



**CONVENTION ON
MIGRATORY
SPECIES**

Distribution: General

UNEP/CMS/COP12/Inf.34
5 October 2017

Original: English

12th MEETING OF THE CONFERENCE OF THE PARTIES
Manila, Philippines, 23 - 28 October 2017

**OPTIONS FOR DEVELOPING AN AGREEMENT UNDER THE CONVENTION ON
MIGRATORY SPECIES FOR EUROPEAN EELS**

Summary:

The attached document has been submitted by the Sargasso Sea Commission in support of UNEP/CMS/COP12/Doc.26.2.1 the Proposal for a Concerted Action for the European Eel (*Anguilla Anguilla*).

The Document fulfills Activity 3 of the above proposal, to “undertake a detailed background assessment of the comparative advantages of developing a CMS Instrument”.



OPTIONS FOR DEVELOPING AN
AGREEMENT UNDER THE
CONVENTION ON MIGRATORY
SPECIES FOR EUROPEAN EELS

September 2017

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<https://en.wikipedia.org/wiki/Eel#/media/File:Glasseelskils.jpg>.

Options for Developing an Agreement under CMS for European Eels

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September 2017

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I. Introduction

International concern for the European eel (*Anguilla anguilla*) has been building over the last decade. In 2007, the European Union (EU) adopted a regulation that requires EU Member Range States to prepare Eel Management Plans (EMPs) with a goal of 40% escapement of adult eels into the marine environment.¹ Later in 2007, the Convention on International Trade in Endangered Species of Fauna and Flora (CITES)² included the species in Appendix II.³ In 2008, the European eel was first listed as Critically Endangered on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species.⁴ Also in 2008, the European eel was added to the List of Threatened and/or Declining Species in the Northeast Atlantic under the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR).⁵ In 2014, the Convention on Migratory Species (CMS)⁶ included the European eel in Appendix II due to its unfavourable conservation status.⁷ Despite these actions, the eel's conservation status may not be improving⁸ due to the variety of threats it faces: over-exploitation for food and bait, barriers to migration such as dams, pollution, and climate change.⁹ The population remains in a

¹ Council Regulation (EC) No 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel, art. 2(4) <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32007R1100> [hereinafter EU Eel Regulation]. The provision provides as follows:

The objective of each Eel Management Plan shall be to reduce anthropogenic mortalities so as to permit with high probability the escapement to the sea of at least 40% of the silver eel biomass relative to the best estimate of escapement that would have existed if no anthropogenic influences had impacted the stock. The Eel Management Plan shall be prepared with the purpose of achieving this objective in the long term.

² Convention on International Trade in Endangered Species of Fauna and Flora, Mar. 3, 1973, 27 U.S.T. 1087, 993 U.N.T.S. 243 (entered into force July 1, 1975), available at <https://cites.org> [hereinafter CITES].

³ CITES, Appendices I, II, and III (valid from Apr. 4, 2017), <https://cites.org/eng/app/appendices.php>.

⁴ D. Jacoby & M. Gollock, *Anguilla anguilla*, “Previously published Red List assessments”, in IUCN RED LIST OF THREATENED SPECIES (2014), at <http://www.iucnredlist.org/details/60344/0>. The European eel was again classified as “Critically Endangered” in 2010 and 2014.

⁵ OSPAR List of Threatened and/or Declining Species and Habitats, Reference Number: 2008-6, at 6 (2010), available at <https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats>.

OSPAR is the treaty and commission through which fifteen States and the EU cooperate to protect the marine environment of the North-East Atlantic Ocean. OSPAR Commission, About OSPAR, <https://www.ospar.org/about>.

⁶ Convention on the Conservation of Migratory Species of Wild Animals, June 23, 1979, 1651 UNTS 333 (entered into force 1983) [hereinafter CMS].

⁷ CMS, Appendix I & II of CMS, <http://www.cms.int/en/page/appendix-i-ii-cms>. The CMS Parties include species in Appendix II “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 the international cooperation that could be achieved by an international agreement.” CMS, *supra* note 2, at art. IV(1).

⁸ Willem Dekker, *Management of the Eel Is Slipping through Our Hands!: Distribute Control and Orchestrate National Protection*, 73 ICES J. MARINE SCIENCE 2442, 2443 (2016) (“Post-evaluation in 2015 recently indicated that hardly any improvement in the status of the stocks has been achieved, and that—on average—mortality has not been reduced any further since 2012.”). The generation length of the European eel is roughly 15 years, however. As a consequence, it may be too early to determine whether existing measures are having a positive impact on the eel's conservation status.

⁹ Jacoby & Gollock, *supra* note 4, at “Major Threat(s).”

“critical state”; the “promising increase” in recruitment in some recent years “may or may not be the result of protective measures.”¹⁰

Consequently, the CMS Secretariat and the Sargasso Sea Commission¹¹ sponsored the First Range States Workshop on the European Eel to review the conservation status of and existing management measures for the species.¹² That meeting concluded that a second workshop that includes additional Range States, particularly from North Africa, would be valuable.¹³ The meeting also concluded that the second workshop should focus on the nature of a CMS legal instrument for the European eel (legally binding or non-legally binding) and the feasibility of including the American eel in any such instrument at a later time.¹⁴

This paper assesses the nature and content of such a CMS instrument. It reviews existing legally binding and non-legally binding CMS instruments and examines the relative advantages and disadvantages of each type of instrument for the conservation and management of the European eel. It also explores and sets out the possible content of an instrument, including measures to protect the eel’s migration and spawning grounds.

To accomplish these tasks, this paper is organized as follows:

- Section II briefly summarizes the life history and scientific gaps in knowledge of European eels, as well as the various threats to the species, for the purpose of determining whether and to what extent an international agreement might be necessary.
- Section III describes the need for international cooperation to conserve and manage the European eel in light of the scientific information included in Section II.
- Section IV assesses the different types of CMS legal instruments, assessing in particular the similarities and differences between legally binding and non-legally binding instruments.
- Section V addresses whether CMS is the proper forum for developing an international instrument for the European eel in light of other international agreements and the CMS criteria found in CMS Resolution 11.12 for evaluating potential new legal instruments.
- Section VI explores the possible content of an instrument, including key elements of such an instrument for the conservation of the European eel.

¹⁰ International Council for the Exploration of the Sea, 2013 Report of the Joint EIFAAC/ICES/GFCM Working Group on Eel (WGEEL), ICES CM 2013/ACOM:18, at 60 (2013), available at http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WGEEL/wgeel_2013.pdf.

¹¹ For more information on the Sargasso Sea Commission, see <http://www.sargassoseacommission.org/>.

¹² The documents for the meeting can be found at CMS, First Range State Workshop on the European Eel, at <http://www.cms.int/en/meeting/first-range-state-workshop-european-eel>.

¹³ *Report of the First Range States Workshop on the European Eel*, UNEP/CMS/Eels WS1/Report, ¶ 145 (2016).

¹⁴ *Id.* at ¶¶ 145–59.

II. Conservation Status of the European Eel

A. Life History

The European eel is one of 16 anguillid species.¹⁵ Anguillids are unusual among aquatic species for a variety of reasons. They are facultatively catadromous: they spawn in the marine environment and live the majority of their lives in continental waters, such as rivers, lakes, estuaries, lagoons, and coastal waters.¹⁶ They are also unusual among aquatic species in that they reproduce just once before they die.¹⁷ On average, the generation length of the European eel has been estimated as 15 years,¹⁸ and they are widely dispersed, inhabiting the marine and freshwater environments of 57 States and territories.¹⁹ Despite this wide dispersal, the European eel is considered a single stock—that is, they are panmictic²⁰ because all adults spawn in the southwestern part of the Sargasso Sea.²¹

The European eel’s life history makes for fascinating study. The eel’s leptocephalus larvae hatch in *Sargassum*²² and then drift with the ocean currents towards Europe and North Africa.²³ The larvae metamorphose as they cross the ocean; by the time they reach the continental shelf of Europe and North Africa, they have completed their metamorphosis into transparent “glass eels” and enter continental waters.²⁴ After a period of time, they begin to take on pigmentation and become known as elvers.²⁵ European eels continue their transformation, entering their growth

¹⁵ David M.P. Jacoby et al., *Synergistic Patterns of Threat and the Challenges Facing Global Anguillid Eel Conservation*, 4 GLOBAL ECOLOGY AND CONSERVATION 321, 323 (2015), available at http://ac.elsa-cdn.com/S2351989415000827/1-s2.0-S2351989415000827-main.pdf?_tid=b4cc7d8c-4ca8-11e7-a2aa-00000aacb35f&acdnat=1496967493_a653f9224d9f12380e89725f3a9ec15c.

¹⁶ *Id.* at 322.

¹⁷ *Id.*

¹⁸ *Id.* at 325, Tbl. 1.

¹⁹ Albania; Algeria; Austria; Belarus; Belgium; Bosnia and Herzegovina; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Egypt; Estonia; Faroe Islands; Finland; France; Georgia; Germany; Gibraltar; Greece; Guernsey; Iceland; Ireland; Isle of Man; Israel; Italy; Jersey; Latvia; Lebanon; Libya; Lithuania; Luxembourg; Macedonia, the former Yugoslav Republic of; Malta; Mauritania; Moldova; Monaco; Montenegro; Morocco; Netherlands; Norway; Poland; Portugal; Romania; Russian Federation; Serbia; Slovakia; Slovenia; Spain; Sweden; Switzerland; Syrian Arab Republic; Tunisia; Turkey; Ukraine; United Kingdom. Jacoby & Gollock, *supra* note 4, at “Countries Occurrence.”

²⁰ International Council for the Exploration of the Sea, *Report of the Workshop on Eel and CITES*, ICES CM 2015/ACOM:44, at 33 [hereinafter *Report of the Workshop on Eels and CITES*]. The report notes that scientists are not sure “[w]hether this panmixia is achieved by random mating of adults in the spawning area in the southwestern part of the Sargasso Sea or by random dispersal of the larvae on their route towards the continent.” *Id.*

²¹ International Council for the Exploration of the Sea, 2015 Report of the Joint EIFAAC/ICES/GFCM Working Group on Eel (WGEEL), ICES CM 2015/ACOM:18, at 8 (2016), available at http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2015/WGEEL/wgeel_2015_final.pdf [hereinafter *2015 WGEEL Report*]

²² *Sargassum* is a genus of large brown algae that floats in island-like masses. U.S. Nat’l Oceanic & Atmos. Admin., Ocean Explorer, <http://oceanexplorer.noaa.gov/facts/sargassum.html>. The Sargasso Sea is roughly 3,000 km². *Report of the First Range States Workshop on the European Eel*, *supra* note 13, at ¶ 21 (statement of Éric Feunteun).

²³ D. Jacoby & M. Gollock, *supra* note 4, at “Range Description.”

²⁴ *2015 WGEEL Report*, *supra* note 21, at 8.

²⁵ International Council for the Exploration of the Sea, 2014 Report of the Joint EIFAAC/ICES/GFCM Working Group on Eel (WGEEL), ICES CM 2014/ACOM:18, at 196 (2014), available at <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKewiJireJv>

stage, during which they are known as yellow eels.²⁶ During this time, they eat a wide range of insects, worms, molluscs, crustaceans, and fish.²⁷ This stage shows great variation; the transformation into a yellow eel may take place in marine, brackish (transitional), or freshwaters, and the stage may last from 2 to 25 years but can exceed 50 years²⁸ depending on temperature (latitude and longitude), ecosystem characteristics, and density-dependent processes.²⁹ Sexual differentiation occurs during this life history stage, but the mechanism is not fully understood.³⁰ Sexual differentiation likely depends on a number of factors, particularly density; males predominate in areas of high eel density and females predominate as eel density decreases.³¹ Rapidly growing individuals typically become males, whereas slow-growing eels tend to develop as females.³² High temperatures and saline conditions may also favor development.³³

As a result of these factors, eels metamorphose into silver eels and reach sexual maturity more quickly in the southern part of their range.³⁴ Silver eels then migrate to the Sargasso Sea where they spawn and die after spawning, an act not yet witnessed in the wild.³⁵

B. Declines

Determining either positive or negative changes in the global stock of the European eel “is difficult due to limited data and the poor understanding of the relationship between recruitment, freshwater populations, and escapement.”³⁶ Nonetheless, scientists agree that the species as a whole continues to decline.³⁷

Using data sets from certain countries where data has been gathered over a longer period of time, scientists report dramatic declines—approximately 90%—in the recruitment of glass eels since the early 1980s.³⁸ Recruitment hit a low point in 2011 with a recruitment rate of less than 1% for the North Sea and less than 5% elsewhere in the species’ range relative to recruitment between 1960 and 1979.³⁹

[bnUAhUM5WMKHfu_AoYQFggmMAA&url=http%3A%2F%2Fwww.fao.org%2F3%2Fa-ax809e.pdf&usg=AFQjCNGU-lqKgz4OvItCmG3iifHUTEZqVg](http://www.fao.org/2F3%2Fa-ax809e.pdf&usg=AFQjCNGU-lqKgz4OvItCmG3iifHUTEZqVg) [hereinafter *2014 WGEEL Report*].

²⁶ *Id.*

²⁷ *Id.* at 196.

²⁸ *2015 WGEEL Report*, *supra* note 21, at 8.

²⁹ *Id.* See also OSPAR Commission, Background Document for European Eel: *Anguilla anguilla* 5 (2010), available at https://qsr2010.ospar.org/media/assessments/Species/P00479_european_eel.pdf.

³⁰ *2014 WGEEL Report*, *supra* note 25, at 196.

³¹ Daniele Bevacqua et al., *A Global Viability Assessment of the European Eel*, 21 *GLOBAL CHANGE BIOLOGY* 3323, 3330 (2015), available at <http://onlinelibrary.wiley.com/doi/10.1111/gcb.12972/abstract>; Andrew J. H. Davey & Donald J. Jellyman, *Sex Determination in Freshwater Eels and Management Options for Manipulation of Sex*, 15 *REV. FISH. BIOL. & FISHERIES* 37 (2005) (“High proportions of female silver eels migrating from some upstream areas, lakes and large rivers may be due to low population density or poor conditions for growth in these habitats.”).

³² Davey & Jellyman, *supra* note 31, at 37.

³³ *Id.*

³⁴ *2015 WGEEL Report*, *supra* note 21, at 8.

³⁵ *2014 WGEEL Report*, *supra* note 25, at 9.

³⁶ Jacoby & Gollock, *supra* note 4, at “Population.”

³⁷ *Id.* at “Current Population Trend.”

³⁸ *Id.* at “Population.”

³⁹ *Id.* See also *2015 WGEEL Report*, *supra* note 21, at 9.

Yellow and silver eels have also experienced declines of greater than 50% over three generations (45 years).⁴⁰ These declines are perhaps less pronounced than expected “partially due to density dependent mortality”; however, more precipitous declines may be masked by the broad age range of yellow eels that could create “a time lag in knock-on population effects”⁴¹ and a lack of data.⁴²

C. Threats

The complex life history of the European eel challenges our understanding of how different threats impact or potentially impact the species,⁴³ and the contribution of each threat to the eel’s decline is not fully understood.⁴⁴ Nonetheless, this paper summarizes these threats to put the global conservation challenge in perspective and to underscore the need for global, multilateral solutions.⁴⁵ For example, scientists believe that the population decline of the European eel is caused by a variety of threats, including overexploitation, pollution, non-native parasites and other diseases, migratory barriers and other habitat loss, mortality during passage through water turbines or pumps, and/or oceanic-factors affecting migrations.⁴⁶ Significantly, these different threats affect the European eel throughout its range.⁴⁷

1. Overutilization

Overutilization of European eels—from the glass eel stage to the silver eel stage—for food and bait is potentially a significant threat to the species.⁴⁸ In fact, all 13 eel species assessed by the IUCN were considered potentially threatened by fishing, harvesting, and other uses.⁴⁹ With the decline of endangered Japanese eel (*A. japonica*),⁵⁰ the European eel has been the preferred eel for Asian food markets.⁵¹ Despite the EU’s import/export ban, a black market for European eel persists; estimates place the black-market price at between \$1,200 and \$1,500 per kilo (\$545 to

⁴⁰ Jacoby & Gollock, *supra* note 4, at “Population.”

⁴¹ *Id.*

⁴² Personal Communication with Dr. Matthew Gollock, Marine and Freshwater Programme Manager, Zoological Society of London (Sept. 15, 2017).

⁴³ Matthew Gollock, *Briefing Paper for the Workshop of European Eel Range States*, at 2 (2015), available at http://www.sargassoseacommission.org/storage/documents/SSC_briefing_note_-_FINAL_1.pdf. *See also* 2014 WGEEL Report, *supra* note 25, at 9 (stating that “the reasons for this decline are uncertain”); Jacoby et al., *supra* note 15, at 326 (stating that “our ability to determine the individual effects of these threats on population trends is complicated by the multiple life-stages across a range of environments” and “how these stressors combine to contribute to declines in abundance of particular life-stages is still poorly understood”).

⁴⁴ Jacoby & Gollock, *supra* note 4, at “Major Threat(s)” (stating that “the significance of any single threat, or the synergy it may have with other threats is still poorly understood”).

⁴⁵ This paper does not attempt to describe the various threats in detail; this has been done elsewhere. *See, e.g., id.*, at “Major Threat(s);” Gollock, *supra* note 43, at 2–10.

⁴⁶ Gollock, *supra* note 43, at 2–10; 2014 WGEEL Report, *supra* note 25, at 9–10.

⁴⁷ 2014 WGEEL Report, *supra* note 25, at 9.

⁴⁸ Gollock, *supra* note 43, at 3 (stating that “[t]he glass eel fishery is also arguably the activity that removes the greatest number of eels from the aquatic system.”).

⁴⁹ Jacoby et al., *supra* note 15, at 326.

⁵⁰ D. Jacoby & M. Gollock, *Anguilla japonica*, The IUCN Red List of Threatened Species (2014), available at <http://www.iucnredlist.org/details/166184/0>.

⁵¹ Jacoby & Gollock, *supra* note 4, at “Use and Trade.”

