

# Global large carnivore conservation and international law

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**Abstract** International cooperation, including through international legal instruments, appears important for the conservation of large carnivores worldwide. This is due to, *inter alia*, the worrying conservation status and population trends of many large carnivore species; the importance of large carnivores for biodiversity conservation at large; their occurrence at low densities, with many populations extending across various countries; and the international nature of particular threats. For the 31 heaviest species in the order Carnivora, this study (i) documents to what extent existing international legal instruments contribute to large carnivore conservation, and (ii) identifies ways of optimizing their contribution in this regard. From this dual perspective, it reviews all global wildlife conservation treaties—Ramsar Wetlands Convention, World Heritage Convention, Convention on Trade in Endangered Species, Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD)—and selected regional instruments, using standard international law research methodology. Results indicate that a substantial body of relevant international law already exists, whereas simultaneously there is clear potential for enhancing the contribution of international law to large carnivore conservation. Avenues for pursuing this include promotion of instruments’ effective implementation; clarification of their precise implications for large carnivore conservation; development of formal guidance; expansion of instruments’ scope in terms of species, sites and countries; and creation of new instruments. The CMS and CBD hold particular potential in some of these respects. The experiences being gained under European legal instruments constitute an interesting ‘laboratory’ regarding human coexistence with expanding large carnivore populations and transboundary cooperation at the (sub)population level.

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## Introduction

A recent study by Ripple et al. (2014) focuses on the status and ecological role of the world's large carnivores, specifically the largest terrestrial species in the order Carnivora. It highlights, first, the importance of these apex predators for biodiversity conservation and, second, the plight of the species concerned. As regards the former, the study finds that the maintenance or recovery of large carnivores at ecologically effective densities is crucial to maintaining the structure and function of diverse ecosystems. As regards the latter, the authors report that many of the 31 reviewed species (listed in Table 1) face 'enormous threats that have caused massive declines in their populations and geographic ranges.' Over 60 % of these 31 species are listed as vulnerable, endangered, or critically endangered on the IUCN Red List, and 77 % are undergoing population declines. The threats concerned include habitat loss and degradation, persecution—often in relation to human-carnivore conflicts—over-exploitation, and depletion of prey (Ripple et al. 2014).

Reversing this trend poses a significant challenge involving multiple approaches, instruments and disciplines. The present paper focuses on one aspect, namely law, in particular international law. Legal instruments are not only a self-evident means towards the protection of large carnivores' habitat and the regulation of their exploitation, but are also a conspicuous ingredient of the toolbox of instruments suitable for the prevention and mitigation of human-carnivore conflicts (Madden 2008; Linnell 2013; Trouwborst 2015b).

In many parts of the world, the large carnivore conservation challenge is compounded by a fragmented legal landscape. Large carnivores occur at low densities and tend to wander across huge home ranges, and many of their remaining populations straddle various countries. This is especially the case in regions comprising many relatively small countries, such as the African and European continents, Central America, and large parts of South America and Asia. Indeed, a lot of countries in these regions are simply too small to independently host viable populations of large carnivores. For instance, Europe currently harbours eleven distinct (sub)populations of Eurasian lynx (*Lynx lynx*), ten of which are shared between two countries or more (Kaczensky et al. 2013; Chapron et al. 2014). Comparable figures apply in respect of gray wolves (*Canis lupus*) and brown bears (*Ursus arctos*) in Europe, with ten (sub)populations each, eight of which are transboundary (Kaczensky et al. 2013; Chapron et al. 2014). The situation is similar for many more of the 31 species listed in Table 1. Examples include lions (*Panthera leo*) (Riggio et al. 2013), cheetahs (*Acinonyx jubatus*) and African wild dogs (*Lycaon pictus*) in Africa; snow leopards (*Panthera uncia*) and tigers (*Panthera tigris*) in Asia; and jaguars (*Panthera onca*) in Central America. From a conservation perspective, it is obviously preferable to adjust relevant law and policy to the biological unit of a wildlife population—even where this population straddles the territories of various countries—instead of adjusting it to biologically meaningless administrative boundaries like international frontiers (Linnell et al. 2008; Linnell and Boitani 2012). To achieve such population level approaches, intergovernmental cooperation and, by implication, international law and policy, have an important part to play.

**Table 1** Status of large carnivores under international legal instruments

	Cons. status	CITES	CMS	African Conv.	Bern Conv.	EU Hab.Dir.
<b>Canidae</b>						
<i>Canis lupus</i> —Gray wolf	LC (±)	I/II <sup>a</sup>			II/III <sup>b</sup>	II, IV/V <sup>c</sup>
<i>Canis rufus</i> —Red wolf	CR (+)					
<i>Chrysocyon brachyurus</i> —Maned wolf	NT (?)	II				
<i>Lycan pictus</i> —African wild dog	EN (–)		II			
<i>Cuon alpinus</i> —Dhole	EN (–)	II			II	
<i>Canis dingo</i> —Dingo	- (–)					
<i>Canis simensis</i> —Ethiopian Wolf	EN (–)			A		
<b>Felidae</b>						
<i>Panthera tigris</i> —Tiger	EN (–)	I			II	
<i>Panthera leo</i> —Lion	VU (–)	I/II <sup>d</sup>	<sup>e</sup>	B		
<i>Panthera onca</i> —Jaguar	NT (–)	I				
<i>Acinonyx jubatus</i> —Cheetah	VU (–)	I <sup>f</sup>	I <sup>g</sup>	A		
<i>Panthera pardus</i> —Leopard	NT (–)	I		B	II	
<i>Puma concolor</i> —Puma	LC (–)	I/II <sup>h</sup>				
<i>Panthera uncia</i> —Snow leopard	EN (–)	I	I			
<i>Neofelis nebulosa</i> —Clouded leopard	VU (–)	I				
<i>Neofelis diardi</i> —Sunda clouded leopard	VU (–)	I				
<i>Lynx lynx</i> —Eurasian lynx	LC (±)	II			III	II, IV/V <sup>i</sup>
<b>Mustelidae</b>						
<i>Enhydra lutris</i> —Sea otter	EN (–)	I/II <sup>j</sup>				
<i>Pteronura brasiliensis</i> —Giant otter	EN (–)	I				
<i>Aonyx capensis</i> —Cape clawless otter	LC (±)	I/II <sup>k</sup>		B		
<b>Ursidae</b>						
<i>Ursus maritimus</i> —Polar bear	VU (–)	II	II		II	
<i>Ursus arctos</i> —Brown bear	LC (±)	I/II <sup>l</sup>			II/III <sup>m</sup>	II, IV <sup>n</sup>
<i>Ailuropoda melanoleuca</i> —Giant panda	EN (–)	I				
<i>Ursus americanus</i> —American black bear	LC (+)	II				
<i>Tremarctos ornatus</i> —Andean black bear	VU (–)	I				
<i>Ursus thibetanus</i> —Asiatic black bear	VU (–)	I				
<i>Melursus ursinus</i> —Sloth bear	VU (–)	I				
<i>Helarctos malayanus</i> —Sun bear	VU (–)	I				
<b>Hyaenidae</b>						
<i>Crocota crocuta</i> —Spotted hyena	LC (–)					
<i>Hyaena brunnea</i> —Brown hyena	- (–)			B		

