UNEP

CMS

CONVENTION ON MIGRATORY SPECIES

Distr: General

UNEP/CMS/Conf. 9.26/Rev 2
27 November 2008

Original: English

NINTH MEETING OF THE
CONFERENCE OF THE PARTIES
Rome, 1-5 December 2008
Agenda Item 17

MIGRATORY MARINE SPECIES
Strategic considerations for 2009-11 and beyond

(Prepared by the CMS Secretariat)

I. Summary

1. Migratory marine species are an important and growing area of the CMS work programme. This paper seeks to outline relevant considerations for the coming triennium and beyond, conscious of the objectives of the 2006-2011 Strategic Plan:

a. to ensure that the conservation and management of migratory species is based on the best available information;
b. to ensure that migratory species benefit from the best possible conservation measures;
c. to broaden awareness and enhance engagement in the conservation of migratory species amongst key actors; and
d. to reinforce CMS's overarching and unifying role in the conservation and management of migratory species (Resolution 8.2).

2. Effective conservation activities for migratory marine species require an increased understanding of the nature of 'migratory' and 'critical habitat' in the marine environment.

3. To deliver such conservation, CMS needs to be positioned to conduct outreach activities and collaborate with many MEAs including the Food and Agricultural Organisation of the United Nations (FAO) and Regional Fisheries Management Organisations (RFMOs). It is also important to cooperate with the wider protected area community in promoting the use of CMS, its agreements and initiatives as viable mechanisms.

4. Increasing the organic linkages within the CMS Family and developing greater expertise on issues such as climate change and by-catch are critical to successfully position CMS and its agreement and initiatives as important 'species expert bodies' whose expertise can be drawn on more widely.

5. The final section of the paper (paragraph 91) is intended to form the basis for Parties to formulate a draft Resolution on this subject at COP9.

II. Migration in this new frontier

6. Cetaceans (whales, dolphins and porpoises), pinnipeds (seals and sea lions), sirenians (dugongs and manatees), marine turtles, sea birds, migratory sharks and other large fish across the world's oceans live within a vast aquatic environment that covers over 71% of the Earth's surface. Their habitats are foreign to humans, comprising extensive landscapes of mountain ranges, plains, volcanoes and deep trenches; often eclipsing the size or majesty of many of their terrestrial counterparts. Driven by massive and layered currents and counter-currents, channels and columns of water, the ocean mass is a three dimensional environment stratified by temperature and salinity. Some dimensions remain isolated for tens of thousands of years. Within this complex environment are the migratory pathways and habitats of many marine species. These species are the living threads that link currents, channels, columns and basins; they are conduits between separated ecosystems and habitats.

7. Migratory marine species habitats can be difficult to conceptualize compared to their terrestrial counterparts. Sometimes 'place' and sometimes 'condition', the habitats of marine species are spread across the globe in oceans, coasts and rivers, from the Arctic north through the equatorial tropics to the Antarctic south.

8. Where riverine and many coastal species and populations have restricted ranges and specific habitats that are fixed, predictable and visible, the habitats of many marine pelagic species and populations are defined by oceanic characteristics rather than geography; by 'fluid' parameters including temperature, salinity, and current: such as feeding areas that are dependent on seasonal and shifting upwelling of nutrients or other ever-changing oceanographic conditions.

9. While cold, warm and tropical water species are usually recognised with distinct and sometimes overlapping distributions, some species and populations use more than one primary habitat during different parts of their migration. These include the many large whales that breed in warm tropical waters but feed after long migrations in polar seas, or marine turtles that cross oceanic basins between feeding and nesting. Other species such as the killer whale or migratory sharks use multiple habitats as they follow prey along an oceanic current migration route.

10. The migration of many migratory marine species, such as that of marine turtles, pinnipeds, sirenians, sea birds and some of the cetaceans, appears cyclical and predictable, coinciding with changes in season and the recurring changes in food availability.

11. Other marine species migrations can appear less predictable such as those of migratory sharks and many of the cetaceans, with movements inside enormous 'home ranges' which constitute migrations in the sense that such forays might involve the animal travelling the length and breadth of its normal home range, comprising several thousand miles and sometimes entirely on the High Seas. These journeys can appear random, or driven by unique circumstances, and may not appear predictable. For many species the data about the subtleties and extent of such migrations and impetus for such movements is not yet available. Migration routes may cross regularly between the national jurisdiction of coastal states or between national jurisdictions and the High Seas. However, these long journeys may still constitute migration under the working definition of CMS, even though the cyclical nature and predictability of these migrations may, at present, be unclear.

12. The current definition of 'migration' is for a significant proportion of a population to "…cyclically and predictably cross one or more national jurisdictional boundaries". This definition may benefit from elaboration to keep pace with our expanding knowledge about marine migratory species that either straddle or live their entire lives on the High Seas and to encompass the growing area of marine species conservation within the CMS work programme.

III. Migratory species and social complexity

13. For many species migration patterns may be encoded into their genes, but for some species there is also some evidence that the details regarding migration may be transmitted from generation to generation as part of social learning. If this cultural transmission of information is lost through the removal of key individuals within a population, there is potential that migration may be negatively affected. In the worst case, this could potentially lead to a reduction in population size and viability, with increased risk of extinction, particularly where time spent at critical habitat for breeding or feeding is significantly diminished. Depending on the mode of cultural transmission, migrating species that depend on the transmission of information from generation to generation from key individuals may, potentially, be more vulnerable than species for which migration patterns are entirely encrypted into their genes For instance, if specific individuals within a social community have a specific role in passing on information, then reducing populations could potentially lead to the loss of important cultural information, including migratory routes and destinations. In some cases cultural transmission may have an influence on the expression of specific genes within a population and thus on the population dynamics. Some scientists now argue that in cultural societies, individuals with important cultural knowledge may have population significance far in excess of their reproductive capacity. CMS is well placed to consider the potential implications of social complexity (the role of individuals, culture, social learning etc) within key migratory marine species communities to determine how the biological significance of social complexity should be reflected in future conservation activities.

IV. Impacts and threats to migratory species in the marine environment

14. Conservation efforts must encompass an understanding of the multiple, cumulative and often synergistic impacts that marine species now face. The future of many migratory marine species and populations is threatened by entanglement, by-catch, over-fishing, pollution, habitat destruction or degradation, deliberate hunts and climate change. Other threats include activities that may frighten, displace or harm these species such as noise pollution from sources including shipping traffic, wind farms, seismic surveys and military sonars. Together these threats can combine to have lethal impacts on species and populations that are already vulnerable.

Fisheries and Bycatch

15. Global fisheries are increasing in intensity and range. While the introduction of more sustainable fisheries management and techniques can reduce this pressure, the current use of destructive fishing methods, the growth of many modern commercial fisheries and the problems of illegal, unregulated and unreported (IUU) fisheries continue to negatively impact many marine species and populations around the world. These impacts are both direct through bycatch and indirect through loss of prey species. Cetaceans, pinnipeds, sirenians, marine turtles, sea birds, migratory sharks and other large fish are all known to become entangled or trapped in many gear types, including long-lines, drift nets, trap lines, mid-water trawls,

coastal gill nets, and purse-seine nets. For some species and populations significant threats manifest through entanglement in discarded fishing gear or 'ghost nets' and finfish aquaculture (also known as fish farming and fish feedlots). Some species and populations are also threatened by the sheer scale of modern fisheries; as fisheries expand, less and less prey is available for wildlife. In some cases wildlife has been viewed as competing with fisheries for limited resources or has directly impacted fishing activities by predating on lines or nets (so-called depredation). In these instances wild animals can become the targets of hostility and are sometimes culled.

Chemical pollution

16. There are many different sources of chemical pollution, including domestic sewage, industrial discharges, seepage from waste sites, atmospheric fallout, domestic run-off, accidents and spills at sea, operational discharges from oilrigs, mining discharges and agricultural run-off. Many rivers, estuaries and coastal waters near large human population centres show signs of eutrophication and heavy-metal contamination. Toxic algal blooms and dead zones are increasingly common around estuaries and bays. The impacts of chemical pollution on marine species and populations range from direct physical poisoning to degradation of important habitats. The chemicals that are probably of most concern for cetaceans and pinnipeds are the POPs (persistent organic pollutants) including pesticides such as DDT (Dichloro-Diphenyl-Trichloroethane), and industrial chemicals including PCBs (Polychlorinated biphenyls) and flame retardants. These substances bio-accumulate along food chains impacting the top marine predators. Damage to the reproductive and immune systems of marine mammals (and possibly other species) are likely consequences of extraordinary pollution 'burdens'. Increased chemical contamination is thought to have facilitated disease outbreaks in cetaceans and pinnipeds and the immunotoxic effects of some substances have been associated with mass mortalities within these two species groups. The transport of pathogens around the world, through the movement of products and ballast water, may increase exposure to disease and environmental contaminants may be facilitating the emergence of new diseases.