\$680 per pound) in Asia.⁵² Since the EU import/export ban, greater pressure has been placed on the American eel, which has fetched up to \$2,600 per pound;⁵³ in 2012, the Maine catch of glass eels was worth \$38 million.⁵⁴ Also since the EU import/export ban, exports of the shortfin eel (*A. bicolor*) in the glass eel stage have sharply increased from the Philippines.⁵⁵ In addition, in parts of the European eel's North African range (specifically Algeria, Morocco, and Tunisia) as well as generally,⁵⁶ exports have sharply increased, causing the CITES Animals Committee to recommend in July 2017 further investigation pursuant to its Review of Significant Trade.⁵⁷

Regarding the European eel, EU Member States still catch 15 to 17 tonnes of glass eels annually for domestic markets, where they are placed in aquaculture farms to grow until they are of marketable size.⁵⁸ Some stakeholders suspect that the total catch is more than twice that.⁵⁹ In fact, France has allocated itself a quota of 57.5 tonnes, which is roughly twice the total allowed for EU consumption and restocking.⁶⁰

2. Habitat Loss/Barriers to Migration

Barriers to migration, such as dams, constitute a significant threat to the European eel.⁶¹ Dams and the construction of new dams are of great concern; in fact, Turkey—a Range State of the European eel—has proposed building 575 new hydroelectric dams.⁶² Such barriers constrain both upstream and downstream eel migration. As eels move upstream, dams pose an obvious obstruction to potential growth habitat. A study of 335 dams (only one with a functioning fish ladder) in Puerto Rico found American eels upstream of 50% of dams less than 2.95 feet (0.9 meters) high but only 5% of those dams taller than 9.84 feet (4 meters).⁶³

⁵² Emma Bryce, *Illegal Eel: Black Market Continues to Taint Europe's Eel Fishery*, THE GUARDIAN (Feb. 9, 2016), available at <https://www.theguardian.com/environment/world-on-a-plate/2016/feb/09/illegal-eel-black-market-continues-to-taint-europes-eel-fishery>.

⁵³ Annie Sneed, *American Eel Is in Endanger of Extinction*, SCIENTIFIC AMERICAN (Aug. 5, 2014), at <https://www.scientificamerican.com/article/american-eel-is-in-danger-of-extinction/>.

⁵⁴ *Id.*

⁵⁵ Jacoby et al., *supra* note 15, at 326; Vicki Crook, SLIPPING AWAY: INTERNATIONAL ANGUILLA EEL TRADE AND THE ROLE OF THE PHILIPPINES 12–17 (2014), available at http://www.trafficj.org/publication/14_Slipping_Away.pdf.

⁵⁶ UN Environment World Conservation Monitoring Centre, Selection of Species for Inclusion in the Review of Significant Trade following CoP17, AC29 Doc. 13.3 Annex 2, at 31 (Rev.1) (2017).

⁵⁷ CITES Animals Committee, Review of Significant Trade [Resolution Conf. 12.8 (Rev. COP17)], AC29 Com. 5, at 3 (2017); CITES Animals Committee, Executive Summary, AC29 Sum. 3, at 3 (2017) (adopting the recommendations in AC29 Com. 5).

⁵⁸ Bryce, *supra* note 52.

⁵⁹ As many as 20 tons of European eel are thought to be exported illegally to Asia. Emma Bryce, *Illegal Eel: Who Is Pilfering Europe's Catch?*, THE GUARDIAN (Mar. 31, 2016) at <https://www.theguardian.com/environment/world-on-a-plate/2016/mar/31/illegal-eel-who-is-pilfering-europes-catch>.

⁶⁰ *Id.*

⁶¹ Gollock, *supra* note 43, at 6.

⁶² 2015 WGEEL Report, *supra* note 21, at 66.

⁶³ Patrick B. Cooney & Thomas J. Kwak, *Spatial Extent and Dynamics of Dam Impacts on Tropical Island Freshwater Fish Assemblages*, 176 BIOSCIENCE 176 (Mar. 2013).

3. Disease and Parasites

The introduction of the Japanese eel into Europe in the 1980s for aquaculture also led to the introduction of the parasitic nematode *Anguillicola crassus*. *A. crassus* may impact the ability of the European eel to reach their spawning grounds due to its adverse impacts on the fitness traits associated with the silvering stage of maturation.⁶⁴ However, the impacts on eel migration and reproductive success could be either negative or positive.⁶⁵ Eels infected with *A. crassus* demonstrate impaired swimming performance due to damaged swim-bladders.⁶⁶ Silver eels have “much higher infection levels than yellow eels,” and infected migrating silver eels may not be able to reach the spawning grounds.⁶⁷ Further, infected eels may not be able to cope with high pressure during their reproductive migration.⁶⁸ Conversely, infected eels may accelerate their metamorphosis and migrate and reproduce “before the energetic cost imposed by the parasite becomes too high,” which could lead to overall positive impact on eels.⁶⁹

4. Pollution and Climate Change

European eels require stores of fat to make the long migration from their continental freshwater habitats to the Sargasso Sea.⁷⁰ Consequently they may be more susceptible to bioaccumulation of pollutants.⁷¹ Researchers have found that accumulation of lipophilic chemical pollutants, such as polychlorinated biphenyls (PCBs), by maturing eels could have potentially toxic effects on the survival period of the fertilized eggs.⁷² In addition, because these pollutants are stored by the fish and released when fat stores are broken down during migration, they could impair the ability of silver eels to complete their spawning migrations.⁷³

Climate change may also affect the abundance of European eels by changing oceanic conditions on which the eels depend to drift to near-shore habitat.⁷⁴ Such changes could impact the breeding grounds of the Sargasso Sea and alter the recruitment of glass eels to near-shore and freshwater environments.⁷⁵ Climate change is also increasingly affecting and reducing freshwater

⁶⁴ G. Fazio et al., *Swim Bladder Nematodes (Anguillicoloides crassus) Disturb Silvering in European Eels (Anguilla anguilla)*, 98 J. PARASITOLOGY 695 (2012), available at <http://www.bioone.org/doi/abs/10.1645/GE-2700.1>.

⁶⁵ *Id.*

⁶⁶ A.P. Palstra et al., *Swimming Performance of Silver Eels Is Severely Impaired by the Swim-bladder Parasite Anguillicola crassus*, 352 J. EXPERIMENTAL MARINE BIOLOGY & ECOLOGY 244 (2007), available at <http://www.sciencedirect.com/science/article/pii/S0022098107003838>.

⁶⁷ *Id.*

⁶⁸ N.B. Sjöberg et al., *Effects of the Swimbladder Parasite Anguillicola crassus on the Migration of European Silver Eels Anguilla anguilla in the Baltic Sea*, 74 J. FISH BIOLOGY 2158 (2009).

⁶⁹ Fazio et al., *supra* note 64, at 703.

⁷⁰ Vincent J. T. van Ginneken & Guido E. E. J. M. van den Thillart, *Physiology: Eel Fat Stores Are Enough to Reach the Sargasso*, 403 NATURE 156 (Jan. 13 2000).

⁷¹ Gollock, *supra* note 43, at 9.

⁷² A.P. Palstra et al., *Are Dioxin-like Contaminants Responsible for the Eel (Anguilla anguilla) Drama?*, 93 NATURWISSENSCHAFTEN 145 (2006), available at <https://www.ncbi.nlm.nih.gov/pubmed/16508793>.

⁷³ T. Robinet & E. Feunteun, *Sublethal Effects of Exposure to Chemical Compounds: A Cause for the Decline in Atlantic Eels?* 11 ECOTOXICOLOGY 265 (2002), available at <https://link.springer.com/article/10.1023/A:1016352305382>.

⁷⁴ Jacoby & Gollock, *supra* note 4, at “Major Threat(s).”

⁷⁵ *Id.*

habitats due to drought.⁷⁶ Scientists are quick to caution that climatic changes and associated changes in oceanic conditions also occur naturally and have influenced eel populations for millennia.⁷⁷ However, potential climate impacts when combined with other impacts is new. Thus, the exact influence of climate change on the European eel remains speculative.

III. The Need for International Cooperation

A diversity of habitats, threats, management strategies, data collection efforts, and other factors all suggest that multilateral efforts to conserve the European eel are needed. A variety of regional and international agreements have adopted or could adopt measures to conserve and manage European eels. However, for the reasons discussed below, they are inadequate to meet the challenges facing the European eel. Consequently, the European eel would benefit from an international agreement focused solely on the European eel.

Some species, due to their life history characteristics or the numerous threats they face, fall through the cracks of international law.⁷⁸ As a result of the life history characteristics of highly migratory species such as tunas, cetaceans, and albatrosses, these species swim or fly in and out of the inland waters, territorial seas, and exclusive economic zones of a number of coastal States, as well as the high seas. Consequently, national legislation or treaties with a limited geographic scope will be inadequate to provide management and conservation measures throughout such a species' range, and, consequently, they are likely to be ineffective.

Species facing numerous threats face different problems. Many treaties lack the comprehensive scope necessary to address multiple threats. CITES,⁷⁹ for example, may help regulate and monitor international trade in a species but it does not have the authority to protect species from domestic trade or habitat destruction.

The European eel exemplifies both of these challenges. With 57 Range States and territories,⁸⁰ individual efforts to manage and conserve the European eel are unlikely to be effective. Moreover, scientists are not sure if all parts of the breeding population contribute to reproduction;⁸¹ consequently, “since any part of the continental stock might be essential to the overall status of the stock, all parts must be protected at least to the minimum acceptable level . . . whatever that level is.”⁸² Even regional law, such as the EU Eel Regulation, is inadequate because the European eel's range extends outside the territories of EU Member States to include North African countries as well as non-EU European countries and territories, such as Norway, Iceland, and the Faroe Islands.⁸³ Moreover, the European eel's spawning habitat occurs in the Sargasso

⁷⁶ Personal Communication with Gollock, *supra* note 42.

⁷⁷ *Id.*

⁷⁸ See generally, Chris Wold, *World Heritage Species: A New Legal Approach to Conservation*, 20 GEORGETOWN INT'L ENVTL. L. REV. 337 (2008).

⁷⁹ CITES, *supra* note 5.

⁸⁰ For a list of the States and territories, see note 19.

⁸¹ *Report of the Workshop on Eels and CITES*, *supra* note 13, at 33.

⁸² *Id.*

⁸³ See *supra* note 19.

Sea,⁸⁴ part of which lies beyond the jurisdiction of any State. In fact, the status of the European eel has not improved and mortality of the eel has not declined appreciably since EU Member States began developing EMPs pursuant to the EU regulation.⁸⁵ The EU itself recognizes that eel management requires more attention due to the range of threats to the eel from fishing as well as dams and other barriers to migration, habitat loss or degradation, pollution, diseases, and parasites.⁸⁶ However, EU Member States cannot address these threats alone. Threats such as pollution clearly require a multilateral response.

At the international level, no organization or treaty has competence to address the suite of threats faced by the European eel throughout its range. Several regional fisheries management organizations (RFMOs) might have some authority to manage the European eel but their geographical scope, membership, or management authority is inadequate to meaningfully manage the eel. For example, the Northwest Atlantic Fisheries Organization (NAFO)⁸⁷ applies its Conservation Measures only in areas beyond national jurisdiction.⁸⁸ The General Fisheries Commission for the Mediterranean (GFCM)⁸⁹ has competence only with respect to fisheries of the Mediterranean and Black Seas.⁹⁰ The International Commission for the Conservation of Atlantic Tuna (ICCAT)⁹¹ covers the entire Atlantic Ocean but it does not have the authority to address direct harvest of eels or protect freshwater habitats; it may manage only tuna and tuna-like species and those fish caught while fishing for tuna.⁹² The area of competence of the Western Central

⁸⁴ See, e.g., ICES, *Report of the Working Group on Eels*, ICES CM 2016/ACOM:19, at 6 (2016) [hereinafter *2016 WGEEL Report*].

⁸⁵ Dekker, *supra* note 8, at 2443.

⁸⁶ European Commission, *Report from the Commission to the Council and the European Parliament on the Outcome of the Implementation of the Eel Management Plans, including an Evaluation of the Measures concerning Restocking and of the Evolution of Market Prices for Eels Less Than 12 cm in Length*, COM(2014) 640 final, 8 (Oct. 21, 2014), available at http://eur-lex.europa.eu/resource.html?uri=cellar:d77e3ffd-5918-11e4-a0cb-01aa75ed71a1.0006.03/DOC_1&format=PDF.

⁸⁷ NAFO is established by the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, Oct. 24, 1978, 1135 U.N.T.S. 369, available at: <http://www.nafo.int/about/frames/about.html> (entered into force Jan. 1, 1979) [hereinafter NAFO Convention].

⁸⁸ The NAFO Convention defines both a “Convention Area,” which includes areas under national jurisdiction, and a “Regulatory Area,” which does not. NAFO Convention, art. I(1)-(2). NAFO applies its conservation measures only to the Regulatory Area: “The [2017 Conservation and Enforcement Measures] shall, unless otherwise provided, apply to all fishing vessels used or intended for use for the purposes of commercial fishing activities conducted on fisheries resources in the Regulatory Area.” NAFO, Conservation and Enforcement Measures, art. 2(1), available at <https://www.nafo.int/Portals/0/PDFs/fc/2017/CEM-2017-web.pdf?ver=2016-12-28-151739-477>.

⁸⁹ The General Fisheries Commission for the Mediterranean (GFCM) was established under the provisions of Article XIV of the FAO Constitution. See Food & Agric. Org. of the U.N., General Fisheries Commission for the Mediterranean (GFCM), <http://www.fao.org/gfcm/en/>. Agreement for the Establishment of the General Fisheries Commission for the Mediterranean, preamble para. 16 (entered into force Feb. 20 1952), available at <http://www.fao.org/gfcm/background/legal-framework/en/>.

⁹⁰ Agreement for the Establishment of the General Fisheries Commission for the Mediterranean, *supra* note 89, at arts. 3, 4.

⁹¹ ICCAT was established by the International Convention for the Conservation of Atlantic Tunas, May 14, 1966, 673 U.N.T.S. 63, 20 U.S.T. 2887. available at: <http://www.iccat.es/> (entered into force Mar. 21, 1969) [hereinafter ICCAT].

⁹² ICCAT provides:

In order to carry out the objectives of this Convention the Commission shall be responsible for the study of the populations of tuna and tuna-like fishes (the Scombriformes with the exception of the families Trichiuridae and Gempylidae and the genus *Scomber*) and such other species of fishes

Atlantic Fishery Commission (WECAFC) includes the Sargasso Sea,⁹³ but it has no management authority⁹⁴ and its jurisdictional scope, like the other RFMOs, does not extend to the freshwater rivers where eels spend a significant part of their life history and where most eels are captured for trade.⁹⁵

Other treaties have taken steps to protect European eels, but they do not cover the spectrum of threats facing European eels. CITES, for example, has included the European eel in Appendix II.⁹⁶ Consequently, Parties must issue export permits that verify that the trade will not be detrimental to the survival of the species and that the eels were legally acquired.⁹⁷ CITES does not, however, have the authority to issue rules to protect the eel's spawning habitat in the Sargasso Sea, require fish ladders to allow eels to migrate past dams, or otherwise adopt habitat conservation measures. The present Appendix II listing under CMS⁹⁸ does not require Parties to undertake any conservation activities,⁹⁹ even though the scope of CMS allows it to address habitat, trade, and other threats.¹⁰⁰ Appendix II species receive protection under CMS only after development of a separate "Agreement."¹⁰¹

Other factors show the weakness of current legal regimes to conserve the European eel. For example, after the EU closed its borders to exports of European eels, exports of the American eel increased to meet demand in Asia.¹⁰² Exports of other eel species also increased in response to declining Japanese eel populations and the EU's prohibition against exports of European eels.¹⁰³

exploited in tuna fishing in the Convention area as are not under investigation by another international fishery organization.

ICCAT, *supra* note 91, at art. IV(1).

⁹³ The WECAFC area of competence includes all marine waters of the Western Central Atlantic bounded by a line drawn as follows:

From a point on the coast of South America at 5° 00' N latitude in a northerly direction along this coast past the Atlantic entry to the Panama Canal; thence continue along the coasts of Central and North America to a point on this coast at 35°00' N latitude; thence due east along this parallel to 42°00' W longitude; thence due north along this meridian to 36°00' N latitude; thence due east along this parallel to 40°00' W longitude; thence due south along this meridian to 5°00' N latitude; thence due west along this parallel to the original point at 5°00' N latitude on the coast of South America.

FAO Resolution 4/61, Establishment of the Western and Central Atlantic Fishery Commission, ¶ 1, available at <http://www.fao.org/docrep/meeting/007/E5618E/E5618E07.htm>.

⁹⁴ *Id.* at ¶ 2.

⁹⁵ *Id.* ¶ 1.

⁹⁶ CITES, Appendices, Appendices I, II and III, *supra* note 3.

⁹⁷ CITES, *supra* note 2, at art. IV(2). Similar permit rules relating to "introduction from the sea" may apply if the species is taken in the marine environment not under the jurisdiction of any State. *Id.* at art. IV(6); CITES, Resolution 14.6 (Rev. COP16), *Introduction from the Sea*, available at <https://cites.org/sites/default/files/document/E-Res-14-06-R16.pdf>.

⁹⁸ CMS, Appendix I and II of CMS, *supra* note 7.

⁹⁹ See CMS, *supra* note 6, at art. IV.

¹⁰⁰ *Id.* at art. V.

¹⁰¹ *Id.* at arts. IV, V.

¹⁰² Sneed, *supra* note 53.

¹⁰³ Jacoby et al., *supra* note 15, at 326 (noting increases in exports of the Indian shortfin eel (*A. bicolor*) from the Philippines).

In addition, management of European eels has typically taken place at the local level, although with the enactment of the European Eel Regulation, some level of national oversight takes place.¹⁰⁴ Nonetheless, management across the EU and the larger eel range remains uncoordinated,¹⁰⁵ and the eel population continues to be of great concern.¹⁰⁶ Local management is unlikely to take into account stock-wide conservation of eels and more likely to respond to local constituent desires.¹⁰⁷ Perhaps consistent with local management, over time countries in the Mediterranean Sea region have developed different methods for gathering catch composition and effort data,¹⁰⁸ making efforts by scientists to assess the status of the European eel more difficult.

IV. CMS Instruments

As described above, the conservation of the European eel would benefit from international management. With an international agreement, reporting of scientific information could be standardized or data collection harmonized; scientific needs and priorities could be determined on a region-wide basis; scientific analysis of relevant information could be channeled towards policymaking across the eel's range; and local management efforts could be informed by stock-wide assessments and conservation needs with local efforts also informing those stock-wide assessments. Moreover, the possibility for stakeholder involvement in eel management, which to date “has varied from country to country,”¹⁰⁹ could be assured.

At the First Range States Workshop on the European Eel, participants generally agreed that an international instrument would benefit the conservation status of the European eel and that CMS could play a role in developing that instrument.¹¹⁰ CMS, with the possibility for legally binding and non-legally binding instruments, provides an opportunity to coordinate those efforts. Using CMS has several advantages over other fora:

1. CMS already has a Secretariat that can organize negotiations;
2. CMS has included the European eel in Appendix II, thereby recognizing the need for an international legal instrument to improve the conservation status of the species;
3. CMS legal instruments have the capacity to address the full range of threats facing the European eel;

¹⁰⁴ Dekker, *supra* note at 8, 2445.

¹⁰⁵ Steps are being taken to coordinate efforts, for example, by the GFCM in the WGEEL, but this is a recent development. Personal Communication with Gollock, *supra* note 42.