**Table 1** continued

	Cons. status	CITES	CMS	African Conv.	Bern Conv.	EU Hab.Dir.
<i>Hyaena hyaena</i> —Striped hyena	NT (–)			B <sup>o</sup>		

Large carnivore species list; conservation status on the IUCN Red List (version 2014.3) and population trend (based on Ripple et al. 2014, ‘+’ for increasing, ‘±’ for stable, ‘–’ for decreasing, ‘?’ for unknown trend); and legal status under two global and three regional legal instruments employing a species-list approach, namely the CITES, the CMS, the African Convention on the Conservation of Nature and Natural Resources, the Bern Convention on the Conservation of European Wildlife and Natural Habitats, and the EU Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive)

<sup>a</sup> Populations in Bhutan, India, Nepal and Pakistan in Appendix I, other populations in Appendix II

<sup>b</sup> Appendix II, except in Georgia, Lithuania and Spain (where Appendix III applies), and except in Belarus, Bulgaria, Czech Republic, Finland, Latvia, Macedonia, Poland, Slovakia, Slovenia, Turkey and Ukraine (where no Appendix applies)

<sup>c</sup> Annex II: except in Estonia, Finland, Latvia, Lithuania, and parts of Greece and Spain; Annex IV: except in Bulgaria, Latvia, Lithuania, Poland, Slovakia and parts of Finland, Greece and Spain; populations in the latter countries (or parts thereof) are in Annex V

<sup>d</sup> Asiatic lion (*Panthera leo persica*) in Appendix I; other subspecies in Appendix II

<sup>e</sup> May be listed in Appendix II at next (12th) COP

<sup>f</sup> Except annual export quotas for live specimens and hunting trophies for Botswana (5), Namibia (150) and Zimbabwe (50)

<sup>g</sup> Except in Botswana, Namibia and Zimbabwe

<sup>h</sup> Subspecies *Puma concolor coryi*, *P. c. costaricensis* and *P. c. cougar* in Appendix I; other subspecies in Appendix II

<sup>i</sup> Annex II: except in Estonia, Finland and Sweden; Annex IV: except in Estonia; Annex V: Estonia

<sup>j</sup> Southern sea otter (*Enhydra lutris nereis*) in Appendix I; other subspecies in Appendix II

<sup>k</sup> Appendix II, except the subspecies *Aonyx capensis microdon* in Cameroon and Nigeria, which are in Appendix I

<sup>l</sup> Appendix II, except bears in Bhutan, China, Mexico and Mongolia, and from the subspecies *Ursus arctos isabellinus*, all of which are in Appendix I

<sup>m</sup> Appendix II, except in Croatia and Georgia (where Appendix III applies) and Bulgaria, Czech Republic, Finland, Slovakia, Slovenia and Ukraine (where no Appendix applies)

<sup>n</sup> Annex II: except in Estonia, Finland and Sweden

<sup>o</sup> Only the subspecies *Hyaena hyaena barbara*

The need to adequately conserve and manage large carnivore populations which overlap various national jurisdictions is, however, not the only reason why international cooperation is required in the present context. Another reason is the importance of large carnivores from a global biodiversity conservation point of view, both as species to be conserved for their own sakes, and with a view to their influence on broader ecosystems. Yet a further reason is that certain activities which pose a threat to the conservation of particular large carnivore species have a strong international dimension, and therefore need to be addressed at the international level. A prominent example is the international trade in specimens and derivatives, for instance bear bile (Lewis and Takahashi 2012).

All this suggests a significant potential for international cooperation, including international law, to contribute to the conservation of large carnivores. Consequently, it is important, first, to know to what extent existing international legal instruments contribute to large carnivore conservation and, second, to explore ways of optimizing the contribution

of international law in this regard. Within the legal discipline, a growing academic literature is dedicated to doing just that in respect of large carnivores in Europe, even if much work remains to be done (Trouwborst 2010; Darpö 2011; Borgström 2012; Michanek 2012; Epstein and Darpö 2013; Epstein 2013; Trouwborst 2014a, b, c, d; Darpö and Epstein 2015; Trouwborst 2015a). There is a particularly conspicuous dearth, however, in our understanding of the role, both present and potential, of international law in respect of large carnivore conservation outside Europe. The current study aims to help fill this gap.

Accordingly, it is the objective of this paper to contribute to (i) charting the current international legal framework as it applies to the conservation of large carnivores worldwide, and (ii) exploring the potential for enhancing the contribution of international law to the conservation of these species.

## Method

Standard international law research methodology is employed in the pursuit of this dual objective. This methodology involves, in particular, the identification and analysis of relevant legal instruments and their provisions, including their interpretation according to the applicable rules from the international law of treaties, as codified in the 1969 Vienna Convention on the Law of Treaties.

The analysis focuses on the same set of large terrestrial mammalian carnivores as singled out in Ripple et al. (2014). This concerns the 31 species of Carnivora, not including pinnipeds, that have an average adult body mass of 15 kg or more. It is duly realized that comparable conservation issues, including legal ones, may arise with respect to slightly smaller carnivores such as Asiatic golden cat (*Pardofelis temminckii*), caracal (*Caracal caracal*), ocelot (*Leopardus pardalis*), Iberian lynx (*Lynx pardinus*) and wolverine (*Gulo gulo*), to name a few. One has to draw the line somewhere, however, and for the sake of coherence it makes sense to focus on the same selection as Ripple et al. (2014). Consequently, where the term ‘large carnivores’ is used below, this should be taken to refer to the 31 aforementioned species. With regard to these species, the present paper examines to what extent current legal instruments already apply to them, and what potential exists for enhancing the significance of the international legal framework for their conservation. Some of the findings presented below may also apply to smaller carnivores.

## Results and discussion

The current international legal framework for large carnivore conservation

Many international legal instruments exist that have a bearing, whether directly or indirectly, on the conservation of large carnivores. Table 1 portrays several important international instruments all of which have an express focus on species listed in appendices. Two of these are global in scope, namely the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the 1979 Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS). The three other instruments included in Table 1 have a regional scope: the 1968 African Convention on the Conservation of Nature and Natural Resources, the 1979 Bern Convention on the Conservation of European Wildlife and Natural Habitats, and the 1992 European Union (EU)

Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive).

Table 1 indicates for each of the selected carnivore species whether and, if so, to what extent it is incorporated in any of the appendices under the aforementioned five legal instruments.

In addition to the instruments incorporated in Table 1, many other international legal instruments are of relevance for present purposes, even if they do not specifically list any (carnivore) species. These include three further global wildlife treaties, namely the 1971 Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat, the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention), and the 1992 Convention on Biological Diversity (CBD). These global treaties are complemented by a diverse array of relevant regional instruments (see “Regional legal instruments” section).

