

Conserving Cetaceans:

The Convention on Migratory Species and its Relevant Agreements for Cetacean Conservation



Cetaceans face a wide range of threats in a rapidly changing world.

There are currently eighty-six recognised species of cetaceans (whales, dolphins and porpoises) in the world.

Many populations are known to be vulnerable or endangered. Several species are in danger of extinction.

The status of many more populations is not well enough known to enable confident assessments to be made about the population's survival probability.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is a global environment treaty. It aims to conserve and manage avian, marine and terrestrial migratory species as well as their habitats throughout their range. The Convention organizes transboundary cooperation for species migrating across national boundaries and provides the legal framework for global action.

The Whale and Dolphin Conservation Society (WDCS) is the global voice for the protection of cetaceans and their environment. WDCS's objectives are to reduce, and ultimately, eliminate the continuing threats to cetaceans and their habitats.

Conserving Cetaceans:

The Convention on Migratory Species and its relevant Agreements for Cetacean Conservation

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Foreword



Cetacean conservation is a crucial component of the work of the Convention on Migratory Species (CMS), which aims to conserve and manage avian, marine and terrestrial migratory species, as well as their habitats, throughout their range. In the last decade, there has been an increasing interest in the marine environment and marine species within the bodies of the Convention, exemplified in several resolutions and recommendations adopted by the CMS Conference of the Parties.

The Convention has adopted a regional approach in cetacean conservation. Under its umbrella, two regional Agreements - ASCOBANS and ACCOBAMS - were developed. Both demonstrate that the Convention and its operational tools play a unique role in regional cetacean conservation.


The relevance of CMS for the regional protection of cetaceans has been confirmed by the successes of ASCOBANS and ACCOBAMS. This bodes well for the conservation of cetaceans in other parts of the world. CMS is ready for this challenge. For example, in September 2002, the Seventh Meeting of the Conference of the Parties recommended that the countries of Central and West Africa, and those of Southeast Asia, take action to develop regional instruments under CMS to conserve small cetaceans. In addition, as recently as September 2003, the World Parks Congress recognised that the innovative tools of CMS could also provide the basis to facilitate the creation of a global representative system of high seas marine protected area networks.

I wish to thank WDCS for its excellent initiative to develop this brochure on cetacean conservation and the work of CMS, its Agreements and that of WDCS. The CMS Secretariat is grateful that this organisation, which is dealing with such important species covered by CMS, recognises the Convention's potential and would like to support CMS's work. This WDCS publication is a convincing example of the important relations and partnerships the Convention cultivates with various non-governmental organisations.

I strongly hope to continue the fruitful cooperation and good partnership with WDCS and I would like to express, again, my sincere thanks for the development of this important publication.

A handwritten signature in black ink, which appears to read "Arnulf Müller-Helmbrecht". The signature is fluid and cursive, with the first name being the most prominent.

Arnulf Müller-Helmbrecht
Executive-Secretary
Convention on Migratory Species
Bonn, Germany
November 2003



"Migratory species" are defined under CMS as "the entire population or any geographically separate part of the population of any species or low taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries" (art I (1)(a))

1 CMS conserving cetaceans

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is a global environment treaty. It aims to conserve and manage avian, marine and terrestrial, migratory species as well as their habitats throughout their range.

CMS provides strict protection for endangered species, encourages the conclusion of multilateral Agreements for species with an unfavourable conservation status, and promotes co-operative research and conservation activities. The Convention entered into force in 1983 and operates through its contracting Parties, other participating States and partner organisations. The membership has grown to more than eighty Parties in Africa, Central and South America, Asia, Europe and Oceania.

The Convention organises transboundary cooperation for species migrating across or outside national boundaries, such as cetaceans. It provides the legal framework for conservation measures throughout the migratory range and strives to maintain or restore a favourable conservation status of the species and their habitats in order to facilitate, where applicable, sustainable use. CMS provides a platform to develop and tailor measures according to particular conservation needs.

More than a dozen legally binding regional and global Agreements have been concluded under the CMS umbrella so far. Two regional Agreements focus on the conservation of cetaceans, the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS).

CMS differentiates between two groups of species listed in the Convention's Appendices. Appendix I lists endangered species to be placed under strict protection by the Parties. Appendix

II lists species that would considerably benefit from international cooperation. More than ten cetacean species are listed on Appendix I, while Appendix II includes nearly forty cetaceans. For many of these species, only geographically limited populations are listed.

Cetaceans face a wide range of threats in a rapidly changing world. There is growing evidence that they are being impacted by fisheries and bycatch, chemical pollution, ship strikes, noise, disturbance and harassment, habitat loss and deliberate hunts. Many of these impacts are difficult to monitor.

As highly migratory species occurring over the global commons, and often outside of national jurisdictions, cetaceans are particularly vulnerable to change in their critical and often little understood habitats. As top predators with low reproductive rates they are especially vulnerable to multiple and often cumulative impacts.

Monitoring the extent of populations, their status and recovery is often difficult. The status of many populations of cetaceans already gives cause for concern and in many other cases too little is known to make accurate assessments.

CMS is committed to greater cooperation for the conservation of migratory cetaceans. At the Seventh Meeting of the Conference of the Parties in 2002, six great whale species listed on Appendix I and seven other cetacean species listed on Appendix II were designated for concerted and co-operative action under the Convention.



»It is increasingly recognized that our understanding of cetacean biology and population dynamics is going to remain inadequate in the foreseeable future. Thus following the precautionary principle, we need to be prepared to act ... «

Whitehead 2000

2 Cetacean habitats and migration

Cetacean habitats are diverse. They can be found across the globe in oceans, coasts and rivers, and from the Arctic north through the equatorial tropics to the Antarctic south.