¹⁰⁶ *Id.* (stating that “[t]he historical decline of the stock indicates that uncoordinated actions by local managers alone could not sustain the stock.”).

¹⁰⁷ *Id.* at 2445–46.

¹⁰⁸ 2015 WGEEL Report, *supra* note 21, at 87; Dekker, *supra* note 8, at 2445.

¹⁰⁹ Dekker, *supra* note 8, at 2447.

¹¹⁰ Report of the First Range States Workshop on the European Eel, *supra* note 13, at ¶ 70; First Range States Workshop on the European Eel, UNEP/CMS/Eels WS1/Outcome (2016), available at <http://www.cms.int/sites/default/files/document/Report%20with%20outcome%20and%20participants%20list.pdf>. Some participants did question the need for an international legal instrument. Report of the First Range States Workshop on the European Eel, *supra* note 13, at ¶ 36 (statement of Evangelia Georgitsi, Directorate General of Maritime Affairs and Fisheries of the European Commission (DG-Mare)).

4. CMS legal instruments have the capacity to address threats and management concerns throughout the eel's range, including in both freshwater and marine environments, as well as on the high seas; and
5. CMS instruments can involve CMS Parties and non-Parties.

CMS offers different options for a legal instrument to protect and conserve the European eel. Section A describes the principal options while Section B assesses their similarities and differences.

A. Legally Binding and Non-legally Binding CMS Instruments

CMS includes two provisions for developing new legal instruments for species included in Appendix II. Article IV(3) refers to “AGREEMENTS” while Article IV(4) refers to agreements. Collectively, AGREEMENTS and agreements are referred to as “Agreements” with an upper case “A.”¹¹¹

1. Article IV(3) requires Parties that are Range States of migratory species listed in Appendix II to endeavour to conclude “AGREEMENTS” where these should benefit the species. They should give priority to those species with an unfavourable conservation status.¹¹²
2. Article IV(4) encourages Parties to take action with a view to concluding “agreements” 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 jurisdiction boundaries.

AGREEMENTS and agreements differ in important ways. Unlike AGREEMENTS, which expressly apply only to species included in Appendix II, agreements may include species not included in CMS Appendix II. In addition, agreements may include species that are not migratory within the meaning of CMS. CMS defines “migratory species” to mean “the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members *cyclically and predictably* cross one or more national jurisdictional boundaries.”¹¹³ In contrast, species covered by an agreement need only *periodically* cross one or more national jurisdiction boundaries.¹¹⁴ In short, Article IV(4) covers a broader range of species than Article IV(3).

¹¹¹ CMS, *Criteria for Assessing Proposals for New Agreements*, UNEP/CMS/Resolution 11.12, at preamble (2014), available at <http://www.cms.int/en/document/criteria-assessing-proposals-new-agreements> (“Noting that colloquially, and in this Resolution, the term “Agreements” is used to refer in a generic sense to AGREEMENTS, agreements and Memoranda of Understanding as the context may require.”).

¹¹² Appendix II includes migratory species that (1) “have an unfavourable conservation status and which require international agreements for their conservation and management” and (2) those that “have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement.” CMS, *supra* note 6, at art. IV(1).

¹¹³ *Id.* at art. I(1)(a) (emphasis added).

¹¹⁴ *Id.* at art. IV(4) (emphasis added).

CMS itself does not specify whether Article IV(3) AGREEMENTS and Article IV(4) agreements should be legally binding.¹¹⁵ Early in the Convention’s history, however, the Parties adopted resolutions that distinguished AGREEMENTS from agreements. In 1988 in Resolution 2.6, for example, the Parties suggested that agreements could take the form of resolutions, administrative agreements, or memoranda of understanding.¹¹⁶ Because resolutions of the Parties are legally non-binding, the implication was that agreements under Article IV(4) could be, but were not required to be, non-binding. The unstated corollary was that Article IV(3) AGREEMENTS would be legally binding. Resolution 2.6 further supports this interpretation by suggesting a progression; an agreement under Article IV(4) could be a “first step” towards conclusion of an AGREEMENT under Article IV(3).¹¹⁷ A two-step process would not be necessary unless the steps included some distinction in their legal status.

Subsequently, CMS Parties, along with non-Parties in some cases, developed and brought into force seven legally binding Agreements.¹¹⁸ Four of these Agreements were developed under Article IV(3),¹¹⁹ while the other three were developed under Article IV(4).¹²⁰ Each participating State consented to be bound by these Agreements only after engaging its domestic processes for ratifying or acceding to the Agreement, and the Agreement entered into force only after the requisite number of States ratified or acceded to the Agreement.¹²¹

¹¹⁵ For a review of the negotiating history concerning Articles IV(3) and (4), see Chris Wold, *A History of “AGREEMENTS” under Article IV.3 and “agreements” under Article IV.4 in the Convention on Migratory Species*, UNEP/CMS/COP11/Inf.31 (2014), available at http://www.cms.int/sites/default/files/document/COP11_Inf_31_History_of_Agreements_Only.pdf.

¹¹⁶ CMS, Implementation of Articles IV and V of the Convention, Resolution 2.6, ¶ 3 (1988), available at <http://www.cms.int/en/document/implementation-article-iv-and-v-convention>.

¹¹⁷ *Id.* at ¶ 2. Later the Parties decided that agreements could be a first step toward an AGREEMENT “in some cases” but that in other cases “this may not be appropriate.” CMS, Implementation of Article IV, Paragraph 4, of the Convention Concerning AGREEMENTS, Resolution 3.5, ¶ 4 (1991), available at <http://www.cms.int/en/document/implementation-article-iv-convention-concerning-agreements>.

¹¹⁸ Agreement on the Conservation of Albatrosses and Petrels, June, 19 2001, 2258 UNTS 257 (entered into force Feb. 1, 2004) [hereinafter ACAP]; Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas, Mar. 17, 1992, 1772 UNTS 217 (entered into force Mar. 29, 1994) [hereinafter ASCOBANS], the Agreement on the Conservation of Cetaceans in the Black Sea and the Mediterranean Sea and Contiguous Atlantic Area, Nov. 24 1996, 2183 UNTS 303 (entered into force June 1, 2001) [hereinafter ACCOBAMS]; Agreement on the Conservation of Populations of European Bats, Dec. 4, 1991, 1863 UNTS 101 (entered into force Jan. 16, 1994) [hereinafter EUROBATS]; Agreement on Africa-Eurasian Migratory Waterbirds, June 16, 1995 (entered into force Nov. 1, 1999) [hereinafter AEWA]; Agreement on the Conservation of Gorillas and Their Habitats, Oct. 26 2007, 2545 UNTS 55 (entered into force June 1, 2008 [hereinafter Gorilla Agreement], and Agreement on the Conservation of Seals in the Wadden Sea, Oct. 16, 1990 (entered into force Oct. 1, 1991) [hereinafter Wadden Sea Seals]. Links to all of these Agreements can be found at CMS, Agreements, <http://www.cms.int/en/cms-instruments/agreements>.

¹¹⁹ See, e.g., AEWA, *supra* note 118, at art. I(3) (“This Agreement is an AGREEMENT within the meaning of Article IV, paragraph 3, of the Convention [on Migratory Species].”); ACAP, *supra* note 118, at art. I(5) (“This Agreement is an AGREEMENT within the meaning of Article IV (3) of the Convention[on Migratory Species].”). See also Gorilla Agreement, *supra* note 118, at art. I(4); EUROBATS, *supra* note 118, at art. II(1).

¹²⁰ ACCOBAMS, *supra* note 118, at art. I(4) (“This Agreement is an agreement within the meaning of Article IV, paragraph 4, of the Convention.”); ASCOBANS, *supra* note 118, at art. 8(1); Wadden Sea Seals, *supra* note 118, at art. I.

¹²¹ See, e.g., ACAP, *supra* note 118, at arts. XV, XVI (describing the provisions for signature, ratification, accession, and entry into force).

The Parties have also developed nineteen Memoranda of Understanding.¹²² Each of these agreements specifically states that they were developed under Article IV(4) and are legally non-binding.¹²³ Unlike legally binding Agreements, non-legally binding agreements do not need to go through a State's ratification process. Instead, upon the signature of a designated individual, such as the Minister of Environment, a State becomes a "Signatory" to the MOU and agrees to implement it.

B. Similarities and Differences

Legally binding and non-legally binding CMS Agreements (that is, both AGREEMENTS and agreements) share many similarities but they also differ in important ways (aside from their legal status). The most important similarity is that they all include substantive conservation actions for Parties/Signatories to undertake to protect the migratory species subject to the Agreement. In fact, the primary purpose of all Agreements is "to restore the migratory species concerned to a favourable conservation status or to maintain it in such a status."¹²⁴ Agreements frequently implement this goal through an Action Plan.¹²⁵ These conservation provisions and Action Plans usually apply throughout the range of the concerned species, including, where applicable, on the high seas. The Agreement on the Conservation of Albatrosses and Petrels (ACAP), for example, applies to listed albatrosses and petrels throughout their range, which is defined as "all the areas of land or water that any albatross or petrel inhabits, stays in temporarily, crosses, or over-flies at any time on its normal migration routes."¹²⁶

The application of an Agreement to the high seas, as with ACAP, is consistent with CMS, which provides that Agreements "should cover the whole of the range of the migratory species concerned and should be open to accession by all Range States of that species, whether or not they are Parties to this Convention."¹²⁷ CMS further defines "habitat" and "range" without reference to national jurisdiction¹²⁸ and defines "Range State" to include those State's whose vessels "take"¹²⁹

¹²² Links to all of these agreements can be found at CMS, Memoranda of Understanding, <http://www.cms.int/en/cms-instruments/mou>.

¹²³ See, e.g., Memorandum of Understanding for the Conservation of Cetaceans and Their Habitat in the Pacific Islands Region, ¶ 9, opened for signature Sept. 15, 2006 (entered into force Sept. 15, 2006) ("This Memorandum of Understanding is an agreement under Article IV, paragraph 4, of CMS and is not legally binding.")

¹²⁴ CMS, *supra* note 2, at art. V(1) (for AGREEMENTS); Resolution 2.6, *supra* note 116, at ¶ 2 (for agreements).

¹²⁵ See, e.g., ACAP, *supra* note 118, at Annex 2, 2 (establishing provisions for habitat conservation and restoration); Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia, June 23, 2001 (entered into force Sept. 1, 2001) [hereinafter IOSEA Marine Turtles MOU], at Conservation and Management Plan, available at <http://www.cms.int/en/legalinstrument/iosea-marine-turtles>.

¹²⁶ ACAP, *supra* note 118, at arts. I(1), I(2)(i). Similarly, the Pacific Islands Cetaceans MOU applies to a signatory's nationals and vessels, without geographic limit. Pacific Islands Cetaceans MOU, *supra* note 123, at ¶ 11. Agreements do not always cover the entire range of the species. AEWA, for example, does not cover the entire range of all waters it covers. AEWA defines "waterbirds" to mean "those species of birds that are ecologically dependent on wetlands for at least part of their annual cycle, have a *range which lies entirely or partly within the Agreement Area* and are listed in Annex 2 to this Agreement." AEWA, *supra* note 118, at art. I.2(c) (emphasis added).

¹²⁷ CMS, *supra* note 6, at art. V(2) (for AGREEMENTS); Resolution 2.6, *supra* note 116, at ¶ 3 (for agreements).

¹²⁸ CMS, *supra* note 6, at art. I(1)(f), (g).

¹²⁹ CMS defines "taking" to mean "taking, hunting, fishing capturing, harassing, deliberate killing, or attempting to engage in any such conduct." *Id.* at art. I(1)(i).

migratory species on the high seas.¹³⁰ The conservation plan for ACAP, for example, includes provisions to protect land-based breeding sites of albatrosses and petrels¹³¹ and the marine habitat of these species.¹³² Similarly, the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA Marine Turtles MOU) calls on Signatories to manage and regulate beaches where sea turtles nest¹³³ and take action to protect high seas turtle habitat.¹³⁴

Most, if not all, Agreements, regardless of whether they are legally binding or not, also include the following provisions:

- submission of reports by Parties/Signatories on implementation of the Agreement;¹³⁵
- review by the Parties/Signatories of implementation at meetings of participating States;¹³⁶
- establishment or designation of a Secretariat to organize meetings and undertake other administrative services;¹³⁷
- financial arrangements for the Agreement;¹³⁸
- a grant of authority to the Parties to a legally binding Agreement or Signatories to a non-legally binding agreement to interpret the Agreement by adopting resolutions and, where relevant, add new species to the list of covered species;¹³⁹ and
- establishment of a scientific or technical committee to provide relevant scientific or other information and advice to the Agreement's decisionmaking body,¹⁴⁰ although they may be designed differently depending on the needs of the Agreement.¹⁴¹

¹³⁰ CMS defines "Range State" as follows:

"Range State" in relation to a particular migratory species means any State (and where appropriate any other Party referred to under subparagraph (k) of this paragraph) that exercises jurisdiction over any part of the range of that migratory species, or a State, flag vessels of which are engaged outside national jurisdictional limits in taking that migratory species.

Id. at art. I(1)(h).

¹³¹ ACAP, *supra* note 118, at Annex 2, para. 2.2.1.

¹³² *Id.* at Annex 2, para. 2.3.

¹³³ IOSEA MOU, *supra* note 125, at Conservation and Management Plan, Objective 2.

¹³⁴ *Id.* at Conservation and Management Plan, Objectives 1.4, 5.3.

¹³⁵ *See, e.g.*, AEW, *supra* note 118, at art. IV(1)(c); ACCOBAMS, *supra* note 118, at art. VIII(b); IOSEA Marine Turtles MOU, *supra* note 125, at "Actions", ¶ 8; Memorandum of Understanding on the Conservation of Migratory Sharks, Feb. 12, 2010, at ¶ 15(b) (entered into force Mar. 2010) [hereinafter Sharks MOU].

¹³⁶ *See, e.g.*, AEW, *supra* note 118, at art. VI(8)(b); ACCOBAMS, *supra* note 118, at art. III(8); IOSEA Marine Turtles MOU, *supra* note 125, at "Basic Principles", ¶ 3; Sharks MOU, *supra* note 135, at ¶ 20.

¹³⁷ *See, e.g.*, AEW, *supra* note , at art. VI(7)(b); ACCOBAMS, *supra* note 118, at art. IV; IOSEA MOU, *supra* note , at "Actions", ¶ 5; Sharks MOU, *supra* note , at ¶ 27.

¹³⁸ *See, e.g.*, AEW, *supra* note 118, at art. VI(8)(c); ACCOBAMS, *supra* note 118, at art. III(8)(e); IOSEA Marine Turtles MOU, *supra* note 125, at "Actions", ¶ 9; Sharks MOU, *supra* note 135, at ¶ 16.

¹³⁹ *See, e.g.*, ACAP, *supra* note 118, at art. VIII(13)(e); AEW, *supra* note 118, at art. VI(9); ACCOBAMS, *supra* note 118, at art. VII(9); IOSEA Marine Turtles MOU, *supra* note 125, at "Basic Principles", ¶ 3; Sharks MOU, *supra* note 135, at ¶¶ 20, 33.

¹⁴⁰ *See, e.g.*, ACAP, *supra* note 118, at art. IX; ACCOBAMS, *supra* note 118, at arts. III(8)(c), VII; IOSEA Marine Turtles MOU, *supra* note 125, at "Actions", ¶ 6; Sharks MOU, *supra* note 135, at ¶ 24.

¹⁴¹ *See, e.g.*, ACCOBAMS, *supra* note 118, at art. VIII (establishing a Scientific Committee); AEW *supra* note , at art. VII (establishing a Technical Committee); Gorilla Agreement, *supra* note 118, at art. VI (establishing a

Despite these numerous similarities, key differences exist. Legally binding Agreements, whether established under Article IV(3) or IV(4), take longer to enter into force because of the need to engage a State's domestic legal processes for ratification or accession. ACAP took more than 2.5 years to enter into force,¹⁴² the African-Eurasian Migratory Waterbird Agreement (AEWA) more than three years,¹⁴³ and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS) roughly 4.5 years.¹⁴⁴

In contrast, MOUs typically commence more quickly. Even geographically large, marine MOUs commenced on the day that they opened for signature. The Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOU), for example, obtained the 10 signatories needed to operationalize the MOU on the same day the MOU opened for signature.¹⁴⁵ The Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Island Region (Pacific Cetaceans MOU) also commenced on the same day it was opened for signature.¹⁴⁶

The legally binding Agreements also tend to have their own Secretariats, although this is not universal. ACCOBAMS, Wadden Sea Seals, and ACAP each have a fully independent Secretariat with offices separate from the CMS Secretariat in Bonn.¹⁴⁷ AEWA and the Agreement on the Conservation of Populations of European Bats (EUROBATS) have largely independent Secretariats, but they are housed with the CMS Secretariat and share some administrative and other tasks. The Secretariat of the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS) has been subsumed within the CMS Secretariat, and the CMS Secretariat is also the Secretariat for the Agreement on the Conservation of Gorillas and Their Habitats (Gorilla Agreement).¹⁴⁸ AEWA, ASCOBANS, EUROBATS, and the Gorilla Agreement are integrated within United Nations Environment (formerly known as the United Nations Environment Programme).¹⁴⁹

Technical Committee); ACAP, *supra* note 118, at art. IX; ASCOBANS, *supra* note 118, at ¶ 6. However, some MOUs, particularly the earlier ones, receive scientific advice from the CMS Scientific Council. Memorandum of Understanding concerning Conservation Measures for the Eastern Atlantic Populations of the Mediterranean Monk Seal (*Monachus monachus*), Oct. 18, 2007, ¶ 4 (nominating the Atlantic Seal Working Group) (entered into force Oct. 18, 2007) [hereinafter Mediterranean Monk Seal MOU]; Memorandum of Understanding concerning Conservation, Nov. 22, 2005, ¶ 4 (nominating the IUCN African Elephant Specialist Group) (entered into force Nov. 22, 2005) [hereinafter West African Elephants MOU].

¹⁴² ACAP was opened for signature on June 19, 2001 and entered into force in February 1, 2004. CMS, ACAP, at <http://www.cms.int/en/legalinstrument/acap>.

¹⁴³ AEWA was opened for signature on August 15, 1996 and entered into force on November 1, 1999. CMS, AEWA, at <http://www.cms.int/en/legalinstrument/aewa>.

¹⁴⁴ ACCOBAMS was signed on November 24, 1996 and entered in force on June 1, 2001. CMS, ACCOBAMS, at <http://www.cms.int/en/legalinstrument/accobams>.

¹⁴⁵ The Sharks MOU entered into force 30 days after receiving the requisite 10 signatures. *See supra* note 135.

¹⁴⁶ The Pacific Cetaceans MOU required four signatories to commence; seven signed on the first day. Pacific Cetaceans MOU, *supra* note 123, at ¶ 12.

