On the Brink:
Global Priorities for Saving Dolphins and Porpoises Threatened by Bycatch

Spinner dolphin, (Stenella longirostris) Fiji.
© WWF-Canon / Cat HOLLOWAY

The greatest threat to whales, dolphins and porpoises is "bycatch" – accidental entanglement in fishing gear that causes these animals to become trapped underwater so they cannot reach the surface to breathe.

At least 308,000 whales, dolphins and porpoises are killed in fishing gear each year in the world's oceans. At this rate, several species and many populations will be lost in the next few decades if nothing is done. Urgent national and international action is needed.

WWF has responded to the need for global leadership on the bycatch issue by launching a global bycatch reduction initiative. As part of that effort, a working group of the world's leading dolphin and porpoise scientists was asked to rank the populations in crisis where little is being done for them but where intervention is likely to reverse the decline. They did so with the following criteria in mind:

- cases where a species' or population's survival is immediately at risk from bycatch and is not being addressed adequately;
- circumstances where rapid progress could be made with a modest investment of resources;
- situations in which bycatch is believed to pose a threat to dolphins and porpoises but a quantitative assessment is needed to verify the risk; and
- fisheries in which a currently available solution, either technical or socio-economic, or a combination of the two appears feasible.

This list is meant to serve as a guide for prioritizing efforts to reduce bycatch of cetaceans worldwide. WWF hopes that governmental decision-makers, aid agencies, nongovernmental organizations and related audiences will consult this list when allocating resources. These are by no means the only problems needing attention; they are the ones that best fit the criteria set for this assessment. It should be noted that all the priorities presented here involve gillnets.

Top Opportunities for Investment of Resources

Irrawaddy Dolphin *(Orcaaella brevirostris)*; Malampaya Sound, Philippines, Crab Net/Trap Fishing
Population: about 77 individuals

This population of Irrawaddy dolphins lives in the Malampaya Sound in the Philippines, where it is threatened by accidental entanglement in crab nets. Available information suggests that the death rate of Irrawaddy dolphins that die in crab nets has gone up from 2.5 percent to 4.5 percent. This population is so critically endangered that even low-level bycatch threatens its future.

The following steps can help the Irrawaddy in the Philippines: promotion of economic alternatives to the crab fishery, improvement of crab pot catching efficiency, development of community-based nature tourism, enhancement of the green mussel fishery, establishment of "gillnet-free" zones in critical habitat, promotion of grow-out pens for groupers and other high-value fish, and long-term monitoring of dolphin abundance and mortality.

Irrawaddy Dolphin *(Orcaaella brevirostris);* Mekong, Mahakam and Ayeyarwady Rivers of Vietnam and in Chilka Lake of India and Songkhla Lake of Thailand, Gillnet Fishing
Population: *50-70 individuals per population*

In the Mekong River from 2001-2003, an average of four deaths per year were attributed to gillnet entanglement out of a population of only 69 individuals. In the Mahakam River from 1997-1999, an average of more than three deaths per year were attributed to gillnet entanglement out of a population of only 34. In Songkhla Lake from 1990-2003, at least 15 Irrawaddy dolphins were killed in gillnets and the population now may number as few as eight. In the Ayeyarwady River in 2002, the number of Irrawaddy dolphins killed in gillnets could not be documented but 3,050 gillnets, which have been a significant contributor to the decline in the species' number and range, were counted at one time.
Efforts to educate local fishermen about bycatch have proven successful in some areas. Fishermen on the Ayeyarwady, for instance, now scare away Irrawaddy dolphins from their gillnets by striking two iron bars together underwater as a sound deterrent. However, bycatch reduction will also require socio-economic incentives to ensure the support of local fishermen, nature-centered tourism managed by local fishermen, simple technological solutions to minimize the potential for gillnet entanglement, requiring fishermen to tend their nets to keep dolphins out or release them, and networks of protected areas where gillnets are banned but traditional dolphin-safe fishing methods are promoted.

