SUDDEN DEATH on the High Seas

Longline Fishing: A Global Catastrophe for Seabirds

American Bird Conservancy

THE PROBLEM

Twenty-three species of seabird are in danger of extinction largely because of mortality from longline fishing ... yet the problem can be solved easily and inexpensively.

The large, graceful albatross is perhaps the most venerated of seabirds. The inspiration behind Samuel Taylor Coleridge's classic poem "The Rime of the Ancient Mariner," albatrosses have some of the longest wingspans of any birds, and spend much of their lives flying thousands of miles over the open ocean in search of food. However, with demand for large ocean fish at an all-time high, hundreds of thousands of albatrosses and other seabirds are being killed each year by the fleets of longline fishing vessels which now crisscross the world's oceans. The longliners set lines up to 60 miles long and may use up to 30,000 baited hooks on each set to catch tuna, swordfish, cod, halibut, Patagonian toothfish (Chilean sea bass), and other fish. While the longlines are being set behind the fishing boats, albatrosses and other seabirds grab the bait and become impaled on the barbed hooks, either caught by their bills, or hooked into their bodies or wings. Dragged under the surface, the birds are unable to free themselves and drown.

Data show that this mortality is having a significant impact on populations, with many species showing rapid recent declines. Scientists now fear that unless action is taken, many seabird species will become extinct.

Black-browed Albatross killed by a longline hook.

Albatrosses are characterized by low reproductive rates, low natural annual mortality, long life spans, and delayed sexual maturity—traits that make populations extremely sensitive to changes in adult survival.

Longline fishing is considered the most recent and most serious global threat to albatrosses and other procellariiformes.

COVER PHOTO BY GRAHAM ROBERTSON • THIS PAGE: PHOTO BY FABIO OLMOS

Seabird populations are being decimated by hundreds of millions of longline hooks...

For an albatross, finding a fishing boat in the open ocean is like finding a free buffet. With their large size, they quickly dominate the feeding frenzy, homing in on the largest morsels: often a squid or fish set on a longline hook. This "smash and grab" feeding ecology selects albatrosses as top victims of longline hooks.

Black-footed Albatrosses killed on U.S. longines in the North Pacific.

The killing of seabirds in longline fisheries is a global problem from which the U.S. is not immune. In the North Pacific, U.S.-based and other longliners kill tens of thousands of seabirds each year. There are more than 2,500 vessels in the Alaskan longline fleet landing $300 million worth of fish annually and in excess of 140 vessels in Hawaii. In total, these fisheries set more than 210 million hooks each year in total.

Recent data, extrapolated from records kept by official fisheries observers aboard some vessels, show that on average, more than 20,000 seabirds die annually in the Alaskan longline fishery alone. From 1993 through 1999, at least 2,425 Black-footed Albatrosses, 6,721 Laysan Albatrosses, and 13 endangered Short-tailed Albatrosses were killed there. Thousands more fulmars, shearwaters, and other seabirds were also killed. The Alaskan halibut fishery of 1,800 vessels which sets more than 20 million hooks annually has no observers, so it is impossible to know how many more seabirds are killed by halibut vessels.

In the Hawaiian-based longline fishery, at least 8,325 Black-footed Albatrosses and 7,050 Laysan Albatrosses were killed from 1994 through 1999. These mortality figures do not include orphaned chicks that starve after their parents drown on a longline hook, or dead birds that fall into the sea as hooks are retrieved. Last year, the Black-footed Albatross was added to the IUCN-World Conservation Union list of species threatened with extinction: because of longline mortality.

The impact of longlines on seabirds is compounded by a range of other threats that are particular to birds that nest on isolated headlands and islands and forage across the open oceans. Introduced cats, rats, and other predators kill both chicks and adult seabirds at the nest, and may also eat eggs. Species that evolved in isolation have no defense against these ubiquitous predators.

The introduction of pigs, goats, cattle, and rabbits to some islands has also led to the destruction of habitat and seabird nesting burrows. Floating plastic is frequently mistaken for food by albatrosses, which can starve if their digestive tracts become blocked with used lighters, toothbrushes, and other flotsam. A recent study on Sand Island in the northwestern Hawaiian chain showed that 97% of Laysan Albatross chicks had ingested plastic, picked up by their parents and regurgitated as though it was food.