Table 1’s function as a quick reference regarding the international legal status of the various species probably largely exhausts its utility, as the scope for drawing sweeping conclusions on the basis of the data presented in the table appears limited. One general conclusion that can be drawn, however, is that the international legal framework for large carnivore conservation constituted by the various instruments—and this surely applies to wildlife more generally as well—is evidently not an overly systematic, straightforward, or indeed entirely consistent whole. To fathom the legal framework’s complexity a glance at the table’s footnotes suffices. Furthermore, Table 1 shows that a species’ conservation status and population trend are evidently not neat indicators of the degree to which it is covered by international legal instruments.

Table 1 is best interpreted by taking a context-specific approach, paying attention to the particular traits pertaining to the species, legal instruments and countries involved. For instance, the reasons why the spotted hyena (*Crocuta crocuta*) is not listed under any of the legal instruments involved probably has little in common with the explanation of the similarly non-listed status of the red wolf (*Canis rufus*), or the dingo (*Canis dingo*). Likewise, that the endangered Ethiopian wolf (*Canis simensis*) is listed under one of the five selected instruments only makes perfect sense. It is listed under the African Convention on account of its conservation status, but not listed under CITES as it is not affected by international trade, not listed nor likely to be listed under the CMS because its range is confined to a single country, and for obvious reasons not listed under the two instruments with a European scope.

Nevertheless, some of the blank spaces in Table 1 are worth highlighting. For example, the unlisted status of the African wild dog clearly indicates that the 1968 African Convention is in need of an update. The CMS is another case in point. Whereas CITES appears to cover all large carnivore species affected by international trade (24 out of the 31), the coverage of large carnivores under the CMS would appear to be the result of a less predictable process. It is not immediately apparent why African wild dog, cheetah, snow leopard and polar bear (*Ursus maritimus*) are covered under the Convention, whereas dhole (*Cuon alpinus*), tiger, lion, sun bear (*Helarctos malayanus*) and several other ostensibly eligible species are not.

Clearly, when interpreting the international legal framework for large carnivore conservation—whether this concerns the instruments in Table 1 or the many others—due account should be taken of the complex and often long-winded processes involved in international law-making, with countries operating on a give-and-take basis, with agendas that may be influenced as much by political as by ecological considerations. The latter state of affairs also accounts, at least in part, for various country-specific exceptions indicated in

Table 1's footnotes, and for the important fact that not all states are parties to all relevant treaties. For instance, the significance of the CMS for the snow leopard is curtailed because some important range states such as China and the Russian Federation are missing as contracting parties.

In the following sections, each of the 'big five' global wildlife treaties is concisely reviewed, in chronological order of adoption, focusing specifically on their—current *and* potential—relevance for large carnivore conservation. For more general analyses of the treaties involved, Bowman et al. (2010) provide good starting points. Said analysis of global instruments is followed by a discussion of selected regional instruments, with particular attention to the experience currently being gained in Europe.

Before doing so, some general observations are in place on the advantages and limitations of international legal instruments generally. Treaties are legally binding international agreements. A state, or international organization like the EU, that has become a party to a wildlife treaty is bound by its terms under international law. With regard to states' actual compliance with their international obligations, Louis Henkin once famously observed that 'it is probably the case that almost all nations observe almost all principles of international law and almost all of their obligations almost all of the time' (Henkin 1979). It may well be that a little more skepticism is justified with regard to states' compliance with international *wildlife* treaties, especially with a view to the often considerable socio-economic consequences of such compliance. At times, states certainly do neglect wildlife conservation obligations and get away with it. Even so, international law would seem to be a useful, and probably indispensable, ingredient of the larger toolbox needed to adequately conserve large carnivores. It is probably fair to assume—although it is difficult to conclusively prove or disprove this—that without it the conservation status of quite a few species worldwide would have been worse (Donald et al. 2007; Baakman 2011). To illustrate, in many countries protected areas have been designated, or existing protected areas reinforced, pursuant to international obligations under wildlife treaties (Bowman et al. 2010). Similar considerations apply to national legislation restricting the capturing, killing and trading of wildlife (Fleurke and Trouwborst 2014). Many wildlife treaties also help to keep conservation issues on governments' agendas, *inter alia* through regular meetings of the parties where all sorts of issues concerning the treaty's implementation are discussed and related guidance adopted. In addition, international legal obligations can play a role in concrete cases where, e.g., a concerned NGO seeks to block a harmful development or solicit particular conservation action, *inter alia* by publicly confronting governments with their international obligations, and/or invoking those obligations in court. In rare instances, such obligations may also be invoked by one country against another in inter-state proceedings before the International Court of Justice or an arbitral tribunal. Finally, wildlife treaties can function as catalysts for targeted cooperation between governmental and non-governmental stakeholders.

Of course, as with most other societal challenges, drawing on legal instruments alone is unlikely to render a satisfactory approach to the conservation of large carnivores. This accords with Daniel Bodansky's general qualification of international environmental law as a 'thirty percent solution' (Bodansky 2009). At the same time, in order for the conservation of large carnivores to be adequately addressed in concert with the remaining seventy percent—to be provided by politics, economics, technology, public awareness, et cetera—international wildlife law should not provide much less than those 30 % either. Thus, whereas international law cannot be expected to provide a silver bullet for large carnivore conservation, the most pertinent questions are how much of its potential contribution is currently delivered, and how best to strive for the full 30 %.

## A closer look at legal instruments

### *Ramsar Wetlands Convention*

The Ramsar Convention, which is currently in force for 168 countries, was adopted in 1971 to ‘stem the progressive encroachment on and loss of wetlands now and in the future’ (Preamble). A central feature of the Convention is the List of Wetlands of International Importance, presently comprising more than 2000 sites covering a total surface area of over 2,000,000 km<sup>2</sup>. Contracting parties ‘shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory’ (Article 3(1)). The latter half of this obligation applies to all wetlands. ‘Wise use’ of wetlands is understood as ‘the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development’ (Ramsar COP Resolution IX.1, 2005). The Convention also requires parties to ‘promote the conservation of wetlands ... by establishing nature reserves on wetlands, whether they are included in the List or not, and provide adequately for their wardening’ (Article 4(1)). To guide the implementation of the above duties, an impressive body of detailed recommendations concerning the conservation and wise use of wetland ecosystems has been adopted over the years by the Convention’s Conference of the Parties (COP), the main decision-making body in which all parties are represented and which meets periodically.

Notwithstanding a traditional emphasis on waterbirds, the broad aims and obligations set out in the Convention, as just discussed, clearly also comprise the conservation of other native wild fauna inhabiting wetlands generally and listed wetlands in particular. This wetland-dwelling fauna includes many species of large carnivore. Even if numerous wetlands are smaller than a typical home range of locally occurring large carnivores, they may still constitute important elements of such home ranges. Moreover, many large contiguous wetland areas exist, encompassing any number of entire large carnivore home ranges. Quite a few of these larger wetlands are included in the Ramsar List, besides countless smaller sites. Compliance by the states involved with their legal obligations under the Ramsar Convention in respect of such sites will clearly benefit the large carnivores present there. Table 2 contains an illustrative sample from the many wetlands on the Ramsar List that are of special importance to large carnivores.

