



United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Anchorage Fish and Wildlife Conservation Office
4700 BLM Road
Anchorage, Alaska 99507



In Reply Refer To:
FWS/AFES/AFWCO

March 29, 2018

EMAILED TO:

Dr. Douglas DeMaster, Ph.D.
Science and Research Director
National Oceanic and Atmospheric Administration
National Marine Fisheries Service, Alaska Fisheries Science Center
7600 Sand Point Way, N.E.
Seattle, Washington 98115-6349

Subject: Biological Opinion on the Effects of Groundfish Research Surveys by the Alaska Fisheries Science Center in Alaska (07CAAN00-2018-F-0008)

Dear Dr. DeMaster:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of continued groundfish research surveys by the Alaska Fisheries Science Center, National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration, during operations in Norton Sound, and the Northern Bering, Chukchi, and Beaufort Seas, Alaska and the effects on the federally endangered short-tailed albatross (*Phoebastria albatrus*), in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). We received your September 12, 2017, request for formal consultation on September 15, 2017.

We have based this biological opinion on information that accompanied your September 12, 2017, request for consultation, including the 2017 biological assessment (NMFS 2017), the draft environmental assessment (NMFS 2016), and the description of the research gear and vessels descriptions contained in Appendix A of the draft environmental assessment. We can make a record of this consultation available at the Anchorage Fish and Wildlife Conservation Office.

Consultation History

2015 to 2017 - The NMFS and the Service engaged in informal discussions regarding the need for a section 7 consultation for the short-tailed albatross, along with the appropriate level of analysis required for a consultation, for the continuation of NMFS' groundfish research surveys conducted by the Alaska Fisheries Science Center.

2016 - NMFS completed a draft environmental assessment (NMFS 2016) for their continued

groundfish research surveys conducted by the Alaska Fisheries Science Center.

September 2017 - The NMFS requested initiation of formal section 7 consultation by letter dated September 12, 2017, received by the Service on September 15, 2017, accompanied by a biological assessment (NMFS 2017).

October 2017 - After reviewing the biological assessment, the Service requested clarification from the NMFS that the biological assessment and section 7 consultation for the effects of groundfish research surveys by the Alaska Fisheries Science Center on short-tailed albatross are limited to those activities that take place in Alaska. In addition, all activities conducted by the International Pacific Halibut Commission proposed for inclusion in this section 7 consultation are limited to those activities conducted in Alaska's waters. By phone on October 10, 2017, and a follow-up e-mail on October 11, 2017, NMFS confirmed that all activities referenced in the biological assessment and included in this section 7 consultation are limited to the waters of Alaska. The Service confirmed that there was sufficient information to proceed with the consultation by letter dated October 18, 2017.

January 2018 - The Service provided the NMFS a draft biological opinion for their review on January 24, 2018.

February 2018 - On February 16, 2018, the NMFS returned the draft biological opinion to the Service with their suggested edits, including a request from NMFS to amend the proposed avoidance and minimization measures that would be implemented during groundfish research surveys. In particular, the NMFS requested that their original proposed avoidance and minimization measure that stated that a protected species observer would record observations and interactions of ALL albatross species (short-tailed, Laysan, and black-footed) be amended to reflect that only short-tailed albatross observations and interactions would be recorded.

March 2018 - The Service reviewed the NMFS suggested edits to the biological opinion, incorporating suggested changes when appropriate. The Service also amended the avoidance and minimization measures as proposed by the NMFS. The Service then re-visited the Status of the Species, the Environmental Baseline, the Effects of the Action, the Cumulative Effects and the Conclusion sections of the biological opinion to determine if these amended avoidance and minimization measures changed the jeopardy analysis for the short-tailed albatross. After determining the jeopardy analysis was still valid with the amended avoidance and minimization measures, the Service revisited the Incidental Take Statement to ensure anticipated take was consistent with the Service's previous analysis.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Douglass M. Cooper', with a stylized flourish at the end.

Douglass M. Cooper
Acting Field Supervisor

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The National Marine Fisheries Service (NMFS), Alaska Fisheries Science Center (AFSC), provides scientific support for the NMFS Alaska Regional Office. The AFSC plans, develops, and manages a multi-disciplinary program of basic and applied fisheries research, which in turn provides scientific data for understanding, managing, and conserving marine resources under the jurisdiction of the NMFS. The AFSC also provides information from their research program to the International Pacific Halibut Commission (IPHC), specifically related to halibut stock assessment and halibut biology, and assists the IPHC with their survey goals. The IPHC conducts biological and scientific research programs to further the understanding of Pacific halibut.

This biological opinion evaluates the continuation of the AFSC's fisheries research activities on the short-tailed albatross during the next five years, and is limited to those AFSC and IPHC research activities that would be conducted within the waters of the State of Alaska, including those conducted in the Gulf of Alaska, the Bering Sea and Aleutian Islands, and the Chukchi and Beaufort Seas Research Areas (Figure 1).

