African nations facing serious IUU fishing problems, ask the ITLOS to address four questions. First, what obligations apply to flag States of vessels engaged in IUU fishing? Second, what is the extent flag State liability for these activities? Third, what party is liable for violations when IUU fishing is conducted by a vessel licensed under an international agreement between the flag State or an international agency? Fourth, what are the rights and obligations of coastal States to ensure sustainable management of shared or common-interest fish stocks?⁶⁰³

600. *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products*, WORLD TRADE ORGANIZATION, https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds400_e.htm (last visited Mar. 26 2017).

601. *Panel Report*, *supra* note 591.

602. Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission, Case No. 21, Advisory Opinion of Apr. 2, 2015, ITLOS, https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.21/advisory_opinion/C21_AdvOp_02.04.pdf.

603. Tim Stephens, *ITLOS Advisory Opinion: Coastal and Flag State Duties to Ensure Sustainable Fisheries Management*, AM. SOCIETY OF INT'L LAW (Apr. 16, 2015), <https://www.asil.org/insights/volume/19/issue/8/itlos-advisory-opinion-coastal-and-flag-state-duties-ensure>.

After unanimously finding jurisdiction to issue such an opinion (contested by the United States, among others), the tribunal carefully circumscribed its opinions on the substantive issues. With regard to flag State obligations, it found “the primary responsibility for taking the necessary measures to prevent, deter and eliminate IUU fishing rests with the coastal State.”⁶⁰⁴ However, flag States must exercise due diligence to ensure their vessels do not engage in IUU fishing.⁶⁰⁵ This includes an obligation to investigate and take action following reported violations. In answering the second question, the tribunal explained that flag State liability follows only from a breach of this due diligence duty, and does not attach to actual vessel conduct. The flag State is not liable if “it has taken all necessary and appropriate measures to meet its “due diligence” obligations.⁶⁰⁶ If vessels flagged by member States of an international organization, such the EU, engage in IUU fishing where the organization has negotiated access, liability generally attaches to the organization unless by contrary agreement.⁶⁰⁷

With regard to the fourth question, the ITLOS observed that a number of UNCLOS provisions establish coastal State rights and obligations related to the sustainable management of fish stocks shared between multiple exclusive economic zones. Noting UNCLOS’s unfortunate lack of related precise definitions, the tribunal highlighted article 61, paragraphs 2, 3, and 4 as creating a coastal State obligation to “conserve and develop [shared and common fish stocks] as a viable and sustainable resource.”⁶⁰⁸ The tribunal is of the view that this may include “more effective fisheries management schemes to ensure the long-term sustainability of exploited stocks” and stock restoration, as well as an obligation to cooperate toward these ends.⁶⁰⁹

In a non-Arctic development on October 29, 2015, but one that might well be relevant to excessive maritime claims and regulations by some Arctic states, arbitrators hearing a dispute

604. *Id.*

605. *Id.*

606. Press Release, ITLOS, Tribunal Delivers its Advisory Opinion Regarding Illegal, Unreported and Unregulated Fishing Activities (Apr. 2, 2015), <http://www.haguejusticeportal.net/index.php?id=13247>.

607. Stephens, *supra* note 603.

608. *Id.*

609. *Id.*

brought by the Republic of the Philippines against the People's Republic of China over competing claims and activities in the South China Sea determined that the arbitration tribunal has jurisdiction over at least some of the claims.⁶¹⁰ China refused to officially appear in the arbitration, claiming that the arbitration panel has no jurisdiction in the matter.⁶¹¹ In July 2016, the tribunal announced that China's claim to sovereignty over the waters had no legal basis and China violated the Philippines' sovereign rights to exploit resources in its waters.⁶¹² The award examined a number of recurring issues, including historic waters claims, distinguishing low tide elevations, rocks, and islands, the legal effect of artificial island "nourishment" on extensions, and the obligation to protect and preserve the marine environment.⁶¹³

K. *United Nations Environment Program (UNEP)*

UNEP facilitates and sometimes acts as secretariat for thirteen Regional Seas Programs among 143 nations.⁶¹⁴ Five other programs—including the program for the Arctic, which is administered by the Arctic Council states—are independently administered.⁶¹⁵ Some within the U.S. State Department have suggested a more formal UNEP-administered Regional Seas Program for the Arctic Ocean (arguably, a semi-enclosed sea under Article 122 of UNCLOS). Such a program would build upon the Council member-states' existing 1991 Arctic Environmental Protection Strategy (AEPS) and could be coupled with provisions for a Regional Fishery Management Organization (RFMO), similar to the Commission for the

610. Press Release, Permanent Court of Arbitration, The Hague, Arbitration Between the Republic of the Philippines and the People's Republic of China (July 13, 2015), <https://www.pcacases.com/web/sendAttach/1304>.

611. See Lowell Bautista, *The Arbitration Case Between Philippines and China Over Their Dispute in the South China Sea*, 19 J. SOUTHEAST ASIAN STUD. 3, 4 (2014).

612. PCA Case No. 2013-19 (Republic of the Philippines and People's Republic of China) Award of 12 July 2016, <https://pca-cpa.org/wp-content/uploads/sites/175/2016/07/PH-CN-20160712-Award.pdf>.

613. *Id.*

614. *Regional Seas Programmes and Other UNEP Activities Relevant to Marine Biodiversity in Areas Beyond National Jurisdiction*, United Nations Environment Programme, Aug. 26, 2016, http://www.un.org/depts/los/biodiversity/prepcom_files/UNEP_and_BBNJ_PrepCom2.pdf.

615. *Id.*

Conservation of Antarctic Marine Living Resources.

V. SELECTED ARCTIC THEMES

A. *Arctic Marine Shipping*

Nearly all the perceived dangers and opportunities of a rapidly warming Arctic relate to shipping.

1. *Prognosis for Arctic Shipping*

A link to the ten-year shipping forecast prepared for the U.S. Committee on the Marine Transportation System (CMTS), is available in this footnote.⁶¹⁶

A scientific study of sea ice thickness in the Northwest Passage and its implication for shipping published in September 2015 concluded that “even in today’s climate, ice conditions must still be considered severe.”⁶¹⁷ In evaluating shipping conditions, the researchers highlighted the importance of considering both sea ice extent and thickness.

The 8th Arctic Shipping Summit was held in Montreal, Canada from March 23–24, 2016, focusing on new developments and regulations that will come into action for the arctic shipping industry.⁶¹⁸

The 9th Arctic Shipping Summit, which was held in London, UK from September 21–22, 2016, looked at the Polar Code in detail and considered technological advancements as well as potential investment opportunities in the field.⁶¹⁹

2. *Arctic Marine Shipping Assessment*

In 2009, an Arctic Council Protection of the Marine

616. THE INT’L COUNCIL ON CLEAN TRANSP., A 10-YEAR PROJECTION OF MARITIME ACTIVITY IN THE U.S. ARCTIC REGION (2015), http://www.cmts.gov/downloads/CMTS_10-Year_Arctic_Vessel_Projection_Report_1.1.15.pdf.

617. Christian Haas & Stephen E. L. Howell, *Ice Thickness in the Northwest Passage*, 42 GEOPHYSICAL RES. LETTERS 7673, 7673 (2015), <http://onlinelibrary.wiley.com/doi/10.1002/2015GL065704/full>.

618. *8th Arctic Shipping Summit*, ACTIVE COMM. INT’L., <http://www.wplgroup.com/aci/event/8th-arctic-shipping-summit/> (last visited Feb. 4, 2017).

619. *9th Arctic Shipping Summit*, ACTIVE COMM. INT’L., <http://www.wplgroup.com/aci/event/arctic-shipping-summit-europe/> (last visited Feb. 4, 2017).

Environment (PAME) working group led by experts from Canada, Finland and the United States completed a comprehensive report on Arctic marine shipping.⁶²⁰ It has been described as the most comprehensive analysis ever undertaken of trends relating to shipping into, out of, and through the region. PAME has produced annual progress reports on its implementation.

The original report included recommendations for enhancing marine safety, protecting people and the environment, and building infrastructure.⁶²¹ AMSA's marine safety and environmental protection goal has been a driving force behind the IMO's mandatory Polar Code.

Arctic Marine Shipping Assessment Progress Report for 2015. In April 2015, the Arctic Council's PAME Working Group published its 2015 progress report on implementing the recommendations in the 2009 Arctic Marine Shipping Assessment (AMSA) Report.⁶²² The next assessment should be published in 2017.

The Arctic Council's Emergency Prevention, Preparedness and Response (EPPR) working group discussed the intelligence gained from two search and rescue exercises hosted by Denmark and the Russian Federation.⁶²³ Additionally, EPPR finalized a pilot project "Automated Mutual Assistance Vessel Rescue Network," which has a regional ship reporting system and uses automatic and long range identification and tracking data for search and rescue efforts.⁶²⁴ This data will be available in emergencies and is an additional tool for managing search and rescue in the Arctic.⁶²⁵

The marine insurance industry and the International Association of Classification Societies (IACS) offer a risk

620. ARCTIC COUNCIL, ARCTIC MARINE SHIPPING ASSESSMENT 2009 REPORT (2009), https://www.pmel.noaa.gov/arctic-zone/detect/documents/AMSA_2009_Report_2nd_print.pdf.

621. *Id.* at 6–7.

622. ARCTIC COUNCIL, STATUS ON IMPLEMENTATION OF THE AMSA 2009 REPORT RECOMMENDATIONS (Apr. 2015), https://www.pmel.noaa.gov/arctic-zone/detect/documents/AMSArecommendations2015_Web.pdf.

623. *EPPR (Emergency Prevention, Preparedness and Response) Meets in Reykjavik*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/our-work2/8-news-and-events/371-eppr-ii-2015> (last updated Dec. 17, 2015).

624. EPPR, EPPR WORKING GROUP MEETING FINAL REPORT 8 (2013), http://arctic-council.org/eppr/wp-content/uploads/2013/09/EPPR-Oulu_Final_report.pdf.

625. *Id.*

assessment tool to supplement the Polar Code. As IACS explained to the IMO's Maritime Safety Committee, the Polar Operational Limit Assessment Risk Indexing System (POLARIS): "provides a standard approach for the evaluation of risks to the ship and the ice conditions encountered/ expected (ice regime). POLARIS can be used for voyage planning purposes or in real time to aid in the decision making in support of shipboard operations. POLARIS may be used by Administrations as a means to set operational limitations with respect to ships operating in ice."⁶²⁶

The International Chamber of Shipping (ICS) released its 2016 Annual Review, which addresses five key issues of the year: acting on the Paris Agreement, assessing the collective interest in markets that are in crisis, making a critical decision on the global sulphur cap, implementing the Ballast Convention (which is set to go into force in 2017), and making a final push for seafarers and flag states to comply with the IMO Convention on Standards of Training, Certification and Watchkeeping (STCW), as the transitional period after the 2010 amendments comes to an end on January 1, 2017.⁶²⁷

3. Arctic Shipping Routes

Secure access to, and the capacity limits of, the Panama and Suez Canals will affect the demand for Arctic shipping routes in the coming decades. The Panama Canal Authority completed an expansion project in 2016 that began commercial operation on June 26th, opening a new lane of traffic by adding a third lock to the system.⁶²⁸ Now, the canal can accommodate container ships of up to 13,000 TEUs (before, it was limited to 5,000 TEU ships). The New Panamax and Suezmax limits are depicted in the following table:

626. Int'l Maritime Org. [IMO], MSC 94/3/7, *Consideration and Adoption of Amendments to Mandatory Instruments: POLARIS* (Sept. 12, 2014), http://www.ics.org.uk/document/public/Publications/Submissions_to_IMO/PDF/CONSIDERATION_AND_ADOPTION_OF_AMENDMENTS_TO_MANDATORY_INSTRUMENTS_pdf2416.pdf.

627. *International Chamber of Shipping 2016 Annual Review*, INTERNATIONAL CHAMBER OF SHIPPING (2016), <http://www.ics-shipping.org/docs/default-source/ICS-Annual-Review-2016/ics-annual-review-2016.pdf?sfvrsn=9>.

628. Joseph Bonney, *Panama Canal Locks To Officially Open June 26*, JOC.COM (Mar. 24, 2016, 10:20 AM), http://www.joc.com/port-news/panama-canal-news/panama-canal-locks-officially-open-june-26_20160324.html.

| | LENGTH | BEAM | DRAFT |
|-----------------------------|------------|--------------|--------------|
| New Panamax (third lock) | 366 meters | 49 meters | 15 meters |
| Suezmax | Unlimited | 50 meters | 20 meters |

For comparison, the commonly cited limiting figures for vessels transiting the Northern Sea Route are 30-meter beam (vessels cannot be wider than the escorting ice-breaker it must sometimes follow), and 12.5-meter draft (due to the shallow and often unavoidable straits between the New Siberian Islands).⁶²⁹ Limiting drafts in some Northwest Passage deep draft routes are as little as ten meters.⁶³⁰

Northeast Passage (and the Northern Sea Route). The Northeast Passage, which includes what Russia has designated the Northern Sea Route (NSR), traverses the Arctic Ocean north of Russia from the Barents Sea to the Bering Strait, thus serving as a possible northern route between the Atlantic and Pacific Oceans.⁶³¹ UNCLOS provides for freedom of navigation (subject to certain limitations) on the high seas, but Russia regulates vessel traffic in the NSR through a system of mandatory navigation permits and transit fees.⁶³² UNCLOS Article 234, which Russia has at times invoked, allows coastal States to adopt and enforce non-discriminatory regulations related to pollution in ice-covered areas within their Exclusive Economic Zones (up to 200 nm from the baseline).⁶³³ Russia also controversially interpreted UNCLOS to allow it to enclose groups of islands in a system of baselines, encompassing their straits as internal waters subject to unrestricted Russian

629. Claes Lykke Ragner, *Northern Sea Route Cargo Flows and Infrastructure – Present State and Future Potential*, THE FRIDTJOF NANSEN INSTITUTE, <https://www.fni.no/getfile.php/132017/Filer/Publikasjoner/FNI-R1300.pdf> (last visited Apr. 26, 2017).

630. Karl Magnus Eger, *Comparison of Operational Conditions Along the Arctic Routes*, ARCTIS KNOWLEDGE HUB, <http://www.arctis-search.com/tiki-index.php?page=Comparison%20of%20Operational%20Conditions%20along%20the%20Arctic%20Routes> (last visited Apr. 30, 2017).

631. See William V. Dunlap, *Transit Passage in the Russian Arctic Straits*, 1 MARITIME BRIEFING 2-3 (1996).

632. Albert Buixadé Farré et al., *Commercial Arctic Shipping Through the Northeast Passage*, 37 POLAR GEOGRAPHY 298, 310 (2014).

