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Bringing the European Eel Back from the Brink: The Need for a New Agreement under the Convention on Migratory Species

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ARTICLE

Bringing the European Eel Back from the Brink: The Need for a New Agreement under the Convention on Migratory Species

CHRIS WOLD*

The European eel is considered “Critically Endangered.” Its population has been declining 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 the Convention on International Trade in Endangered Species (“CITES”) to regulate international trade and Appendix II of the Convention on Migratory Species (“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 these actions, the eel’s conservation status might not be improving. The eel’s Appendix II status on CITES regulates only international trade. The CMS Appendix II listing 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 eel’s range.

Thus, European eel conservation would benefit from a new international legal instrument negotiated under the auspices of CMS. Unlike other agreements, a legal instrument negotiated under CMS can cover the full range of the European eel’s freshwater and marine habitat and address the full range of threats to the species. CMS Agreements can be legally binding or not. Regardless of the instrument’s legal status, it should prohibit or regulate taking; prohibit

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or regulate trade, potentially through a CDS; establish an advisory body to assess new scientific information and review management strategies; and include reporting obligations to help monitor the success or failure of management strategies.

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I. INTRODUCTION

In books and movies, eels are commonly depicted as sneaky creatures with a propensity for tricking other creatures.¹ The French idiom “there’s an eel under the rock” refers to a dubious situation.² They are also considered to be dangerous creatures that bring catastrophes.³ In the Pacific island myth, the eel-god Tuna (the Samoan word for eel) takes the form of an eel to watch women bathe; a woman who eats an eel is considered possessed of an evil spirit.⁴ In other cultures, eels are sacred.⁵

Regardless of their depiction in myth and movies, modern day eels are big business and in great peril. Maine fishermen have sold glass eels to Asian dealers for as much as \$2,600 per pound.⁶ In 2012, the Maine catch of glass eels was worth \$38 million.⁷ In addition, as catadromous species, eels spawn in the marine environment and spend their adult lives in continental waters such as rivers, lakes, estuaries, and lagoons.⁸ This catadromous life history makes them vulnerable to a variety of threats. In addition to over-exploitation for Japanese cuisine, including sushi (unagi),⁹ eels encounter barriers to migration such as dams as they swim upstream and down.¹⁰ They also face threats from disease, parasites, and climate change.¹¹

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1. See, e.g., *Little Mermaid*, in which two eels, Flotsam and Jetsam, search for victims for the wicked Ursula; they were, for example, given the task of luring Ariel to Ursula’s lair. *LITTLE MERMAID* (Disney 1989).
 2. Eric Feunteun & Tony Robinet, *Freshwater Eels and People in France*, in *EELS AND HUMANS* 75, 75 (Katsumi Tsukamoto & Mari Kuroki ed., (2014)) (in French, “Il y a anguille sous roche”).
 3. *Id.*
 4. 2 ROBERT W. WILLIAMSON, *THE SOCIAL AND POLITICAL SYSTEMS OF CENTRAL POLYNESIA* 274 (1924).
 5. T. Kieran McCarthy, *Eels and People in Ireland: From Mythology to International Eel Stock Conservation*, in *EELS AND HUMANS* 13, 14–15 (Katsumi Tsukamoto & Mari Kuroki eds., 2014).
 6. Annie Sneed, *American Eel Is in Endanger of Extinction*, *SCI. AM.* (Dec. 1, 2014), <https://perma.cc/3NYR-BUQT>.
 7. *Id.*
 8. David M.P. Jacoby et al., *Synergistic Patterns of Threat and the Challenges Facing Global Anguillid Eel Conservation*, 4 *GLOB. ECOLOGY & CONSERVATION* 321, 322 (2015).
 9. See *infra* Section II.C.1.
 10. See *infra* Section II.C.2.
 11. See *infra* Section II.C.3–4.

International concern has been growing for all eel species in the family Anguillidae due to their significant population declines,¹² but regional and international efforts have so far focused on the European eel (*Anguilla anguilla*). 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.¹³ Later in 2007, the Convention on International Trade in Endangered Species of Fauna and Flora (“CITES”)¹⁴ included the species in Appendix II.¹⁵ 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.¹⁶ That same year, 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”).¹⁷ In 2014, the Convention on Migratory

12. *Anguillid Eel Specialist Group (AESG): About AESG*, IUCN FRESHWATER SPECIALIST GRP., <https://perma.cc/23DD-7B5S> (“For 30 years or more there has been growing concern amongst stakeholders in relation to the decline in recruitment and/or populations of a number of species within the family Anguillidae.”).
13. 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.
Council Regulation 1100/2007, Establishing Measures for the Recovery of the Stock of European Eel, art. 2, 2007 O.J. (L 248) 1, 3, 4 (EC), <https://perma.cc/7FCN-TXCG> [hereinafter EU Eel Regulation].
14. 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), <https://perma.cc/A6UP-M6V9> [hereinafter CITES].
15. CITES Appendices II, III (valid from Apr. 4, 2017), <https://perma.cc/XV8Z-YUW6>.
16. DAVID JACOBY & MATT GOLLOCK, IUCN, THE IUCN RED LIST OF THREATENED SPECIES – ANGUILLA ANGUILLA, EUROPEAN EEL 1, 3 (2014), <https://perma.cc/J8QZ-KVAA>. The European eel was again classified as “Critically Endangered” in 2010 and 2014. *Id.*
17. OSPAR List of Threatened and/or Declining Species and Habitats (Ref. No. 2008-6), pt. II, 2008, <https://perma.cc/WV8U-VAJH>. 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. *About OSPAR*, OSPAR COMM’N, <https://perma.cc/A5B2-F4AL>.

Species (“CMS”)¹⁸ included the European eel in Appendix II due to its unfavorable conservation status.¹⁹ Despite these actions, the eel’s conservation status may not be improving.²⁰ The population remains in a “critical state”; the “promising increase” in recruitment in some recent years “may or may not be the result of protective measures.”²¹

Consequently, the CMS Secretariat and the Sargasso Sea Commission²² sponsored the First Range States Workshop on the European Eel to review the conservation status of and existing management measures for the species.²³ That meeting concluded that a second workshop that includes additional Range States, particularly from North Africa, would be valuable.²⁴ 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.²⁵

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18. Convention on the Conservation of Migratory Species of Wild Animals, June 23, 1979, 1651 U.N.T.S. 333 (entered into force 1983), <http://perma.cc/XP9Q-GBWZ> [hereinafter CMS].
 19. CMS Appendix II, at 14, <https://perma.cc/GXL2-YMS5>. 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 18, at art. IV(1).
 20. Willem Dekker, *Management of the Eel Is Slipping through Our Hands!: Distribute Control and Orchestrate National Protection*, 73 ICES J. MARINE SCI. 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. Jacoby et al., *supra* note 8, at 325, fig.1. As a consequence, it may be too early to determine whether existing measures are having a positive impact on the eel’s conservation status.
 21. INT’L COUNCIL FOR THE EXPL. OF THE SEA, REPORT OF THE JOINT EIFAAC/ICES WORKING GROUP ON EELS (WGEEL), ICES CM 2013/ACOM:18, at 180 (2013), <https://perma.cc/2RSX-AV6G>.
 22. For more information on the Sargasso Sea Commission, see SARGASSO SEA COMM’N, <https://perma.cc/55RX-CJX5>.
 23. Documents for the meeting can found at *The First Range State Workshop on the European Eel*, CMS, <https://perma.cc/YR9Z-ARH9>.
 24. CMS, Rep. of the First Range States Workshop on the European Eel, Doc. UNEP/CMS/Eels WS1/Report, ¶ 145 (Oct. 13–14, 2016), <https://perma.cc/4DX2-DGNF>.
 25. *Id.* ¶ 145-58.

At the Twelfth Meeting of the Conference of the Parties to CMS,²⁶ the Parties adopted a “concerted action”²⁷ for the European Eel²⁸ that calls on CMS Parties to convene a second workshop of Range States “to explore all options that might help to strengthen conservation efforts for the European eel.”²⁹ In particular, the meeting “should focus on exploring synergies between existing instruments, to solidify the role of CMS, and associated mechanism[s] of implementation, in on-going conservation efforts.”³⁰

In light of these events, this Article assesses the nature and content that a CMS instrument could play in strengthening conservation measures for the European eel. 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, Section II begins by briefly summarizing 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 agree-

26. For information about and documents from this meeting, see *Twelfth Meeting of the Conference of the Parties to CMS*, CMS, <https://perma.cc/RQ93-GVBR>.

27. “Concerted actions” are defined as:

[P]riority 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

a) involve measures that are the collective responsibility of Parties acting in concert; or

b) 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[.]

CMS Res. 12.28, *Concerted Actions*, Doc. UNEP/CMS/Res. 12.28, ¶ 1 (Oct. 2017), <https://perma.cc/L6C4-GHT4>.

28. CMS, Concerted Action on the European Eel (*Anguilla anguilla*), Doc. UNEP/CMS/Concerted Action 12.1 (Oct. 2017), <https://perma.cc/B3D5-HD2M> [hereinafter CMS Concerted Action on the European Eel].

29. *Id.* at 1.

30. *Id.*

ment might be necessary. Section III describes the need for international cooperation to conserve and manage the European eel given the scientific information included in Section II. Section IV evaluates 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 12.8 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. Section VII briefly comments on the possible extension of a CMS instrument concerning the European eel to the American eel (*A. rostrata*), which faces similar threats. Finally, Section VIII concludes that the role of CMS in European eel conservation must be solidified because only CMS has the flexibility and breadth to address all of the threats to the European eel across its full geographic range.

II. CONSERVATION STATUS OF THE EUROPEAN EEL

A. Life History

The European eel is one of 16 anguillid species.³¹ 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.³² They are also unusual among aquatic species in that they reproduce just once before dying.³³ On average, the generation length of the European eel has been estimated at 15 years,³⁴ and it is widely dispersed, inhabiting the marine and freshwater environments of 57

31. Jacoby et al., *supra* note 8, at 323.

32. *Id.* at 322.

33. *Id.* at 323.

34. *Id.* at 325, tbl.1.

States and territories.³⁵ Despite this wide dispersal, the European eel is considered a single stock—that is, it is panmictic³⁶ because all adults spawn in the southwestern part of the Sargasso Sea.³⁷

The European eel's life history makes for fascinating study. The eel's leptocephalus larvae hatch in *Sargassum*³⁸ and then drift with the ocean currents towards Europe and North Africa.³⁹ 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.⁴⁰ After a period of time, they begin to take on pigmentation and become known as elvers.⁴¹ Continuing their transformation, European eels then enter their growth stage, during which they are known as yellow eels.⁴² During this time, they eat a wide range of insects, worms, molluscs, crustaceans, and fish.⁴³ This stage shows great variation: the transformation into a

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35. 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 16, at 4.
36. INT'L COUNCIL FOR THE EXPL. OF THE SEA, REPORT OF THE WORKSHOP ON EEL AND CITES 33 (2015), <https://perma.cc/UGD8-MY2E> [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.*
37. INT'L COUNCIL FOR THE EXPL. OF THE SEA, REPORT OF THE JOINT EIFAAC/ICES/GFCM WORKING GROUP ON EEL (WGEEL) 8 (2015), <http://perma.cc/7CQP-MS7L> [hereinafter 2015 WGEEL REPORT].
38. *Sargassum is a Genus of Large Brown Algae that Floats in Island-like Masses*, U.S. NAT'L OCEANIC & ATMOSPHERIC ADMIN., <http://perma.cc/KE5N-ZLAU>. The Sargasso Sea is roughly 3,000 km². Rep. of the First Range States Workshop on the European Eel, *supra* note 24, ¶ 21 (statement of Éric Feunteun).
39. JACOBY & GOLLOCK, *supra* note 16, at 4.
40. 2015 WGEEL REPORT, *supra* note 37, at 8.
41. INT'L COUNCIL FOR THE EXPL. OF THE SEA, REPORT OF THE JOINT EIFAAC/ICES/GFCM WORKING GROUP ON EEL (WGEEL) 196 (2014), <http://perma.cc/6WSG-NW9L> [hereinafter 2014 WGEEL REPORT].
42. *Id.*
43. *Id.*

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 years,⁴⁴ depending on “temperature (latitude and longitude), ecosystem characteristics, and density-dependent processes.”⁴⁵ Sexual differentiation occurs during this life history stage, but the mechanism is not fully understood.⁴⁶ 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.⁴⁷ Rapidly growing individuals typically become males, whereas slow-growing eels tend to develop as females.⁴⁸ High temperatures and saline conditions may also favor development.⁴⁹

As a result of these factors, eels metamorphose into silver eels and reach sexual maturity more quickly in the southern part of their range.⁵⁰ Silver eels then migrate to the Sargasso Sea where they spawn and die; incredibly, no one has yet seen a European eel spawn.⁵¹

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.”⁵² Nonetheless, scientists agree that the species as a whole continues to decline.⁵³

44. 2015 WGEEL REPORT, *supra* note 37, at 8.