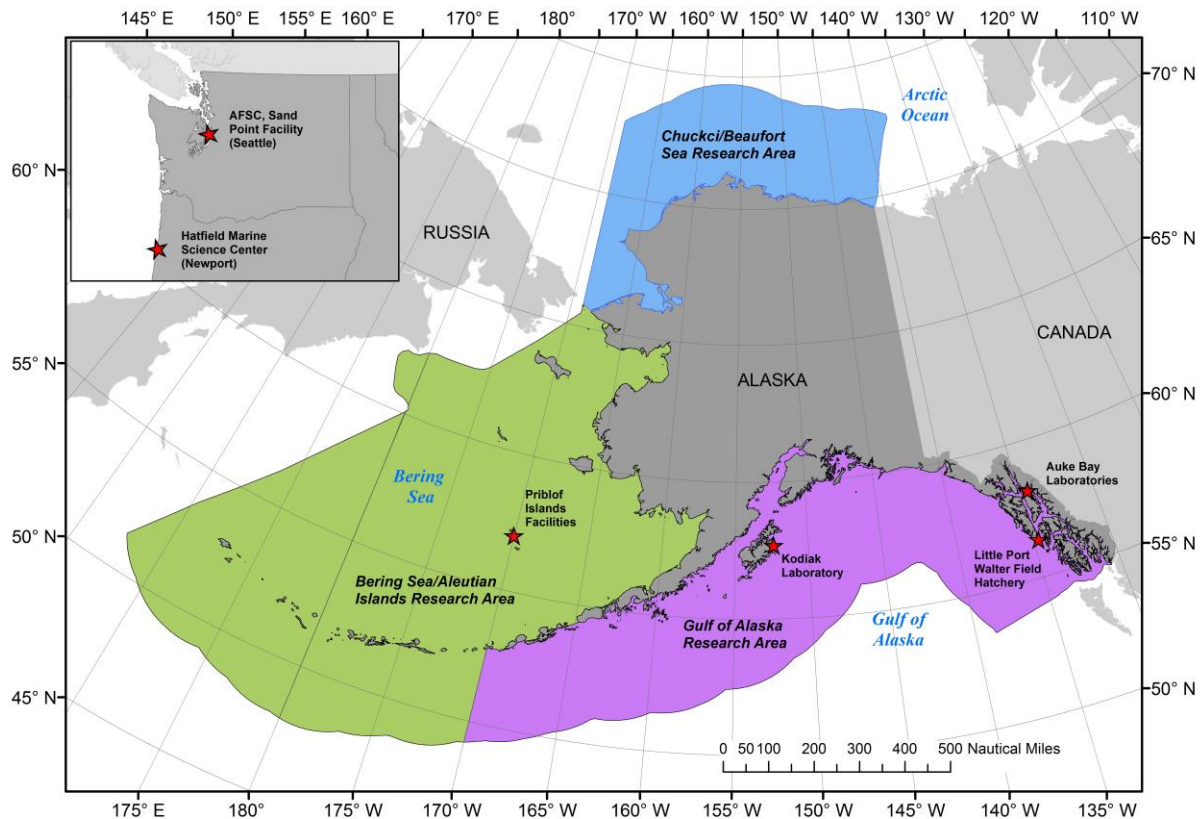


Figure 1. AFSC Research Areas in the State of Alaska (Source: NMFS 2016, NMFS 2017)

Fisheries research conducted by the AFSC and the IPHC use gear types similar to those used in commercial fishing operations in Alaska, such as bottom, mid-water, and surface trawls, and longline gear (hook and line methods). Although AFSC and IPHC researchers use similar types of gear as the commercial fisheries, the size, configuration, and methods used during AFSC and IPHC research surveys can be significantly different. For example, standard bottom trawl survey tow durations for AFSC and IPHC research trawls are usually 30 minutes or less at the targeted depth, excluding deployment and retrieval time; commercial fisheries trawls using similar gear are usually deployed for longer periods of time.

In addition to the sampling and gear types listed above, research activities may include the use of plankton nets, seine nets, cast nets, gill nets, dip nets, epibenthic tow sleds, rock dredges, pots and traps, oceanographic instruments, submersibles, acoustic instruments, and underwater cameras. A summary description of research conducted on National Oceanic and Atmospheric Administration (NOAA) vessels and vessels chartered by NOAA can be found in Table 2-1 and Table 2-2 of the biological assessment (NMFS 2017), with a more detailed description of each of the research programs and gear types available in the Draft Programmatic Environmental Assessment (NMFS 2016).