633. *Id.*

sovereignty.⁶³⁴ Whether the NSR eventually provides a viable shipping alternative depends largely on the future of Arctic ice: the Intergovernmental Panel on Climate Change expects 125 days of NSR navigability by 2050.⁶³⁵

Russia set up the Northern Sea Route Administration (NSRA)⁶³⁶ and published new Rules of Navigation on the Water Area of the Northern Sea Route (unofficial English translation).⁶³⁷ The Russian International Affairs Council (RIAC) provided a reader on the Northern Sea Route with Arctic experts' in-depth coverage on maritime law, transit in the Bering Strait, ecology, icebreakers, and security.⁶³⁸

In October 2016, the NSR Administration noted that 688 permits had been issued to pass through the NSR so far in the year, including 136 for foreign ships.⁶³⁹ This number was up from 672 at the same time in 2015.⁶⁴⁰ In December 2016, the Russian Ministry of Economic Development announced that shipments to ports along the route in the first eleven months of the year increased to 6.9 million tons, a new post-Soviet high.⁶⁴¹ China's biggest shipping company announced that its operations along the Russian Arctic coast were reaching a record high in 2016.⁶⁴² Meanwhile, transit shipments remained on a low level in general, reaching only about 210,000 tons of

634. *Id.*

635. Thomas Nilsen, *125 Days of Navigable Conditions by 2050*, BARENTS OBSERVER (Apr. 1, 2014), <http://barentsobserver.com/en/business/2014/04/125-days-navigable-conditions-2050-01-04>.

636. *Northern Sea Route Administration*, NORTHERN SEA ROUTE INFORMATION OFFICE, http://www.arctic-lio.com/nsr_nsra (last visited Feb. 5, 2017).

637. *Rules of Navigation on the Water Area of the Northern Sea Route*, NORTHERN SEA ROUTE INFORMATION OFFICE (Jan. 17, 2003), http://www.arctic-lio.com/docs/nsr/legislation/20130425185806en-Rules_unof.pdf.

638. *Northern Sea Route*, RUSSIAN INTERNATIONAL AFFAIRS COUNCIL, <http://russiancouncil.ru/en/northernsearoute> (last visited Feb. 5, 2017).

639. *Northern Sea Route Traffic to Reach 6 Mln T in 2016—NSR Administration*, PORTNEWS (Oct. 21, 2016, 11:57 AM), <http://en.portnews.ru/news/228305/>.

640. *Id.*; see also Av Malte Humpert, *Frozen Waters: Northern Sea Route Traffic Boosted by Internal Traffic, While Transits Fall Sharply*, HIGH NORTH NEWS (Dec. 15, 2015), <http://www.highnorthnews.com/frozen-waters-northern-sea-route-traffic-boosted-by-internal-traffic-while-transits-fall-sharply/>.

641. Atle Staalesen, *Record High for Northern Sea Route*, BARENTS OBSERVER (Dec. 20, 2016), <https://thebarentsobserver.com/en/2016/12/record-high-northern-sea-route>.

642. Atle Staalesen, *COSCO Sends Five Vessels Through Northern Sea Route*, BARENTS OBSERVER (Oct. 10, 2016), https://thebarentsobserver.com/en/arctic-industry-and-energy/2016/10/cosco-sends-five-vessels-through-northern-sea-route#.V_z19gStJc.twitter.

goods transiting from the Bering Strait in the east to the Barents Sea in the west by mid-September.⁶⁴³

Activity by major energy projects in the region contributed to the increase in cargo volume, in particular oil production by Gazprom Neft's Prirazlomnaya platform and the development of Yamal LNG.⁶⁴⁴ While domestic internal traffic along the NSR increased, international transit traffic using the NSR for transport from Europe to Asia or vice versa declined significantly from its peak in 2012. Transit shipping along the NSR decreased from a high of 1.26 million tons in 2012 to 1.176 million tons in 2013, then declined sharply to 274,000 tons and 39,000 tons in 2014 and 2015 respectively.⁶⁴⁵

In 2015, the Russian government released an Integrated Development Plan for the NSR 2015-2030.⁶⁴⁶ The plan stressed the importance of providing safer and more reliable navigation for maritime export of Russian natural resources along the NSR but also the strategic importance of the NSR for Russian national security.⁶⁴⁷ The Russian government is attempting to increase international transit cargo transportation on NSR in partnership with China and other Asian countries.⁶⁴⁸

Northwest Passage. Northwest Passage (NWP) transits through Canada's Arctic Archipelago are much more limited than those through the NSR.⁶⁴⁹ Neither Transport Canada, NORDREG nor Canadian Coast Guard has yet to provide data on 2016 traffic through the NWP, as did their Russian counterparts.⁶⁵⁰

In September 2016, after more than two years of planning, the thirteen-deck cruise ship *Crystal Serenity* embarked on its sold-out voyage through the Northwest Passage.⁶⁵¹ The ship

643. *Id.*

644. Humpert, *supra* note 640.

645. *Id.*

646. *Future Development of the Northern Sea Route*, PORTNEWS (Feb. 19, 2016), <http://en.portnews.ru/digest/16895/>.

647. *Id.*

648. *Id.*

649. See R. K. Headland, *Transits of the Northwest Passage to End of the 2015 Navigation Season*, NORTHWEST PASSAGE 2015, <http://cil.nus.edu.sg/wp/wp-content/uploads/2015/11/Arctic-Guide-November-2015-KDK-JAR-KDK-edits-12152015.pdf>, (last visited Apr. 14, 2016).

650. *Id.*

651. *Mission Accomplished: Crystal Serenity Completes 32-Day Northwest Passage Journey*, BUSINESS WIRE (Sept. 16, 2016, 1:06 PM),

safely docked in New York City thirty-two days later.⁶⁵² Passengers paid between \$22,000 and \$120,000 for the trip, which included stops in secluded Inuit villages for a glimpse of life in the North.⁶⁵³

Canada has declared the NWP internal waters, and has enacted an assortment of laws to address maritime risks in the waters.⁶⁵⁴

A recent Ocean Yearbook article explores the application of UNCLOS Article 234 in those waters (Peter Luttmann, *Ice-Covered Areas under the Law of the Sea Convention: How Extensive are Canada's Coastal State Powers in the Arctic?*)⁶⁵⁵ Another, by James Kraska, examines the Northern Canada Vessel Traffic Services Zone Regulations (NORDREG) and the Law of the Sea.⁶⁵⁶

As the Canadian Department of Fisheries and Oceans' Arctic Voyage Planning Guide warns, the NWP presents more shipping challenges than the NSR because of more hazardous ice conditions and a relative lack of infrastructure.⁶⁵⁷

An October 2014 Report of the Commissioner of the Environment and Sustainable Development on Marine Navigation in the Canadian Arctic concluded that existing infrastructure adequately supports current traffic levels, but gaps must be addressed to handle the emerging risks of increased traffic.⁶⁵⁸

<http://www.businesswire.com/news/home/20160916005705/en/Mission-Accomplished-Crystal-Serenity-Completes-32-Day-Northwest>.

652. *Id.*

653. Brady Dennis & Chris Mooney, *A Luxury Cruise Ship Sets Sail for the Arctic, Thanks to Climate Change*, WASH. POST (Aug. 16, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/08/16/a-luxury-cruise-ship-sets-sail-for-the-arctic-thanks-to-climate-change/?utm_term=.79a435e176e9.

654. ROBERT DUFRESNE, LIBRARY OF PARLIAMENT, *CONTROVERSIAL CANADIAN CLAIMS OVER ARCTIC WATERS & MARITIME ZONES* (2008) <http://www.loppar.gc.ca/content/lop/researchpublications/prb0747-e.htm>.

655. Peter Luttmann, *Ice-Covered Areas Under the Law of the Sea Convention: How Extensive are Canada's Coastal State Powers in the Arctic?*, 29 OCEAN YEARBOOK 85 (Aldo Chircop, ed., 2015).

656. James Kraska, *The Northern Canada Vessel Traffic Services Zone Regulations (NORDREG) and the Law of the Sea*, 30 INT. J. MARINE & COASTAL L. 225 (2015).

657. *Arctic Voyage Planning Guide*, FISHERIES & OCEANS CAN., <http://geoportal.gc.ca/eng/Gallery/MapProfile/5> (last visited Feb. 5, 2017).

658. Office of the Auditor General of Canada, *Marine Navigation in the Canadian Arctic*, in 2014 FALL REPORT OF THE COMMISSIONER OF THE ENVIRONMENT AND

One unofficial source reported that, between the first NWP transit in 1853 and the end of the 2012 navigation season, 185 complete transits of the Northwest Passage had been made by 135 different vessels.⁶⁵⁹ The figure includes transits through all seven of the recognized NWP routes. In 2012, a record number (30) of vessels transited through the Northwest Passage, bringing the total to 215.⁶⁶⁰

In 2013, for the first time, a large bulk carrier, the 75,000 deadweight-ton Nordic Orion, transited from Vancouver, BC to Pori, Finland via the Northwest Passage.⁶⁶¹ In 2014, the Fednav cargo ship MV Nunavik, carrying nickel ore (and equipped with some ice protection) completed the transit without icebreaker accompaniment.⁶⁶²

The Journal of Ocean Technology released a new issue in 2016 focused on climate change and adapting to a changing Arctic ocean, emphasizing the importance of cooperation and collaboration to promote sustainable development moving forward.⁶⁶³

4. *International Agreements on Shipping Safety*

Polar Code. Most sections of the IMO's mandatory Polar Code entered into force on January 1, 2017.⁶⁶⁴ The Polar Code amendments to the STCW Convention were adopted by the IMO's Maritime Safety Committee in November 2016, and will not enter into force until July 1, 2018.⁶⁶⁵

Arctic Search and Rescue. In 2011, the Arctic Council

SUSTAINABLE DEVELOPMENT 3.77 (2014), http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201410_03_e_39850.html.

659. R. K. Headland, *supra* note 649.

660. Canada Department of Environment and Natural Resources, *Trends in Shipping in the Northwest Passage and the Beaufort Sea*, in ONLINE NORTHWEST TERRITORIES STATE OF THE ENVIRONMENT REPORT 7.3 (May 29, 2015), <http://www.enr.gov.nt.ca/state-environment/73-trends-shipping-northwest-passage-and-beaufort-sea>.

661. John McGarrity & Henning Gloystein, *Big Freighter Traverses Northwest Passage for 1st Time*, REUTERS (Sept. 27, 2013, 11:36 AM), <http://www.reuters.com/article/us-shipping-coal-arctic-idUSBRE98Q0K720130927>.

662. Becky Oskin, *Cargo Ship is First to Solo the Northwest Passage*, DISCOVERY NEWS (Oct. 2, 2014), <http://news.discovery.com/earth/oceans/cargo-ship-is-first-to-solo-the-northwest-passage-141002.htm>.

663. *Climate Change: Adapting to a Changing Arctic Ocean*, 11 J. OCEAN TECH., no. 3, Fall 2016.

664. See Section IV.C.

665. See Section IV.C.

states signed the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic.⁶⁶⁶ The agreement, which assigns the areas of SAR responsibility for each state-party, entered into force on January 19, 2013.

In view of the conflicting territorial claims in the Arctic, the treaty provides that “the delimitation of search and rescue regions is not related to and shall not prejudice the delimitation of any boundary between States or their sovereignty, sovereign rights or jurisdiction.”⁶⁶⁷ Russia embraced the agreement, opening three of ten planned SAR centers by the end of 2014. Future cooperation on search and rescue activities will be facilitated by the Arctic Coast Guard Forum.⁶⁶⁸

The U.S. Coast Guard, Alaskan Command and other state, federal, local and international partners conducted the exercise Arctic Chinook 2016 in Kotzebue, Alaska, from August 22–25, 2016.⁶⁶⁹ According to Coast Guard reports, Arctic Chinook was a joint Coast Guard and U.S. Northern Command-sponsored exercise on the U.S. Department of State-approved list of Arctic Council Chairmanship events.⁶⁷⁰ The exercise scenario consisted of an adventure-class cruise ship with approximately 250 passengers and crew that experiences an incident which degrades to become a catastrophic event.⁶⁷¹ The exercise simulated a decision to abandon ship resulting in passengers and crew with a mix of critical, serious and minor injuries, as well as the deployment of life rafts.⁶⁷²

5. *Arctic Shipping Safety Measures*

Central Bering Sea Place of Refuge. The Coast Guard and Marine Transportation Act of 2012 called for two Arctic marine studies.⁶⁷³ Section 717 required the Commandant of the Coast

666. See Agreement on Cooperation, *supra* note 96.

667. *Id.*

668. See Vice Admiral Charles D. Michel, *supra* note 138.

669. Bill Colclough, *Arctic Chinook 2016*, COAST GUARD ALASKA (Sept. 2, 2016), <http://alaska.coastguard.dodlive.mil/2016/09/arctic-chinook-2016/>.

670. *Trends in Shipping in the Northwest Passage and the Beaufort Sea*, in NORTHWEST TERRITORIES STATE OF THE ENVIRONMENT REPORT (May 29, 2015), <http://www.enr.gov.nt.ca/state-environment/73-trends-shipping-northwest-passage-and-beaufort-sea>.

671. *Id.*

672. *Id.*

673. See Pub. L. No. 112-213, 126 Stat. 1540 (2012).

Guard to consult with appropriate federal agencies and with state and local interests to determine what improvements, if any, are necessary to designate existing ice-free facilities or infrastructure in the Central Bering Sea as a fully functional, year-round Potential Place of Refuge.⁶⁷⁴ The Coast Guard delivered the report in 2014.⁶⁷⁵

Arctic Deep Water Port. Section 721 of the 2012 bill required the Commandant, in consultation with the Commanding General of the Army Corps of Engineers, the Maritime Administrator, and the Chief of Naval Operations, to conduct a study on the feasibility of establishing a deep water seaport (with a depth of not less than thirty-four feet) in the Arctic to protect and advance strategic United States interests within the Arctic region.⁶⁷⁶ The Coast Guard delivered the Report on February 11, 2014.⁶⁷⁷ See Section III.A.7 for a description of the Corps of Engineers' activity, and Section II.A.13 for a discussion on the Committee on the Marine Transportation System.

Bering Strait PARS. On November 8, 2010, the Coast Guard published a notice in the Federal Register of its intent to conduct a Port Access Routing Study (PARS) for the Bering Strait, the 50-mile-wide strait between Russia and Alaska, partly blocked by Little and Big Diomedes Islands.⁶⁷⁸ The study was initiated to evaluate the continued applicability of and the need for modifications to current vessel routing measures, and the need for the creation of new vessel routing measures in the Bering Strait.⁶⁷⁹ The goal is to help reduce the risk of marine casualties and increase the efficiency of vessel traffic in the study area.⁶⁸⁰

The Coast Guard announced on February 19, 2015 a proposal to establish four-mile wide traffic lanes running from Unimak Pass in the Aleutian Islands through the U.S. side of the Bering

674. *Id.*

675. *Id.*

676. See Pub. L. No. 112-213, 126 Stat. 1540 (2012).

677. U.S. COAST GUARD, FEASIBILITY OF ESTABLISHING AN ARCTIC DEEP-DRAFT SEAPORT (Feb. 11, 2014),

<http://origin.library.constantcontact.com/download/get/file/1103854201241-742/2014-1.02.11.Feasibility+of+Establishing+an+Arctic+Deep-draft+Seaport.pdf>.

678. 75 Fed. Reg. 68,568 (Nov. 8, 2010).

679. *Id.* at 68,569.

680. *Id.* at 68,570.