Seabirds also accidentally feed their chicks offal discarded by fishing vessels that still contains fishing hooks. Some species have been persecuted for food, and the Short-tailed Albatross came close to extinction as a result of large-scale slaughter for feathers. This combined onslaught has a cumulative effect that has been catastrophic for many species. The threat from longlining could be the final blow for some species unless action is taken now.

PHOTO: LIZ MITCHELL

THE PROBLEM

PHOTO: FABIO OLMOS

The albatross pictured above is already doomed, having snatched a bait attached to a weighted line that is beginning to sink. It will soon be pulled under the surface to drown.

Three albatross species occur regularly in the North Pacific. All are at serious risk from U.S.–based and other longliners.

Black-footed Albatross

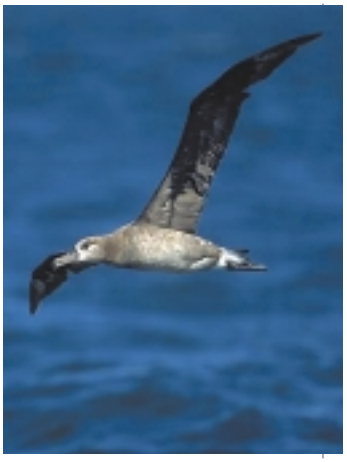

PHOTO: DON BACCUS

This species has recently been classified as Threatened with extinction. This follows a 10% decrease in breeding pairs since 1992 on Midway and Laysan Islands and on French Frigate Shoals, where 77% of the species' world population nests. Estimates suggest that mortality of this species is at least 2,130 birds per year in U.S.-based fisheries alone. A recent study states that up to 10% of the species' breeding population is killed on longline hooks throughout the North Pacific each year. U.S. vessels represent a fraction of the total number of boats from many nations that fish in this species' range. Vessels from these other nations rarely if ever have observers aboard, so these mortality figures are just the tip of the iceberg.

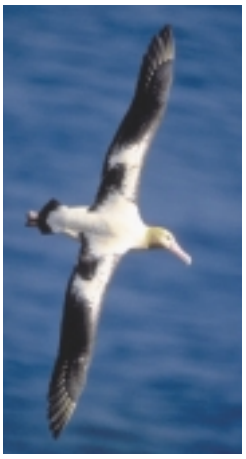

PHOTO: USFWS

Short-tailed Albatross

This is one of the world's most endangered seabird species with no more than 1,500 birds left of a population that once numbered in the millions. From 1887-1902, an estimated five million were slaughtered for the feather trade. In recent years, at least 13 have been killed in the U.S. Alaskan longline fishery. It is unknown how many have been killed by other fleets, but it is likely to be many more. Toroshima, the current major breeding island off the coast of Japan, is subject to volcanic activity presenting a further threat, although habitat enhancement at this key breeding site has led to a recent population increase. These birds wander the entire North Pacific where they are vulnerable to longline hooks. The species is Federally listed as Endangered.

Laysan Albatross

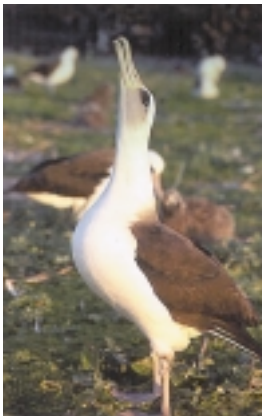

PHOTO: USGS

After making a slow recovery from feather trade persecution at the turn of the century, the breeding population of this species has decreased by an alarming 30% since 1992 on Midway and Laysan Islands where more than 90% of the world population nests. Longline mortality is believed to be the primary threat. The species has a similar range to the Black-footed Albatross, but is generally more numerous. They are commonly caught on longlines in the North Pacific, with more than 2,280 killed there by U.S. vessels alone each year. Given the recently released population data on this species, it also clearly qualifies as Threatened with extinction under IUCN-World Conservation Union criteria, although it is yet to be officially listed.

THE PROBLEM

Worldwide, at least 64 seabird species are known to have been killed in longline fisheries. The 23 Threatened* species are shown in red.

PHOTO: KEVIN SCHAFER/ WWW.KEVINSCHAFER.COM

Penguins, such as this Gentoo, are capable of diving deep enough to take longline bait even after the lines reach fishing depth. Fortunately, few have been affected so far.

