

 <p>Agreement on the Conservation of Albatrosses and Petrels</p>	<p><b>Ninth Meeting of the Seabird Bycatch Working Group</b></p> <p><i>Florianópolis, Brazil, 6 - 8 May 2019</i></p> <p><b>Summary Report of the U.S. West Coast and Alaska Trawl Fisheries Seabird Cable Strike Workshop</b></p> <p><b><i>Jason E. Jannot, Thomas Good, Vanessa Tuttle, Anne Marie Eich, Shannon Fitzgerald, Mi Ae Kim</i></b></p>
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#### SUMMARY

The *U.S. West Coast and Alaska Trawl Fisheries Seabird Cable Strike Mitigation Workshop* was held on November 7-8, 2017 in Seattle, Washington, USA. The workshop brought together representatives from the groundfish trawl fishing industry, seafood associations, non-governmental organizations (NGOs), and federal agencies to identify effective and practical mitigation measures to reduce seabird cable strike mortality in the U.S. West Coast At-sea Hake Catcher-Processor and Alaska trawl fisheries.

The workshop included presentations from experts on the scope and scale of the seabird-cable strike issue in the North Pacific as well as mitigation strategies utilized elsewhere in the world. The presentations were followed by discussing physical and behavioural mitigation strategies and designs, prioritizing mitigation measures for seabird-cable strikes, understanding implementation hurdles, and identifying next steps for developing mitigation measures.

Participants agreed to five priority physical mitigation measures to be tested by the fleet:

1. Snatch Block
2. Water Deterrents
3. Improve visibility of the third wire
4. Streamer Lines -Warp Booms Combination
5. Third Wire Float Device

Behavioural measures used in other regional fisheries were also considered for the groundfish trawl fleets. However, discussions with the industry revealed that behavioural measures were either not feasible (e.g., batching) without considerable investment or were already being employed when feasible (e.g., maceration of offal on some vessels, which is similar to mincing and results in reduced attractiveness to albatross spp.).

Workshop participants agreed current research in both regions should continue and be refined as appropriate. Participants also agreed that federal agencies, NGOs, and the trawl fleet fishing industry should partner to fund research for improving data collection and developing and testing mitigation strategies on trawlers in both regions.

Since the workshop, Federal scientists have collaborated with an NGO to secure funds for enhanced data collection by dedicated seabird observers in 2019 on U.S. West Coast At-sea Hake Catcher-Processor trawl vessels. In addition, vessels in this trawl fleet have been voluntarily testing a variety of mitigation strategies to reduce seabird cable strikes.

The full workshop report can be obtained here: <https://doi.org/10.7289/V5/TM-NWFSC-142>

## 1. WORKSHOP GOALS AND OBJECTIVES

The goal of the workshop was to bring together industry, government, and NGO representatives to share information on the scope and scale of seabird interactions on pelagic trawl vessels fishing in Alaska and U.S. West Coast waters (Washington, Oregon). Specific aims were to identify effective, practical mitigation measures to reduce seabird cable strike mortality in these pelagic trawl fisheries with minimal impact on vessel economics. In the longer term, the workshop strived to develop collaborative relationships between the participants for testing and implementing proposed mitigation measures.

Workshop objectives:

1. Contextualize and scope the problem by providing information on:
  - a. the scale of the seabird cable strike problem
  - b. existing mitigation measures being used effectively around the globe
2. Discuss existing mitigation measures
3. Discuss existing and new mitigation feasibility
4. Generate new ideas for mitigation
5. Prioritize mitigation measures for future development, testing, and implementation
6. Identify needs for testing and implementation of mitigation measures
7. Identify and share resources that foster collaborative partnerships to test and implement mitigation measures.

## 2. WORKSHOP CONTEXT

Pelagic trawl vessels fishing in Alaska and U.S. West Coast waters regularly interact with three species of albatross (short-tailed [*Phoebastria albatrus*], black-footed [*Phoebastria nigripes*], and Laysan [*Phoebastria immutabilis*]) as well as many other seabird species (Eich et al. 2016, Jannot et al. 2018). While no mortalities of short-tail albatross have been observed, and in Alaska trawl fisheries only one known black-footed albatross take has occurred, mortalities of Laysan albatross in Alaska trawl fisheries and black-footed albatross in West Coast trawl fisheries are documented. The spatial and temporal overlap of wide-ranging seabirds with commercial fisheries in the U.S.

Exclusive Economic Zone (EEZ) makes interactions between seabirds and vessels unavoidable, resulting in at least some incidental seabird mortality (Guy et al., 2013).