Strait and into the Arctic Ocean.⁶⁸¹ As presently proposed, the traffic lanes will be voluntary. The measures are expected to enter force in 2017.⁶⁸²

In his December 9, 2016 executive order, President Obama directed the Coast Guard to give careful consideration to community recommendations regarding environmentally sensitive Areas to Be Avoided (ATBAs) in the area and to publish its initial findings by the end of 2016 and move its conclusions to the International Maritime Organization for action by 2018.⁶⁸³

Arctic Waterways Safety Committee. In 2014 the U.S. Coast Guard 17th District facilitated an initial meeting of stakeholders to organize a new Arctic Waterways Safety Committee.⁶⁸⁴ The committee held its first formal meeting in Juneau in March 2015, and a public meeting in Anchorage on June 8.⁶⁸⁵ The new committee is meant to provide a forum to solve differences in the Arctic waterways without involving regulatory intervention.⁶⁸⁶ It focuses on creating best practices to ensure a safe, efficient, and predictable environment for all users of Arctic waterways.⁶⁸⁷ Members include representatives from Arctic municipalities, regional subsistence hunting groups, and the marine industries.⁶⁸⁸

681. Craig H. Allen, Sr., *The Coast Guard Advances its Arctic Readiness in 2015, but Challenges Remain*, PACIFIC MARITIME MAGAZINE (Feb. 1, 2016), <http://www.pacmar.com/story/2016/02/01/features/the-coast-guard-advances-its-arctic-readiness-in-2015-but-challenges-remain/409.html>.

682. *Id.*

683. Press Release, The White House, Office of the Press Secretary, FACTSHEET: White House Announces Actions to Protect Natural and Cultural Resources in Alaskan Arctic Ocean (Dec. 9, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/12/09/fact-sheet-white-house-announces-actions-protect-natural-and-cultural>.

684. ARCTIC WATERWAYS SAFETY COMMITTEE, <http://www.arcticwaterways.org/> (last visited Feb. 5, 2017).

685. Carey Restino, *Committee Forms to Tackle Arctic Waterways Safety*, ALASKA DISPATCH NEWS (Mar. 28, 2015), <https://www.adn.com/arctic/article/committee-forms-tackle-arctic-waterway-safety/2015/03/28/>.

686. ARCTIC WATERWAYS SAFETY COMMITTEE, <http://www.arcticwaterways.org/> (last visited Feb. 5, 2017).

687. *Id.*

688. *Our Work*, ARCTIC WATERWAYS SAFETY COMMITTEE, <http://www.arcticwaterways.org/attorneys-1.html> (last visited Feb. 5, 2017).

B. *Polar Icebreakers*

The most widely cited compilation of icebreakers of the world is produced by the U.S. Coast Guard.⁶⁸⁹ What follows is a brief survey of recent icebreaker acquisition, construction and operational developments.

Australia. Australia revealed details of its new icebreaker in October 2015.⁶⁹⁰ The new icebreaker will be used primarily to supply Australia's three permanent Antarctic research stations with cargo, equipment and personnel as well as operating as a research ship with laboratory facilities.⁶⁹¹ The icebreaker, set to replace the *Aurora Australis*, is projected for completion in 2019.⁶⁹²

Canada. The 492 foot, Polar Class 2, diesel electric powered Canadian Coast Guard icebreaker CCGS *John G. Diefenbaker* was expected to join the Canadian Coast Guard fleet in 2021-2022; however, that date has slipped, as there are reportedly several research vessels and two navy ships scheduled for construction ahead of her.⁶⁹³

China. Shanghai-based Jiangnan Shipyard Co., Ltd announced in July 2016 that China intends to start building its first domestically produced icebreaker by the end of 2016.⁶⁹⁴ China's largest icebreaker *Xuelong* (Snow Dragon) was purchased from a Ukrainian company in 1993.⁶⁹⁵ China refitted

689. OFF. WATERWAYS AND OCEAN POL'Y, U.S. COAST GUARD, MAJOR ICEBREAKERS OF THE WORLD (2015), <http://www.uscg.mil/hq/cg5/cg552/docs/20150521%20Major%20Icebreaker%20Chart.pdf>.

690. Press Release, Hon. Malcolm Turnbull, Prime Minister, Australia's New State-of-the-Art Icebreaker Unveiled (Oct. 29, 2015), <http://www.environment.gov.au/minister/hunt/2015/pubs/mr20151029.pdf>.

691. AUSTL. GOV'T, DEP'T OF THE ENV'T, AUSTL. ANTARCTIC DIV., AUSTRALIA'S NEW ANTARCTIC ICEBREAKER (2014), <https://www.environment.gov.au/minister/hunt/2014/pubs/mr20140731-factsheet.pdf>.

692. Sam Ikin, Rosemary Bolger & Emilie Gamenz, *New \$500 million Icebreaker Australia's Biggest Investment the Antarctic Program*, ABC (Oct. 29, 2015, 2:39 AM), <http://www.abc.net.au/news/2015-10-29/pm-turnbull-releases-details-of-new-500-million-icebreaker/6893848>.

693. *Section 3 – Strategic and Management Priorities*, CANADIAN COAST GUARD, <http://www.ccg-gcc.gc.ca/Publication/2014-2017-IBHRP/Section3-Strategic-and-Management-Priorities> (last updated Dec. 20, 2014).

694. *China Starts Building Its First Polar Icebreaker*, CRIENGLISH.COM (July 30, 2016, 4:44 PM), <http://english.cri.cn/12394/2016/07/30/2743s936063.htm>.

695. *Id.*

it into a polar research vessel at a cost of thirty million yuan, about \$4.6 million, and put it into service in place of the Research Vessel Jidi in 1994.⁶⁹⁶ Xuelong has completed thirty-two expeditions in Antarctica and is now on its seventh Arctic expedition.⁶⁹⁷ The new vessel will be smaller than the Xuelong but with more icebreaking power.⁶⁹⁸

Finland. Finland continues to be a leading nation in the design and construction of icebreakers. The Finnish icebreaking fleet includes nine state-owned, Finnish Navy and commercially owned vessels.⁶⁹⁹ *Polaris*, Finland's newest icebreaker, was completed on September 28, 2016.⁷⁰⁰ She is the world's first to feature dual fuel liquefied natural gas (LNG) and diesel propulsion, which makes the vessel Finland's most powerful icebreaker and the world's greenest.⁷⁰¹ In late 2016 the icebreaker was undergoing final outfitting at Arctech Helsinki Shipyard and the vessel was scheduled for delivery to Arctia Icebreaking Oy in mid-2017.⁷⁰²

Germany. On July 18, 2016, the German research icebreaker *Polarstern* departed from Tromsø (Norway) to start its 100th expedition.⁷⁰³ On board there are scientists from thirteen nations who cover the range from physical oceanography, geochemistry, geodesy, geology, geophysics, seismology, marine biology, biochemistry and mechanical engineering.⁷⁰⁴ Later that year, she departed for Antarctica.⁷⁰⁵

696. *Id.*

697. *Id.*

698. *Id.*

699. Tim Bird, *Finland's Icebreakers Plough Through Baltic Ice*, THIS IS FINLAND (Feb. 2017), <https://finland.fi/business-innovation/finlands-icebreakers-plough-through-baltic-ice/>.

700. *The World's First LNG-powered Icebreaker Polaris Delivered*, ARCTECH (Sept. 28, 2016), <http://arctech.fi/the-worlds-first-lng-powered-icebreaker-polaris-delivered/>.

701. *Id.*

702. *Id.*

703. Vera Schlindwein, Henning Kirk & Torsten Kanzow, *The 100th Expedition*, ALFRED-WEGENER INSTITUTE: POLARSTERN WEEKLY REPORTS (July 28, 2016), <http://www.awi.de/nc/en/expedition/ships/polarstern/weekly-reports/single-view/presse/polarstern-expedition-klappe-die-hundertste.html>.

704. *Id.*

705. Olaf Boebel, *We Are Leaving Cape Town*, ALFRED-WEGENER INSTITUTE: POLARSTERN WEEKLY REPORTS (Dec. 21, 2016), <http://www.awi.de/nc/en/expedition/ships/polarstern/weekly-reports/single-view/presse/wir-lassen-kapstadt-hinter-uns.html>.

Russia. On June 16, 2016, Russia launched the *Arktika*, the world's biggest, most powerful icebreaker in St. Petersburg.⁷⁰⁶ The LK-60 class vessel is 170 meters (568 feet) long and thirty-four meters wide, and powered by two nuclear reactors.⁷⁰⁷ Reportedly, it will be able to break through ice thirteen feet deep.⁷⁰⁸ Projected for completion in 2019, the *Arktika* will be based in Murmansk, and the Russian Federation plans to add two additional LK-60 class vessels for 2019 and 2020.⁷⁰⁹

One week earlier, Russia launched the 6,000-ton diesel-electric icebreaker *Ilya Muromets* during a ceremony in St. Petersburg.⁷¹⁰ The vessel is expected to be inducted into the Russian Navy in 2017.⁷¹¹ The *Ilya Muromets* could be the lead ship of a new class of icebreakers, depending on how well the vessel will do perform in service. The 6,000-ton ship is eighty-five-meter (280-feet) long and can reportedly break through a meter of ice.⁷¹² With a crew of thirty-five it can traverse the entire 5,600 kilometer (3,500 mile) length of the Northern Passage and can operate autonomously for up to sixty days.⁷¹³

According to a statement by Russian Deputy Prime Minister Dmitry Rogozin in October 2016, Russia plans to develop a super-powerful icebreaker that will be able to operate in any ice situation and clear a passage through five-meter ice.⁷¹⁴ Although still only in the project development stage, Russia will be testing projects in coming years to develop new materials and fuel fit for their use in extremely low temperatures.⁷¹⁵

Sweden. On August 8, 2016, the Swedish icebreaker *Oden*

706. Camila Domonoske, *Russia Launches World's Biggest, Most Powerful Icebreaker*, NPR: THE TWO-WAY (June 16, 2016, 7:48 AM), <http://www.npr.org/sections/thetwo-way/2016/06/16/482288188/russia-launches-worlds-biggest-most-powerful-icebreaker>.

707. *Id.*

708. *Id.*

709. Atle Staalesen, *These Are Russia's New Icebreakers*, BARENTS OBSERVER (Dec. 1, 2015), <http://thebarentsobserver.com/2015/12/these-are-russias-new-icebreakers>.

710. Franz-Stefan Gady, *Russia Launches First New Military Icebreaker in 45 Years*, THE DIPLOMAT (June 14, 2016), <http://thediplomat.com/2016/06/russia-launches-first-new-military-icebreaker-in-45-years/>.

711. *Id.*

712. *Id.*

713. *Id.*

714. *Russia to Develop Icebreaker Able to Clear Passage Through 5-meter Ice*, RUSS. BEYOND HEADLINES (Oct. 13, 2016), http://rbth.com/news/2016/10/13/russia-to-develop-icebreaker-able-to-clear-passage-through-5-meter-ice_638465.

715. *Id.*

departed Svalbard to join the Canadian icebreaker Louis S. St-Laurent for “Arctic Ocean 2016,” in support of Canada’s continental shelf claim.⁷¹⁶ For six weeks, the two vessels operated in the Amundsen Basin and the Lomonosov and Alpha Ridges.⁷¹⁷

Sweden recognizes that efficient ice-breaking operations are required to promote maritime safety and improve accessibility in ice-infested waters.⁷¹⁸ Swedish ice-breakers are able to support increasing commercial shipping in the Arctic as well as help with both the monitoring of the vulnerable marine environment and Arctic research.⁷¹⁹ The Swedish Maritime Administration’s five ice-breaking vessels are well suited to Arctic and sub-Arctic waters.⁷²⁰ In addition, the private operator, Trans Viking Icebreaking and Offshore, operates three ice-capable vessels.⁷²¹

United States. Icebreaker acquisition attracts much attention among Arctic observers. The High Latitude Region Mission Analysis prepared for the Coast Guard by ABS Consulting in 2011 concluded that the Coast Guard needs three heavy and three medium icebreakers to fulfill its statutory missions (Vol. II of the study analyzes Arctic Mission Area Needs).⁷²² To fulfill its statutory missions and maintain the continuous presence requirements of the Naval Operations Concept (2010) would require six heavy and four medium icebreakers.⁷²³

The Coast Guard presently has two active polar icebreakers: USCGC Healy (WAGB 20), medium icebreaker with a projected service life of 2030, and USCGC Polar Star (WAGB 10), a heavy

716. *Arctic Expedition Onboard Swedish Icebreaker to Depart from Spitsbergen (Svalbard) on Tuesday, ARCTIC* (Aug. 8, 2016), <http://arctic.ru/international/20160808/403134.html>.

717. Gov’t Can., *2016 Arctic Survey*, BACKGROUND, <http://news.gc.ca/web/article-en.do?mthd=tp&ctr.page=1&nid=1102489> (last updated July 21, 2016).

718. *Sweden*, ARCTIC COUNCIL, <http://www.arctic-council.org/index.php/en/about-us/member-states/sweden> (last updated Sept. 10, 2015).

719. *Id.*

720. *Id.*

721. *What We Do*, VIKING SUPPLY SHIPS, <http://www.vikingsupply.com/whatwedo> (last visited Mar. 26, 2017).

722. U.S. COAST GUARD, HIGH LATITUDE REGION MISSION ANALYSIS CAPSTONE SUMMARY (July 2010), <http://assets.fiercemarkets.net/public/sites/govit/hlsummarycapstone.pdf>.

723. *Id.*

icebreaker whose original 30-year service life ended in 2006, but then completed a service life extension program in 2013.⁷²⁴ A third polar icebreaker, the Polar Sea (WAGB 11), was prepared for “preservation drydocking” in 2015.⁷²⁵

The Coast Guard has not yet decided whether it will be feasible to return the Polar Sea to active service. Meanwhile, her sister ship Polar Star, which is en route to Antarctica at this writing, is expected to reach the end of her extended service life not later than 2023, potentially leaving the nation without a heavy icebreaker to support its Antarctic activities.⁷²⁶

The Congressional Research Service published a detailed analysis of icebreaker capabilities and modernization needs on November 10, 2016.⁷²⁷ The U.S. has at least five options, individually or in combination, for acquiring a new heavy icebreaker: (1) acquire a new icebreaker from a U.S. shipbuilding company; (2) acquire a new icebreaker from a foreign shipbuilding company (perhaps at a lower cost); (3) enter into a short- or long-term lease; (4) enter into a hybrid public-private partnership for staffing an icebreaker owned privately or by the government; and (5) overhaul and reactivate the USCGC Polar Sea.⁷²⁸

During President Obama’s visit to the Arctic in September 2015, he said he would move up icebreaker construction by two years (2020 instead of the original 2022 date).⁷²⁹ The President recognized in a speech in Seward, Alaska that “icebreakers are examples of something that we need to get online now. They can’t wait. And I’m looking forward to trying to work with

724. *Id.*

725. Craig H. Allen, Sr., *The Coast Guard Advances Its Arctic Readiness in 2015, but Challenges Remain*, PACIFIC MARITIME MAGAZINE (Feb. 1, 2016), <http://www.pacmar.com/story/2016/02/01/features/the-coast-guard-advances-its-arctic-readiness-in-2015-but-challenges-remain/409.html>.

726. See Hector Martin, *Icebreakers: ‘Polar Sea’ Revisited*, THE ARCTIC JOURNAL (Oct. 16, 2014, 6:48 PM), <http://arcticjournal.com/politics/1082/polar-sea-revisited>.

727. RONALD O’ROURKE, CONG. RESEARCH SERV., RL34391, COAST GUARD POLAR ICEBREAKER MODERNIZATION: BACKGROUND AND ISSUES FOR CONGRESS (Nov. 10, 2016), <https://www.hsdl.org/?view&did=796906>.

728. *Id.* at 1–2.