Macaroni Penguin
Gentoo Penguin
Unidentified loon species
Wandering Albatross
Tristan Albatross
Antipodean Albatross
Southern Royal Albatross
Northern Royal Albatross
Amsterdam Albatross
Short-tailed Albatross
Waved Albatross
Laysan Albatross
Black-footed Albatross
Campbell Albatross
Black-browed Albatross
Buller's Albatross
Salvin's Albatross
Shy Albatross
Chatham Albatross
Atlantic Yellow-nosed Albatross
Indian Yellow-nosed Albatross
Grey-headed Albatross
Sooty Albatross
Light-mantled Sooty Albatross
Southern Giant Petrel
Northern Giant Petrel
Northern Fulmar
Antarctic Fulmar
Cape Petrel
Great-winged Petrel
Grey Petrel
White-chinned Petrel
Spectacled Petrel
Black Petrel
Westland Petrel
Cory's Shearwater
Flesh-footed Shearwater
Greater Shearwater
Sooty Shearwater
Short-tailed Shearwater
Balearic Shearwater
Mediterranean Shearwater
Manx Shearwater
Wilson's Storm Petrel
Great Cormorant
European Shag
Gannet
Cape Gannet
Australasian Gannet
Blue-footed Booby
Brown Booby
Great Skua
Subantarctic Skua
Audouin's Gull
Yellow-legged Gull
Black-headed Gull
Mediterranean Gull
Herring Gull
Lesser Black-backed Gull
Great Black-backed Gull
Glaucous-winged Gull
Black-legged Kittiwake
Common Murre
Thick-billed Murre

PHOTO: FABIO OLMOS

Even the once abundant White-chinned Petrel, which is killed in the tens of thousands in southern ocean longline fisheries, has now been classified as Threatened with extinction because of longline mortality. Will it be the next Passenger Pigeon?

**Threatened means listed as Vulnerable, Endangered, or Critically Endangered, under IUCN-World Conservation Union criteria.*

Will longlining cause the extinction of albatrosses?

PHOTO: TONY PALLISER

Southern Royal Albatross, a Threatened species killed on longlines.

16 of the world's 21 albatross species are now considered Threatened with extinction under IUCN-World Conservation Union criteria. Longlines are the major continuing threat these species:

Wandering, Antipodean, Tristan, Amsterdam, Northern Royal, Southern Royal, Waved, Short-tailed, Black-footed, Laysan, Black-browed, Campbell, Buller's, Shy, Salvin's, Chatham, Indian Yellow-nosed, Atlantic Yellow-nosed, Grey-headed, Sooty, Light-mantled Sooty.

The exact number of birds killed worldwide on longlines each year is unknown, but is certainly already in the hundreds of thousands. Yet, longline fishing is expanding rapidly around the world. For example, the Brazilian swordfish fleet which kills thousands of Threatened White-chinned, and also Spectacled Petrels, has increased five-fold in the past three years. Ninety percent of this swordfish is exported to the U.S.

From 1997 to 2000, estimates suggest that as many as 333,000 seabirds, including 67,000 albatrosses, were killed in the unregulated "pirate" Patagonian toothfish fishery in the southern oceans. These seabirds include several species Threatened with extinction. Patagonian toothfish is marketed in the U.S. as Chilean sea bass. Out of concern for its population, Whole Food Markets has withdrawn the fish from sale in its stores, although it is still commonly available from other retailers and many restaurants. Both seabirds and toothfish are in decline as a result of this fishery.

96% of the world population of the Black-footed Albatross breeds in the northwest Hawaiian Islands. The U.S. has a special responsibility for protecting this species, which was added to the international Threatened list in 2000 because of declines linked to longline mortality.

PHOTO: KEVIN SCHAFER / WWW.KEVINSCHAFER.COM

THE PROBLEM

Worldwide, longline mortality is a major factor species. Some of the hardest hit victims from