¹⁴⁷ Robert Lee et al., *Review of the Current Organization and Activities of CMS and the CMS Family First Step of the Inter-Sessional Future Shape Process*, UNEP/CMS/Inf.10.14.8 ¶ 16 (2010), available at <http://www.cms.int/en/document/phase-i-report>.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

Many of the MOUs are administered by the CMS Secretariat. In some cases, however, the CMS Secretariat receives support for technical coordination services from a non-governmental organization.¹⁵⁰ In two cases (Ruddy-headed Goose and Huemel MOUs), the two Signatories (Argentina and Chile) coordinate among themselves; they function independently of the CMS Secretariat.¹⁵¹ The Signatories to three other MOUs (Monk Seal, Grassland Birds, and High Andean Flamingos) perform most of the coordination work and operate “relatively independently” of the Secretariat.¹⁵² Each of these three MOUs has just four or five Signatories, making coordination relatively simple.

Similarly, CMS Agreements differ in the number of working languages that they use. ACCOBAMS works in English and French;¹⁵³ ASCOBANS works primarily in English but also provides translations of some documents in other languages;¹⁵⁴ AEWA works in two languages (French and English);¹⁵⁵ ACAP in three (French, English, and Spanish); EUROBATS in three (French, English, and German);¹⁵⁶ and the Gorilla Agreement in two (French and English). Similarly, MOUs also differ in the number of languages used. For example, the Sharks MOU uses three (English, Spanish, and French),¹⁵⁷ while the Pacific Cetaceans MOU uses two (English and French).¹⁵⁸ The IOSEA Marine Turtles and Dugong MOUs use only English.¹⁵⁹

Importantly, the number of working languages chosen and the choice of administrative structures for locating and hosting a Secretariat are not dependent on whether an Agreement is binding. These are negotiable items. That said, the costs of operating an Agreement rise substantially with the number of working languages due to the need for interpretation and translation.

¹⁵⁰ The Saiga Antelope, Siberian Crane, Aquatic Warbler, and Pacific Cetaceans MOUs receive technical coordination services from NGOs. CMS, *An Assessment of MOUs and Their Viability*, UNEP/CMS/COP11/Doc.22.3, at 21 (2014).

¹⁵¹ *An Assessment of MOUs and Their Viability*, *supra* note 150, at 22.

¹⁵² *Id.* at 23.

¹⁵³ ACCOBAMS, *supra* note 118, at art. XVII.

¹⁵⁴ ASCOBANS, Eighth Meeting of the Parties, at <http://www.ascobans.org/es/node/1873> (showing meeting documents only in English). However, the treaty itself provides that English, French, German and Russian are equally authentic. ASOBANS, *supra* note , at final paragraph.

¹⁵⁵ See AEWA, 6th Session of the Meeting of the Parties to AEWA, at <http://www.unep-awea.org/en/meeting/6th-meeting-parties-awea> (showing translation of meeting documents into English and French only). AEWA has four official languages, however: Arabic, English, French and Russian. AEWA, *supra* note 118, at art. XVII.

¹⁵⁶ EUROBATS, *supra* note 118, at art. XIV.

¹⁵⁷ Sharks MOU, *supra* note 118, at ¶ 34.

¹⁵⁸ Pacific Cetaceans MOU, *supra* note 123, at ¶ 16.

¹⁵⁹ Dugong MOU, *supra* note , at ¶ 19. See generally the meeting documents from meetings of the signatories to the IOSEA Marine Turtles MOU, which are only in English. IOSEA Marine Sea Turtles MOU, at http://ioseaturtles.org/iosea_meeting.php?id=7.

C. Conservation Outcomes of Legally binding and Non-legally binding Agreements

In 2008, the CMS Secretariat undertook an analysis of the 19 MOUs and the Gorilla Agreement to determine which factors led to successful performance of MOUs.¹⁶⁰ The Secretariat concluded that MOUs were more likely to be viable when

- the Signatories are willing and able to run it themselves (the number of Signatories must be small);
- there is a strong engagement from the stakeholders in the MOU and some modest and regular funding to assist them; or
- significant funding to staff a functional Secretariat is available.¹⁶¹

The second point—the active engagement of one or more non-State actors—appears particularly relevant to the success of an MOU. The CMS Secretariat concluded that

[t]he total number of stakeholders is . . . not the important factor. As for the case of Saiga Antelope, the Aquatic Warbler and IOSEA, the total number of stakeholders is rather low, but all of them are actively engaged and participate in the MOU, suggesting the MOU is central to the wider conservation effort.¹⁶²

Later in its viability assessment, the Secretariat concluded that

with the Bukhara Deer MOU, there has been little engagement from the Secretariat over the years, but one committed NGO (WWF Russia) uses the MOU and its Action Plan to engage with the relevant governments in existing fora, and ensures conservation actions are being implemented.¹⁶³

Perhaps surprisingly, the legal status of the Agreement “does not appear to be a matter of great significance.”¹⁶⁴ Consistent with the Secretariat’s conclusions, the authors of a paper that reviewed implementation of CMS Agreements concluded that stable, core funding is more important.¹⁶⁵ Those CMS and the Agreements with stable, core funding are able to pursue their conservation agenda confidently unlike MOUs relying “exclusively on voluntary contributions that could be withdrawn or not materialize at any time.”¹⁶⁶

Despite this conclusion, legally binding Agreements appear to provide more stable funding because they have their own core budgets; Parties perhaps view their contributions to legally

¹⁶⁰ An Assessment of MOUs and Their Viability, *supra* note 144. The Parties asked for the analysis in CMS, Future Structure and Strategies of the CMS and CMS Family, Resolution 10.9, at Annex 1, Activity 5 (2011), available at <http://www.cms.int/en/document/future-structure-and-strategies-cms-and-cms-family>.

¹⁶¹ *Id.* at 39.

¹⁶² *Id.* at 31.

¹⁶³ *Id.* at 36.

¹⁶⁴ Lee et al., *supra* note 147, at ¶ 255.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

binding Agreements differently from their contributions to MOUs, which are specified as “voluntary.”¹⁶⁷

V. Should CMS Pursue a CMS Legal Instrument for Eels?

Despite the Convention’s provisions for the development of Agreements, the CMS Parties have evolved their thinking about their value. In 2008, the CMS Parties noted the challenges associated with the proliferation of CMS Agreements, in particular the financial and staff resources needed to administer and operationalize them effectively.¹⁶⁸ Consequently, the Parties adopted criteria for evaluating proposals for new Agreements at the Eleventh Meeting of the Conference of the Parties (COP).¹⁶⁹ When evaluating proposals for future Agreements, the CMS Secretariat and Scientific Council are “instruct[ed]” and the CMS Parties are “urg[ed]” to apply the criteria included in CMS Resolution 11.12, such as identifying the relevant species’ conservation needs and the possibility for stable funding.¹⁷⁰ These criteria are designed to assess the “opportunities, risks, appropriateness and relative priority” of any new proposal for a new CMS legal instrument.¹⁷¹ A paper prepared for the First Range States Workshop on the European Eel and the Report of that workshop summarized those criteria and apply those criteria to the European eel.¹⁷² This paper looks at those criteria in more detail in the context of a potential European Eel Agreement, while acknowledging that some elements cannot be assessed until a proposal is more fully developed.

1. *Conservation priority.* The conservation priority criterion requires an assessment of the severity of the conservation need in relation to the degree of species endangerment or unfavourable conservation status as defined by the Convention.¹⁷³ As noted above, the European eel is categorized as “Critically Endangered” under the IUCN Red List with glass eel recruitment reaching as low as 1% of pre-1980 abundance in some localities.¹⁷⁴ In addition, the European eel’s status is clearly “unfavourable,” as defined by CMS.¹⁷⁵ With recruitment at a historic low, the

¹⁶⁷ *Id.* at Annex, Table 35.

¹⁶⁸ CMS, Intersessional Process Regarding the Future Shape of CMS, Resolution 9.13, preamble para. 9 (2008) (acknowledging that the growth in Agreements creates “new challenges” for CMS that requires “in-depth consideration”). *See also* CMS, *Priorities for CMS Agreements*, Resolution 10.16, ¶ 6 (2011), available at <http://www.cms.int/en/document/priorities-cms-agreements> (recognizing that the “development and servicing of agreements are subject to the availability of resources”).

¹⁶⁹ Resolution 11.12, *supra* note 111. This instruction derives from Resolution 10.9, which called for the creation of “criteria against which to assess proposed new potential agreements.” Resolution 10.9, *supra* note 160, at Annex 1, Activity 12 (2011). *See also* CMS, *Priorities for CMS Agreements*, Resolution 10.16, *supra* note 168, at ¶ 6 (including eight considerations to be addressed when making any new proposals for Agreements).

¹⁷⁰ Resolution 11.12, *supra* note 111.

¹⁷¹ *Id.*, at Annex.

¹⁷² Otto Spijkers & Alex Oude Elferink, Potential for a New Convention on Migratory Species (CMS) Agreement on the European Eel: Background Paper for Workshop of European Eel Range States, UNEP/CMS/Eels WS1/Doc. 3 (Sept. 2016), available at http://www.cms.int/sites/default/files/document/cms_eels-ws1_doc-3_potential-new-agreement_e.pdf; Report of the First Range States Workshop on the European Eel, *supra* note 13, at ¶ 113.

¹⁷³ Resolution 11.12, *supra* note 111, at Annex, Criterion (i).

¹⁷⁴ Jacoby and Gollock, *supra* 4.

¹⁷⁵ Under CMS Article I, a species’ conservation status is considered “unfavourable” if any of the following criteria are not met:

species is unlikely to maintain itself on a long-term basis without appropriate interventions. With large dams blocking migration and with many more dams proposed in eel habitat,¹⁷⁶ the eel's range is currently being reduced and likely will continue to be reduced on a long-term basis.

2. *Serve a specific existing COP mandate.* This criterion specifies that any new agreement respond to an expressed CMS strategy or other decision of the Parties.¹⁷⁷ A new CMS legal instrument to protect the European eel could help fulfill Goal 3 of the CMS Strategic Plan, which calls for “improv[ing] the conservation status of migratory species and the ecological connectivity and resilience of their habitats.”¹⁷⁸ Protecting near-shore and freshwater habitats across the species' range would improve connectivity and resilience for the European eel because the European eel only occurs in water bodies that are connected to the sea under natural conditions.¹⁷⁹ Moreover, if Range States and territories can be brought together to benefit the European eel, then Goal 5—to “enhance implementation through participatory planning, knowledge management and capacity building”¹⁸⁰—would also be fulfilled.

Other CMS policies and strategies would also be addressed. For example, Resolution 11.27 urges Parties to “undertake measures to reduce or mitigate known serious impacts” on freshwater species from hydropower by, among other things, creating fish ladders.¹⁸¹ Any strategy to protect eels would most probably include provisions relating to restoring habitat above dams and removing obstacles to migration caused by hydroelectric and other dams. Lastly, because Article IV directs CMS Parties to endeavor to conclude an agreement for Appendix II species,¹⁸² the preparation of a new legal instrument for the European eel, already included in Appendix II, would fulfill an expressed CMS strategy.

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- (1) population dynamics data indicate that the migratory species is maintaining itself on a long-term basis as a viable component of its ecosystems;
 - (2) the range of the migratory species is neither currently being reduced, nor is likely to be reduced, on a long-term basis;
 - (3) there is, and will be in the foreseeable future sufficient habitat to maintain the population of the migratory species on a long-term basis; and
 - (4) the distribution and abundance of the migratory species approach historic coverage and levels to the extent that potentially suitable ecosystems exist and to the extent consistent with wise wildlife management[.]

CMS, *supra* note 6, at art. I(1)(d)-(e).

¹⁷⁶ See *supra* Section II.C.2.

¹⁷⁷ Resolution 11.12, *supra* note 111, at Annex, Criterion (ii).

¹⁷⁸ CMS, Strategic Plan for Migratory Species 2015–2023, UNEP/CMS/Resolution 11.2, Chapter 3, Goal 3.

¹⁷⁹ Monaco, Proposal for the Inclusion of the European Eel (*Anguilla anguilla*) on CMS Appendix II,

UNEP/CMS/COP11/Doc.24.1.18 (2014), at 8, available at

http://www.cms.int/sites/default/files/document/Doc_24_1_18_Prop_II_12_Rev.1_Anguilla_anguilla_%28European_eel%29_MCO_E.pdf.

¹⁸⁰ *Id.* at Chapter 3, Goal 5.

¹⁸¹ CMS, Renewable Energy and Migratory Species, UNEP/CMS/Resolution 11.27, ¶ 3.4 (2014).

¹⁸² Article IV(3) provides that “Parties that are Range States of migratory species listed in Appendix II shall endeavour to conclude AGREEMENTs where these should benefit the species and should give priority to those species in an unfavourable conservation status.” CMS, *supra* note 6, at art. IV(3).

3. *Clear and specific defined purpose.* This criterion calls on any proposal for a new CMS legal instrument to specify the intended conservation outcomes and ways that the target species would benefit from international cooperation.¹⁸³ As with other CMS Agreements, the overall goal would be to restore the European eel to a favorable conservation status, consistent with CMS Article V. More specifically, a European Eel Agreement could include, among other things, the following specific purposes to improve the conservation status of the European eel:

- To coordinate conservation goals and strategies throughout the range of the European eel. Currently, EU Member States have established a goal of 40% escapement of silver eels,¹⁸⁴ and Member States must develop EMPs for each river basin inhabited by eels.¹⁸⁵ Nineteen Member States have developed EMPs to accomplish those goals. The First Range States Workshop on the European Eel indicates that an escapement goal of 40% would be a key element of a future CMS Agreement.¹⁸⁶ To ensure compatibility with EMPs developed by EU Range States, such a goal would seem highly pragmatic—at least until a different range-wide goal could be agreed to within the context of a European Eel Agreement, based on the available scientific information.
- To develop and coordinate scientific research relating to the European eel across its geographic range. As noted above, scientists agree that much is unknown about the European eel and the causes of its decline.¹⁸⁷
- To ensure stakeholder participation in eel conservation. The participation of stakeholders in the development of eel conservation plans has been described as “marginal” and “varied.”¹⁸⁸ A CMS legal instrument could ensure stakeholder participation.

Section VI of this paper describes a number of other provisions that could be included in a European Eel Agreement.

4. *Absence of better remedies outside the CMS system.*¹⁸⁹ Alternatives to a CMS legal instrument all fall short of addressing all threats to the European eel throughout the eel’s range. As noted in Section III, RFMOs do not have the geographic or management authority to manage eels. Other treaties focus on only one aspect of eel conservation (for example, international trade under CITES). In addition, other multilateral environmental agreements (MEAs), such as the Convention

¹⁸³ Resolution 11.12, *supra* note 111, at Annex, Criterion (iii).

¹⁸⁴ EU Eel Regulation, *supra* note 1, at art. 2(4). The provision provides in full:

The objective of each Eel Management Plan shall be to reduce anthropogenic mortalities so as to permit with high probability the escapement to the sea of at least 40% of the silver eel biomass relative to the best estimate of escapement that would have existed if no anthropogenic influences had impacted the stock. The Eel Management Plan shall be prepared with the purpose of achieving this objective in the long term.

¹⁸⁵ *Id.* at art. 2.

¹⁸⁶ Summary of Outcomes, *supra* note 110, at § 1.

¹⁸⁷ See *supra* Sections II.B and II.C.

¹⁸⁸ Dekker, *supra* note 8, at 2445, 2447.

¹⁸⁹ Resolution 11.12, *supra* note 111, at Annex, Criterion (iv).

on Biological Diversity (CBD)¹⁹⁰ or the UN Convention on the Law of the Sea (UNCLOS),¹⁹¹ may provide general conservation duties but are not designed to manage specific species.¹⁹² Only CMS has the authority to cover freshwater and marine habitat (including areas of the high seas) and the full range of threats to the European eel.

5. *Absence of better remedies inside the CMS system.*¹⁹³ CMS offers alternatives to a new legal instrument, such as “concerted actions” or “action plans,” but these are not likely to be better remedies. Concerted actions are priority conservation measures, projects, or institutional arrangements undertaken to improve the conservation status of selected Appendix I and Appendix II species or selected groups of Appendix I and Appendix II species that involve measures that are the collective responsibility of Parties acting in concert or are designed to support the conclusion of an instrument under Article IV of the Convention and enable conservation measures to be progressed in the meantime or represent an alternative to such an instrument.¹⁹⁴ In the past, the Parties listed species for which concerted actions should be taken, but they did not identify any specific conservation actions to take.¹⁹⁵ Instead, each Party was free to determine what action it would take.

The concept of concerted actions is evolving, with specific proposals that identify conservation actions to be undertaken by specified entities (e.g., Parties, Secretariat).¹⁹⁶ Such concerted actions, as with action plans, apply only to CMS Parties that are Range States. Thus, if either is adopted for the European eel, it would not apply to non-Parties such as Iceland, Turkey, and the Faroe Islands. While these non-Parties could participate informally in a concerted action, it is difficult to conceive, in most circumstances, how that would occur. For example, the Parties have not called intersessional meetings to discuss implementation of the concerted actions and the Parties have not publicized concerted actions on the CMS website. Consequently, a non-Party is unlikely to know that a concerted action has been adopted. Intersessional meetings have occurred for some actions plans, but they are rare and entirely dependent on voluntary contributions. With a CMS Agreement, the Agreement itself will specify the meeting schedule.

¹⁹⁰ Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S 79 (1992) (entered into force Dec. 29, 1993) [hereinafter Biodiversity Convention].

¹⁹¹ The United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S 3, U.N. Doc. A/CONF.62/122 (entered into force Nov. 16, 1994), available at: http://www.un.org/depts/los/convention_agreements/convention_overview_convention.htm [hereinafter UNCLOS].

¹⁹² For more information on the inability of existing treaties to manage the full range of threats to the European eel, see Spijkers & Elferink, *supra* note 172, at 5–11.

¹⁹³ Resolution 11.12, *supra* note 111, at Annex, Criterion (v).

¹⁹⁴ CMS, Concerted Actions, UNEP/CMS/COP12/Doc.26.1, available at <http://www.cms.int/en/document/concerted-actions>. Although this document has not yet been adopted, the Parties are expected to adopt it in October at COP12.

¹⁹⁵ Prior to COP11, concerted actions applied to Appendix I species and cooperative actions applied to Appendix II species. While two different names applied, the process for identifying species and the outcome (a list) was the same.

¹⁹⁶ See, e.g., CMS. Proposal for a Concerted Action for the Arabian Sea Humpback Whale (*Megaptera novaeangliae*) Already Listed in Appendix I of the Convention, UNEP/CMS/COP12/Doc. 26.2.4 (2017), at http://www.cms.int/sites/default/files/document/cms_cop12_doc.26.2.4_concerted-action-arabian-sea-humpback-whales_e.pdf.