729. Julie Hirschfeld Davis, *Obama to Call for More Icebreakers in Arctic as U.S. Seeks Foothold*, N.Y. TIMES (Sept. 1, 2015), http://www.nytimes.com/2015/09/02/us/politics/obama-to-call-for-more-icebreakers-in-arctic-as-us-seeks-foothold.html?_r=0.

Congress to make that happen.”⁷³⁰

The Omnibus Appropriations Act passed by Congress on December 16, 2015 appropriated \$1.26 billion for Coast Guard shipbuilding programs in FY16, including \$6 million for “survey and design work associated with reactivation of the Polar Sea” and \$3.5 million to begin acquisition of a new polar icebreaker.⁷³¹

On January 13, 2016, the Coast Guard announced plans to acquire two polar icebreakers and on March 18, 2016 held an Industry Day in McLean, Virginia.⁷³² On October 26, 2016 the Coast Guard issued a Request for Information and Raft Industries Studies Statement of Work. The Coast Guard is now in the analyze/select phase of icebreaker acquisition. Operational requirements for the new icebreaker are available here.⁷³³

The Coast Guard released a request for information (RFI) for the polar icebreaker acquisition program October 26, 2016.⁷³⁴ The request sought feedback on the program’s national acquisition approach and schedule and included a draft statement of work for industry studies on heavy polar icebreaker technology risks, sustainability, producibility, and affordability.⁷³⁵

On December 22, 2016, the Coast Guard issued a request for quotes for industry studies to identify solutions for the heavy

730. Remarks Prior to a Boat Tour of Kenai Fjords National Park in Seward, Alaska, 2015 DAILY COMP. PRES. DOC. 589, (Sept. 1, 2015), <https://www.gpo.gov/fdsys/pkg/DCPD-201500589/pdf/DCPD-201500589.pdf>.

731. Consolidated Appropriations Act of 2016, Pub. L. No. 114-113, 129 Stat. 2242.

732. Andrea Shalal, *U.S. Coast Guard Moves Forward on New Icebreakers*, REUTERS (Jan. 13, 2016, 7:18 PM), <http://www.reuters.com/article/us-usa-coastguard-icebreaker-idUSKCN0UR25R20160114>; U.S. COAST GUARD, POLAR ICEBREAKER (PIB) ACQUISITION PROGRAM INDUSTRY ENGAGEMENT, INDUSTRY DAY PRESENTATION (2016), <https://www.uscg.mil/ACQUISITION/icebreaker/pdf/Industry%20Day%2018%20March%202016.pdf>.

733. U.S. COAST GUARD, POLAR ICEBREAKER INDUSTRY DATA PACKAGE (2016). Hyperlink leads here: <https://www.uscg.mil/acquisition/icebreaker/pdf/USM%20signed%20USCG%20PIB%20ORD%20FOUO%20industry%20version.pdf>.

734. Draft Statement of Work, U.S. Coast Guard Heavy Polar Icebreaker Industry Studies (Oct. 25, 2016), <https://www.uscg.mil/hq/cg9/icebreaker/pdf/RFI-SOW-for-Industry-Studies-October-25-2016.pdf>; U.S. COAST GUARD, REQUEST FOR INFO. NO. HSCG23-17-I-ICEBREAKER (2016), <https://www.uscg.mil/hq/cg9/icebreaker/pdf/Acquisition-Strategy-RFI.pdf>.

735. *Id.*

polar icebreaker that minimize cost, schedule, production, and technology risk.⁷³⁶

Other than the icebreakers operated by the U.S. Coast Guard described above, four ice-capable ships fly the U.S. flag. One, *Sikuliaq* (261 feet long and launched in 2014), is owned by the National Science Foundation and operated by the University of Alaska Fairbanks.⁷³⁷ Two are owned by Edison Chouest Offshore and chartered to the National Science Foundation: Nathaniel B. Palmer (308 feet long and launched in 1992) and Laurence M. Gould (230 feet long and launched in 1997).⁷³⁸ The fourth, the 360 foot *Aiviq* (launched in 2012), owned and operated by Edison Chouest Offshore, is an ice-capable anchor handling tug supply (AHTS) vessel built to support Royal Dutch Shell in the Arctic.⁷³⁹ On November 9, 2015, Edison Chouest Offshore canceled plans to build two more AHTS vessels.⁷⁴⁰

Foss Maritime launched the *Michele Foss*, the first of four planned Arctic tugs in March 2015.⁷⁴¹ In June 2016, Foss launched the second vessel in the class, the *Denise Foss*.⁷⁴² The ice-strengthened tugs are 132 feet long.⁷⁴³

C. *Arctic Living Marine Resources*

U.S. Arctic Fisheries. In 2009, the U.S. secretary of commerce approved the North Pacific Fisheries Management Council's Fishery Management Plan for the Fish Resources of

736. *Industry Studies in Support of the USCG Polar Icebreaker*, FEDBIZOPPS.GOV, https://www.fbo.gov/index?s=opportunity&mode=form&id=55bc5f6bfa1ac0918a1ef38435d984d5&tab=core&_cview=1 (last visited Feb. 5, 2017).

737. *R/V Sikuliaq: Global Class Ice-Capable Research Vessel*, UNIV. ALASKA FAIRBANKS, <https://www.sfos.uaf.edu/sikuliaq/launch/> (last visited Apr. 29, 2016).

738. *U.S. Antarctic Program Images*, NAT'L SCI. FOUND., <https://www.nsf.gov/geo/plr/antarct/imageset/start.jsp> (last visited Apr. 29, 2016).

739. Jill Burke, *Builder of Tug that Failed Shell's Kulluk Has Moneyed Alaska Ties*, ALASKA DISPATCH NEWS (Jan. 4, 2013), <http://www.adn.com/article/builder-tug-failed-shells-kulluk-has-moneyed-alaska-ties>.

740. *Chouest Said to Have Canceled Arctic AHTS Duo*, MARINE LOG (Nov. 9, 2015), http://www.marinelog.com/index.php?option=com_k2&view=item&id=10031:chouest-said-to-have-canceled-arctic-ahts-duo&Itemid=223.

741. Peter Marsh, *Michele Foss: Foss Maritime's First Arctic Class Tug*, PAC. MAR. MAG. (June 1, 2015), <http://www.pacmar.com/story/2015/06/01/features/michele-foss-foss-maritimes-first-arctic-class-tug/347.html>.

742. *Id.*

743. *Id.*

the Arctic Management Area (Arctic FMP).⁷⁴⁴ The Arctic FMP imposes a moratorium on commercial fishing in the “Arctic Management Area,” which includes the waters of the U.S. exclusive economic zone north of the Bering Strait, including the Chukchi and Beaufort Seas eastward to the limits of U.S. jurisdiction.⁷⁴⁵ The moratorium on fisheries is to remain in place until scientists can determine what fish stocks exist (e.g., Arctic cod, saffron cod, snow crab, and Pollock) and how crucial they are to maintaining a fragile Arctic ecosystem.⁷⁴⁶ The plan was implemented by the National Marine Fisheries Service in 2009 (74 Fed. Reg. V. 74 No. 211, Dec. 3, 2009).⁷⁴⁷ Canadians protested the eastern reach of the U.S. Arctic Management Area, claiming that it extended into waters claimed by Canada (the Beaufort Sea boundary between the U.S. and Canada is disputed).⁷⁴⁸

An initial study on the Arctic ecosystem was published by a researcher at NOAA’s Alaska Fisheries Science Center in Seattle.⁷⁴⁹

Any decision on fishing activity in the harsh and distant waters of the 200,000 square mile Arctic Management Area must consider National Standard 10 of the Magnuson-Stevens Act, which dictates that conservation and management measures must, to the extent practicable, promote the safety of human life at sea.⁷⁵⁰

Prices for Bering Sea Pollock to Rise. A 2016 report suggests that while rising temperatures in the Bering Sea and Gulf of Alaska will diminish pollock harvests in the coming decades, rising prices will help mitigate economic losses felt by

744. N. PAC. FISHERY MGMT. COUNCIL, FISHERY MANAGEMENT PLAN FOR FISH RESOURCES OF THE ARCTIC MANAGEMENT AREA (Aug. 2009), <https://www.npfmc.org/wp-content/PDFdocuments/fmp/Arctic/ArcticFMP.pdf>.

745. *Id.* at 1–2.

746. *Id.* at 4–5.

747. 74 Fed. Reg. 56,728 (Nov. 3, 2009).

748. Elizabeth Bluemink, *US, Canada do Battle Over Beaufort Boundary*, ALASKA DISPATCH NEWS (Mar. 6, 2010), <http://www.adn.com/article/20100306/us-canada-do-battle-over-beaufort-boundary>.

749. G.A. WHITEHOUSE, U.S. DEPT OF COMMERCE, NOAA TECHNICAL MEMORANDUM NMFS-AFSC-262, PRELIMINARY MASS-BALANCE FOOD WEB MODEL OF THE EASTERN CHUKCHI SEA, (2013), <https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-262.pdf>.

750. 16 U.S.C. §§ 1801–1883 (2012).

the reduced catch.⁷⁵¹ The total Alaska pollock harvest in 2050 is estimated to be 22.2 percent smaller than it was in 2004, but the dollar value of the harvest (total revenue from sales of raw pollock) is projected to decline by only nine percent.⁷⁵² Declining harvest levels will once again trigger an examination of the fleet capitalization level.⁷⁵³

Norway and Russia agreed in October 2015 to increase the codfish quota in the Barents Sea.⁷⁵⁴ The agreement is part of the annual fishing negotiations between both countries, which share stocks of cod, haddock, and capelin in the Barents Sea. In the late 1970s, the Russia and Norway institutionalized management cooperation through the Joint Norwegian-Russian Fisheries Commission under the Agreement of 11 April 1975.⁷⁵⁵ The 2015 agreement contains technical regulations for fisheries operations and research collaboration.⁷⁵⁶

Walrus. The massive 2014 Pacific Walrus “haul out” was repeated in 2016, when thousands of the animals congregated on a barrier island just north of Point Lay, Alaska.⁷⁵⁷ The haul outs were first observed in 2007, coinciding with a record sea ice melt in the Arctic.⁷⁵⁸ Female walrus and their young generally spend their summers on the sea ice, foraging in shallower areas for food. But as summer sea ice retreats, walrus are forced to

751. Yereth Rosen, *Warmer Bering Sea will Reduce Future Pollock Harvests but Raise Prices*, ARCTIC NEWSWIRE (Apr. 16, 2016), <https://www.adn.com/fishing/article/warmer-bering-sea-will-reduce-future-pollock-harvests-rising-prices-expected-limit/2016/04/16/>.

752. *Id.*

753. *Id.*

754. Trude Pettersen, *Norway and Russia Agree on Barents Sea Quotas for 2015*, BARENTS OBSERVER (Oct. 10, 2014), <http://barentsobserver.com/en/nature/2014/10/norway-and-russia-agree-barents-sea-quotas-2015-10-10>.

755. NORWEGIAN MINISTRY OF TRADE, INDUSTRY, AND FISHERIES, *Fisheries Collaboration with Russia*, FISHERIES. NO (Oct. 18, 2011), http://www.fisheries.no/resource_management/International_cooperation/Fisheries_collaboration_with_Russia/.

756. *Bilateral Catch Agreement*, ARCTIC JOURNAL (Oct. 9, 2015), <http://arcticjournal.com/business/1880/bilateral-catch-agreement>.

757. Suzanne Goldenberg, *Extreme Arctic Sea Ice Melt Forces Thousands of Walrus Ashore in Alaska*, GUARDIAN (Aug. 27, 2015), <http://www.theguardian.com/environment/2015/aug/27/walrus-alaska-arctic-seaice-melt>.

758. Suzanne Goldenberg, *U.S. Reroutes Flights Around Alaska Beach in Attempt to Avoid Walrus Stampede*, GUARDIAN (Oct. 2, 2014), <https://www.theguardian.com/environment/2014/oct/01/walrus-alaska-beach-trampled-death>.

spend summers on shore.⁷⁵⁹

Polar Bears. Scientists estimate the global polar bear population numbers 20,000 to 25,000, but they caution that data on populations in Russia and East Greenland are lacking.⁷⁶⁰ About 60 percent live within or are shared by Canada. Polar bears are also found in the U.S. (Alaska), Russia, Greenland, and Norway (Svalbard).⁷⁶¹

The IUCN lists the polar bear as a vulnerable species, citing sea ice losses from climate change as the single biggest threat to polar bear survival.⁷⁶² At their 2014 meeting, the IUCN Polar Bear Specialist Group reported that of the 19 populations of polar bears three populations are declining; six are stable; one is increasing; and there is insufficient data on the other nine.⁷⁶³

The Southern Beaufort Sea population along the northern coast of Alaska and western Canada plunged by about 40 percent over the ten-year study period from 2001–2010, dropping from about 1500 bears to 900 bears before stabilizing.⁷⁶⁴ However, Norway's Barents Sea polar bear population has increased by 30 percent over the past eleven years.⁷⁶⁵

Polar bears rely on the sea ice to hunt, travel, breed, and sometimes to den.⁷⁶⁶ Scientists report that, confronted by dramatically diminished sea ice, polar bears are increasingly being forced to swim much longer distances between haul outs, increasing their activity level at the same time food sources are less accessible.⁷⁶⁷

The five nations with polar bear populations signed a non-binding conservation agreement on September 2, 2015. Canada,

759. Emily Russell, *In Unnerving Trend, 35,000 Walrus Haul Out at Point Lay*, ALASKA PUB. MEDIA (Sept. 11, 2015), <http://www.alaskapublic.org/2015/09/11/unnerving-trend-35000-walrus-haul-out-at-point-lay/>.

760. See *Polar Bear Status Report*, POLAR BEARS INTERNATIONAL, <http://www.polarbearsinternational.org/status-and-threats/polar-bear-status-report> (last visited Apr. 29, 2016).

761. *Id.*

762. *Id.*

763. *Id.*

764. *Id.*

765. *Id.*

766. *Id.*

767. Jonathan Amos, *Polar bears travel further as Arctic sea-ice drifts*, BBC NEWS (Dec. 16, 2015), <http://www.bbc.com/news/science-environment-35065411>.

Denmark, Norway, Russia, and the United States agreed on a circumpolar action plan to protect and manage polar bears and their habitats. Signatories to the agreement plan to draft an implementation plan and publish progress reports and action tables.⁷⁶⁸

The Inuit Circumpolar Council noted that the five-nation agreement recognizes the right of Inuit to harvest polar bears under Canadian land claims agreements and Greenland's legislation.⁷⁶⁹

Russia-Norway Plan for Polar Bear Conservation. In November 2016, Norway hosted the first meeting of the working subgroup for the conservation of the polar bear population and of the working group for cooperation in biodiversity under the Joint Russian-Norwegian Commission on Environmental Protection.⁷⁷⁰ The parties completed a draft plan of joint work for polar bear protection that will be implemented from 2017–2018.⁷⁷¹ The group gave special attention to cooperation in the Pasvik-Inari cross-border specially protected natural area.⁷⁷²

New Marine Protected Area in the Arctic. In November 2016, the Government of Canada and northern partners announced the establishment of a new marine protected area in the Arctic.⁷⁷³ Located in the Beaufort Sea near the community of Paulatuk, Northwest Territories, the Anguniaqvia niqiqyuam Marine Protected Area was created in collaboration with the Inuvialuit, as well as partners from industry, non-governmental organizations, and other stakeholders.⁷⁷⁴ For the first time, the Government of Canada utilized conservation objectives that were specifically based on Indigenous traditional knowledge.⁷⁷⁵

768. *Five Circumpolar States Strike New Deal to Protect Polar Bears*, NUNATSIQA NEWS (Sept. 4, 2015), http://www.nunatsiaqonline.ca/stories/article/65674circumpolar_nations_strike_new_plan_to_protect_polar_bears/.