Noise pollution

17. Introduced noise pollution comes from shipping and other vessels, military activities, air guns used in seismic testing, fisheries anti-predation devices, ocean research, and more recently marine wind farms and other renewable energy technologies such as tidal turbines. Sources of introduced noise can be localized or wide-ranging, with intense seismic sources and recent military technologies utilizing powerful detection mechanisms that may radiate over thousands of kilometres of the ocean. Hearing is recognised as the most important sense for cetaceans, and the ability to hear well is vital in all key aspects of their lives including finding food, navigating and social interactions. Any reduction in hearing ability - whether by physical damage or masking by other sound - may seriously compromise the viability of individuals and, therefore, populations. One hypothesis is that military mid-range sonar may cause deep-diving cetaceans to surface too quickly and subject them to decompression sickness leading to death. Concern about the impacts of introduced noise range from death and physical damage to these animals (especially to animals in close proximity to the noise source) to altering behaviour, increasing stress and displacement from important habitats. The extent of this impact on other migratory marine species is not yet understood, but is also of concern.

Ship strikes

18. Evidence is emerging that collisions between vessels and cetaceans and sirenians may be happening more frequently than previously suspected and, in the case of endangered, endemic or geographically-isolated populations, may pose a significant conservation threat. Non-fatal collisions - which can also cause serious injury - are also of concern. There are reported sightings of cetaceans, sirenians and marine turtles with deformities or wounds suggestive of propeller strike. Some of these injuries may ultimately result in the death, even if it is several years after the collision. Shipping has a further negative environmental impact, through emitting carbon dioxide (1.8% of total CO_2 emissions in 1996, UNFCCC 2000) but primarily through emitting large quantities of toxic nitrogen oxides and sulphur oxides.

Climate change, habitat loss and degradation

19. It is important to both the individual and the survival of its population (or species) that its habitats continue to be suitable to support it. Habitat loss or degradation is especially critical for marine species with limited range, such as river or estuarine cetaceans and sirenians, or species with specific and focused habitat needs such as marine turtles which use nesting beaches. Disturbance or damage of sites required for breeding is likely to have a particularly detrimental impact on migratory species due to the vulnerability of populations during reproduction.

20. Global warming is unequivocal according to the International Panel on Climate Change (IPCC). Anthropogenic changes in the atmosphere, weather patterns and marine ecosystems ("climate change") include sea surface changes, sea level rise, erosion of beaches, mangroves, sea grass beds, coral reefs as well as deep ocean ecosystems and changes in ocean chemistry. Climate change is particularly evident when considering the recent rise in temperatures, melting of snow and ice and the change in frequency and intensity of extreme weather events such as strong precipitation, drought and tropical cyclones.

21. Coastal species, such as marine turtles, that use shorelines and other coastal marine ecosystems could be greatly impacted. Sea level rise will decrease nesting beaches and feeding habitats, increased sand temperature can alter the sex ratio or potentially result in mortality and the effects of increased temperatures of the sea’s surface on coral and sea grasses will affect the foraging habitats.

22. Changes in salinity and temperature may impact on coastal upwelling regions, which is likely to reduce nutrient concentrations and prey abundance. As a result the food chains of numerous migratory marine species may be affected.

23. The observed acidification of oceans (pH level has declined by 0.1 since the industrial revolution) is a serious concern for coral habitats, but also prey species such as krill, which have already changed in physiology as a result of the pH change. Specialist feeders such as many cetaceans, pinnipeds, migratory sharks and other large predatory fish that have evolved to find food in a highly patchy environment may have difficulties securing prey.

24. The implications of climate change are compounded by the apparent rate of change which is thought to be much faster than anything that most marine species have been exposed to in the past. When considered in the context of cumulative impacts, the ability of species and populations to adapt to this rapid change may be compromised.

25. In many areas habitat loss is caused by dams, fishing structures, coastal development and the extraction of water for human use. In some parts of the world water management, flood control and major river modification, including dams and the removal of surface water, has led to population declines. Prey species and foraging grounds may be reduced, while sedimentation, nutrient over-enrichment and salinity, and in turn eutrophication, increase.

Direct exploitation

26. Coastal communities have exploited marine species for centuries. Cetaceans, pinnipeds, sirenians, marine turtles, migratory sharks and other large fish have also been used for food, oil, shell and skins. However, the pattern of exploitation has dramatically changed over the last few centuries, as some species have become the focus of commercial hunts. Many modern hunts and fisheries are not sustainable. While the International Whaling Commission (IWC) implements the 1946 International Convention on the Regulation of Whaling, there is no international regulation for hunts of pinnipeds, sirenians or marine turtles. A resurgence of hunting marine mammals for food ("marine bushmeat") has occurred in some regions where other fishery resources have become depleted and human populations have grown rapidly; this is an increasing trend. Some marine populations are also threatened by live captures and removal for display in captivity or research, which has an equivalent impact to hunting as the animals removed (or those killed during capture operations) are no longer available to their populations. Current management of fisheries for migratory sharks and other marine fish of concern to CMS is commercial in nature. Higher levels of demand driven by a rapidly growing human population size together with more effective fishing gear and higher harvesting effort have led to a considerable increase in exploitation levels for migratory fish species.

THE POLITICS OF THE MARINE ENVIRONMENT: A GLOBAL WORLD WITH REGIONAL TOOLS

27. The delivery of global environmental policy is becoming more complex. Competing demands for diplomatic attention, the challenges of managing impacts on the global commons and the escalation of issues requiring urgent and immediate government and civil society attention all conspire to push poorly represented issues into the background. The successful development and implementation of conservation policy for migratory species can only be achieved where the relevance has been established. Therefore, it is incumbent on us to translate species connectivity into political connectivity.

V. CMS, its agreements and initiatives and global Multilateral Environment Agreements

28. CMS has developed a working relationship within the six global Multilateral Environment Agreements (MEAs) through regular participation in the Biodiversity Liaison Group (Conf 9.12). There are Memoranda of Understanding between CMS and the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the Convention on Biological Diversity (CBD) and the International Whaling Commission (IWC), and there is an agreed programme of work between CMS and CBD, and others in preparation between CMS and CITES, and CMS and the Bern Convention (see Conf 9.23).

29. CMS has sought to illustrate the inter-linkages between climate change and migratory species in workshops and reports and has continued to champion the need to strive to enhance ecosystem resilience and promote ecological connectivity to allow migration, genetic

exchange and range shifts in reaction to changing environmental conditions. While it is well-known that the marine environment is already experiencing an increasing in water temperatures and changes in currents, accurate predictions are limited by data deficiency and high levels of uncertainty. Furthermore, the ecological understanding of the world's oceans is much less advanced than that of terrestrial ecosystems; hence it could be argued that comparatively little attention has been paid to marine biodiversity in the climate change debates. Consequently, correspondingly fewer policy conclusions have been drawn about mitigating the impact of climate change on migratory marine species and this may be considered a priority area for both research and dialogue among CMS, CBD, Bern Convention and United Nations Framework Convention on Climate Change (UNFCCC). (see Conf 9.24).

30. Bycatch is a major concern for CMS. With direct reference to addressing the issue in three consecutive resolutions - CMS Resolutions 6.2, 7.2, 8.14 – and a number of important agreements and initiatives developed to mitigate this threat including the Atlantic Coast of Africa Marine Turtle MoU (the Memorandum of Understanding Concerning Conservation Measures for Marine Turtles of the Atlantic Coast of Africa), the IOSEA Marine Turtle MoU (the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia), ASCOBANS (the Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas), ACCOBAMS (the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area) and four marine mammal initiatives - the Mediterranean Monk Seals MoU (Memorandum of Understanding concerning Conservation Measures for the Eastern Atlantic Populations of the Mediterranean Monk Seal (*Monachus monachus*)), Pacific Cetaceans MoU (the Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Islands Region), the Western African Aquatic Mammal MoU (Memorandum of Understanding Concerning the Conservation of the Manatee and Small Cetaceans of Western Africa and Macaronesia), and the Indian/Pacific Ocean Dugong MoU (Memorandum of Understanding on the Conservation and Management of Dugongs (*Dugong Dugon*) and their Habitats Throughout their Range). In addition ACAP (the Agreement on the Conservation of Albatrosses and Petrels) is also concerned with bycatch as a threat, and the developing instrument for migratory sharks has also identified bycatch as an issue. However, important coordination and collaboration between the CMS Family and other bodies, such as the Food and Agricultural Organisation (FAO), the European Union and relevant Regional Fisheries Management Organisations (RFMOs) remain a largely elusive goal that is a priority area to address.