New considerations for habitats

Riverine and many coastal cetaceans have more restricted ranges, whereas marine cetacean habitats are often defined by oceanic characteristics rather than geography.

The temperature of the water seems to strongly influence which species are found within a region. Cold, warm and tropical water species are recognised with distinct, and sometimes overlapping, distributions.

For many cetacean species, critical habitats may relate to conventional geographical areas. For other species, critical habitat may be defined by more 'fluid' oceanographic parameters including temperature, salinity, and current, such as the less fixed feeding areas that are dependent on upwellings or other ever-changing oceanographic conditions.

Some species use more than one primary habitat during different parts of their migration, including the many large whales that breed in warm tropical waters but feed, after long migrations, in polar seas. Other species such as the orca may well use multiple habitats as they follow prey along a migration route.

Regular, irregular and sometimes vast migrations

The migration of many cetacean species is cyclical and predictable, coinciding with changes in season and the recurring changes in food availability. Time spent between the ends of a cetacean's migration are also important parts of their life cycle.

The migration routes of many species cross regularly between the national jurisdiction of coastal States and some species regularly cross

from national jurisdictions into the high seas. Other cetacean migrations are less predictable.

There are movements within some of the enormous 'home ranges' which constitute migrations in the sense that such forays might involve the animal traveling the length and breadth of its normal home range, comprising several thousand miles and sometimes entirely on the high seas. Such journeys are often undertaken with less predictability.

These movements can appear random, or driven by unique circumstances, and may not appear to be cyclic. However the subtleties and extent of such migrations are difficult to evaluate without continuously monitoring individuals and the components of their habitats to determine the impetus for such movements. For many species this data is not yet available.


Such 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.

Considering species and populations

Many cetacean species inhabit vast marine regions. Some species are thought to have movements between populations on a regular basis, whereas other populations remain more distinct. Overlapping migrations may occur, but specific populations may remain isolated from each other.

The conservation status of a migratory species means the sum of the influences acting on the migratory species that may affect its long-term distribution and abundance. For this reason the assessment of population status is critical.

There can be little doubt that there are a number of significant pressures which act independently and cumulatively to influence not only the migration of cetaceans but also their long-term population distribution abundance and survival.



WDCS has substantial experience working within CMS and its regional Agreements for the Conservation of Small Cetaceans of the Baltic and North Sea (ASCOBANS) and cetaceans in the Black Sea, Mediterranean Sea and the Contiguous Atlantic area (ACCOBAMS). This experience is reflected in both representation at the Advisory Committee of ASCOBANS, in participating in the work of the Scientific Committee of ACCOBAMS and through ongoing provision of essential global information on threats that cetaceans currently face, including fisheries interactions, noise and chemical pollution, direct kills, habitat degradation and global warming.

3 Threats to cetaceans

The health of many of the world's cetacean populations is threatened by bycatch, pollution, habitat destruction, over-fishing and climate change. Other threats include activities that may frighten, displace or harm these species such as underwater noise pollution from sources such as shipping traffic, wind farms, seismic surveys and military sonars.

Fisheries and Bycatch

Global fisheries are increasing in intensity and range. The introduction of more sustainable fishing techniques can reduce this pressure. However, the use of destructive fishing methods and the growth of many modern commercial fisheries continues to impact many cetacean populations around the world. The impacts can be both direct through bycatch and indirect through loss of prey species.

Bycatch is one of the main concerns of CMS and the Agreements ASCOBANS and ACCOBAMS. The Seventh Meeting of the Conference of the Parties emphasized that bycatch remains one of the major causes of mortality from human activities in the marine environment and recommended a speedy implementation of CMS Resolution 6.2, which requests all Parties to strengthen measures to protect the species against bycatch (CMS Recommendation 7.2). Cetaceans are known to become entangled in many gear types, including long-lines, drift nets, trap lines and mid-water trawls, but the largest problem remains with coastal gill nets, drift nets and purse-seine nets. The continued use of gill nets is endangering a number of coastal species of dolphin and porpoise.

Some cetacean populations may also be threatened by the sheer scale of modern fisheries. As fisheries compete with one another for fish, less and less prey is available for cetaceans and other wildlife to eat.

Chemical pollution

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 oil rigs, 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 are increasingly common around estuaries and bays.

The impacts of chemical pollution on cetaceans range from direct physical poisoning to degradation of important habitats. The chemicals that are probably of most concern for cetaceans are the persistent organic pollutants (POPs) including pesticides, such as DDT, and industrial chemicals; most famously the PCBs. These substances enter marine food chains and accumulate along the chain to the marine top predators.

Damage to the reproductive and immune systems of marine mammals (and other species) are the likely consequences of their extraordinary pollution 'burdens'. Many cetacean populations are known to be carrying heavy contaminant burdens which may contribute to increased mortality.

There has been a worldwide increase in reports of viral and bacterial diseases affecting marine species as well as an apparent increase in toxic algal blooms. Habitat degradation, in particular increased chemical contamination, is thought to have facilitated disease outbreaks and the immunotoxic effects of some substances has been associated with marine mammal mass mortalities. The increasing and cumulative pressures on cetaceans and the current trends of climate change may make cetaceans more susceptible to disease. 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. In addition, exposure to chemical substances that have immunotoxic effects may lower cetacean

immune responses and algal bloom outbreaks may further increase the toll of weakened populations by reducing their food supply as fish die.

Ship strikes, noise, disturbance and harassment

Hearing is 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.

Human-created noise in the marine environment contributes to an already significant natural biological and ambient level of sound. Introduced noise pollution comes from shipping and other vessels, military activities, fisheries anti-predation devices, ocean research, and the air-guns used in seismic testing to find oil and gas deposits. An emerging threat to cetaceans are the potential impacts of marine wind farms. The concern about the potential negative impact of wind turbines to wildlife has been expressed by CMS at the Seventh Meeting of the Conference of the Parties (CMS Resolution 7.5).

