

The Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS): A Regional Response to the Threats Facing Cetaceans

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I. Introduction

In November of 1996, representatives of seventeen nations assembled in Monaco and adopted by consensus the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS).¹ As of June 1998, only Monaco has ratified the agreement;² however, it is anticipated that it will ultimately come into force within the next few years.³

ACCOBAMS is the second regional accord to conserve cetaceans entered into under the Convention on the Conservation of Migratory Species of Wild Animals (CMS)⁴ in what ultimately may become a set of worldwide interlocking regional agreements.⁵ The purpose of this article is to assess the prospects for ACCOBAMS to contribute to the protection of cetaceans in an area of the world fraught with perils for marine species. In this pursuit, it: 1) examines the perils facing cetaceans in the area encompassed by the agreement; 2) outlines the negotiating history of ACCOBAMS and its key provisions; and 3) briefly assess the treaty's prospects and suggest means of strengthening its framework.

1. 36 I.L.M. 777 (1997) (hereinafter ACCOBAMS).

2. E-mail correspondence from Douglas Hykle, Convention on the Conservation of Migratory Species of Wild Animals (CMS) Secretariat, March 24, 1998.

3. ACCOBAMS will enter into force three months after at least seven coastal States or regional economic integration organizations of the region encompassed by the Agreement, ratify, accept or approve the Agreement, *see infra*, note 61 and accompanying text. This total must include at least two from the subregion of the Black Sea and at least five from the Mediterranean and contiguous Atlantic area. ACCOBAMS, *supra* note 1, at art. XIV(1).

4. 19 I.L.M. 15 (1980).

5. Hugo Nukamp & Andre Nollkaemper, *The Protection of Small Cetaceans in the Face of Uncertainty: An Analysis of the ASCOBANS Agreement*, 9 GEO. INT'L ENVTL. L. REV. 281, 302 (1997). The Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) entered into force in 1994 and is reprinted in II THE MARINE MAMMAL COMMISSION COMPENDIUM OF SELECTED TREATIES, INTERNATIONAL AGREEMENTS, AND OTHER RELEVANT DOCUMENTS ON MARINE RESOURCES, WILDLIFE AND THE ENVIRONMENT 1612 (1994).

II. Status of Cetaceans in the Mediterranean and Black Sea

A. The Mediterranean

The western Mediterranean Sea is home to approximately 200,000 dolphins, the vast majority of which are striped dolphins (*Stenella coeruleoalba*). The striped dolphin is also very common in the eastern Mediterranean basin.¹ Additionally, 3,000-4,000 fin whales (*Balaenoptera physalus*) inhabit the western Mediterranean.² Other species found in the region include Common dolphins (*Delphinus delphis*), Bottlenose dolphins (*Tursiops truncatus*), Risso's dolphin (*Grampus griseus*), Cuvier's beaked whales (*Ziphius cavirostris*), long-finned pilot whales (*Globicephala melas*) and sperm whales (*Physeter catodon*).³ Many species of cetaceans in the region are imperiled, primarily as a consequence of massive increases of pollution in recent years. Land-based pollution generated from the twenty-one nations in and around the Mediterranean Sea accounts for 80-90% of the contamination, with 80% of the load attributable to France, Italy, Spain and Greece.⁴

Some of the most lethal ingredients in the Mediterranean's toxic stew are organochlorine chemicals. These include DDT, PCBs, dieldrin and dioxins, which are generated primarily by industrial processes and farming.⁵⁰ Cetaceans are particularly susceptible to poisoning by such substances because they have less capability than most other species to metabolize persistent organochlorine chemicals.⁶¹ Moreover, organochlorines bioaccumulate in cetaceans and dissolve easily in their large fat stores, waiting to be released when they call upon their blubber reserves.⁷²

Between 1990-1992, thousands of striped dolphins died in an epizootic in the Mediterranean.⁸³ Although

1. Alex Aguilar & J. Antonio Raga, *The Striped Dolphin Epizootic in the Mediterranean Sea*, 22 AMBIO 524, 524 (Dec. 1993).

2. Tethys Research Institute, <http://www.tethys.org/resactiv.htm> (1998); *Mediterranean Mobilises to Save Dolphins*, AGENCE FRANCE PRESSE, Aug. 4, 1996.

3. ACOBAMS, *supra* note 1, Annex 1; Tethys Research Institute, *supra* note 7.

4. Francoise Kadri, *Blueprint is Approved to Fight Mediterranean Pollution*, AGENCE FRANCE PRESSE, Mar. 8, 1996.

5. ⁰ Bommana G. Loganathan & Kurunthachalam Kannan, *Global Organochlorine Contamination Trends: An Overview*, 23 AMBIO 187, 189 (Oct. 1994).

6. ¹ Letizia Marsili & Silvano Focardi, *Organochlorine Levels in Subcutaneous Blubber Biopsies of Fin Whales (*Balaenoptera physalus*) and Striped Dolphins (*Stenella coeruleoalba*) from the Mediterranean Sea*, 92 ENVTL. POLLUTION 1 (1995); ENVIRONMENTAL INVESTIGATION AGENCY, *WHALES IN A CHANGING OCEAN* 14 (1994).

7. ² Allison Motluk, *Deadlier Than The Harpoon*, NEW SCI., July 1, 1995, at 12. "Bioaccumulation consists of the net retention of a substance (e.g. a contaminant) over time." Peter M. Chapman, *Is Bioaccumulation Useful for Predicting Impacts*, 34 MARINE POLLUTION BULL. 282, 282 (1997).

8. ³ Fred Pearce, *Dead in the Water*, NEW SCI., Feb. 4, 1995, at 27.

the ultimate cause of death was identified as a morbillivirus that produced infections similar to distemper in carnivores,¹⁴ many researchers believe that extremely high loads of PCBs²⁵ carried by the victims may have compromised their immune systems, making them more vulnerable to the disease.³⁶ High levels of PCBs have also been linked to the depression of reproductive rates⁴⁷ and cancer⁵⁸ in marine mammals. Organochlorines may also have played a role in driving the once pervasive harbor porpoise (*Phocoena phocaena*) to the point of near extinction in the region.⁶⁹

The United Nations Environment Program recently reported that 80% of the 500 million tons of sewage generated by the 130 million inhabitants of the Mediterranean and the 100 million annual tourists is dumped untreated into the ocean.⁷⁰ The phosphorous and nitrogen contained in sewage, as well as detergents, shampoos and fertilizers that wash into the ocean, has resulted in eutrophication throughout the Mediterranean. This has produced massive algae blooms that have removed oxygen from the water, killed prey species that cetaceans rely upon, and contributed to the build-up of dinoflagellates toxic to marine animals.⁸¹ Cetaceans also are threatened by releases of crude oil from land and vessels, and heavy metals such as lead and mercury.⁹²