31. Of unique relevance to migratory marine species is the focused attention CMS has paid to IWC and its process in the past triennium to increase cooperation between the two bodies and with the delivery of consistent conservation positions. During the period 2007-8 CMS visited the IWC Secretariat and participated in three IWC–related meetings, including two meetings convened by the Pew Foundation in New York and Tokyo, and the official IWC Intersessional Meeting in London in March 2008 on the Future of the IWC. CMS is consulting the IWC Scientific Committee and Conservation Committee about the development of a global *Programme of Work for Cetaceans* requested in CMS *Resolution 8.22: Adverse Human Induced Impacts on Cetacean.* As CMS increases its presence in cetacean issues it may become appropriate to revise the existing Memorandum of Understanding between CMS and the IWC to increase collaboration between the two bodies.

32. CMS has recently increased its outreach to the International Maritime Organisation (IMO). The IMO will soon become a formal partner of ACCOBAMS. The relationship between CMS and other global and regional MEAs is covered in more detail in the Report on

CMS Activities with Partners (see Conf 9.23).

33. What is increasingly evident is that many of the MEAs with which CMS interacts have either a either single-issue or single-region focus. This places CMS, its agreements and initiatives in a complex position of needing to both draw the work and priorities of these organisations into its own sphere, as well as ensure that the priorities and decisions of CMS radiate out to have appropriate reciprocal influence.

34. This level of coordination has been requested of CMS in the development of global *Programme of Work for Cetaceans.* It might be beneficial to consider the development of similar systematic exercises for the other marine species groups to ensure that the work of CMS, the CMS Scientific Council and its agreements and initiatives both reflect and fully contribute to international priorities.

VI. CMS, marine protected areas and the High Seas

35. The United Nations General Assembly has noted the need to give consideration to the use of marine protected areas as a tool for integrated ocean management, as part of a regime incorporating biodiversity conservation, fisheries, mineral exploration, tourism and scientific research in a sustainable manner (The United Nations General Assembly, Fifty-fifth session, part B item 28, 2000).

36. By necessity, policy responses to understanding, and correspondingly protecting, marine species habitat in this new frontier differ from traditional or terrestrial biodiversity management systems that have invested heavily in isolated site protection and fixed corridors within coordinated networks of national legislative frameworks. Migratory species' dependence on differing conditions along migratory pathways, as well as the inherent connectivity of marine ecosystems are not served well by isolated management. Tools to coordinate connections are required.

37. A number of regional systems already exist that link protected areas together across wide geographical areas; the Circumpolar Protected Area Network Plan encompassing national marine protected areas within eight Arctic countries; the 1990 Protocol for Specially Protected Areas and Wildlife in the Wider Caribbean Region; and protected areas designated under the Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR) are important examples. The Pelagos Sanctuary in the Ligurian Sea for marine mammals covers 87,500 square kilometres within the Mediterranean and therefore operates as a form of internationally declared protected area that addresses a range of threats to cetaceans in this region.

38. A significant area of the world's oceans is designated as High Seas - all parts of the ocean that are not included in the exclusive economic zone, in the territorial sea or in the internal or archipelagic waters of a state. The High Seas are reserved for peaceful purposes, where no state can validly purport to subject any part to its sovereignty. In this vast area states are urged to cooperate with each other in the conservation and management of living resources (United Nations Convention on the Law of the Sea, hereinafter UNCLOS, Article 118) and to cooperate with a view to the conservation of marine mammals and in the case of cetaceans to work through the appropriate international organizations for their conservation, management and study (UNCLOS Articles 65 and 120).

39. Where some CMS area-based agreements and initiatives, such as ACCOBAMS, ASCOBANS, the Pacific Cetaceans MoU and the IOSEA Marine Turtle MoU have been

declared to encapsulate areas within a defined geographical boundary which effectively continues their jurisdictions over areas of the High Seas, very few have given specific focus to management or restriction of activities in associated High Seas areas.

40. Uniquely, the Pacific Cetaceans MoU goes as far as stating that each signatory, as appropriate, will implement the Memorandum of Understanding in the Pacific Islands Region (defined as the area between the Tropic of Cancer and 60 degrees South latitude and between 130 degrees East longitude and 120 degrees West longitude) with respect to: (a) its nationals and vessels; and (b) marine areas under its jurisdiction. Although the Pacific Cetaceans MoU is not legally binding, such text suggests that the MoU has an implied competency to agree on the management of activities outside of national jurisdictions within the defined MoU area.

41. It can be argued that the United National Convention on the Law of the Sea (UNCLOS) has already established a mandate for High Seas protected areas through Article 194 requiring measures to protect '*rare and fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life'* which is further reinforced by the Article 197 requirement for cooperation on a global basis. Clearly, any High Seas protection mechanisms will require some flexibility in the declaration and restriction of uses. However, this should not become an impediment to the appropriate protection of critical habitat on the High Seas.

42. Whereas most marine protected areas have been regarded as independent or isolated instruments to date, if High Seas and multi-jurisdictional habitat protection networks are to be considered in the future it will be necessary to find the appropriate legal framework for this level of global management. For instance, Signatory States of the IOSEA Marine Turtle MoU have been considering a proposal which would give greater recognition to sites of particular importance for marine turtle conservation. CMS and it agreements and initiatives are uniquely positioned to develop and tailor regional and global measures according to particular conservation needs and to organize trans-boundary protected area cooperation for species migrating across or outside national marine boundaries. This has already been acknowledged in the joint programme of work between CMS and CBD (see Conf 9.23) through which CMS plays a crucial role in achieving CBD's marine protected area targets.

43. This is an area where a careful review of the interaction between existing national and international laws is needed as a prerequisite to consideration of CMS's future role and involvement with issues on the High Seas, and a legal review might usefully be commissioned to investigate this question, providing the basis for future discussion of the Conference of the Parties.

44. If further development of CMS's role in marine protected area networks is considered important by CMS Parties, CMS might usefully develop an outreach strategy that can promote the use of CMS to other key MEAs and the wider protected area community, utilising channels such as the International Union for the Conservation of Nature (IUCN) Marine Protected Area and Oceans Governance Programmes. The upcoming International Conference on Marine Mammal Protected Areas, the World Commission on Protected Areas and the IUCN World Parks Congress might provide useful opportunities to explore and develop the role of the CMS Family as global management framework for networks of marine protected areas.

APPLYING CMS TOOLS

VII. Agreements and Initiatives: Article IV, paragraph 3 and 4 agreements - one tool with different legal manifestations

CMS agreements and initiatives for marine species

45. Of the 23 agreements (Art IV, para 3) and initiatives (Art IV, para 4) operating under the frameworks of CMS, 11 relate to marine species. Individually they address key threats to marine species as they relate to the species within their focus. As the CMS agenda continues to expand in the marine area it is appropriate to consider the current structure and focus of agreements and initiatives covering multiple threats. It may be that new approaches are needed or greater coordination within the CMS Family.

46. With seven instruments now focusing on marine mammals, CMS already holds a leading global and regional role in marine mammal conservation. Activities are divided between three marine mammal legally-binding agreements – ASCOBANS, ACCOBAMS and Wadden Sea Seals (Agreement on the Conservation of Seals in the Wadden Sea) - and five marine mammal MoUs - the Mediterranean Monk Seals MoU, the Pacific Cetaceans MoU, the Western African Aquatic Mammal MoU and the Indian/Pacific Ocean Dugong MoU. Together this network is an important contribution to global marine mammal conservation work. In addition, the Conference of the Parties has urged the exploration of a marine mammal initiative in Southeast Asia (Recommendation 7.5) and the consideration of a marine mammal initiative in the Indian Ocean (Recommendation 7.7).

47. CMS has two major marine turtle initiatives – the Atlantic Coast of Africa Marine Turtle MoU and the IOSEA Marine Turtle MoU. Between them, these two agreements are relevant to some 70 Range States and cover a vast geographic area from the Atlantic coast of Africa to the western Pacific Ocean. In addition, the Conference of the Parties has urged a focus on leatherback turtle conservation in the Pacific Ocean (Recommendation 7.6) and has encouraged Parties and Range States in the Pacific to cooperate to develop and conclude a Memorandum of Understanding and associated Conservation Plan for marine turtles in that region under the CMS (Recommendation 8.17).