PHOTO: TONY PALLISER

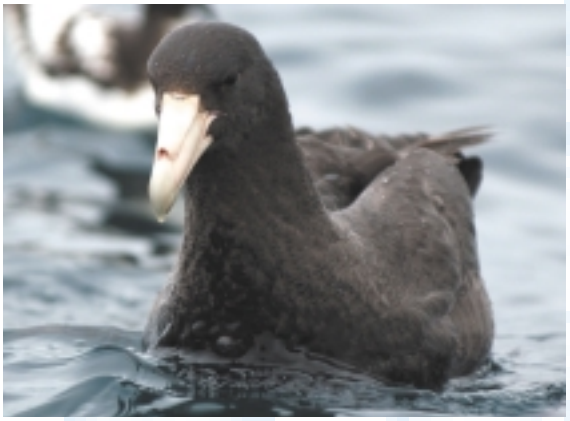

PHOTO: TONY PALLISER

Indian Yellow-nosed Albatross

The species has undergone a decline of at least 36% since 1984 at its main breeding site on Amsterdam Island, where approximately 28,000 pairs nest. Scientists believe that longline mortality is responsible for this decline. Up to 600 are killed each year in the western Australian longline fishery. Birds are also killed in the Patagonian toothfish (Chilean sea bass) fishery, and they come into contact with tuna longliners in subtropical waters where they are also killed.

Southern Giant Petrel (juvenile)

The world population has declined 18% from 38,000 pairs to 31,000 pairs over the last decade, probably due to longline mortality. A total of 2,000-4,000 were estimated as having been killed in the unregulated southern ocean Patagonian toothfish (Chilean sea bass) fishery between 1997 and 1998. Even at the lower estimate, the species cannot withstand this level of mortality for much longer.

With his cruel bow he laid full low
The harmless Albatross

SAMUEL TAYLOR COLERIDGE

MAP COURTESY OF WWW.THEODORA.COM/MAPS, USED WITH PERMISSION.

in population declines for many threatened around the world include:

PHOTO: TONY PALLISER

PHOTO: FABIO OLMOS

Antipodean Albatross (juvenile)

This species has a small world population of less than 12,000 breeding pairs. A survey on one of its key breeding islands indicated a 63% decline between 1973 and 1997. The species has been caught in significant numbers in the tuna longline fishery in New Zealand waters.

Wandering Albatross and Spectacled Petrels

The **Wandering Albatross** is in decline across most of its range because of longlines. The southern bluefin tuna fishery alone may have accounted for an annual mortality of 2–3% of adults and 14–16% of immatures at South Georgia in the 1980s.

The **Spectacled Petrel** has a world population of a few thousand pairs at most. It is estimated that approximately 700 are being killed on longlines each year, principally in waters off Brazil where this picture was taken.

See ABC's website at www.abcbirds.org for more details on Threatened seabird populations and declines.

THE SOLUTION

Inexpensive bird-scaring lines can be used with additional line weighting to eliminate seabird mortality and save bait ... a win-win for fishermen and birds.

Bird-scaring or "tori" lines (tori meaning bird in Japanese) have been shown to virtually eliminate seabird mortality caused by longlines. They were first developed by Japanese bluefin tuna fishermen who recognized that keeping birds off bait was in their own economic interest, as leaving more bait for fish increases the chances of success. The tori lines are mounted on poles at the stern of the boat, and are connected to a floating buoy that is dragged behind the vessel. Colored streamers are attached to the lines, and these flap erratically in the wind above the area where the bait enters the water. When the longlines are properly weighted, they sink immediately behind the boat and the flapping streamers scare the birds away. By the time the baited hooks are beyond the streamer zone, they have already sunk below the depth where they can be reached by most seabirds.

In Hawaii, where lines are set at shallower depths than in Alaska, regulations are in place that require thawing the bait so it sinks more quickly, dyeing bait blue so it is less visible to birds, adding weights so the lines sink more quickly, setting lines at night when fewer birds are feeding, and strategically discharging offal during line setting, so that birds are attracted away from the boat's stern where the lines are set (or not discharging offal at all, so fewer birds are attracted to the boat). These measures also have been shown to be effective means of reducing seabird mortality.

PHOTO: © MICROSOFT

The use of bird-scaring lines and other avoidance measures, ensures that we can still enjoy seafood, knowing that no albatrosses or other sea birds have had to die to bring the catch to table. Japanese southern ocean tuna longliners setting 481 million hooks, killed an estimated 44,000 albatrosses annually in the early 1980s.

New study shows streamer lines virtually eliminate seabird mortality.

A rigorous two-year study by the University of Washington on various seabird avoidance measures aboard Alaskan longliners documented that paired streamer lines (costing $260 delivered), virtually eliminate all albatross and Northern Fulmar mortality. Other seabird mortality also is nearly eliminated. One southern bluefin tuna recently brought $173,600 at a Tokyo fish market—enough to provide bird-scaring lines for 667 vessels.