The AFSC and the IPHC have developed procedures to reduce potential interactions with seabirds, and specifically short-tailed albatross, during research activities. The procedures described are based on protocols used during previous research surveys, best practices developed for commercial fisheries using similar gear, consultation with protected species experts and fisheries gear experts, and are currently implemented on AFSC and IPHC surveys. The AFSC and the IPHC will implement the following avoidance and minimization measures, specified by vessel and gear type, during research activities:

Fisheries Research Using Trawl Vessels and Gear

- 1) A designated Protected Species Observer (PSO) will be assigned for each survey cruise. The PSO will be the Chief Scientist or their designee. The PSOs are trained in protected species identification and trained in the AFSC Mitigation and Monitoring protocols including active avoidance (the move-on rule), recording, and reporting. The PSO's scope of responsibilities includes monitoring for threatened and endangered species. When the PSO is not on the bridge, the vessel operator will take up those essential functions to identify and avoid protected species and report any interaction to the PSO.
- 2) The PSO will watch for protected species (including short-tailed albatross) and take proactive steps to avoid deploying the gear in any situation where there is a high likelihood for an interaction with protected species. In particular, the PSO will alert the vessel operator and vessel crew to the presence of short-tailed albatross. Under those circumstances, the PSO will direct all vessel action necessary to initiate mitigation procedures.

- 3) The PSO will use the AFSC Protected Species Interaction Form or its equivalent to record all sightings of and significant interactions with short-tailed albatrosses.
- 4) Third wires will be limited to use on mid-water trawls conducted during summer and winter acoustic surveys that target groundfish such as pollock.
- 5) Chumming (i.e., releasing additional bait to attract target species to the gear), or addition of offal to the water column, is not allowed during research trawl deployment.

Fisheries Research Using Longline Vessels and Gear

- 1) A designated PSO will be assigned for each survey cruise. The PSO will be the Chief Scientist or their designee. The PSOs are trained in protected species identification and trained in the AFSC Mitigation and Monitoring protocols including active avoidance (the move-on rule), recording, and reporting. The PSO's scope of responsibilities includes monitoring for threatened and endangered species. When the PSO is not on the bridge, the vessel operator will take up those essential functions to identify and avoid protected species and report any interaction to the PSO.
- 2) The PSO will watch for protected species and take proactive steps to avoid deploying the gear in any situation where there is a high likelihood for an interaction with protected species. In particular, the PSO will alert the vessel operator and vessel crew to the presence of short-tailed albatrosses. Under those circumstances, the PSO will direct all vessel action necessary to initiate mitigation procedures such as the move-on rule.
- 3) The PSO will use the AFSC Protected Species Interaction Form or its equivalent to record all sightings of and significant interactions with short-tailed albatrosses.
- 4) Tori lines (paired streamers) will be deployed before longline gear is set (Figure 2). The paired streamer line mitigation measures follow the same deployment and performance standards required for commercial longline vessels, as recommended by Melvin et al. (2001), and are derived from collaborative research conducted between Washington Sea Grant, NMFS, and the freezer longline and sablefish longline components of the commercial industry. A crewman is responsible for ensuring the streamer lines meet performance standards and are working properly, and the PSO is present during the set to ensure protocols are being followed. Additionally, the vessel is instructed to set at a slow speed to ensure the line sinks quickly. Seven-pound lead balls or equivalent are attached at the end of each skate to increase the sink rate and ensure the groundline reaches the seafloor.
- 5) AFSC longline protocols specifically prohibit chumming before or during the longline setting operations (i.e., releasing additional bait to attract target species to the gear). However, longline surveys are conducted on contracted commercial fishing

catcher/processor vessels and fish are processed as the longline is retrieved. Spent bait and processing offal are discarded away from the longline gear as it is being retrieved, which often serves to attract seabirds and marine mammals away from the longline. Due to the volume of fish caught with each set and the length of time it takes to retrieve the longline (up to 8 hours), the retention of spent bait and offal until the gear is completely retrieved is not possible and the attraction of birds and marine mammals to the vessel is likely.

Fisheries Research Using Other Gear Types

The AFSC and the IPHC have not proposed avoidance and minimization measures specific to research activities using gear types other than trawls and longlines.

