

# Executive Summary

This Action Plan represents a consensus of the IUCN/SSC Cetacean Specialist Group concerning the status of the world's 86 currently recognized species of cetaceans (porpoises, dolphins, and whales), threats to their survival, and measures needed to better understand and address those threats. Two species – the baiji (*Lipotes vexillifer*) and the vaquita (*Phocoena sinus*) – and several geographical populations of whales and dolphins are classified in the Red List as Critically Endangered (Table 1). Other species, notably the Northern Hemisphere right whales (*Eubalaena glacialis* and *E. japonica*), blue whale (*Balaenoptera musculus*), Hector's dolphin (*Cephalorhynchus hectori*), and Ganges/Indus river dolphins (*Platanista gangetica*), are classified as Endangered. Numerous additional populations are known to be in serious danger of extirpation but have yet to be formally assessed for the Red List.

Known or suspected threats include: continued deliberate killing of some species for food and predator control; incidental killing as a result of entanglement in fishing gear, collisions with powered vessels, and entrapment in water-regulation devices; removal of live animals from small coastal populations to supply oceanaria and “research/rescue/captive breeding” facilities; and the disruption of foodwebs and depletion of prey resources as a result of industrial or intensive artisanal fishing. Cetaceans, especially freshwater and coastal species, are suffering from degradation of their habitat caused by dam construction, removal of water for irrigation, land “reclamation,” and appropriation of bays for aquaculture operations. Longstanding concerns about the disturbance caused by ship noise, seismic operations, drilling, and other acoustic inputs to the marine environment have expanded to encompass the likelihood that new types of military sonar can cause lethal trauma to deep-diving cetaceans. Exceptionally high levels of chemical contaminants in the tissues of cetaceans may be affecting the animals' immune and reproductive systems.

Any removals from wild populations, whether by hunting, bycatch, or live-capture, need to be within sustainable limits,

which means that sufficient data must be available and a regime for enforcement and monitoring in place. Because fishery bycatch is such a serious and widespread threat to cetacean populations, there is an urgent need to develop alternative fishing gear and practices, and at the same time to implement immediate mitigation measures, ranging from fishery closures to the mandatory use of acoustic deterrents to keep animals away from nets. While research is underway to better define the threats of chemical and noise pollution, acoustic trauma, and climate change, precautionary measures should be taken to moderate (and preferably eliminate) the relevant anthropogenic input factors.

Fifty-seven specific initiatives are identified and described for conservation-related research and education: 21 in Asia, 18 in Latin America, six in Africa, seven in Europe, two in North America, and three that are non-regional. The Cetacean Specialist Group has traditionally focused on problems in developing countries, presuming that the needs for support and expertise are greater there than in Europe, North America, and Oceania. Also, most of the group's attention has been devoted to the small and medium-sized cetaceans, as they are not officially recognized as falling within the aegis of the International Whaling Commission. For the first time, this Action Plan identifies specific management actions needed to prevent the extinction of several of the most seriously threatened species and populations. The baiji and vaquita can be saved only by immediate efforts to drastically reduce fishery bycatch. Tighter fishery management is also needed urgently for at least some populations of franciscanas (*Pontoporia blainvillei*), Hector's dolphins, Irrawaddy dolphins (*Orcaella brevirostris*), and short-beaked common dolphins (*Delphinus delphis*). It is important to emphasize that these recommended actions are a mere beginning. To achieve our goal of conserving the planet's diverse and abundant cetacean fauna will require not only rapid progress on the work laid out in this Action Plan, but also a much wider and deeper vision of what needs doing, and the will to pursue that vision without delay.

**Table 1. Species and populations classified on the Red List as Critically Endangered.**

Species/population	Distribution	Main threats	Conservation efforts
Baiji	China	Fishery bycatch; habitat degradation	Some study but inadequate protection
Vaquita	Mexico	Fishery bycatch	Intensive study and some initial protective measures
Svalbard population of bowhead whales	Norway, Greenland, Russia	Very low numbers due to past hunting	Adequate protection but more monitoring needed
Mahakam River population of Irrawaddy dolphins	Indonesia	Fishery bycatch; habitat degradation	Some study but inadequate protection
North Island population of Hector's dolphins	New Zealand	Fishery bycatch	Intensive study and management

# Introduction

Conserving cetaceans (and other wildlife) is an ongoing process that can never be considered complete. Conservation measures that are already in force need to be evaluated and re-evaluated, and new approaches need to be developed to address threats that were unrecognized or non-existent until recently. For example, global warming, noise pollution from low-frequency, high-amplitude sound sources, and reduced availability of prey are factors that were hardly considered as threats to cetaceans in the past but are now of great concern. At the same time, the all too familiar threats of accidental killing in fishing gear and exposure to toxic chemicals appear to be intensifying and remain almost intractable. It is likely that cetaceans have already been eradicated in some areas where fishing has been intensive, and the insidious effects of toxic contaminants may have taken a toll that will never be well understood and fully documented.