6. *If a CMS instrument is best, extending an existing one is not feasible.*¹⁹⁷ None of the existing CMS Agreements relates in any way to conservation of the European eel. Several existing Agreements protect bird species (AEWA, ACAP, Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU), while others are terrestrial-mammal focused (EUROBATS, West African Elephants MOU). Those that involve marine species are focused on specific taxonomic groups (ACCOBAMS, ASCOBANS, IOSEA Turtle MOU, Dugongs MOU, Sharks MOU). Aside from the Sharks MOU, no other Agreement addresses fish species or conservation.

7. *Prospects for funding.* As noted above,¹⁹⁸ adequate and predictable financing is a key component driving the success of a CMS Agreement. Identifying prospects for funding is also a criterion for evaluating proposals for new CMS Agreements.¹⁹⁹ Identifying the prospects for funding is beyond the scope of this paper. However, given the value of the European eel as food and bait, and given the dire conservation status of the species, the prospects for funding would seem promising. That said, conservation need and funding do not always align. CMS, itself, provides good examples. Despite the continuing decline of the African elephant in West Africa, the Memorandum of Understanding concerning Conservation Measures for the West African Populations of the African Elephant (*Loxodonta africana*) remains mostly unfunded.²⁰⁰ With respect to funding a European Eel Agreement, the EU, with 27 of 28 Member States (all but Hungary) included as Range States of the European eel,²⁰¹ might be a place to start.²⁰²

8. *Synergies and cost effectiveness.*²⁰³ A CMS Agreement for European eels that includes actions to protect the Sargasso Sea will have significant synergistic effects with other CMS initiatives. As described in the designation of the Sargasso Sea as an Ecologically or Biologically Significant Marine Area (EBSA) under the CBD,²⁰⁴ the Sargasso Sea is home to several species of shark and cetaceans that are the subject of other CMS legal instruments and resolutions, including Sharks MOU²⁰⁵ and the Global Programme of Work for Cetaceans.²⁰⁶ Other species included in the CMS Appendices, including the green turtle (*Chelonia mydas*), hawksbill turtle (*Eretmochelys imbricate*), loggerhead turtle (*Caretta caretta*), and Kemp's ridley turtle (*Lepidochelys kempii*), all of which are included in both Appendix I and II, use *Sargassum* as a nursery habitat.²⁰⁷ Adult leatherback sea turtles (*Dermochelys coriacea*) also use the Sargasso Sea.²⁰⁸

¹⁹⁷ Resolution 11.12, *supra* note 111, at Annex, Criterion (vi).

¹⁹⁸ *See supra* Section IV.C.

¹⁹⁹ Resolution 11.12, *supra* note 111, at Annex, Criterion (vii).

²⁰⁰ An Assessment of MOUs and Their Viability, *supra* note 150, at 37.

²⁰¹ Jacoby & Gollock, *supra* note 4, at "Countries Occurrence."

²⁰² *See* Spijkers & Elferink, *supra* note 172, at 15 (also identifying the EU as a potential funder).

²⁰³ Resolution 11.12, *supra* note 111, at Annex, Criterion (viii).

²⁰⁴ Convention on Biological Diversity, Ecologically or Biologically Significant Areas (EBSAs): The Sargasso Sea, available at <https://chm.cbd.int/database/record?documentID=200098>.

²⁰⁵ *See generally* <http://www.cms.int/sharks/en>.

²⁰⁶ CMS, Global Programme of Work for Cetaceans, UUNEP/CMS/Resolution 10.15, available at <http://www.cms.int/en/document/global-programme-work-cetaceans>.

²⁰⁷ Ecologically or Biologically Significant Areas (EBSAs): The Sargasso Sea, *supra* note 204.

²⁰⁸ *Id.*

Moreover, any measures to protect the European eel in its freshwater habitat will also benefit the freshwater fish species included in the Appendices and, thus, help implement Resolution 10.12 on migratory freshwater fish. That resolution specifically calls on Parties “to strengthen measures to protect migratory freshwater fish species against threats, including habitat destruction, habitat fragmentation, overfishing, bycatch, invasive species, pollution and barriers to migration.”²⁰⁹

Because the European eel is adversely affected by habitat loss and degradation, barriers to migration, and overexploitation, a CMS Agreement for the species would also help the Parties implement paragraph 6 of Resolution 10.12, which calls on Parties

to engage in international cooperation on migratory freshwater fish, which would focus on CMS-listed fish species, at sub-regional or regional levels, noting that this cooperation should, *inter alia*[,] . . . b) identify and implement effective measures, as appropriate, to mitigate threats such as habitat degradation, barriers to migration, bycatch and overexploitation[.]²¹⁰

Any measures to reduce habitat loss and degradation, barriers to migration, and overexploitation are likely to benefit not only the many freshwater migratory species included in the CMS Appendices but other species as well. Because reports indicate that 38% of European freshwater fish are threatened,²¹¹ measures to protect the European eel could have significant conservation benefits for many of these species as well.

With respect to cost-effectiveness, proposals should identify the resources needed to implement the new CMS Agreement. The exact scale of the resources needed to administer a European Eel Agreement is difficult to predict because no current CMS Agreement has the same combination of number of species (1), number of Range States and territories (57), range of threats, and geographic scope covering freshwater and marine habitats, as well as jurisdictional waters and areas beyond national jurisdiction.

Nonetheless, the Sharks MOU may provide some insight as to costs for implementing a CMS instrument for the European eel. The Sharks MOU has a global reach and currently covers 29 species of sharks and rays across their marine habitats and has 41 Signatories.²¹² The budget for the 2016–2018 triennium is 1,037,829 Euros, which covers a P2 position²¹³ and 50% of an administrative position,²¹⁴ with additional in-kind support provided by the CMS Secretariat.²¹⁵

²⁰⁹ CMS, Freshwater Migratory Species, UNEP/CMS/Resolution 10.12, ¶ 2, available at <http://www.cms.int/en/document/migratory-freshwater-fish>.

²¹⁰ *Id.* at ¶ 6.

²¹¹ See CMS, Executive Summary: Review of Freshwater Fish, UNEP/CMS/Conf.10.32, ¶ 1 (2011), available at <http://www.cms.int/en/document/executive-summary-review-freshwater-fish>.

²¹² CMS, Sharks, <http://www.cms.int/sharks/en/legalinstrument/sharks-mou>.

²¹³ In the United Nations system, a P2 position is a professional position that requires a minimum of two years experience. United Nations, Staff Categories, <https://careers.un.org/lbw/home.aspx?viewtype=SC>.

²¹⁴ CMS, Administrative and Budgetary Matters, CMS/Sharks/Outcome 2.5, at Annex 1 (2015), available at <http://www.cms.int/sharks/en/mos2>.

²¹⁵ *Id.*

This budget covers meetings but very little programmatic work, with only 15,000 Euros allocated for analytical work.²¹⁶ Other aspects of the work plan are implemented by the single P2 position.

The IOSEA Marine Turtles MOU²¹⁷ may also provide a useful reference point. The IOSEA Marine Turtles MOU has 35 Signatories and applies to the waters and coastal States of the Indian Ocean and Southeast Asia and adjacent seas, extending eastwards to the Torres Strait²¹⁸ and covers the loggerhead, olive ridley (*L. olivacea*), green, hawksbill, leatherback, and flatback (*Natator depressus*) sea turtles.²¹⁹ The MOU's Conservation and Management Plan includes 24 programs and 105 specific activities, focusing on “reducing threats, conserving critical habitat, exchanging scientific data, increasing public awareness and participation, promoting regional cooperation, and seeking resources for implementation.”²²⁰ It had a budget of USD945,000 for the 2015–2017 triennium, with the CMS budget contributing USD27,000 per year²²¹ towards the Coordinator's salary for CMS-related work. This arrangement is subject to the decision of Parties on the CMS Budget at COP12.

9. *Prospects for leadership in developing an Agreement.*²²² A highly committed leader, whether a government or nongovernmental organization, can help ensure the success in developing a CMS Agreement and ensuring its successful implementation. In a report concerning the viability of CMS MOUs, the CMS Secretariat noted that

For some avian and marine mammal MOUs, having one highly committed partner, which feels a genuine sense of partnership, may be sufficient to ensure a good degree of implementation; BirdLife International and Whale and Dolphin Conservation (WDC) are examples of this. Similarly with the Bukhara Deer MOU, there has been little engagement from the Secretariat over the years, but one committed NGO (WWF Russia) uses the MOU and its Action Plan to engage with the relevant governments in existing fora, and ensures conservation actions are being implemented.

Conversely, the lack of any suitable stakeholders to assist with implementation can cause significant problems. This is particularly the case on the west coast of Africa, where the Secretariat has been unable to identify a suitable NGO or other partner to assist with the implementation of the three MOUs there.²²³

The prospects for leadership in developing and implementing a CMS Agreement for European eels appear to be very strong. The Sargasso Sea Commission²²⁴ has taken an active role

²¹⁶ *Id.*

²¹⁷ See IOSEA Marine Turtles MOU, Introduction, <http://www.ioseaturtles.org/introduction.php>.

²¹⁸ IOSEA Marine Turtles MOU, *supra* note 125, at “Definitions”, ¶ 2.

²¹⁹ *Id.* at “Objective” & “Definitions”, ¶ 1.

²²⁰ See Introduction, <http://www.ioseaturtles.org/introduction.php>.

²²¹ *Report of the Seventh Meeting of IOSEA Signatory States*, at ¶ 170 & Annex 6, available at [http://www.ioseaturtles.org/UserFiles/File/meeting_files/SS7_IOSEA_REPORT_no_covers.compressed\(5\).pdf](http://www.ioseaturtles.org/UserFiles/File/meeting_files/SS7_IOSEA_REPORT_no_covers.compressed(5).pdf).

²²² Resolution 11.12, *supra* note 111, at Annex, Criterion (ix).

²²³ *An Assessment of MOUs and Their Viability*, *supra* note 150, at 36.

²²⁴ Sargasso Sea Commission, About the Commission, <http://www.sargassoseacommission.org/about-the-commission>. More details about the history of the Sargasso Sea Commission can be found at David Freestone &

in protecting not only the Sargasso Sea but also species that depend on it. This independent Commission is appointed by the Government of Bermuda, pursuant to the provisions of the 2014 Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea,²²⁵ a political declaration now signed by nine governments.²²⁶ The mission of the Commission, supported by the government Signatories and a number of collaborating partners from the science and conservation world,²²⁷ is to “[e]xercise a stewardship role for the Sargasso Sea and keep its health, productivity and resilience under continual review.”²²⁸ It helped organize the First Range States Workshop on the European Eel,²²⁹ is organizing the second Range States workshop,²³⁰ and appears fully committed to ensuring the implementation of any CMS European Eel Agreement. The Sargasso Sea Commission also developed the proposal that led to the establishment of the Sargasso Sea as an EBSA and helped motivate the proposal to include the European eel in CMS Appendix II.

10. *Prospects for coordination of the Agreement’s implementation.* This criterion asks proposals to demonstrate meaningful prospects for coordinating implementation of the Agreement, such as through hosting of a Secretariat and organization of meetings.²³¹ It is beyond the scope of this report to inquire among governments and institutions as to whether they are willing to host a Secretariat. Nonetheless, the active engagement of the Sargasso Sea Commission (*see* previous section) indicates that such prospects may be “good.”

11. *Feasibility in other respects.* This criterion asks proposals for new Agreements to address the practical feasibility for launching and operating the Agreement, such as political stability or diplomatic barriers.²³² The close regional proximity of many of the Range States and territories, their close political ties through the EU, the European Economic Area, and the Joint Africa-EU Strategy,²³³ as well as the close environmental working relationships among European and North African Range States through AEWa, the Raptors MOU, and other conservation agreements such as OSPAR, indicate that there are no diplomatic or political barriers to a European Eel Agreement. In addition, some of the non-EU Range States share similar concerns. Some of the North African Range States, for example, have banned eel fishing.²³⁴ Thus, there do not appear to be any political or diplomatic barriers to a European Eel Agreement.

Faith Bulger, *The Sargasso Sea Commission: An Innovative Approach to the Conservation of Areas beyond National Jurisdiction*, 30 OCEAN YEARBOOK 80 (2016), available at <http://booksandjournals.brillonline.com/content/journals/10.1163/22116001-03001005>; David Freestone & Kate Killerlain Morrison, *Current Legal Developments: The Sargasso Sea*, 29 INT’L J. MARINE & COASTAL L. 345 (2014), available at <http://booksandjournals.brillonline.com/content/journals/15718085/29/2>.

²²⁵ Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea, (Mar. 11, 2014), available at <http://www.sargassoseacommission.org/about-the-commission/hamilton-declaration>.

²²⁶ These nine governments are the Azores, Bahamas, Bermuda, British Virgin Islands, Canada, Cayman Islands, Monaco, the United Kingdom, and the United States.

²²⁷ *See* Sargasso Sea Commission, About the Commission, Collaborating Partners, at <http://www.sargassoseacommission.org/about-the-commission/collaborating-partners>.

²²⁸ Hamilton Declaration, *supra* note 225, at Annex II(a).

²²⁹ Report of the First Range States Workshop on the European Eel, *supra* note 13, at ¶ 171.

²³⁰ Personal Communication with David Freestone (Sept. 1, 2017).

²³¹ Resolution 11.12, *supra* note 111, at Criterion (x).

²³² Resolution 11.12, *supra* note 111, at Criterion (xi).

²³³ In 2014 at the Fourth EU-Africa Summit, European and African governments agreed to the Roadmap 2014–2017. *See* Joint Africa–EU Strategy (2014), available at https://ec.europa.eu/europeaid/regions/africa/continental-cooperation/joint-africa-eu-strategy_en.

²³⁴ 2016 WGEEL Report, *supra* note 84, at 49–50.

Even without political and diplomatic barriers, it may take time to convince Range States that a European Eel Agreement is necessary. EU Member States, for example, may believe that EMPs that they are developing under the EU Eel Regulation are sufficient. Other Range States may have other concerns and may not prioritize engagement in the negotiation and implementation of an Eel Agreement. These challenges are difficult to assess in the abstract, and it may be necessary to engage in some shuttle diplomacy to determine whether there is real political commitment to a European Eel Agreement.

12. *Likelihood of success.* This criterion asks whether certain risks, such as the “uncertainty about the ecological effects; lack of a ‘legacy mechanism’ by which results can be sustained, and activities by others that may undermine or negate the results of the Agreement.”²³⁵ Unlike the previous criterion, which focuses on implementation, this criterion focuses on whether the Agreement will achieve its intended outcome.²³⁶ Thus, the question appears to ask whether an Agreement will result in the conservation of the European eel.

Given the substantial lack of knowledge with respect to the European eel’s life history and the contribution of each threatening factor to the eel’s decline, it is nearly impossible to determine the likelihood of success that any CMS Agreement might have. However, in the absence of some mechanism to coordinate the 57 Range States and territories of the European eel, it seems highly unlikely that the eel’s conservation status will improve.

In addition, it is not clear what is meant by the phrase “legacy mechanism”; Resolution 11.12 and its supporting documents do not provide concrete examples. To the extent that it refers to conservation strategies that will endure over time, it is simply too early to make that assessment. To the extent that it asks whether institutions will sustain their engagement in eel conservation over the long-term, perhaps a more positive response is possible due to long-term interest in eel conservation expressed by the Sargasso Sea Commission. Also, the European Commission, with its mandate to coordinate EU Member States, may qualify as a “legacy mechanism” provided that the Commission and the EU Member States can be convinced to participate in an Eel Agreement.

13. *Magnitude of likely impact.* This criterion asks about the number of species and countries that will benefit from a proposed CMS Agreement, as well as the catalytic and “multiplier” effects it might have.²³⁷ As indicated by the response to criterion 8 above, the catalytic and multiplier impacts of a European eel legal instrument could be substantial because of the number of CMS species that use the Sargasso Sea and freshwater habitats also occupied by the eel. In addition, while 19 Member States of the EU are implementing the EU’s Eel Regulation to varying degrees, a European Eel Agreement could extend coordinated eel conservation efforts to the remaining Range States and territories.

²³⁵ Resolution 11.12, *supra* note 111, at Criterion (xii).

²³⁶ CMS, *Developing, Resourcing and Servicing CMS Agreements: A Policy Approach*, UNEP/CMS/COP11/Doc.22.2, at Annex 1, p. 24, available at <http://www.cms.int/en/document/developing-resourcing-and-servicing-cms-agreements>.

²³⁷ Resolution 11.12, *supra* note 111, at Criterion (xiii).

14. *Provision for monitoring and evaluation.* The criterion for monitoring and evaluation includes a long list of sub-criteria that focus on defining a specific mechanism for monitoring and evaluating relevant scientific and technical information, progress towards implementation by the Parties/Signatories, and among other related activities.²³⁸ Any European Eel Agreement would need a Secretariat and a meeting of the Parties/Signatories to review relevant scientific and technical information and to coordinate conservation strategies across the 57 Range States and territories. Given the lack of scientific information about the eel’s life history and impacts to the eel, a scientific or advisory committee would need to be a key element of any European Eel Agreement. The possibilities for such a committee, including representation of the Working Group on Eels (WGEEL),²³⁹ are described more fully in the next section.

VI. Options for a CMS Legal Instrument for the European Eel

A CMS legal instrument for the European eel does not fit neatly into any existing CMS Agreement for purposes of drawing comparisons. While several CMS Agreements have a broad geographical scope, they also cover multiple species (e.g., Sharks MOU, Raptors MOU, IOSEA Marine Turtles MOU, ACAP, and AEWAs). A European Eel Agreement would have a broad, regional geographic scope but cover only one species. In addition, unlike some CMS Agreements that include a range of developed and developing Range States and territories, a European Eel Agreement would include primarily developed-country Range States. Among CMS instruments, perhaps only the Dugong MOU, with its single-species focus on the dugong (*Dugong dugon*) and 46 Range States, is similar in geographic and species scope, but those Range States are primarily least-developed and developing countries.²⁴⁰ Because the eel’s range includes a large number of Range States and territories—which include developed European countries, developing North African countries and only one least-developed country²⁴¹—a European Eel Agreement might be more similar to the Sharks MOU or the IOSEA Marine Turtle MOU with their regional focus and more balanced mix of developed and developing Range States. Given the broad geographic region, the potential need to include more than one language, and the array of conservation measures that are needed to address eel conservation, a European Eel Agreement would likely require “a central Secretariat . . . with significant funding to maintain a level of core activity.”²⁴²

In addition to Secretariat costs, the large number of Range States and territories will likely increase costs because it is assumed that any European Eel Agreement will have more than one official language. Consequently, the Agreement will require additional resources for coordination, translation, interpretation, and meetings.²⁴³ The relatively small number of developing country

²³⁸ *Id.* at Criterion (xiv).

