2002–2010 Conservation Action Plan for the World's Cetaceans

Dolphins, Whales and Porpoises

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Harbor porpoise, *Phocoena phocoena*

The harbor porpoise is widely distributed in coastal waters of the temperate and subarctic Northern Hemisphere (Read 1999). Populations in the North Pacific, North Atlantic, and Black Sea/Sea of Azov are geographically isolated from one another. Numerous regional populations (stocks) are also recognized, particularly in the North Atlantic (Rosel 1997; Rosel *et al.* 1999). Abundance has declined in many areas as a result of excessive incidental mortality in fishing operations. Although large commercial catches were once made in the Baltic, North, and Black seas, the only area known to have a large direct hunt today is West Greenland, where a thousand or more porpoises are shot for food each year (Annual Reports of North Atlantic Marine Mammal Commission, NAMMCO). Depletion of prey populations, pollution, and other anthropogenic disturbances are believed to have contributed to population declines, but the evidence is less conclusive for these factors than it is for fishery bycatch.

The IWC Scientific Committee has reviewed the status of harbor porpoises in the North Atlantic, most recently in 1995. The aggregate abundance for surveyed areas in the North Atlantic totals well over half a million (Donovan and Bjørge 1995; Hammond *et al.* 2002), and there are probably close to 100,000 harbor porpoises in US waters of the eastern North Pacific (Angliss *et al.* 2001; Carretta *et al.* 2001). The immediate conservation concern, therefore, is not for the species but rather for those regional populations that have been severely depleted and remain threatened. Populations in the Baltic Sea and the Black Sea/Sea of Azov are classified as Vulnerable in the IUCN Red List but may in fact be Endangered. In the Baltic, survey data show that the species is now rare in areas where it was formerly common (IWC 1996); in the Black and Azov seas, there is a lack of information on porpoise abundance and mortality but also evidence of a generalized ecological collapse (Öztürk 1996).

Spectacled porpoise, *Phocoena dioptrica*

This small porpoise has a fairly broad distribution in subantarctic and cold temperate waters of the Southern Hemisphere (Goodall and Schiavini 1995; Brownell and Clapham 1999a). It is uncertain whether the animals near large islands and island groups (e.g., Falkland, South Georgia, Kerguelen, Heard, Tasmania, Macquarie, Auckland, and Antipodes) constitute separate populations, and similar uncertainty exists for the groups found along the South American mainland (e.g., Uruguay and Tierra del Fuego). Sightings made far offshore between 54°S and 59°S (IWC 1991) suggest that there may be some movement across expanses of open ocean. The spectacled porpoise remains a very poorly known species, and its conservation status is uncertain in all areas. Some mortality occurs in fishing gear, but the scale of this mortality relative to population abundance and rate of increase is completely unknown.

Vaquita (Gulf of California porpoise), *Phocoena sinus*

The vaquita is endemic to the upper Gulf of California, Mexico (Vidal *et al.* 1999). Its total abundance is estimated to be in the mid-hundreds (Jaramillo-Legorreta *et al.* 1999), and the population may be declining rapidly (Barlow *et al.* 1997). Commercial and artisanal fishing for a variety of species (e.g., sciaenids, scombrids, shrimp, and elasmobranchs) is intensive in the upper Gulf, and the incidental killing of vaquitas, particularly in gill and trawl nets, is the principal threat (Vidal 1995; D'Agrosa *et al.* 1995, 2000; Rojas-Bracho and Taylor 1999). In addition, this Critically Endangered porpoise's habitat has been drastically altered by damming of the Colorado River in the United States. Long-term changes due to the reduced freshwater input are matters of concern and should be investigated. However, the immediate priority is for decisive action to eliminate the bycatch of vaquitas in fishing gear.

Burmeister's porpoise, *Phocoena spinipinnis*

This porpoise is endemic to coastal waters of the South American mainland from northern Peru southward, round Cape Horn, and northward to southern Brazil (Goodall *et al.* 1995; Brownell and Clapham 1999b). Some evidence suggests that the Burmeister's porpoises in the Pacific and Atlantic belong to separate populations (Corcuera *et al.* 1995). They are frequently killed in set and drift gillnets throughout most of their range. Some are killed deliberately in the Peruvian multi-species fishery that employs both gillnets and harpoons to take cetaceans (Van Waerebeek and Reyes 1994), and additional animals may be taken at least occasionally for crab bait in southern Chile (cf. Lescrauwaet and Gibbons 1994). The presumably substantial but poorly documented take of this species in Peru is the greatest concern. Nothing is known about abundance or trends in any area.