The claim that humans have not yet caused the extinction of any cetacean species is becoming increasingly tenuous. Surviving total populations of two species, the baiji (Yangtze River dolphin, *Lipotes vexillifer*) and the vaquita (Gulf of California porpoise, *Phocoena sinus*), are thought to be in the tens and mid-hundreds, respectively, and are probably still declining (Zhou *et al.* 1998; Jaramillo-Legorreta *et al.* 1999). Only about 300–350 North Atlantic right whales (*Eubalaena glacialis*) remain, almost all of them concentrated along the heavily industrialized east coast of North America (Katona and Kraus 1999; IWC 2001b). Although there may still be several hundred North Pacific right whales (*E. japonica*) in the Sea of Okhotsk, this species, too, has essentially disappeared from most of its range elsewhere in the North Pacific and is in grave danger of extinction (IWC 2001b).

Some populations of other species, such as the gray whales (*Eschrichtius robustus*) in the North Atlantic (Mead and Mitchell 1984) and possibly the blue whales (*Balaenoptera musculus*) in the western North Pacific (Reeves *et al.* 1998), have been exterminated. Many local and regional populations are seriously depleted. Among these are the belugas (white whales, *Delphinapterus leucas*) in Ungava Bay (Canada), in Cook Inlet (Alaska), and off West Greenland (IWC 2000a); the Irrawaddy dolphins (*Orcaella brevirostris*) in the Mahakam River of Borneo (Kreb 2002) and the Mekong River of Vietnam, Cambodia, and Laos (Smith *et al.* 1997a; Baird and Mounssouphom 1997); the finless porpoises (*Neophocaena phocaenoides*) in portions of the Inland Sea of Japan (reduced by more than 95% since the 1970s; Kasuya *et al.* 2002) and the Yangtze River (Wang *et al.* 2000; Zhou *et al.* 2000; Reeves *et al.* 2000a); and the harbor porpoises (*Phocoena phocoena*) in the Baltic and Black Seas (Buckland *et al.* 1992; Donovan

and Bjørge 1995; IWC 1996). One population of spinner dolphins (*Stenella longirostris*) in the eastern tropical Pacific was reduced by at least half since the 1950s (Wade 1993). Other populations remain at extremely low levels after having been reduced by intensive commercial whaling in earlier times. For example, the gray whale population in the western North Pacific (Brownell *et al.* 1997; Weller *et al.* 2002) and bowhead whale (*Balaena mysticetus*) populations in the Sea of Okhotsk and in Arctic waters adjacent to the North Atlantic Ocean (IWC 1992; Zeh *et al.* 1993; Clapham *et al.* 1999) are severely depleted, and their prospects for recovery are uncertain.

Conservationists and scientists campaigned for many years to bring the direct exploitation of large cetaceans under effective control, largely by changing the policies of the International Whaling Commission (IWC), a body established under the 1946 International Convention for the Regulation of Whaling (Gambell 1999). Right and bowhead whales have been protected from commercial whaling under international law since 1935, gray whales since 1946, and humpback whales (*Megaptera novaeangliae*) and blue whales since the mid-1960s (Best 1993). The worldwide moratorium on commercial whaling, which took effect beginning in 1986 and continues at the time of this writing, was the most recent in a long line of protective measures implemented by the IWC. However, there was rampant non-compliance and falsification of documents by the Soviet whaling fleet (Yablokov 1994). Many thousands of right whales, blue whales, and humpback whales in the Southern Ocean and North Pacific were taken illegally during the 1950s and 1960s (Best 1988; Zemsky *et al.* 1995a, 1995b; Mikhalev 1997; Tormosov *et al.* 1998). These actions jeopardized population survival in some instances, and they have set back recovery for many decades. Japanese post-war records of sperm whale (*Physeter macrocephalus*) catches have also been shown to be unreliable (Kasuya 1999a), as have some of the whaling records from a shore station in South Africa (Best 1989). This evidence has reinforced skepticism about the effectiveness of international whaling management.