48. CMS also has a very important sea bird agreement – the Agreement on the Conservation of Albatrosses and Petrels (ACAP) which focuses on any species, subspecies or population of the albatrosses and petrels listed in Annex 1. The ACAP Agreement is not geographically restricted, although up to now only species that breed in the Southern Hemisphere have been listed in its Annex 1. ACAP's Advisory Committee is considering potential additions to the Annex, including the three albatross species that breed in the northern hemisphere. If these three species are included by ACAP's Meeting of Parties, then all the world's albatrosses will be listed in the Agreement.

49. Bringing a new species group to the CMS agreement and initiatives family, work on migratory sharks has also commenced (Recommendation 8.16). A CMS Technical Series (No. 15) prepared by the IUCN Shark Specialist Group reviewed the conservation status of migratory Chondrichthyan fishes in 2007. An important introductory *Meeting to Identify and Elaborate an Option for International Cooperation on Migratory Sharks under the Convention on Migratory Species* was held in late 2007, and a global instrument under Article III, IV and V of CMS will be negotiated immediately following the 9th CMS Conference of the Parties. Three fundamental principles have been recommended for this forthcoming instrument, including the need to address the broad range of measures that deal with shark

conservation and management; the need for precautionary and ecosystem approaches to shark conservation; and importantly the need for cooperation and immediate engagement with the fisheries industry, FAO and RFMOs.

50. Following the inclusion of the European Sturgeon *Acipenser sturio* on CMS Appendix I by the 8th meeting of the Conference of the Parties, an action plan for the conservation and restoration of the species has been developed under the joint auspices of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and CMS. The Action Plan has been finalized and was endorsed by the Standing Committee of the Bern Convention in 2007. The CMS Scientific Council has reviewed the situation concerning the conservation of sturgeons and paddlefishes at its 14th meeting (Bonn, 2007) within the review of progress in the Cooperative Action for those species. The suggestion was made to convene an international workshop on conservation initiatives and the possibility of the establishment of a CMS Article IV instrument.

Increasing institutional linkages within the CMS Family and creating 'species expert bodies'

51. As these agreements and instruments grow and greater areas of the world's oceans are covered by CMS activities, institutionalizing the organic linkages within the CMS Family is an important challenge to be considered, and if efforts are successful they could position CMS and its agreements and initiatives as important 'species expert bodies' to be called upon for advice by other MEAs. CMS already provides an important additional avenue for international cetacean policy.

52. Considerations to develop such linkages could include developing regional nodes of expertise; institutionalizing a connection between agreements' scientific bodies and the CMS Scientific Council; sharing technical resources such species related scientific meetings and organizing agreement or initiative meetings in common.

53. Correspondingly few policy conclusions have been drawn about mitigating the impact of climate change on migratory marine species and this may be considered a priority area for both research and dialogue among CMS, CBD, UNEP and UNFCCC. Given that CMS and other instruments such as CITES, and CMS Partner organizations work on a species-specific basis, it may be practical to assess the species-specific threat of climate change for species listed on CMS appendices.

54. As the pressure of this issue intensifies it seems appropriate to continue the work of the Scientific Council by prioritizing climate change adaptation research and by compiling and analyzing existing information on climate change as it relates to migratory species and CMS Family to coordinate scientific and technical advice to assist CMS Parties and introduce adaptation measures to counteract the effects of climate change on migratory species as well as providing important advice into the UNFCCC processes. A specific listing of species that are likely to be significantly threatened by climate change in future may be advisable.

55. This will require greater Secretariat capacity to ensure that coordination and cooperation is maintained among and within the agreements, initiatives and CMS as the parent body to ensure that the CMS Family benefits from shared expertise and coordination while also recognising the important geo-political perspectives and regionally appropriate solutions. The access to primary scientific literature needs to be facilitated in order to permit the Secretariat to access the best available knowledge on migratory species. With adequate resources, such capacity could substantively contribute to CMS Family outreach to other key international bodies, and in particular FAO, RFMOs and UNFCCC.

VIII. CMS Appendices, Concerted and Cooperative Actions

56. Of the species and populations listed on the CMS Appendices, 82 are from the marine environment. Of these, 8 are species or populations listed for Concerted Action and a further 32 are listed for Cooperative Action (for definitional interpretation refer to Conf 9.16)

57. The annexed (A) table provides a quick guide to the species and populations listed on CMS Appendix I and II, indicating those that have been listed for Concerted or Cooperative Action and identifying which listed species/populations still require attention within a new agreement or initiative.

Cetacean species and populations requiring additional attention

58. One species, the Franciscana, *Pontoporia blainvillei*, is **listed on the appendices** and **listed for concerted action**, although there is no current agreement or initiative addressing this species' conservation needs. Another 6 species are also listed on the appendices and listed for concerted action, but are only partially covered across their distribution or migratory range:

a. Sei whale, *Balaenoptera borealis*
b. Blue whale, *Balaenoptera musculus*
c. Fin whale, *Balaenoptera physalus*
d. Southern right whale, *Eubalaena australis*
e. Humpback whale, *Megaptera novaeangliae*
f. Sperm whale, *Physeter macrocephalus*

59. Of the species or populations **listed on the appendices** and **listed for cooperative action**, 7 have no current agreement or initiative addressing their conservation needs:

a. Commerson's dolphin, *Cephalorhynchus commersonii* (South American population)
b. Chilean dolphin, *Cephalorhynchus eutropia*
c. Finless porpoise, *Neophocaena phocaenoides*
d. Irrawaddy dolphin, *Orcaella brevirostris*
e. Burmeister's porpoise, *Phocoena spinipinnis*
f. Pantropical spotted dolphin, *Stenella attenuata* (eastern tropical Pacific population, Southeast Asian populations)
g. Spinner dolphin, *Stenella longirostris* (eastern tropical Pacific populations, Southeast Asian populations)

6 are only partially covered across their distribution or migratory range:

h. Fraser's dolphin, *Lagenodelphis hosei* (Southeast Asian populations)
i. Peale's dolphin, *Lagenorhynchus australis*
j. Dusky dolphin, *Lagenorhynchus obscurus*
k. Spectacled porpoise, *Phocoena dioptrica*
l. Indo-Pacific humpback dolphin, *Sousa chinensis*
m. Indo-Pacific bottlenose dolphin, *Tursiops aduncus* (Arafura/Timor Sea populations)

60. Of the remaining species or populations **listed on the appendices**, 12 have no current agreement or initiative addressing their conservation needs:

a. Bowhead whale, *Balaena mysticetus*
b. Baird's beaked whale, *Berardius bairdii*
c. Beluga whale, *Delphinapterus leucas*

d. North Atlantic right whale, *Eubalaena glacialis* (North Atlantic)
e. North Pacific right whale, *Eubalaena japonica* (North Pacific)
f. Boto, *Inia geoffrensis*
g. Narwhal, *Monodon monoceros*
h. Dall's porpoise, *Phocoenoides dalli*
i. Ganges dolphin, *Platanista gangetica gangetica*
j. Tucuxi, *Sotalia fluviatilis*
k. Striped dolphin, *Stenella coeruleoalba* (eastern tropical Pacific population)
l. Short-beaked common dolphin, *Delphinus delphis* (eastern tropical Pacific population)

7 are only partially covered across their distribution or migratory range:

m. Antarctic minke whale, *Balaenoptera bonaerensis*
n. Bryde's whale, *Balaenoptera edeni*
o. Pygmy right whale, *Caperea marginata*
p. Heaviside's dolphin, *Cephalorhynchus heavisidii*
q. Northern bottlenose whale, *Hyperoodon ampullatus*
r. Killer whale, *Orcinus orca*
s. Atlantic humpback dolphin, *Sousa teuszii*

Pinniped species and populations requiring additional attention

61. Of the 5 species or populations **listed on the appendices**, 3 have no current agreement or initiative addressing their conservation needs:

a. Grey Seal, *Halichoerus grypus* (only Baltic Sea populations)
b. South American Fur Seal, *Arctocephalus australis*
c. South American Sea Lion, *Otaria flavescens*

2 populations **listed on the appendices** are partially covered across their distribution or migratory range:

d. Harbour Seal, *Phoca vitulina* (only Wadden Sea population)
e. Harbour Seal, *Phoca vitulina* (Baltic Sea population)

Sirenian species and populations requiring additional attention

62. Of the 3 species or populations **listed on the appendices**, 2 have no current agreement or initiative addressing their conservation needs:

a. West Indian Manatee, *Trichechus manatus* (populations between Honduras and Panama)
b. Amazonian manatee, *Trichechus inunguis*

Marine turtle species and populations requiring additional attention

63. Of the 6 species of marine-turtle **listed on the appendices**, 5 are partially covered across their distribution or migratory range:

a. Green turtle, *Chelonia mydas*
b. Loggerhead sea turtle, *Caretta caretta*
c. Hawksbill turtle, *Eretmochelys imbricata*
d. Olive Ridley sea turtle, *Lepidochelys olivacea*
e. Leatherback turtle, *Dermochelys coriacea*

1 has no current agreement or initiative addressing its conservation needs:

f. Kemp's Ridley sea turtle, *Lepidochelys kempii*

Migratory shark species and populations requiring additional attention

64. All 3 species or populations **listed on the appendices** have no current agreement or initiative addressing their conservation needs (but negotiations are under way) :

a. Whale shark, *Rhincodon typus*
b. Basking shark, *Cetorhinus maximus*
c. Great white shark, *Carcharodon carcharias*

Sea birds

65. The marine aves have not been as thoroughly assessed as other marine species in this paper, although they are represented in the tables at Annex A. Of the 57 species or populations **listed on the appendices** 15 have no current agreement or initiative addressing their conservation needs.