Indo-Pacific Humpback Dolphin (*Sousa chinensis)* and **Indo-Pacific Bottlenose Dolphin** *(Tursiops aduncus)*; the South Coast of Zanzibar (Tanzania), East Africa, Drift and Bottom-set Gillnets
Populations: *Humpbacked in Zanzibar about 71, Bottlenose in Zanzibar around 161*

Indo-Pacific humpback dolphins and bottlenose dolphins found near the southern coast of Zanzibar were once hunted for bait, which reduced their populations. Hunting both species is now illegal. A 2003-2004 observer program indicates that 5.6 percent of the humpback dolphin population, and 8 percent of the bottlenose dolphin population, are accidentally killed each year by gillnets set by local boats from two villages off the south coast of Zanzibar.

When the hunting of both of these species was banned in 1996, local hunters began using their boats to take tourists dolphin watching, which has been a successful economic alternative. However, because dolphins are still accidentally caught in gillnets, urgent action is needed to reduce the pressure on depleted populations and protect the interests of the local communities for which dolphin-oriented tourism has proven an important part of their livelihood. Government decision-makers need to incorporate bycatch monitoring and mitigation into their fisheries management process.

Irrawaddy dolphin, (Orcaella brevirostris) Indonesia.
© WWF-Canon / Alain COMPOST

Fraser's Dolphin Mindoro, Philippines © L. Dolar

Harbor Porpoise *(Phocoena phocoena)*; Black Sea, Coastal Gillnets
Population: *Unknown*
According to several sources of data from the Black Sea, thousands of porpoises are killed each year, mainly in large-mesh, bottom-set gillnets set to catch turbot, sturgeon and dogfish. There is an urgent need to estimate the magnitude of these bycatches—preferably by using independent onboard observer programs, but at the very least through indirect means to estimate fishing effort and cetacean bycatches in illegal, unreported, or unregulated Black Sea fisheries.

The Scientific Committee of the International Whaling Commission (IWC) has concluded that "the conservation status of this population would be greatly improved if existing fisheries regulations restricting fishing effort and the use of certain gear types were enforced." A sufficient legal and regulatory system is in place to protect this population, but progress is blocked by a lack of implementation and enforcement. Therefore, the next step is to provide assistance to range states in improving the effectiveness of their existing fishery management programs.

Spinner Dolphin *(Stenella longirostris)* and **Fraser's Dolphin** *(Lagenodelphis hosei);* The Philippines, Large-Mesh Driftnets and Purse Seines
Population: *Unknown*
The general population of spinner dolphins is considered at low risk for extinction; however, the population of spinner dolphins in the waters surrounding the Philippines is of great concern. The annual bycatch of small cetaceans in a single tuna driftnet fishery in one province was estimated at 400, and in round-haul gillnets in the Eastern Sulu Sea as many as 3,000 spinners may be caught annually. Fraser's dolphins face the same predicament. Generally Fraser's dolphins are abundant, but the high rate of bycatch in the Philippines threatens its survival there. In a recent assessment survey of 105 fishing villages in the area, 67 percent were found to have some level of cetacean bycatch. Though comprehensive population abundance data does not exist for these species nationwide, the best available data suggests that these bycatch levels are unsustainable.

What is most needed is comprehensive monitoring and documentation of how much the fleets are fishing and how much bycatch they are landing. This can be done by sending onboard observers out to fish with the major fleets as well as having people stationed on docks to interview incoming boats on what — and how much— they caught.

Atlantic Humpback Dolphin *(Sousa teuszii);* Northern Gulf of Guinea (Ghana, Togo) Coastal Gillnet Fishing
Population: *Unknown*
Although no population numbers are available, this dolphin has become rare in at least two areas where it was once very common. The high density of fishing in this area is viewed as the biggest threat to the humpback dolphin because of entanglement in fishing gear and diminishing prey. These dolphins are a high priority for research and conservation because of their restricted range, narrow ecological niche and generally low population levels.

Because fisheries authorities in Ghana and Togo remain unconvinced of the severity of the problem, better data is essential. Field investigations are needed to determine whether humpback dolphins are still present in Ghana's Volta River region and in western Togo, and whether there is cross-border movement. Affirmative results could increase political will for conservation and stimulate cooperation between the two countries. Adding this species to the conservation program of Ada Sanctuary at the mouth of the Volta, a RAMSAR site, would boost its visibility and spur action.