There is reason for cautious optimism about the status and future of some populations of great whales (i.e., the 14 recognized baleen whale species and the sperm whale). For example, some populations of southern right whales (*Eubalaena australis*) (IWC 2001b), humpback whales in many areas (e.g., Bannister 1994, Smith *et al.* 1999), gray whales in the eastern North Pacific (Jones and Swartz 2002), and blue whale populations in the eastern North Pacific (Carretta *et al.* 2001) and central North Atlantic (Sigurjónsson and Gunnlaugsson 1990) have shown signs of recovery under protection. In contrast, the continued small

numbers of North Atlantic and North Pacific right whales, southern right whales in some areas of former abundance (e.g., around New Zealand, off Peru and Chile) (IWC 2001b), bowhead whales in some areas (see above), and blue whales and fin whales (*Balaenoptera physalus*) in the Southern Hemisphere, mean that there is no reason to be complacent about their futures (Clapham *et al.* 1999).

In the 1980s and 1990s, direct exploitation was less of an immediate threat to most endangered whale populations than was accidental mortality from ship-strikes and entanglement in fishing gear. Reduced abundance of prey as a result of overfishing (Bearzi *et al.* 1999) and possibly climate change (Würsig *et al.* 2001), the direct effects of pollution on health and reproduction (O'Shea *et al.* 1999; Reijnders *et al.* 1999), and the disturbance caused by noise from ship traffic and industrial activity (Gordon and Moscrop 1996; Würsig and Richardson 2002) have become additional major concerns in recent decades.

There is still much interest in the conservation of the great whales. The high public profile of commercial whaling ensures that governments, non-governmental organizations (NGOs), and inter-governmental organizations (IGOs) will continue to apply pressure on whaling nations to eliminate whaling altogether, or at least to keep harvests within sustainable limits. The Cetacean Specialist Group (CSG) membership has always been well represented in the IWC's Scientific Committee as well as in many of the relevant national government agencies, NGOs, and other IGOs. Members therefore have been involved directly in the work of developing an effective regime for whaling management and large whale conservation.

The first IUCN Cetacean Action Plan (Perrin 1988, 1989) attempted to expand the attentions and energies of conservationists to encompass the approximately 70 species of smaller and medium-sized cetaceans as well as the great whales (Brownell *et al.* 1989), while the second Cetacean Action Plan (Reeves and Leatherwood 1994a) further emphasized freshwater cetaceans and coastal populations of marine cetaceans as particularly at risk and, thus, needing concerted conservation efforts. These animals' exceptional vulnerability is often tied to their geographically restricted range, relatively narrow ecological niche, and dependence on resources that are also used intensively by humans.

The survival of freshwater cetaceans depends on the environmental quality of rivers, lakes, and estuaries in southern Asia and South America. These animals are in direct competition with humans for the necessities of life: food and fresh water. Whether to control flooding, produce electricity, or provide water for agricultural, domestic, or industrial uses, the impetus for constructing dams, barrages, embankments, and other river modifications grows relentlessly. These structures interrupt the movements of cetaceans and their prey and reduce the availability of suitable habitat (Reeves and Leatherwood 1994b; Reeves and Smith 1999; Smith and Reeves 2000b). Moreover, economic

growth through industrialization and agricultural modernization, coupled with burgeoning human populations, means that rivers, lakes, and estuaries must absorb ever-increasing amounts of waste, while at the same time they are expected to provide increased quantities of fish, crustaceans, and molluscs for human consumption. Although freshwater cetaceans enjoy religious or customary protection from hunting in some areas (e.g., Baird and Mounsouphom 1997; Smith *et al.* 1997a, 1997b), they face many indirect threats, (e.g., accidental entanglement in fishing gear, electrocution from electric fishing, collisions with powered vessels, underwater detonations, and polluted or diminished food supplies). In some areas, deliberate killing continues, and there is a demand for river dolphin products such as meat and oil (Reeves *et al.* 1993; Mohan *et al.* 1997; Sinha 1997; Smith *et al.* 1998).

Coastal marine cetaceans are also perceived as competing with humans for certain resources, often with no direct evidence to support such perceptions. Some populations have experienced high mortality due to accidental entanglement in fishing gear, and in areas such as Peru (Read *et al.* 1988; Van Waerebeek *et al.* 1997), Sri Lanka (Leatherwood and Reeves 1989), the Philippines (Leatherwood *et al.* 1992; Dolar *et al.* 1994), and West Africa (Van Waerebeek and Ofori-Danson 1999), incidental catches have given rise to directed ones as fishermen have become more aware of markets for cetacean products. Culling, inspired by the perception that cetacean depredations on fish stocks were responsible for local declines in fish harvests, continued at least until the early 1990s in Japan (Kasuya 1985; Anon. 1992; Kishiro and Kasuya 1993) and possibly other areas such as the Philippines and Turkey (Earle 1996; Northridge and Hofman 1999). Although the officially sanctioned culling of cetaceans no longer occurs on a large scale, fishermen sometimes retaliate in their own ways (e.g., Matkin and Saulitis 1994; Reeves *et al.* 1999c).