45. *Id.* See also OSPAR COMM’N, BACKGROUND DOCUMENT FOR EUROPEAN EEL: ANGUILLA ANGUILLA 5 (2010), <https://perma.cc/MZ6X-6GLW>.

46. 2014 WGEEL REPORT, *supra* note 41, at 196.

47. Daniele Bevacqua et al., *A Global Viability Assessment of the European Eel*, 21 GLOBAL CHANGE BIOLOGY 3323, 3330 (2015); Andrew J. H. Davey & Donald J. Jellyman, *Sex Determination in Freshwater Eels and Management Options for Manipulation of Sex*, 15 REVS. IN FISH BIOLOGY & FISHERIES 37, 37–38, 43 (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.”).

48. Davey & Jellyman, *supra* note 47, at 37.

49. *Id.* at 37–38.

50. 2015 WGEEL REPORT, *supra* note 37, at 8.

51. 2014 WGEEL REPORT, *supra* note 41, at 9.

52. JACOBY & GOLLOCK, *supra* note 16, at 6.

53. *Id.* at 8.

Using data sets from certain countries where data has been gathered over a longer time period, scientists report dramatic declines—approximately 90%—in the recruitment of glass eels since the early 1980s.⁵⁴ 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 1979.⁵⁵

Yellow and silver eels have also experienced declines of greater than 50% over three generations (45 years).⁵⁶ 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”⁵⁷ and a lack of data.⁵⁸

C. Threats

The complex life history of the European eel challenges our understanding of how different threats impact or potentially impact the species,⁵⁹ and the contribution of each threat to the eel’s decline is not fully understood.⁶⁰ Nonetheless, this Article summarizes these threats to put the global conservation challenge in perspective and to underscore the need for global, multilateral solutions.⁶¹ For example, scientists believe that the population decline of the European eel is caused by a variety of threats, including

54. *Id.* at 7.

55. *Id.* See also 2015 WGEEL REPORT, *supra* note 37, at 9.

56. JACOBY & GOLLOCK, *supra* note 16, at 7.

57. *Id.*

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

59. Matthew Gollock, *Briefing Paper for the Workshop of European Eel Range States*, at 2 (2015), <https://perma.cc/TJ5F-VCB8>. See also 2014 WGEEL REPORT, *supra* note 41, at 9 (stating that “the reasons for this decline are uncertain”); Jacoby et al., *supra* note 8, 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”).

60. JACOBY & GOLLOCK, *supra* note 16, at 11 (stating that “the significance of any single threat, or the synergy it may have with other threats, is still poorly understood”).

61. This article does not attempt to describe the various threats in detail; this has been done elsewhere. See, e.g., *id.* at 11–12; Gollock, *supra* note 59, at 2–10.

“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.”⁶² Significantly, these different threats affect the European eel throughout its range.⁶³

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.⁶⁴ In fact, all 13 eel species assessed by the IUCN were considered potentially threatened by fishing, harvesting, and other uses.⁶⁵ With the decline of endangered Japanese eel (*A. japonica*),⁶⁶ the European eel has been the preferred eel for Asian food markets.⁶⁷ Despite the EU’s import/export ban, a black market for European eel persists; estimates place the black-market price between \$1,200 and \$1,500 per kilo (\$545 to \$680 per pound) in Asia.⁶⁸ Since the EU import/export ban, greater pressure has been placed on the American eel, which has fetched up to \$2,600 per pound;⁶⁹ in 2012, the Maine catch of glass eels was worth \$38 million.⁷⁰ Also since the EU ban, exports of the shortfin eel (*A. bicolor*) in the glass eel stage from the Philippines have sharply increased.⁷¹ In addition, in parts of the European eel’s North African range (specifically Algeria, Morocco, and Tunisia),

62. Gollock, *supra* note 59, at 2–10; 2014 WGEEL REPORT, *supra* note 41, at 9.

63. 2014 WGEEL REPORT, *supra* note 41, at 9.

64. Gollock, *supra* note 59, at 4 (stating that “[t]he glass eel fishery is also arguably the activity that removes the greatest number of eels from the aquatic system”).

65. Jacoby et al., *supra* note 8, at 326.

66. DAVID JACOBY & MATT GOLLOCK, IUCN, THE IUCN RED LIST OF THREATENED SPECIES – ANGUILLA JAPONICA, JAPANESE EEL 1, 7–8 (2014), <https://perma.cc/X6GP-LFSZ>.

67. JACOBY & GOLLOCK, *supra* note 16, at 9.

68. Emma Bryce, *Illegal Eel: Black Market Continues to Taint Europe’s Eel Fishery*, GUARDIAN (Feb. 9, 2016), <https://perma.cc/SEA7-PH2K>.

69. Sneed, *supra* note 6, at 3.

70. *Id.*

71. Jacoby et al., *supra* note 8, at 326; VICKI CROOK, TRAFFIC INT’L & ZOOLOGICAL SOC’Y OF LONDON, SLIPPING AWAY: INTERNATIONAL ANGUILLA EEL TRADE AND THE ROLE OF THE PHILIPPINES 12–17 (2014), <https://perma.cc/ZX4C-P4SL>.

as well as generally,⁷² exports have risen dramatically, causing the CITES Animals Committee to recommend in July 2017 further investigation pursuant to its Review of Significant Trade.⁷³

Regarding the European eel, EU Member States still catch 15 to 17 metric tons of glass eels annually for domestic markets, where they are placed in aquaculture farms to grow until they are of marketable size.⁷⁴ Some stakeholders suspect that the total catch is more than twice that.⁷⁵ In fact, France has allocated itself a quota of slightly more than 57 metric tons, which is roughly twice the total allowed for EU consumption and restocking.⁷⁶

2. Habitat Loss/Barriers to Migration

Barriers to migration, such as dams, constitute a significant threat to the European eel.⁷⁷ Existing 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.⁷⁸ 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 shorter than 2.95 feet (0.9 meters) but only 5% of those dams taller than 9.84 feet (3 meters).⁷⁹ In ad-

72. U.N. Env't World Conservation Monitoring Ctr., Selection of Species for Inclusion in the Review of Significant Trade Following CoP17, Doc. A/AC.29/13.3, annex 2, at 31 (2017), <https://perma.cc/RV9T-QAUL>.

73. CITES Animals Comm., Rep. on the Twenty-Ninth Meeting of the Animals Comm., Doc. A/AC.29/21, at 3 (July 18–22, 2017), <https://perma.cc/KB4A-227Q>; CITES Dec. 17.188 (2016), <https://perma.cc/U9JY-XF9Y> (adopting the recommendations in AC29 Com. 5).

74. Bryce, *supra* note 68.

75. 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?*, GUARDIAN (Mar. 31, 2016), <https://perma.cc/XC4G-EPH8>.

76. *Id.*; Andrew Kerr, Sustainable Eel Grp., Eels III: European Eel Recovery: "It is All About Collaboration" (June 22, 2016).

77. Gollock, *supra* note 59, at 7.

78. 2015 WGEEL REPORT, *supra* note 37, at 66.

79. Patrick B. Cooney & Thomas J. Kwak, *Spatial Extent and Dynamics of Dam Impacts on Tropical Island Freshwater Fish Assemblages*, 63 BIOSCIENCE 176, 182 (2013).

dition, “considerable” habitat, much of which is suitable eel habitat, has been lost due to wetland reclamation projects, floodplain drainage, and dredging, among other reasons.⁸⁰

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*.⁸¹ *A. crassus* may impact the ability of European eels to reach their spawning grounds due to its adverse impacts on the fitness traits associated with the silvering stage of maturation.⁸² However, the impacts on eel migration and reproductive success could be either negative or positive.⁸³ Eels infected with *A. crassus* demonstrate impaired swimming performance due to damaged swim-bladders.⁸⁴ Silver eels have “much higher infection levels than yellow eels,” and infected migrating silver eels may not be able to reach the spawning grounds.⁸⁵ Further, infected eels may not be able to manage high pressure during their reproductive migration.⁸⁶ 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 impacts on eels.⁸⁷

80. Eric Feunteun, *Management and Restoration of European Eel Population (Anguilla anguilla): An Impossible Bargain*, 18 *ECOLOGICAL ENGINEERING* 575, 579 (2002).

81. François Lefebvre et al., *On the Origin of Anguillicoloides crassus*, *The Invasive Nematode of Anguillid Eels*, 7 *AQUATIC INVASIONS* 443 (2012).

82. Géraldine Fazio et al., *Swim Bladder Nematodes (Anguillicoloides crassus) Disturb Silvering in European Eels (Anguilla anguilla)*, 98 *J. PARASITOLOGY* 695, 695 (Sept. 7, 2012).

83. *Id.*

84. Arjan 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, 245 (2007).

85. *Id.* at 245, 252.

86. 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, 2166 (2009).

87. Fazio et al., *supra* note 82, at 703.

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.⁸⁸ Consequently, they may be more susceptible to bioaccumulation of pollutants.⁸⁹ Researchers have found that accumulation of lipophilic chemical pollutants, such as polychlorinated biphenyls (“PCBs”), in maturing eels could have potentially toxic effects on the survival period of the fertilized eggs.⁹⁰ 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.⁹¹

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.⁹² Such changes could impact breeding grounds in the Sargasso Sea and alter the recruitment of glass eels to near-shore and freshwater environments.⁹³ Climate change is also increasingly affecting and reducing freshwater habitats due to drought.⁹⁴ Scientists are quick to caution that climatic changes and associated changes in oceanic conditions also occur naturally and have influenced eel populations for millennia.⁹⁵ However, potential climate impacts, when combined with the other impacts described in this section, are new. Thus, the exact influence of climate change on the European eel remains speculative.

88. 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, 156–57 (2000).

89. Gollock, *supra* note 59, at 10.

90. Arjan P. Palstra et al., *Are Dioxin-like Contaminants Responsible for the Eel (Anguilla anguilla) Drama?*, 93 NATURWISSENSCHAFTEN 145, 148 (2006).

91. Tony T. Robinet & Eric E. Feunteun, *Sublethal Effects of Exposure to Chemical Compounds: A Cause for the Decline in Atlantic Eels?*, 11 ECOTOXICOLOGY 265, 272 (2002).

92. JACOBY & GOLLOCK, *supra* note 16, at 12–13.

93. *Id.*

94. Personal Communication with Gollock, *supra* note 58.

95. *Id.*

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.⁹⁶ Due to the life history traits 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.⁹⁷ 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, thus, are likely to be ineffective.

Species facing numerous threats encounter different problems. Many treaties lack the comprehensive scope necessary to address multiple threats. CITES, for example, may help regulate and monitor international trade in specimens of a species, but it does not have the authority to protect that species from domestic trade or habitat destruction.⁹⁸

The European eel exemplifies both of these challenges. With 57 Range States and territories,⁹⁹ individual efforts to manage and conserve the European eel are unlikely to be effective. Moreover,

96. See Chris Wold, *World Heritage Species: A New Legal Approach to Conservation*, 20 *GEO. INT'L ENVTL. L. REV.* 337, 339–42 (2008).

97. See, e.g., Dale W. Rice & Karl W. Kenyon, *Breeding Distribution, History, and Populations of North Pacific Albatrosses*, 79 *THE AUK* 365 (1962) (describing the distribution and life history of various albatrosses).

98. CITES, *supra* note 14, at art. XIV(1).

99. For a list of the States and territories, see *supra* note 35.

scientists are not sure if all parts of the breeding population contribute to reproduction;¹⁰⁰ 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.”¹⁰¹ 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.¹⁰² Moreover, the European eel’s spawning habitat occurs in the Sargasso Sea,¹⁰³ 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.¹⁰⁴ 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.¹⁰⁵ 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 legal 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 protect the eel. For example, the Northwest Atlantic Fisheries Organization

100. REPORT OF THE WORKSHOP ON EELS AND CITES, *supra* note 36, at 33.

101. *Id.*

102. *See supra* note 35.