Other large fish species and populations requiring additional attention

66. All 18 species or populations **listed on the appendices** have no current agreement or initiative addressing their conservation needs:

a. Giant sturgeon, *Huso huso*
b. Kaluga sturgeon, *Huso dauricus*
c. Baikal sturgeon, *Acipenser baerii baicalensis*
d. Lake sturgeon, *Acipenser fulvescens*
e. Russian sturgeon, *Acipenser gueldenstaedtii*
f. Green sturgeon, *Acipenser medirostris*
g. Sakhalin sturgeon, *Acipenser mikadoi*
h. Adriatic sturgeon, *Acipenser naccarii*
i. Ship sturgeon, *Acipenser nudiventris*
j. Persian sturgeon, *Acipenser persicus*
k. Sterlet, *Acipenser ruthenus* (Danube population)
l. Amur sturgeon, *Acipenser schrenckii*
m. Chinese sturgeon, *Acipenser sinensis*
n. Stellate sturgeon, *Acipenser stellatus*
o. Large Amu-Dar shovelnose, *Pseudoscaphirhynchus kaufmanni*
p. Small Amu-Dar shovelnose, *Pseudoscaphirhynchus hermanni*
q. Syr-Dar shovelnose, *Pseudoscaphirhynchus fedtschenkoi*
r. Chinese paddlefish, *Psephurus gladius*

Possible agreement and initiative development and consideration of future species for listing

67. The Conference of the Parties has urged the consideration of a marine mammal initiative in Southeast Asia (Recommendation 7.5), the exploration of a marine mammal initiative in the Indian Ocean (Recommendation 7.7) and a marine turtle initiative in the Pacific Ocean (Recommendation 8.17). These initiatives would have a significant impact on many of the listed species/populations partially encompassed within existing agreements or initiatives or still requiring attention within new agreements or initiatives.

68. Listed South American species/populations of marine mammals remain a long-standing grouping that requires attention. A new agreement or initiative might be developed to include the South American fur seal and sea lion, as well as the Commerson's dolphin, Chilean dolphin, Burmeister's porpoise and tucuxi. Such an instrument might also encompass the West Indian Manatee and two regional river dolphins - the boto and Franciscana.

69. Appropriate regional instruments can also be considered priorities for the remaining marine mammals including the beluga whale, narwhal, bowhead whale, Baird's beaked whale, north Atlantic right whale, north Pacific right whale, Dall's porpoise, grey seal and the eastern tropical Pacific populations of the short-beaked common dolphin, pantropical spotted dolphin and spinner dolphin. Some populations may also be encompassed by extending existing regional agreement or initiative boundaries.

70. In light of the growing impact of climate change, future listing and/or negotiation of an appropriate regional instrument for northern polar species such as the iconic polar bear (*Ursus maritimus*) or pinnipeds such as ringed seal (*Pusa hispida*), harp seal (*Pagophilus groenlandicus*) and walrus (*Odobenus rosmarus*) among others, could be considered. A review of the impact of climate change on cetacean and pinniped species and populations in the Antarctic might also be an appropriate priority in the coming triennium.

71. Future consideration should be given to conservation activities for the listed fish species.

IX. Projects and programmes

72. In the recent triennium CMS has actively progressed a number projects and programmes that also contribute to the network of marine species conservation.

73. In 2006, the IOSEA Marine Turtle MoU Secretariat coordinated CMS's first-ever 'Year of …' campaign with the successful organisation of a Year of the Turtle in some 30 countries bordering the Indian Ocean and beyond. This was followed by the global Year of the Dolphin in 2007 and 2008, launched and managed by a partnership led by the CMS Secretariat with ACCOBAMS, ASCOBANS, the Whale and Dolphin Conservation Society and the global tourism group, TUI AG. The campaign was successful in increasing awareness in countries, the business community and other MEAs about the importance of dolphin conservation and played an important role in bridging a communication gap among private sector, UN agencies and nongovernmental organizations, by providing a common platform for joint activities and common goals. (see Conf 9.21).

74. As directed by *Resolution 8.22: Adverse Human Induced Impacts on Cetaceans*, the Secretariat is in the process of investigating and considering the priorities and work of the IMO, the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), the Cartagena Convention and the UNEP Regional Seas Programme, the United Nations Informal Consultation on Protection of the Oceans and the Law of the Sea (UNICPOLOS) the International Whaling Commission Scientific and Conservation Committees, the FAO and its Committee on Fisheries Industries (COFI) and RFMO activities relating to cetaceans and has developed a draft Global Programme of Work for Cetaceans which also identifies points of collaboration and synergy between CMS, CMS cetacean-related agreements, IMO, IWC Scientific and Conservation Committees, OSPAR, UNICPOLOS and the UNEP Regional Seas Programme for consideration by the 9th CMS Conference of the Parties. The Revised Secretariat Programme to Implement CMS Resolution 8.22: Adverse Human Induced Impacts on Cetaceans and to develop draft *Programme of Work for Cetaceans* is annexed (B) for consideration.

75. During the 13th Scientific Council meeting a CMS Partner - the Whale and Dolphin Conservation Society - proposed to coordinate an expert group to support the cetacean related work of the Scientific Council and the Appointed Councillor for Marine Mammals. The 'Cetacean Liaison Group' met once during the triennium (see report CMS/ScC14/Inf.21) and contributed to species listing proposals and expert advice on regional agreement development

and the Year of Dolphin. The Scientific Council recognised the valuable assistance of the Cetacean Liaison Group during its 14th meeting and WDCS has subsequently committed to expanding the work programme of the Cetacean Liaison Group in the coming triennium. Similar scientific support might be appropriate for other marine species.

SUMMARIZING AREAS FOR FORWARD CONSIDERATION

Updating the working definition of migration

76. The current definition of migration which is to "…cyclically and predictably cross one or more national jurisdictional boundaries" may benefit from elaboration via an interpretive resolution to keep pace with our expanding knowledge base about marine migratory species and to encompass the growing area of marine species conservation within the CMS work programme.

Increasing the CMS outreach to MEAs

77. Many of the MEAs with which CMS needs to interact are either single-issue or single-region focused, which places CMS, its agreements and initiatives in a complex position of needing to both draw the work and priorities of these organisations into its own sphere, as well as ensure that the priorities and decisions of CMS radiate out to have appropriate reciprocal influence. Analysis of how to achieve this will have been completed for cetaceans through the development of the draft *Global Programme of Work for Cetaceans*. It might be beneficial to consider the development of similar systematic exercises for the other marine species groups to ensure that the work of the CMS Family both reflects and fully contributes to international priorities.

78. As CMS increases its presence in cetacean issues it may become appropriate to revise the existing Memorandum of Understanding between CMS and the IWC to increase collaboration between the two bodies.

Considering CMS's role in protected areas

79. CMS may develop an outreach strategy to key MEAs and the wider protected area community to promote the use of CMS, its agreements and initiatives as viable mechanisms for networks of marine protected areas. The upcoming International Conference on Marine Mammal Protected Areas, the World Commission on Protected Areas and the IUCN World Parks Congress might provide useful opportunities to explore and develop the role of the CMS Family as global management framework for networks of marine protected areas.

80. High Seas MPAs are a specific area where a careful review of the interaction between existing national and international laws is needed as a prerequisite to consideration of CMS's future role and involvement with issues on the High Seas, and a legal review might usefully be commissioned to investigate this question, providing the basis for future discussion of the Conference of the Parties.