As seabirds congregate around trawlers to feed on offal, they heighten their risk of colliding with the trawl warps and data cables (also known as 3<sup>rd</sup> wires) that run aft of trawlers, collectively referred to here as cables. Seabird mortality on trawl fishing vessels is often unreported and undetected; when a bird strikes a cable and is seriously injured or killed, the resulting carcass is not likely to be recovered and counted, resulting in “cryptic” mortality. Cable strikes are a known source of cryptic seabird mortality, particularly on at-sea factory trawlers (Sullivan et al., 2006; Melvin et al., 2011; Maree et al., 2014), and cryptic seabird mortality on trawl vessels was recently highlighted in Alaska fisheries (Eich et al. 2016).

Quantifying mortality from cable strikes is difficult; dead birds often go unobserved and are rarely entangled by cables and recorded by fisheries observers. In 2016 and 2017, at-sea fisheries observers monitored cables for seabird strikes on at-sea hake pelagic factory trawlers off the continental U.S. West Coast. Estimates of seabird cable strikes, based on extrapolating from observed to unobserved tow hours, indicate that a total of 468 hard cable-strikes of black-footed albatross occurred in 2016 (fall and spring) and 2017 (spring). These numbers suggest that albatross and other seabird mortalities are likely under-reported in the West Coast at-sea hake pelagic factory fleet.

While streamer lines have been shown to mitigate seabird cable strikes on trawl vessels in Alaska (Melvin et al., 2011), the safety and difficulty in using streamers, especially in high winds, have deterred adoption of these mitigation devices in at-sea factory trawlers off Alaska and U.S. West Coast. Developing new, practical, and effective seabird mitigation measures has the potential to significantly reduce seabird mortality in much of the Northeastern Pacific, as many factory vessels fish in both waters off Alaska and off the U.S. West Coast.

### **3. WORKSHOP RESULTS**

Participants agreed to five physical mitigation measures to be tested by the fleet. Behavioural measures used in other regional fisheries were also considered for the groundfish trawl fleets. However, discussions with the industry revealed that behavioural measures were either not feasible without considerable investment (e.g., batching) or were already being employed when feasible (e.g., maceration of offal on some vessels, which is similar to mincing and results in reduced attractiveness to albatross spp.). The five physical mitigation measures agreed for development and testing were:

1. Snatch Block - A block that pulls the 3<sup>rd</sup> wire down closer to the deck, such that it enters the water much closer to the stern of the vessel, reducing the amount of aerial exposure of cable to seabirds.
2. Water Deterrents - Water cannon off the stern on both sides of vessel to prevent bird strikes on warps.
3. Improve visibility of the 3<sup>rd</sup> wire - Modify the 3<sup>rd</sup> wire with cable fairing or coloured sleeve or coating.

4. Streamer Lines Warp Booms Combination - Warp boom deployed on each side plus streamer lines positioned on to the end of the boom, ending with a float.
5. 3rd Wire Float Device - A collapsible device that runs the entire aerial length of the third wire, terminating at the surface of the water and has colours or streamers which scare birds away and increase visibility.

Participants noted that multiple measures could be employed simultaneously. Each mitigation measure was judged by small groups of participants on four dimensions: feasibility, practicality, testability, and effectiveness. All of the five measures were deemed to have the following desirable properties:

1. Be easy to implement
2. Does not pose safety hazard
3. Does not require vessel reconfiguration
4. Be easy to test for efficacy

Several considerations for implementation were identified. First, obtaining full cooperation of the fleet will require clear demonstration of the conservation need along with continued, in-depth outreach to vessels. NOAA Fisheries and partners will need to fill data gaps and clarify potential issues, especially as it relates to 1) albatross populations and 2) differences between West Coast and Alaska fisheries in both seabird distributions and bycatch risk. To this end, in 2018, NMFS and Oregon Sea Grant secured funding to place dedicated seabird observers on U.S. West Coast trawl vessels in 2019, with the aim of adding to, and improving the data currently being collected in that fishery. Second, any mitigation measures will need to be general enough that all vessels can adopt them and flexible enough that they can be modified for vessel-specific configurations. Third, mitigation measures will have to be cost effective and not overly burdensome. Fourth, mitigation measures will have to work in most types of conditions found at sea, be durable, and not compromise current vessel operations or safety of personnel. Finally, mitigation strategies will need to be tested, demonstrated to be effective, and have clear performance standards and benchmark goals for bycatch reduction.

There were several other take-home messages conveyed during this workshop. Everyone agreed that this will be a long-term, slow, deliberative, and collaborative process. The industry expressed their appreciation to the NOAA Fisheries for starting from a collaborative stance early in the process and involving the fleet with the development of mitigation measures. The industry was also clear that they want to be pro-active and intend to engage their fleets in this effort. To that end, in 2018, some vessels began voluntarily testing several different mitigation devices including the snatch block, warp booms, and water cannons.

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