Whilst many of the sources of introduced noise are localized, some recent military technologies have utilized powerful detection mechanisms that may radiate over thousands of kilometres of the ocean.

Potential impacts of human-created noise on cetaceans range from physical damage to these animals (especially to those in close proximity to the noise source) to altering behaviour, increasing stress and displacement from important habitats.

Evidence is slowly emerging that collisions between vessels and cetaceans may be happening more frequently than previously suspected and may, especially in the case of endangered or geographically isolated cetacean populations, pose a serious conservation threat.

In addition, the extent of harassment, whether intentional or incidental, may be an increasing

and little understood problem in coastal waters.

The impact of greatest consequence associated with noise pollution, harassment and ship strikes may be the cumulative and long-term impact that we are currently unable to assess and evaluate.

Habitat loss and degradation

It is important to both the individual and the survival of the population (or species) that its habitats continue to be suitable to support it.

Habitat loss is especially critical for cetaceans with limited range, such as river dolphins. In many areas habitat loss is caused by dams, fishing structures and withdrawal of water for human use. In some parts of the world water management, flood control and major river modification, including the removal of surface water, has led to population decline. Dams prevent migration and create barriers which fragment populations. Prey species may be reduced, while sedimentation, nutrient over-enrichment and salinity, and in turn eutrophication, increase.

Habitat loss is also a concern for coastal and offshore species. Changes in the atmosphere, weather patterns and marine ecosystems are currently being observed. Predictions include sea surface changes and sea level rise. Changes in the ice-caps may affect rainfall and salinity, and temperate changes may impact on coastal upwelling regions causing a possible reduction in nutrient concentrations and 'productivity' which in turn can impact whole food chains.

The modification of habitats may cause shifts in cetacean food sources (through change in upwelling patterns and prey aggregation). Species that have evolved to find food in a highly patchy environment may have difficulties securing prey.

The implications of climate change for cetaceans are compounded by the apparent rate of change (some 3 to 4 degrees celsius in higher latitudes in only 50 years) which is thought to be much faster than anything that cetaceans have been exposed to in the past. When considered in the context of cumulative impacts, the ability of

cetacean populations to adapt to this rapid change may be compromised.

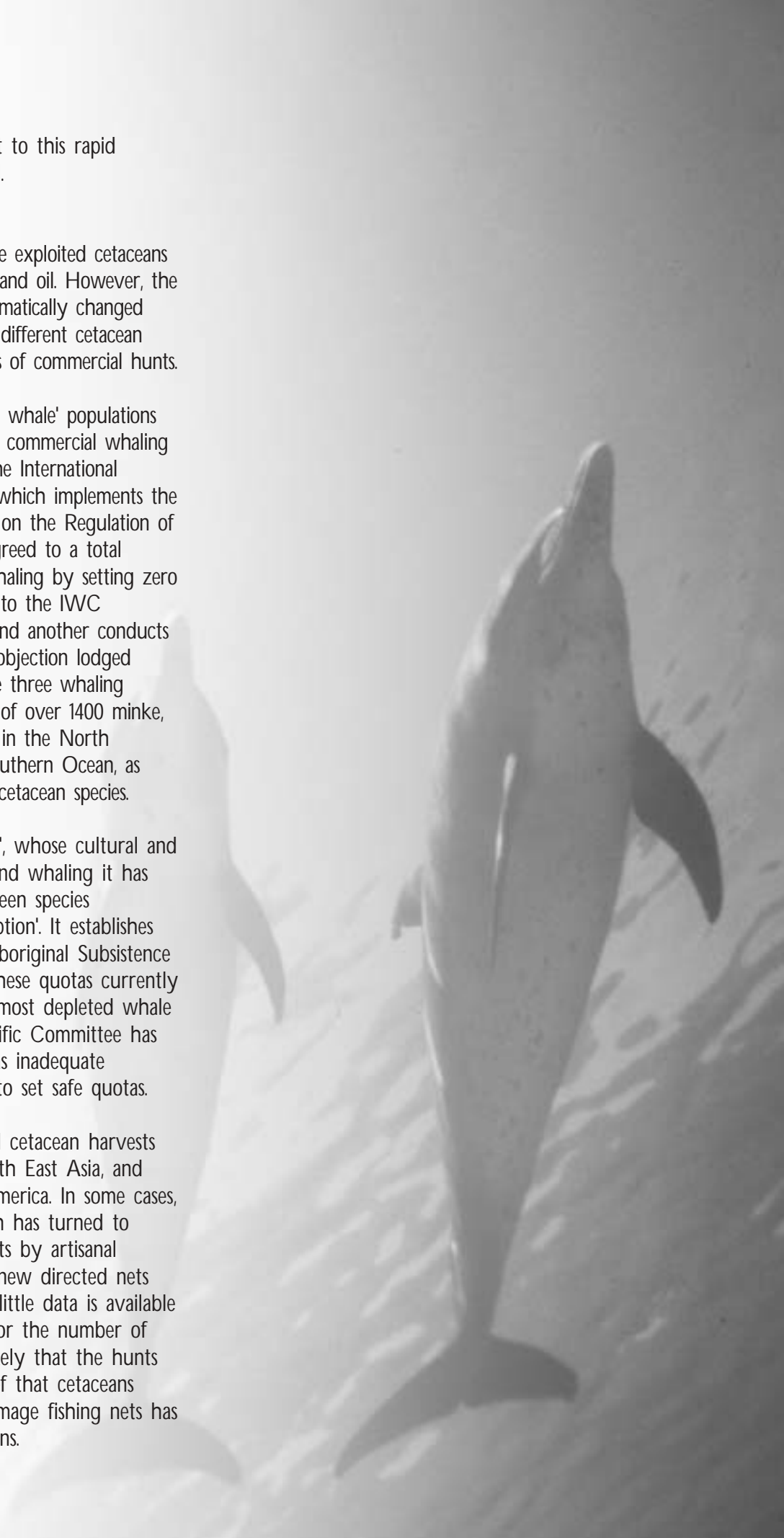
Deliberate hunts


Some coastal communities have exploited cetaceans for centuries, mainly for food and oil. However, the pattern of exploitation has dramatically changed over the last few centuries as different cetacean species have become the focus of commercial hunts.