Increasing the organic linkages within the CMS Family

81. Increasing the organic linkages within the CMS Family is an important challenge to be considered. Consideration may be given to developing regional nodes of expertise; institutionalizing a connection between agreement scientific bodies and the CMS Scientific

Council; sharing technical resources such as species related scientific meetings and organizing agreement or initiative meetings in common. Continuing to utilise the expert support of Partner organisations for the work of the Scientific Council is important to maintain. With adequate resources, such capacity could substantively contribute to CMS Family outreach to other key international bodies.

Assessing the progress on appendix-listed species, and consideration of future species for listing and of 'cooperative actions' within agreements and initiatives

82. The Conference of the Parties has already urged the exploration of a marine mammal initiative in South East Asia (Recommendation 7.5), the consideration of a marine mammal initiative in the Indian Ocean (Recommendation 7.7) and a marine turtle initiative in the Pacific Ocean (Recommendation 8.17).

83. Listed South American species/populations of marine mammals remain a long-standing grouping that require attention. A new agreement or initiative might be developed to including the South American fur seal and sea lion, as well as the Commerson's dolphin, Chilean dolphin, Burmeister's porpoise and tucuxi. Such an instrument might also encompass the West Indian Manatee and two regional river dolphins - the boto and Franciscana.

84. Appropriate regional instruments may also be considered priorities for the remaining marine mammals including the beluga whale, narwhal, bowhead whale, Baird's beaked whale, north Atlantic right whale, north Pacific right whale, Dall's porpoise, grey seal and the eastern tropical Pacific populations of the short-beaked common dolphin and pantropical spotted dolphin, spinner dolphin. Some populations may also be encompassed by extending existing regional agreement or initiative boundaries.

85. In light of the growing impact of climate change, future listing and/or negotiation of an appropriate regional instrument for polar species such as the iconic polar bear or pinnipeds such as ringed seal, harp seal, walrus among others that might be an appropriate priority in the coming triennium.

86. Future consideration should be given to conservation activities for the listed fish species.

Increasing CMS's role on bycatch

87. CMS may produce a global assessment of the impact of by-catch and targeted and non-targeted catch on the conservation status of all migratory marine species covered by the Convention. This could be supported by the Scientific Council identifying and making available information on emerging and best practice by-catch mitigation techniques as relevant to the appendix listed species to feed into such a global assessment. CMS may also identify priority fisheries, regions and species that would benefit from additional cooperative action. This could be combined with review of the "marine bushmeat" problem.

Increasing CMS's role on climate change

88. Correspondingly few policy conclusions have been drawn about mitigating the impact of climate change on migratory marine species and this may be considered a priority area for both research and dialogue between CMS, CBD, UNEP and UNFCCC. Given that CMS and other instruments such as CITES, and CMS Partner organizations work on a species-specific basis, it may be practical to assess the species-specific threat of climate change for species listed on CMS appendices.

89. A review of the impact of climate change on cetacean and pinniped species and populations in the Antarctic might also be an appropriate priority in the coming triennium.

90. As the pressure of this issue intensifies it seems appropriate to continue the work of the Scientific Council by prioritizing climate change adaptation research and by compiling and analyzing existing information on climate change as it relates to migratory species. The CMS Family might coordinate scientific and technical advice to assist CMS Parties to introduce adaptation measures that can counteract the effects of climate change on migratory species as well as providing important advice into the UNFCCC processes. A specific listing of species that are likely to be significantly threatened by climate change in future may be advisable.

Action requested:

91. The Conference of the Parties may wish to consider:

a. Identifying priority issues, species and habitats in the marine sphere requiring intervention by CMS in the next decade, giving consideration to:

   i. Increasing the organic linkages within the CMS Family and developing 'species expert bodies' by developing regional nodes of expertise; institutionalizing a connection between agreement scientific bodies and the CMS Scientific Council; sharing technical resources such as species related scientific meetings and organizing agreement or initiative meetings in common; and continuing to utlilize the expert support for the work of the Scientific Council;
   ii. Seeking avenues for research and dialogue on issues of common interest (climate change between CMS, CBD, UNEP and UNFCC; cetaceans with IWC; FAO and RFMOs on fisheries);
   iii. Commencing work towards previously identified species priorities (marine mammals in South East Asia and the Indian Ocean; marine turtle initiative in the Pacific Ocean; South American species/populations of marine mammals possibly including the West Indian Manatee and the boto and Franciscana;
   iv. Increasing CMS's role in protected areas by developing an outreach strategy and participating in the upcoming International Conference on Marine Mammal Protected Areas, the World Commission on Protected Areas and the IUCN World Parks Congress;
   v. Commissioning a review of the interaction between existing national and international laws as a prerequisite to consideration of CMS's future role and involvement with issues on the High Seas and to provide the basis for future discussion of the Conference of the Parties;
   vi. Endorsing the Revised Secretariat Programme to Implement CMS Resolution 8.22: Adverse Human Induced Impacts on Cetaceans; and
   vii. Review, and provide interpretation of the definition of migration in the light of advances in knowledge concerning marine migratory species (straddling national jurisdictions or in the High Seas).

b. Requesting the Scientific Council to:

   i. Prioritize climate change adaptation research and compile and analyze existing information on climate change as it relates to migratory species;
   ii. Coordinate scientific and technical advice to assist CMS Parties and introduce adaptation measures to counteract the effects of climate change on migratory

species as well as providing important advice into the UNFCCC processes;

iii. Coordinate a detailed scientific and technical review of the potential impact of anthropogenic noise pollution on migratory marine species and to develop draft guidelines for CMS Parties on conducting activities known to produce underwater sound with the potential to cause adverse effects on cetaceans, taking into account existing guidelines from within the CMS Family.

iv. Produce a global assessment of the impact of by-catch on the conservation status of all migratory marine species covered by the Convention and identify and make available information on emerging best practice and by-catch mitigation techniques;

v. Advise on how the biological significance of social complexity and cultural transmission within key migratory species should be reflected in the future conservation activities of CMS;

vi. Review and propose future listing and/or negotiation of an appropriate regional instrument for polar species; and

vii. Advise on appropriate conservation activities for the listed fish species.

c. Instituting a review of CMS marine agreements and projects in 2009 – 2010 as part of a rolling programme under Article VII.5(d) for reviewing the progress being made under agreements, in conjunction with the Scientific Council and as an input to the proposals in draft Resolution 9.13 to establish an ad-hoc working group on the future shape of the CMS.

d. Ensuring adequate resources for marine work are available under the CMS budget.

MARINE SPECIES AND POPULATIONS LISTED ON CMS APPENDIX I, APPENDIX II, CONCERTED AND COOPERATIVE ACTION

Table legend on 'Level of coverage'	
◇	listed species/populations fully encompassed within existing agreements or initiatives
◆	listed species/populations partially encompassed within existing agreements or initiatives
◆◆	listed species/populations requiring attention within a new agreement or initiative

Species/population name	**App'x listing**	**Concerted or Cooperative action**	**Addressed by agreement, initiative or programme**	**Level of coverage**
Mammalia				
Bowhead whale, *Balaena mysticetus*	I			◆◆
Antarctic minke whale, *Balaenoptera bonaerensis*	II		Part of migratory range – Pacific Cetacean MoU	◆
Sei whale, *Balaenoptera borealis*	I/II	Concerted - 2002	Part of migratory range – ACCOBAMS, Pacific Cetacean MoU	◆
Bryde's whale, *Balaenoptera edeni*	II		Part of migratory range – Pacific Cetacean MoU	◆
Blue whale, *Balaenoptera musculus*	I	Concerted - 2002	Part of migratory range – Pacific Cetacean MoU	◆
Fin whale, *Balaenoptera physalus*	I/II	Concerted - 2002	Part of migratory range – Pacific Cetacean MoU	◆
Baird's beaked whale, *Berardius bairdii*	II			◆◆
Pygmy right whale, *Caperea marginata*	II		Part of migratory range – Pacific Cetacean MoU	◆
Commerson's dolphin, *Cephalorhynchus commersonii* (South American population)	II	Cooperative - 2005		◆◆
Chilean dolphin, *Cephalorhynchus eutropia*	II	Cooperative - 2005		◆◆
Heaviside's dolphin, *Cephalorhynchus heavisidii*	II		Part of migratory range – West African MoU	◆
Beluga whale, *Delphinapterus leucas*	II			◆◆
Short-beaked common dolphin, *Delphinus delphis* (App I - only Mediterranean population); (App II - North and Baltic Sea populations, Mediterranean population, Black Sea population, eastern tropical Pacific population)	I/II		Part of migratory range – ASCOBANS, ACCOBAMS	◇ ◆◆
Southern right whale, *Eubalaena australis*	I	Concerted - 2002	Part of migratory range – Pacific Cetacean MoU	◆
North Atlantic right whale, *Eubalaena glacialis* (North Atlantic)	I			◆◆
North Pacific right whale, *Eubalaena japonica* (North Pacific)	I			◆◆
Long-finned pilot whale, *Globicephala melas* (only North and Baltic Sea populations)	II		ASCOBANS	◇
Risso's dolphin, *Grampus griseus* (only North and Baltic Sea populations)	II		ASCOBANS	◇
Northern bottlenose whale, *Hyperoodon ampullatus*	II		Part of migratory range – ASCOBANS	◆
Boto, *Inia geoffrensis*	II			◆◆
Fraser's dolphin, *Lagenodelphis hosei* (Southeast Asian populations)	II	Cooperative - 2005	Possibly some populations – Pacific Cetacean MoU	◆
Atlantic white-sided dolphin, *Lagenorhynchus acutus* (only North and Baltic Sea populations)	II		ASCOBANS	◇
White-beaked dolphin, *Lagenorhynchus albirostris* (only North and Baltic Sea populations)	II		ASCOBANS	◇
Peale's dolphin, *Lagenorhynchus*	II	Cooperative - 2005	Possibly some populations –	◆