²³⁹ For more about the WGEEL, see Joint EIFAAC/ICES/GFCM Working Group on Eels, at <http://ices.dk/community/groups/Pages/WGEEL.aspx>.

²⁴⁰ See Dugong MOU, Dugong Summary Sheet, at http://www.cms.int/dugong/sites/default/files/instrument/dugong_150715.pdf. Fifteen of the 46 Range States are least-developed countries. United Nations Committee for Development Policy, List of Least Developed Countries (as of June 2017), available at https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/ldc_list.pdf.

²⁴¹ Mauritania is the only European eel Range State listed as a least-developed country. List of Least Developed Countries, *supra* note 240.

²⁴² *An Assessment of MOUs and Their Viability*, *supra* note 150, at 35.

²⁴³ *Id.* at 17.

Range States, however, may benefit any such Agreement because few developing countries will require financial assistance to participate in meetings. These and other issues are discussed below.

A. Binding Versus Non-binding

As noted in the preceding section, the conservation outcomes of a CMS Agreement do not appear dependent on whether the Agreement is legally binding or not. However, the legally binding character of an agreement has two principle impacts in the context of a CMS Agreement for European eels.

First, and as noted earlier,²⁴⁴ a legally binding Agreement takes longer to bring into force than a non-legally binding MOU. Given the dire conservation status of the European eel, a lengthy period prior to entry into force may be undesirable.

Second, a legally binding Agreement requires financial contributions from the Parties, probably based on the UN scale of assessments. The Agreement's costs, including secretariat support and any programmatic work, would be paid from mandatory contributions, which have led to more stable funding than MOUs (excluding the Gorilla Agreement).²⁴⁵ In addition to helping ensure the success of the Agreement,²⁴⁶ such a contribution scheme would likely be considered fair because it is consistent with UN practice.

A non-legally binding MOU, in contrast, would be paid from voluntary contributions and, given the current administration of MOUs, would require extensive in-kind contributions from the CMS Secretariat—costs that would be paid by CMS Parties only and not by non-Party Range States or territories. The CMS Parties that are also Eel MOU Signatories may perceive the non-CMS Party Signatories to an Eel MOU as “free-riders” who are taking advantage of the contributions made by Parties to the CMS budget.²⁴⁷ Thirteen of the 57 Range States and territories (22.8%) are CMS non-Parties.²⁴⁸ With a relatively large number of free riders, Range States and territories may prefer a legally binding Agreement. Similarly, CMS Parties that are not eel Range States may feel that all Eel MOU Signatories are consuming a disproportionate amount of the CMS budget, particularly from the CMS Administration and Finance team which would be asked to help administer an Eel MOU, but which may not receive financial contributions as part of an Eel MOU.

A strategy to avoid this conundrum might be to negotiate an MOU and binding Agreement simultaneously. The MOU could be relatively simple. It could set up an interim Secretariat and include an Action Plan. The MOU and its Action Plan would commence on signing. Meanwhile, a more developed Article IV(3) AGREEMENT could establish more detailed provisions, including reporting and monitoring obligations and a permanent Secretariat; the MOU's Action Plan would carry over to the legally binding Agreement. This strategy is not without risk. It could be that the

²⁴⁴ See *supra* Section IV.B.

²⁴⁵ Lee et al., *supra* note 147, at ¶¶ 45–58.

²⁴⁶ See *supra* Section IV.C.

²⁴⁷ Lee et al., *supra* note 147, at ¶ 96.

²⁴⁸ The thirteen are Bosnia and Herzegovina, Faroe Islands, Iceland, Lebanon, Macedonia, the former Yugoslav Republic, Moldova, Russia, and Turkey, in addition to four territories (Gibraltar, Guernsey, Isle of Man, and Jersey). However, these four UK territories would be covered by the UK's participation unless the UK expressly excluded them on signing or ratification.

legally binding Agreement never enters into force, which could result in an MOU that is not fully developed. If the Eel MOU is modeled on existing MOUs, however, then it may be possible to avoid an under-developed Eel MOU.

B. Scope

To ensure that a European Eel Agreement covers the broad range of habitats and geographical distribution of the European eel, the Agreement should not attempt to define an “Agreement Area.” Instead, as with ACAP for albatrosses and petrels,²⁴⁹ a European Eel Agreement should be based on the conservation of eels and their habitats. “Habitat” should then be defined to mean “any area that contains suitable living conditions, during any part of their life history, for eels.”

In addition, while the First Workshop of Range States of the European Eel suggested that a new CMS Agreement should focus on the European eel, it also indicated that it could be expanded to include the American eel at a later date.²⁵⁰ To ensure that the Agreement can be expanded to include the American eel (see Section VII below), the Agreement should include the species covered in an Appendix as CMS and many other CMS Agreements do. For example, the Raptors MOU applies to “Birds of Prey,” a phrase that is defined as “migratory populations of Falconiformes and Strigiformes species occurring in Africa and Eurasia, listed in Annex 1 of this Memorandum of Understanding.”²⁵¹ Likewise, the Sharks MOU applies to any migratory species, subspecies, or population in the Class *Chondrichthyes* included in Annex 1 of the MOU.²⁵² In a similar fashion, an Eel Agreement could apply to “eels” or “anguillid species” included in Annex I.

C. Objective

Ideally, a European Eel Agreement would establish a measurable conservation target to be achieved within a specified timeframe.²⁵³ ICES has recommended an escapement goal for silver eels of 50%,²⁵⁴ but the EU has adopted an escapement goal of 40%.²⁵⁵ However, the EU Eel Regulation does not specify in what timeframe that goal should be met. Instead, it calls for achieving that goal “in the long term.”²⁵⁶ In light of the life history of the European eel, with individuals reaching sexual maturity in variable time periods, the failure to designate a specific timeframe for achieving the 40% escapement goal is understandable. Without a more specific timeframe, however, it is difficult to determine progress towards the escapement target.

²⁴⁹ See *supra* Section IV.B.

²⁵⁰ *Report of the First Range States Workshop on European Eels*, *supra* note 13, at ¶ 145.

²⁵¹ Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia, Nov. 1, 2008 at ¶ 1(a) (entered into force Nov. 1, 2008) [hereinafter Raptors MOU].

²⁵² Shark MOU, *supra* note 135, at § 2(p).

²⁵³ See Outcome, *supra* note 110, at § 1.

²⁵⁴ 2015 WGEEL Report, *supra* note 21, at 28.

²⁵⁵ EU Eel Regulation, *supra* note 1, at art. 2(4).

²⁵⁶ *Id.* (“The Eel Management Plan shall be prepared with the purpose of achieving this objective in the long term.”).

D. Conservation Obligations

1. Provisions Regarding Take and Trade

Although the EU bans the import and export of European eels, the fishery still remains a significant economic activity, employing about 25,000 people throughout Europe to support the EU market for eels.²⁵⁷ Presumably eel fisheries also generate jobs in non-EU States. Consequently, a European Eel Agreement would need to adopt rules for harvesting consistent with the eel's role as a source of food, bait, and jobs or, if a harvest prohibition is desired, recognize the economic implications of that choice.

Currently, because the European eel is included in CMS Appendix II, international law does not prohibit the take of European eels.²⁵⁸ In addition, because the European eel is included in CITES Appendix II, States may allow trade²⁵⁹ provided relevant CITES export permits are issued, including a finding that the trade will not be detrimental to the survival of the species (a finding known as the “non-detriment” finding).²⁶⁰ As noted earlier, exports have increased sharply in recent years.²⁶¹ With a dearth of scientific information concerning European eels, it seems unlikely that an adequate non-detriment finding can be made; indeed, that was the opinion of EU scientists leading up to the EU's ban on imports and exports of European eel.²⁶² Because CITES clearly provides that an affirmative finding of no detriment is required, a lack of scientific information should preclude issuance of an export permit. In addition, as the European Commission has reported, “[s]cientists constantly advise that all humanly induced mortality (fisheries and non-fishing anthropogenic mortality) should be reduced to as close to zero as possible and that urgent action is needed.”²⁶³ Thus, an Eel Agreement focused on the European eel may wish to adopt measures stronger than those provided by CITES and CMS and strictly regulate national and international trade.²⁶⁴

If an Eel Agreement allows trade, then negotiators may want to consider provisions requiring the issuance of catch documents, as many RFMOs require for harvest of tuna²⁶⁵ and

²⁵⁷ *Report of the Workshop on CITES and Eels*, *supra* note 20, at 6.

²⁵⁸ See CMS, *supra* note 6, at arts. IV, 5 (not imposing any specific prohibitions against take or trade).

²⁵⁹ CITES, *supra* note 2, at art. IV (not prohibiting trade for primarily commercial purposes).

²⁶⁰ CITES requires exporting countries to determine that exports of Appendix II specimens will not be detrimental to the survival of the species, the specimens were legally acquired, and for living specimens that the specimens will be prepared and shipped so as to avoid injury and cruel treatment. *Id.* at art. IV(2).

²⁶¹ See *supra* Section II.C.1.

²⁶² In December 2010, the Scientific Review Group (SRG) established under the EU Eel Regulation concluded that “it was not possible for the SRG to consider that the capture or collection of European eel specimens in the wild or their export will not have a harmful effect on the conservation status of the species.” SRG, Short Summary of Conclusions of the 54th Meeting of the Scientific Review Group on Trade in Wild Fauna and Flora, ¶ 8 (Dec. 3, 2010), available at https://circabc.europa.eu/sd/a/49ab3fc9-646b-4b35-ac42-f0333479ce24/54_summary_srg.pdf.

²⁶³ European Commission, *supra* note 86, at 7.

²⁶⁴ International agreements set minimum standards unless expressly stated otherwise. CITES, for example, specifically recognizes the right of Parties to adopt measures stricter than those found in CITES. CITES, *supra* note 2, at art. XIV(1).

²⁶⁵ See, e.g., ICCAT, Recommendation by ICCAT Amending Recommendation 09-11 on an ICCAT Bluefin Tuna Catch Documentation Program, Recommendation 11-20 (2011).

toothfish.²⁶⁶ RFMOs have adopted catch documentation schemes (CDS) to prevent illegal, unreported, and unregulated (IUU) fishing.²⁶⁷ The Food and Agriculture Organization of the United Nations (FAO) has defined CDS as

[a] system that tracks and traces fish from the point of capture through unloading and throughout the supply chain. A CDS records and certifies information that identifies the origin of fish caught and ensures they were harvested in a manner consistent with relevant national, regional and international conservation and management measures. The objective of the CDS is to combat IUU fishing by limiting access of IUU fish and fishery products to markets.²⁶⁸

Given reports of high levels of illegal trade of European eel and other eel species,²⁶⁹ a CDS may be one possible strategy for allowing harvest and trade but also ensuring that the harvest and trade are legal. It would allow Parties or Signatories to an Eel Agreement to regulate harvest and trade more strictly than CMS and CITES without actually prohibiting harvest and trade. In considering such a strategy, negotiators may want to know that an Appendix I listing under CMS has the effect of prohibiting the take of listed species and a CITES Appendix I listing has the effect of prohibiting international trade for primarily commercial purposes. With the European eel critically endangered, a CDS for eels may represent a viable “middle ground.”

Importantly implementation of measures stricter than CMS or CITES for take and trade might require new implementing legislation if States do not currently have legislation that allows for such measures. Similarly, implementation of CDS for eels is not contemplated by CMS and would likely require new domestic implementing legislation. A legally binding Eel Agreement might be necessary in order to ensure that States are compelled to adopt such legislation²⁷⁰ or have the authority to adopt such legislation.²⁷¹

2. Eel Management Plans

An important question that negotiators of an Eel Agreement must answer is whether to adopt a top-down approach or a bottom-up approach to eel conservation. The top-down approach would consist of eel conservation measures that must be adopted by all Parties/Signatories. Under this approach, each Party/Signatory would be required to, for example, prohibit the take of eels or construct fish ladders around migration obstacles such as dams. The bottom-up approach would

²⁶⁶ Catch Documentation Scheme for *Dissostichus* spp., CCAMLR, Conservation Measure 10-05 (2016), available at <https://www.ccamlr.org/en/measure-10-05-2016>.

²⁶⁷ See FAO, GLOBEFISH - Analysis and information on world fish trade, Catch Documentation Schemes: Practices and applicability in combating IUU fishing, <http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/426994/>.

²⁶⁸ FAO, Report of the Expert Consultation on Catch Documentation Schemes, FAO Fisheries and Aquaculture Report No. 1120, at Annex D, § 4.1 (July 2015), available at <http://www.fao.org/documents/card/en/c/c497fcf1-c89a-4721-85e6-59c9f288ac6e/>.

²⁶⁹ See *supra* Section II.C.1.

²⁷⁰ Vienna Convention, May 23, 1969, U.N. Doc. A/CONF. 39/27, 1155 U.N.T.S. 331, art. 27 (entered into force Jan. 27, 1980) (“Every treaty in force is binding upon the parties to it and must be performed by them in good faith”).

²⁷¹ In some States, treaties are considered superior to domestic legal obligations.

allow local and national officials to undertake nation-wide or basin-wide measures to address the specific conservation challenges in that area.

The Critically Endangered status of the European eel suggests that the top-down approach would be more effective. To ensure the recovery of the species as quickly as possible, each Party/Signatory would undertake the full range of measures identified in the Agreement.

However, the top-down approach may discourage some States or territories from participating in the Agreement. In addition, the European eel may be relatively more abundant in some places. Dams of insufficient height to pose a barrier to migration may be more prevalent in some Range States. Under these circumstances, a bottom-up approach might be more effective. To quickly launch an Eel Agreement, the bottom-up approach, focused on basin-wide EMPs, may offer the most viable option, largely because the EU Member States, which constitute a large proportion of European eel Range States, have already adopted this approach through the EU Eel Regulation.²⁷² Attracting EU participation may be very difficult if a different approach is taken.

Under the EU's approach, Member States are required to prepare EMPs for each river basin, which may include maritime waters, that constitutes natural habitat for the European eel.²⁷³ The overall goal of a EMP must be to reduce mortality “so as to permit with high probability the escapement to the sea of at least 40% of the silver eel biomass relative to the best estimate of escapement that would have existed if no anthropogenic influences had impacted the stock.”²⁷⁴ The EU Eel Regulation does not specify the types of measures that must be adopted in an EMP. Instead, Member States may adopt measures based on local and regional conditions,²⁷⁵ so long as those measures are designed to meet the 40% escapement goal “in the long-term.”²⁷⁶ An EMP may contain a variety of measures, including measures to reduce commercial fishing activity, restrict recreational fishing, restock eels, make rivers passable, improve river habitats, transport silver eels from inland waters, combat predators, and reduce mortality from hydroelectric power turbines.²⁷⁷

As of 2013, 19 Member States had adopted EMPs for 81 basins.²⁷⁸ According to ICES, most management actions relate to commercial and recreational fisheries, with other measures relating to hydropower-pumping station obstacles, habitat, restocking, and predator control.²⁷⁹ The EMPs have also resulted in the establishment of implementation and monitoring programs and new scientific studies. Of the specified management actions, 756 management actions have been implemented fully, 259 partially implemented, and 107 not implemented.²⁸⁰

²⁷² EU Eel Regulation, *supra* note 1, at art. 2(4).

²⁷³ *Id.* at arts. 2(1)–(4).

²⁷⁴ *Id.* at art. 2(4).

²⁷⁵ *Id.* at art. 2(7).

²⁷⁶ *Id.* at art. 2(4).

²⁷⁷ *Id.* at art. 2(8).

²⁷⁸ European Commission, *supra* note 86, at 4.

²⁷⁹ ICES, *Report of the Workshop on Evaluation Progress Eel Management Plans (WKEPEMP)*, ICES CM 2013/ACOM:32, at 6 (2013), available at

http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WKEPEMP/wkepemp_2013.pdf.

²⁸⁰ *Id.*

Despite all of these management actions, it is still too early to determine whether the EU's bottom-up approach is effective in achieving the 40% escapement goal or a contribution to recovery of the stock as a whole.²⁸¹ As the European Commission reports,

[s]cientific advice underlines that the effectiveness of individual management measures cannot always be demonstrated: necessary data are missing or the measures concerned are not expected to produce their effects immediately or in the short term. For instance, there is high probability that restrictions on fisheries for silver eel have contributed to increases in silver eel escapement. However, management measures targeting eels prior to the silver eel stage (for instance restocking) are not expected to have yet contributed to increased silver eel escapement for biological reasons (generational lag time, ranging from approximately 5 years in Mediterranean lagoons to 25–30 years in northern Europe). Non-fisheries measures related to hydropower, pumping stations and migration obstacles are also difficult to evaluate at this point in time, mainly due to the site-specific nature of potential impacts and lack of post-evaluation data. The advice does not conclude that these management measures are ineffective or that will not be effective in the longer term.²⁸²

Nonetheless, the EMPs are not without utility. The European Commission also reported that of the 81 Eel Management Units (EMUs), 17 EMUs were achieving their biomass targets and 24 EMUs were achieving their anthropogenic mortality targets.²⁸³ Not all the information was positive: 42 EMUs reported not achieving their biomass targets while 19 reported not achieving their mortality targets.²⁸⁴ Reporting was insufficient to evaluate the achievement of biomass targets for 22 EMUs and mortality targets for 38 EMUs.²⁸⁵

3. Restocking

Restocking basins with eels seems like a commonsense measure to improve abundance and enhance recruitment of eels. In fact, virtually all EU EMPs include restocking as a conservation measure.²⁸⁶ The EU Eel Regulation also requires a Member State that allows fishing for eels that are less than 12 centimeters total length to reserve a minimum of 60% of their catch for restocking purposes.²⁸⁷

Scientists, however, are not convinced that restocking is a viable tool for eel recovery. Some studies “unambiguously state” that major knowledge gaps prevent firm conclusions about the utility of restocking, while others suggest that eels from a stocked watershed migrate similarly

²⁸¹ European Commission, *supra* note 86, at 5.

²⁸² *Id.*

²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ *Id.*

²⁸⁶ *Id.*

²⁸⁷ EU Eel Regulation, *supra* note 1, art. 7(2).

to wild populations,²⁸⁸ thus indicating that restocking could contribute to eel recovery. Others question the contribution of restocking to increases in spawning stock.²⁸⁹

If negotiators of a European Eel Agreement include restocking as a tool for eel recovery, then the Agreement must ensure that provisions are adopted to evaluate the efficacy and effects of restocking.²⁹⁰ One such provision could require all stocked eels to be marked in order to separate and distinguish wild from restocked eels for sampling and monitoring purposes.²⁹¹

4. Provisions Relating to the Sargasso Sea

Because European eels spawn in the Sargasso Sea,²⁹² negotiators of an Eel Agreement may wish to include provisions to protect this spawning habitat. Parts of the Sargasso Sea lie within Bermuda's exclusive economic zone while other parts lie on the high seas (areas beyond national jurisdiction),²⁹³ and scientists are unclear exactly where spawning takes place.²⁹⁴ Consequently, protection of spawning habitat may require protection of the Sargasso Sea within Bermuda's exclusive economic zone and on the high seas.