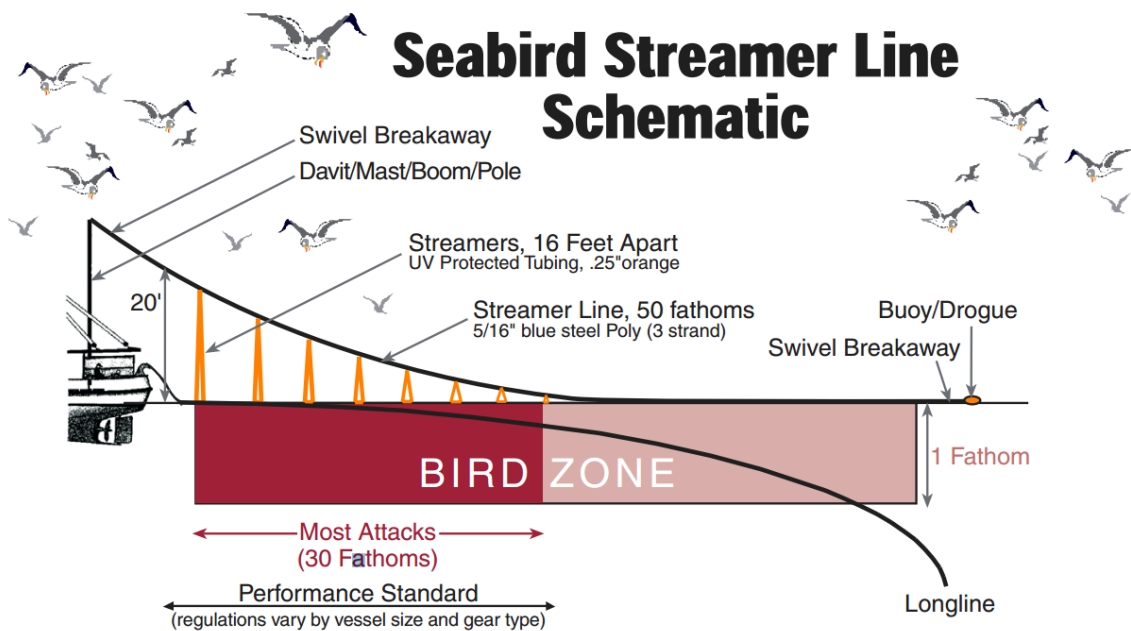


Figure 2: Streamer lines used to reduce seabird bycatch in fisheries using hook-and-line gear (Melvin 2000, Melvin et. al. 2001).

ANALYTICAL FRAMEWORK FOR THE JEOPARDY AND ADVERSE MODIFICATION DETERMINATIONS

Section 7(a)(2) of the Endangered Species Act (ESA) requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. “Jeopardize the continued existence of” means “to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the short-tailed albatross, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the short-tailed albatross in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the short-tailed albatross; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the short-tailed albatross; and (4) the Cumulative Effects, which evaluates the effects of future, non-Federal activities, that are reasonably certain to occur in the action area, on the short-tailed albatross.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the current status of the short-tailed albatross, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to reduce appreciably the likelihood of both the survival and recovery of the short-tailed albatross in the wild by reducing the reproduction, numbers, and distribution of that species.

STATUS OF THE SPECIES

The short-tailed albatross was federally listed as endangered throughout its range, including the United States, on July 31, 2000 (65 FR 46643). At the time of listing, designation of critical habitat was determined to be unnecessary (65 FR 46651).

Species Description

The short-tailed albatross is a large pelagic bird with long, narrow wings adapted for soaring above the water surface. The short-tailed albatross is the largest albatross species in the North Pacific with a body length of 33 to 37 inches and wingspan of 84 to 90 inches. Adults have a white head and body, and golden cast to the crown and nape. The tail is white with a black terminal bar. A disproportionately large pink bill distinguishes it from the other two North Pacific albatross species, Laysan albatross and black-footed albatross, and its hooked tip becomes progressively bluer with age. Short-tailed albatross juveniles are blackish-brown,

progressively whitening with age, and are the only North Pacific albatross that develops an entirely white back at maturity (USFWS 2008).

Historic and Current Distribution

Historically, the short-tailed albatross was thought to be the most abundant albatross in the North Pacific, with 14 known breeding colonies, and also potentially occurred in the North Atlantic (Olson and Hearty 2003; USFWS 2008). However, from the late 1800's, millions were hunted for feathers, oil, and fertilizer (USFWS 2008), and by 1949 the species was thought to be extinct. The species was rediscovered and began to recover during the 1950s, and currently occurs throughout the North Pacific Ocean.

Today, breeding colonies exist primarily on two small islands in the North Pacific Ocean. Torishima, a Japanese island that is an active volcano, is estimated to contain 80 to 85 percent of the existing breeding population. The second main breeding population is believed to nest in the Senkaku Islands (USFWS 2008, 2014). The Senkaku Islands breeding population estimate is an unverified projection from growth of this breeding colony since 2002, the last time the site was visited. The Senkaku Islands are in disputed ownership between China, Japan, and Taiwan, and are politically difficult to access. Therefore, no nest searches have occurred since 2002. The estimates of the Senkaku Islands population data are extrapolated from the 2002 data under the assumption that factors affecting population growth have remained similar to those observed on Torishima Island (Deguchi et al 2017).

In 2008, 10 chicks were translocated to a former colony site on Mukojima, a non-volcanic island south of Torishima Island, in the hope of re-establishing a colony on this island. All translocated chicks survived to fledging. From 2009 through 2012, an additional 15 chicks per year were moved to Mukojima Island and reared to fledging. All but one of 70 translocated chicks from 2008 through 2012 fledged successfully. The translocation effort may be attracting additional breeding adults to this island; an egg was laid by a pair in 2012 and 2013. In 2016, an 8-year old translocated male and a wild female, thought to be from the Senkaku Islands, successfully fledged the first chick on Mukojima Island. During the 2017 breeding season, one chick successfully hatched, and 10 short-tailed albatross adults were reported on Mukojima Island.