Species/population name	App'x listing	Concerted or Cooperative action	Addressed by agreement, initiative or programme	Level of coverage
australis			Pacific Cetaceans MoU	
Dusky dolphin, *Lagenorhynchus obscurus*	II	Cooperative - 2005	Some populations – Pacific Cetacean MoU	◆
Humpback whale, *Megaptera novaeangliae*	I	Concerted - 2002	Part of migratory range – ACCOBAMS, Pacific Cetacean MoU	◆
Narwhal, *Monodon monoceros*	II			◆◆
Finless porpoise, *Neophocaena phocaenoides*	II	Cooperative - 2005		◆
Irrawaddy dolphin, *Orcaella brevirostris*	II	Cooperative - 2005		◆◆
Killer whale, *Orcinus orca*	II		Some populations – ASCOBANS, ACCOBAMS, Pacific Cetacean MoU, West African MoU	◆
Spectacled porpoise, *Phocoena dioptrica*	II	Cooperative - 2005	Some populations – Pacific Cetacean MoU	◆
Harbour porpoise, *Phocoena phocoena* (North and Baltic Sea populations, western North Atlantic population, Black Sea population)	II		ASCOBANS, ACCOBAMS	◇
Burmeister's porpoise, *Phocoena spinipinnis*	II	Cooperative - 2005		◆◆
Dall's porpoise, *Phocoenoides dalli*	II			◆◆
Sperm whale, *Physeter macrocephalus*	I/II	Concerted - 2002	Part of migratory range – ACCOBAMS, Pacific Cetacean MoU	◆
Ganges dolphin, *Platanista gangetica gangetica*	I/II			◆◆
Franciscana, *Pontoporia blainvillei*	I/II	Concerted - 1997		◆◆
Tucuxi, *Sotalia fluviatilis*	II			◆◆
Indo-Pacific humpback dolphin, *Sousa chinensis*	II	Cooperative - 2005	Some populations – Pacific Cetacean MoU	◆
Atlantic humpback dolphin, *Sousa teuszii*	II		Some populations – West African MoU	◆
Pantropical spotted dolphin, *Stenella attenuata* (eastern tropical Pacific population, Southeast Asian populations)	II	Cooperative - 2005		◆◆
Striped dolphin, *Stenella coeruleoalba* (eastern tropical Pacific population, Mediterranean population)	II		Some populations – ACCOBAMS	◆ ◇
Spinner dolphin, *Stenella longirostris* (eastern tropical Pacific populations, Southeast Asian populations)	II	Cooperative - 2005		◆◆
Indo-Pacific bottlenose dolphin, *Tursiops aduncus* (Arafura/Timor Sea populations)	II	Cooperative - 2005	Part of migratory range – Pacific Cetaceans MoU	◆
Common bottlenose dolphin, *Tursiops truncatus* (North and Baltic Sea populations, western Mediterranean population, Black Sea population)	II		ASCOBANS ACCOBAMS	◇
Dugong, *Dugong dugon*	II		Indian/Pacific Ocean Dugong MoU	◇
West Indian manatee, *Trichechus manatus* (populations between Honduras and Panama)	I/II			◆◆
West African manatee, *Trichechus senegalensis*	II		West African MoU	◇
Grey seal, *Halichoerus grypus* (only Baltic Sea populations)	II			◆◆
Harbour seal, *Phoca vitulina* (only Baltic and Wadden Sea populations)	II		Wadden Sea Seals	◆
Mediterranean monk seal, *Monachus monachus*	I/II		Mediterranean Monk Seals MoU	◆
South American fur seal, *Arctocephalus australis*	II			◆◆
South American sea lion, *Otaria flavescens*	II			◆◆

Species/population name	App'x listing	Concerted or Cooperative action	Addressed by agreement, initiative or programme	Level of coverage
Reptilia				◆◆
Green turtle, *Chelonia mydas*	I/II	Concerted - 1991	Part of migratory range – Atlantic Coast of Africa Marine Turtle MoU and IOSEA Marine Turtle MoU	◆
Loggerhead sea turtle, *Caretta caretta*	I/II	Concerted - 1991	Part of migratory range – Atlantic Coast of Africa Marine Turtle MoU and IOSEA Marine Turtle MoU	◆
Hawksbill turtle, *Eretmochelys imbricata*	I/II	Concerted - 1991	Part of migratory range – Atlantic Coast of Africa Marine Turtle MoU and IOSEA Marine Turtle MoU	◆
Kemp's Ridley sea turtle, *Lepidochelys kempii*	I/II	Concerted - 1991		◆◆
Olive Ridley sea turtle, *Lepidochelys olivacea*	I/II	Concerted - 1991	Part of migratory range – Atlantic Coast of Africa Marine Turtle MoU and IOSEA Marine Turtle MoU	◆
Leatherback turtle, *Dermochelys coriacea*	I/II	Concerted - 1991	Part of migratory range – Atlantic Coast of Africa Marine Turtle MoU and IOSEA Marine Turtle MoU	◆
Pisces				
Whale shark, *Rhincodon typus*	II			◆◆
Basking shark, *Cetorhinus maximus*	I/II			◆◆
Great white shark, *Carcharodon carcharias*	I/II			◆◆
Giant sturgeon, *Huso huso*	II	Cooperative - 1999		◆◆
Kaluga sturgeon, *Huso dauricus*	II	Cooperative - 1999		◆◆
Baikal sturgeon, *Acipenser baerii baicalensis*	II	Cooperative - 1999		◆◆
Lake sturgeon, *Acipenser fulvescens*	II	Cooperative - 1999		◆◆
Russian sturgeon, *Acipenser gueldenstaedtii*	II	Cooperative - 1999		◆◆
Green sturgeon, *Acipenser medirostris*	II	Cooperative - 1999		◆◆
Sakhalin sturgeon, *Acipenser mikadoi*	II	Cooperative - 1999		◆◆
Adriatic sturgeon, *Acipenser naccarii*	II	Cooperative - 1999		◆◆
Ship sturgeon, *Acipenser nudiventris*	II	Cooperative - 1999		◆◆
Persian sturgeon, *Acipenser persicus*	II	Cooperative - 1999		◆◆
Sterlet, *Acipenser ruthenus* (Danube population)	II	Cooperative - 1999		◆◆
Amur sturgeon, *Acipenser schrenckii*	II	Cooperative - 1999		◆◆
Chinese sturgeon, *Acipenser sinensis*	II	Cooperative - 1999		◆◆
Stellate sturgeon, *Acipenser stellatus*	II	Cooperative - 1999		◆◆
Common sturgeon, *Acipenser sturio*	I/II	Cooperative - 1999		◆
Large Amu-Dar shovelnose, *Pseudoscaphirhynchus kaufmanni*	II	Cooperative - 1999		◆◆
Small Amu-Dar shovelnose, *Pseudoscaphirhynchus hermanni*	II	Cooperative - 1999		◆◆
Syr-Dar shovelnose, *Pseudoscaphirhynchus fedtschenkoi*	II	Cooperative - 1999		◆◆
Chinese paddlefish, *Psephurus gladius*	II	Cooperative - 1999		◆◆
Marine Aves				
Humboldt penguin, *Spheniscus humboldti*	I	Concerted - 1999		◆◆
African Penguin *Spheniscus demersus*	II			◆◆
Short-tailed albatross, *Diomedea albatrus*	I		Under consideration for inclusion under ACAP	◆◆
Amsterdam albatross, *Diomedea amsterdamensis*	I		ACAP	◆
Wandering albatross, *Diomedea exulans*	II		ACAP	◆
Royal albatross, *Diomedea epomophora*	II		ACAP	◆