103. *See, e.g.*, INT’L COUNCIL FOR THE EXPL. OF THE SEA, REPORT OF THE WORKING GROUP ON EELS (WGEEL) 6 (2016), <https://perma.cc/AQ8W-WRDU> [hereinafter 2016 WGEEL REPORT].

104. Dekker, *supra* note 20, at 2443.

105. *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*, at 8, COM (2014) 640 final (Oct. 21, 2014), <https://perma.cc/C4TZ-CLNX> [hereinafter *Eel Implementation Report*].

(“NAFO”)¹⁰⁶ applies its Conservation Measures only in areas beyond national jurisdiction.¹⁰⁷ The General Fisheries Commission for the Mediterranean (“GFCM”)¹⁰⁸ has competence only with respect to fisheries of the Mediterranean and Black Seas.¹⁰⁹ The Convention on the Protection of the Marine Environment of the Baltic Sea¹¹⁰ has broad jurisdiction to address pollution¹¹¹ and promote ecological restoration,¹¹² but its geographic scope is limited to the Baltic Sea.¹¹³

The International Commission for the Conservation of Atlantic Tuna (“ICCAT”)¹¹⁴ 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.¹¹⁵ The area of

106. NAFO is established by the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries. *See* Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, Oct. 24, 1978, 1135 U.N.T.S. 369 (entered into force Jan. 1, 1979), <https://perma.cc/69R8-CFHK> [hereinafter NAFO Convention].

107. The NAFO Convention defines both a “Convention Area,” which includes areas under national jurisdiction, and a “Regulatory Area,” which does not. *Id.* at 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, at art. 2(1), FC Doc. 17-01 (2017), <https://perma.cc/PL4F-JKHG>.

108. The General Fisheries Commission for the Mediterranean (“GFCM”) was established under the provisions of Article XIV of the FAO Constitution. *See* Agreement for the Establishment of the General Fisheries Commission for the Mediterranean, Preamble, <https://perma.cc/6R4B-66N4>; *General Fisheries Commission for the Mediterranean (GFCM)*, FOOD & AGRIC. ORG. OF THE U.N., <https://perma.cc/A6Y7-TJ65>. (entered into force Feb. 20 1952).

109. *See* Agreement for the Establishment of the General Fisheries Commission for the Mediterranean, *supra* note 108, at arts. 3–4.

110. Convention on the Protection of the Marine Environment of the Baltic Sea, Apr. 9, 1992 (entered into force Jan. 17, 2000), <https://perma.cc/TJ66-VB4L>. This convention is more frequently referred to as the Helsinki Convention and its commission as HELCOM.

111. *Id.* at arts. 3, 5, 6, 8, 11.

112. *Id.* at arts. 3, 15.

113. *Id.* at arts. 1, 4(1).

114. ICCAT was established by the International Convention for the Conservation of Atlantic Tunas. *See* International Convention for the Conservation of Atlantic Tunas, May 14, 1966, 20 U.S.T. 2887, annex I, at 5, <https://perma.cc/X7YT-V55K> [hereinafter ICCAT].

115. ICCAT provides:

competence of the Western Central Atlantic Fishery Commission (“WECAFC”) includes the Sargasso Sea,¹¹⁶ but it has no management authority,¹¹⁷ 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.¹¹⁸

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.¹¹⁹ 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.¹²⁰ 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

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

Id. at annex I, at art. IV(1).

116. 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 Res. 4/61, Establishment of the Western and Central Atlantic Fishery Commission, ¶ 1, <https://perma.cc/8LXH-2VKD>.

117. *Id.* ¶ 2.

118. *Id.* ¶ 1.

119. CITES Appendix II, *supra* note 15.

120. CITES, *supra* note 14, 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 Res. Conf. 14.6 (Rev. CoP16), *Introduction from the Sea*, annex III(1) (June 2017), <https://perma.cc/NYF6-UANB>.

measures. The present Appendix II listing under CMS¹²¹ does not require Parties to undertake any conservation activities,¹²² even though the scope of CMS allows it to address habitat, trade, and other threats.¹²³ Appendix II species receive protection under CMS only after development of a separate “Agreement.”¹²⁴

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.¹²⁵ Exports of other eel species also increased in response to declining Japanese eel populations and to the EU’s prohibition against exports of European eels.¹²⁶

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 now takes place.¹²⁷ Nonetheless, management across the EU and the larger eel range remains uncoordinated,¹²⁸ and the conservation status of the European eel continues to be of great concern.¹²⁹ Local management is unlikely to take into account stock-wide conservation of eels and more likely to respond to local constituent desires.¹³⁰ Perhaps consistent with local management, countries in the Mediterranean Sea region have, over time, developed different methods for gathering catch composition and effort data,¹³¹ making efforts by scientists to assess the status of the European eel more difficult.

121. CMS Appendix II, *supra* note 19.

122. *See* CMS, *supra* note 18, at art. IV.

123. *Id.* at art. V.

124. *Id.* at arts. IV–V.

125. Sneed, *supra* note 6.

126. Jacoby et al., *supra* note 8, at 326 (noting increases in exports of the Indian shortfin eel (*A. bicolor*) from the Philippines).

127. Dekker, *supra* note 20, at 2445.

128. 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 58.

129. Dekker, *supra* note 20, at 2445 (stating that “[t]he historical decline of the stock indicates that uncoordinated actions by local managers alone could not sustain the stock”).

130. *Id.* at 2445–46.

131. 2015 WGEEL REPORT, *supra* note 37, at 87–88; Dekker, *supra* note 20, at 2445.

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,"¹³² 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.¹³³ The CMS Parties later agreed that a second Range States meeting should explore how to "solidify the role of CMS" in European eel conservation.¹³⁴ Indeed, CMS, with the possibility for legally binding and non-legally binding instruments, provides an opportunity to coordinate eel conservation efforts. Using CMS has several advantages over other fora:

1. CMS already has a Secretariat that can organize negotiations;¹³⁵
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;¹³⁶
3. CMS legal instruments have the capacity to address the full range of threats facing the European eel;¹³⁷

132. Dekker, *supra* note 20, at 2447.

133. Rep. of the First Range States Workshop on the European Eel, *supra* note 24, ¶ 70. Some participants did question the need for an international legal instrument. *Id.* ¶ 36 (statement of Evangelia Georgitsi, Directorate General of Maritime Affairs and Fisheries of the European Commission (DG-Mare)).

134. CMS Concerted Action on the European Eel, *supra* note 28, at 1.

135. CMS, *supra* note 18, at art. VII(2).

136. *Id.* at art. IV.

137. *Id.* at art. V(4).

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;¹³⁸ and
5. CMS instruments can involve CMS Parties and non-Parties.¹³⁹

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 uppercase "A."¹⁴⁰

Article IV(3) requires Parties that are Range States of migratory species listed in Appendix II to endeavor to conclude "AGREEMENTS" where these should benefit the species. They should give priority to those species with an unfavorable conservation status.¹⁴¹ Article IV(4) encourages Parties to take action with a view to concluding "agreements" for any population or 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

138. *Id.* at art. V(2).

139. *Id.*

140. CMS Res 12.8, *Implementation of Articles IV and V of the Convention*, Doc. UNEP/CMS/Res. 12.8, at 1 (Oct. 2017), <https://perma.cc/M635-8XRM> ("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.") (emphasis in original).

141. 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 co-operation that could be achieved by an international agreement." CMS, *supra* note 18, at art. IV(1).

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.”¹⁴² In contrast, species covered by an agreement need only “*periodically* cross one or more national jurisdictional boundaries.”¹⁴³ In short, Article IV(4) covers a broader range of species than Article IV(3). A European Eel Agreement could fall within either provision.

CMS itself does not specify whether Article IV(3) AGREEMENTS and Article IV(4) agreements should be legally binding.¹⁴⁴ 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.¹⁴⁵ Because resolutions of the Parties are 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).¹⁴⁶ A two-step process would

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

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

144. 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*, Doc. UNEP/CMS/COP11/Inf.31 (Sept. 25, 2014), <https://perma.cc/S44N-Y6NA>.

145. CMS Res. 2.6, *Implementation of Articles IV and V of the Convention*, Doc. UNEP/CMS/Res. 2.6, ¶ 3 (Oct. 14, 1988), <https://perma.cc/9TLD-XSVT>. The Parties consolidated Resolution 2.6 with other resolutions relating to implementation of Agreements in Resolution 12.8. CMS Res. 12.8, *supra* note 140.

146. CMS Res. 2.6, *supra* note 145, ¶ 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 Res. 3.5, *Implementation of Article IV, Paragraph 4, of the Convention Concerning AGREEMENTS*, Doc. UNEP/CMS/Res. 3.5, ¶ 4 (Sept. 13, 1991), <https://perma.cc/9YH8-UR8E>. The Parties consolidated Resolution 3.5 with other resolutions relating to implementation of Agreements in Resolution 12.8. CMS Res. 12.8, *supra* note 140.

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.¹⁴⁷ Four of these Agreements were developed under Article IV(3),¹⁴⁸ while the other three were developed under Article IV(4).¹⁴⁹ 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.¹⁵⁰

The Parties have also developed nineteen Memoranda of Understanding.¹⁵¹ Each of these agreements specifies that they were developed under Article IV(4) and are non-binding.¹⁵² Unlike legally

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147. *Agreement on the Conservation of Gorillas and Their Habitats*, Oct. 26, 2007, 2545 *U.N.T.S.* 55 [hereinafter Gorilla Agreement]; Agreement on the Conservation of Albatrosses and Petrels, June 19, 2001, 2258 *U.N.T.S.* 257 (entered into force Feb. 1, 2004) [hereinafter ACAP]; Agreement on African-Eurasian Migratory Waterbirds, Aug. 15, 1996, 2365 *U.N.T.S.* 203 (entered into force Nov. 1, 1999) [hereinafter AEWA]; Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area, Nov. 24, 1996, 2183 *U.N.T.S.* 303 (entered into force June 1, 2001) [hereinafter ACCOBAMS]; [hereinafter EUROBATS]; Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas, Mar. 17, 1992, 1772 *U.N.T.S.* 217 (entered into force Mar. 29, 1994) [hereinafter ASCOBANS]; Agreement on the Conservation of Bats in Europe, Dec. 4, 1991, 1863 *U.N.T.S.* 101 (entered into force Jan. 16, 1994) [hereinafter EUROBATS]; Agreement on the Conservation of Seals in the Wadden Sea, Oct. 16, 1990, 2719 *U.N.T.S.* 263 (entered into force Oct. 1, 1991) [hereinafter Wadden Sea Seals].
148. See, e.g., ACAP, *supra* note 147, at art. I(5) (“This Agreement is an AGREEMENT within the meaning of Article IV (3) of the Convention[on Migratory Species].”); AEWA, *supra* note 147, at art. I(3) (“This Agreement is an AGREEMENT within the meaning of Article IV, paragraph 3, of the Convention [on Migratory Species].”). See also Gorilla Agreement, *supra* note 147, at art. I(4); EUROBATS, *supra* note 147, at art. II(1).
149. ACCOBAMS, *supra* note 147, at art. I(4) (“This Agreement is an agreement within the meaning of Article IV, paragraph 4, of the Convention.”); ASCOBANS, *supra* note 147, at art. 8.1; Wadden Sea Seals, *supra* note 147, at art. I.
150. See, e.g., ACAP, *supra* note 147, at arts. XV–XVI (describing the provisions for signature, ratification, accession, and entry into force).
151. Links to all of these agreements can be found at *Memoranda of Understanding*, CMS, <https://perma.cc/3YFP-4DVR>.
152. See, e.g., Memorandum of Understanding for the Conservation of Cetaceans and Their Habitat in the Pacific Islands Region, Doc. UNEP/CMS/PIC-1/Inf/3, ¶ 9 (opened for signature Sept. 15, 2006) (entered into force Sept. 15, 2006), <https://perma.cc/TG3P-2WJL> [hereinafter Pacific Islands Cetaceans

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."¹⁵³ Agreements frequently implement this goal through an Action Plan.¹⁵⁴ 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."¹⁵⁵

MOU ("This Memorandum of Understanding is an agreement under Article IV, paragraph 4, of CMS and is not legally binding.").