The incidental catching of cetaceans by Italian swordfish and tuna fishers, utilizing driftnets as long as 20 kilometers,¹⁰³ also poses a serious threat to certain species. Recent studies reveal that only 18% of the catch in these nets are swordfish.¹¹⁴ Among the other species caught and usually discarded in such operations each

1. ⁴ Nuria Calzada & Christina H. Lockyer, *Age and Sex Composition of the Striped Dolphin Die-Off in the Western Mediterranean*, 10 MARINE MAMMAL SCI. 299, 300 (1994); Alex Aguilar & J. Antonio Raga, *The Striped Dolphin Epizootic in the Mediterranean Sea*, 22 AMBIO 524, 526 (Dec. 1993).
2. ⁵ "PCB concentration in striped dolphins from the Mediterranean Sea have been determined to be greater than 1000 ppm, which is the highest level ever recorded in a marine mammal . . ." Loganathan & Kannan, *supra* note 10, at 189. See also Paul A. Johnston, et al., *Cetaceans and Environmental Pollution: The Global Commons*, in THE CONSERVATION OF WHALES AND DOLPHINS (Mark P. Simmonds & Judith D. Hutchinson, eds. 1996), at 235; *Scientists Warn of Major Threat to Mediterranean Dolphins*, REUTERS LIBRARY REP., Aug. 31, 1990.
3. ⁶ Pearce, *supra* note 13, at 28.
4. ⁷ Joseph E. Cummins, *Extinction: The PCB Threat to Marine Mammals*, 18 ECOLOGIST 19 (1988); D.E. GASKIN, THE ECOLOGY OF WHALES AND DOLPHINS 427 (1982).
5. ⁸ M. García Hartmann, *Pathology of Marine Mammals*, in MARINE MAMMALS, SEABIRDS & POLLUTION OF MARINE SYSTEMS 141 (Thierry Jauniaux, et al, eds. 1997); Joseph E. Cummins, *PCBs A Global Tragedy 2*, (1994) (unpublished manuscript supplied to the author).
6. ⁹ Secretariat, Convention on the Conservation of Migratory Species of Wild Animals, *The Conservation of Small Cetaceans: A Review* 8 (1991).
7. ⁰ D'Vora Ben Shaul, *A Sea That is Swamped by Pollution Problems*, JERUSALEM POST, May 29, 1995, at 7. See also Secretariat to the Barcelona Convention, *State of the Marine & Coastal Environment in the Mediterranean Region*, MAP Technical Report, Series No. 100, <http://www.unep.org/unep/regoffs/medu/home.htm> (1996).
8. ¹ Pearce, *supra* note 13, at 28.

year are thousands of dolphins and whales.¹⁵ The bycatch of striped dolphins has recently been characterized as unsustainable by the International Whaling Commission.²⁶

Italian fishing practices are in direct defiance of a regulation adopted by the European Union (EU) in 1993 banning driftnets longer than 2.5 kilometers in length.³⁷ In 1996 the EU made a commitment to encourage Italian fishers to phase out their use of such nets by providing funding to convert the nation's fleet to more selective measures. However, very little progress has been made in the interim, perhaps because the proposal is purely voluntary.⁴⁸

A. Black Sea

The Black Sea region has experienced catastrophic declines in its cetacean populations in the past half-century. According to Alexandru Bologa of the Romanian Institute for Marine Research, the dolphin population has plummeted by 99% in the past 48 years, from over one million in 1950 to less than 10,000 now.⁵⁹ Bologa predicts that if present trends continue, dolphins will "cease to exist" in the Black Sea by the turn of the century.⁶⁰ Moreover, the stocks of harbor porpoises in the Black & Mediterranean Sea are in "critical condition."⁷¹ As a consequence of the decimation of stocks, there are only three remaining species of cetaceans endemic to the Black Sea region: the harbor porpoise, common dolphin and bottlenose dolphin.⁸² Although the region's cetaceans face both the threats of direct exploitation and bycatch in fishing gear,⁹³ the primary peril is from pollution. Semi-enclosed seas, such as the Black Sea,¹⁰⁴ are particularly threatened

9. ² M.I. Dassenakis, et al., *The Influence of Long Existing Pollution on Trace Metal Levels in a Small Tidal Mediterranean Bay*, 32 MARINE POLLUTION BULL. 275, 275 (1996); *Anti-Pollution Efforts Stepped Up*, MIDDLE EAST ECON. DIG., Mar. 17, 1995; Françoise Ramade, *Environmental and Ecotoxicological Problems in the Mediterranean Countries*, SCI. TOTAL ENV'T 97, 100 (1993).

10. ³ *Driftnets: Euro-MPs and Council Probe Plans to Phase Out Italian Fleet*, AGRIC. SERV. INT'L, Apr. 18, 1997.

11. ⁴ *U.S. Government Faced With Tough Decision on Italian Fishing Case*, DEUTSCHE PRESSE-AGENTUR, Mar. 14, 1996.

1. ⁵ Pearce, *supra* note 13, at 28. See also Marlise Simons, *Boats Plunder Mediterranean with Outlawed Nets*, N.Y. TIMES, June 4, 1998, at A3.

2. ⁶ *Report of the Sub-Committee on Small Cetaceans*, Annex G, 45 REP. INT'L WHALING COMM. 165, 177 (1995). See also WDCS Welcomes New Initiative for Black Sea and Mediterranean Whales and Dolphins (hereinafter WDCS), <http://www.wdcs.org/wdcs/campaign/conventi/accobams.htm>.

3. ⁷ *Council Regulation (EEC) No 345/92 of 27 January 1992 amending for the eleventh time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources*, 1992 OJ L 42, at art. 9a. The European Union's decision implements a 1989 resolution by the United Nations, which called for a moratorium on the use of driftnets of lengths greater than 2.5 kilometers on the high seas. United Nations General Assembly, *Resolution on Large-Scale Pelagic Driftnet Fishing and Its Impact on Living Marine Resources of the World's Oceans and Seas*, 44/225, adopted Dec. 22, 1989, 29 I.L.M. 1555 (1990).

by land and ocean-introduced contaminants because they are characterized by limited deep water exchange, resulting in extremely slow removal rates of such chemicals.¹⁵ Land-based pollution, the largest threat to the Sea's fauna species, comes primarily from the five tributary rivers to the Black Sea: the Danube, Dniester, Dnieper, Don and Kuban.²⁶ The Danube alone contributes hundreds of tons of nitrogen and huge amounts of phosphorous,³⁷ as well as over 50,000 tons of oil and heavy metals including mercury and zinc.⁴⁸

The estimated 570 million cubic meters of untreated organic waste dumped into waters feeding into the Black Sea annually has resulted in vast areas of eutrophication. This has contributed to the extinction of 40 species of fish, as well as sponges, sea anemones, shrimps, crabs and other species.⁵⁹ Overall, eutrophication and other sources of contaminants threaten half of the 180 fish species in the Black Sea,⁶⁰ in turn imperiling cetaceans that rely on many of these species for food.