UNCLOS already prohibits the harvesting of catadromous species, such as the European eel, on the high seas.²⁹⁵ Most, but not all European eel Range States are party to UNCLOS; Israel, Libya, Syria, and Turkey are the eel Range States not party to UNCLOS.²⁹⁶ To ensure complete coverage, an Eel Agreement would want to include its own provisions to protect eels in the high seas portions of the Sargasso Sea.

A variety of CMS Agreements apply to the high seas and impose obligations on Parties/Signatories in those areas. They do so, for example, by applying the Agreement to the "nationals and vessels" of Parties/Signatories without limiting the geographic scope to a State or territory's jurisdiction. This is the approach taken by the Pacific Cetaceans MOU and the IOSEA Turtle MOU.²⁹⁷

²⁸⁸ See Jacoby & Gollock, *supra* note 4, at "Conservation Actions" (citations omitted).

²⁸⁹ See European Commission, *supra* note 86, at 6.

²⁹⁰ *Id.* at 8.

²⁹¹ Håkan Wickström & Niklas B. Sjöberg, *Traceability of Stocked Eels – The Swedish Approach*, 23 *ECOLOGY OF FRESHWATER FISH* 33 (2014).

²⁹² See *supra* Section II.A.

²⁹³ D.d'A Laffoley et al., Submission of Scientific Information to Describe Ecologically or Biologically Significant Marine Areas: Sargasso Sea, 5 (undated), available at <https://www.cbd.int/doc/meetings/mar/rwebsa-wcar-01/other/rwebsa-wcar-01-sargasso-sea-alliance-02-en.pdf>.

²⁹⁴ *Id.* at 11.

²⁹⁵ UNCLOS, *supra* note 191, at art. 67(2) ("Harvesting of catadromous species shall be conducted only in waters landward of the outer limits of exclusive economic zones. When conducted in exclusive economic zones, harvesting shall be subject to this article and the other provisions of this Convention concerning fishing in these zones.")

²⁹⁶ United Nations, Oceans & Law of the Sea, Chronological lists of ratifications of, accessions and successions to the Convention and the related Agreements (Last updated: 23 May 2017), available at http://www.un.org/depts/los/reference_files/chronological_lists_of_ratifications.htm.

²⁹⁷ See, e.g., Pacific Cetaceans MOU, *supra* note 123, at ¶ 11; IOSEA Marine Turtles MOU, *supra* note 125, at "Basic Principles," ¶ 2.

ACAP takes a different approach by implicitly imposing obligations on Parties in high seas areas. Albatrosses and petrels are caught as bycatch in longline and other commercial fisheries.²⁹⁸ Rather than designate areas off limits to fishing, ACAP provides that the Parties “shall endeavour individually and collectively to manage marine habitats” so as to avoid pollution that may harm these birds and ensure the sustainability of resources that provide food for them.²⁹⁹ Parties must also “individually or collectively seek to develop management plans for the most important foraging and migratory habitats of albatrosses and petrels” and “take special measures individually and collectively to conserve marine areas which they consider critical to the survival and/or restoration of species of albatrosses and petrels which have unfavourable conservation status.” Because ACAP defines “habitat” to mean “any area which contains suitable living conditions for albatrosses and/or petrels,”³⁰⁰ it is clear that ACAP requires Parties to take action to protect high seas habitats.

Although no oceanic eel fisheries appear to currently exist,³⁰¹ the negotiators of a European Eel Agreement could use either of these approaches to adopt a prohibition against eel fishing in the Sargasso Sea, anywhere on the high seas, or beyond some distance from the coast. Such a provision would help ensure that such fisheries are not developed and protect the eel’s migration. In addition, such a prohibition would not be unusual. A variety of RFMOs have adopted fishing bans to protect certain habitats or species. For example, NAFO prohibits bottom trawling on specified seamounts, corals, and areas with high densities of sponges.³⁰² The South East Atlantic Fisheries Organisation (SEAFO) also bans bottom trawling on specified seamounts on the high seas.³⁰³ The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) bans bottom trawling in areas of the high seas.³⁰⁴ The GFCM bars fishing on certain coral reefs.³⁰⁵ The International Whaling Commission maintains a Southern Ocean Sanctuary in which all commercial whaling is prohibited.³⁰⁶ In other words, if an Eel Agreement established a fishing ban in the high seas portions of the Sargasso Sea, it would not be unusual in international law.

²⁹⁸ ACAP, About ACAP, at <https://www.acap.aq/index.php/resources/education/1078-about-acap?lang=en> (stating that “[o]ne of the most significant threats facing albatrosses and petrels is mortality resulting from interactions with fishing gear, especially longline- and trawl-fishing operations.”).

²⁹⁹ ACAP, *supra* note 118, at Annex 2, ¶ 2.3.1.

³⁰⁰ *Id.* at art. 2(j).

³⁰¹ See European Commission, Communication from the Commission to the Council and the Parliament: Development of a Community Action Plan for the Management of European Eel, COM(2003) 573 final, at 4 (2003) (stating “No targeted fisheries take place in oceanic waters but river mouths, coastal areas with brackish waters and continental fresh water bodies are all subject to different types of fisheries.”), available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52003DC0573&from=EN>.

³⁰² NAFO Conservation and Enforcement Measures, *supra* note 88, art. 17 (2017). See Daniela Diz, *Current Legal Developments: The Sargasso Sea*, 31 INT’L J. MARINE & COASTAL L. 359 (2016) (describing the efforts to ban bottom trawling in these areas).

³⁰³ SEAFO, Conservation Measure 30/15 on Bottom Fishing Activities and Vulnerable Marine Ecosystems in the SEAFO Convention Area, art. 5(1) & Annex 2, available at <http://www.seafo.org/media/8933d489-854c-4c99-895e-66573c7010a4/SEAFOweb/CM/open/eng/CM30-15.pdf>.

³⁰⁴ CCAMLR, Conservation Measure 22-05 (2008) Restrictions on the use of bottom trawling gear in high-seas areas of the Convention Area, available at <https://www.ccamlr.org/en/measure-22-05-2008>.

³⁰⁵ GFCM, Recommendation GFCM/35/2011/2 on the exploitation of red coral in the GFCM area of application (2011).

³⁰⁶ The International Convention for the Regulation of Whaling (ICRW) established the International Whaling Commission (IWC). International Convention for the Regulation of Whaling art. III(1), Dec. 2, 1946, 62 Stat. 1716, 161 U.N.T.S. 72 (entered into force Nov. 10, 1948) [hereinafter ICRW]. The schedule, which includes the rules for

As for those areas of the Sargasso Sea within Bermuda's exclusive economic zone, UNCLOS directs relevant States to cooperate in the management and regulation of catadromous species.³⁰⁷ The negotiators of an Eel Agreement could extend the measures applicable to the high seas portion of the Sargasso Sea to those areas within Bermuda's exclusive economic zone, as the Eel Agreement would be a valid forum for cooperation.

E. Reporting

To ensure that the Parties/Signatories are working towards achievement of the objective of an Eel Agreement and that they are acting consistently with their obligations and commitments, they should be required to report on their implementation of certain activities. At the same time, an Eel Agreement should not establish reporting obligations that conflict with those of other regimes, such as the EU Eel Regulation. The EU Eel Regulation requires Member States to report every three years on progress in the implementation of their EMPs. In particular, they must report the following information:

- (a) for each Member State, the proportion of the silver eel biomass that escapes towards the sea to spawn relative to the target level of 40% escapement goal;
- (b) for those Member States without an approved EMP, the level of fishing effort exerted on eel each year, and the reduction realized relative to the 50% reduction in harvest required by the Eel Regulation;
- (c) the level of mortality factors outside the fishery (e.g., predators, hydroelectric turbines) and the reduction in mortality realized; and
- (d) the amount of glass eels caught less than 12 centimeters in length and the proportions of this utilized for various purposes.³⁰⁸

It appears that the EU Member States reported on implementation of their EMPs in 2015, but no analysis of them has occurred.³⁰⁹ Whether that indicates a problem with the reports or the reporting obligations themselves, or a lack of resources to undertake the analysis of the reports is unknown. To the extent that the reporting obligations themselves are not the problem, they could form the minimum amount of information to report. If an Eel Agreement bars fishing in the Sargasso Sea or otherwise limits fishing in areas beyond an "eel basin," then Parties/Signatories should be required to report on measures taken to implement those restrictions. Depending on other provisions of the Agreement, other reporting requirements may be advisable.

whaling, is an integral part of the ICRW. *Id.* art. I(1). The prohibition against commercial whaling in the two sanctuaries is found in paragraph 7 of the Schedule. Schedule as Amended by the Commission at the 66th Meeting (2016).

³⁰⁷ UNCLOS, *supra* note 191, at art. 67(3).

³⁰⁸ EU Eel Regulation, *supra* note 1, at art. 9(2).

³⁰⁹ 2016 WGEEL Report, *supra* note 84, at 8 (stating, "EU Member States again reported on progress with implementing their EMPs in 2015 but no official post-evaluation has taken place.").

F. Advisory Body

Any European Eel Agreement should include an advisory body that can provide technical advice to the participating States and territories. The advisory body could be a scientific committee or a broader technical committee.

Due to the large number of unanswered questions concerning the European eel's life history and the primary threats to the eel despite its precipitous population decline, a strong case can be made for a scientific committee that prioritizes scientific research needs and analyzes existing science. Most MEAs (e.g., CMS, CITES) and RFMOs (e.g., ICCAT, NAFO) have a dedicated scientific committee.³¹⁰ The Sharks MOU also has a scientific committee.³¹¹

At the same time, the conservation response to new scientific information concerning European eels may have profound impacts on law and policy and may require additional information concerning the feasibility of adopting certain technologies or implementing new laws. Consequently, a broader technical committee may respond more meaningfully to the needs of the participating States and territories. Several MEAs and CMS Agreements (e.g., AEWA³¹² and the Raptors MOU³¹³) have adopted this approach. The Ramsar Convention on Wetlands of International Importance³¹⁴ has established a Scientific and Technical Review Panel (STRP), comprising scientists and “technical experts.”³¹⁵ The scientific experts provide advice on “the strategic direction of scientific work needed to enhance the development of STRP products, and ensure the scientific quality of the finished products,”³¹⁶ while the technical experts prepare “guidance, technical briefing notes, Ramsar Technical Reports, etc., and solicit input and feedback on these from stakeholders and partners in all the Ramsar regions.”³¹⁷

AEWA has taken a similar approach, although it specifies a greater range of expertise for its Technical Committee. The AEWA Technical Committee comprises

³¹⁰ See, e.g., CMS, *supra* note 6, at art. VIII (establishing a Scientific Council); CITES, *Establishment of Committees*, Resolution Conf. 11.1 (Rev. CoP17 (establishing an Animals Committee and a Plants Committee)).

³¹¹ Sharks MOU, *supra* note 135, at ¶ 24.

³¹² AEWA, *supra* note 118, at art. VI(7). For more information on the AEWA Technical Committee, see AEWA, Technical Committee, <http://www.unep-aewa.org/en/about/organizational-structure/aewa-technical-committee>.

³¹³ Members of the Raptors Technical Advisory Group must have expertise in raptor research, conservation and/or management in order to provide advice on the implementation of the Raptors MOU, analyze scientific advice and assessments for the purpose of proving recommendations to the Signatories, and provide comments on any proposals to amend the MOU text which have a technical content. Report of the First Meetings of Signatories of the Raptors MOU, Terms of Reference for the Technical Advisory Group (TAG) to the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MOU), CMS/Raptors/MoS1/Report/Annex V (2013), available at http://www.cms.int/raptors/sites/default/files/document/report_e_1.pdf.

³¹⁴ Convention on Wetlands of International Importance, Especially As Waterfowl Habitat, Feb. 2, 1971, 11 I.L.M. 969 (1972) (entered into force Dec. 21, 1975) [hereinafter the Ramsar Convention].

³¹⁵ Ramsar, *New Framework for Delivery of Scientific and Technical Advice and Guidance on the Convention*, Resolution XII.5, at Annex 1, ¶ 7, available at http://www.ramsar.org/sites/default/files/documents/library/cop12_res05_new_strp_e_0.pdf.

³¹⁶ *Id.* at ¶ 7, footnote 2.

³¹⁷ *Id.* at ¶ 7, footnote 3.

- nine experts representing the different regions of the Agreement Area (Northern and Southwestern Europe, Central Europe, Eastern Europe, Southwestern Asia, Northern Africa, Central Africa, Western Africa, Eastern Africa, and Southern Africa), elected by the Parties;
- one representative appointed by each of the following organizations: the IUCN, Wetlands International, and the International Council for Game and Wildlife Conservation; and
- one thematic expert, elected by the Parties, from each of the following fields: rural economics, game management, and environmental law.³¹⁸

The general approach of AEWA might work quite well for a European Eel Agreement. Given the broad geographic range of the European eel, broad geographic representation on a technical committee would ensure that specific scientific and conservation concerns are addressed at the advisory body level. Given the lack of scientific information about the European eel, the AEWA approach could be modified to ensure that the nine regional representatives have scientific expertise or perhaps a separate set of members would have that expertise. The expert in game management would be changed to an expert in fisheries or eel management.

Moreover, the establishment of a more general Technical Committee would help ensure that the work of the Joint EIFAAC/ICES/GFCM Working Group on Eel (WGEEL) is not duplicated. Presently, the main objective of the WGEEL is to “report on the status of the European eel stocks and provide advice to support development and implementation of EC Regulation No. 1100/2007 for eel stock recovery.”³¹⁹ The WGEEL assesses European eel populations across its range.³²⁰ A member or two of the WGEEL could participate as an expert on the Agreement’s Technical Committee. In the alternative, the Agreement could hire the WGEEL to provide specific scientific services to the Parties/Signatories (as the EU does).³²¹ The arrangement could be designed as in the Western and Central Pacific Fisheries Commission (WCPFC).³²² The WCPFC has its own Scientific Committee,³²³ but the science it reviews is provided by the Oceanic Fisheries Programme of the Secretariat of the Pacific Community.³²⁴

³¹⁸ AEWA, Modus Operandi of the Technical Committee of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds, Rule 2(1) (2012), available at http://www.unep-aewa.org/sites/default/files/basic_page_documents/tc_modus_operandi_approved_by_mop5_en_rev_112016.pdf.

³¹⁹ ICES, Joint EIFAAC/ICES/GFCM Working Group on Eels, at <http://ices.dk/community/groups/Pages/WGEEL.aspx>.

³²⁰ See, e.g., 2016 WGEEL Report, *supra* note 84.

³²¹ See ICES, ICES and EU Sign Memorandum of Understanding (Press Release), at <http://www.ices.dk/news-and-events/news-archive/news/Pages/ICES-and-European-Union-sign-Memorandum-of-Understanding-in-Copenhagen.aspx> (“ICES provides the European Union with [scientific advice](#) on fishing opportunities for more than 220 fish stocks on an annual basis.”).

³²² The WCPFC was established by the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, Sept. 5, 2000, 2275 U.N.T.S. 40532 [hereinafter WCPF Convention] (entered into force June 19, 2004). available at: <https://www.wcpfc.int/system/files/text.pdf>.

³²³ *Id.* at art. 11(1).

³²⁴ Memorandum of Understanding, WCPFC-Int’l Scientific Comm. for Tuna & Tuna-like Species in the N. Pac. Ocean, Mar. 15, 2016, available at <https://www.wcpfc.int/relations-other-organisations-0>.

G. Secretariat

In addition to identifying the tasks to be performed by the Secretariat, which have become somewhat boilerplate within MEAs (e.g., review reports, organize meetings),³²⁵ negotiators of a European Eel Agreement must determine 1) the location of the Secretariat, 2) whether the Secretariat (and the Agreement itself) is associated with the United Nations or another entity or is independent (like, e.g., ACAP), 3) staff size, and 4) whether any of its staff are shared with CMS. These four issues are difficult to untangle, as they are closely interrelated.

At the moment, at least four locations could provide some synergies for an Eel Secretariat, each with its own advantages and disadvantages. None of these locations or institutions has made any remarks about its willingness or capacity to host an Eel Secretariat. As such, this section is intended only to generate discussion.

The first and most obvious location for an Eel Secretariat is Bonn, sharing space with the CMS Secretariat, as well as staff from EUROBATS, AEWA, and ASCOBANS. Sharing space with the CMS Secretariat has several advantages, including the possibility to share administrative staff. Germany has also shown an interest in eel conservation by virtue of its proposal, on behalf of the EU, to include the European eel in Appendix II of CITES.³²⁶ Germany is also a European eel Range State.

In addition, if the Parties/Signatories to an Eel Agreement do not believe that a full-time person is needed for a particular position, it may be possible to split the position with another CMS Agreement, as ASCOBANS and the IOSEA Turtles MOU have done. The ASCOBANS Coordinator spends 75% of her time on ASCOBANS; the remaining time is spent as the CMS Marine Mammals Officer.³²⁷ Similarly, the IOSEA Coordinator serves as a part-time advisor to CMS, thus off-loading some of that salary on CMS.³²⁸ Such a scheme, of course, would require agreement among the CMS Parties.

An advantage or disadvantage, depending on one's perspective, of sharing space with the CMS Secretariat—and by extension integrating with the UN system—is that the UN charges 13% for Programme Support Costs (PSC). This fee is assessed against mandatory contributions and voluntary contributions alike.³²⁹ The PSC fee is charged even if the funds are for specific programmatic work (thus diverting programmatic funds towards administration).³³⁰ Part of the funds from PSC charges are returned to CMS to pay for local administrative staff. The remainder

³²⁵ See, e.g., CMS, *supra* note 6, at art. IX.

³²⁶ Germany (on behalf of the EU, Proposal for the Inclusion of *Anguilla anguilla* (L.) in Appendix II in accordance with Article II §2(a), COP14 Prop. 18 (2007), available at <https://cites.org/eng/cop/14/prop/index.php>.

³²⁷ Lee et al., *supra* note 147, at ¶ 71.

³²⁸ *Id.* at ¶ 54.

³²⁹ See Decision 80/44 of 27 June 1980, the UNDP Governing Council (approving a PSC rate of “13 per cent of annual project expenditures.” The UN General Assembly approved the UNDP’s formula for use by the United Nations Secretariat. UNGA Resolution 35/217 (Dec. 17, 1980). As a program of the United Nations, UNEP, including the agreements under its authority (such as CMS) falls within the scope of the PSC formula.

³³⁰ Some exceptions have been made to this rule; for example, the EU pays 7% PSC on its contributions. However, these exceptions are rare. See CBD, Note on the 13 per cent Programme Support Costs (PSC), ¶¶ 6–7 (undated), available at <https://www.cbd.int/doc/meetings/cop-bureau/cop-bur-2010/cop-bur-2010-02-note-13percent-160310-en.pdf>.

goes to the Nairobi office of the United Nations Environment Programme to pay administrative staff there that perform tasks on behalf of CMS.