The dramatic decline in 'great whale' populations worldwide is primarily due to commercial whaling which is now regulated by the International Whaling Commission (IWC), which implements the 1946 International Convention on the Regulation of Whaling. In 1982, the IWC agreed to a total moratorium on commercial whaling by setting zero quotas. However, two parties to the IWC undertake scientific whaling, and another conducts a commercial hunt under an objection lodged against the moratorium. These three whaling nations conduct annual hunts of over 1400 minke, sei, Bryde's and sperm whales in the North Atlantic, North Pacific and Southern Ocean, as well a large number of small cetacean species.

The IWC permits 'aborigines', whose cultural and nutritional need for whales and whaling it has recognised, to hunt some baleen species 'exclusively for local consumption'. It establishes five year blocks of annual Aboriginal Subsistence Whaling quotas. However, these quotas currently concentrate on some of the most depleted whale species and the IWC's Scientific Committee has expressed concerns that it has inadequate information on some species to set safe quotas.

There are other documented cetacean harvests in South Asia, East Asia, South East Asia, and parts of Africa and South America. In some cases, dolphin and porpoise bycatch has turned to directed net or harpoon hunts by artisanal fishers. The impact of these new directed nets hunts is not known as very little data is available on the targeted populations or the number of animals being caught. It is likely that the hunts are not sustainable. The belief that cetaceans compete with fisheries or damage fishing nets has prompted culls in some regions.





WDCS was pleased to have been recognised as an official ACCOBAMS Partner organisation "as a consequence of the historical relationship" with the Secretariat and "in facilitating cooperation in assessment and management activities of man-cetacean interactions and also in activities of capacity building, collection and dissemination of information, training and education".

4 Conserving species in regions

Because cetaceans are often highly migratory, they cross multiple jurisdictional boundaries on their travels. Therefore their effective protection can only be achieved by means of international cooperation. Impacts experienced by cetaceans differ significantly from region to region. Developing solutions to conservation problems is possible through regional Agreements. Countries within defined geographical areas that have historical experience as well as socio-cultural, political or economic linkages in common can often find the negotiation of regional instruments easier than broader international Agreements.

Multilateral Agreements are key operational tools of CMS offering tailored regional instruments for conservation activities. They range from legally binding treaties to less formal instruments, such as Memoranda of Understanding. In this respect, CMS acts a framework convention from which regional treaties evolve. All Agreements are based on concrete management and conservation plans.

Since 1990, more than a dozen international Agreements and Memoranda of Understanding have been concluded under the CMS umbrella, for bats, birds, deer, dolphins and whales, marine turtles and seals.

In addition to facilitating regional Agreements, CMS promotes co-operative conservation and research projects. These projects help to catalyse conservation actions, fill gaps in knowledge and provide a better scientific foundation for action. One example is the West African Cetaceans Research and Conservation Programme, which is conceived as a long-term international effort to stimulate broad regional involvement. Another CMS-sponsored initiative is a study providing a comprehensive review of available information on small cetacean migration and conservation issues on a worldwide scale. CMS also promotes capacity building measures, such as a workshop on the conservation and management of marine mammals in West Africa.

The Global Register of Migratory Species (GROMS), which supports the work of CMS, contains a list of 2,880 migratory vertebrate species in digital format, together with their threat status according to the IUCN Red List, and digital maps for approximately 800 species. GROMS summarizes the state of knowledge about migratory species and brings together information sources from basic research and conservation, making them mutually available to the respective communities.

Over the past decade, WDCS has supported around one hundred conservation field projects in over forty countries, spanning all six continents. These projects include scientific work such as population studies, research on threats and threat mitigation, as well as a broad range of conservation initiatives such as encouraging government authorities to designate areas of marine protection; working with local law enforcement agencies; and developing alternative fishing activities to reduce bycatch. WDCS is acutely aware that such programs can only be successful with the full support and participation of local people and aims to identify and work closely with local scientists, conservationists, educators and other community members in each region, in order to ensure long-term solutions.

The research and conservation work supported by both CMS and WDCS continues to contribute to tangible conservation outcomes for a range of species. Taking the next step of using this fieldwork to underpin conservation Agreements requires preparatory work, commitment to research and mitigation training in many regions and inclusive negotiation should be considered as part of a long term program for CMS, Range States, WDCS and other expert organisations.

Species Profile

Harbour Porpoise, *Phocoena phocoena*

Status:

CMS Appendix: II (North and Baltic Sea population, western Mediterranean population, Black Sea population)

IUCN: Vulnerable (populations in the Baltic and Black Sea/Sea of Azov may be endangered)

Biology and Migration:

Harbour porpoises are found in the coastal waters of the sub-Arctic and cool temperate waters of the North Atlantic and the North Pacific. They are the only member of the porpoise family living in European waters. The majority of sightings occur within 10 km (6 miles) of land. They frequently visit shallow bays, estuaries, and tidal channels under 200 m in depth, and have been known to swim up rivers. Seasonally, due to food movements, they tend to be inshore in the summer and offshore in the winter, as well as sometimes north in summer and south in winter. Some populations are present all year round.

Threats:

Bycatch, prey depletion, chemical pollution, hunting/whaling, habitat loss, noise pollution, human disturbance and boat traffic.