### *World Heritage Convention*

The other global site-based treaty is the 1972 World Heritage Convention, which is in force for an impressive 191 countries. A substantial number of ecologically important sites around the world qualify as ‘natural heritage’ according to the definition in Article 2 of the Convention, and a selection of these have been included in the World Heritage List administered under the Convention. Contracting parties are committed to doing everything within their power to ensure the ‘identification, protection, conservation, presentation and transmission to future generations’ of the natural heritage situated on their territories (Article 4). It should be noted that ‘natural heritage’ includes, but is not limited to, sites on the World Heritage List. Moreover, to warrant that ‘effective and active measures’ are taken for the protection of the sites concerned, the Convention stipulates that each party ‘shall endeavor, in so far as possible, and as appropriate for each country,’ to ‘integrate the protection of that heritage into comprehensive planning programmes’ and to ‘take the appropriate legal, scientific, technical, administrative and financial measures necessary for



**Table 2** Ramsar Wetlands important to large carnivores

Ramsar site + designation year	Size (ha)	Country	Species
Polar Bear Pass (1982)	262,400	Canada	Gray wolf—polar bear
Kafue Flats (1991)	600,500	Zambia	African wild dog—lion—cheetah—leopard—Cape clawless otter—spotted hyena
Pantanal Boliviano (2001)	3,189,888	Bolivia	Maned wolf—jaguar—puma—giant otter
Berezinsky Biosphere Reserve (2010)	85,149	Belarus	Gray wolf—Eurasian lynx—brown bear
Sembilang National Park (2011)	202,896	Indonesia	Tiger—Sunda clouded leopard—sun bear

Selected sites from the Ramsar List of Wetlands of International Importance. For each site, the table indicates its official name, year of designation, surface area in hectares, the contracting party involved, and the large carnivore species frequenting the site. This selection serves an illustrative purpose and only represents a tiny fraction of wetland sites of relevance to large carnivore conservation

the identification, protection, conservation, presentation and rehabilitation of this heritage’ (Article 15). The Convention’s Operational Guidelines instruct parties to provide for a buffer zone wherever this is ‘necessary for the proper conservation’ of the site involved (World Heritage Committee 2012).

Analogous to the Ramsar Convention, large carnivores whose habitat is situated within a natural heritage site, particularly if this site is incorporated in the World Heritage List, are likely to benefit from the protection regime imposed by the Convention. What is more, in various cases the occurrence of certain species of large carnivore formed an integral part of the reasons for listing the site. In such cases the Convention’s protection requirements extend not indirectly but expressly to the animals involved—if not at the individual level then at least at the level of a healthy population.

Examples of such sites from the World Heritage List are the Sundarbans National Park in India with its tigers, and the Sichuan Giant Panda Sanctuaries in China. The latter site comprises nearly a million hectares plus a buffer zone half that size, harbouring 30 % of the giant panda (*Ailuropoda melanoleuca*) world population and dholes, snow leopards and clouded leopards (*Neofelis nebulosa*) besides. Another eminent instance is the Okavango Delta in Botswana, covering 2 million hectares surrounded by a buffer zone of an additional 2 million hectares, home to African wild dogs, lions, cheetahs, leopards (*Panthera pardus*), Cape clawless otters (*Aonyx capensis*), and spotted and brown hyenas (*Hyaena brunnea*). For illustrative purposes, Table 3 portrays the current ten natural sites from the World Heritage List that are located in the Russian Federation. These extensive areas encompass some of the core habitat of 10 of the 31 species considered in this paper, including various subspecies of particular conservation value (*P. tigris altaica*; *P. pardus orientalis*; *U. arctos isabellinus*). Several transboundary sites have been designated under the Convention. Relevant examples are the Uvs Nuur Basin (Mongolia-Russia, see Table 3) and Waterton-Glacier (Canada-United States). It should also be noted that some World Heritage sites overlap with Ramsar sites. For instance, the Okavango Delta System is also included in the Ramsar List.

**Table 3** Russian World Heritage sites important to large carnivores

World Heritage site	Size (ha)	Species
Virgin Komi Forests (1995)	3,280,000	Gray wolf—Eurasian lynx—brown bear
Volcanoes of Kamchatka (1996)	3,830,200	Gray wolf—Eurasian lynx—sea otter—brown bear
Lake Baikal (1996)	8,800,000	Eurasian lynx—brown bear
Golden Mountains of Altai (1998)	1,611,457	Gray wolf—snow leopard—Eurasian lynx—brown bear
Western Caucasus (1999)	298,903	Gray wolf—leopard—Eurasian lynx—brown bear
Central Sikhote-Alin (2001)	406,177	Gray wolf—tiger—leopard—Eurasian lynx—brown bear—Asiatic black bear
Uvs Nuur Basin (2003, transboundary site with Mongolia)	898,064 (+170,790 b.z.)	Gray wolf—dhole—snow leopard—Eurasian lynx—brown bear
Natural System of Wrangel Island Reserve (2004)	916,300 (+3,745,300 b.z.)	Polar bear
Putorana Plateau (2010)	1,887,251 (+1,773,300 b.z.)	Gray wolf—Eurasian lynx—brown bear
Lena Pillars Nature Park (2012)	1,272,150	Gray wolf—Eurasian lynx—brown bear

All ten Russian natural heritage sites included in the World Heritage List, in order of their inscription. For each site, the table indicates its official name, year of designation, surface area in hectares of the site [and buffer zone (b.z.) where applicable], and the large carnivore species frequenting the site

### *Convention on International Trade in Endangered Species*

CITES, which has 180 parties, aims to protect species of wild fauna and flora against overexploitation through international trade. The latter poses a significant threat to various large carnivore species, including most of the felids and bears. CITES regulates international trade in specimens and body parts of species, subspecies, or populations listed in three appendices, the first two of which are most important. A central feature of the Convention's operation is a licensing system, which generally outlaws international trade in listed species without the prior grant of one or more CITES permits. The rigidity of licensing conditions depends on the appendix involved. Thus, Article III of the Convention prohibits, with few exceptions, international commercial trade in species threatened with extinction, included in Appendix I. Appendix II is intended for species not yet threatened but which may become so unless trade is controlled. The Convention therefore limits export of Appendix II species to levels which would not be detrimental (Article IV). Presently, these appendices together cover 24 of the 31 largest carnivore species. 13 are in Appendix I, 5 are in Appendix II, and for 6 species Appendix I or II applies, depending on the subspecies or country involved (see Table 1).