One disadvantage is that the CMS staff is already operating at full capacity and is considered understaffed.³³¹ Without additional numbers of staff and financial resources, the CMS Secretariat will not be able to perform secretariat functions for a new, active Eel Agreement while also maintaining the same level of performance for CMS and the other MOUs.

In addition, if the Eel Agreement integrates with the CMS Secretariat, then all of the rules of the United Nations Environment Programme relating to contracting, salary, and travel would apply. The advantage is that these rules would not have to be written anew. The disadvantage is their lack of flexibility.

A second possibility for housing the Eel Agreement Secretariat might be the Sargasso Sea Commission. As noted earlier, the Sargasso Sea Commission has been a supporter of eel conservation, including the eel's sole spawning area: the Sargasso Sea.³³² The Sargasso Sea Commission is hosted by the IUCN in Washington, D.C., which may not be ideal for an Eel Agreement initially focused on the European eel. However, if the Eel Agreement is later expanded to include the American eel, as discussed in Section VII, then locating a Secretariat within a Range State of that species may be more acceptable to the Range States of the European eel.

The Anguillid Eel Specialist Group (AESG), hosted by the Zoological Society of London, offers a third possibility.³³³ The AESG identifies scientific gaps in our knowledge of anguillid species, advocates for the conservation of anguillid species, and provides a forum for discussing issues relating to these species.³³⁴ The Zoological Society of London charges an administrative fee of 15%³³⁵ but its London location would provide easy access for most Range States.

Lastly, a fourth possibility would be to locate the Secretariat within the territory of a CMS party that hosts an existing CMS Agreement. Monaco, for example, is a European eel Range State, has shown an interest in eel conservation by virtue of its proposal to include the European eel in CMS Appendix II,³³⁶ and already hosts the ACCOBAMS Secretariat as a Secretariat independent of CMS and the United Nations system. It is possible that some synergies between the two Agreements could be found. With a fully independent Agreement and Secretariat, whether in Monaco or elsewhere, the Parties/Signatories would be allowed to establish their own rules, including for salary, although Executive Secretaries of independent secretariats appear to have salaries similar to those in the UN system.³³⁷

³³¹ Lee et al., *supra* note 147, at ¶¶ 63–64, 132.

³³² See *supra* Section V, criterion 9 (describing role of the Sargasso Sea Commission).

³³³ Anguillid Eel Specialist Group (AESG), About, at <http://www.iucnffsg.org/about-ffsg/anguillid-specialist-sub-group/>.

³³⁴ *Id.*

³³⁵ Personal Communication with Gollock, *supra* note 42.

³³⁶ Proposal for the Inclusion of the European Eel (*Anguilla anguilla*) on CMS Appendix II, *supra* note 179.

³³⁷ The salary of the International Whaling Commission's Executive Secretary has been posted as £94,365.97 British Pounds (USD122,477). IWC, Current Vacancies, at <https://iwc.int/vacancies>. The salary of the ACAP Executive Secretary is AUS141,685 (USD112,385) for 2017. ACAP, Agreement Budget: 2016 – 2018, Resolution 5.6, Appendix A (2015). These salaries are similar to a D-1 or D-2 position within the UN system, not accounting for

Whatever choice the Parties/Signatories make, they should ensure that the Secretariat has legal personality.³³⁸ The Ramsar Convention Secretariat, for example, does not have legal personality, and consequently some Ramsar Convention Parties have had difficulties paying their contributions.³³⁹

H. Finance

To ensure the success of an Eel Agreement, the participating States and Territories must be willing to contribute sufficient resources. As of 2010, three of the seven legally binding Agreements lacked funds to ensure successful implementation of their work plan,³⁴⁰ and “most” MOU operational and project-specific work was underfunded.³⁴¹

As noted earlier, no current CMS Agreement is an adequate comparator for a potential Eel Agreement. The Dugong, Sharks, and IOSEA Turtle MOUs are the closest comparators, but they have significant differences. Thus, it is difficult to assess with great accuracy what an Eel Agreement might cost on an annual basis.

The Dugong MOU, as noted above, covers a single species across 46 Range States and territories and operates in a single language. The Dugong Secretariat is run out of the CMS office in Abu Dhabi.³⁴² The Dugong MOU is staffed by a P4 Programme Officer, a P2 Programme Officer, and an Administrative and Finance Assistant.³⁴³ These full-time staff are supported by an Executive Coordinator (0.33 P5 FTE) and another P2 Programme Officer (0.5 FTE). When fully

benefit packages and adjustments for post location. UN, Pay and Benefits, <https://careers.un.org/lbw/home.aspx?viewtype=SAL>.

³³⁸ The legal personality of a Secretariat is established in the Headquarters Agreement between the host government and the decisionmaking body of the Agreement. The first paragraph of the ACCOBAMS headquarters agreement, for example, provides as follows:

1. The Government of H.S.H. the Prince of Monaco shall recognize the legal personality of the Permanent Secretariat and, for the purposes of carrying out its statutory responsibilities, its capacity:
 - to contract,
 - to acquire and dispose of movable and immovable property,
 - to be a party to legal proceedings.

ACCOBAMS, *Amendment to the Headquarters Agreement with the Host Government*, Resolution 6.2, at Annex 1, art. I(1), available at http://www.accobams.org/new_accobams/wp-content/uploads/2016/06/ACCOBAMS_MOP6_Res6.2.pdf.

³³⁹ Ramsar Convention, Legal Status of the Ramsar Convention Secretariat, Doc. SC36-16 (2008), available at http://archive.ramsar.org/cda/fr/ramsar-documents-standing-legal-status-of-the/main/ramsar/1-31-41%5E22766_4000_1. For more information about the relationship between the Ramsar Convention Secretariat and the IUCN, see Bharat H. Desai, *Multilateral Environmental Agreements: Legal Status of the Secretariats* 181–89 (2010).

³⁴⁰ Lee et al., *supra* note 147, at ¶ 87.

³⁴¹ *Id.* at ¶ 89.

³⁴² See CMS, *Current Financial Status and Future Funding*, CMS/Dugong, MOS3/13/1, ¶ 3 (Jan. 12, 2017).

³⁴³ *Id.* at Annex 1, Tables 1, 2.

staffed, the core budget is slightly more than USD600,000.³⁴⁴ In addition, these staff submitted proposals to conduct on-the-ground conservation projects, receiving a USD5.88 million grant.³⁴⁵ In other words, successful implementation of the Dugong MOU requires both core funding as well as project funding. Significantly, the Dugong MOU has been entirely funded since its establishment in 2009 by the Environment Agency–Abu Dhabi.³⁴⁶ At the last meeting of the Signatories, the Secretariat sought to diversify funding by seeking voluntary contributions of USD120,000 for program activities from the Signatories based on a modified version of the UN Scale of Assessments, a proposal that the Signatories adopted.³⁴⁷

The Sharks MOU is global and covers 29 species, whereas an Eel Agreement would be regional and cover a single species. The Sharks MOU has 41 signatories,³⁴⁸ which may be similar to the number for an Eel Agreement (with 57 Range States and territories), but the Shark MOU Signatories come from all over the world and many of them are developing countries that receive funding to participate in meetings. A much smaller number of potential participating States and territories in an Eel Agreement are developing countries. The Sharks MOU has an Advisory Committee comprising 10 members.³⁴⁹ It operates in three languages: English, French, and Spanish.³⁵⁰

The Sharks MOU had a budget of 1,145,866 Euros (approximately USD1,246,380 in January 2016) for the 2013–2015 triennium, although it received only USD645,752 in voluntary contributions to the Trust Fund (additional voluntary contributions were received for specific projects).³⁵¹ An additional in-kind contribution of 186,501 Euros in the form of staff time was provided by the CMS Secretariat,³⁵² and the German Government paid for a P2 officer for two of the three years of the triennium.³⁵³ The budget anticipated the hiring of a P3 officer, which was budgeted at 438,020 Euros for the triennium.³⁵⁴ The costs of one Meeting of the Signatories and one meeting of the Advisory Committee were estimated at 235,553 Euros,³⁵⁵ with a large portion of those costs allocated to interpretation (30,000 Euros) and support for delegate participation (82,500 Euros).³⁵⁶ The costs of hosting a Meeting of the Signatories do not account for the costs borne by the host government; Costa Rica, the host of the First Advisory Committee meeting and the Second Meeting of the Signatories, was financially responsible for the venue (including

³⁴⁴ *Id.* at Table 2.

³⁴⁵ *Id.* at ¶ 17.

³⁴⁶ *Id.* at ¶ 2.

³⁴⁷ CMS, Report of the Third Meeting of the Signatories to the Dugong MOU, CMS/Dugong/MOS3*, ¶¶ 137–142 (June 14, 2017, *Second reissue for technical reasons (05 September 2017)*), available at http://www.cms.int/dugong/sites/default/files/document/cms-dugong_mos3_report_reissued2.pdf.

³⁴⁸ CMS, Sharks MOU, Sharks, <http://www.cms.int/sharks/en/legalinstrument/sharks-mou>.

³⁴⁹ Sharks MOU, *supra* note 135, at Annex 2.

³⁵⁰ *Id.* at ¶ 34.

³⁵¹ CMS, Report on the Implementation of the Budget for the Triennium 2013–2015, CMS/Sharks/MOS2/Doc.10.2 (2016).

³⁵² *Id.* at ¶ 3.

³⁵³ *Id.* at ¶ 10.

³⁵⁴ *Id.* at Annex 2, Line Item 1.

³⁵⁵ *Id.* at ¶ 14.

³⁵⁶ *Id.* at Annex 2, Line Items 9, 10, & 15.

microphones and other relevant technology for the meeting), a work room for the Secretariat, and rooms for working groups.³⁵⁷

Because of the relatively small number of developing countries that would require travel assistance, presumably the budget for a European Eel Agreement would have smaller amounts allocated for this purpose.³⁵⁸ Similarly, the use of only two languages would reduce the cost of interpretation and translation significantly. Staff costs would be dependent on the number and type of personnel hired. But given the similarity in scope to the Sharks MOU, one full-time P2 or P3 professional officer and one part-time administrative assistant would be considered a minimal requirement.

As for languages of a European Eel Agreement, English and Arabic might be the two most relevant. The Range States of Europe speak more than a dozen languages but English would be a common language spoken by most government officials. Arabic is the most common first language among the Range States (Algeria, Egypt, Lebanon, Libya, Morocco, Syria, and Tunisia). Making Arabic an official language may entice these Range States to participate. While Arabic is not a working language of CMS or any of its Agreements, this could be accommodated without too much difficulty.

VII. Extension to the American Eel

The American eel (*A. rostrata*) also faces conservation challenges, although they do not appear to be as severe as those facing the European eel. The American eel has been classified as “Endangered” on the IUCN Red List for reasons similar to the European eel: “hydropower turbines; poor body condition; climate change and/or changes in oceanic currents; disease and parasites (particularly *A. crassus*); exploitation and trade of glass, yellow and silver eels; hydrology; habitat loss; pollutants; and predation.”³⁵⁹ As with the European eel, the scientific data gaps concerning the life history and threats to the American eel are significant.³⁶⁰ Consequently, the question arises as to whether the European Eel Agreement could be expanded to include the American eel.³⁶¹

Procedurally, the inclusion of the American eel could be easily arranged. As with other Agreements, the species to be protected would be placed in an Annex to the Eel Agreement. The Parties/Signatories could add species to the Annex at subsequent meetings, provided that the

³⁵⁷ Letter from Bradnee Chambers, CMS Executive Secretary, to Edgar Gutiérrez Espleta, Minister for Environment and Energy (July 13, 2015).

³⁵⁸ The following European eel Range States appear to be eligible for funding: Albania, Algeria, Belarus, Bosnia and Herzegovina, Egypt, Georgia, Lebanon, Libya, Macedonia, Mauritania, Moldova, Montenegro, Morocco, Syrian Arab Republic, Tunisia and Ukraine.

³⁵⁹ D. Jacoby et al., *Anguilla rostrata*, The IUCN Red List of Threatened Species, at “Justification” (2014), at <http://www.iucnredlist.org/details/191108/0>.

³⁶⁰ See *id.* at “Major Threats” (noting the “relative lack of understanding of the threats”). See also U.S. Fish & Wildlife Service, American eel: 12-month Petition Finding Form, Docket Number FWS-HQ-ES-2015-0143, at 7, available at https://www.fws.gov/northeast/americaneel/pdf/20150820_AmEel_12M_NotWarranted_BatchFormat_v2_Signed.pdf (stating that “no rangewide estimate of American eel abundance exists” and “specific information on demographic structure is lacking and difficult to determine”).

³⁶¹ *Report of the First Range States Workshop on the European Eel*, *supra* note 13, at ¶¶ 145–52.

Agreement gives the Parties/Signatories that authority. This is, of course, the way CMS itself operates,³⁶² as does ACAP,³⁶³ AEWA,³⁶⁴ and the Sharks MOU,³⁶⁵ among others.³⁶⁶

The oddity of this approach under an Eel Agreement is that none of the Range States of the American eel are likely to participate in the vote to include the American eel in the Agreement's Annex since they are unlikely to be a Party/Signatory to an Eel Agreement focusing on the European eel. Nonetheless, Parties/Signatories frequently add species to the list of covered species in the absence of a Range State³⁶⁷ or even against the will of a Range State.³⁶⁸ Presumably, however, the Eel Agreement would include provisions to allow for participation as observers by non-Range States and non-Parties or non-Signatories, as is generally the case in multilateral environmental agreements³⁶⁹ and CMS MOUs.³⁷⁰ In this way, they would be allowed to participate in the discussions, although they would not have the right to vote.

The inclusion of the American eel, with 43 additional Range States and territories,³⁷¹ in an Eel Agreement would certainly increase costs. Many of these States and territories are developing countries that would require funds to participate in meetings. In addition, several speak Spanish as their native language.³⁷² Adding this language to the Agreement would likely enhance their participation but, of course, also add costs for translation and interpretation. Adding the American eel to an Eel Agreement would likely also require expansion of any advisory committee to accommodate the scientific and technical expertise from relevant Range States and territories.

Because the American eel and the European eel face similar threats, it is possible that any Action Plan developed for the European eel could also apply to the American eel. Action plans are intended to be iterative documents subject to amendment, so any actions specific to the American eel could be incorporated into the action plan at a meeting of the Parties/Signatories.

Some participants at the First Range States Workshop on the European Eel noted that more management work was needed in American eel Range States before inclusion of the American eel

³⁶² CMS, *supra* note 6, at art. XI.

³⁶³ ACAP, *supra* note 118, at art. VIII(13)(e).

³⁶⁴ AEWA, *supra* note 118, at art. X(5).

³⁶⁵ Sharks MOU, *supra* note 135, at ¶ 20.

³⁶⁶ Raptors MOU, *supra* note 250, at ¶¶ 15, 22.

³⁶⁷ Several shark species were included in the CMS Appendix II at COP11 despite the absence of or lack of participation by many Range States, such as the United States, Canada, and Mexico, all of whom are CMS non-Parties. However, many of shark Range States did participate and agree to list these shark species.

³⁶⁸ For example, the southern African countries have been opposed to many of the decisions taken concerning the African elephant in CITES.

³⁶⁹ See, e.g., CMS, *supra* note 6, at art. VII(8); CITES, *supra* note 2, at art. XI(6).

³⁷⁰ See, e.g., Sharks MOU, *supra* note 135, at ¶ 22.

³⁷¹ The Range States and territories are Anguilla; Antigua and Barbuda; Aruba; Bahamas; Barbados; Belize; Bermuda; Bonaire, Sint Eustatius and Saba; Canada; Cayman Islands; Colombia; Costa Rica; Cuba; Curaçao; Dominica; Dominican Republic; Greenland; Grenada; Guadeloupe; Haiti; Honduras; Jamaica; Martinique; Mexico; Montserrat; Nicaragua; Panama; Puerto Rico; Saint Barthélemy; Saint Kitts and Nevis; Saint Lucia; Saint Martin (French part); Saint Pierre and Miquelon; Saint Vincent and the Grenadines; Sint Maarten (Dutch part); Trinidad and Tobago; Turks and Caicos Islands; United States; Venezuela, Bolivarian Republic of; Virgin Islands, British; Virgin Islands, and the United States. Jacoby et al., *supra* note 359, at "Countries Occurrence."

³⁷² Colombia, Dominican Republic, Honduras, Mexico, Nicaragua, Panama, and Venezuela. *Id.*

in the Agreement would be productive.³⁷³ On the one hand, inclusion of the American eel in the Agreement could catalyze development of management plans. On the other hand, the lack of eel management expertise could establish obligations that simply are not implementable in a reasonable period of time. Clearly, the Range States will need to determine which step to take first.

VIII. Conclusion

The European eel is considered “Critically Endangered.” Its population continues to decline due to overutilization, barriers to migration such as dams, pollution, and climate change. The international community has responded by including the European eel in Appendix II of CITES in order to regulate international trade, the List of Threatened and/or Declining species under OSPAR to help establish conservation priorities to protect marine biodiversity, and Appendix II of CMS to help improve the species conservation status. The EU has taken regional action to prohibit imports into and exports from EU Member States, although intra-EU trade is permissible.

Despite this international and regional action, the eel’s conservation status might not be improving. The eel’s Appendix II status on CITES regulates only international trade; CITES does not have competence to address other threats to the eel. OSPAR is limited to an area in the Northeast Atlantic, omitting vast areas of the eel’s range. The CMS Appendix II listing for the European eel does not impose any specific conservation obligations on the Parties. No other international treaty has the competence to manage the full suite of threats across the European eel’s range.

The conservation of the European eel would benefit from international management coordinated through a new international legal instrument. CMS, with the possibility for legally binding and non-legally binding instruments, provides an opportunity to coordinate those efforts. Unlike other international agreements, a legal instrument negotiated under CMS can cover the full range of the European eel’s habitat, including all freshwater and marine habitats, and address the full range of threats to the species.

Evidence indicates that the legal status of a CMS instrument is not *per se* indicative of whether the instrument will be successful or not. However, legally binding CMS instruments tend to have more stable funding, and the stable funding is linked to more successful conservation outcomes. If a commitment of funds can be arranged, a non-legally binding MOU may more quickly enter into force and achieve conservation benefits for the species.

Regardless of the instrument’s legal status, it should include a range of provisions, such as those to prohibit or regulate taking; prohibit or regulate trade, potentially through a CDS; establish an advisory body to bring new scientific information to bear on possible new management strategies; and reporting obligations to help monitor the success or failure of management strategies.

³⁷³ *Report of the First Range States Workshop on the European Eel*, *supra* note 13, at ¶¶ 147–48.