UNEP ASCOBANS

The Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS)

UNEP/ASCOBANS (the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas) is important as both the responsible multilateral Agreement for cetacean conservation in the region and also as the first Agreement for cetaceans under CMS.

ASCOBANS was concluded in 1991, entered into force in 1994 and is open for accession by all Range States (i.e. any state that exercises jurisdiction over any part of the range of a species covered by the Agreement or whose flag vessels engage in operations adversely affecting small cetaceans in the Agreement area) and by regional economic integration organisations.

The aim of the Agreement is to promote close cooperation amongst Parties with a view to achieving and maintaining a favourable conservation status for small cetaceans. ASCOBANS covers all species, subspecies or populations of toothed whales in the North and Baltic Seas except for the sperm whale.

Bycatch is considered the most serious threat to cetacean populations in the ASCOBANS area. Marine pollution, noise pollution, habitat destruction and competition with fisheries are further dangers.

The extent of the threat to small cetaceans in the ASCOBANS area is dramatically illustrated by the decline in the population of harbour porpoises, in the Baltic Seas. The harbour porpoise, *Phocoena phocoena*, is the most common cetacean species in the North Sea and the only native cetacean inhabiting the Baltic.

Species Profile

Sperm whale, *Physeter macrocephallus*

Status:

CMS Appendix : I and II

IUCN : Vulnerable

Biology and Migration:

Sperm whales are found in most of the world's oceans, except the high Arctic. Populations concentrate where the seabed rises steeply from a great depth, which may draw them near coasts and oceanic islands, in search of their major food, deep-sea cephalopods. The species has been found in the Atlantic, Indian and Pacific Oceans, and, more rarely, in semi-landlocked regions such as the Mediterranean and the Black Sea. Migration varies between the sexes with mature males ranging into the higher latitudes, during summer. Populations in the Atlantic, Indian and Pacific Oceans are partially isolated from each other by the major continental land masses and the contact between the populations is largely unknown. The Northern and Southern Hemisphere populations may also be isolated from each other.

Threats:

Hunting/whaling, entanglement in fishing nets, ship strikes, chemical pollution.



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According to the most recent estimates, the number of harbour porpoises in the Baltic Sea has dropped to around 600.

A conservation and management plan forming part of the Agreement obliges Parties to engage in habitat conservation and management, surveys and research, pollution mitigation and public information.

The ASCOBANS Action Plan focuses on the following areas:

- Habitat conservation and management
- Surveys and research
- Use of bycatches and strandings
- Legislation
- Information and education

More recently ASCOBANS has developed a recovery plan for the Baltic harbour porpoise (Jastarnia Plan), which recommends a program for bycatch reduction, research and monitoring, marine protected area establishment and an increase of public awareness.

To achieve its aim, ASCOBANS cooperates with Range States that have not (yet) acceded to the Agreement, relevant intergovernmental organisations and non-governmental organisations. While much has already been achieved, much remains to be done.

Species Profile

Common dolphin, *Delphinus delphis*

Status:

CMS Appendix: II

IUCN: Least Concern

Biology and Migration:

The common dolphin is a largely oceanic species and lives in the temperate waters of the Atlantic and Pacific Oceans. Although abundant globally, several regional populations, including the Mediterranean Sea population, are thought to be in serious trouble. Common dolphins are often found in large herds and association with other marine species is not uncommon.

Threats:

Entanglement in fishing nets, hunting/whaling, prey depletion, habitat loss.



The Agreement on the Conservation of the Mediterranean Sea and Contiguous

ACCOBAMS (the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area) is the second Agreement for cetaceans under CMS, concluded in 1996 and entered into force in 2001. It is the first Agreement of its kind to bind the countries of these two sub-regions to work together on a problem of common concern. The first Meeting of the Parties was held in Monaco February/March 2002.

The purpose of ACCOBAMS is to reduce threats to cetaceans in Black Sea waters, Mediterranean and Atlantic coasts of North Morocco and South Portugal. The ecosystems within the ACCOBAMS region are highly changed and disturbed, primarily due to pollution, coastal development, extensive vessel traffic, over-fishing and the impacts of introduced species. Cetaceans are affected by the activities of a range of countries operating in this semi-enclosed marine system.

The aim of the Agreement is to promote close cooperation amongst Parties with a view to achieving and maintaining a favourable conservation status for all species of cetaceans present in the area. ACCOBAMS applies to all cetaceans that have a range which lies entirely or partly within the Agreement area or that accidentally or occasionally frequent the Agreement area.

ACCOBAMS is currently working on a comprehensive conservation and management plan. There are three cetacean species, isolated from the Mediterranean populations, in the Black Sea and at least eighteen different cetacean species, many of which are genetically distinct from their Atlantic counterparts, are known to inhabit the



of Cetaceans of the Black Sea, Atlantic Area (ACCOBAMS)

Mediterranean Sea. While various threats, such as incidental catches and pollution are of serious concern, pressure might be most intense on coastal species, such as common dolphins where in some areas a dramatic decline in the past decades has been monitored. However, pelagic species, such as sperm whales and striped dolphins, can also be severely affected.

The Agreement calls on its members to implement a comprehensive conservation plan and to enforce legislation to prevent the deliberate taking of cetaceans in fisheries by vessels under their flag or within their jurisdiction, and to minimise incidental catches.

The ACCOBAMS Action Plan obliges Parties to address the following measures for the conservation of cetaceans:

- Adoption and enforcement of national legislation
- Assessment and management of human-cetacean interactions
- Habitat protection
- Research and monitoring
- Capacity building, collection and dissemination of information, training and education
- Responses to emergency situations

Significantly, membership is also open to non-coastal States of the Agreement area ("third countries") whose vessels are engaged in activities which may affect cetaceans. From the beginning, ACCOBAMS involved in its work most of the Range states to the Agreement and developed a close collaboration with non-governmental organisations and scientific community, granting these organisations a status of ACCOBAMS 'Partner'.