The study also finds that these bird-scaring lines, that form a flapping curtain over baited lines when they are set, have no effect on the catch of targeted fish, nor do they increase the catch of other non-target species. Neither do they pose a safety risk to fishermen. The study recommends that all Alaskan longliners be required to employ these paired streamer lines, and that all bottom fishing longliners around the globe also employ streamer lines when setting baited lines, as well as eliminate offal discharge over baited lines during setting. To view the full study, dated August 31, 2001, complete with details for the design of materials for paired streamer lines. See: http://www.wsg.washington.edu/pubs/seabirds/execsummary.pdf.

More than 500 paired streamer lines have been given to Alaskan longline vessels thanks to a grant program funded by the U.S. Fish and Wildlife Service. Additional grant funds are still available to outfit more vessels (see p. 13).

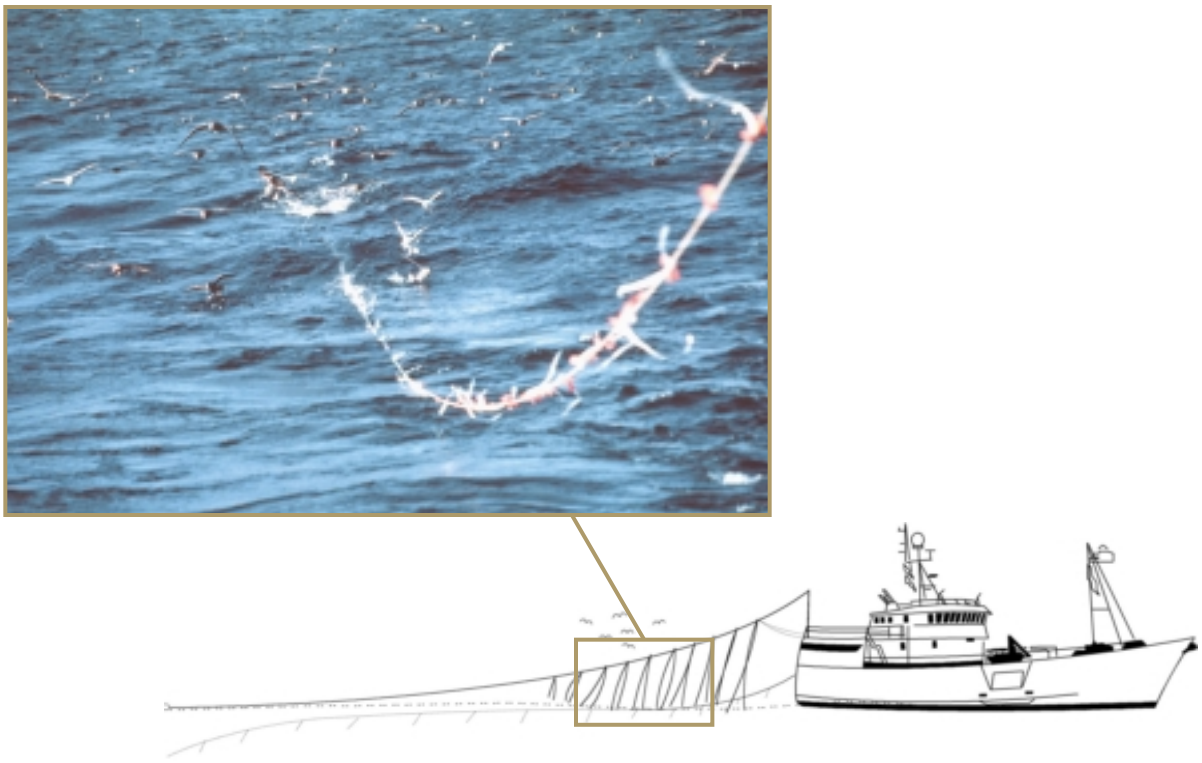

PHOTO: LIZ MITCHELL

GRAPHIC COURTESY OF SEATTLE MARINE

Bird-scaring or "tori" lines in use. Inset shows how birds are kept away from the stern by the line.

BACKGROUND

Seabird deaths on longlines: an international environmental problem where the U.S. can lead in eliminating seabird mortality with no negative impact on commercial fisheries.