As of 2016, there were also two breeding sites in addition to Mukojima within the Ogasawara (Bonin) Islands: one on Nakodojima approximately 3.1 miles south of Mukojima and one on Yomejima approximately 12.42 miles south of Mukojima (Deguchi et al. 2017). A chick was fledged from Nakodojima in 2014, and the Yomejima chick was observed in 2016. Since the translocation, three pairs have produced four chicks in the Ogasawara Islands (Deguchi et al. 2017, Deguchi, pers. comm. 2017).

In the Northwestern Hawaiian Islands, one short-tailed albatross pair was breeding at the Midway Atoll (having fledged a chick in 2011, 2012, and 2014) and another suspected female-female pair has been attempting to breed at Kure Atoll since 2010. The hatching in 2011 marked the first confirmed hatching of a short-tailed albatross outside of the islands surrounding Japan in

recorded history. Prior to that, observations of infertile short-tailed albatross eggs and reports from the 1930's suggested that short-tailed albatross may have nested on Midway Atoll in the past.

Life History

The short-tailed albatross is a colonial, annual breeding species; each breeding cycle lasts about eight months. Birds may breed at five years of age, but first year of breeding is more commonly at age six. Birds arrive on Torishima Island in October, but as many as 25 percent of breeding age adults may not return to the colony in a given year. Instead, they spend the year at sea, often in Alaskan waters. A single egg is laid in late October to late November, and is not replaced if destroyed. Bi-parental incubation lasts 64 to 65 days. Hatching occurs from late December through January (Hasegawa and DeGange 1982), and chicks begin to fledge in late May through June.

Nest sites may be flat or sloped, with sparse or full vegetation. Nests consist of a concave scoop about two feet in diameter on the ground, lined with sand and vegetation. Tickell (1975) described short-tailed albatross nests as scoops in volcanic ash lined and sometimes built up with grass.

Parents alternate foraging trips that may last two to three weeks, while taking turns incubating the egg. When one bird is foraging, the other stays on the nest without eating or drinking. The first few days after hatching, the chick is fed on stomach oil, which is rich in calories and Vitamin A. This oil also provides a source of water once metabolized. Soon after hatching, the chicks are fed more solid food, such as squid and flying fish eggs. During the first few weeks after hatching, one adult broods the chick and the other forages at sea. Later, when the chick can thermoregulate, both parents leave the chick and forage simultaneously.

By late May or early June, the chicks are almost fully grown, and the adults begin abandoning the colony site (Hasegawa and DeGange 1982). The chicks fledge soon after the adults leave the colony (Austin 1949), and by mid-July the breeding colony is empty. Non-breeders and failed breeders disperse earlier from the breeding colony, during late winter through spring (Hasegawa and DeGange 1982).

Short-tailed albatross are monogamous and highly philopatric to nesting areas (they return to the same breeding site year after year). Chicks hatched at Torishima Island return there to breed. However, young birds may occasionally disperse from their natal colonies to attempt to breed elsewhere, as evidenced by the appearance of adult birds on Midway Atoll that were banded as chicks on Torishima Island (Richardson 1994). In summer (non-breeding season), short-tailed albatross disperse widely throughout the temperate and subarctic North Pacific Ocean (Sanger 1972; Suryan et al. 2007b).