The IUCN Red Data Book on cetaceans (Klinowska 1991) provided a comprehensive review of information on each species, and the 1994 IUCN Cetacean Action Plan included an abbreviated update (Reeves and Leatherwood 1994a). In the present version of the Cetacean Action Plan, we have again included brief summaries of the conservation status of each species of cetacean (Chapter 4). Current, authoritative information on the status of many populations is provided in the IWC's report series, which has continued since 1999 as the *Journal of Cetacean Research and Management*. Concurrent with its decision in 1982 to implement a global moratorium on commercial whaling (IWC 1983), the IWC called for "comprehensive assessments" of the commercially important whale stocks. By the middle of 2002, major reviews, and in some cases one or more intensive reassessments, had been completed for minke whales (*Balaenoptera bonaerensis* and *B. acutorostrata*) in the Southern Hemisphere, North Atlantic, and western North Pacific; fin whales and humpback whales in the North

Atlantic; bowhead whales in the Bering, Chukchi, and Beaufort seas; gray whales; and right whales.

The IWC's Standing Sub-committee on Small Cetaceans, established in 1974 (Mitchell 1975), has continued its annual reviews of priority stocks and conservation problems. The Commission encourages the Scientific Committee to address scientific issues regarding small cetaceans even though there is no agreement among member nations concerning the IWC's legal competence in this area. Annual meetings of the Sub-committee focus on particular species, stocks, or technical problems (e.g., methods of bycatch reduction), and an effort is made in each case to summarize the state of knowledge and identify ongoing research and conservation needs. At its meeting in 2000, for example, the Sub-committee discussed the status of freshwater cetaceans (IWC 2001a) and completed its deliberations concerning acoustic deterrents (IWC 2000a) and other approaches to bycatch reduction (IWC 2001c). Special IWC volumes have been published on the genus *Cephalorhynchus* (Brownell and Donovan 1988), the Northern Hemisphere pilot whales (genus *Globicephala*) (Donovan *et al.* 1993), the problem of incidental mortality in passive nets and traps (Perrin *et al.* 1994), the porpoises (family Phocoenidae) (Bjørge and Donovan 1995), and issues related to chemical pollutants (Reijnders *et al.* 1999).

The most important parts of this Cetacean Action Plan, in a practical sense, are the sections that describe research and education projects considered high priorities for conservation (Chapter 5) and offer recommendations for management actions to benefit some of the most threatened species and populations (Chapter 6). It is hoped that, as in the past, government agencies, IGOs, and NGOs will find the projects outlined in Chapter 5 useful in planning conservation efforts and making decisions on how to allocate funds. Numerous national governments and NGOs, and some IGOs, have produced their own plans of action for cetacean

conservation (or in many instances, marine mammal conservation) (e.g., Bannister *et al.* 1996; Anon. 1997; Jefferson and Reeves 1999; Smith and Smith 2000; Notarbartolo di Sciara *et al.* 2001). For the most part, these different initiatives are complementary to, and convergent with, this IUCN Action Plan. The dynamic, ever-evolving threats to cetaceans demand that multiple approaches be pursued and that participation in addressing the threats be broad and inclusive.

Previous IUCN Cetacean Action Plans focused on conservation-oriented research and generally refrained from making explicit recommendations for conservation action. The inclusion of Chapter 6 in the present plan reflects a growing sense of frustration and impatience among CSG members. Most of the projects proposed in the 1988 and 1994 Action Plans have been either fully or partially implemented. Completed studies have helped elucidate known problems, improved the basis for assessing vulnerable populations, and identified and characterized emergent threats. What they have not done, and indeed research alone can never do, is bring about positive change. All too often, the residue of uncertainty that surrounds any scientific effort provides an excuse for inaction. Officials call for more research rather than making difficult choices about limits to human activity, or investing in mitigation. Thus, although the CSG's greatest strength continues to reside in its scientific expertise and independence from political constraints, we have chosen in this Action Plan to set forth a series of recommendations for action that are well-justified scientifically and that are urgently needed to improve the survival prospects of threatened species and populations. As explained in Chapter 6, these recommendations address only a sample of the vast array of problems that are pending in the field of cetacean conservation. In that sense, they are a mere beginning.