In October 1996, spurred by increasing evidence of declines in albatross and other seabird populations, the IUCN-World Conservation Union (an inter-governmental organization of which the U.S. is a member), adopted a resolution urging nations to "adopt the goal of eliminating seabird by-catch within longline fisheries" and "implement seabird by-catch reduction measures immediately within longline fisheries." The U.S. government supported this call for action. Previously, an international treaty, the Convention for the Conservation of Antarctic Marine Living Resources, required all longliners fishing below 300 degrees South to use a bird-scaring line, set lines at night, add greater line weights, and strategically discharge offal. Subsequently, the United Nations Food and Agriculture Organization (FAO) adopted an International Plan of Action for Reducing Incidental Catch of Seabirds. The U.S. fully supported and voted for this international protocol. Unfortunately the protocol is voluntary, and the deadline for each longline nation to assess its fisheries for seabird mortality, and to prepare plans to minimize seabird deaths passed in February 2001, with only two nations (U.S. and Japan) submitting Plans. Most longlining nations have still not even assessed the extent of seabird mortality in their fisheries, and have done little if anything to avoid killing seabirds.

Furthermore, the U.S. Plan of Action is weak, listing no specific avoidance measures, and providing an additional two years for an assessment of the problem that is already well documented in all but the Alaskan halibut fishery (where observers are not yet required). Because the plan does not require observers to monitor seabird mortality aboard vessels, there seems to be little chance that the halibut fishery assessment will take place unless further action is taken. In fact, existing fishery regulations already provide better protection for seabirds than the Plan suggests, especially in Hawaii where specific avoidance measures are now required.

Congress and the U.S. National Marine Fisheries Service should act now to improve regulations and require that effective avoidance measures are employed by all U.S. longline vessels to protect seabirds. The two-year National Marine Fisheries Service-funded Alaskan study recommended required use of paired streamer lines on all Alaskan and global bottomfish vessels. The Administration should also call on other fishing nations to adopt effective National Plans of Action to avoid seabird mortality.

PHOTO: LIZ MITCHELL

A young Short-tailed Albatross (left), Laysan Albatrosses, and Fulmars feed on offal next to a North Pacific longliner.

It is vital that the U.S. takes an active role in pressing for improved protection of albatrosses and other seabirds in the world's longline fisheries. The survival of the great albatrosses depends on it.

American Bird Conservancy's ALBATROSS ACTION CAMPAIGN

What needs to be done to stop the killing of seabirds on longlines?

Simple and inexpensive changes in fishing practices will protect the world's albatrosses and petrels from severe population declines and eventual extinction. ABC is calling on the U.S. and other nations to require effective avoidance measures on all longline vessels, such as paired bird-scaring lines and better weighted lines.

Here's what you can do to save Albatrosses and other seabirds:

Fishermen Find out which techniques can help you avoid killing seabirds in your fishery (see p. 10). Always use these measures when fishing. Alaskan longliners can contact Al Didier, Pacific States Marine Fisheries Commission, at: 503-650-5400 for free bird-scaring lines. Grants are also available to outfit larger vessels with line mounting poles.

Citizens **1.** Write your Congressperson and urge him/her to hold hearings on seabird killing, enact legislation to prevent the killing, and press the Administration and the National Marine Fisheries Service (NMFS) to enact measures to prevent seabird killing on longlines. **2.** Don't purchase Patagonian toothfish (Chilean sea bass) that may have been caught by pirate longliners (see ABC's fact sheet at www.abcbirds.org), and press the Administration and Congress to consider import sanctions on all fish caught by longlining nations that do not use effective seabird avoidance measures. **3.** Create awareness of the problem—contact your local media. **4.** Ask conservation groups you belong to for help with these efforts. For more details, including sample letters, see www.abcbirds.org.