Species/population name	App'x listing	Concerted or Cooperative action	Addressed by agreement, initiative or programme	Level of coverage
Waved albatross, *Diomedea irrorata*	II		ACAP	◆
Black-footed albatross, *Diomedea nigripes*	II		Under consideration for inclusion under ACAP	◆◆
Laysan albatross, *Diomedea immutabilis*	II		Under consideration for inclusion under ACAP	◆◆
Black-browed albatross, *Diomedea melanophris*	II		ACAP	◆
Buller's albatross, *Diomedea bulleri*	II		ACAP	◆
Shy albatross, *Diomedea cauta*	II		ACAP	◆
Yellow-nosed albatross, *Diomedea chlororhynchos*	II		ACAP	◆
Grey-headed albatross, *Diomedea chrysostoma*	II		ACAP	◆
Sooty albatross, *Phoebetria fusca*	II		ACAP	◆
Light-mantled albatross, *Phoebetria palpebrata*	II		ACAP	◆
Northern giant petrel, *Macronectes giganteus*	II		ACAP	◆
Southern giant petrel, *Macronectes halli*	II		ACAP	◆
Grey petrel, *Procellaria cinerea*	II		ACAP	◆
White-chinned petrel, *Procellaria aequinoctialis*	II		ACAP	◆
Black petrel, *Procellaria parkinsoni*	II		ACAP	◆
Westland petrel, *Procellaria westlandica*	II		ACAP	◆
Henderson petrel, *Pterodroma atrata*	I			
Cahow or Bermuda petrel, *Pterodroma cahow*	I			◆◆
Dark-rumped petrel, *Pterodroma phaeopygia*	I			◆◆
Dark-rumped petrel, *Pterodroma sandwichensis*	I			◆◆
Pink-footed shearwater, *Puffinus creatopus*	I			◆◆
Balearic shearwater, *Puffinus mauretanicus*	I	Concerted - 2005		◆◆
Peruvian diving petrel, *Pelecanoides garnotii*	I/II			◆◆
Olrog's gull, *Larus atlanticus*	I			◆◆
Sooty gull, *Larus hemprichii*	I/II			◆
White-eyed gull, *Larus leucophthalmus* *	I/II			◆
Relict gull, *Larus relictus*	I			◆◆
Saunder's gull, *Larus saundersi*	I			◆◆
Great Black-headed gull, *Larus ichthyaetus* (West Eurasian and African population)	II			◆
Mediterranean gull, *Larus melanocephalus*	II			◆
Slender-billed gull, *Larus genei*	II			◆
Audouin's gull, *Larus audouinii* *	I/II			◆
Armenian gull *Larus armenicus*	II			◆
Chinese crested tern, *Sterna bernsteini*	I	Concerted - 2002		
Gull-billed Tern, *Sterna nilotica nilotica* (West Eurasian and African populations)	II			◆
Caspian Tern, *Sterna caspia* (West Eurasian and African populations)	II			◆
Royal Tern, *Sterna maxima albidorsalis*	II			◆
Great Crested Tern, *Sterna bergii* (African and Southwest Asian populations)	II			◆
Lesser Crested Tern, *Sterna bengalensis* (African and Southwest Asian populations)	II			◆
Sandwich Tern, *Sterna sandvicensis sandvicensis*	II			◆
Roseate Tern, *Sterna dougallii* (Atlantic population)	II			◆

Species/population name	App'x listing	Concerted or Cooperative action	Addressed by agreement, initiative or programme	Level of coverage
Common Tern, *Sterna hirundo hirundo* (populations breeding in the Western Palearctic)	II			◆
Arctic Tern, *Sterna paradisaea* (Atlantic populations)	II			◆
Little Tern, *Sterna albifrons*	II			◆
Saunders's Tern, *Sterna saundersi*	II			◆
Damara Tern, *Sterna balaenarum*	II			◆
White-cheeked Tern, *Sterna repressa*	II			◆
Black Tern, *Chlidonias niger niger*	II			◆
White-winged Tern, *Chlidonias leucopterus* (West Eurasian and African population)	II			◆
Japanese murrelet, *Synthliboramphus wumizusume*	I			◆◆
African Skimmer, *Rynchops flavirostris*	II			◆

REVISED SECRETARIAT PROGRAMME TO IMPLEMENT CMS RESOLUTION 8.22: ADVERSE HUMAN INDUCED IMPACTS ON CETACEANS

I. Summary of Resolution 8.22 requirements

Resolution 8.22 asks for the development of a draft *Programme of Work for Cetaceans* to be considered by CMS CoP9.

The resolution explicitly requires that this programme of work be developed with the full knowledge of the International Maritime Organization (IMO), the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), the Cartagena Convention and the UNEP Regional Seas Programme, the United Nations Informal Consultation on Protection of the Oceans and the Law of the Sea (UNICPOLOS) the International Whaling Commission Scientific Committee (IWC SC) and Conservation Committee (IWC CC), the United Nations Food and Agricultural Organisation (FAO) and its Committee on Fisheries Industries (COFI) and Regional Fisheries Management Organisations (RFMOs) activities relating to cetaceans and requires the programme of work to identify points of collaboration and synergy between CMS, CMS cetacean-related agreements, IMO, IWC SC and CC, OSPAR, UNICPOLOS and the UNEP Regional Seas Programme.

In the development of this programme of work, CMS Resolution 8.22 requires specific activities be undertaken. These areas can be grouped as follows:

1. *notification* of CMS Resolution 8.22 be transmitted to IMO, IWC SC and CC, OSPAR, UNICPOLOS, and the UNEP Regional Seas Programme to ensure a full exchange of information, promote collaboration and reduce duplication of effort with these other international organisations.
2. *review* of the extent to which CMS, CMS cetacean-related agreements, IMO, IWC SC and CC, OSPAR, UNICPOLOS, the UNEP Regional Seas Programme, FAO, COFI and the RFMOs are addressing listed impacts through their threat abatement activities.
3. *analysis* of the gaps and overlaps between CMS, CMS cetacean-related agreements, IMO, IWC SC and CC, OSPAR, UNICPOLOS, the UNEP Regional Seas Programme and the *identification* of priority impacts and regions requiring urgent attention.
4. *development* of a draft programme of work for submission to CMS CoP9.

II. Progress and revised Secretariat programme

The report structure has been signed off by both the 14th Scientific Committee and the 32nd Standing Committee and significant progress has been made on the substantive areas of the report including:

1. summary of regions and listed impacts;
2. review the extent to which CMS and CMS cetacean-related Agreements are addressing listed impacts through their threat abatement activities; and
3. review the extent to which IMO, IWC SC and CC, OSPAR, UNICPOLOS and the UNEP Regional Seas Programme are addressing listed impacts through their threat abatement activities.

The review of the impacts to cetaceans section will be distributed in early January 2009 to identified members of the Scientific Council for comment and input between January and March 2009. At the same time the review will being distributed to other expert bodies for additional input. This will provide a thorough basis for prioritization of activities by threats. Comment will be drawn in by March 2009.

Work is now focusing on completing:

1. the review of cetacean related requirements within the Scientific Council Strategic Implementation Plan;
2. the analysis of gaps and overlaps between CMS activities and IMO, IWC SC and CC, OSPAR, UNICPOLOS and the UNEP Regional Seas Programme; and
3. identification of where collaboration and synergies can exist between CMS and CMS cetacean-related Agreements, IMO, IWC SC and CC, OSPAR, UNICPOLOS and the UNEP Regional Seas Programme

Early in 2009, the sections reviewing the extent to which IMO, IWC SC and CC, OSPAR, UNICPOLOS and the UNEP Regional Seas Programme are addressing listed impacts through their threat abatement activities will be sent to IMO, IWC SC and CC, OSPAR, UNICPOLOS and UNEP for the individual input and comment. Comment will be drawn in by March 2009.

Between March and July the Secretariat will work with the CMS Appointed Councillor for Aquatic Mammals to identify the priority impacts and regions requiring urgent attention and develop the draft *Programme of Work for Cetaceans*.

This will be circulated to Parties for comments. On the basis of the comments received, a revised draft will be produced that will be submitted and submission to the Standing Committee for approval.