153. CMS, *supra* note 18, at art. V(1) (for AGREEMENTS); CMS Res. 12.8, *supra* note 140, ¶ 3 (for agreements).
154. *See, e.g.*, ACAP, *supra* note 147, 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, at Conservation and Management Plan (opened for signature June 23, 2001) (entered into force Sept. 1, 2001), <https://perma.cc/C2HK-MASE> [hereinafter IOSEA Marine Turtles MOU].
155. ACAP, *supra* note 147, 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 152, ¶ 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; it 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 147, at art. I(2)(c) (emphasis added).

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”¹⁵⁶ CMS further defines “habitat” and “range” without reference to national jurisdiction,¹⁵⁷ and defines “Range State” to include those State’s whose vessels “take”¹⁵⁸ migratory species on the high seas.¹⁵⁹ The conservation plan for ACAP, for example, includes provisions to protect land-based breeding sites of albatrosses and petrels,¹⁶⁰ and the marine habitat of these species.¹⁶¹ 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 nest¹⁶² and to take action to protect high seas turtle habitat.¹⁶³

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;¹⁶⁴

156. CMS, *supra* note 18, at art. V(2) (for AGREEMENTS); CMS Res. 12.8, *supra* note 140, ¶ 4 (for agreements).

157. CMS, *supra* note 18, at art. I(1)(f)–(g).

158. 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).

159. 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).

160. ACAP, *supra* note 147, at annex 2, ¶ 2.2.1.

161. *Id.* at annex 2, ¶ 2.3.

162. IOSEA Marine Turtles MOU, *supra* note 154, at Conservation and Management Plan, Objective 2.

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

164. *See, e.g.*, AEWA, *supra* note 147, at art. IV(1)(c); ACCOBAMS, *supra* note 147, at art. VIII(b); IOSEA Marine Turtles MOU, *supra* note 154, at “Actions,” ¶ 8; Memorandum of Understanding on the Conservation of Migratory Sharks, Doc. CMS/Sharks/MOS1/Inf.1, ¶ 15(b) (opened for signature Feb. 12, 2010), (entered into force Mar. 2010)<https://perma.cc/3Q24-LXUJ> [hereinafter Sharks MOU].

- Review by the Parties/Signatories of implementation at meetings of participating States;¹⁶⁵
- Establishment or designation of a Secretariat to organize meetings and undertake other administrative services;¹⁶⁶
- Financial arrangements for the Agreement;¹⁶⁷
- 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;¹⁶⁸ and
- Establishment of a scientific or technical committee to provide relevant scientific or other information and advice to the Agreement's decision-making body,¹⁶⁹ although they may be designed differently depending on the needs of the Agreement.¹⁷⁰

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165. *See, e.g.*, AEWA, *supra* note 147, at art. VI(8)(b); ACCOBAMS, *supra* note 147, at art. III(8)(b); IOSEA Marine Turtles MOU, *supra* note 154, at "Basic Principles," ¶ 3; Sharks MOU, *supra* note 164, ¶ 20.
166. *See, e.g.*, AEWA, *supra* note 147, at art. VI(7)(b); ACCOBAMS, *supra* note 147, at art. IV(1)–(2); IOSEA Marine Turtles MOU, *supra* note 147, at "Actions," ¶ 5; Sharks MOU, *supra* note 163, ¶ 27(a).
167. *See, e.g.*, AEWA, *supra* note 147, at art. VI(8)(c); ACCOBAMS, *supra* note 147, at art. III(8)(e); IOSEA Marine Turtles MOU, *supra* note 154, at "Actions," ¶ 9; Sharks MOU, *supra* note 164, ¶¶ 16–17.
168. *See, e.g.*, ACAP, *supra* note 147, at art. VIII(13)(c), (e); AEWA, *supra* note 147, at art. VI(9); ACCOBAMS, *supra* note 147, at art. VII(3)(b)–(c); IOSEA Marine Turtles MOU, *supra* note 154, at "Actions," ¶¶ 3–4; Sharks MOU, *supra* note 164, ¶¶ 20, 33.
169. *See, e.g.*, ACAP, *supra* note 147, at arts. IX(1), (6)(a)–(c); ACCOBAMS, *supra* note 147, at arts. III(8)(c), VII; IOSEA Marine Turtles MOU, *supra* note 154, at "Actions," ¶ 6; Sharks MOU, *supra* note 164, ¶ 24.
170. *See, e.g.*, Gorilla Agreement, *supra* note 147, at art. VI (establishing a Technical Committee); ACAP, *supra* note 147, at art. IX(1) (establishing an Advisory Committee); AEWA *supra* note 147, at art. VII(3) (establishing a Technical Committee); ACCOBAMS, *supra* note 147, at art. VII(1) (establishing a Scientific Committee); ASCOBANS, *supra* note 147, at art. 5.1 (establishing an Advisory Committee). 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*), ¶ 4 (Oct. 18, 2007), <https://perma.cc/S4RA-3B9N> [hereinafter Mediterranean Monk Seal MOU] (nominating the Atlantic Seal Working Group); Memorandum of Understanding concerning Conservation Measures for the West African Populations of the African Elephant (*Loxodonta africana*), ¶ 4 (Nov. 22, 2005), <https://perma.cc/Q75T-GD7B> [hereinafter West

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 two-and-a-half years to enter into force,¹⁷¹ the African-Eurasian Migratory Waterbird Agreement ("AEWA") more than three years,¹⁷² and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area ("ACCOBAMS") roughly 4.5 years.¹⁷³

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 it opened for signature,¹⁷⁴ as did the Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Island Region ("Pacific Cetaceans MOU").¹⁷⁵

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.¹⁷⁶ AEWA and the Agreement on the Conservation of Populations of European Bats ("EUROBATS") have largely independent Secretariats,

African Elephants MOU] (nominating the IUCN African Elephant Specialist Group).

171. ACAP was opened for signature on June 19, 2001, and entered into force on February 1, 2004. *ACAP*, CMS, <https://perma.cc/4S5D-WWDY>.

172. AEWA was opened for signature on August 15, 1996, and entered into force on November 1, 1999. *AEWA*, CMS, <https://perma.cc/HTC8-CVJ6>.

173. ACCOBAMS was signed on November 24, 1996, and entered in force on June 1, 2001. *ACCOBAMS*, CMS, <https://perma.cc/BCS6-YXKM>.

174. The Sharks MOU entered into force 30 days after receiving the requisite 10 signatures. *See* Sharks MOU, *supra* note 164, at 9.

175. The Pacific Islands Cetaceans MOU required four signatories to commence; seven signed on the first day. Pacific Cetaceans MOU, *supra* note 152, ¶ 12.

176. 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, Doc. UNEP/CMS/Inf.10.14.8, ¶ 16 (Jan. 1, 2010), <https://perma.cc/AU9E-SJH2>.

but they are housed with the CMS Secretariat and share some administrative and other tasks.¹⁷⁷ 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”).¹⁷⁸ AEWA, ASCOBANS, EUROBATS, and the Gorilla Agreement are integrated within United Nations Environment (formerly known as the United Nations Environment Programme).¹⁷⁹

Many of the MOUs are administered by the CMS Secretariat, and none has an independent secretariat. In some cases, however, the CMS Secretariat receives support for technical coordination services from a nongovernmental organization.¹⁸⁰ 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.¹⁸¹ 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.¹⁸² Each of these three MOUs has just four or five Signatories, making coordination relatively simple compared to Agreements with many more Parties or Signatories.

CMS Agreements also differ in the number of working languages that they use. ACCOBAMS works in English and

177. CMS, Report of Resolution 11.3, Enhancing Synergies and Sharing Common Services among CMS Family Instruments, UNEP/CMS/COP12/Doc.16.1 (2017), <https://perma.cc/KHM6-YL4N>.

178. *Id.*

179. *Id.*

180. 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, Doc. UNEP/CMS/COP11/Doc.22.3, at 21 (Aug. 14, 2014), <https://perma.cc/579J-TYTM> [hereinafter CMS Assessment of MOUs].

181. *Id.* at 22.

182. *Id.* at 23.

French;¹⁸³ ASCOBANS works primarily in English, but also provides translations of some documents in other languages;¹⁸⁴ AEWA works in two languages (French and English);¹⁸⁵ ACAP in three (French, English, and Spanish); and EUROBATS in one (English).¹⁸⁶ Similarly, MOUs differ in the number of languages used. For example, the Sharks MOU uses three (English, Spanish, and French),¹⁸⁷ while the Pacific Cetaceans MOU uses two (English and French).¹⁸⁸ The IOSEA Marine Turtles and Dugong MOUs use only English.¹⁸⁹

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.

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

183. ACCOBAMS, RULES OF PROCEDURE FOR THE MEETING OF THE PARTIES at Rule 21(1), <https://perma.cc/5STK-D97Q>.

184. See, e.g., *Eighth Meeting of the Parties*, ASCOBANS, <https://perma.cc/55LT-6AMB> (showing meeting documents only in English). The treaty provides that English, French, German, and Russian are equally authentic, but, as noted, the parties only conduct meetings in one language. ASCOBANS, *supra* note 147, at art. 8.7.

185. See *6th Session of the Meeting of the Parties to AEWA*, AEWA, <https://perma.cc/T2SS-CKJT> (showing translation of meeting documents into English and French only). AEWA has four official languages, however: Arabic, English, French, and Russian. AEWA, *supra* note 147, at art. XVII(1).

186. EUROBATS, RULES OF PROCEDURE at Rule 17, <https://perma.cc/396S-TPWN>.

187. Sharks MOU, *supra* note 164, ¶ 34.

188. Pacific Cetaceans MOU, *supra* note 152, ¶ 16.

189. Memorandum of Understanding on the Conservation and Management of Dugongs (*Dugong dugon*) and Their Habitats throughout Their Range, Doc. CMS/DUGONG/Inf.5, ¶ 19 (Oct. 31, 2007), <https://perma.cc/3A6H-BLS5> [hereinafter Dugong MOU]; IOSEA Marine Turtles MOU, Doc. CMS/MT-AFR.1/Inf.7, at 5 (June 23, 2001), <https://perma.cc/VL43-8GZR>.

to successful performance of MOUs.¹⁹⁰ 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.¹⁹¹

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

The 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.¹⁹²

Later in its assessment, the Secretariat concluded:

[W]ith 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.¹⁹³

Perhaps surprisingly, the legal status of the Agreement “does not appear to be a matter of great significance.”¹⁹⁴ 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.¹⁹⁵ Those CMS Agreements with stable,

190. See generally CMS Assessment of MOUs, *supra* note 180. The Parties asked for the analysis in CMS Res. 10.09, *Future Structure and Strategies of the CMS and CMS Family*, Doc. UNEP/CMS/Res. 10.09, annex 1, at Activity 5 (Nov. 20–25, 2011), <https://perma.cc/96DK-JCC2>.

191. CMS Assessment of MOUs, *supra* note 180, at 39.

192. *Id.* at 31.

193. *Id.* at 36.

194. Lee et al., *supra* note 176, ¶ 255.

195. *Id.*

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.”¹⁹⁶

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 binding Agreements differently from their contributions to MOUs, which are specified as “voluntary.”¹⁹⁷

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.¹⁹⁸ Consequently, the Parties adopted criteria for evaluating proposals for new Agreements at the Eleventh Meeting of the Conference of the Parties (“COP”).¹⁹⁹ When evaluating proposals for future Agreements, the CMS Secretariat and

196. *Id.*

197. *Id.* at annex I, tbl.35.

198. CMS Res. 9.13, *Intersessional Process Regarding the Future Shape of CMS*, UNEP/CMS/Res. 9.13, preamble para. 9 (Dec. 1–8, 2008) (acknowledging that the growth in Agreements creates “new challenges” for CMS that requires “in-depth consideration”), <https://perma.cc/P63W-LH7J>. See also CMS Res. 10.16, *Priorities for CMS Agreements*, Doc. UNEP/CMS/Res. 10.16, ¶ 6 (Nov. 20–25, 2011), <https://perma.cc/5D4K-CCDX> (recognizing that the “development and servicing of agreements are subject to the availability of resources”). The Parties repealed these two resolutions in 2017 because the work outlined in them had been completed. See CMS, *Review of Decisions*, Doc. UNEP/CMS/COP12/Doc.21/Rev.2, annex 2, at 22–24 (Aug. 10, 2017), <https://perma.cc/7RRJ-R66K> [hereinafter CMS Review of Decisions].