Government **ALASKA 1.** New regulations should be adopted by NMFS to require effective seabird avoidance measures including the use of paired streamer lines and greater line weighting on all vessels. **2.** Observer coverage should be initiated aboard Pacific halibut vessels. **HAWAII 1.** NMFS should ensure adequate monitoring of the longline fleet so that required seabird avoidance measures are effectively used and seabird mortality is assessed. **2.** NMFS should continue its support of the elimination of the shallow setting swordfish fishery unless effective seabird avoidance measures can be employed. **3.** Hawaiian swordfish vessels should be prevented from landing their catches in California, a loophole which allows them to ignore the Hawaiian fishery closure. **NATIONAL** The National Oceanic and Atmospheric Administration and NMFS should comply with the January 19, 2001, Department of the Interior Solicitor's Opinion on the applicability of the Migratory Bird Treaty Act (MBTA) to the full U.S. Exclusive Economic Zone, and extraterritorially to all U.S. citizens and U.S. flagged vessels. The MBTA makes it illegal to kill seabirds, even unintentionally. **INTERNATIONAL** U.S. leadership and advocacy is needed through the United Nations Food and Agriculture Organization (FAO), at other international forums, and in bi-lateral fishery meetings, to promote the implementation of seabird avoidance measures, and the adoption of National Plans of Action under the FAO agreement.

40 organizations joined ABC in a petition to the United States government to protect seabirds from longline mortality:

American Birding Association
American Ornithologists' Union
Antarctica Project
Association of Field Ornithologists
Association for Professional Observers
Audubon Naturalist Society of the Mid-Atlantic States
Avian Science and Conservation Center–McGill University
Center for Biological Diversity
Cooper Ornithological Society
Cornell Laboratory of Ornithology
Defenders of Wildlife
Endangered Species Coalition
Endangered Species Recovery Council
Environmental Defense
Environmental Research Consultancies
Fisheries Defense Fund
Friends of the Earth
Greenpeace
Humane Society of the United States
Manomet Center for Conservation Sciences
Marine Endeavors
National Audubon Society
National Fishing Association
National Wildlife Federation
Natural Resources Defense Council
New Jersey Audubon Society
North Carolina Museum of Natural History
Nuttall Ornithological Club
Ocean Conservancy
Ocean Watch
Ocean Watch Foundation
Pacific Seabird Group
Pacific Whale Foundation
Point Reyes Bird Observatory
Reef Keeper International
St. Petersburg Audubon Society
Trumpeter Swan Society
Washington State Fish and Wildlife Department
Waterbird Society
World Wildlife Fund

Visit www.abcbirds.org to view the petition

At least 33 nations and territories, including the U.S. have longline fleets. Those whose fleets are believed to cause significant seabird mortality are shown **in red**. Few nations employ seabird avoidance measures, or even assess seabird mortality. Only Japan and the U.S. produced National Plans of Action in time for a February, 2001 deadline under a United Nations agreement designed to protect seabirds. Unfortunately even these plans are insufficient, as both nations still kill numerous seabirds in their longline fisheries. ABC is urging the U.S. government to require specific avoidance measures on all longline vessels and to urge other nations to adopt effective National Plans of Action to protect seabirds, including the use of avoidance measures on all longline vessels.

Angola, **Argentina, Australia, Brazil, Canada, Chile, China, Ecuador, Faeroe Islands,** Falkland Islands, Finland, Fiji, France, Greenland, **Iceland, Indonesia, Japan, Mexico, Namibia, New Zealand, Norway, Peru,** Philippines, **Republic of Korea (South Korea), Russia, South Africa, Spain, Taiwan,** Vietnam, **Uruguay, Venezuela,** Ukraine, **United States**

BIBLIOGRAPHY

Alexander, K., Robertson, G., and Gales, R. (1997). *The Incidental Mortality of Albatrosses in Longline Fisheries, a Report on the Workshop from the First International Conference on the Biology and Conservation of Albatrosses.* Australian Antarctic Division, Kingston.

BirdLife International (2000) *Threatened Birds of the World.* BirdLife International and Lynx Edicions, Cambridge and Barcelona.

Brothers, N. (1991) Albatross Mortality and Associated Bait Loss in the Japanese Longline Fishery in the Southern Ocean. *Biological Conservation,* vol. 55, no. 3, pp. 255-268.

Brothers, N., Cooper, J., and Lokkeborg, S. (1999) *The Incidental Catch of Seabirds by Longline Fisheries: Worldwide Review and Technical Guidelines for Mitigation: Fisheries Circular 937.* United Nations Food and Agricultural Organization, Rome.

Del Hoyo, J., Elliott, A., & Sargatal, J. eds. (1992) *Handbook of the Birds of the World. Vol. 1. Lynx Editions,* Barcelona.

Didier, A. (2001) *Personal communication on free paired streamer (tori line) program.* Pacific States Marine Fish Commission, Seattle.