CITES features a relatively advanced institutional structure to oversee the Convention's implementation, and many of the Convention's obligations have been clarified in detailed guidance adopted over the years by the COP. Some of this guidance expressly focuses on large carnivores. A good example is a COP Resolution adopted in 2002 and last revised in 2013, addressing big cats in Asia, i.e., tiger, Asiatic lion (*P.l. persica*), leopard, snow

leopard and clouded leopard, all of which are listed in Appendix I (Res. Conf. 12.5). As the Resolution notes, despite the applicability of the strictest CITES regime illegal trade in these species has escalated and threatens their survival. This trade is driven by the use of parts and derivatives in traditional medicine and a demand for skins. The Resolution calls for an array of actions to be taken by range states to reverse this trend, including the improvement of relevant national legislation, the provision of penalties adequate to deter illegal trade, and especially the stepping up of enforcement efforts. In the latter regard, the Resolution urges parties and other range states, *inter alia*, to ‘introduce innovative enforcement methods and, as a matter of priority, strengthen enforcement efforts in key border regions, and develop or improve implementation of regional enforcement networks’ and to ‘ensure that anti-poaching teams and enforcement units are established and effectively resourced to counter illegal killing of and trade in Asian big cat species’, with special attention for the ‘gathering and use of intelligence; targeting offenders; wildlife crime investigative techniques; collecting evidence; inter-agency liaison and cooperation; and preparing cases for prosecution’ (Res. Conf. 12.5). The cited provisions highlight an evidently essential issue of general application, that to be effective CITES controls need to be implemented and enforced on the ground. It is noteworthy in this regard that the CITES Secretariat has joined forces with four other intergovernmental entities—INTERPOL, UN Office on Drugs and Crime, World Bank and World Customs Organization—in setting up the International Consortium on Combating Wildlife Crime (ICWC), which is dedicated to aiding national enforcement agencies and regional enforcement networks to increase the number of perpetrators of serious wildlife crimes being brought to justice (ICWC 2013).

### *Convention on Migratory Species*

With 120 contracting parties the CMS has a lower participation rate than the other global wildlife treaties, although this number is on a steady increase. CMS Appendix I lists ‘migratory species which are endangered’. Appendix II lists ‘migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from ... an international agreement’. Species may be listed in both appendices simultaneously. The Convention defines ‘migratory species’ as species ‘whose members cyclically and predictably cross one or more national jurisdictional boundaries’ (Article I(1)(a)). However, the term has subsequently been interpreted by the CMS COP in a remarkably flexible manner, as actually encompassing any species whose range extends across more than one country. This approach has enabled the inclusion in the CMS appendices of species such as the mountain gorilla (*Gorilla beringei*), Mediterranean monk seal (*Monachus monachus*), and indeed several species of large carnivore that can hardly be considered migratory in the classical sense. Cheetah and snow leopard figure on Appendix I, and African wild dog and—since 2014—polar bear on Appendix II (see Table 1). Furthermore, at the most recent COP in 2014, CMS parties formally established that ‘*Panthera leo* ... and all its evolutionarily significant constituents, including *Panthera leo persica*, satisfy the Convention’s definition of “migratory species”’, and called for an Appendix II listing proposal for the lion to be prepared for the next COP (COP Resolution 11.32). It thus appears that the CMS has evolved into an instrument focussing on the conservation of *transboundary* rather than purely *migratory* wildlife (Bowman et al. 2010; Trouwborst 2012), and its relevance for large carnivore conservation looks set to increase.

Cheetahs and snow leopards are listed in Appendix I, and a significant number of both species’ range states are CMS parties. These states are subject to a stringent requirement to

prohibit the taking of cheetahs and snow leopards, except under strictly defined conditions (Article III(5)). ‘Taking’ is broadly defined as ‘taking, hunting, ... capturing, harassing, deliberate killing, or attempting to engage in any such conduct’ (Article I(1)(i)). In addition, the Convention sets out more qualified duties to ‘conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction’ and, generally, ‘to the extent feasible and appropriate, to prevent, reduce or control factors that are endangering or are likely to further endanger the species’ (Article III(4)). Given their conservation status, dholes and tigers would seem to be serious candidates for future Appendix I listing.

Arguably the most important feature of the CMS is the mechanism whereby targeted subsidiary instruments are developed for specific species or groups of species, tailored to their conservation needs and circumstances. Parties that are range states of Appendix II species ‘shall endeavour to conclude AGREEMENTS (*sic*) where these would benefit the species and should give priority to those species in an unfavourable conservation status’ (Article IV(3)). The Convention sets out a number of criteria to be met by such AGREEMENTS, demanding *inter alia* that they cover the entire range of the species in question (Article V). In addition, CMS parties are ‘encouraged’ to conclude ‘agreements’ (lower case) for ‘any population or any geographically separate part of the population of any species or lower taxon of wild animals, members of which periodically cross one or more national jurisdictional boundaries’ (Article IV(4)). The latter option offers much more flexibility as to content and form. It is generally understood that AGREEMENTS need to be in the form of legally binding instruments, i.e. treaties, whereas ‘agreements’ under Article IV(4) may be either treaties or non-binding Memoranda of Understanding (MoUs). CMS instruments typically lay down a general obligation to take the necessary measures for achieving a favourable conservation status of the species concerned, accompanied by more specific obligations addressing specific threats, monitoring and research, etc. These specific commitments are often contained in an easily amendable Action Plan appended to the instrument itself. Altogether, there are currently 26 CMS subsidiary instruments in force—7 treaties and 19 MoUs—covering a much larger number of species. Generally speaking, CMS instruments appear to have made constructive contributions to the conservation of the species concerned, even if this is difficult to quantify.

So far, no CMS subsidiary treaties or MoUs focus on large carnivores, but this may well change. Legally speaking, the strongest case is for the development of an AGREEMENT on African wild dogs, given the species’ Appendix II status, its otherwise apparent fit with the wording of Article IV(3) of the Convention cited above, and the fact that most wild dog range states are CMS parties. The other large carnivore on Appendix II, the polar bear, appears a less likely candidate. Firstly, the CMS itself does not apply to Russia, the US, Canada or Greenland—although as a principle AGREEMENTS are open to accession by non-CMS parties, and Russia and the US are already signatories to certain other CMS instruments. Secondly, a dedicated international legal instrument already exists, the 1973 Agreement on the Conservation of Polar Bears. As noted previously, more large carnivores may be added to Appendix II in the future, possibly starting with the lion.

At any rate, from a large carnivore conservation perspective, ‘agreements’ based on Article IV(4) appear to offer the greatest potential. As Appendix II listing is not required, such CMS instruments may target (combinations of) species listed only in Appendix I or not CMS-listed at all. Moreover, the Article IV(4) avenue offers flexibility regarding the instruments’ geographic scope, overall content, and form. To illustrate the flexibility of scope, a CMS agreement might target a single large carnivore species in part or all of its range, or, for instance, cover all large carnivores in Africa.

It is convenient, furthermore, that CMS subsidiary instruments are open also to participation by states that are not parties to the Convention itself. For example, that Botswana, Namibia and Zambia are currently not yet parties to the CMS would not stand in the way of these countries becoming parties to (an) agreement(s) covering lions, cheetahs and/or wild dogs.

In light of the above, natural candidates for dedicated CMS instruments would appear to include maned wolf (*Chrysocyon brachyurus*), African wild dog, dhole, tiger, lion, jaguar, cheetah, snow leopard, clouded leopard, giant otter (*Pteronura brasiliensis*), Andean black bear (*Tremarctos ornatus*), Asiatic black bear (*Ursus thibetanus*), sun bear, brown hyena and striped hyena (*Hyaena hyaena*). Even agreements targeting ‘Least Concern’ species such as gray wolf, puma (*Puma concolor*), Eurasian lynx, brown bear and spotted hyena are within the Convention’s mandate. An unfavourable conservation status is not a precondition for the development of CMS subsidiary instruments, and any species with transboundary populations the conservation status of which is likely to benefit from international cooperation would be eligible. Incidentally, the case for transboundary population level cooperation regarding wolves, lynx and bears in Europe has already been made, and is a strong one (see “[The lessons being learnt in Europe](#)” section).