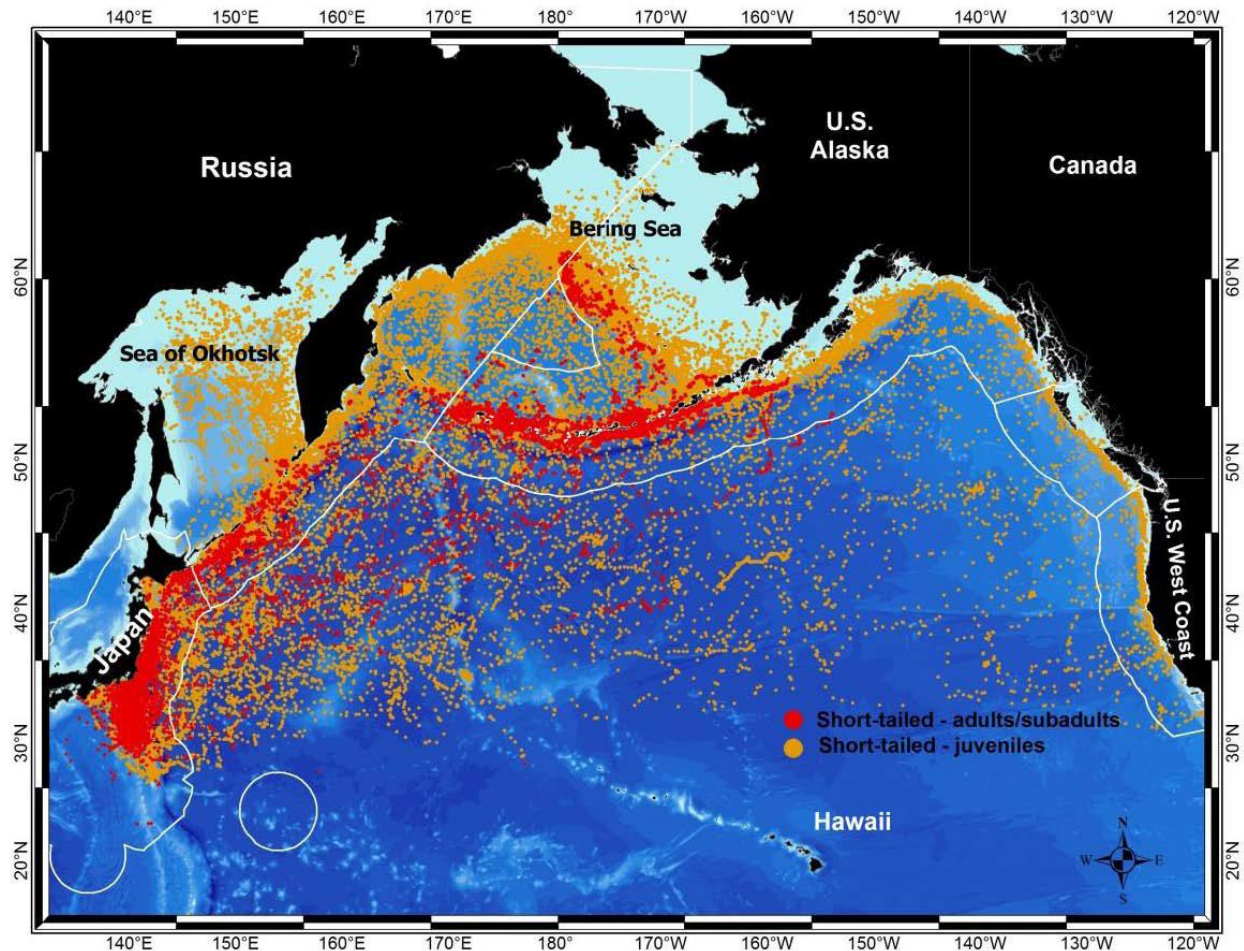


Figure 3: Locations of 99 short-tailed albatross tracked between 2002 to 2012, showing adult and juvenile distributions in the North Pacific (Suryan et al. 2006, 2007a, 2008, Suryan and Fischer 2010, Deguchi et al. 2014). White lines represent the Exclusive Economic Zones of countries within the range of short-tailed albatross.

Habitat Description

Distribution

Juveniles and younger sub-adult birds (up to 2 years old) have a wider range than adults and can be found in the Sea of Okhotsk, a broad region of the Bering Sea, and the west coast of North America (O'Connor et al. 2013; Figure 3). Sub-adult birds also travel greater daily distances (mean = 119 mi/day in first year of flight, 112 mi/day in second year of flight; O'Connor et al. 2013) than adults (83 mi/day; Suryan et al. 2007a). Post-fledging juvenile birds ranged widely throughout the North Pacific rim, and some individuals also spent time in the oceanic waters between Hawaii and Alaska (Deguchi et al. 2014). Although the highest concentrations of short-tailed albatross are found in the Aleutian Islands and Bering Sea (primarily along the outer

continental shelf) regions of Alaska, subadults appear to be distributed along the west coast of the U.S. more than has been previously reported (Guy et al. 2013).

Foraging Ecology and Diet

The diet of short-tailed albatross is not well-known, but observations of food brought to nestlings and of regurgitated material (Austin 1949), as well as at-sea observations during feeding, indicate that the diet includes squid, shrimp, fish (including bonitos [*Sarda* sp.], flying fishes [Exocoetidae] and sardines [Clupeidae]), flying fish eggs, and other crustaceans (Hasegawa and DeGange 1982; Tickell 1975). This species has also been reported to scavenge discarded marine mammals and blubber from whaling vessels, and they readily scavenge fisheries offal (Hasegawa and DeGange 1982). Short-tailed albatross forage diurnally and possibly nocturnally (Hasegawa and DeGange 1982), either singly or in groups (occasionally in the hundreds) predominantly taking prey by surface-seizing (Piatt et al. 2006).

In an analysis of historic and current distribution of North Pacific albatrosses, Kuletz et al. (2014) speculated that the increase in albatrosses (including short-tailed albatross) and changes in their distribution over the last decade was due to possible increases in squid biomass in the Bering Sea and Aleutian Islands region. Overall the much higher abundance of albatrosses in the Aleutian Islands compared to the Bering Sea mirrored the relative density of squid, which is estimated to be approximately seven times higher in the Aleutian Islands (Ormseth 2012).

Breeding Habitat

Short-tailed albatross nest on isolated, windswept, offshore islands, with restricted human access. On Torishima Island, most birds nest on a steep site containing loose volcanic ash (Tsubamezaki); however, a new colony on a vegetated gentle slope (Hatsunezaki) is growing rapidly. Nesting at the eroding Tsubamezaki site may be an artifact of where commercial harvest did not occur, due to the difficulty of access for humans. Torishima Island, where vegetated, is dominated by a clump-forming grass, *Miscanthus sinensis* var. *condensatus*. The grass helps to stabilize the soil, provide protection from weather, and acts as a beneficial visual barrier between nesting pairs that minimizes antagonistic interactions. In addition, it allows for safe, open takeoffs and landings.