769. *Id.*

770. *Russia and Norway work out a draft plan for polar bear conservation*, THE ARCTIC (Nov. 9, 2016), <http://arctic.ru/environmental/20161109/488230.html>.

771. *Id.*

772. *Id.*

773. Press Release, Gov't Can., Government of Canada and Northern Partners Announce New Marine Protected Area in the Arctic (Nov. 16, 2016), <http://news.gc.ca/web/article-en.do?nid=1154979&tp=1>.

774. *Id.*

775. *Id.*

Biodiversity and Invasive Species. Reports continue to come in on non-Indigenous species in Arctic waters. In September 2014, a research vessel examining mackerel stocks caught three large Bluefin tuna in the Denmark Strait, much farther north than these fish usually range.⁷⁷⁶

In a December 8, 2015 article titled *Arctic Invasion* in *Hakai* magazine, Geoffrey Giller reported that scientists sampling arriving ships' ballast water in Svalbard identified twenty-three non-native species, including crabs, barnacles, and copepods, in the ballast water.⁷⁷⁷ So far, it appears that the surrounding waters are too cold for the species to survive.

Arctic High Seas Fisheries. Much of the Arctic Ocean lies beyond the U.S. or any other nation's 200-mile exclusive economic zone. Within that high seas Arctic "doughnut hole" (not to be confused with a similar high seas doughnut hole in the Bering Sea between the U.S. and Russian EEZs, which is governed by a 1994 international agreement) all nations enjoy the freedom to fish consistent with the U.N. Convention on the Law of the Sea and other applicable international law, such as the Straddling Fish Stocks Agreement.⁷⁷⁸

On June 3, 2008, President George W. Bush signed a congressional joint resolution relating to Arctic Fisheries (Pub. L. No. 110-243).⁷⁷⁹ That resolution emphasizes the need for the United States to work with other nations to prepare for conserving and managing future Arctic fisheries.⁷⁸⁰ It further declares that the U.S. should support international efforts to halt the expansion of commercial fishing activities in the high seas of the Arctic Ocean until such international conservation measures are in place.⁷⁸¹

For over five years, the U.S. encouraged the other states bordering the Arctic Ocean to negotiate an agreement to regulate Arctic fisheries. Russia balked for several years, but in

776. Alex Kirby, *Bluefin Tuna Follow Prey to Warming High Arctic*, CLIMATE NEWS NETWORK (Sept. 8, 2014), <http://climatenewsnetwork.net/bluefin-tuna-follow-prey-to-warming-high-arctic/>.

777. Geoffrey Giller, *Arctic Invasion*, HAKAI MAG. (Dec. 8, 2015), <http://www.hakaimagazine.com/article-short/arctic-invasion>.

778. See *Maritime Zones and Boundaries*, NOAA OFFICE OF GEN. COUNSEL, http://www.gc.noaa.gov/gcil_maritime.html (last visited Apr. 29, 2016).

779. Act of June 3, 2008, Pub. L. No. 110-243, 122 Stat. 1569.

780. *Id.*

781. *Id.*

2012 it signaled its willingness to support an agreement.⁷⁸² Talks among the Arctic states began in the spring of 2013. At a February 2014 meeting in Nuuk, Greenland, officials from Canada, Denmark, Norway, Russia, and the United States agreed on tentative terms.⁷⁸³

In July 2015, the five nations with Arctic Ocean coastlines signed an agreement to keep their fleets out of the ocean's so-called "donut hole."⁷⁸⁴

From July 6–8, 2016, delegations from Canada, Denmark in respect of the Faroe Islands and Greenland, the European Union, Iceland, Japan, South Korea, Norway, Russia, and the United States met in Iqaluit, Canada to continue discussions concerning the prevention of unregulated commercial fishing in the high seas area of the central Arctic Ocean.⁷⁸⁵

Fishing Agreement to Protect Arctic Waters. In May 2016, leaders in the catching industry reached an agreement "that from the 2016 season the catching sector will not expand their Cod fishing activities with trawl gear into those areas where regular fishing has not taken place before."⁷⁸⁶ The agreement was precipitated by an investigation by Greenpeace in March that revealed suppliers of cod to major British seafood brands were taking advantage of melting Arctic ice to push further north with fleets of destructive giant bottom trawlers.⁷⁸⁷ The agreement, which spans the whole supply chain and covers

782. Andrew E. Kramer, *Accord Would Regulate Fishing in Arctic Waters*, N.Y. TIMES (Apr. 16, 2013), <http://www.nytimes.com/2013/04/17/world/agreement-would-regulate-fishing-in-arctic-waters.html>.

783. *Id.*

784. Yereth Rosen, *5 Nations Sign Declaration to Protect Arctic 'Donut Hole' From Unregulated Fishing*, ARCTIC NEWSWIRE (July 16, 2015), <http://www.adn.com/article/20150716/5-nations-sign-declaration-protect-arctic-donut-hole-unregulated-fishing>.

785. *Meeting on High Seas Fisheries in the Central Arctic Ocean: Chairman's Statement*, FISHERIES AND OCEANS CAN., <http://www.dfo-mpo.gc.ca/international/media/statement-declaration-eng.htm> (last modified July 15, 2016).

786. *McDonald's and Global Seafood Providers in Landmark Move for Arctic Protection*, GREENPEACE (May 25, 2016), <http://www.greenpeace.org/international/en/press/releases/2016/McDonalds-seafood-Arctic-protection-overfishing/>.

787. Rebecca Smithers, *Major British Seafood Brands Linked to Fishing in Fragile Arctic Area*, GUARDIAN (Mar. 3, 2016), <https://www.theguardian.com/environment/2016/mar/03/major-british-seafood-brands-linked-to-fishing-in-fragile-arctic-area>.

an area twice the size of France, represents the first time the seafood sector has voluntarily imposed limitations to industrial fishing in the Arctic.⁷⁸⁸ Any fishing companies operating in these Arctic waters will not be able to sell their cod to the brands supporting this deal, including McDonald's, Tesco, Birds Eye, Espersen, Russian group Karat, and Fiskebåt, which represents the entire Norwegian oceangoing fishing fleet.⁷⁸⁹

D. Arctic Non-Living Marine Resources

International policy leaders almost universally agree that the world should strive to keep global average temperature rise related to greenhouse gas emissions below 2° C above pre-industrial levels.⁷⁹⁰ Several studies indicate that meeting that goal throughout the twenty-first century requires a specific cap on global carbon emissions.⁷⁹¹ Other studies estimate that emissions from using all the fossil fuels still left in the ground would exceed that cap by three times.⁷⁹²

A study published in the science journal *Nature* in January 2015 compared the relative environmental costs of extractive activities in reserve locations around the world.⁷⁹³ The purpose was to arrive at a scientifically supportable conclusion about exactly which reserves should remain untapped. The results indicate “that all Arctic resources should be classified as unburnable” if the temperature rise is to remain below 2° C.⁷⁹⁴

The Arctic Oil and Gas Potential. A widely-cited 2008 report by the U.S. Geological Survey estimates that the Arctic holds 90 billion barrels of oil, 1,669 trillion cubic feet of natural

788. *Id.*

789. *Id.*

790. See, e.g., Camil Domonoske, *2 Degrees, \$100 Billion: The World Climate Agreement, By the Numbers*, NPR: THE TWO-WAY (Dec. 12, 2015, 5:33 PM), <http://www.npr.org/sections/thetwo-way/2015/12/12/459502597/2-degrees-100-billion-the-world-climate-agreement-by-the-numbers>.

791. See, e.g., Johan Rockstrom et al., *A Roadmap for Rapid Decarbonization*, 355 SCIENCE 1269 (2017).

792. See, e.g., Malte Meinshausen et al., *Greenhouse-Gas Emission Targets for Limiting Global Warming to 2°C*, 458 NATURE 1158 (2009), <https://www.nature.com/nature/journal/v458/n7242/full/nature08017.html>.

793. Christophe McGlade & Paul Ekins, *The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C*, 517 NATURE 187 (2015), <http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html>.

794. *Id.* at 190.

gas, and 44 billion barrels of natural gas liquids, of which approximately 84 percent is expected to occur in offshore areas, where exploration and development risks and costs greatly exceed onshore counterparts.⁷⁹⁵

The International Energy Agency released its World Energy Outlook 2016 on November 16, 2016.⁷⁹⁶ The report notes that major transformations in the global energy system will take place over the next decades and renewables and natural gas will be the big winners in the race to meet energy demand growth until 2040.⁷⁹⁷ However, a detailed analysis of the Paris Agreement finds that the era of fossil fuels is not over and will complicate the process of reaching ambitious climate goals.⁷⁹⁸ Implementing current international pledges under the Agreement will only slow down the projected rise in energy-related carbon emissions from an average of 650 million tons per year since 2000 to around 150 million tons per year in 2040.⁷⁹⁹ The authors argue that this achievement will not be enough to avoid the worst impact of climate change as it would only limit the rise in average global temperatures to 2.7°C by 2100, but a decrease to 2°C could be possible if policies to accelerate further low carbon technologies and energy efficiency are put in place across all sectors.⁸⁰⁰

United States. The federal Outer Continental Shelf Lands Act (OCSLA) defines the OCS as all submerged lands lying seaward of state coastal waters which are under U.S. jurisdiction.⁸⁰¹ Under the federal Submerged Lands Act, most states (including Alaska) have title to the adjacent submerged lands out to three miles offshore.⁸⁰² Under the OCSLA, the secretary of the interior is responsible for the administration of

795. U.S. GEOLOGICAL SURV., CIRCUM-ARCTIC RESOURCE APPRAISAL: ESTIMATES OF UNDISCOVERED OIL AND GAS NORTH OF THE ARCTIC CIRCLE (2008), <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.

796. INT'L ENERGY AGENCY, WORLD ENERGY OUTLOOK 2016 (2016), <http://www.iea.org/newsroom/news/2016/november/world-energy-outlook-2016.html>.

797. *Id.*

798. *Id.*

799. *Id.*

800. *Id.*

801. 42 U.S.C. §§ 1301 *et seq.* (2012); *see also OCS Land Act History*, BUREAU OCEAN ENERGY MGMT., <http://www.boem.gov/OCS-Lands-Act-History/> (last visited Apr. 29, 2016).

802. 42 U.S.C. § 1337(g).

mineral exploration and development of the OCS.⁸⁰³ The Act empowers the secretary to grant leases to the highest qualified responsible bidder on the basis of sealed competitive bids, and to formulate regulations as necessary to carry out the provisions of the Act.⁸⁰⁴ The Act also provides guidelines for implementing an OCS oil and gas exploration and development program.⁸⁰⁵

OCSLA leasing responsibility is delegated to the DOI's Bureau of Ocean Energy Management (BOEM).⁸⁰⁶ The statutorily authorized OCSLA leasing program begins with preparation of five-year leasing plans.⁸⁰⁷ On March 15, 2016, Secretary Jewell announced the second proposal, the Proposed Program for 2017–2022.⁸⁰⁸ There were thirteen potential lease sales in four program areas in all or parts of the six proposed outer continental shelf planning areas.⁸⁰⁹ This included ten sales in the combined Gulf of Mexico Program Area, and one sale each in the Chukchi Sea, Beaufort Sea, and Cook Inlet Program Areas offshore Alaska.⁸¹⁰ President Obama subsequently issued a memorandum to remove the Chukchi and Beaufort seas from the program.⁸¹¹

BOEM estimates that the Chukchi Sea contains between two and forty million barrels of unproved technically recoverable crude oil and up and 10 to 210 trillion cubic feet of unproved technically recoverable natural gas.⁸¹²

Royal Dutch Shell and Lease Sale 193. Royal Dutch Shell, the main purchaser of Arctic offshore Alaska drilling leases, had

803. *Id.* § 1334(a).

804. *Id.* § 1337(g).

805. *Id.* § 1351.

806. *Frequently Asked Questions*, BUREAU OCEAN ENERGY MGMT., <http://www.boem.gov/FAQ/> (last visited Apr. 29, 2016).

807. *Id.*

808. BUREAU OCEAN ENERGY MGMT, 2017–2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED PROGRAM (2016), <https://www.boem.gov/2017-2022-Proposed-Program-Decision/>.

809. *Id.*

810. *Id.*

811. Memorandum on Withdrawal of Certain Areas of the United States Outer Continental Shelf Offshore Alaska from Leasing Disposition, 2015 DAILY COMP. PRES. DOC. 59 (Jan. 27, 2015), <https://www.gpo.gov/fdsys/pkg/DCPD-201500059/pdf/DCPD-201500059.pdf>.

812. Terry Yen & Laura Singer, *Oil Exploration in the U.S. Arctic Continues Despite Current Price Environment*, U.S. ENERGY INFO. ADMIN. (June 12, 2015), <https://www.eia.gov/todayinenergy/detail.cfm?id=21632>.

a disappointing 2012 Arctic season, and spent 2013 in negotiations with BOEM on conditions for a resumption of drilling.⁸¹³ It returned to Arctic waters in the summer of 2015.⁸¹⁴

BOEM conditionally approved Shell's 2015 exploration plan on May 11, 2015, and followed up with final approval on July 22, after the supporting resources (two drill rigs and thirty support vessels) were all on scene (a Shell-chartered icebreaker MSV Fennica struck a submerged hazard near Dutch Harbor in July and had to undergo emergency repairs in Portland before joining the Shell fleet in the Chukchi Sea).⁸¹⁵

Shell successfully drilled the Burger J exploration well to a depth of 6,800 feet; however, the indications of oil and gas were reportedly not sufficient to warrant further exploration in the prospect.⁸¹⁶

In late September 2015, Shell announced that it was suspending its Arctic offshore oil exploration program for the foreseeable future, citing disappointing results from exploratory well after having spent over \$7 billion for exploration and leases in the Chukchi Sea.⁸¹⁷

On October 16, 2015, BSEE denied "suspension of operations" requests by Shell and Statoil to extend their exploration leases in the Chukchi and Beaufort Sea outer continental shelf areas.⁸¹⁸ As a result, the Beaufort Sea leases are scheduled to

813. Yereth Rosen, *U.S. Government Gauges Interest in New Chukchi Sea Offshore Oil Leasing*, REUTERS (Sept. 26, 2013, 8:07 PM), <http://www.reuters.com/article/alaska-offshore-idUSL2N0HM2KY20130927>.

814. Rupert Neate, *Shell to Resume Arctic Drilling Off Alaska as Green Groups Warn of Disaster*, GUARDIAN (May 11, 2015), <https://www.theguardian.com/environment/2015/may/11/shell-arctic-drilling-alaska-oil-gas>.

815. See generally Paul Barrett & Benjamin Elgin, *Inside Shell's Extreme Plan to Drill for Oil in the Arctic*, BLOOMBERG (Aug. 5, 2015), <http://www.bloomberg.com/news/features/2015-08-05/inside-shell-s-extreme-plan-to-drill-for-oil-in-the-arctic>.