II. The ACCOBAMS Framework

A. Negotiating History

In 1991, an early draft of ACCOBAMS was reviewed at a meeting of the Secretariats of the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution,⁷¹ the Convention on the Con-

8. ⁸ *Driftnets, supra* note 23; *Plans to Ban Driftnets Face French and Italian Opposition*, EUR. REP., Feb. 28, 1998. There are also recent reports that Italian fishers are applying for fishing licenses in Albania and Croatia to facilitate the continued use of driftnets. See Simons, *supra* note 25.

There is also a move afoot in the EU to ban the use of driftnets entirely. The fisheries ministers of the EU approved the proposal in March of this year. However, it has been met with resistance by several EU members, including Ireland, France and Italy. Maxine Frith, *Drift-Net Fishing Banned by Ministers*, PRESS ASS'N NEWSFILE, Mar. 24, 1998.

5. ⁹ Gabriela Velea, *Black Sea Dolphins Face Extinction*, INTER PRESS SERV., Apr. 21, 1996. See also Colin Woodard, *The Black Sea Faces Dark Times*, CHRISTIAN SCI. MONITOR, Dec. 13, 1996, at 6.
6. ⁰ *Id.*
7. ¹ Judith D. Hutchinson, *Fisheries Interactions: The Harbour Porpoise – a Review*, in Simmonds & Hutchinson, *supra* note 15, at 131.
8. ² WDCS, *supra* note 25.
9. ³ Hutchinson, *supra* note 15, at 139.
10. ⁴ The Black Sea connects only to the Mediterranean, through the narrow Bosphorus and the Sea of Marmara. Ellen Hey & Laurence D. Mee, *The Ministerial Declaration: An Important Step*, 23 ENVTL. POL'Y & L. 215, 215 (1993).
1. ⁵ Loganathan & Kannan, *supra* note 10, at 189.
2. ⁶ Thomas Land, *Co-ordinated Action is Key to Black Sea Pollution Strategy*, LLOYDS LIST, Jan. 2, 1997.
3. ⁷ Paul Brown, *Germany and Austria Sued for Polluting Black Sea Via Danube*, THE GUARDIAN, Sept. 26, 1997, at 15. See also Florica Porumb, *On the Development of 'Noctiluca scintillans' Under Eutrophication of Romanian Black Sea Waters*, 1992 SCI. TOTAL ENV'T 907, 907.

ervation of European Wildlife and Natural Habitats (Bern Convention),¹² the Convention on the Conservation of Migratory Species and Wild Animals (hereinafter CMS),²³ the International Union for the Conservation of Nature and Greenpeace International. That same year, the Conference of the Parties to CMS adopted a resolution urging Party and non-Party range states of small cetaceans listed in Appendix II of the treaty, especially those proximate to the Black and Mediterranean Seas, to accord priority to concluding agreements under the CMS to protect these species.³⁴

Mediterranean range states convened a meeting in Athens in October, 1992, to discuss the draft Agreement.⁴⁵ Subsequent input was provided by representatives of Black Sea range states at a meeting in 1994.⁵⁶ Negotiating sessions in 1995 and 1996 culminated in the signature of the Agreement by eleven states on November 24, 1996, at an intergovernmental meeting in Monaco convened by the UNEP/CMS Secretariat in conjunction with Monaco and France.⁶⁷

B. Treaty Provisions

1. Framework for the Treaty/Scope

Although ACCOBAMS is a freestanding treaty, it was developed under the framework of the 1979 Convention on the Conservation of Migratory Species of Wild Animals. Thus, its objectives and implementation

4. ⁸ Kapana Sharma, *The Tale of a Dying Sea: Slowly Some of the Landlocked Seas are Becoming Terminally Ill*, THE HINDU, Oct. 14, 1997, at 12C. Over 110,000 tons of oil enters the Black Sea each year. *Black Sea Becoming 'Dead Sea'*, CHINA DAILY, Dec. 15, 1997, at 4.

5. ⁹ *Id.*

6. ⁰ Nicolae Bodeanu, *Algal Blooms and Development of the Main Phytoplanktonic Species at the Romanian Black Sea Littoral in Conditions of Intensification of the Eutrophication Process*, 1992 SCI. TOTAL ENV'T 891, 903. *Black Sea Becoming 'Dead Sea'*, *supra* note 36. Another serious threat to fish species in the region is a jellyfish-like species (*Mnemiopsis leidyi*) which was accidentally introduced into the Black Sea in the mid-1980s from the ballast water of a ship from the United States. Black Sea Environmental Program Home Page, *The Black Sea in Crisis*, <http://www.domi.invensis.com.tr/blacseal/crisis.htm>. *Mnemiopsis* thrives in the Black Sea, at one time constituting nearly half of the total biomass in the sea before beginning to decrease in the past few years. It has substantially contributed to the decline of fish species in the area by consuming huge amounts of phytoplankton. Colin Woodard, *Troubles Bubble Under the Sea*, CHRISTIAN SCI. MONITOR, Sept. 10, 1997, at 1.

7. ¹ Done Feb. 16, 1976, reprinted in 15 I.L.M. 290 (1976).

1. ² 1979, E.T.S. 104.

2. ³ See *supra* note 3.

3. ⁴ Secretariat, Convention on the Conservation of Migratory Species of Wild Animals, *Draft Agreement on the Conservation of [Small] Cetaceans of the Mediterranean and the Black Seas* (Sept. 1995), at 4, (hereinafter *Draft Agreement*).

4. ⁵ Alain Piquemal, *La Protection de la Biodiversite en Mediterranee et Mer Noire*, <http://www.unice.fr/CERDAMI/actu1.htm> (1997).

5. ⁶ *Draft Agreement*, *supra* note 45, at 4.

will be strongly influenced by this agreement.¹⁸ CMS was the direct result of a recommendation adopted at the 1972 United Nations Conference on the Human Environment, calling upon nations “to enact international conventions and treaties to protect species inhabiting international waters or those which migrate from one country to another.”²⁹ Its membership now includes fifty-two Parties from Africa, Central and South American, Asia, Europe and Oceania.³⁰

Parties to the CMS pledge to take measures to protect “wild animals that migrate across or outside national jurisdictional boundaries.”⁴¹ In the case of endangered migratory species, listed in Appendix I of the treaty, the Parties are required to prohibit their taking and to take appropriate conservation measures, including habitat restoration and control of the introduction of exotic species.⁵² Currently Appendix I includes only six species of cetaceans, none of which are found in the Mediterranean or Black Seas. However, the CMS also functions as a framework convention for migratory species not identified as currently endangered. The treaty outlines two types of agreements that may be entered into by the Parties. Article IV(3) calls upon the Parties to conclude AGREEMENTS to protect species listed in Appendix II, encompassing species “which have an unfavourable conservation status . . . as well as those which have a conservation status which would significantly benefit from the international co-operation that could be achieved by an international agreement.”⁶³ Article IV(4) encourages the Parties to conclude “agreements for any population or any geographically separate part of the population of any species or lower taxon or wild animals, members of which periodically cross one or more national jurisdictional boundaries.” Parties entering into either an Article IV(3) or IV(4) Agreement need not be Parties to the CMS.⁷⁴

6. ⁷ Piquemal, *supra* note 45. The eleven nations signing the Agreement were Albania, Cyprus, Spain, France, Georgia, Greece, Italy, Morocco, Monaco, Portugal and Tunisia. Turkey and Romania have announced their interest in signing in the future. Personal Correspondence from Douglas Hykle, CMS Secretariat, March 24, 1998 via e-mail.