199. See generally CMS Res. 11.12, *Criteria for Assessing Proposals for New Agreements*, Doc. UNEP/CMS/Res. 11.12 (Nov. 4–9, 2014), <https://perma.cc/8KUJ-L5JH>. The criteria, originally adopted in Resolution 11.12, were incorporated into Resolution 12.8; Resolution 11.12 was then repealed. CMS Res. 12.8, *supra* note 140, ¶ 13(d). The original instruction derives from Resolution 10.9, which called for the creation of “criteria against which to assess proposed new potential agreements.” CMS Res. 10.9, *supra* note 190, at annex 1, at Activity 12. See also UNEP Res. 10.16, *supra* note 198, ¶ 6 (including eight considerations to be addressed when making any new proposals for Agreements). The Parties repealed this resolution in

Scientific Council are “instruct[ed]” and the CMS Parties are “urg[ed]” to apply criteria such as identifying the relevant species’ conservation needs and the possibility for stable funding.²⁰⁰ These criteria are designed to assess the “opportunities, risks, appropriateness and relative priority” of any new proposal for a new CMS legal instrument.²⁰¹

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 under the Convention.”²⁰² 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.²⁰³ In addition, the European eel’s status is clearly “unfavourable,” as defined by CMS.²⁰⁴ With recruitment at a historic low, the species is unlikely

2017 because it was superseded by subsequent resolutions. See CMS Review of Decisions, *supra* note 198, at annex 2, at 23–24.

200. CMS Res. 12.8, *supra* note 140, ¶ 8.

201. *Id.* at annex, at 4. 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. Otto Spijkers & Alex O. Elferink, *Potential for A New CMS Agreement on the European Eel*, Doc. UNEP/CMS/Eels WS1/Doc. 3, at 12-13 (Oct. 13–14, 2016), <https://perma.cc/P3N8-8NE9>; Rep. of the First Range States Workshop on the European Eel, *supra* note 24, ¶ 113 (This article 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.).

202. CMS Res. 12.8, *supra* note 140, at annex, ¶ (i).

203. JACOBY & GOLLOCK, *supra* note 16, at 6.

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

- (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 18, at art. I(1)(c)–(d).

to maintain itself on a long-term basis without appropriate interventions. With large dams blocking migration and many more dams proposed in eel habitat,²⁰⁵ 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.²⁰⁶ 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.”²⁰⁷ 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.²⁰⁸ Moreover, if Range States and territories can be brought together to benefit the European eel, then Goal 5—to “[e]nhance implementation through participatory planning, knowledge management and capacity building”²⁰⁹—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.²¹⁰ 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 of the CMS directs CMS Parties to endeavor to conclude an agreement for Appendix II species,²¹¹

205. See *supra* Section II.C.2.

206. CMS Res. 12.8, *supra* note 140, at annex, ¶ (ii).

207. CMS Res. 11.2, *Strategic Plan for Migratory Species 2015–2023*, UNEP/CMS/Res. 11.2, annex 1, Chapter 3, Goal 3 (Nov. 9, 2014), <https://perma.cc/Y7PJ-47XT>.

208. CMS, Proposal for the Inclusion of the European Eel (*Anguilla anguilla*) on CMS Appendix II, Doc. UNEP/CMS/COP11/Doc.24.1.18, at 8 (Sep. 12, 2014), <https://perma.cc/TJL2-QAZ3>.

209. CMS Res. 11.2, *supra* note 207, at annex I, at Chapter 3, Goal 5.

210. CMS Res. 11.27, *Renewable Energy and Migratory Species*, Doc. UNEP/CMS/Res. 11.27 (Rev. COP12), ¶ 3(d) (2017), <https://perma.cc/ALN6-57EN>.

211. Article IV(3) provides that “Parties that are Range States of migratory species listed in Appendix II shall endeavour to conclude AGREEMENTS where these

the preparation of a new legal instrument for the European eel, already included in Appendix II, would fulfill an expressed CMS strategy.

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.²¹² 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 so-called “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,²¹³ and Member States must develop EMPs for each river basin inhabited by eels.²¹⁴ Nineteen Member States have developed EMPs to accomplish those goals.²¹⁵ 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.²¹⁶ 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.

should benefit the species and should give priority to those species in an unfavourable conservation status.” CMS, *supra* note 18, at art. IV(3).

212. CMS Res. 12.8, *supra* note 140, at annex, ¶ (iii).

213. EU Eel Regulation, *supra* note 13, 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.

Id.

214. *Id.* at arts. 2(1), (3).

215. *Eel Implementation Report*, *supra* note 105, at 4.

216. Rep. of the First Range States Workshop on the European Eel, *supra* note 24, at 28.

- 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.²¹⁷
- 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.”²¹⁸ A CMS legal instrument could ensure stakeholder participation.

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

4. *Absence of better remedies outside the CMS system.*²¹⁹ 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 on Biological Diversity (“CBD”)²²⁰ or the UN Convention on the Law of the Sea (“UNCLOS”),²²¹ may provide general conservation duties but are not designed to manage specific species.²²² 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.*²²³ 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

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

218. Dekker, *supra* note 20, at 2445, 2447.

219. CMS Res. 12.8, *supra* note 140, at annex, ¶ (iv).

220. Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S 79 (entered into force Dec. 29, 1993), <https://perma.cc/726C-CK3E> [hereinafter CBD].

221. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S 3 (entered into force Nov. 16, 1994), <https://perma.cc/K4JD-2LTX> [hereinafter UNCLOS].

222. For more information on the inability of existing treaties to manage the full range of threats to the European eel, see generally Spijkers & Elferink, *supra* note 201, at 5–11.

223. CMS Res. 12.8, *supra* note 140, at annex, ¶ (v).

conservation status of selected Appendix I and Appendix II species or selected groups of Appendix I and Appendix II species” that 1) “involve measures that are the collective responsibility of Parties acting in concert,” or 2) 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.”²²⁴ 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.²²⁵ Instead, each Party was free to determine what action it would take.

The concept of concerted actions has evolved; they now include specific proposals that identify conservation actions to be undertaken by specified entities (e.g., Parties, Secretariat).²²⁶ 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, prior to COP12 in 2017, concerted actions have not been publicized on the CMS website.²²⁷ 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.²²⁸

224. CMS Res. 12.28, *supra* note 27, ¶ 1.

225. 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. CMS Res. 11.13, *Concerted and Cooperative Actions*, Doc. UNEP/CMS/Resolution 11.13 (Nov. 4–9, 2014), <https://perma.cc/VJN8-KPJN>. CMS Res. 11.13 was repealed by CMS Res. 12.28, *supra* note 24, ¶ 9.

226. *See, e.g.*, CMS, Proposal for a Concerted Action for the Arabian Sea Humpback Whale (*Megaptera novaeangliae*), Doc. UNEP/CMS/COP12/Doc. 26.2.4, at 4 (June 14, 2017), <https://perma.cc/PH4H-672A>.

227. Personal Communication with Melanie Virtue, Head, Aquatic Species Team, CMS Secretariat (May 23, 2018).

228. *Id.*

6. *If a CMS instrument is best, extending an existing one is not feasible.*²²⁹ None of the existing CMS Agreements relates in any way to the 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 fish conservation.

7. *Prospects for funding.* As noted above,²³⁰ adequate and predictable financing is a key component driving the success of a CMS Agreement. Although beyond the scope of this Article, identifying prospects for funding is also a criterion for evaluating proposals for new CMS Agreements.²³¹ However, given the value of the European eel as food and bait and 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.²³² 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 eel²³³—might be a place to start.²³⁴

8. *Synergies and cost-effectiveness.*²³⁵ 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

229. CMS Res. 12.8, *supra* note 140, at annex, ¶ (vi).

230. *See supra* Section IV.C.

231. CMS Res. 12.8, *supra* note 140, at annex, ¶ (vii).

232. CMS Assessment of MOUs, *supra* note 180, at 37.

233. JACOBY & GOLLOCK, *supra* note 16, at 4.

234. *See* Spijkers & Elferink, *supra* note 201, at 15 (identifying the EU as a potential funder).

235. CMS Res. 12.8, *supra* note 140, at annex, ¶ (viii).

CBD,²³⁶ the Sargasso Sea is home to several species of shark and cetaceans that are the subject of other CMS legal instruments and resolutions, including the Sharks MOU²³⁷ and the Global Programme of Work for Cetaceans.²³⁸ 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 kempi*), all of which are included in both Appendix I and II, use *Sargassum* as a nursery habitat.²³⁹ Adult leatherback sea turtles (*Dermochelys coriacea*) also use the Sargasso Sea.²⁴⁰

Moreover, any measure 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."²⁴¹

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:

[E]ngage 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[.]²⁴²

236. *Ecologically or Biologically Significant Areas (EBSAs): The Sargasso Sea*, CBD (June 15, 2015), <https://perma.cc/BK2A-K63M>.

237. See generally Sharks MOU, *supra* note 164.

238. See generally CMS Res. 10.15, *Global Programme of Work for Cetaceans*, Doc. UNEP/CMS/Resolution 10.15 (Oct. 2017), <https://perma.cc/Y3BV-68SZ>.

239. *Ecologically or Biologically Significant Areas (EBSAs): The Sargasso Sea*, *supra* note 236.

240. *Id.*

241. CMS Res. 10.12, *Freshwater Migratory Species*, Doc. UNEP/CMS/Resolution 10.12, ¶ 2 (Nov. 20–25, 2011), <https://perma.cc/5HHJ-LS3R>.

242. *Id.* ¶ 6(b).

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,²⁴³ 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. The potential costs of a European Eel Agreement are discussed in more detail in Section VI.H. Whether such an Agreement would be cost-effective will be a subjective inquiry in light of the time lag for any conservation benefits to be achieved.

9. *Prospects for leadership in developing an Agreement.*²⁴⁴ A highly committed leader, whether a government or nongovernmental organization, can help ensure the successful development and implementation of a CMS Agreement. In a report concerning the viability of CMS MOUs, the CMS Secretariat noted the following:

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; Bird-Life 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

243. CMS, Executive Summary: Review of Freshwater Fish, Doc. UNEP/CMS/Conf.10.32, ¶ 1 (Sept. 28 2011), <https://perma.cc/RSA6-CQQQ>.

244. CMS Res. 12.8, *supra* note 140, at annex, ¶ (ix).

has been unable to identify a suitable NGO or other partner to assist with the implementation of the three MOUs there.²⁴⁵

The prospects for leadership in developing and implementing a CMS Agreement for European eels appear to be very strong. The Sargasso Sea Commission²⁴⁶ has taken an active role 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,²⁴⁷ a political declaration now signed by nine governments.²⁴⁸ The Commission's mission, supported by the government Signatories and a number of collaborating partners from the science and conservation world,²⁴⁹ is to "[e]xercise a stewardship role for the Sargasso Sea and keep its health, productivity and resilience under continual review."²⁵⁰ The Sargasso Sea Commission helped organize the First Range States Workshop on the European Eel,²⁵¹ is organizing the second Range States workshop,²⁵² and appears fully committed to ensuring the implementation of any CMS European Eel Agreement. It also developed the proposal that led to the establishment of the Sargasso Sea as an EBSA, helped motivate the proposal to

245. CMS Assessment of MOUs, *supra* note 180, at 36.

246. *About the Commission*, SARGASSO SEA COMM'N, <https://perma.cc/QL96-6BFH>. More details about the history of the Sargasso Sea Commission can be found at David Freestone & Kate Killerlain Morrison, *Current Legal Developments: The Sargasso Sea*, 27 INT'L J. MARINE & COASTAL L. 345 (2012), <https://perma.cc/8CYB-VJYX>, and David Freestone & Faith Bulger, *The Sargasso Sea Commission: An Innovative Approach to the Conservation of Areas Beyond National Jurisdiction*, 30 OCEAN Y.B. 80 (2016), <https://perma.cc/38M2-NHP3>.

247. Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea, Mar. 11, 2014, <https://perma.cc/48MG-VUAL> [hereinafter Hamilton Declaration].

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

249. *See Collaborating Partners*, SARGASSO SEA COMM'N, <https://perma.cc/C7LL-A3CQ>.

