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Solving Seabird Bycatch In Alaskan Fisheries: A Case Study In Collaborative Research

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Seabird mortality in longline fisheries is a worldwide marine conservation problem. Seabirds aggregate in response to fishing operations and can become hooked and drown as they attack sinking baited hooks. Because many seabirds are long-lived species with delayed maturity and limited reproductive capability, they are highly vulnerable to adult mortality.

Regulatory and conservation attention in the Alaskan longline fisheries is focused on the rare incidental mortality of one species — the short-tailed albatross (*Phoebastria albatrus)*, an endangered species under the U.S. Endangered Species Act. Takes of six short-tailed albatrosses within a two-year period would trigger re-initiation of a Section 7 consultation in these respective fisheries and consequently interrupt or close Alaska's $300 million (ex-vessel value) demersal longline fisheries. Takes of only two short-tails over five years could disrupt or close the Alaskan trawl fisheries, valued at over $500 million.

Building on earlier collaborative work to reduce the bycatch of seabirds in salmon drift gillnets, Washington Sea Grant Program launched a suite of research and outreach programs in collaboration with industry, NOAA Fisheries and the U.S. Fish and Wildlife Service to reduce seabird bycatch in Alaska's diverse longline fisheries. More recently this work was extended to Alaska's trawl fisheries.

Projects include the following:

Solving Seabird Bycatch in Longline Fisheries (1999 - 2000)

Conducted an extensive 2-year research program in two Alaskan longline fleets, sablefish and Pacific cod in the context of production fishing. To date, this is the largest effort of its kind.

Outcomes:

- Paired streamer lines were proven to be near 100-percent effective at eliminating the catch of albatrosses and other surface-feeding birds.
- Both sablefish and cod fishing fleets adopted this new technology, two years before it was required — resulting in an eight-fold decrease in seabird mortality.
- Antarctic seabird avoidance requirements were modified in 2003, based on findings from the Alaska research.

Integrated Weight Line Development and Testing (2002 - 2005)

Tested a novel leaded longline material — one that sinks quickly and consistently out of the range of seabirds and offers improved handling characteristics, relative to traditional unleaded lines. Testing was conducted over five months on two vessels in the Bering Sea and by collaborators in New Zealand and Antarctic fisheries.

over

Seabirds feeding on offal discards. Northern fulmars, black-footed and Laysan albatrosses, and an endangered short-tailed albatross (pink bill; left to right).

Outcomes:

- Preliminary results show integrated weight line coupled with streamer lines can further reduce seabird bycatch, especially of diving birds such as shearwaters.
- Report in process.

Seabird Surveys (2002 - 2004)

Initiated and coordinated a three-year effort to collect seabird data on the Alaskan longline fishing grounds in the course of fish stock assessment surveys.

Outcomes:
Data demonstrated the absence of albatross-like seabirds in Alaska's inside waters. Elimination of seabird avoidance requirements recommended to the North Pacific Fishery Management Council for these inside waters, affecting over 600 of the 1600 vessels in the Alaskan fleet. The Council will take action at the June 2006 meeting.

WSGP-created protocols, methodology and training were extended to *all* NMFS Alaska Science Center surveys beginning in 2004.

Research Extended to Smaller Longline Vessels (2002)

WSGP research originally focused on large vessels (> 60 feet). At the urging of the North Pacific Fishery Management Council, in 2002 WSGP extended research to small vessels that make up the bulk of the Alaskan longline fleet. The Alaska Sea Grant Program continued outreach with the small boat fleet in 2003 and 2004 to filter new ideas and raise awareness.

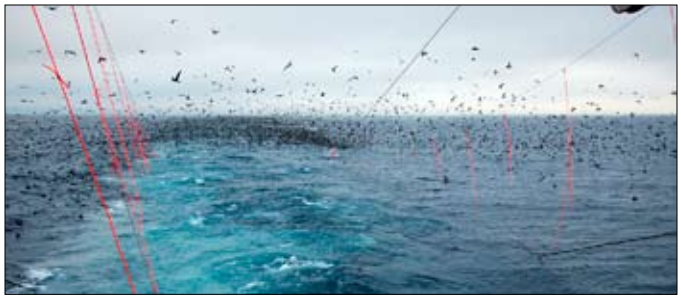
Outcomes:
Specific recommendations on small vessels are being made at the North Pacific Fisheries Management Council June 2006 meeting.

A new, lighter streamer line was developed in collaboration with the Alaska Sea Grant Program and is being distributed to the small boat fleet throughout Alaska.

Paired streamer lines while setting longline gear.

Solving Seabird Bycatch in Trawl Fisheries (2004 – present)

Pilot testing of seabird deterrent technologies was initiated to reduce seabird interactions with trawl cables in the Bering Sea catcher-processor fleet. With NOAA Fisheries funding, two vessels were retrofitted in 2005, based on WSGP recommendations, and WSGP expanded research on retrofitted vessels.



Paired streamer lines while trawling.

Outcomes:
Several seabird deterrents were shown to be highly effective and work continues to make deterrents more practical. Data are currently being analyzed.

Collaborations initiated with the New Zealand squid trawl fleet.

Outreach

Research findings and recommendations from these projects were shared with a range of potential users in U.S. and foreign fisheries.

Off the Hook video (a collaboration with the Alaska Sea Grant Program) and accompanying flyer were developed and distributed to the Alaska fleet and translated into Spanish and Russian for use in South America and the Russian Far East.

Port-to-port workshops were presented throughout Alaska in 2002.

Streamer lines designed by Melvin have been distributed to the Alaskan fishing fleet at no cost.

In collaboration with the World Wildlife Fund, protocols and resources were shared with a Russian scientific team to develop parallel studies on streamer lines and integrated weight longlines in the Russian longline fisheries. Pilot tests were completed in 2005 and work is to be expanded in 2006.

Collaborators

Research and outcomes were made possible by many supportive partners from federal and state agencies, other Sea Grant programs, and non-governmental organizations in this country and abroad.

Collaborators to date have included NOAA Fisheries, U.S. Fish and Wildlife Service, Alaska Sea Grant College Program (Marine Advisory Program), Alaska Department of Fish and Game, International Pacific Halibut Commission, Alaska Longline Fishermen's Association, American Seafoods Company, Australian Antarctic Division, Cordova District Fishermen United, Glacier Fish Company, Kamchatka Branch of Pacific Institute of Geography Far-Eastern Department of Russian Academy of Science, North Pacific Longline Association, Fishing Vessel Owners Association, Petersburg Vessel Owners Association, Pollock Conservation Cooperative, Southern Seabird Solutions, United Fishermen of Alaska, and World Wildlife Fund.

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