1. ⁸ See *supra* note 45.

2. ⁹ Stockholm Declaration on the Human Environment, June 16, 1972, U.N. Doc. A/Conf.48/14/Rev. 1. For a concise discussion of the negotiating history of CMS, see P. VAN HEIJNSBERGEN, INTERNATIONAL LEGAL PROTECTION OF WILD FAUNA AND FLORA 28 (1997).

3. ⁰ CMS Secretariat, *Parties to the Convention on the Conservation of Migratory Species of Wild Animals*, Feb. 1, 1998.

4. ¹ CMS, *supra* note 3, at Preamble.

5. ² *Id.* at art. III.

6. ³ *Id.* at art. IV(1).

7. ⁴ *Id.* at art. V(2). Currently the European Union and ten of the nations in the treaty's Agreement area, see *infra* note 59 and accompanying text, are also Parties to the CMS. None of the nations bordering the Black Sea are parties to the CMS. Secretariat, CMS, *supra* note 45, at 3.

As one commentator notes, the drafters of the CMS intentionally capitalized the term “agreements” in Article IV(3) to distinguish them from “agreements” entered into under Article IV(4). When states enter into an Article IV(3) AGREEMENT, they are required to conform to detailed guidelines outlined in Article V for the conservation of Appendix II species.¹⁵ By contrast, Article IV(4) agreements may encompass species not listed in Appendix II; moreover, these agreements are not subject to CMS guidelines.²⁶

ACCOBAMS was drafted under Article IV(4) of the CMS.³⁷ Thus, while Appendix II of the CMS lists only four species of cetaceans found in the Mediterranean and Black Seas,⁴⁸ ACCOBAMS’s status as an Article IV(4) agreement permitted the Parties to establish conservation measures for “all cetaceans that have a range which lies entirely or partly within the Agreement area or that accidentally or occasionally frequent the Agreement area.”⁵⁹ The “Agreement area” encompasses “all the maritime waters of the Black Sea and the Mediterranean and their gulfs and seas, and the internal waters connected to or interconnecting these maritime waters, and of the Atlantic area contiguous to the Mediterranean Sea west of the Straits of Gibraltar.”⁶⁰

1. Objectives/Commitments

“Recognizing that cetaceans are an integral part of the marine ecosystem which must be conserved for the benefit of present and future generations,”⁷¹ the Parties to ACCOBAMS pledge themselves to take coordinated measures “to achieve and maintain a favourable conservation status for cetaceans.”⁸² These measures

1. ⁵ Nukamp & Nollkaemper, *supra* note 5, at 287.

2. ⁶ Two AGREEMENTS have been entered into by CMS Parties, the Agreement on the Conservation of Bats in Europe (EUROBATS) (entered into force on Jan. 16, 1994), and the Agreement on the Conservation of African Eurasian Migratory Waterbirds (AEWA) (concluded on June 16, 1995). In addition to ACCOBAMS, two other agreements have been entered into under Article IV(4), the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas, *supra* note 5, and the Agreement on the Conservation of Seals in the Wadden Sea (entered into force, Oct. 1990). CMS Secretariat, *Guide to the Convention on the Conservation of Migratory Species of Wild Animals*, Mar. 1997, at 5-8.

3. ⁷ ACCOBAMS, *supra* note 1, at art. I(4).

4. ⁸ Appendix II includes only four species of small cetaceans found in the Mediterranean or Black Sea: *Phocoena phocoena* (Black Sea populations); *Tursiops truncatus* (western Mediterranean and Black Sea populations); *Stenella coeruleoalba* (western Mediterranean populations) and *Delphinus delphis* (western Mediterranean and Black Sea populations).

5. ⁹ ACCOBAMS, *supra* note 1, at art. 1(2). The Parties originally limited the treaty’s purview to small cetaceans, as is the case with ASCOBANS. However, this approach was abandoned at the 1995 intergovernmental negotiating session. Piquemal, *supra* note 46, at 3. Annex I to the treaty contains an “indicative list” of cetaceans to which the Agreement applies.

6. ⁰ ACCOBAMS, *supra* note 1, at art. I(1) (a).

7. ¹ *Id.* at Preamble.

include prohibition of the deliberate taking of cetaceans in the Agreement area and the establishment of a network of specially protected areas.¹³

Additionally, the Parties agree to implement measures outlined in the treaty's Conservation Plan.²⁴ These measures include the following:

a. National Legislation

The Parties agree to take measures to reduce the incidental catching of cetaceans, including prohibiting the use of drift nets of more than 2.5 kilometers in length in the Agreement area, preventing fishing gear from being discarded or left adrift at sea, and mandating the use of devices on fishing gear that ensure the immediate release of ensnared cetaceans. Additionally, the Parties are required to conduct impact assessments to determine the impact of current or future activities on cetaceans by the fishing industry, tourism, including cetacean-watching, and offshore exploitation of resources.³⁵ The Parties also pledge to use other relevant instruments to regulate the discharge of pollutants that have an adverse effect on cetaceans.⁴⁶

a. Habitat Protection

ACCOBAMS calls upon the Parties to establish and manage specially protected areas that correspond to critical cetacean habitat and feeding regions within the Agreement area.⁵⁷ The Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean of the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution,⁶⁸ is cited as the most apposite framework for estab-

8. ² *Id.* at art. II(1).