Species Profile

Fin whale, *Balaenoptera physalus*

Status:

CMS Appendix : I and II

IUCN : Endangered

Biology and Migration:

Fin whales can be seen in the Northern and Southern Hemispheres (including the Antarctic) wherever there is deep water. They are least common in the tropics and do enter polar waters but not as often as blue or minke whales. They are often seen offshore from Iceland, Eastern Canada, New England, Baja California and in the Mediterranean. There are at least three geographical populations - in the North Atlantic, in the North Pacific and the southern hemisphere. Some populations may migrate but this is not easy to predict. Those in the Gulf of California appear to be resident all year round. The IWC's Scientific Committee has advised that it has insufficient information on the status of North Atlantic fin whales to assure that the Aboriginal Subsistence Whaling quota set by the IWC for Greenland are sustainable.

Threats:

Hunting/whaling, ship strikes, environmental change, noise pollution, chemical pollution.



Species Profile

Orca, *Orcinus orca*

Status:

CMS Appendix : II

IUCN: Lower risk (pending re-assessment)

Biology and Migration:

Orca, or killer whales, are among the most widely-distributed mammals on Earth. Although they are found in all the oceans of the world, they tend to be small, thinly distributed populations ranging over large hunting areas. Their degree of migration is reflected in the distribution of their preferred prey - in some populations this is potentially thousands of kilometres.

Populations can be fewer than one hundred and up to three hundred individuals, in many of the areas of the world where they have been studied. Highly social and long lived, orcas stay close together in long-time matrilineal associations of the same individuals which confers an importance to the roles of older animals, especially females. The reproductive rate is very low. Females may have long period in which they continue to exert a strong influence on the group, beyond their calf bearing years.

Threats:

Pollution, noise, fisheries conflict and prey depletion, habitat loss and climate change, live capture for captivity, hunting/whaling.



The North Atlantic

The North Atlantic is an extremely diverse marine environment, covering an enormous stretch of ocean that extends from the north-west coast of Africa and the Canary Islands up to Iceland, Scandinavia and the frontier of the Arctic circle. The principal areas of concern are for harbour porpoise bycatch in gillnets and for common dolphins in bycatch pelagic trawls.

In addition to the key work of ASCOBANS, CMS has invested substantively in progressing cetacean conservation work through the development of an Action Plan for the Conservation of Small Cetacean and Manatees of Tropical West Africa and the West Africa Cetacean Research and Conservation Programme that has undertaken a survey of cetaceans in Senegal, The Gambia and Guinea-Bissau. Field activities discovered a previously unknown population of the threatened Atlantic humpback dolphins, *Sousa teuszii*, which are listed on CMS Appendix II. The program is now focusing on interactions of small cetaceans with fisheries in Ghana and Togo.

The Seventh Meeting of the Conference of the Parties to CMS recommended establishing a CMS instrument on small cetaceans and sirenians in West Africa (CMS Recommendation 7.3).

WDCS research and conservation in the north Atlantic region covers a wide range of species and issues. These include studies on the northern bottlenose whale, *Hyperoodon ampullatus*, (CMS App II), and harbour porpoise, *Phocoena phocoena*, (CMS App II) rescue and research, in Nova Scotia, Canada. Key humpback whale, *Megaptera novaeangliae*, (CMS App I) research off the east coast of the USA has recently commenced. UK research focuses on the bottlenose dolphin, *Tursiops truncatus*, (CMS App II) populations of the Moray Firth in Scotland; and Risso's dolphin, *Grampus griseus*, (CMS App II), bottlenose dolphin and harbour porpoise off the coast of Wales; whilst outside the UK, WDCS is funding a variety of projects, including sperm whale,

Physeter macrocephallus, (App I and II) research in the Azores, Blainville's beaked whale, *Mesoplodon densirostris*, and other beaked whale species research in the Canaries. WDCS is a founder and the chair of the UK Marine Animal Rescue Coalition which also increasingly acts as a source of advice and expertise for rescue efforts across the whole of Europe.

The South Atlantic Ocean

The coastal and riverine nature of this region represents another area of fisheries bycatch. In addition, pollution and boat strikes pose increasing threats. Species in the Southwest Atlantic also face widespread habitat loss and degradation and directed hunts.

CMS has concentrated effort on survey work for the Franciscana dolphin, *Pontoporia blainvillei*, (CMS App I and II). A workshop on the Conservation and Research Priorities of Aquatic Mammals in Latin America was held in October 2002, resulting in a series of recommendations on high-priority conservation needs. A technical review on the conservation status of small cetaceans in southern South America has been released, providing up to date assessment of the available knowledge for the region, identifying research and conservation priorities and evaluating the opportunities for developing an Agreement for small cetaceans in the region.

WDCS research in the South Atlantic region focuses on conservation and population studies of Commerson's dolphin, *Cephalorhynchus commersonii*, (CMS App II), which is threatened by over-fishing and pollution, and conservation and population studies of orcas, *Orcinus orca* (CMS App II) Franciscana dolphins, *Pontoporia phocoena*, (CMS App I), Peale's dolphins, *Lagenorhynchus australis*, (CMS App II) off Argentina, and southern right whales, *Balaena glacialis australis*, (CMS App I), off both Argentina and Uruguay. WDCS has historically supported critically-important work on the tucuxi dolphin, *Sotalia fluviatilis*, (CMS App II) in the Cananeia Estuary of Brazil.