Mention should, finally, be made of the existence of several cooperative ‘Special Species Initiatives’ carried out under CMS auspices which do not neatly fit the CMS subsidiary instrument format. One such initiative concerns Sahelo-Saharan megafauna and may benefit Saharan cheetahs (*A.j. hecki*), even if its principal focus is on several ungulate species. Particularly noteworthy is the recently launched, ambitious Central Asian Mammals Initiative, covering a range of ungulates as well as cheetahs and snow leopards. If the latter Initiative bears fruit, this could obviate the need for traditional CMS instruments for snow leopards and for cheetahs in Central Asia.

### *Convention on Biological Diversity*

The CBD aims broadly for the conservation and sustainable use of biological diversity, including at the ecosystem, species and genetic level. The Convention comes close to universal participation, with virtually all states (193) and the EU as contracting parties. Whereas the CBD lacks lists of species requiring special attention, many of its obligations are plainly of relevance to large carnivores. These include duties regarding in situ conservation (Article 8), ex situ conservation (Article 9), sustainable use (Article 10) and environmental impact assessment (Article 14). To single out one of these, Article 8 requires each party, ‘as far as possible and as appropriate’, *inter alia* to establish a ‘system of protected areas or areas where special measures need to be taken to conserve biological diversity’, ‘[p]romote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings’, ‘[r]ehabilitate and restore degraded ecosystems and promote the recovery of threatened species’, and ‘[d]evelop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations’. Whereas the above provisions are just as binding as other treaty obligations, they are phrased in such a broad and qualified manner that it is difficult in practice to establish the boundary between compliance and violation. Parties evidently dispose of an ample margin to determine what, in their individual circumstances, is ‘possible’ and ‘appropriate’, although this discretion is certainly not limitless either.

Whatever the added value of its legal obligations as such, the CBD is also of significance—both generally and for present purposes—as a high-profile forum for signaling, discussing, and sharing information and experience regarding all kinds of conservation

issues, and the development and adoption of non-binding but authoritative guidance regarding those issues by the CBD COP. Most of the strategic Aichi Biodiversity Targets, for instance, are relevant to large carnivore conservation, such as the 12th: ‘By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained’ (CBD Strategic Plan for Biodiversity 2011–2020). The only express guidance hitherto provided by the COP with regard to large carnivores can be found in two COP Decisions on mountain biodiversity. The first of these calls on CBD parties to ‘[a]ddress issues related to conflict between humans and other species, especially with regard to coexistence with predators’ (COP Decision VII/24, 2004). The other Decision ‘[e]ncourages Parties, where possible and appropriate, to develop and implement regional collaboration strategies and action plans for the conservation of mountain biological diversity including on animals that could cause conflict with humans in particular large predators’ (COP Decision X/30, 2010).

Evidently, large carnivore conservation is not a random subcategory of biodiversity conservation at large. Notwithstanding the peculiarities of specific species, populations, regions and countries, large carnivores have several traits in common which warrant a distinct approach that is sensitive to those traits. As elaborated above (“[Introduction](#)” section), these traits include large carnivores’ (i) key functions in ecosystems, (ii) high potential for conflicts with human interests, (iii) strong international dimension, and (iv) worrying conservation status and decline of many populations. Whereas large carnivore conservation must evidently be fleshed out at regional and national levels, the need to incorporate the aforementioned special traits into conservation efforts applies across the globe. Given its mandate and scope, the CBD would appear the pre-eminent forum for the development of generic guidance in this regard, highlighting the importance of large carnivore conservation and sustainable use and setting out the basic ingredients of recommended conservation and management practices, so as to inform the eventually needed tailor-made approaches at regional and national levels. In particular, a CBD COP Decision on large carnivores could provide a valuable and authoritative reference point in this connection, whereas more detailed guidance could be disseminated by dedicating a volume of the CBD Technical Series to large carnivores.

### *Regional legal instruments*

In addition to the five global treaties, many regional legal instruments are of relevance for present purposes. For instance, the African Convention included in Table 1 requires its 30 contracting parties to grant special protection throughout their territories to seven large carnivore species listed in the Convention’s Annex, including the prohibition of their ‘hunting, killing, capture or collection’ (Article VIII). For ‘Class B’ species lion, leopard, Cape clawless otter, brown hyena and Barbary hyena (*H.h. barbara*) this prohibition may, however, be lifted ‘under special authorization’ at the discretion of the ‘competent authority’. For the ‘Class A’ species Ethiopian wolf and cheetah, exceptions may be made ‘only on the authorization in each case of the highest competent authority and only if required in the national interest or for scientific purposes’ (Article VIII). Other relevant provisions *inter alia* address habitat protection (Article X) and the generic restriction of certain means of capture and killing, such as a prohibition on the use of poisoned baits (Article VII). A substantially revised and updated version of the Convention was negotiated in 2003, but has not yet entered into force.

Besides the European ones discussed in the next section, other relevant regional legal instruments include (but are not limited to) the 1940 Convention on Nature Protection and

Wild Life Preservation in the Western Hemisphere, 1973 Polar Bear Agreement, 1992 Central American Convention for the Conservation of Biodiversity and the Protection of Priority Wetlands, 1994 Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, 1999 Protocol (to the 1992 Treaty of the Southern African Development Community) on Wildlife Conservation and Law Enforcement, and the 2001 Convention on the Conservation of Wildlife and their Natural Habitats in the Countries of the Gulf Cooperation Council.

To illustrate the most recent one, the Gulf Wildlife Convention is in force for Oman, Saudi Arabia, the United Arab Emirates and three smaller Gulf countries. Wolf, cheetah, leopard and striped hyena are included in Appendix II as species to be specially protected (Article 3(1)(B)). Generally, this regime entails ‘conserving such species, wherever they exist in natural habitats or whenever it is necessary to settle them’, which latter is an apparent reference to reintroduction. (Whereas this is from the English version as provided by the Gulf Council, please note that only the Arabic text of the Convention is authoritative). Moreover, parties’ obligations in respect of these species include ‘banning all forms of hunting or deliberate killing ... or causing their disturbance, particularly during seasons of propagation and breeding’. Of special interest is the absolute nature of this ban, as the Convention does not contain a derogation clause of any kind.

The lessons being learnt in Europe

Gray wolves, Eurasian lynx and brown bears used to occur in most of Europe before disappearing from large parts of their ranges, chiefly through human persecution. Some populations persisted, mostly on the continent’s eastern, southern and northern fringes. Recent decades have witnessed the stabilization and even increase of many populations, resulting in a progressive recolonization of former ranges (Kaczensky et al. 2013; Chapron et al. 2014). This comeback has been enabled by a mix of factors including legal protection, which in turn reflects changing societal perceptions and priorities. Wolves, lynx and bears are thus returning to countries or regions where people are no longer used to ‘having something in their backyards that is wild and a little out of control’ (J. Linnell, cited in Enserink and Vogel 2006).