250. Hamilton Declaration, *supra* note 247, at annex II, ¶ (a).

251. Rep. of the First Range States Workshop on the European Eel, *supra* note 24, ¶ 171.

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

include the European eel in CMS Appendix II, and spurred the concerted action on the European eel adopted by the CMS Parties in 2017.²⁵³

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 organizing meetings.²⁵⁴ It is beyond the scope of this Article 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 discussed above indicates that such prospects may be “good.”²⁵⁵

11. *Feasibility in other respects.* This criterion asks proposals for new Agreements to address the practical feasibility of launching and operating the Agreement by considering, for example, “political stability or diplomatic barriers.”²⁵⁶ The close regional proximity of many of the Range States and territories, their tight political ties through the EU, the European Economic Area, and the Joint Africa-EU Strategy,²⁵⁷ 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.²⁵⁸ Thus, there do not appear to be any political or diplomatic barriers to a European Eel Agreement.

Even without political and diplomatic barriers, it may take time to convince Range States that a European Eel Agreement is

253. See Concerted Action on European Eel, *supra* note 28, at 1 (acknowledging that the Sargasso Sea Commission commissioned the basic science that led to the proposal for including the European eel in CMS Appendix II submitted by Monaco).

254. CMS Res. 12.8, *supra* note 140, at annex, ¶ (x).

255. See *infra* Section VI.G (which explores four options for hosting a secretariat).

256. CMS Res. 12.8, *supra* note 140, at annex, ¶ (xi).

257. In 2014 at the Fourth EU-Africa Summit, European and African governments agreed to the Roadmap 2014–17. See Fourth EU–Africa Summit Roadmap 2014–2017, EU–Africa Summit (Apr. 3, 2014), <https://perma.cc/PD3W-JJBE>.

258. 2016 WGEEL REPORT, *supra* note 103, at 49–50.

necessary. EU Member States, for example, may believe that EMPs 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 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 the Parties to evaluate certain risks, such as the uncertainty about the ecological effects, the lack of a “legacy mechanism” to sustain the agreement’s success, and activities that may undermine the Agreement’s success.²⁵⁹ Unlike the previous criterion, which focuses on implementation, this criterion focuses on whether the Agreement will achieve its intended outcome.²⁶⁰ 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 12.8 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.

259. CMS Res. 12.8, *supra* note 140, at annex, ¶ (xii).

260. CMS, Developing, Resourcing and Servicing CMS Agreements: A Policy Approach, Doc. UNEP/CMS/COP11/Doc.22.2, annex 1, ¶ 6 (Aug. 5, 2014), <https://perma.cc/Z3KZ-4CSL>.

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.²⁶¹ As indicated by the response to criterion 8 above, the catalytic and multiplier impacts of a European Eel Agreement 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 EU Member States 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.

14. *Provision for monitoring and evaluation.* The criterion for monitoring and evaluation includes a long list of subcriteria that focus on defining a specific mechanism for monitoring and evaluating relevant scientific and technical information and progress towards implementation by the Parties/Signatories, among other related activities.²⁶² 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”),²⁶³ 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 geographic scope, they also cover multiple species (e.g., Sharks MOU, Raptors MOU, IOSEA Marine Turtles MOU, ACAP, and AEW).

261. CMS Res. 12.8, *supra* note 140, at annex, ¶ (xiii).

262. *Id.* at annex, ¶ (xiv).

263. For more about the WGEEL, see *WGEEL: Joint EIFAAC/ICES/GFCM Working Group on Eels*, ICIEM/CIEM, <https://perma.cc/S63A-FF98>.

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.²⁶⁴ Because the eel's range encompasses a large number of Range States and territories—including developed European countries, developing North African countries, and only one least-developed country²⁶⁵—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.”²⁶⁶

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 working language. Consequently, the Agreement will require additional resources for coordination, translation, interpretation, and meetings.²⁶⁷ The relatively small number of developing country 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.

264. See Dugong MOU, Dugong Summary Sheet, <https://perma.cc/5ECC-UGXU>. Fifteen of the 46 Range States are least-developed countries. *List of Least Developed Countries*, U.N. COMM. FOR DEV. POLICY (June 2017), <https://perma.cc/4AK7-CJJY>.

265. Mauritania is the only European eel Range State listed as a least-developed country. *List of Least Developed Countries*, *supra* note 264.

266. CMS Assessment of MOUs, *supra* note 180, at 35.

267. *Id.* at 17–19.

A. Binding Versus Nonbinding

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 principal impacts in the context of a CMS Agreement for European eels.

First, and as noted earlier,²⁶⁸ 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, likely 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).²⁶⁹ In addition to helping ensure the success of the Agreement,²⁷⁰ 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” that are taking advantage of the contributions made by Parties to the CMS budget.²⁷¹ Thirteen of the 57 Range States and territories (22.8%) are CMS non-Parties.²⁷² 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

268. *See supra* Section IV.B.

269. Lee et al., *supra* note 176, ¶¶ 45–58.

270. *See supra* Section IV.C.

271. Lee et al., *supra* note 176, ¶ 96.

272. 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 if the UK expressly includes them on signing or ratification. *Memorandum on Application*, U.K. FOREIGN & COMMONWEALTH OFFICE, <https://perma.cc/DHX4-CSWQ> (last updated Nov. 3, 2009).

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, however. The legally binding Agreement might never enter 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 underdeveloped 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,²⁷³ 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.²⁷⁴ 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," defined as

273. *See supra* Section IV.B.

274. Rep. of the First Range States Workshop on European Eels, *supra* note 24, ¶ 145.

“migratory populations of Falconiformes and Strigiformes species occurring in Africa and Eurasia, listed in Annex 1 of this [MOU].”²⁷⁵ Likewise, the Sharks MOU applies to any migratory species, subspecies, or population in the Class *Chondrichthyes* included in Annex 1 of the MOU.²⁷⁶ In a similar fashion, an Eel Agreement could apply to “eels” or “anguillid species” included in an Annex.

C. Objective

Ideally, a European Eel Agreement would establish a measurable conservation target to be achieved within a specified timeframe.²⁷⁷ ICES has recommended an escapement goal for silver eels of 50%,²⁷⁸ but the EU has adopted a goal of 40%.²⁷⁹ However, the EU Eel Regulation does not specify a timeframe for meeting that goal. Instead, it calls for achieving that goal “in the long term.”²⁸⁰ Given 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. Nonetheless, without a more specific timeframe for achieving a goal, it is difficult to determine progress towards the escapement target. Thus, a European Eel Agreement would benefit from adopting the EU’s escapement goal to ensure complementarity between the two regimes, but it should adopt specific timeframes for achieving the goal.

275. *Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia*, ¶ 1(a) (opened for signature Nov. 1, 2008) (entered into force Nov. 1, 2008), <https://perma.cc/W7VK-ATY5> at ¶ 1(a) [hereinafter Raptors MOU].

276. Sharks MOU, *supra* note 164, § 3(p).

277. See Rep. of the First Range States Workshop on the European Eel, *supra* note 24, at Summary of Outcomes, § 1.

278. 2015 WGEEL REPORT, *supra* note 37, at 28.

279. EU Eel Regulation, *supra* note 13, at art. 2(4).

280. *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.²⁸¹ Presumably, eel fisheries also generate significant numbers of jobs in non-EU States. Consequently, a European Eel Agreement would need to adopt harvesting rules 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 taking of European eels.²⁸² In addition, because the European eel is included in CITES Appendix II, States may allow its trade,²⁸³ provided that 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).²⁸⁴ As noted earlier, exports have increased sharply in recent years.²⁸⁵ With a dearth of scientific information concerning European eels, it seems unlikely that an adequate non-detriment finding can be made; indeed, that

281. REPORT OF THE WORKSHOP ON EELS AND CITES, *supra* note 36, at 6.

282. *See* CMS, *supra* note 18, at arts. IV–V (not imposing any specific prohibitions against take or trade).

283. CITES, *supra* note 14, at art. IV (not prohibiting trade for primarily commercial purposes).

284. 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).

285. *See supra* Section II.C.1.

was the opinion of EU scientists leading up to the EU's ban on imports and exports of European eel.²⁸⁶ Because CITES clearly provides that an affirmative finding of no detriment is required,²⁸⁷ 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.”²⁸⁸ Thus, a European Eel Agreement may wish to adopt measures stronger than those provided in CITES and CMS and strictly regulate national and international trade.²⁸⁹

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 tuna²⁹⁰ and toothfish.²⁹¹ RFMOs have adopted catch documentation schemes (“CDS”) to prevent illegal, unreported, and unregulated (“IUU”) fishing.²⁹² The Food and Agriculture Organization of the United Nations (“FAO”) has defined CDS as

286. 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.” SCI. REVIEW GRP., SHORT SUMMARY OF CONCLUSIONS OF THE 54TH MEETING OF THE SCIENTIFIC REVIEW GROUP ON TRADE IN WILD FAUNA AND FLORA ¶ 8 (2010), <https://perma.cc/THU3-XAFG>.

287. CITES provides that “[a]n export permit shall only be granted when . . . a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species.” CITES, *supra* note 14, at art. IV(2)(a).

288. *Eel Implementation Report*, *supra* note 105, at 7.

289. 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 14, at art. XIV(1).

290. *See, e.g.*, International Commission for the Conservation of Atlantic Tunas, Recommendation by ICCAT Amending Recommendation 09-11 on an ICCAT Bluefin Tuna Catch Documentation Program, Recommendation 11-20, at 1 (2011).

291. Convention for the Conservation of Antarctic Marine Living Resources, Catch Documentation Scheme for *Dissostichus* spp., Conservation Measure 10-05, at 1 (2016), <https://perma.cc/LY2F-NLEK>.

292. *See* Gilles Hosch, *Catch Documentation Schemes: Practices and Applicability in Combating IUU Fishing*, FOOD & AGRIC. ORG. OF THE U.N., <https://perma.cc/K864-DMC3>.

[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.²⁹³

Given reports of high levels of illegal trade of European eel and other eel species,²⁹⁴ 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 those activities. With the European eel critically endangered, the species might qualify for an Appendix I listing under CMS, which would prohibit the take of listed species, and an Appendix I listing under CITES, which would prohibit international trade for primarily commercial purposes. A CDS for eels may, thus, 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 a 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 legislation²⁹⁵ or have the authority to do so.²⁹⁶

293. FAO Expert Consultation on Catch Documentation Schemes, FAO Fisheries and Aquaculture Rep., Doc. FIPM/R1120, app. D, § 4.1 (*July 21–24, 2015*), <https://perma.cc/8YAA-2FTP>.

294. *See supra* Section II.C.1.

295. Vienna Convention on the Law of Treaties, art. 26, *opened for signature* May 23, 1969, 1155 U.N.T.S. 331 (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.”).

296. In some States, treaties are considered superior to domestic legal obligations. Article 55 of the French Constitution, for example, provides, in English translation, “Treaties or agreements duly ratified or approved shall, upon publication, prevail over Acts of Parliament, subject, in regard to each agreement or treaty, to its application by the other party.” 1958 CONST. art. 55 (Fr.).

2. Eel Management Plans

An important question that negotiators of an Eel Agreement must answer is whether to adopt a top-down or bottom-up approach to eel conservation. The top-down approach would consist of eel conservation measures that must be adopted by all Parties/Signatories. For example, each Party/Signatory would be required to prohibit the take of eels or construct fish ladders around migration obstacles such as dams. The bottom-up approach would allow local and national officials to undertake nation- 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 that the species recovers 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 too short 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.²⁹⁷ Attracting EU participation may be very difficult under a different approach.

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.²⁹⁸ The overall goal of an 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."²⁹⁹ The EU Eel Regulation does not specify the

297. EU Eel Regulation, *supra* note 13, at art. 2(4).

298. *Id.* at art. 2(1)–(4).

299. *Id.* at art. 2(4).

types of measures that must be adopted in an EMP. Instead, Member States may adopt measures based on local and regional conditions,³⁰⁰ so long as those measures are designed to meet the 40% escapement goal “in the long term.”³⁰¹ 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.³⁰²

As of 2013, 19 Member States had adopted EMPs for 81 basins.³⁰³ According to ICES, most management actions relate to commercial and recreational fisheries, while other measures relate to hydropower-pumping station obstacles, habitat, restocking, and predator control.³⁰⁴ The EMPs have also resulted in the establishment of implementation and monitoring programs and new scientific studies. Of the specified management actions, 756 have been fully implemented, 259 partially implemented, and 107 not implemented.³⁰⁵

Despite these management actions, it is 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.³⁰⁶ 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

300. *Id.* at art. 2(7).

301. *Id.* at art. 2(4).

302. *Id.* at art. 2(8).