Threats

Natural Events

Habitat destruction from volcanic eruption continues to pose a significant threat to short-tailed albatross at the primary breeding colony on Torishima Island (USFWS 2014). The main colony site, Tsubamezaki, is on a sparsely vegetated steep slope of loose volcanic soil that is subject to severe erosion, particularly during monsoon rains. A landslide at Tsubamezaki buried up to 10 chicks in February 2010 (Yamashina Institute for Ornithology, unpublished data). Future eruptions or landslides could result in a significant loss to the primary nesting area and the population as a whole. Non-native plants, such as shrubs, can limit or destroy suitable nesting habitat on breeding islands. Although there is currently no known invasive plant problem on

Torishima Island, accidental introduction remains a threat. These events can result in permanent loss of habitat.

Commercial Fishing

Albatross, like many seabirds, attack baited hooks of both pelagic and demersal longlines while the hooks are deployed; if they are hooked or snagged, they are likely to be injured or pulled underwater with the rest of the gear and drowned (USFWS 2008). Interactions with trawls may occur when seabirds fly behind vessels or float in offal plumes that trail behind vessels.

Individuals can strike the trawl cables (warp cables) or the sonar cable (third wire) attached to the net or become entangled on the outside of nets towed at or near the surface; the former in particular are unlikely to be detected as they do not show up on the vessels' deck to be sampled (USFWS 2008).

In U.S. waters, there were two reported fishery-related mortalities of short-tailed albatross in the 1980's. The first bird was found dead in a fish net north of St. Matthew Island, Bering Sea, in July 1983. The second one was killed in October 1987, by a halibut vessel in the Gulf of Alaska. Both mortalities were reported by fishermen (USFWS 2008). Since 1990, fisheries observers have documented seven short-tailed albatross mortalities in the Gulf of Alaska and Bering Sea Islands hook-and-line Pacific cod groundfish fishery, two mortalities from the sablefish fishery in the Gulf of Alaska and Bering Sea Islands, two mortalities from the hook-and-line fisheries targeting Greenland turbot in the Bering Sea, and one mortality from the West Coast sablefish fishery (Appendix A, USFWS 2014).

Oil Pollution

There is potential for oil spills to occur in the action area which could affect short-tailed albatross. Oil contamination can adversely affect short-tailed albatross either through acute toxicity from being directly oiled or as a result of chronic or sublethal exposure to low levels of oil. Petroleum exposure may: (1) compromise seabird thermoregulation through fouling of feathers, (2) cause direct toxicity through ingestions (during preening), (3) contaminate the birds' food resources, (4) reduce prey availability from toxic effects on prey species, and (5) cause embryo toxic effects (USFWS 2008, 2009).

Plastic Pollution

Plastics have been found in the stomachs of most, if not all, species of albatross. Both black-footed and Laysan albatross are well known to ingest plastics in the course of foraging. Lavers and Bond (2016) have recently examined the role of plastic as a vector for trace metals in Laysan albatrosses. Lavers et al. (2014) studied sub-lethal effects of plastic ingestion in flesh-footed shearwaters (*Puffinus carneipes*) and found birds with high levels of ingested plastic exhibited reduced body condition and increased contaminant load ($p < 0.05$; Lavers et al. 2014). Tanaka et al. (2013) analyzed polybrominated diphenyl ethers in the abdominal adipose of short-tailed shearwaters (*Puffinus tenuirostris*). Some of the birds were found to contain higher-brominated constituents, which were not present in their pelagic fish prey. These same birds were found to contain plastics in their stomach. Plastic ingestion is, therefore, not only a direct dietary risk but

may contribute to chronic accumulation of contaminants that adhere to and are absorbed by plastics in albatross.

Global Changes

Climate change impacts to short-tailed albatross could include changes to nesting habitat or changes to prey abundance or distribution. Fortunately, the nesting habitats on Torishima Island, the Ogasawara Islands, and the Senkaku Islands are high enough above sea level (above 70 feet) to avoid inundation by projected sea level rise. Models for the Northwestern Hawaiian Islands indicate nesting habitat used by short-tailed albatross on low-lying Midway and Kure Atolls is likely to be lost by the end of the century due to sea level rise and increased storm frequency and intensity (Storlazzi et al. 2013).

Sea-ice retreat in the Arctic may potentially open new foraging habitat or provide a new migration corridor between the Pacific and Atlantic Oceans. A juvenile short-tailed albatross was recently sighted in the Arctic (Chukchi Sea), and evidence from other species (e.g., northern gannet [*Morus bassanus*] and ancient murrelet [*Synthliboramphus antiquus*]) indicates some bird species might use ice free portions of the Arctic as a migration or population dispersion route (Gall et al. 2013). The alteration of ice, prey, and seabird distribution is expected to continue, but how these changes will affect short-tailed albatrosses is unknown.