#### *Bern Convention and Habitats Directive*

Two major legal instruments determine the outer limits of European governments’ discretion in responding to this ongoing carnivore comeback. These are the Bern Convention, to which virtually all European countries, some African countries and the EU are contracting parties, and the Habitats Directive, which binds the 28 EU member states. (For a recent general introduction to both legal regimes, see Fleurke and Trouwborst 2014; for specific analyses of their relevance to large carnivores, see the various studies mentioned in the “[Introduction](#)” section). Under the EU Directive, the three species have Annex II status in most member states (Table 1), entailing an obligation to designate and protect the most suitable habitat as Special Areas of Conservation under the ‘Natura 2000’ protected area network (Articles 4 and 6). The Bern Convention equivalent is the ‘Emerald Network’ established under Article 4. Whereas both instruments thus provide protection for some of the core habitat of large carnivores, the comparatively small size of protected areas in Europe imposes limitations. For instance, Boitani and Ciucci (2009) have submitted in this regard that ‘no protected area or Natura 2000 site in Europe on its own is large enough to ensure the persistence of a viable wolf population’.

In the European context, species protection obligations applicable to large carnivores regardless of their location are therefore all the more significant. Both the Convention and the Directive impose such obligations. Where Bern Convention Appendix II and/or Habitats Directive Annex IV apply (see Table 1), national authorities must ensure special protection, including prohibitions of killing and capturing of individual animals subject to strictly defined exception clauses. (Note that Bern Convention Appendix II also includes dhole, tiger, leopard and polar bear). Bern Convention Appendix III and Habitats Directive Annex V represent more flexible regimes requiring healthy populations but no protection for individual animals.

The Standing Committee (the Convention's COP equivalent) has developed a noteworthy body of non-binding guidance regarding the application of the Bern Convention to wolves, lynx and bears, with the aid of a Group of Experts on Large Carnivores established under the Convention. This guidance includes an array of Standing Committee Recommendations (Recommendations Nos. 10 (1988), 17 (1989), 20 (1991), 37 (1992), 74 (1999), 82 (2000), 89 (2001), 100 (2003), 101 (2003), 115 (2005), 137 (2008), 148 (2010), 162 (2012), 163 (2012) and 173 (2014)), as well as detailed Bern Convention Action Plans for wolf, lynx and bear (Boitani 2000; Breitenmoser et al. 2000; Swenson et al. 2000). Incidentally, the scope of several Standing Committee Recommendations encompasses non-listed species. For instance, one Recommendation (No. 148 (2010)) urges the adoption of a national action plan for striped hyenas in Azerbaijan, whereas another (No. 115 (2005)) even calls for transboundary cooperation between Senegal and Mali regarding lions. The European Commission, charged with supervising the implementation of the Habitats Directive, has also commissioned specific guidance concerning large carnivores (most notably Linnell et al. 2008).

#### *Transboundary cooperation at the population level*

All of the above obligations target countries individually. No provision is made in either legal instrument for concerted conservation actions tailored to the biological units of the transboundary carnivore populations, notwithstanding a generally phrased obligation in the Bern Convention for parties to 'cooperate whenever appropriate and in particular where this would enhance the effectiveness of measures taken under other articles of this Convention' (Article 11(1)(a)). Moreover, the specific legal regimes applicable to the various species vary from country to country, due to reservations submitted by several parties to the Bern Convention and country-specific differences established under the Habitats Directive. For instance, under the Convention, depending on the party concerned, the wolf is a 'strictly protected fauna species' under Appendix II, a 'protected fauna species' under Appendix III, or neither. Comparable differences apply under the Habitats Directive, and to some of the other species involved. The situation is compounded further by the fact that not all Bern Convention parties are also bound by the Habitats Directive. The resultant fragmentation of the European legal landscape in respect of the three large carnivores adds to the need for transboundary cooperation at the level of the biological unit of the (sub)-population involved (Linnell et al. 2008; Trouwborst 2010; Linnell and Boitani 2012; Epstein 2013; Trouwborst 2014c).

To remedy these shortcomings, both the Standing Committee and the European Commission expressly advocate a transboundary population level approach to large carnivore conservation and management [for the Convention, see Recommendations No. 115 (2005) and No. 137 (2008)]. Of particular interest is the development of a detailed guidance document on the issue by the Large Carnivore Initiative for Europe (LCIE)—a Specialist



Group of the IUCN Species Survival Commission—under contract from the European Commission. These ‘Guidelines for Population Level Management Plans for Large Carnivores in Europe’ (Carnivore Guidelines) were finalized, and endorsed by the Commission, in 2008 (Linnell et al. 2008). The Guidelines call for the adoption of a population level management plan, by the competent authorities of all countries involved, for each large carnivore (sub)population, and set out detailed instructions in this regard. Upon the Carnivore Guidelines’ adoption, the European Commission stressed that it is complicated, if not impossible, for one EU country to conserve and manage its large carnivores in the absence of concerted and convergent actions being taken by neighbouring states (European Commission 2008). In particular, it held that ‘effective management of large carnivore populations which are shared between Member States can only be achieved through shared and coordinated management plans as described in the[se] guidelines.’ The Commission considers these Carnivore Guidelines to represent ‘best practice’ when it comes to the application of the Habitats Directive to large carnivores. The Standing Committee of the Bern Convention has similarly called on parties to the Convention ‘to reinforce cooperation with neighboring states in view of adopting harmonised policies towards management of shared populations of large carnivores, taking into account the best practice in the field of management of populations of large carnivores,’ under express reference to the Carnivore Guidelines (Recommendation No. 137 (2008)).

Especially significant for present purposes is a template provided in the Carnivore Guidelines, setting out in detail the ingredients that each transboundary management plan should contain (Linnell et al. 2008). It suffices to highlight a few of the most essential ones. The objectives for the population concerned should be specific and measurable, encompassing concrete goals in terms of numbers, range, and other parameters such as harvest rates, damage levels, poaching levels, which goals can then be used to measure the success of management actions. These goals ought to be distributed in space between the various administrative units involved like countries, autonomous regions, provinces, counties, wildlife management units or protected areas. As regards specific actions, the template stresses that it is crucial that the removal of animals be coordinated between all management units sharing a population, based on a pre-determined population level limit for the number of individuals that can be removed each year (or, arguably, any other coherent time unit employed). Significant attention should, furthermore, be paid to ensuring connectivity within the population as well as with neighbouring populations. A final point singled out here is that each plan should indicate any changes in legislation which are required to implement the population level management plan.

Whereas the Carnivore Guidelines generally refer to population level management ‘plans’, it is made clear that the transboundary cooperation concerned may take any of various shapes, as long as it adequately serves its purpose. It could involve a legally binding agreement, but this is not a strict requirement. The arrangement involved needs to be sufficiently flexible to adjust to future developments regarding the population concerned, but also sufficiently formal and high-profile to warrant its actual observation by the governmental actors involved (Trouwborst 2010). As Beyerlin (2014) put it, any transboundary wildlife regime ‘must fail unless it contains tailored, detailed rules on the conditions, targets, and modalities of cooperation.’ One conceivable and interesting option would appear to be the format of a CMS subsidiary instrument (see “[Convention on Migratory Species](#)” section). For large carnivores in the Alps and Carpathians, population level cooperation could be shaped within the frameworks of the regional treaties in force for these mountain ranges (“[Alpine Convention and Carpathian Convention](#)” section).