303. *Eel Implementation Report*, *supra* note 105, at 4.

304. INT’L COUNCIL FOR THE EXPL. OF THE SEA, REPORT OF THE WORKSHOP ON EVALUATION PROGRESS EEL MANAGEMENT PLANS (WKEPEMP) 6 (2013), <https://perma.cc/24KG-B879> [hereinafter 2013 WKEPEMP REPORT].

305. *Id.*

306. *Eel Implementation Report*, *supra* note 105, at 5.

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.³⁰⁷

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.³⁰⁸ Not all the information was positive, however: 42 EMUs reported not achieving their biomass targets, and 19 reported not achieving their mortality targets.³⁰⁹ Reporting was insufficient to evaluate the achievement of biomass targets for 22 EMUs and mortality targets for 38 EMUs.³¹⁰

3. Restocking

Restocking basins with eels seems like a commonsense measure to improve abundance and increase eel recruitment. In fact, virtually all EU EMPs include restocking as a conservation measure.³¹¹ The EU Eel Regulation also requires a Member State that allows fishing for eels under 12 centimeters in total length to reserve a minimum of 60% of their catch for restocking purposes.³¹²

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 to wild populations,³¹³ indicating that restocking could contribute to eel recovery. Others question restocking’s effectiveness in increasing spawning stock.³¹⁴

307. *Id.*

308. *Id.*

309. *Id.*

310. *Id.*

311. *Id.*

312. EU Eel Regulation, *supra* note 13, at art. 7(1).

313. See JACOBY & GOLLOCK, *supra* note 16, at 14 (citations omitted).

314. See *Eel Implementation Report*, *supra* note 105, at 6.

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.³¹⁵ One such provision could require marking of all stocked eels to distinguish wild from restocked eels for sampling and monitoring purposes.³¹⁶

4. Provisions Relating to the Sargasso Sea

Because European eels spawn in the Sargasso Sea,³¹⁷ negotiators of an Eel Agreement may wish to include provisions to protect this 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).³¹⁸ Further, scientists are unclear exactly where spawning takes place.³¹⁹ Consequently, protection of spawning habitat may require protection of the Sargasso Sea both 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.³²⁰ Most but not all European eel Range States are party to UNCLOS; Israel, Libya, Syria, and Turkey are the eel Range States that are not.³²¹ To ensure complete coverage, an Eel Agreement would want to include provisions to protect eels in the high seas portions of the Sargasso Sea.

315. *Id.* at 8.

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

317. See 2014 WGEEL REPORT, *supra* note 41, at 9.

318. Dan Laffoley et al., Submission of Scientific Information to Describe Ecologically or Biologically Significant Marine Areas 5 (unpublished report presented to the Sargasso Sea Alliance), <https://perma.cc/K5ZF-BXGW>.

319. *Id.* at 11.

320. UNCLOS, *supra* note 221, 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.”).

321. *Chronological Lists of Ratifications of, Accessions and Successions to the Convention and the Related Agreements*, U.N. OCEANS & LAW OF THE SEA, <https://perma.cc/7VBF-4KPM> (last updated Apr. 3, 2018).

A variety of CMS Agreements apply to the high seas and impose obligations on Parties/Signatories in those areas. For example, they apply 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.³²²

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.³²³ 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.³²⁴ Parties must also “individually or collectively seek to develop management plans for the most important foraging and migratory habitats of albatrosses and petrels”³²⁵ 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.”³²⁶ Because ACAP defines “habitat” as “any area which contains suitable living conditions for albatrosses and/or petrels,”³²⁷ it is clear that ACAP requires Parties to take action to protect high seas habitats.

Although no oceanic eel fisheries appear to currently exist,³²⁸ the negotiators of a European Eel Agreement could use either of these approaches to adopt a prohibition against eel fishing in the

322. See, e.g., Pacific Islands Cetaceans MOU, *supra* note 152, ¶ 11; IOSEA Marine Turtles MOU, *supra* note 154, at “Basic Principles,” ¶ 2.

323. *About ACAP*, ACAP, <https://perma.cc/E3GQ-U9M6> (last updated Dec. 27, 2017) (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”).

324. ACAP, *supra* note 147, at annex 2, ¶ 2.3.1.

325. *Id.* at annex 2, ¶ 2.3.2.

326. *Id.* at annex 2, ¶ 2.3.3.

327. *Id.* at art. I(2)(j).

328. See *Communication from the Commission to the Council and the European Parliament: Development of a Community Action Plan for the Management of European Eel*, at 4, COM (2003) 573 final (Oct. 1, 2003) (“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.”), <https://perma.cc/WY6P-EV72>.

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.³²⁹ The South East Atlantic Fisheries Organisation ("SEAFO") also bans bottom trawling on specified seamounts on the high seas.³³⁰ The Commission for the Conservation of Antarctic Marine Living Resources ("CCAMLR") bans bottom trawling in areas of the high seas (subject to few exceptions).³³¹ The GFCM bars fishing on certain coral reefs.³³² The International Whaling Commission maintains a Southern Ocean Sanctuary in which all commercial whaling is prohibited.³³³ 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.

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.³³⁴ The negotiators of an Eel Agreement could extend the measures applicable to the high seas portion of the Sargasso Sea to those

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329. NAFO Conservation and Enforcement Measures, *supra* note 107, at art. 17. 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).
330. SEAFO, Conservation Measure 30/15 on Bottom Fishing Activities and Vulnerable Marine Ecosystems in the SEAFO Convention Area art. 5(1), Dec. 3, 2015, <https://perma.cc/2GYK-6X3G>.
331. CCAMLR, Conservation Measure 22-05: Restrictions on the Use of Bottom Trawling Gear in High-Seas Areas of the Convention Area, Oct. 27–Nov. 7, 2008, <https://perma.cc/YHX4-KTP6>.
332. GFCM, Recommendation GFCM/35/2011/2 on the Exploitation of Red Coral in the GFCM Area of Application, 2011, <https://perma.cc/J4XZ-WZSQ>.
333. 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 whaling, is an integral part of the ICRW. *Id.* at art. I(1). The prohibition against commercial whaling in the two sanctuaries is found in paragraph 7 of the Schedule. ICRW Schedule as Amended by the Commission at the 66th Meeting art. III, ¶ 7 (2016).
334. UNCLOS, *supra* note 221, at art. 67(3).

areas within Bermuda's exclusive economic zone, as the Eel Agreement would be a valid forum for fulfilling this duty to cooperate.

E. Reporting

To ensure that the Parties/Signatories are working toward achieving the objective of an Eel Agreement and 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 toward 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.³³⁵

It appears that the EU Member States reported on implementation of their EMPs in 2015, but no analysis of them has occurred.³³⁶ Whether that indicates a problem with the reports, the reporting obligations themselves, or a lack of resources to undertake the analysis is unknown. To the extent that the reporting obligations themselves are not the problem, they could form the minimum amount of information to report under an Eel Agreement. If an Eel Agreement bars fishing in the Sargasso Sea or otherwise limits

335. EU Eel Regulation, *supra* note 13, at art. 9(1).

336. 2016 WGEEL REPORT, *supra* note 103, at 8 ("EU Member States again reported on progress with implementing their EMPs in 2015 but no official post-evaluation has taken place.").

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, different reporting requirements may be advisable.

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.³³⁷ The Sharks MOU also has a scientific advisory committee.³³⁸

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., AWEA³³⁹ and the Raptors MOU³⁴⁰) have adopted this approach.

337. See, e.g., CMS, *supra* note 18, at art. VIII (establishing a Scientific Council); CITES Res. 11.1 (Rev. CoP17), *Establishment of Committees*, ¶ 2(b) (Sept. 24–Oct. 5, 2016), <https://perma.cc/4M4H-2YK7> (establishing an Animals Committee and a Plants Committee).

338. Sharks MOU, *supra* note 164, ¶ 24.

339. AWEA, *supra* note 147, at art. VI(7). For more information on the AWEA Technical Committee, see *AWEA Technical Committee*, AWEA, <https://perma.cc/F6B2-7WHJ>.

340. 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 providing recommendations to the Signatories, and provide comments on any proposals to amend the MOU text which have a technical content. CMS, Report of the First Meetings of Signatories of the Raptors MOU, Doc. CMS/Raptors/MoS1/Report/Annex V, ¶¶ 1, 3–5, 8 (Dec. 10, 2013), <https://perma.cc/EE2J-N52N>.

The Ramsar Convention on Wetlands of International Importance³⁴¹ has established a Scientific and Technical Review Panel (“STRP”), comprising scientists and “technical experts.”³⁴² 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,”³⁴³ 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.”³⁴⁴

AEWA has taken an approach similar to the Ramsar Convention, although it specifies a greater range of expertise for its Technical Committee. The AEWA Technical Committee comprises:

- 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.³⁴⁵

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 com-

341. Convention on Wetlands of International Importance Especially as Waterfowl Habitat arts. 6–7, *opened for signature* Feb. 2, 1971, T.I.A.S. No. 11084, 996 U.N.T.S. 245 (entered into force Dec. 21, 1975) [hereinafter the Ramsar Convention].

342. Ramsar Convention Res. XII.5, *New Framework for Delivery of Scientific and Technical Advice and Guidance on the Convention* annex 1, ¶ 7 (June 1–9, 2015), <https://perma.cc/SBF6-9GHY>.

343. *Id.* ¶ 7 & n.2.

344. *Id.* ¶ 7 & n.3.

345. AEWA, *Modus Operandi of the Technical Committee of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds*, Rule 2(1) (May 14–18, 2012), <https://perma.cc/Q2DQ-9N7D>.

mittee would ensure that specific scientific and conservation concerns are addressed at the advisory body level. Due to the lack of scientific information about the European eel, the AEW 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.”³⁴⁶ The WGEEL assesses European eel populations across its range.³⁴⁷ 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).³⁴⁸ The arrangement could be designed as in the Western and Central Pacific Fisheries Commission (“WCPFC”).³⁴⁹ The WCPFC has its own Scientific Committee,³⁵⁰ but the science it reviews is provided by the Oceanic Fisheries Programme of the Secretariat of the Pacific Community.³⁵¹

346. *Joint EIFAAC/ICES/GFCM Working Group on Eels*, INT’L COUNCIL FOR THE EXPL. OF THE SEA, <https://perma.cc/9QM6-85L3>.

347. *See, e.g.*, 2016 WGEEL REPORT, *supra* note 103, at 5, 11.

348. *See ICES and EU Sign Memorandum of Understanding*, INT’L COUNCIL FOR THE EXPL. OF THE SEA (Mar. 1, 2016), <https://perma.cc/AA64-7UXX> (“ICES provides the European Union with scientific advice on fishing opportunities for more than 220 fish stocks on an annual basis . . .”).

349. The WCPFC was established by the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean art. 9(1), Sept. 5, 2000, 2275 U.N.T.S. 40532 (entered into force June 19, 2004), <https://perma.cc/75KV-YEJ4> [hereinafter WCPF Convention].

350. *Id.* at art. 11(1).

351. Memorandum of Understanding Between the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the Pacific Community, at 1–3 (Mar. 15, 2016), <https://perma.cc/2QPQ-UP2M>.

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),³⁵² 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.³⁵³ Germany is a European eel Range State as well,³⁵⁴ which might make it amenable to hosting the secretariat.

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.³⁵⁵ Similarly, the IOSEA Coordinator serves as a part-time advisor to CMS, thus off-loading some of that salary on

352. See, e.g., CMS, *supra* note 18, at art. IX.

353. CITES, *Consideration of Proposals for Amendment Of Appendices I and II*, CITES Doc. CoP14 Prop. 18 (June 3–15, 2007), <https://perma.cc/U7LY-QYAP>.

354. JACOBY & GOLLOCK, *supra* note 16, at 4

355. Lee et al., *supra* note 176, ¶ 71.

CMS.³⁵⁶ 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").³⁵⁷ This fee is assessed against mandatory contributions and voluntary contributions alike.³⁵⁸ The PSC fee is charged even if the funds are for specific programmatic work (thus diverting programmatic funds towards administration).³⁵⁹ Part of the funds from PSC charges are returned to CMS to pay for local administrative staff. The remainder 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 of splitting space with the CMS Secretariat is that the CMS Secretariat is already operating at full capacity and is considered understaffed.³⁶⁰ Without additional personnel 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 service for CMS and the other MOUs.