Species Profile

Franciscana dolphin, *Pontoporia blainvillei*

Status:

CMS Appendix : I and II

IUCN: Data deficient

Biology and Migration:

This is the only river dolphin species that lives in the sea and prefers shallow coastal waters. Franciscanas are only found in the temperate waters of Eastern South America. Their known range extends from the Doce River, Brazil to Bahia Blanca, Argentina. Sightings are mainly made close to land in water no deeper than nine metres. They are most common in the La Plata estuary but they do not venture upstream farther than Buenos Aires. They are rarely seen in the winter months which suggests some form of seasonal movement.

Threats:

Entanglement in fishing nets, prey depletion, habitat loss, human disturbance, chemical pollution, noise pollution.



Species Profile

Ganges River dolphin, *Platanista gangetica gangetica*

Status:

CMS Appendix I and II
IUCN: Endangered

Biology and Migration:

Ganges River dolphins are found in the Ganges, Meghna and Brahmaputra river systems of Western India, Nepal, Bhutan, and Bangladesh and the Karnaphuli River, Bangladesh. There is discontinuous distribution from the foothills of the Himalayas to the limits of the tidal zone. During the dry season, when the river levels are low, the adults tend to stay in the main river channels. During the monsoon season, they move into creeks and tributaries. Some juveniles rarely leave the tributaries. There are usually more dolphins at junctions where two rivers meet, and just downstream of shallow water. They prefer deeper water, but can be seen in water as shallow as a metre. The building of dams prevents Ganges River dolphins from following migration routes that they may have previously taken.

Threats:

Habitat loss (dam building and dredging), prey depletion, chemical pollution, hunting/whaling, entanglement in fishing nets, human disturbance, noise pollution, boat traffic.

South Asia and the Indian Ocean

Cetaceans in South Asia and the Indian Ocean are subject to a wide range of threats. Habitat loss is especially critical for cetaceans with a limited range, such as the riverine and coastal dolphins. Pollution is known to be high in parts of the region and coastal and riverine artisanal and commercial fisheries bycatch is also a significant issue. Research indicates that there is a consistent rise of water temperature, which is likely to be related to climate change. Erosion and flooding along some coastlines is also expected to increase.

In 2002, the Seventh Meeting of the Conference of the Parties to CMS supported further research into threats and populations studies for cetaceans in the Bay of Bengal and will explore further options with regard to a CMS instrument in the future (CMS Resolution 7.7). CMS in collaboration with WDCCS is engaged in a survey of cetaceans in the Bay of Bengal focused on distribution and initial assessment of threats.

WDCCS research and conservation in the South Asian and the Indian Ocean regions focuses on the Ganges River dolphin, *Platanista gangetica gangetica*, (CMS App I and II) along the Ganges and Brahmaputra rivers of India and Bangladesh, and in Pakistan, on the Indus River dolphin, *Platanista minor*. WDCCS also funds work to monitor the status of the Irrawaddy dolphin, *Orcaella brevirostris*, (CMS App II) in the Sundarbans of Bangladesh. WDCCS has historically also contributed to humpback whale, *Megaptera novaeangliae*, (CMS App I) research off Madagascar.

South East Asia and the South China Sea

The South East Asia region is a combined temperate and tropical region, with many island and coastal ecosystems. The coastal fishing intensity in this region represents an area of concentrated fisheries interaction and bycatch for cetacean species. Species in the Central West Pacific and South China Sea also face habitat loss and degradation, prey depletion, chemical pollution, live captures and directed hunts.

CMS has developed strong research interests in South East Asia, with a project to investigate the status of cetaceans in the Gulf of Tonkin. More recently CMS collaborated with Australia on a survey of cetaceans in the Timor Sea. Two conferences on the biology and conservation of small cetaceans in South East Asia have been held concluding with a draft Action Plan for the conservation of marine mammals in South East Asia. The Seventh Meeting of the Conference of the Parties to CMS encouraged the development of an appropriate CMS instrument on small cetaceans and dugongs in South East Asia and adjacent waters (CMS Recommendation 7.4).

WDCS research and conservation efforts in the region are focused on a program to reduce threats to Irrawaddy dolphins, *Orcaella brevirostris*, (CMS App II), in Indonesia, Thailand and Myanmar, in addition to work assessing the status of Indo-Pacific humpbacked dolphins, *Sousa chinensis*, (CMS App II), in the Andaman Sea and Gulf of Thailand.

Species Profile

Irrawaddy dolphin, *Orcaella brevirostris*

Status:

CMS Appendix :II

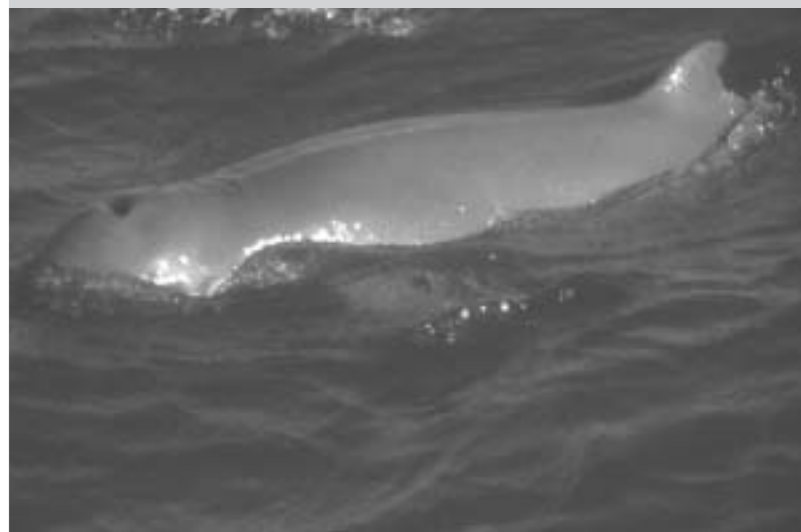
IUCN: Data deficient (some populations are considered critically endangered)

Biology and Migration:

This species of dolphin lives in the shallow, tropical, and sub tropical waters of the Indian and Pacific Oceans, around Indonesia, Northern Australia, and South East Asia. It prefers to live near to the coast and at the mouth of rivers. It also lives upstream in some tropical rivers, such as the river Ayeyarwady (formerly Irrawaddy) in Myanmar (formerly Burma), Mahakam of Indonesia and Mekong of Laos. The species also occurs in isolated waters bodies including Chilka Lake in India and Songkhala Lake in Thailand. It is unusual for an Irrawaddy dolphin to swim farther than two kilometres away from the shore, because they prefer sheltered areas and more cloudy/ turbid waters.