816. *Shell: Burger J Well to Be Sealed and Abandoned*, RTTNEWS (Sept. 28, 2015, 1:36 AM), <http://www.rttnews.com/2557348/shell-burger-j-well-to-be-sealed-and-abandoned.aspx>.

817. Juliet Eilperin & Steven Mufson, *Royal Dutch Shell Suspends Arctic Drilling Indefinitely*, WASHINGTON POST (Sept. 28, 2015), https://www.washingtonpost.com/news/energy-environment/wp/2015/09/28/royal-dutch-shell-suspends-arctic-drilling-indefinitely/?utm_term=.7edbc32d6da5.

818. Yereth Rosen, *Environmental Groups Want a Say in Shell's Arctic Lease-Extension Appeal*, ALASKA DISPATCH NEWS (Jan. 14, 2016), <http://www.adn.com/article/20160114/environmental-groups-want-say-shells-arctic-lease-extension-appeal>.

expire starting in 2017, and the Chukchi leases are scheduled to expire in 2020.⁸¹⁹ On December 15, Shell filed its notice of appeal, seeking to reverse BOEM's decision and preserve its rights under the lease.⁸²⁰

Obama Withdraws Most of Chukchi and Beaufort Seas from Leasing. On December 20, 2016, President Obama issued a memorandum for the secretary of the interior invoking Section 12(a) of the Outer Continental Shelf Lands Act to indefinitely withdraw from future OCS oil and gas leasing nearly all of the Chukchi and Beaufort Seas Planning Areas.⁸²¹ He added that "The withdrawal directed by this memorandum prevents consideration of withdrawn areas for any mineral leasing for purposes of exploration, development, or production."⁸²²

Liberty Island Project. BOEM is deciding how to assess the environmental effect of a production plan for the Liberty Project by Hilcorp Alaska LLC.⁸²³ The project entails construction of a twenty-three-acre gravel island in Foggy Island Bay, fifteen miles east of Prudhoe Bay. The island would serve as a platform for five or more extraction wells that could tap oil six miles from shore in the Beaufort Sea. A successful well would be the first petroleum production in federal Arctic waters.⁸²⁴

National Petroleum Council Report. The National Petroleum Council is a federally chartered, but privately funded, advisory group established to represent the oil and gas industry's view to the federal government.⁸²⁵ At the request of Secretary of Energy Moniz, it produced a thorough report in March 2015: *Arctic Potential, Realizing the Promise of U.S.*

819. *Id.*

820. *Id.*

821. Press Release, White House Office of the Press Secretary, Presidential Memorandum—Withdrawal of Certain Portions of the United States Arctic Outer Continental Shelf from Mineral Leasing (Dec. 20, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/12/20/presidential-memorandum-withdrawal-certain-portions-united-states-arctic>.

822. *Id.*

823. *Hilcorp Alaska LLC*, BUREAU OF OCEAN ENERGY MGMT., <http://www.boem.gov/Hilcorp-Liberty/> (last visited Apr. 29, 2016).

824. Alan Bailey, *New Liberty Plan: Hilcorp Proposes a Gravel Production Island for Beaufort Sea Oil Field*, PETROLEUM NEWS (Jan. 11, 2015), <http://www.petroleumnews.com/pntruncate/13322022.shtml>.

825. *About NPC*, NAT'L PETROLEUM COUNCIL, <http://www.npc.org/background.html> (last update Mar. 31, 2015).

Arctic Oil and Gas Resources.⁸²⁶ The report notably concludes that existing technology allows the safe development of Arctic oil and gas, but U.S. regulatory practices discourage exploration activity.⁸²⁷

Canada. In June of 2015, Exxon and BP suspended a joint venture in Canadian Arctic exploration due to lack of time for test drilling before its lease expires in 2020.⁸²⁸

Canada's National Energy Board confirmed on December 17, 2014 that Chevron withdrew from a hearing on Arctic drilling rules after deciding to indefinitely shelve plans to drill in the EL 481 block of Canada's Beaufort Sea. Chevron reportedly cited economic uncertainty, though not directly related to the 48 percent decline in oil prices since June 2014. Chevron was unlikely to drill until 2025, so its decision probably reflects a more long-term assessment of the costs and benefits of its Arctic operations.⁸²⁹

Norway. Norway's Statoil finished 2014 amid reports of escalating costs, declining prices, and disappointing failures. Statoil came up dry in all three Arctic wells drilled during its 2014 Barents Sea exploration season.⁸³⁰

Italian oil company ENI reportedly plans to move ahead with its plans to drill in the Norwegian Arctic, provided Norway assents.⁸³¹

Russia. Russia's leading resource extraction and development companies, Gazprom (natural gas) and Rosneft (the world's largest publicly-traded petroleum company),

826. NAT'L PETROLEUM COUNCIL, ARCTIC POTENTIAL: REALIZING THE PROMISE OF U.S. ARCTIC OIL AND GAS RESOURCES (2015), http://npcarcticpotentialreport.org/pdf/ExSummary_vol-41715.pdf.

827. *Id.* at 51.

828. Chester Dawson, *Exxon Mobil, BP Suspend Canadian Arctic Exploratory Drilling Program in Beaufort Sea*, WALL ST. J. (June 26, 2015), <http://www.wsj.com/articles/exxon-mobil-bp-suspend-canadian-arctic-exploratory-drilling-program-in-beaufort-sea-1435348381>.

829. *Chevron Cancels Canadian Arctic Drilling as Oil Prices Slide*, REUTERS (Dec. 17, 2014), <http://www.reuters.com/article/us-chevron-canada-artic-idUSKBN0JV2UU20141217>.

830. Kjetil Malkenes Hovland, *Statoil Fails to Make Commercial Discoveries in Arctic Drilling Campaign*, WALL ST. J. (Aug. 7, 2014), <http://www.wsj.com/articles/statoil-fails-to-make-commercial-discoveries-in-arctic-drilling-campaign-1407400451>.

831. Harry Davies, *Italian Firm Eni Poised to Begin Arctic Oil Quest as Shell Quits Alaska*, GUARDIAN (Sept. 30, 2015), <http://www.theguardian.com/environment/2015/sep/30/italian-firm-eni-to-begin-arctic-oil-quest-shell-quits-alaska>.

continue to explore new resources in the Arctic. To succeed, however, Russia will need access to western technology and investment funds, and sanctions have impeded access to both.

Multilateral sanctions imposed on Russia, Russian companies, and selected Russian individuals following Russia's 2014 invasion of Ukraine continue to affect Russia's ability to develop its offshore oil and gas resources.⁸³²

In his November 17, 2015, testimony before a House committee, Admiral Papp reported that "The U.S. is in lockstep with the E.U. and Norway on sanctions that target, among other things, Russia's ability to develop resources in its Arctic waters."⁸³³

Sanctions were expanded in August 2015 to bar transporting certain equipment to Gazprom's Yuzhno-Kirinskoye field. And Rosneft postponed drilling a second well in the Kara Sea until 2018, because sanctions have reportedly prevented access to equipment and funding.⁸³⁴

In September 2015, Russia's Ministry of Natural Resources and Environment, Sergei Donskoi, announced that Russia will issue four field licenses to Rosneft, the country's largest oil producer, and Gazprom for development of the Arctic Shelf. Donskoi also commented that the ministry had considered suspending issuance of licenses but would continue issuing them under Russia's current legislation.⁸³⁵

On Dec. 29, 2015, Gazprom Chairman Alexey Miller underlined his company's commitment to the Russian Arctic region.⁸³⁶ The statement followed news that Gazprom's board of directors had approved an \$11.8 billion investment program for 2016.⁸³⁷ Noting Gazprom's leadership position in the Russian petroleum industry, Miller said: "We have been efficiently

832. See e.g., Joseph J. Schatz, *The Transatlantic Cost of Russia Sanctions*, POLITICO (Sept. 12, 2015, 5:30 AM), <http://www.politico.eu/article/transatlantic-unity-russia-sanctions-united-states-europe-ukraine/>.

833. *Statement of Admiral Robert J. Papp, Jr.*, *supra* note 571.

834. *Russia's Rosneft Unlikely to Resume Kara Sea Drilling Before 2018*, REUTERS (June 11, 2015),

<http://uk.reuters.com/article/russia-rosneft-kara-sea-idUKL5N0YW3DD20150611>.

835. *Sergei Donskoi: Rosneft and Gazprom to Receive Four Arctic Development Licenses*, ARCTIC (Sept. 2, 2015), <http://arctic.ru/resources/20150902/155646.html>.

836. Wendy Laursen, *Arctic Oil and Gas: Triumph and Disappointment in 2015*, MAR. EXECUTIVE (Dec. 30, 2015), <http://www.maritime-executive.com/editorials/arctic-oil-and-gas-triumph-and-disappointment-in-2015>.

837. *Id.*

developing the Prirazlomnoye field in the Arctic Shelf. In November, the amount of oil output reached one million [tons] there and this vividly demonstrates that we operate this complex and extremely promising region in a productive and safe manner.”⁸³⁸

Miller was referring to Gazprom Neft’s news that it has brought its second well into production at the Prirazlomnoye field, with output field now up to 1,800 tons per day (up from 300,000 tons/day in 2014). The Prirazlomnoye field is located in the Pechora Sea, thirty nautical miles from shore.⁸³⁹

E. Marine Pollution Prevention, Response & Liability

There were no significant marine pollution incidents in the Arctic in 2016.

U.S. Vessel Response Plan Requirements. On September 30, 2013, the Coast Guard promulgated its final rule on Nontank Vessel Response Plans (NTVRPs).⁸⁴⁰ The rule entered into effect on January 30, 2014. Foreign vessels in innocent passage through the U.S. territorial sea or transit passage through an international strait in U.S. waters (e.g., Unimak Pass, which some 3,000 vessels transit each year) are exempt.⁸⁴¹ On December 20, 2013, the Coast Guard granted a temporary Alternative Planning Criteria (APC) request by the Alaska Maritime Prevention & Response Network for the waters of the Western Alaska Captain of the Port region.⁸⁴²

In May 2015, the Coast Guard approved a second APC service provider for a limited area of Western Alaska. Resolve Marine Group and National Response Corporation (NRC) partnered to form 1 Call-Alaska.⁸⁴³ The new provider’s coverage is limited to the northern Pacific great circle route and to nontank vessels

838. *Id.*

839. *Id.*

840. 33 C.F.R. § 151, 155, 160 (2016).

841. *Id.*

842. ALASKA MAR. PREVENTION & RESPONSE NETWORK, <http://www.ak-mprn.org/> (last visited Feb. 5, 2017).

843. *Resolve Marine Group and NRC Approved for Western Alaska Alternative Planning Criteria (APC)*, RESOLVE MARINE GROUP (May 2015), <https://resolvemarine.com/news/resolve-marine-group-nrc-approved-western-alaska-alternative-planning-criteria-apc/>.

transiting through the Aleutian Islands.⁸⁴⁴ This second APC approval raised concerns that competition between service providers will provoke a “race to the bottom,” and discourage the investment necessary for the region to meet the more demanding National Planning Criteria for vessel spill response plans.⁸⁴⁵

The APC approvals for both providers were due to expire on December 31, 2015, but were extended through 2017.⁸⁴⁶ This, despite concerns over lack of response capability in the region raised by the co-chairs of Alaska’s Arctic Policy Committee, Sen. Lesil McGuire and Rep. Bob Herron, in their testimony to the U.S. Senate Energy and Natural Resources Committee on March 5, 2015.⁸⁴⁷

In December 2016, the Coast Guard temporarily suspended promulgation of the Alternative Planning Criteria National Guidelines in order to re-open the public comment period for an additional 90 days.⁸⁴⁸

F. Arctic Marine Scientific Research

A March 22, 2016 research paper published in Atmospheric Chemistry and Physics raises the possibility of a more rapid rate of sea level rise in this century than previously forecast by the U.N.’s Intergovernmental Panel on Climate Change, whose research is regarded as a gold standard in climate research but at the same time has also been criticized for being too conservative.⁸⁴⁹

According to Hansen, the increased melting could lead to a number of climate change “feedbacks” that could slow down and

844. *Id.*

845. *Id.*

846. RESOLVE MARINE GROUP, *supra* note 843.

847. *United States Arctic Opportunities Hearing Before the S. Comm. on Energy and Natural Resources*, 114th Cong. 2 (2015) (statements of Sen. Lesil McGuire & Rep. Bob Herron), <http://www.energy.senate.gov/public/index.cfm/2015/3/united-states-arctic-opportunities-hearing>.

848. LT Sarah Janaro, *12/21/2016: Comment Period to Re-open for Alternative Planning Criteria National Guidelines*, COAST GUARD MAR. COMMONS (Dec. 21, 2016), <http://mariners.coastguard.dodlive.mil/2016/12/21/12212016-comment-period-to-re-open-for-alternative-planning-criteria-national-guidelines/>.

849. James Hansen et al., *Ice Melt, Sea Level Rise and Superstorms: Evidence from Paleoclimate Data, Climate Modeling, and Modern Observations that 2° C Global Warming Could Be Dangerous*, 16 ATMOSPHERIC CHEM. AND PHYSICS 3761, 3800 (2016).

eventually shut down the oceans' circulation, stratify the polar seas with warmer waters trapped below cold surface layers, increase the temperature difference between low and high latitudes, and generate increasingly powerful storms.⁸⁵⁰

Scientific Meetings. The Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean was held in Tromso, Norway from September 26–28, 2016.⁸⁵¹ The Arctic Division of the American Association for the Advancement of Science met from June 26-29 in Anchorage, Alaska for an exploration of “Chemistry Under the Midnight Sun” in conjunction with the American Chemical Society’s Northwest Regional Meeting.⁸⁵² The 2016 Arctic Science Summit was held in Fairbanks, Alaska, and included ASSW Business Meetings, the Arctic Council Senior Arctic Officials Meeting, the 2016 Arctic Observing Summit,⁸⁵³ and the first fully-developed Model Arctic Council.⁸⁵⁴

Assessments and Studies. The ongoing Sea State and Boundary Layer Physics of the Emerging Arctic Ocean study, an Office of Naval Research Departmental Research Initiative (DRI) chaired by Dr. Jim Thomson of the UW Applied Physics Laboratory, seeks to identify factors affecting the spatial and temporal variability of sea state, and improve forecasting of waves on the open ocean and in the marginal ice zone.⁸⁵⁵ In launching the initiative, ONR noted that there remain fundamental gaps in our knowledge of the physical environment and processes, interactions and feedbacks that are critical to understanding the seasonal evolution of sea ice and the effect of increasing open water on the ice and on the atmosphere, at the

850. *Id.*

851. *Fourth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean, 4th FiSCAO*, NOAA ALASKA FISHERIES SCI. CTR., http://www.afsc.noaa.gov/Arctic_fish_stocks_fourth_meeting/ (last visited Feb. 11, 2017).

852. *ACS Northwest Regional Meeting 2016*, AM. CHEM. SOC'Y, <http://norm2016.sites.acs.org> (last visited Feb. 5, 2017).

853. ARCTIC OBSERVING SUMMIT, <http://www.arcticobservingsummit.org> (last visited Feb. 5, 2017).

854. *Model Arctic Council*, U. OF ALASKA FAIRBANKS, <http://www.uaf.edu/mac/> (last visited Feb. 5, 2017).