1. ³ *Id.* Both the International Convention for the Regulation of Whaling (ICRW), Dec. 2, 1946, 62 Stat. 1716, T.I.A.S. No. 19\849, 161 U.N.T.S. 361, art. VIII, and ACCOBAMS provide exceptions to the prohibition against taking cetaceans for research "aimed at maintaining a favourable conservation status for cetaceans." ACCOBAMS, *supra* note 3, at art. II(2). However, unlike under the ICRW, ACCOBAMS prohibits lethal or non-in situ research and requires advanced approval by the treaty's Scientific Committee. *Id.* This may be in recognition of the fact that the ICRW's scientific research provision has been used as a pretext by nations, including Japan and Norway, to flout the moratorium on commercial whaling established by the International Whaling Commission (IWC) in 1982. Japan and Norway kill 800-900 whales annually in the name of research despite the fact that the IWC's Scientific Committee consistently concludes that this research does not substantially contribute to the rational scientific management of whales stocks or meet research needs deemed critical by the Committee. See Yves Leer, *IWC Fails to Agree to Relaxation of Whaling Ban*, AGENCE FRANCE PRESSE, May 20, 1998; *Draft Resolution on Special Permit Catches by Japan*, IWC/48/40 (1995); *Resolution on Norwegian Proposal for Special Permits*, Appendix I, 39 IWC REP. 30 (1988).

2. ⁴ ACCOBAMS, *supra* note 3, at Annex 2.

3. ⁵ *Id.* at 1(a)-(c). To inform these efforts, the treaty includes a provision for collection and analysis of data on human-cetacean interaction through cooperation between the Parties and international organizations. *Id.* at

4. ⁶ *Id.* at 1(d).

5. ⁷ *Id.* at 3.

lishing specially protected areas.

*The Protocol requires the Parties to establish specially protected areas in marine and coastal zones to safeguard, inter alia, “habitats critical to the survival, reproduction and recovery of endangered, threatened or endemic species of flora or fauna.”*¹⁹ The Protocol’s list of “endangered or threatened species” encompasses all cetacean species listed in ACCOBAMS in the Mediterranean region.²⁰ The Protocol calls upon the Parties to prohibit activities that adversely affect endangered or threatened species and to prohibit the destruction of critical habitat of such species. It also establishes a framework for cooperative scientific and technical research, including monitoring, to effectuate the Protocol’s objectives, coordinated through a Regional Activity Centre for Specially Protected Areas.³¹

a. Research & Monitoring

Despite centuries of research, our understanding of the critical parameters for assessing the health of the stocks of cetaceans, including abundance, recruitment rates, age distribution, pregnancy rates, sex ratios in breeding populations and interaction with fisheries, remains woefully inadequate.⁴² Moreover, our knowledge of the dynamics of small cetaceans, which are the predominant species found in the ACCOBAMS Agreement area, is even more rudimentary.⁵³ For most small cetacean species there is virtually no basic data or estimates of important biological parameters.⁶⁴

Recognizing the egregious gaps in knowledge that exist vis-à-vis cetaceans in the region, ACCOBAMS calls for a coordinated research and monitoring program by the Parties, including efforts to determine cetacean migration routes and feeding areas, the impact of interactions with humans, and

6. ⁸ See *supra* note 42. The Protocol was adopted in June 1995, and is slated to replace the Protocol concerning Mediterranean Specially Protected Areas of 1982, in accordance with that treaty’s Article 32. The Protocol has not yet entered into force. Note 1, Protocol concerning Specially Protected Area and Biological Diversity in the Mediterranean.

1. ⁹ *Id.* at art. 4(c).

2. ⁰ *Id.* at Annex II.

3. ¹ *Id.* at art. 20(3).

4. ² Andrew J. Read, *Incidental Catches of Small Cetaceans*, in Simmonds & Hutchinson, *supra* note 15, at 124; ANIMAL WELFARE INSTITUTE, DEBUNKING THE RMP 14-18 (1994); K. RADWAY ALLEN, CONSERVATION AND MANAGEMENT OF WHALES 70-71 (1980).

5. ³ William C. Burns, *The International Whaling Commission And The Regulation Of The Consumptive And Non-Consumptive Uses Of Small Cetaceans: The Critical Agenda For The 1990s*, 13 WIS. INT’L L.J. 105, 123 (1994).

6. ⁴ *Id.*; Sidney Holt, *How Red Herrings And Soft Variables Are Killing The Whales*, SIREN, May, 1986.

the status and trends of discrete populations.¹⁵ In recognition of the different needs and developmental stages of states in the region, the Agreement also emphasizes the need for capacity-building through such measures as the establishment of data collection systems, delineation of protected or managed areas, and the creation of training programs on conservation techniques.²⁶

a. Emergency Responses

ACCOBAMS calls for the Parties to develop and implement emergency measures when “exceptionally unfavourable or endangering conditions occur.”³⁷ Measures to be taken include the implementation of emergency plans in response to major pollution events, strandings or epizootics, development of capacities for rescue operations for wounded or sick cetaceans and preparation of a code of conduct for institutions involved in cetacean research.⁴⁸

1. Institutions

The Meeting of the Parties is designated within the Agreement as its decision-making body.⁵⁹ After an initial meeting one year after the Agreement enters into force, Meetings of the Parties are to occur at intervals of not more than three years unless the Parties decide otherwise. The Parties will adopt rules of procedure and establish an Agreement Secretariat, regional coordination units, a Bureau and a Scientific Committee at the first meeting. At meetings thereafter, the Parties will review the conservation status of cetacean species in the Agreement Area, review the progress made in implementing the Agreement, and make recommendations to amend the treaty. Each Party will be required to prepare a report for each session of the Meeting of the Parties on its implementation of the Agreement, with an emphasis on the conservation measures taken and scientific research and monitoring activities.⁶⁰

The Agreement Secretariat’s primary functions are to oversee arrangements for sessions of the Parties, and to facilitate cooperation between the Parties, non-Party states and relevant national and international bodies.⁷¹ Sub-regional Co-ordination Units are to be established in the Mediterranean Sea and

1. ⁵ ACCOBAMS, *supra* note 1, at Annex II, 4.

2. ⁶ *Id.* at 5.

3. ⁷ *Id.* at 6.

4. ⁸ *Id.*

5. ⁹ *Id.* at art. III(1).

6. ⁰ *Id.* at art. VIII(b).

contiguous Atlantic areas and the Black Sea to facilitate implementation of the treaty's provisions and to report on the status and trends of populations in the respective sub-regions.¹² The Bureau, which will consist of the Chairperson and Vice-Chairperson of the Meetings of the Parties, will provide general policy and financial guidance to the Parties, as well as represent them in other forums.²³ Finally, the Scientific Committee is established as an advisory body to the Meeting of the Parties to, *inter alia*, *advise them on implementation of the Agreement, to conduct assessments of the status of species in the Agreement Area and to help develop and coordinate monitoring programs.*³⁴

II. The Prospects for ACCOBAMS

A. The Historical Record

It is difficult to be sanguine about the prospects for ACCOBAMS if one reviews the implementation history of other regional treaties that are directly relevant to its objectives. In the Mediterranean, the General Fisheries Council for the Mediterranean (GFCM) was created under the auspices of the Food & Agriculture Organization (FAO) in 1948 to ensure the rational management of the region's fisheries.⁴⁵ Despite disastrous declines in commercial the region's fish stocks over the past two decades,⁵⁶ total fish catches have almost tripled since the establishment of the GFCM.⁶⁷ Moreover, the parties to the GFCM have not responded to FAO requests for catch and effort statistics, critical data for any fisheries management regime.⁷⁸ In 1975, the United Nations Environmental Program initiated the Mediterranean Action Plan (MAP) to confront the marine pollution crisis in the region.⁸⁹ This led to the establishment of the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, and two accompanying protocols in 1976.⁹⁰ Unfortunately, MAP has been complied with, for the most part, only in the breach. For example,

7. ¹ *Id.* at art. IV.