Overall, the pace at which the Carnivore Guidelines' approach as outlined above is actually being implemented by states is modest. Notwithstanding a number of promising initiatives, the first fully-fledged transboundary population level management plan in Europe is still to be formalized (Blanco 2013). In view of the tenacious challenges involved in human-carnivore coexistence, it would in any case seem unrealistic to expect huge strides in this respect. As Linnell and Boitani (2012) reflect, 'it is only a few decades since wolves changed their official status from vermin to conservation icons [and therefore] not surprising that the process takes time and is stormy'.

Naturally, the European experience cannot be straightforwardly transplanted to other regions, given the varying ecological, political, institutional and socio-economic contexts of each region (Weber and Rabinowitz 1996). This caveat aside, the approach outlined in the Carnivore Guidelines—particularly with a view to its comprehensiveness, level of detail and intergovernmental endorsement—provides an interesting blueprint of what transboundary cooperation for large carnivore populations could look like.

### *Alpine Convention and Carpathian Convention*

Of special interest is the role of two treaty regimes dedicated to particular European mountain ranges, the Alps and the Carpathians. The Alps are home to tentative comeback populations of wolf, lynx and bear, whereas the Carpathians are a traditional stronghold for the same species. The 1994 Protocol (to the 1991 Alpine Convention) relating to the Conservation of Nature and the Countryside binds all Alpine states except Switzerland. Several of its provisions regarding the conservation of species and their habitats in the Alps are of clear relevance to wolves, lynx and bears, even if they are not specifically mentioned. At least as important is the 'Large Carnivores, Wild Ungulates and Society Platform' (WISO) operating under auspices of the Alpine Convention, tasked *inter alia* with the promotion of actual cross-border conservation and management of large carnivores at the population level, including the determination of common long-term goals for large carnivore populations. WISO produced a set of 'Guidelines on Large Carnivores, Wild Ungulates and Society' which were endorsed by the Convention's parties in 2011 (XIth Alpine Conference, Doc. AC11/B7/2).

The other mountain regime comprises the 2003 Framework Convention on the Protection and Sustainable Development of the Carpathians and its 2008 Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity. Both are in force for the seven Carpathian states. These instruments are remarkable for the way their provisions expressly address large carnivores. Under the Carpathian Convention, parties 'shall take appropriate measures to ensure a high level of protection and sustainable use of ... species of flora and fauna being characteristic to the Carpathians, in particular the protection of endangered species, endemic species and large carnivores' (Article 4(1), emphasis added). The Protocol commits parties to 'harmonise and coordinate their efforts and cooperate on ... conservation and sustainable use of [*inter alia*] large carnivores' (Article 1(2)). Furthermore, each party 'shall take measures in its national territory with the objective to ensure the long-term conservation or sustainable use and recovery of [*inter alia*] large carnivores', whereby it is specifically added that the latter 'might be in need of management plans' (Article 12(2)). The Protocol pays special attention to connectivity, with parties being required to take measures to 'improve and ensure continuity and connectivity of natural and semi-natural habitats in the Carpathians, thus allowing dispersal and migration of wild species populations particularly of large carnivores, and genetic exchange between such populations' (Article 9(1), emphasis added).

## Enhancing the contribution of international law to large carnivore conservation

The above analysis clearly indicates that there is significant potential for enhancing the contribution of international legal instruments to the conservation of large carnivores across the globe. Several parallel avenues through which this enhancement could be pursued are indicated below, without pretending to be exhaustive. Although these various courses of action are presented separately, they are evidently interrelated.

### *Effective implementation*

As demonstrated above, a significant body of international law of importance for large carnivore conservation already exists. It appears safe to assume that if all states concerned would fully and consistently comply with their current international obligations—some of which are far-reaching—this would make a considerable difference. Meaningful efforts aimed at increasing such compliance with the law as it stands would thus seem worthwhile.

### *Further clarification*

This paper merely provides a bird's-eye-view of the international legal frameworks in place, and has necessarily skipped over many intricate issues of legal interpretation that would come into view when zooming in closer. Indeed, for many of the instruments treated above more comprehensive and in-depth analyses appear warranted in order to gauge their current and potential implications for large carnivore conservation with more accuracy.

### *Formal guidance*

A closely associated course of action is the development of non-binding but authoritative guidance specifically regarding the application of legal instruments to large carnivores—similar to that adopted by the CITES COP for Asian big cats, and the guidance concerning wolves, lynx and bears issued under the Bern Convention and Habitats Directive. At the global level, there appears to be a good case for the development of such guidance under the umbrella of the CBD (see “[Convention on Biological Diversity](#)” section).

### *Expanding the scope of existing instruments*

Clearly, the contribution of international law to large carnivore conservation could be enhanced by expanding legal instruments' scope, in several respects. First, for some instruments there is evident potential for adding large carnivore (sub)species or populations to their appendices, or uplisting already listed ones. The CMS is a case in point. Second, similar considerations apply to the protection of additional sites of importance to large carnivores under the World Heritage and Ramsar Conventions. Third, the utility of certain instruments would benefit significantly from the accession of currently missing states as contracting parties.

### *Developing new legal instruments*

For certain large carnivore species in certain regions it may be worthwhile to invest in mustering the political will and resources required for the development of new international legal instruments. Whereas these could take the shape of an *ad hoc* instrument,

analogous to the Polar Bear Agreement, there is also apparent scope for using the flexible format of a subsidiary instrument under the CMS (see “[Convention on Migratory Species](#)” section).

### Research

In respect of all of the above avenues, a role of sorts would seem to be implied for further research involving, but not limited to, the discipline of international law—whether this concerns exploring ways of promoting compliance, interpreting current obligations, developing guidance for the application of legal instruments to large carnivores, shaping proposals for the enhancement of existing instruments, or crafting new legal instruments. The present analysis has barely scratched the surface in this regard. Two research projects are currently engaging several of these dimensions in a European context (see [www.clawsandlaws.eu](http://www.clawsandlaws.eu), and [www.tilburguniversity.edu/iuscarnivoris](http://www.tilburguniversity.edu/iuscarnivoris)). Beyond Europe, the scope for further international law research is especially apparent.

### Conclusions

A substantial body of international law of significance to large carnivore conservation is currently in force, comprising an array of global and regional legal instruments. At the same time, there is clear potential for enhancing the contribution of international law to the conservation of large carnivores across the globe. Avenues for pursuing this enhancement include the promotion of legal instruments’ effective implementation; the clarification of their precise current and potential implications for large carnivore conservation; the development of formal guidance in this regard; the expansion of instruments’ scope in terms of species, sites and countries covered; and the creation of new international legal instruments. The CMS and the CBD would seem to hold particular potential in some of these respects. Useful lessons may be learnt from the experiences being gained in Europe, which constitute an interesting laboratory for present purposes, particularly with regard to human coexistence with expanding large carnivore populations, and the experimentation with transboundary cooperation at the (sub)population level.

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