855. *Sea State and Boundary Layer of Physics of Emerging Arctic Ocean*, APPLIED PHYSICS LAB., U. OF WASH., http://www.apl.washington.edu/project/project.php?id=arctic_sea_state (last visited Apr. 17, 2016).

Arctic to hemispheric scale.⁸⁵⁶

Ocean Acidification. Ocean acidification is particularly acute in polar waters. The Arctic Monitoring and Assessment Program, an Arctic Council Working Group, commissioned a three-year study of Arctic waters acidification.⁸⁵⁷ The report (Arctic Ocean Acidification Assessment) was released on May 6, 2013. AMAP released an overview report in March 2014.⁸⁵⁸

A study released in the June 2015 issue of *Oceanography* revealed that the Chukchi and Beaufort seas could reach acidification levels that threaten the entire marine ecosystem as early as 2030.⁸⁵⁹ The authors concluded by warning that “This region provides unique insights into how the global ocean will respond to human activities, and it is our best hope for developing the understanding that will be needed to mitigate and adapt to what will be our new, modern ocean environment.”⁸⁶⁰

G. *Indigenous Arctic Residents*

The Arctic region is home to 30 different Indigenous groups and four million residents.⁸⁶¹ The Arctic Council has granted Permanent Participant status to six Arctic Indigenous communities.⁸⁶²

In May 2016, Canada announced it will fully support the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).⁸⁶³ In 2010, President Obama issued a statement of

856. *Id.*

857. *Arctic Ocean Acidification 2013: An Overview*, ARCTIC MONITORING AND ASSESSMENT PROGRAMME, <http://www.amap.no/documents/doc/arctic-ocean-acidification-2013-an-overview/1061> (last visited May 8, 2017).

858. *Id.*

859. J.T. Mathis et al., *Ocean Acidification in the Surface Waters of the Pacific-Arctic Boundary Regions*, 28 *OCEANOGRAPHY* 122, 127 (2015), http://tos.org/oceanography/assets/docs/28-2_mathis2.pdf.

860. *Id.*

861. *Protecting Life in the Arctic*, PEW CHARITABLE TRUSTS, <http://www.pewtrusts.org/en/projects/protecting-life-in-the-arctic> (last visited Apr. 17, 2016).

862. *Arctic Council*, ARCTIC PORTAL, <http://arcticportal.org/arctic-governance/arctic-council> (last visited Apr. 17, 2016).

863. Tamara Khandaker, *Canada Adopts UN Declaration on Indigenous Peoples, but Some Are Skeptical Anything Will Change*, VICE NEWS (May 10, 2016), <https://news.vice.com/article/canada-finally-endorses-un-declaration-on-indigenous-people>.

support, while emphasizing that it is “not legally binding or a statement of current international law.”⁸⁶⁴

The International Whaling Commission (IWC) establishes aboriginal catch limits.⁸⁶⁵ For 2013 through 2018 the IWC has authorized Alaskan and Chukotka native whalers to land up to 336 whales to meet subsistence needs.⁸⁶⁶

On July 31, 2015, the European Union formally approved the Government of Nunavut as a Recognized Body under the Indigenous Communities Exemption of the EU Seal Regime, which means that the Government of Nunavut will be able to certify sealskins as having been harvested according to the rules of the exemption.⁸⁶⁷ The EU seal ban issue had previously been cited by Canada as the reason for their objection to EU Observer status at the Arctic Council.⁸⁶⁸

Inuit leaders attended the COP21 climate change conference in Paris.⁸⁶⁹ Vice President of the Inuit Circumpolar Council-Canada Herb Nakimayak, Nunavut Premier Peter Taptuna, and Nunavut MP Hunter Tootoo of the federal fisheries ministry attended the summit as part of the Canadian delegation.⁸⁷⁰ Additionally, the Joint Arctic Peoples delegation to Paris was headed by ICC’s international chair Okalik Eegeesiak and holds observer status at the Conference.⁸⁷¹ The Inuit hoped to see support for Inuit adaption and mitigation efforts, use of native

864. Press Release, U.S. STATE DEP’T, Announcement of U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples 1 (Jan. 12, 2011), <http://www.achp.gov/docs/US%20Support%20for%20Declaration%2012-10.pdf>.

865. *Catch Limits & Catches Taken*, INT’L WHALING COMM’N, <https://iwc.int/catches> (last visited Apr. 17, 2016).

866. *Id.*

867. *European Union Approves Exemption for Nunavut Seal Hunt*, NUN. DEP’T OF EXEC. AND INTERGOVERNMENTAL AFFAIRS (July 31, 2015), <http://www.gov.nu.ca/eia/news/european-union-approves-exemption-nunavut-seal-hunt>.

868. Lassi Heininen, Heather Exner-Pirot & Joël Pflouffe, *This Year in the Arctic: Timeline of 2015 Events*, in ARCTIC YEARBOOK 2015: ARCTIC GOVERNANCE AND GOVERNING 29 (Lassi Heininen et al. eds., 2015), <http://www.arcticyearbook.com>.

869. Shady Oliver, *Arctic Delegation Heads to Paris Climate Talks*, ALASKA DISPATCH NEWS (Dec. 4, 2015), <http://www.adn.com/article/20151204/arctic-delegation-heads-paris-climate-talks>.

870. *Inuit Leaders in Paris Attempt to Raise Arctic Issues at COP21*, NUNATSIQA NEWS (Dec. 1, 2015), http://www.nunatsiaqonline.ca/stories/article/65674inuit_leaders_in_paris_to_turn_cop_21_attention_to_arctic_issues/.

871. *Id.*

knowledge in decision making and creation of global financing to support Indigenous peoples to monitor and battle climate change.⁸⁷²

On October 25, 2016 IMO Secretary-General Kitack Lim received a delegation of Arctic Indigenous leaders at IMO headquarters in London.⁸⁷³ In this unprecedented meeting, the delegates discussed a wide range of issues, including their concerns regarding the impacts of Arctic shipping on Indigenous communities.⁸⁷⁴ The group hopes to achieve permanent status for Indigenous communities in this international forum in order to be party to decisions that will increasingly affect their livelihoods.⁸⁷⁵

H. Military Activities in the Arctic

When the Arctic Council was established in 1996, the founding states elected not to include military security issues in the council's mandate.⁸⁷⁶ Some have argued that the decision to exclude security issues should be reconsidered. Recommendations include a complete de-militarization of the Arctic (as is the case with Antarctica) and declaring the Arctic region to be a nuclear-weapons-free zone.

Canada. Canada is a charter member of NATO. Its armed forces number 68,000 active and 7,000 reserves. In addition, the Canadian Coast Guard, a civilian, non-paramilitary organization, has over 4,500 civilian members.⁸⁷⁷

It is too early to predict how the Trudeau's national security policy might differ from those of the Harper government, but the immediate withdrawal of Canadian military forces from Syria and Iraq may foreshadow a more isolationist posture.⁸⁷⁸

872. *Id.*

873. Levon Sevunts, *Arctic Indigenous Leaders to Push for Permanent Voice in World Maritime Body*, RADIO CAN. INT'L (Oct. 20, 2016), <http://www.rcinet.ca/en/2016/10/20/arctic-indigenous-leaders-to-push-for-permanent-voice-in-world-maritime-body/>.

874. *Id.*

875. *Id.*

876. The Council's Charter states that "The Arctic Council should not deal with matters related to military security." Ottawa Declaration, *supra* note 392, at 1 n.1.

877. *NATO Member Countries*, NATO, http://www.nato.int/cps/en/natolive/nato_countries.htm (last updated Feb. 6, 2017).

878. Jessica Murphy, *Canada to End Airstrikes in Syria and Iraq*, GUARDIAN (Oct. 20, 2015), <http://www.theguardian.com/world/2015/oct/21/canada-end-airstrikes-syria->

Vessel procurement requirements for the Royal Canadian Navy (RCN) and Canadian Coast Guard are consolidated in the National Shipbuilding Procurement Strategy.⁸⁷⁹ In 2011, the government awarded a \$25 billion contract to build six to eight Arctic Offshore Patrol Ships as well as fifteen other warships for the RCN over the next two decades.⁸⁸⁰ The Canadian Press reported on September 3, 2014 that the Arctic ship order was on time and under budget.⁸⁸¹ By December, however, the Canadian Parliamentary Budget Office estimated that only four ships would be built, with a 50 percent chance of on-time delivery.⁸⁸²

Canada announced in August 2014 plans to develop a series of Northern Operations Hubs, “to facilitate initial rapid deployment and up to 30 days sustained operations in the North.”⁸⁸³ The hubs are expected to be operational by 2018 in Iqaluit, Yellowknife, Resolute Bay, and Inuvik. Canada also conducted a Canadian Armed Forces Joint Arctic Experiment that tested unmanned technology in Arctic conditions.⁸⁸⁴

Finland. Finland, which has adopted a non-alignment policy, is not a member of NATO;⁸⁸⁵ however, NATO and Finland actively cooperate on peace and security operations. Finnish and international concerns were raised in late 2014, when Russia

iraq-new-prime-minister-trudeau.

879. *National Shipbuilding Strategy*, PUB. WORKS AND GOV'T SERV. CAN., <http://www.tpsgc-pwgsc.gc.ca/app-acq/amd-dp/mer-sea/sncn-nss/index-eng.html> (last updated May 15, 2017).

880. Jeffrey Gilmour, *Canadian Defense Spending – A Case Study of Management*, 15 J. MIL. AND STRATEGIC STUDIES 177 (2014), <https://www.ciaonet.org/attachments/24455/uploads>.

881. *Design of Arctic Patrol Vessels on Time, Under Budget by \$20 to \$30M*, GLOBAL NEWS (Sept. 3, 2014), <http://globalnews.ca/news/1541457/design-of-arctic-patrol-vessels-on-time-under-budget-by-20-to-30m/>.

882. OFFICE OF THE PARLIAMENTARY BUDGET OFFICER, BUDGET ANALYSIS FOR THE ACQUISITION OF A CLASS OF ARCTIC/OFFSHORE PATROL SHIPS 2 (2014), http://www.pbo-dpb.gc.ca/web/default/files/files/files/AOPS_EN.pdf.

883. David Pugliese, *Canadian Forces to Stockpile Military Equipment in Arctic 'Hubs' for Faster Response in Case of Emergency*, NAT'L POST (Aug. 21, 2014), <http://news.nationalpost.com/news/canada/canadian-forces-to-stockpile-military-equipment-in-arctic-hubs-for-faster-response-in-case-of-emergency>.

884. Alycia Coulter, *Joint Arctic Experiment 2014 Demonstrates Capabilities of Unmanned Systems at CFS Alert*, NAT'L DEF. AND THE CANADIAN ARMED FORCES (Oct. 22, 2014), <http://www.forces.gc.ca/en/news/article.page?doc=joint-arctic-experiment-2014-demonstrates-capabilities-of-unmanned-systems-at-cfs-alert/i1glw4ox>.

885. General Gustav Hägglund, *Finnish Defence Policy Aims to Protect Against External Pressures*, NATO, <http://www.nato.int/docu/review/1995/9504-4.htm> (last visited Apr. 16, 2016).

reopened its Cold War era military base in Alakurtti, less than forty miles from the Finnish border.⁸⁸⁶ In early June of 2015, rumors circulated that Finland's new government was exploring the possibility of joining NATO.⁸⁸⁷ Finland's military numbers 35,000 standing armed forces and 900,000 reserves.⁸⁸⁸

NATO. The North Atlantic Treaty Organization, established by the Atlantic Treaty of 1949,⁸⁸⁹ now includes twenty-eight member-states.⁸⁹⁰ Article V of the treaty states that if an armed attack occurs against one of the member-states, it should be considered an attack against all members, and other members shall assist the attacked member, with armed forces if necessary.⁸⁹¹

At the July 2016 NATO summit in Warsaw, Poland, the alliance officially acknowledged Russia's "aggressive actions, including provocative military activities in the periphery of NATO territory" as putting Moscow at odds with the alliance, which could lead to an increased focus on Arctic security.⁸⁹² A communique from the summit states: "In the North Atlantic, as elsewhere, the Alliance will be ready to deter and defend against any potential threats, including against sea lines of communication and maritime approaches of NATO territory."⁸⁹³

In March 2016, Norway led the largest iteration of Exercise Cold Response to date.⁸⁹⁴ Approximately 16,000 troops from

886. Elisabeth Braw, *Putin Makes His First Move in Race to Control the Arctic*, NEWSWEEK (Jan. 5, 2015), <http://www.newsweek.com/2015/01/16/putin-makes-his-first-move-race-control-arctic-296594.html>.

887. Mark Seip, *Fearful of Putin, Finland Explores NATO Membership*, NEWSWEEK (May 4, 2015), <http://www.newsweek.com/fearful-putin-finland-explores-nato-membership-339428>.

888. *Id.*

889. North Atlantic Treaty, Apr. 4, 1949, 63 Stat. 2241, 34 U.N.T.S. 243 [hereinafter North Atlantic Treaty].

890. NATO member states are the following: Albania, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Turkey, the United Kingdom, and the United States. *NATO Member Countries*, *supra* note 877.

891. North Atlantic Treaty, *supra* note 889, at art. V.

892. Rob Huebert, *How the Warsaw NATO Summit Altered Arctic Security*, NEWS DEEPLY: ARCTIC DEEPLY (July 18, 2016), <https://www.newsdeeply.com/arctic/community/2016/07/18/how-the-warsaw-nato-summit-altered-arctic-security>.

893. *Id.*

894. Matthew L. Schehl, *Marines Hit the Arctic for Largest Winter Exercise Since the*

thirteen NATO Allies and partners worked through a ten-day exercise in the Arctic under subzero conditions.⁸⁹⁵ The exercise tests the troops' ability to move and fight together against a common enemy.⁸⁹⁶ Canadian Forces also held Exercise Arctic Ram 2016, which simulated securing a crashed satellite with sensitive information near Resolute Bay, in Nunavut, Canada.⁸⁹⁷

Norway. Norway is a charter member of NATO.⁸⁹⁸ Its armed forces number 26,200 active and 56,200 reserves. The Russian announcement that it will soon add a marine brigade to its Northern Fleet and station those marines near Pechenga (Murmansk Oblast)—just nine miles from the Norwegian border—raised concerns in Norway.⁸⁹⁹

At the CSIS forum described in Section III.I above, Norway's Foreign Minister Børge Brende expressed Norway's grave concern with Russia's violations of international law, which has created a "new security environment in Europe," Brende observed that Norway was compelled to impose sanctions and suspend military cooperation, but would continue to cooperate with Russia on fisheries, maritime safety, nuclear safety and environmental protection.⁹⁰⁰

Russia. In 2016, much was written about the nature and extent of the security threat posed by a resurgent Russian Federation under President Vladimir Putin. The adjacent Baltic States were among the most outspoken. This map, posted on Twitter by Agnia Grigas, depicts the growing Russian military footprint in the Arctic.

Cold War, MARINE CORPS TIMES (Mar. 2, 2016), <https://www.marinecorpstimes.com/story/military/2016/03/02/marine-hit-arctic-largest-winter-exercise-since-cold-war/81161832/>.

895. *Id.*

896. *Id.*

897. *This Week in the Arctic: Northern Navigation and Military Exercises*, ALASKA DISPATCH NEWS (last updated Sept. 26, 2016), <https://www.adn.com/arctic/article/week-arctic-northern-navigation-and-military-exercises/2016/02/26/#.VtGhKpaiYbI.twitter>.