Flint, E. (2001) *Population Data Charts, 1992-2001 for Laysan and Black-footed Albatross Breeding Pairs on Key nest Sites in Northwest Hawaiian Islands.* U.S. Fish and Wildlife Service (FWS), Honolulu.

Geernaert, T. et al. (2001) *A Feasibility Study that Investigates Options for Monitoring Bycatch of the Short-tailed Albatross in the Pacific Halibut Fishery off Alaska.* Prepared for the National Marine Fisheries Service (NMFS) by the International Pacific Halibut Commission, Seattle.

Melvin, E. (2000) *Letter and report from University of Washington Sea Grant Research Program to the Executive Director of North Pacific Fishery Management Council.* University of Washington, Seattle.

Melvin, E., Parrish, J., Dietrich, K., & Hamel, O. (2001) *Solutions to Seabird Bycatch in Alaska's Demersal Longline Fisheries.* Washington Sea Grant Program, Seattle.

Olmos, F. (2001) *Personal communication on status of Brazilian longline fishery and seabird mortality,* Sao Paulo.

PHOTO: TONY PALLISER

Buller's Albatross, another threatened species killed in longline fisheries.

Pashley, D. (2000) *Conservation of the Land Birds of the U.S.* Partners in Flight/American Bird Conservancy, The Plains.

Robertson, G. and Gales, R. (1998) *Albatrosses, Biology and Conservation.* Surrey Beatty & Sons, Sydney.

Safina, C. (2001) Albatross Wanderings. *Audubon Magazine,* vol. 103, no. 1, pp. 70-85. National Audubon Society, New York.

Stevens, M. (2001) *Personal communication regarding seabird mortality in Southern Ocean "pirate" fisheries, based on the Convention on the Conservation of Antarctic Marine Living Resources Working Group on Fish Stock Assessment.* Washington, DC.

Thomas, R. (2000) Longlining: A Major Threat to the World's Seabirds. *World Birdwatch,* vol. 22, no. 2, pp. 10-13. BirdLife International, Cambridge.

Tickell, W. L. N. (2000). *Albatrosses.* Yale University Press, New Haven.

U.S. Fish & Wildlife Service (1999) *Biological Opinion for the Effects of the Alaska Based Longline Groundfish Fishery on the Short-tailed Albatross for 1999-2000.* FWS, Anchorage.

U.S. Department of Commerce, National Oceanic and Atmospheric Association (NOAA)/NMFS (2001) *Alaska Groundfish Fisheries, Draft Programmatic Supplemental Environmental Impact Statement.* NOAA/NMFS, Anchorage.

U.S. Fish & Wildlife Service (2000) *Biological Opinion for the Effects of the Hawaii-based Domestic Longline Fleet on the Short-tailed Albatross.* FWS, Honolulu.

URS Corporation for NOAA/NMFS (2001) *Final Environmental Impact Statement, Fishery Management Plan, Pelagic Fisheries of the Western Pacific Region.* NOAA/NMFS, Honolulu.

"I now belong to a higher cult of mortals for I have seen the albatross."

—Robert Cushman Murphy aboard the brig *Daisy* (1912)

American Bird Conservancy (ABC) is a 501(c)3 not-for-profit organization whose mission is to conserve wild birds and their habitats throughout the Americas. It is the only U.S.-based group dedicated solely to countering the greatest threats facing birds in the Western Hemisphere. A growing human population, consuming ever greater resources, is critically impacting bird populations through habitat destruction, direct mortality from such harmful practices as the unwise use of pesticides, the introduction of invasive species, and the negative impacts of some commercial fishing methods. ABC believes adequate resources exist to overcome these threats, and that unifying people, organizations, and agencies around common approaches to priority issues is the key to success.
For information on ABC's programs see www.abcbirds.org.

American Bird Conservancy

P.O. Box 249
The Plains, VA 20198
Tel: (540) 253 5780
Fax: (540) 253 5782
www.abcbirds.org

1834 Jefferson Place, NW
Washington, DC 20036
Tel: (202) 452 1535
Fax: (202) 452 1534

THIS REPORT IS SPONSORED IN PART BY:

Cheesemans' Ecology Safaris www.cheesemans.com

Quark Expeditions www.quarkexpeditions.com

Nature Portfolio Images www.natureportfolio.com

Abercrombie & Kent Global Foundation www.akglobalfoundation.org