Threats:

Hunting/whaling, entanglement in fishing nets, habitat loss, human disturbance, live capture for captivity.



Species Profile

Humpback whale, *Megaptera novaeangliae*

Status:

CMS Appendix: I
IUCN: Vulnerable

Biology and Migration:

Humpbacks are found in all the oceans of the world but their distribution changes with summer and winter seasons. Most humpbacks migrate each year from their feeding grounds in polar regions in the summer to breeding areas in the warm waters around the Equator in the winter. Northern Hemisphere populations probably never meet Southern Hemisphere populations. Their worldwide population was believed to be divided into various populations (one on either side of both the North Atlantic and North Pacific, and seven in the Southern Hemisphere) with little or no interchange between them. Now, however, it is known that there is certainly some mixing between breeding groups in each ocean basin.

Threats:

Environmental change, noise pollution, chemical pollution, entanglement in fishing nets, prey depletion, hunting/whaling.



The North Pacific Ocean

The North Pacific is a temperate to tropical region, that historically has very high dolphin mortalities occurring in the Eastern Pacific tuna fishery. A number of countries also hunt or whale for a range of cetacean species from Dall's porpoise to the great whales. Recently, fisheries bycatch in West Pacific net and trawl fisheries has increased.

WDCS research and conservation in the North Pacific region focuses on the blue whales, *Balaenoptera musculus*, (CMS App I) found off Baja California Peninsula, Mexico. In the Northwest Pacific, research has focused on the life history and ecology of a population of orcas, *Orcinus orca*, (CMS App II) living off the coast of Russia, north of Japan. In the Northeast Pacific, WDCS is funding research into both the northern and southern resident populations of orcas, found off British Columbia, Canada and Washington State, USA.

The South Pacific Ocean

This region is one of three that are likely to face the most acute effects of climate change. Cetacean interactions with fishing fleets in the South Pacific Ocean (specifically tuna) are now receiving greater attention and bycatch remains a significant issue in the southeast Pacific.

WDCS research and conservation in the region focuses on projects to protect the boto, *Inia geoffrensis*, (CMS App II) in the Colombian Amazon and Orinoco rivers; humpback whale, *Megaptera novaeangliae*, (CMS App I) research along the coast of Ecuador; bottlenose dolphin, *Tursiops truncatus*, (CMS App II) research in Peru, and blue whale, *Balaenoptera musculus*, (CMS App I) research off Chile. In New Zealand, WDCS supports stranding rescue work, as well as the only research project dedicated to orcas, *Orcinus orca*, (CMS App II) in the South Pacific, and Hector's dolphin, *Cephalorhynchus hectori*, conservation work, in the Banks Peninsula Marine Mammal Sanctuary near Christchurch.

The Arctic Ocean

Ozone depletion and global warming threaten cetaceans world wide, but nowhere are the impacts more prominent than in the polar regions. Around ten percent of all the world's riverine discharge flow into the Arctic Ocean, resulting in elevated pollutant levels - a particular concern for cetaceans as marine top predators. Some populations of narwhals, belugas and bowheads are still threatened by hunting.

The Southern Ocean

Like the Arctic, this region represents one of the areas likely to face the most acute effects of climate change. In addition cetaceans are still hunted by scientific whaling fleets. The international fishing industry is known to be expanding their krill harvest for aquaculture feed and science, further depleting this critical food source. Noise pollution, chemical pollution and marine debris are also issues to manage in the southern ocean.

WDCS research and conservation in the region focuses on distribution and abundance research, using Southern Ocean tourist vessels as platforms of opportunity for long and short term population monitoring of minke, fin, humpback and other cetacean populations. Historically, WDCS has funded research into southern right whales, *Balaena australis*, (CMS App I) off the sub-Antarctic Auckland Islands.

Non-Governmental organisations that work on the conservation of cetaceans

ASMS, Swiss Marine Mammal Protection
Greenpeace
GSM, Society for the Conservation of Marine Mammals
HSI, Human Society International
IFAW, International Fund for Animal Welfare
IUCN, World Conservation Union
Tethys Research Institute
WDCS, Whale and Dolphin Conservation Society
WWF, World Wide Fund for Nature International

Species Profile

Beluga (white whale), *Delphinapterus leucas*

Status:

CMS Appendix : II

IUCN: Vulnerable

Biology and Migration:

Belugas are found in Arctic regions. There are a number of beluga populations including one in the Bering, Chukchi and Okhotsk Seas; another in the high-Arctic Canada and west Greenland; in Hudson Bay and James Bay (Canada); and another in the Svalbard area (north of Norway); and there is also a small population in the Gulf of St Lawrence, Canada. They generally spend summer in shallow bays and estuaries and winter in areas of pack-ice, breathing through cracks and holes in the ice.

Threats:

Hunting/whaling, habitat loss, boat traffic/human disturbance, chemical pollution, live capture for captivity.



* All IUCN status references are taken from the Dolphins, whales and porpoises: 2002-2010 Conservation Action Plan for the World's Cetaceans, (2003) Reeves Randall R, Smith Brian D, Crespo Enrique A, and Notarbartolo di Sciara Giuseppe (compilers), IUCN/SSC Cetacean Specialist Group, IUCN, Gland, Switzerland and Cambridge, UK

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