1. ² *Id.* at art. V.

2. ³ *Id.* at art. VI.

3. ⁴ *Id.* at art. VII.

4. ⁵ Nicholas Robinson, III AGENDA 21 & THE UNCED PROCEEDINGS 1357 (1992). The scope of the GFCM was expanded to the "Black Sea and connecting waters" in 1976. *Id.*

5. ⁶ Colin Woodard, *Black Sea in Critical Condition*, SF CHRON., Nov. 10, 1997, at A12; *Mediterranean Nations Agree to Fish Conservation Group*, EUROPEAN REP., Dec. 4, 1996.

6. ⁷ Robinson, *supra* note 86, at 1357.

7. ⁸ *Id.* at 1359.

8. ⁹ John Warren Kindt, *Solid Wastes and Marine Pollution*, 34 CATH. U. L. REV. 37, 80 n.302 (1984).

9. ⁰ Edith Brown Weiss, *International Environmental Law: Contemporary Issues and the Emergence of a New World Order*, 81 GEO. L.J. 675, 679 n.27 (1993).

major polluting nations in the region, including France, Spain and Italy, routinely flout the regulations they established pursuant to the agreement.¹¹ Moreover, member nations have consistently failed to pay their dues to the Barcelona Convention Secretariat or provide information about implementation measures.²² Compliance with environmental and fishing accords has been no better in the Black Sea region. The 1960 Varna Convention collapsed in the face of the refusal of member states to agree to controls on fishing methods or sustainable catch quotas.³³ Also, recent research demonstrates a clear pattern of non-compliance with regulations to ban the use of organochlorine pesticides, perpetuating high levels of DDT, PCBs and HCHs in Black Sea cetaceans.⁴⁴

C. B. Resource Constraints

Successful implementation of ACCOBAMS will require substantial expenditures in the context of pollution cleanup efforts, cetacean research, and monitoring programs. Unfortunately, the severe financial constraints faced by many nations in the region, particularly in the Black Sea, may render the ambitious objectives of the treaty chimerical. As one commentator recently noted in discussing the prospects for Black Sea states to address marine pollution issues:

A solution becomes more difficult in the context of the Black Sea because the majority of its littoral states are in a state of virtual bankruptcy. Some of the world's best marine biology institutes now have a skeletal staff, most of them receiving minimal or no salaries. Furthermore, the ports located along its coast do not have sewage or effluent treatment plants. The ones that exist have fallen into disrepair and there are no funds to set them right. Huge quantities of untreated organic waste are dumped daily into its waters – a staggering 571 million cubic metres per year.⁵⁵

Furthermore, many Black Sea research vessels are tethered in ports because of a lack of funds, or are being used to shuttle business people around the region.⁶⁶

While the Meeting of the Parties will establish contribution scales for member States at its first meeting,⁷⁷ the history of other international wildlife treaty regimes does not give one much cause for opti-

1. ¹ Pearce, *supra* note 13, at 28.

2. ² *Id.* See also *Anti-Pollution Efforts Stepped Up*, MIDDLE E. ECON. DIG., Mar. 17, 1995, at 20. MED POL, a long-term program for pollution monitoring and research in the region, has also been plagued by the failure of most of the 12 member states to report data. Johnston, *supra* note 15, at 242.

3. ³ A.E. Reynolds, *The Varna Convention: A Regional Response to Fisheries Conservation and Management*, 2 INT'L J. COASTAL & ESTUARINE L. 154-170 (1987).

4. ⁴ Shinsuke Tanabe, et al., *Persistent Organochlorine Residues in Harbour Porpoise (Phocoena phocoena) from the Black Sea*, 34 MARINE POLLUTION BULL. 338, 341-343 (1997). See generally, Mark Glukhovskiy, *Troublesome Neighbors*, MOSCOW NEWS, Jan. 22, 1998.

5. ⁵ Sharma, *supra* note 39.

6. ⁶ Neal Ascherson, *Can A Study Cruise and a Noble Scrap of Paper Save the Black Sea?*, INDEPENDENT, Sept. 28, 1997; John Pomfret, *Communism's Messiest Legacy is a Gasping Black Sea*, INT'L HERALD TRIBUNE, June 21, 1994.

7. ⁷ ACCOBAMS, *supra* note 1, at art. IX(1).

mism. Even major multilateral regimes, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora,¹⁸ and the International Convention for the Regulation of Whaling,²⁹ have been marked by the failure of their members to pay assessments in a timely manner and minimal contributions that have made it difficult to fulfill treaty objectives.³⁰⁰ Moreover, while ACCOBAMS also contemplates the pursuit of funds from other sources, the failure of cleanup programs for the Baltic Sea and the Danube River in recent years to attract substantial funding from international sources is a discouraging portent.⁴⁰¹

D. Improving The Prospects For ACCOBAMS

1. Funding the Treaty

*As noted above, financial constraints may seriously impair the effectiveness of ACCOBAMS. It is thus incumbent upon some of the more affluent states in the Agreement Area, as well as the European Community, to make meaningful commitments at the first Meeting of the Parties. Moreover, other wealthy nations, including the United States, Australia and New Zealand, have portrayed themselves in recent years as staunch advocates for the welfare of cetaceans in forums such as the International Whaling Commission. They should view this as an excellent opportunity to demonstrate their commitment to cetacean conservation by contributing to implementation of the treaty's conservation plan, perhaps through an existing mechanism such as Global Environmental Facility.*⁵⁰²

1. Standards for Application of the Precautionary Principle

The precautionary principle has been characterized as a "public policy guideline for environmental issues"⁶⁰³ which "ensures that a substance or activity posing a threat to the environment is prevented from adversely affecting the environment, even if there is no conclusive scientific proof linking that particular substance or activity to environmental damage."⁷⁰⁴ Many versions of the principle incorporated into recent international environmental treaty regimes also mandate the use of the best available technology to prevent harm to the environment, or have reversed the tradi-

1. ⁸ Convention on International Trade in Endangered Species of Wild Fauna and Flora, March 3, 1973, 27 U.S.T. 1087, T.I.A.S. No. 8249, 993 U.N.T.S. 243, ELR Stat. 40336.