Dall's porpoise, *Phocoenoides dalli*

This porpoise is endemic to the North Pacific and adjacent seas. It occurs as far south as Baja California, Mexico, in the east and northern Japan (including the Sea of Japan) in the west, northward to the southern Bering Sea (Houck and Jefferson 1999). Two subspecies are recognized based on geographical variation in color patterns. *Dalli*-type animals (*P. d. dalli*) predominate in most of the species' range,

The CSG **strongly recommends** that *if the Chinese government elects to continue the effort to translocate remaining dolphins into the "semi-natural reserve,"* the following conditions be met (IWC 2001a):

- Capture operations be improved to prevent injury to the dolphins;
- Water quality in the reserve be rigorously monitored, with appropriate measures taken to ensure high standards; and
- The finless porpoises be removed from the reserve to prevent any possible disadvantageous ecological or behavioral interactions with the dolphins.

Vaquita, or Gulf of California porpoise

History: When the first Cetacean Action Plan was published in 1988, the vaquita's status was uncertain and it was classified in the IUCN Red List as Vulnerable (Figure 36). The only Action Plan recommendation at that time was to monitor the incidental catch of vaquitas in local fisheries (Perrin 1988). In 1991, on the recommendation of the IWC's Scientific Committee, the vaquita's Red List status was revised from Vulnerable to Endangered (Klinowska 1991). In 1992, President Carlos Salinas of Mexico created the "Comité Técnico para la Preservación de la Totoaba y la Vaquita" (Technical Committee for the Preservation of the Totoaba [an endangered sciaenid fish] and Vaquita). Prof. Bernardo Villa Ramírez, the leader of this group, developed a recovery plan for the vaquita that included broad-reaching recommendations to monitor fishery bycatch, stop illegal fishing for and export of totoabas, evaluate habitat issues, estimate population size and trends, and coordinate local, state, federal and international recovery efforts (Villa Ramírez 1993). On 10 June 1993, the Government of Mexico established the Biosphere Reserve of the Upper Gulf of California and Colorado River Delta, in large part to protect the habitat of vaquitas and totoabas. The management plan for this reserve called for a ban on commercial fishing in its "nuclear zone."

The 1994 Cetacean Action Plan described the vaquita as "the most critically endangered marine cetacean" but added no new vaquita projects, on the understanding that the Mexican navy was helping to enforce the ban on the use of large-mesh gillnets for totoabas in the northern Gulf of California and that fishing activities within the vaquita's range were being effectively monitored (Reeves and Leatherwood 1994a). The earlier Action Plan recommendation for monitoring gillnet fisheries in the northern Gulf of California was carried out from 1993 to 1995 and revealed that all gillnets used in the upper Gulf (mesh sizes of 7–20 cm) were catching vaquitas and that the bycatch in small-mesh gillnets (including those for shrimp and chano (*Micropogonias megalops*)) was sufficient, by itself, to threaten the survival of the species (previously, large-mesh gillnets had been believed to be the primary threat)

Figure 36. Vaquitas that were captured and killed accidentally during "experimental" gillnet fishing to assess the population status of totoabas (*Totoaba macdonaldi*) near El Golfo de Santa Clara, Sonora, Gulf of California, Mexico (Brownell *et al.* 1987). *Photo: Alejandro Robles.*

(D'Agrosa 1995; D'Agrosa *et al.* 2000). At its 1994 annual meeting, the IWC's Scientific Committee commended the Government of Mexico for its efforts and made three major recommendations: (a) to monitor fishing activities and bycatch throughout the vaquita's range; (b) to conduct a complete survey of vaquita abundance; and (c) to take immediate action to eliminate incidental catches of vaquitas (IWC 1995). In 1996, the vaquita was one of two cetacean species (along with the baiji) listed by IUCN as Critically Endangered (Baillie and Groombridge 1996).

Surveys between 1986 and 1993 indicated that there were only a few hundred vaquitas left (Barlow *et al.* 1997). Soon after these results became known, the Government of Mexico convened an international panel of experts to form a recovery team – El Comité Internacional para la Recuperación de la Vaquita (the International Committee for the Recovery of the Vaquita), generally known as CIRVA. This group met in January 1997 and February 1999 to develop recommendations to promote the recovery of the species. At its first meeting, CIRVA recommended that a new, more nearly complete abundance survey should be undertaken. As a direct result of this recommendation, a joint Mexico/US survey was carried out later in 1997, confirming that the entire population numbered in the hundreds of individuals (probably fewer than 600) (Jaramillo-Legorreta *et al.* 1999). Also at its first meeting, CIRVA reviewed risk factors affecting vaquitas and concluded that fishery bycatch represented the greatest and most immediate threat. Although loss of fresh water and associated nutrient input from the Colorado River was not viewed as an immediate threat to the species (Rojas-Bracho and Taylor 1999), long-term changes in vaquita habitat were identified as a concern that must be investigated. CIRVA's 1999 recommendations were that: (a) vaquita bycatch be reduced to zero as soon as possible; (b) the southern boundary of the