In addition, if the Eel Agreement integrates with the CMS Secretariat, then all 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 with the Sargasso Sea Commission. As noted earlier, the Sargasso Sea Commission has been a supporter of eel conservation,

356. *Id.* ¶ 54.

357. See CBD, Note on the 13 per cent Programme Support Costs (PSC), ¶ 3, <https://perma.cc/KZH2-KMWK> [hereinafter CBD Note on PSC].

358. See Decision 80/44, U.N. Dev. Program, 27th Sess., 706th mtg. at 560, Doc. E/1980/42/Rev.1 (June 27, 1980). The UN General Assembly approved the UNDP's formula for use by the United Nations Secretariat. G.A. Res. 35/217, at art. V(2) (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.

359. 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 PSC, *supra* note 357, ¶¶ 6–7.

360. Lee et al., *supra* note 176, ¶¶ 63–64, 132.

including the eel's sole spawning area: the Sargasso Sea.³⁶¹ 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.³⁶² The AESG identifies gaps in our scientific knowledge of anguillid species, advocates for their conservation, and provides a forum for discussing issues relating to these species.³⁶³ The Zoological Society of London charges an administrative fee of 15%,³⁶⁴ 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, and has shown an interest in eel conservation by submitting proposals to include the European eel in CMS Appendix II³⁶⁵ and for a concerted action.³⁶⁶ It also already hosts the ACCOBAMS Secretariat, which is independent of CMS and the United Nations system. Synergy between the two Agreements is possible. 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.³⁶⁷

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

362. *Anguillid Eel Specialist Group (AESG): About AESG*, IUCN FRESHWATER SPECIALIST GRP., <https://perma.cc/F7VD-57EU>.

363. *Id.*

364. Personal Communication with Dr. Matthew Gollock, *supra* note 58.

365. Proposal for the Inclusion of the European Eel (*Anguilla anguilla*) on CMS Appendix II, *supra* note 208.

366. Concerted Action on the European Eel, *supra* note 28, at 1.

367. The salary of the International Whaling Commission's Executive Secretary has been posted as £94,365.97 British Pounds (USD122,477). INT'L WHALING COMM'N, EXECUTIVE SECRETARY OF THE INTERNATIONAL WHALING COMMISSION: CANDIDATE INFORMATION PACK 6 (2017), <https://perma.cc/S2RS-D9EG>. The 2017 salary of the ACAP Executive Secretary is AUS141,685 (USD112,385) for 2017. ACAP Res. 5.6, app. A (May 4-8, 2015). These salaries are similar to a D-1 or D-2 position within the UN

Whatever choice the Parties/Signatories make, they should ensure that the Secretariat has legal personality.³⁶⁸ The Ramsar Convention Secretariat, for example, does not have legal personality, and consequently some Ramsar Convention Parties have had difficulties paying their contributions.³⁶⁹

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,³⁷⁰ and “most” MOU operational and project-specific work was underfunded.³⁷¹

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 annually.

system, not accounting for benefit packages and adjustments for post location. *Pay and Benefits*, U.N. CAREERS, <https://perma.cc/6GB6-4VFF>.

368. The legal personality of a Secretariat is established in the Headquarters Agreement between the host government and the decision-making 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 Res. 6.2, *Amendment to the Headquarters Agreement with the Host Government*, Doc. MOP6/2016/Res.6.2, annex 1, at art. I(1) (2016), perma.cc/MPN4-29S6.

369. Ramsar Convention, Legal Status of the Ramsar Convention Secretariat, Doc. SC36-16, at 3 (Feb. 27–29, 2008), <https://perma.cc/U4CK-6NGU>. 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).

370. Lee et al., *supra* note 176, ¶ 87.

371. *Id.* ¶ 89.

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.³⁷² The Dugong MOU is staffed by a P4 Programme Officer, a P2 Programme Officer, and an Administrative and Finance Assistant.³⁷³ These full-time staff are supported by an Executive Coordinator (0.33 P5 FTE) and another P2 Programme Officer (0.5 FTE).³⁷⁴ When fully staffed, the core budget is slightly more than USD600,000.³⁷⁵ In addition, these staff submitted proposals to conduct on-the-ground conservation projects, receiving a USD5.88-million grant.³⁷⁶ 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.³⁷⁷ 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.³⁷⁸

The IOSEA Marine Turtles MOU³⁷⁹ may also provide a useful reference point. The IOSEA Marine Turtles MOU has 35 Signatories; applies to the waters and coastal States of the Indian Ocean and Southeast Asia and adjacent seas, extending eastwards to the Torres Strait;³⁸⁰ and covers the loggerhead, olive ridley (*L. olivacea*), green, hawksbill, leatherback, and flatback (*Natator depressus*) sea turtles.³⁸¹ The MOU's Conservation and Management Plan includes 24 programs and 105 specific activities, focusing on reducing threats, conserving critical habitat, exchanging scientific

372. See Dugong MOU Secretariat, Current Financial Status and Future Funding, Doc. CMS/Dugong/MOS3/13.1, ¶ 3 (Jan. 12, 2017), <https://perma.cc/NS5C-GMAD>.

373. *Id.* at annex 1, tbls.1 & 2.

374. *Id.*

375. *Id.* at tbl.2.

376. *Id.* ¶ 16.

377. *Id.* ¶ 2.

378. Dugong MOU, Rep. of the Third Meeting of the Signatories to the Dugong MOU, Doc. CMS/Dugong/MOS3*, ¶¶ 137–42 (June 14, 2017), <https://perma.cc/6QVB-VF4J>.

379. See IOSEA Marine Turtles MOU, *supra* note 154.

380. *Id.* at Definitions, ¶ 3.

381. *Id.* at Definitions, ¶ 1.

data, increasing public awareness and participation, promoting regional cooperation, and seeking resources for implementation.³⁸² It had a budget of USD945,000 for the 2015–2017 triennium, with the CMS budget contributing USD27,000 per year³⁸³ towards the Coordinator’s salary for CMS-related work. This arrangement is subject to the decision of Parties on the CMS Budget at COP12.

The Sharks MOU has a global scope and covers 29 species of sharks and rays across their marine habitats,³⁸⁴ whereas an Eel Agreement would be regional and would cover a single species. The Sharks MOU has 48 signatories,³⁸⁵ 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.³⁸⁶ It operates in three languages: English, French, and Spanish.³⁸⁷

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).³⁸⁸ The CMS Secretariat provided an additional in-kind contribution of 186,501 Euros in the form of staff time,³⁸⁹ and the German Government paid for a P2 officer for two of the three years of the triennium.³⁹⁰ The budget anticipated the hiring of a P3 officer, which was budgeted at 438,020 Euros for the triennium.³⁹¹ The costs of one Meeting of the Signatories and one

382. *Id.* at Conservation & Management Plan.

383. IOSEA Marine Turtles MOU, Rep. of the Seventh Meeting of IOSEA Signatory States, annex 6, at 83–84 (Sept. 2014), <https://perma.cc/UUA3-LL5Y>.

384. *Sharks: Memorandum of Understanding on the Conservation of Migratory Sharks*, CMS ANIMALS, <https://perma.cc/GF2R-3FEW>.

385. *Id.*

386. Sharks MOU, *supra* note 164, at annex 2, at 1.

387. *Id.* ¶ 34.

388. Sharks MOU, Rep. on the Implementation of the Budget for the Triennium 2013–2015, Doc. CMS/Sharks/MOS2/Doc.10.2 ¶¶ 3, 5 (Jan. 7, 2016), <https://perma.cc/F9N4-94XP>.

389. *Id.* ¶ 3.

390. *Id.* ¶ 10.

391. *Id.* at annex 2, at 7.

meeting of the Advisory Committee were estimated at 235,553 Euros,³⁹² with a large portion of those costs allocated to interpretation (30,000 Euros) and support for delegate participation (82,500 Euros).³⁹³ 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 microphones and other relevant technology for the meeting), a work room for the Secretariat, and rooms for working groups.³⁹⁴

The Sharks MOU budget for the 2016–2018 triennium is 1,037,829 Euros, which covers a P2 position³⁹⁵ and 50% of an administrative position,³⁹⁶ with additional in-kind support provided by the CMS Secretariat.³⁹⁷ This budget covers meetings but very little programmatic work, with only 15,000 Euros per year allocated for analytical work.³⁹⁸ Other aspects of the work plan are implemented by the single P2 position.

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.³⁹⁹ 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,

392. *Id.* ¶ 14.

393. *Id.* at annex 2, at 8.

394. Letter from Bradnee Chambers, Exec. Sec'y, CMS, to Edgar Gutiérrez Espleta, Minister for Env't & Energy, Costa Rica (July 13, 2015).

395. In the United Nations system, a P2 position is a professional position that requires a minimum of two years of work experience. *Staff Categories*, U.N. CAREERS, <https://perma.cc/U2FZ-PNQX>.

396. Sharks MOU, Administrative and Budgetary Matters, Doc. CMS/Sharks/Outcome 2.5, annex 1, at 2 (Feb. 20, 2016), <https://perma.cc/B2CB-TABG>.

397. *Id.*

398. *Id.*

399. 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.

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 other 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.”⁴⁰⁰ As with the European eel, the scientific data gaps concerning the life history and threats to the American eel are significant.⁴⁰¹ Consequently, the question arises as to whether a European Eel Agreement could be expanded to include the American eel.⁴⁰²

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

400. DAVID JACOBY ET AL., IUCN, THE IUCN RED LIST OF THREATENED SPECIES – ANGUILLA ROSTRATE, AMERICAN EEL 2 (2017), <https://perma.cc/R8JL-HTAT>.

401. *See id.* at 2, 3, 6, 16 (noting the “relative lack of understanding of the threats”); *see also* U.S. FISH & WILDLIFE SERV., AMERICAN EEL (ANGUILLA ROSTRATA) – 12-MONTH PETITION FINDING FORM 7 (2015), <https://perma.cc/8M2X-P4KQ> (stating that “no rangewide estimate of American eel abundance exists” and “specific information on demographic structure is lacking and difficult to determine”).

402. Rep. of the First Range States Workshop on the European Eel, *supra* note 24, ¶¶ 145–52.

meetings, provided that the Agreement gives the Parties/Signatories that authority. This is, of course, the way CMS itself operates,⁴⁰³ as does ACAP,⁴⁰⁴ AEWa,⁴⁰⁵ and the Sharks MOU,⁴⁰⁶ among others.⁴⁰⁷

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 State⁴⁰⁸ or even against the will of a Range State.⁴⁰⁹ 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 agreements⁴¹⁰ and CMS MOUs.⁴¹¹ In this way, they would be allowed to participate in the discussions and voice their opinions, although they would not have the right to vote.

403. CMS, *supra* note 18, at art. XI.

404. ACAP, *supra* note 147, at art. VIII(13)(a)–(e).

405. AEWa, *supra* note 147, at art. X(5).

406. Sharks MOU, *supra* note 164, ¶ 20.

407. Raptors MOU, *supra* note 275, ¶¶ 15, 22.

408. 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. *Parties and Range States*, CMS, <https://perma.cc/GE4F-ADD3> (last updated Dec. 1, 2017).

409. For example, the southern African countries have been opposed to many of the decisions taken concerning the African elephant in CITES. In 2016, Namibia and Zimbabwe submitted proposals 14, 15, and 16 to allow commercial trade in ivory and other elephant specimens while many West and East African countries sought to prohibit all commercial trade in ivory and other elephant parts. See *Seventeenth Meeting of the Conference of the Parties—Proposals for Amendment of Appendices I and II*, CITES, <https://perma.cc/GFZ2-6BVZ>.

410. See, e.g., CMS, *supra* note 18, at art. VII(8); CITES, *supra* note 14, at art. XI(6).

411. See, e.g., Sharks MOU, *supra* note 164, ¶ 22.

The inclusion of the American eel, with 43 additional Range States and territories,⁴¹² 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.⁴¹³ Adding this language to the Agreement would likely enhance their participation but, of course, would 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 in the Agreement would be productive.⁴¹⁴ 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.

412. 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; 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; and Virgin Islands, United States. JACOBY ET AL., *supra* note 400, at 4.

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

414. Rep. of the First Range States Workshop on the European Eel, *supra* note 24, ¶¶ 147–48.

VIII. CONCLUSION

The European eel is considered “Critically Endangered.” Its population continues to decline due to overutilization, barriers to migration such as dams, habitat loss, 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. However, legally binding CMS instruments tend to have more stable funding, and 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.