2. ⁹ International Convention for the Regulation of Whaling, 2 December 1946, 161 U.N.T.S. 72 (entered into force 10 November 1948).

3. ⁰⁰ See *Report on National Reports Submitted Under Article VIII, Paragraph 7, of the Convention*, NINTH MEETING OF THE CONFERENCE OF THE PARTIES, 7-18 November 1994, Doc. 9.21, at 1; WILLIAM T. BURKE, *THE NEW INTERNATIONAL LAW OF FISHERIES* 292 (1994):

The IWC is also given little or no capacity of its own to increase knowledge and understanding of whales, their habitats, or their interactions with other species . . . The commission has no research arms nor funds to engage researchers. It must rely on member states and on private groups, neither of which can be presumed to do objective science or interpret conditions without bias.

4. ⁰¹ Woodard, *supra* note 30, at 6.

tional burden of proof to establish the safety of practices or activities.¹⁰⁵

Intrinsic to the precautionary principle is an express rejection of a focus on the assimilative capacity of the environment, which heretofore held sway in the arena of international environmental decision-making.²⁰⁶ The assimilative capacity concept emphasizes the ability of scientists to accurately ascertain the carrying capacity of, and the magnitude of threats to, the environment, as well as society's technological capacity to mitigate such threats once detected.³⁰⁷ Recognition of the failure of the assimilative capacity paradigm to adequately safeguard the environment led to the formulation of the precautionary principle:

*The precautionary concept advocates a shift away from the primacy of scientific proof and traditional economic analyses that do not account for environmental degradation. Instead, emphasis is placed on: 1) the vulnerability of the environment; 2) the limitations of science to accurately predict threats to the environment, and the measures required to prevent such threats; 3) the availability of alternatives (both methods of production and products) which permit the termination or minimization of inputs into the environment; and 4) the need for long-term, holistic economic considerations, accounting for, among other things, environmental degradation and the costs of waste treatment.*⁴⁰⁸

Application of the precautionary principle is particularly salutary in the context of cetacean conservation regimes given the serious deficiencies of knowledge about the impact of exogenous factors on the viability of stocks, such as pollution and fisheries' interactions.⁵⁰⁹ and the grave threat of population crashes well before downward trends in stocks can be detected.⁶¹⁰ Unfortunately, incarnations of the precautionary principle in international environmental treaty regimes to date "provide few, if any operable guidelines for policy makers nor . . . constitute a rigorous analytical schema."⁷¹¹ As a consequence, policy makers are often confused about their obligations in applying the principle, or blithely sign agreements which incorporate the principle knowing that its likely to be unenforceably vague.⁸¹²

ACCOBAMS incorporates an especially vague version of the precautionary principle, simply providing that "the Parties shall apply the precautionary principle" in the context of conservation, research and management measures.⁹¹³ In this amorphous form it is likely to be wholly ignored by the Parties. At the First Meeting of the Parties, the Parties should amend this provision, as well as other treaties critical to the success of ACCOBAMS, to include specific precautionary mandates. A good example in the context of marine pollution is the Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution's¹⁰¹⁴ references to "the real absorptive capacity of the marine environment"¹¹¹⁵ and its focus on emissions limits for regulated substances.¹²¹⁶ The Treaty's regulatory focus reflects a misplaced reliance on society's ability to assess the assimilative capacity of the

5. ⁰² Global Environment Facility Instrument For The Establishment Of The Restructured Global Environment Facility (GEF), reprinted in 33 I.L.M. 1273 (1994) (*hereinafter Global Environment Facility Instrument*). The GEF was established as a pilot program under the rubric of the United Nations Development Program (UNDP), the International Bank For Reconstruction (IBRD) and the United Nations Environment Program (UNEP), 30 I.L.M. 1735 (1991). Hailed as "the first major financial accomplishment since the Rio Summit," *Global Funds Emerging To Pay For Big Cleanup*, BANGKOK POST, Dec. 8, 1994, its purpose is to grant concessional aid to developing nations to assist them in implementation of environmental protection programs in four categories: 1) Protection of the ozone layer; 2) Limitation of greenhouse gas emissions; 3) Protection of biodiversity; and 4) Protection of international waters. *Global Environment Facility Instrument, supra*, Para. 2, at 1285. See also Russell A. Mittermeier & Ian A. Bowles, *The GEF and Biodiversity Conservation: Lessons to Date, Suggestions For Future Action*, 20 SPECIES 33, June, 1993. The pilot phase of GEF ended in late 1993, after \$1 billion was committed to 100 projects in developing nations. Pratap Chatterjee, *Environment: New Environment Fund Appoints Chairman*, INTER PRESS SERV., July 12, 1994. GEF was established as a permanent organization in 1994. The organization is comprised of thirty-two member countries with a budget of \$2 billion for a three-year period. *Global Environment Facility To Allow NGOs To Observe Meetings For First Time*, BNA INT'L ENV'T DAILY, July 18, 1994.

6. ⁰³ Norman Myers, *Biodiversity and the Precautionary Principle*, 22 AMBIO 74, May, 1993.

marine environment.¹¹⁷ The Convention should be amended to mandate that those engaged in activities that may pollute the environment use the best available technology to prevent pollution, and that the burden of proof be placed on these parties to demonstrate that their activities will not be harmful to marine species.²¹⁸ The precautionary principle provision of ACCOBAMS should also be amended to include other measures that further its underlying objectives, such as: 1) mandating the best available technology in the context of fishing gear; 2) in the context of the required impact assessments for activities that may have an adverse impact on cetacean stocks,³¹⁹ imposition of the burden of proof on the parties conducting the activities to demonstrate their safety; 3) establish an independent observer scheme to more closely monitor cetacean bycatch, as well as enhance our underlying knowledge of cetacean stocks in the region.

3. Cetaceans and Climate Change

The United Nation's Intergovernmental Panel on Climate Change (IPCC) has recently concluded that projected increases of anthropogenically-generated "greenhouse gases," including carbon dioxide, methane, and nitrous oxides could elevate global temperatures by 1-3.5 degrees Celsius by the year 2100, with this trend accelerating thereafter.⁴²⁰ This may have egregious implications for marine ecosystems and their inhabitants, including cetaceans.