With sufficient funding and appropriate training, Ghana and Togo could initiate systematic data collection at the national level, and over time implement sound conservation measures. Although gillnet closures over large areas are not feasible because so many coastal Ghanaians live from the sea, certain areas like Ada Sanctuary could be declared off-limits to gillnet fishing. Also, the Ghana and Togo fisheries and wildlife departments should cooperate to ban or at least limit commerce in cetacean products. In the longer term, introduction of tourism focused on dolphin watching seems feasible, as species diversity is unusually high, seas are calm, and tourism to Ghana is rising.

Bottle-nosed dolphin,
(Tursiops truncatus)
Bahía Islands, Honduras.
© WWF-Canon / Chris Martin BAHR

Burmeister's Porpoise *(Phocoena spinipinnis)*; Off the Coast of Peru, Artisanal Gillnet Fishing
Population: *Unknown*
This porpoise is one of the most frequently bycaught cetaceans in the waters of Peru, where thousands of Burmeister's porpoises were caught annually until it became illegal to sell their meat in 1994. Estimating the scale of bycatch actually became problematic after the ban in 1994 because dead porpoises were no longer available for inspection at fish markets.

An independent observer scheme is required to study factors influencing the bycatch of Burmeister's porpoises by the artisanal fishing fleet. The program should have the following components: a coastal port survey for remains of discarded Burmeister's porpoises to evaluate current fishery-caused mortality relative to former levels; boat-based observers in areas where large numbers of porpoises were killed in the past to document how the porpoises become tangled and exactly how they die; an experimental set-up of an acoustic porpoise-detector to indicate when porpoises are present, as they are so difficult to spot visually; and, compilation, analysis, and publication of substantial existing datasets that are relevant to this problem. These actions should help make a stronger case for the need for gillnet restrictions and marine protected areas in Peru.

Franciscana Dolphin *(Pontoporia blainvillei)*; Argentina, Uruguay, and Brazil, Coastal Gillnets
Population: around 42,078
Franciscana dolphins, the most threatened small cetacean species in the southwestern Atlantic Ocean, live only along the east coast of South America and are highly vulnerable to incidental capture in fishing gear. Available evidence suggests that large numbers are killed in gillnets, and mortality rates are believed to be unsustainable.

The IWC Scientific Committee's sub-committee on small cetaceans recommends the following conservation strategy for the franciscana: solidify political commitments on cooperation between the range states, leading to cooperation among fishery management and wildlife conservation agencies at the national and provincial levels; secure continued support for research on ecological parameters, genetics, abundance, and mortality rates and other biological information on the franciscana; following further testing, replace gillnets with less harmful gear and use sound deterrents (pingers) that scare franciscanas away from gillnets; and expand educational programs that involve artisanal fishermen and communities in the search for solutions to the bycatch problem.

Commerson's Dolphin *(Cephalorhynchus commersonii)*; Argentina, Coastal Gillnets and Midwater Trawls
Population: *approximately 21,000 (South American population)*
The species' near-shore distribution makes it vulnerable to incidental capture in gillnets and other fishing gear used in coastal waters. Commerson's dolphins are also sometimes killed in mid-water trawl nets on the Argentine shelf. The South American population has also been subjected to harpooning (mainly for crab bait) and some live capture for display.

Bycatch must become a priority for fishery management in Argentina, and observer programs should include cetaceans so that bycatch levels can be estimated. There is a clear need to develop and test devices to prevent dolphins from entering trawls, and possibly also to assess the effectiveness and feasibility of using pingers to reduce dolphin mortality in the gillnet fishery. Finally, further research is needed to identify and create management units and to improve understanding of the reproductive biology of Commerson's dolphins.

Gillnets

Gillnets are mesh nets that allow fish to pass their heads and gill coverings through a hole in the mesh and then get stuck on their gill coverings when they try to back out. When a gillnet is "set" the bottom is weighted to the sea floor by weights and the top is held up by floats creating a wall of net. These nets are difficult for larger cetaceans to see or detect with echolocation so they frequently run in to them when swimming or feeding and become tangled in the netting or in the ropes holding the netting.

Hector's dolphin calf killed in gillnet. Banks Peninsula, New Zealand.
© WWF-Canon / Stephen DAWSON

WWF International
Avenue du Mont-Blanc
CH-1196 Gland
Switzerland

www.panda.org/species

tel: +41-22 364 9111
fax: +41-22 364 0640