Biosphere Reserve be expanded to incorporate the known range of the vaquita; (c) gillnets and trawlers be phased out in the entire Biosphere Reserve; (d) effective enforcement of fishing regulations begin immediately; (e) acoustic surveys for vaquitas be initiated; (f) research on alternative gear types be started; (g) public outreach and education be developed; (h) consideration be given to the compensation of fishermen for lost income; (i) research be initiated on vaquita habitat; and (j) international and non-governmental cooperation be fostered (Rojas-Bracho and Jaramillo-Legorreta 2002). At its second meeting, CIRVA analyzed potential mitigation alternatives (e.g., pingers, season and area closures) and concluded that banning gillnets in the entire range of the species was the single measure most likely to prevent extinction. Much additional information on vaquitas and their risk factors has been published in recent years (Rojas-Bracho and Taylor 1999; Rosel and Rojas-Bracho 1999; Taylor and Rojas-Bracho 1999). In 2000, the Joint Initiative for the Gulf of California was developed by a coalition of World Wildlife Fund (WWF-Mexico), Conservation International (CI-Mexico), and other NGOs. Under this initiative, WWF organized and hosted a meeting of collaborators (working with CIRVA) to promote vaquita conservation. A working group was established to develop a strategy to promote vaquita recovery based on CIRVA's recommendations. This group is currently working to ensure that these recommendations are followed.

Remaining issues: Notwithstanding the progress outlined above, the vaquita remains Critically Endangered. It appears certain that unless anthropogenic sources of mortality are eliminated, the species will not survive much longer. Bycatch remains the single biggest issue, and fishing with gillnets (that are known to take vaquitas) has not been eliminated from the porpoise's distribution range. It is now widely recognized that the "nuclear zone" of the Biosphere Reserve has no overlap with the core area of vaquita abundance and that almost half of all vaquitas are entirely outside the reserve at any one time. A ban on gillnet fishing in the nuclear zone or even in the whole of the Biosphere Reserve is not likely to be sufficient to ensure the survival of the species. Furthermore, it is clear that fishing with gillnets is continuing even in the nuclear zone where it is prohibited, indicating that enforcement is a major problem that needs immediate attention.

Conservation recommendations: The CSG **recommends** that immediate actions be taken to prevent the extinction of the vaquita. Specific needed actions fall within the recommendations already developed by other groups (for summaries, IWC 2000a, 2001a). We emphasize three points, as follows:

- Fishing methods that result in bycatch of vaquitas should be eliminated throughout the range of the species.
- Fishery monitoring and enforcement should be initiated and maintained to ensure that the risks to vaquitas are reduced.
- Monitoring of the vaquita population should be initiated with the goal of detecting trends in abundance (recovery or further declines) over a long time period (decades). Another ship survey will not be sufficient because variances in abundance estimates are too great (Taylor and Gerrodette 1993). A new, more cost-effective method (such as acoustic surveys) is needed to detect trends in the abundance of this rare species.

To ensure the long-term success of conservation efforts, socio-economic alternatives will be needed for the people whose incomes are affected by restrictions on gillnet (and other) fisheries in the upper Gulf of California.

Franciscana

History: The franciscana has been subject to incidental mortality in gillnets along the coasts of Brazil, Uruguay, and Argentina for more than 50 years. Although no meaningful survey data on the abundance of franciscanas were available until recently (Secchi *et al.* 2001a), the scale of observed and estimated mortality has been sufficiently high to cause great concern about their conservation status (e.g., references cited in Chapter 4). South American experts who have met at regular intervals since 1986 to consider the species' research and conservation needs have concluded that catch rates in at least some areas are unsustainable. Recent modeling studies have indicated that the franciscana stock off southern Brazil and Uruguay (Secchi *et al.* in press a) is declining due to the unsustainable levels of bycatch (Secchi 1999; Secchi *et al.* 2001b, in press b; Kinas 2002). Studies of stranding rates provide additional evidence (Pinedo and Polacheck 1999). The franciscana may be at greater risk of extinction than any other cetacean species in the western South Atlantic.

Key issue: There is no doubt that the greatest immediate requirement for franciscana conservation is to reduce levels of incidental mortality in gillnets.

Conservation recommendations: Because of the difficulty and cost of conducting surveys of franciscanas, and of obtaining rigorous estimates of bycatch mortality in the small-scale, artisanal gillnet fisheries thought to be responsible for most of the mortality in some areas, it is unlikely that the scientific argument for precautionary management can be made much stronger in the near future than it is now. Due to the past efforts of scientists from Brazil, Uruguay, and Argentina, the existing evidence is sufficient to justify management action, with the proviso that efforts to delineate stock boundaries, assess abundance, and quantify bycatch mortality continue and, if possible, be expanded. The CSG **urges** management authorities to implement measures to reduce franciscana mortality. The following approaches are **recommended**:

- Modify fishing gear and practices, e.g., by forcing changes in fishing areas, reducing the total fishing