Elevated ocean temperatures could have adverse impacts upon ocean and coastal upwelling regions, estuaries, and rivers, impairing the production of species lower on the food chain which cetaceans rely upon for sustenance.⁵²¹ Additionally, elevated levels of atmospheric carbon dioxide could increase sea-water acidity, potentially raising the concentration of heavy metals in ocean ecosystems, exacerbating the toxic effect of

7. ⁰⁴ James Cameron & Juli Abouchar, *The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment*, 14 B.C. INT'L & COMP. L. REV. 1, 2 (1991). See 1992 Rio Declaration on Environment and Development, Principle 5, 31 I.L.M. 874 (1992) ('lack of full scientific certainty shall not be used a reason for postponing cost-effective measures to prevent environmental degradation'). Perhaps the earliest application of the principle in the environmental context is the German *vorsorgeprinzip*, first enunciated in its 1976 environmental policy program. Konrad von Moltke, *The Precautionary Principle*, ENV'T 2, April, 1992. Versions of the principle have been incorporated in many international environmental treaty regimes in recent years, including the Bamako Convention, 30 I.L.M. 773, 781 (1991); the Montreal Protocol to the Vienna Convention for the Protection of the Ozone Layer, 26 I.L.M. 1541, 1551 (1987); and the United Nations Framework Convention on Climate Change, 31 I.L.M. 849 (1992). "Based on its rapid and widespread acceptance by national actors, the principle may be approaching the status of customary international law." William C. Burns & C. Thomas Duncan Mosedale, *European Implementation of CITES and the Proposal for a Council Regulation (EC) on the Protection of Species of Wild Fauna and Flora*, 9 GEO. INT'L ENVTL. L. REV. 389, 417 n.195 (1997).

1. ⁰⁵ Owen McIntyre & Thomas Duncan Mosedale, *The Precautionary Principle as a Norm of Customary International Law* (1997), at 19 (unpublished manuscript supplied to the author); Grant J. Hewison, *The Precautionary Approach to Fisheries Management: An Environmental Perspective*, 11 INT'L J. MARINE & COASTAL L. 301, 307 (1996); Jon M. Van Dyke, *Applying the Precautionary Principle to Ocean Shipments of Radioactive Materials*, 27 OCEAN DEV. & INT'L L. 379, 380 (1996); David Favre, *Debate Within the CITES Community: What Direction for the Future?*, 33 NAT. RESOURCES J. 875, 883 (1993).

2. ⁰⁶ Ellen Hey, *The Precautionary Concept in Environmental Policy And Law: Institutionalizing Caution*, 4 GEORGETOWN INT'L ENVTL. L. REV. 303, 305 (1992).

these substances on cetaceans.¹²²

Recent research in the Mediterranean suggests global warming could adversely affect that status of some species of fish that may be prey species for cetaceans, contribute further to anoxic conditions in the region and substantially raise sea surface temperatures.²²³ Thus, the failure of ACCOBAMS to address the potential impact of climate change could bedevil its efforts to ensure the viability of cetacean species in the Agreement Area. The regime should also consult closely with other regimes that are addressing the impact of climate change on cetaceans and marine environments, such as the International Whaling Commission, the Intergovernmental Panel on Climate Change and the Intergovernmental Oceanographic Commission.

Conclusion

The increasingly imperiled status of cetaceans in the Black and Mediterranean Seas makes a compelling case for the establishment of a regional conservation regime. However, as Hykle recently observed, now comes “the difficult task of transforming a well-crafted legal document into concrete actions . . .”²⁴ The effectiveness of the ACCOBAMS parties in accomplishing this task may speak volumes about the future of a regional approach to cetacean conservation.

3. ⁰⁷ *Id.* at 306; Gregory Fullem, *The Precautionary Principle: Environmental Protection in the Face of Scientific Uncertainty*, 31 WILLAMETTE L. REV. 495, 497-98 (1995).

4. ⁰⁸ Hey, *supra* note 106, at 307.

5. ⁰⁹ See *supra* note 73 and accompanying text.

6. ¹⁰ Paul Thompson & Sue Mayer, *Defining Future Research Needs for Cetacean Conservation*, in Simmonds & Hutchinson, *supra* note 15, at 412:

[E]ven where repeated estimates of cetacean population size can be made, the precision of these estimates may be so low that it would take many years to detect population trends. In NE Scotland, where there is an estimated population of only 130 bottlenose dolphins in the Moray Firth, power analysis techniques . . . have shown that it would take over 10 years to detect an annual population decline of around 5% . . . In this case, one clearly cannot wait for significant declines to be detected as the population would have decreased from 130 to 74 individuals before any action was taken. (Citations omitted).

7. ¹¹ Timothy O’Riordan & Andrew Jordan, *The Precautionary Principle in Contemporary Environmental Politics*, 4 ENVTL. VALUES 191, 192 (1995). See also S.M. Garcia, *The Precautionary Principle: Its Implications in Capture Fisheries Management*, 22 OCEAN & COASTAL MGMT. 99, 111 (1994).

8. ¹² James E. Hickey & Vern R. Walker, *Refining the Precautionary Principle in International Environmental Law*, 14 VA. J. INT’L L. 423, 424 & 437 (1995).

9. ¹³ ACCOBAMS, *supra* note 1, at art. II(4).

10. ¹⁴ *Supra* note 42.

11. ¹⁵ Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources, art. 7(2), Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, *supra* note 42.

12.¹⁶ *Id.* at Annex I(9)(B).

1. ¹⁷ Thompson & Mayer, *supra* note 110, at 414.

2. ¹⁸ The precautionary principle has been incorporated into many marine pollution regimes and intergovernmental declarations in recent years, including the 1984 Bremen Ministerial Declaration of the International Conference on the Protection of the North Sea, the Paris Convention for the Protection of the Marine Environment of the North-East Atlantic, 32 I.L.M. (1993) and the Helsinki Convention of the Protection of the Marine Environment of the Baltic Sea Area, art. 3(2), reproduced in 8 INT'L J. MARINE & COASTAL L. 191, 215-43 (1993). McIntyre & Mosedale, *supra* note 105, at 4-6.

3. ¹⁹ ACCOBAMS, *supra* note 1, at Annex 2(1)(c).

4. ²⁰ IPCC, *Contribution of Working Group II to the IPCC Second Assessment Report*, IPCC-XI/Doc. 4 (1995), at SPM-1. The IPCC has developed a range of scenarios for future atmospheric warming, based on differing assumptions concerning the sensitivity of the climate to increases in greenhouse gas concentrations, population and economic growth, land-use patterns, technological developments and the mix of energy sources utilized by society. IPCC, *Summary For Policymakers: Scientific-Technical Analyses of Impacts, Adaptations, and Mitigation of Climate Change*, Report of Working Group II, (1995), at 3.

5. ²¹ Environmental Investigation Agency, WHALES IN A CHANGING OCEAN 5 (1994).

1. ²² Catherine Dold, *Toxic Agents Found to be Killing Off Whales*, N.Y. TIMES, June 16, 1992, at B8.

2. ²³ Secretariat to the Barcelona Convention, *supra* note 20, at 63-66.

3. ²⁴ CMS Secretariat, Remarks of Douglas Hykle, *Allocutions D'Ouverture des Conférences Diplomatiques, Accord de la Copvention de Bonn sur la Conservation des cétacés de la mer Noire, de la mer Méditerranée et de la zone Atlantique adjacente* 24 (1996).