898. *NATO Member Countries*, supra note 877.

899. See Trude Pettersen, *More Naval Infantry to the Northern Fleet*, BARENTS OBSERVER (Nov. 28, 2014), <http://barentsobserver.com/en/security/2014/11/more-naval-infantry-northern-fleet-28-11>.

900. See *Minister of Foreign Affairs Børge Brende, Special Advisory Board Meeting*, CSIS (Apr. 14, 2014), <http://csis.org/multimedia/video-borge-brende-minister-foreign-affairs-norway>.



Several more Arctic bases are in the pipeline.⁹⁰¹ The Nagurskoye base in Franz Josef Land is reported to be ninety-eight percent finished.⁹⁰² In addition, eight new buildings on Wrangel Island and Cape Schmidt are scheduled to be completed by the end of the year.⁹⁰³ Another sixty-eight buildings are to be built on the two bases in the course of 2017.⁹⁰⁴

On December 26, 2014, President Putin signed the revised Russian Military Doctrine.⁹⁰⁵ After characterizing NATO as a

901. Atle Staalesen, *New Arctic Military Base Is Declared Ready for Operation*, BARENTS OBSERVER (Dec. 14, 2016), <https://thebarentsobserver.com/en/security/2016/12/new-arctic-military-base-declared-ready-operation#.WFFIMt2KdrB.twitter>.

902. *Id.*

903. *Id.*

904. *Id.*

905. *Russia's New Military Doctrine Names NATO as Key Risk*, REUTERS (Dec. 26, 2014, 9:47 AM),

major threat to Russia's security, the doctrine, for the first time ever, named the protection of national interests in the Arctic among the main priorities for Russian armed forces in times of peace.⁹⁰⁶

Russia established its Arctic Command in 2014, to coordinate all military activities in the region.⁹⁰⁷ On "Navy Day" in July 2015, Russia announced a new naval doctrine, in which the Arctic plays a central role.⁹⁰⁸ Russia's Northern Fleet now comprises two-thirds of the nation's navy. That fleet will soon be reinforced with a marine brigade stationed near Pechenga (nine miles from the Norwegian border). In January 2015, Russia reopened its military installation in Alakurtti, sixty kilometers from the border of Finland.⁹⁰⁹

Russia increased its military budget by nearly \$11 billion from 2014 to 2015. It has announced its intent to modernize seventy percent of its military by 2020.⁹¹⁰

Russian General Valery Gerasimov stated that in 2015, the Defense Ministry will focus on increasing combat capabilities with a focus on the Arctic.⁹¹¹ Moscow is in the process of construction of ten Arctic search and rescue stations, sixteen deep water ports, thirteen airfields, and ten air-defense radar stations.⁹¹²

<http://www.reuters.com/article/us-russia-crisis-military-doctrine-idUSKBN0K40Q120141226>.

906. *Id.*

907. Luke Coffey, *Russian Military Activity in the Arctic: A Cause for Concern*, HERITAGE (Dec. 16, 2014), <http://www.heritage.org/research/reports/2014/12/russian-military-activity-in-the-arctic-a-cause-for-concern>.

908. Wendy Laursen, *Moscow Launches New Strategy, New Ship*, MAR. EXECUTIVE (July 26, 2015, 7:39 PM), <http://www.maritime-executive.com/article/moscow-launches-new-strategy-new-ship>.

909. *Russia Moves First Troops to Arctic Base Near Finnish Border*, BARENTS OBSERVER (Jan. 15, 2015), <http://barentsobserver.com/en/security/2015/01/russia-moves-first-troops-arctic-base-near-finnish-border-15-01>.

910. Catrin Einhorn et al., *Russia Rearms for a New Era*, N.Y. TIMES (Dec. 24, 2015), http://www.nytimes.com/interactive/2015/12/24/world/asia/russia-arming.html?_r=0.

911. Timothy Heritage, *Russia to Step Up Combat Capabilities in Crimea*, REUTERS, (Jan. 13, 2015), <http://www.reuters.com/article/us-ukraine-crisis-russia-military-idUSKBN0KM10320150113>.

912. Jeremy Bender, *Russia Just Put the Finishing Touches on 6 Arctic Military Bases*, BUS. INSIDER (Dec. 7, 2015), http://www.businessinsider.com/russia-equipped-six-military-bases-in-the-arctic-2015-12?pundits_only=0&get_all_comments=1&no_reply_filter=1#comment-56679ed8ecad04e727ac49e3.

On December 9, 2015, Russia deployed an S-300 equipped air defense missile regiment on the Novaya Zemlya islands.⁹¹³

Mark Ferguson, commander of the U.S. Navy in Europe and Africa and head of NATO's joint force command in Naples, stated that Russia's "arc of steel" from the Arctic to the Mediterranean is evidence of the country's remilitarization.⁹¹⁴ Russia maintains twenty to thirty icebreaking ships, and it opened a specialized Arctic rescue center for emergencies in its Murmansk port in mid-October 2015.⁹¹⁵

An August 27, 2015, Center for Strategic and International Studies report titled *The New Ice Curtain* concluded that "Russia views itself as the Arctic superpower, as the Kremlin is increasingly willing to use the Arctic to demonstrate Russia's return to power on the global stage and in the region."⁹¹⁶ Putin has made revitalizing the Arctic one of his top priorities. He has reopened some fifty Soviet-era Arctic military bases and conducted the largest military exercises there since the Soviet Union's demise. Russian generals have announced plans to establish an Arctic Command by 2018. CSIS's Heather Conley, co-author of the study, raised those same concerns in her testimony before the Senate Armed Services Committee Hearing on Russian Strategy and Military Operations on October 8, 2015, where she described three large-scale Russian military exercises over the past twenty-four months, numbering up to 100,000 military forces.⁹¹⁷

Commenting on Russia's militarization of the Arctic, Admiral Robert Papp, the U.S. Special Representative for the Arctic, commented that "The problem is less due to the military buildup

913. *Russian Defense Ministry Deploys S-300, S-400 Air Defense Missile Systems in Arctic*, TASS (Dec. 9, 2015, 4:40 PM), <http://tass.ru/en/defense/842758>.

914. Jim Garamone, *NATO Leader Says Russia Building 'Arc of Steel' in Europe*, U.S. DEPT OF DEF. (Oct. 6, 2015), <http://www.defense.gov/News-Article-View/Article/622080/nato-leader-says-russia-building-arc-of-steel-in-europe>.

915. See Jen Judson, *The Icebreaker Gap*, POLITICO, (Sept. 1, 2015), <http://www.politico.com/agenda/story/2015/09/the-icebreaker-gap-000213>; *Arctic Rescue Center Put on Combat Duty in Russia's Murmansk*, TASS (Oct. 21, 2015), <http://tass.ru/en/society/830711>.

916. Heather A. Conley et al., *The New Ice Curtain*, CENTER FOR STRATEGIC & INT'L STUDIES (Aug. 27, 2015), <http://csis.org/publication/new-ice-curtain>.

917. *Russian Strategy and Military Operations: Hearing Before the S. Comm. on Armed Services*, 114th Cong. 3 (2015), (statement of Heather Conley, Director, Europe Program, CSIS), http://www.armed-services.senate.gov/imo/media/doc/Conley_10-08-15.pdf.

than the buildup of rhetoric . . . President Putin and his associates, their rhetoric about how important the Arctic is to them and their need to defend it is not useful to the type of cooperative efforts we would like to do within the Arctic.”⁹¹⁸

Admiral Paul Zukunft, Commandant of the U.S. Coast Guard, commented on Russia’s buildup of capability in the Arctic, noting that his concern stems from the “complete lack of transparency” in the process.⁹¹⁹

Senator McCain visited the Arctic in 2015 and explained in a Wall Street Journal Op-ed that Russia’s rush to nationalize and control waterways in the Arctic Ocean raises issues of commercial shipping, military, and intelligence.⁹²⁰ McCain expressed concern about Russia’s activities, stating that the country is “threatening the security and prosperity of the Arctic and Northern Europe by assertively deploying its military power, patrolling its neighbors’ coastlines both above and below water, and building or reopening numerous military outposts across the region.”⁹²¹ Alaska’s freshman Senator Dan Sullivan has repeatedly voiced his concerns about Russia’s military activities in the Arctic.⁹²²

In April 2016, Russian submarine launched its Kalibr missile from the Barents Sea less than twenty-four hours after deputy head of the Federation Council’s Committee for Defense and Security threatened Sweden that Russia will deploy more missiles to its northern regions if Sweden enters NATO.⁹²³

918. Keith Johnson, *Searching for Leads in the Opening Arctic*, FOREIGN POL’Y (Sept. 14, 2015), <http://foreignpolicy.com/2015/09/14/searching-for-leads-in-the-opening-arctic/>.

919. Jacqueline Klimas, *Interview: Adm. Paul Zukunft, Coast Guard Commandant*, WASH. EXAMINER, (Sept. 26, 2015), <http://www.washingtonexaminer.com/interview-adm.-paul-zukunft-coast-guard-commandant/article/2572774>.

920. John McCain, *The Real Arctic Threat*, WALL ST. J. (Sept. 1, 2015), <http://www.wsj.com/articles/the-real-arctic-threat-1441149448>.

921. *Id.*

922. Becky Bohrer, *Russian Military Moves Highlight U.S. Arctic Concerns*, Sullivan Says, ALASKA DISPATCH NEWS, (Aug. 17, 2015), <http://www.adn.com/article/20150817/russian-military-moves-highlight-us-arctic-concerns-sullivan-says>.

923. Thomas Nilsen, *Russian Sub Launched Kalibr Missile Day After Warning Against Swedish NATO Membership*, INDEPENDENT BARENTS OBSERVER (Apr. 30, 2016), <https://thebarentsobserver.com/en/security/2016/04/russian-sub-launched-kalibr-missile-day-after-warning-against-swedish-nato#.VyTqEdeZMBF.twitter>.

In 2016–2020, the Russian Ministry of Defense will focus on the development of military infrastructure in the Arctic region and on the Kuril Islands.⁹²⁴

Sweden. Sweden has declared itself a neutralized state and therefore not a member of NATO.⁹²⁵ However, reports circulated this year that Sweden was considering becoming a member of NATO if Finland also decided to join.⁹²⁶ The Swedish Armed Forces number 20,000 active, 12,000 reserve and 22,000 Home Guard.

United States. The United States is a charter member of NATO.⁹²⁷ Its armed forces (not including the Coast Guard) number 1.3 million active and 850,000 reserve.

The FY2016 National Defense Authorization Act (NDAA) required the secretary of defense to develop a new military strategy to respond to Russia's growing military presence in the Arctic.⁹²⁸ This strategy would focus on how to protect American citizens and the homeland while ensuring freedom of navigation and support for US economic and trade interests. The strategy was required to identify the infrastructure, force posture, and capabilities the U.S. needs to ensure the region remains stable and conflict free. The report was due to be released in January 2017.⁹²⁹

VI. UNIVERSITY OF WASHINGTON ALPI NEW DEVELOPMENTS

UW Arctic Law and Policy Institute (ALPI) Director Professor Craig H. Allen continued to serve as a Research Fellow in the U.S. Coast Guard's Center for Arctic Study and Policy and was also appointed to the National Maritime Security Advisory Committee. Bridgette Cooper, ALPI research fellow for 2015–

924. *Russian Defense Ministry to Focus on Military Infrastructure Development in the Arctic*, THE ARCTIC (Mar. 25, 2016), <http://arctic.ru/infrastructure/20160325/323055.html>.

925. Drazo Kraishnik, *Sweden and the Never Ending Debate for NATO Membership*, NATO ASS'N, (Jan. 14, 2016), <http://natoassociation.ca/sweden-and-the-never-ending-debate-for-nato-membership/>.

926. *Sweden and Finland Consider NATO Membership*, STRATFOR WORLDVIEW: GEOPOLITICAL DIARY, (Sept. 16, 2015), <https://www.stratfor.com/geopolitical-diary/sweden-and-finland-consider-nato-membership>.

927. *NATO Member Countries*, *supra* note 877.

928. National Defense Authorization Act for Fiscal Year 2017, Pub. L. No. 114-328, 130 Stat. 2000 (2016).

929. *Id.*

16, began her term as a law clerk on the Washington State Supreme Court. Malina Dumas (UW Law '18), a FLAS-sponsored student in Inuktitut, was appointed a Hazelton Fellow to assist in compiling this Year in Review.

On January 15–16, 2016 UW Law hosted the third Arctic Encounter Symposium (see below).

On June 16, 2016 ALPI hosted U.S. Coast Guard Commandant Admiral Paul Zukunft and provided the admiral with a briefing by scientists from the UW's College of the Environment and Applied Physics Lab on Arctic ice forecasting.

VII. SELECTED CONFERENCES

The 10th Arctic Frontiers conference was held in Tromsø, Norway from January 24–29, 2016. This year, the conference focused on the balance between resource utilization and preservation, and between industrial and environmental interests in the Arctic.⁹³⁰

The Third Arctic Encounter Symposium was held at the University of Washington from January 15–16, 2016.⁹³¹ Speakers included U.S. Senators Lisa Murkowski and Maria Cantwell, Alaska Lieutenant Governor Byron Mallott and Admiral Robert J. Papp, U.S. State Department Special Representative for the Arctic.⁹³²

The Ecosystem Studies of Sub-Arctic Seas (ESSAS) Annual Science Meeting Symposium on March 7–9, 2016 was held in Yokohama, Japan.⁹³³

The Ninth Polar Law Symposium was held in Reykjavik, Iceland from October 5–9, 2016.⁹³⁴

The 2016 Arctic Circle Assembly convened from October 7–9, 2016 in Reykjavik, Iceland.⁹³⁵ The Arctic Circle highlights issues and concerns, programs, policies and projects; it provides

930. *Arctic Frontiers 2016*, ARCTIC RESEARCH CONSORTIUM OF THE U.S., <https://www.arcus.org/23182> (last visited May 17, 2017).

931. *Third Annual Arctic Encounter Symposium*, ARCTIC ENCOUNTER SYMPOSIUM, <http://www.arcticencounter.com/seattle-2016/> (last visited Feb. 6, 2017).

932. *Id.*

933. *2016 ESSAS Annual Science Meeting*, ECOSYSTEM STUDIES OF SUB-ARCTIC SEAS, <http://www.arc.hokudai.ac.jp/en/essas2016/> (last visited March 25, 2017).

934. *9th Polar Law Symposium: The Role of Law in Polar Governance*, UNIV. OF AKUREYRI (Oct. 2016), <http://www.polarlaw.is/static/files/9pls-agenda-final-2016.pdf>.

935. ARCTIC CIRCLE 2016 ASSEMBLY, <http://www.arcticcircle.org/assemblies/2016> (last visited May 5, 2017).

platforms for dynamic dialogue and constructive cooperation. While the plenary sessions are the responsibility of the Arctic Circle, the breakout sessions are organized by various participating partners in their own name and with full authority over the agenda and the choice of speakers.

The University of Washington's Arctic Law and Policy Institute (ALPI) is a collaborative, university-based, multidisciplinary think tank chartered to provide objective analysis of selected law and policy issues related to Arctic marine science, governance, pollution prevention and response, safety of navigation, conservation and management of natural resources and measures to ensure a healthy and sustainable future for Arctic peoples.

Readers are encouraged to report new developments for inclusion in future end-of-year reviews by writing to the Institute at: ALPI@uw.edu.