Population Estimate

A species thought to be extinct in the 1940's, the current short-tailed albatross estimated population has steadily increased to just under 6,000 individuals, with the population increasing at an average annual rate of 8.5 percent (Sievert and Hasegawa, unpublished population model, 2017).

Recovery Plan

The Short-tailed Albatross Recovery Plan was finalized in 2008 (USFWS 2008). Specific actions to achieve recovery and delisting of the short-tailed albatross identified in the Recovery Plan are:

- 1) Continue to manage the population and habitat on Torishima Island;
- 2) Monitor the size and productivity of the Senkaku Islands population;
- 3) Continue telemetry studies to determine at-sea habitat use, spatial and temporal distribution relative to environmental conditions, and potential for interactions with particular fisheries;
- 4) Establish one or more breeding colonies on non-volcanic islands as insurance against catastrophic events on Torishima;
- 5) Continue research on fisheries operations and mitigation measures that will help managers reduce take of short-tailed albatross throughout their range;
- 6) Conduct other research that will facilitate recovery;
- 7) Conduct other management-related activities that will facilitate recovery;

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- 8) Conduct outreach and international negotiations that will raise awareness of this species situation among stakeholders and management agencies in albatross range states; and
- 9) Compile protocols for all aspects of recovery work.

In 2008, efforts were undertaken to begin establishment of a nesting colony on a non-volcanic island (Recovery Action Four) and former breeding site, Mukojima. Birds from the translocation project are now making their way back to Mukojima Island (Deguchi et al. 2014, Yamashina Institute 2015). Deterministic population models project the population on Mukojima to reach 50 breeding pairs by 2046, with 75 breeding pairs estimated in 2052 (Sievert and Hasegawa, unpublished population model, 2017; USFWS 2014).

Specific to Recovery Action Five, the NMFS and the USFWS are working with the commercial fishing industry to minimize injury and mortality of the short-tailed albatross in U.S. waters. The NMFS's 2004 revised seabird bycatch regulations require Alaska longline vessels over 55 feet to deploy streamer lines while setting gear (USFWS 2009). Progress has been made in developing seabird bycatch avoidance measures that minimize seabird bycatch in the Alaska demersal longline fisheries (USFWS 2008).

The short-tailed albatross may be reclassified from endangered to threatened under the following conditions:

- 1) The total breeding population of short-tailed albatross reaches a minimum of 750 pairs; and
- 2) At least three breeding colonies each exhibiting a 3-year running average growth rate of ≥ 6 percent for ≥ 7 years, at least two of which occupy island groups other than Torishima with a minimum of ≥ 50 breeding pairs each.

The species may be delisted under the following conditions:

- 1) The total breeding population of short-tailed albatross reaches a minimum of 1,000 pairs (population totaling 4,000 or more birds); and
- 2) The 3-year running average growth rate of the population as a whole is ≥ 6 percent for ≥ 7 years; and
- 3) At least 250 breeding pairs exist on two island groups other than Torishima, each exhibiting ≥ 6 growth for ≥ 7 years; and
- 4) A minimum of 75 pairs occur on a site or sites other than Torishima and the Senkaku Islands.

ENVIRONMENTAL BASELINE

Action Area

The implementing regulations for section 7(a)(2) of the ESA define the “action area” as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 Code of Federal Regulations 402.02).

The action area for the AFSC and the IPHC research activities analyzed in this biological opinion is limited to the marine waters off the State of Alaska, which covers nearly 3 million square miles and includes three research areas: 1) the Gulf of Alaska, 2) the Bering Sea and Aleutian Islands, and 3) the Chukchi Sea and Beaufort Sea. Generally, these research areas occur within the waters of the Exclusive Economic Zone, which extends from 3 to 200 nautical miles from the coast.

Existing Conditions in the Action Area

The action area provides habitat for a variety of seabirds, marine mammals, and fish. Commercial, recreational and subsistence fishing are common in the area, with fishing vessels using a range of fishing gear and targeting multiple species.

Previous Consultations in the Action Area

The USFWS (2015) issued a biological opinion to the NMFS for the Fishery Management Plans for the Gulf of Alaska and Bering Sea/Aleutian Islands Federal groundfish fisheries and the State of Alaska parallel groundfish fisheries. We determined that this action would not jeopardize the short-tailed albatross.

The USFWS (2018) issued a biological opinion to the NMFS for the Pacific halibut fisheries in Alaska. We determined that this action would not jeopardize the short-tailed albatross.

Status of the Species in the Action Area

These wide-ranging seabirds are found within the action area throughout the North Pacific and Bering Sea, and may be found in the action area year round. Waters around the Aleutian Islands are important for feeding, particularly during the summer non-breeding season. A small number of recent sightings have occurred in the Chukchi Sea as well, suggesting that they may be increasing their range into Arctic waters. Juveniles and up to 25 percent of adults each year will forego returning to the North Pacific and Japanese nesting habitat and remain in waters around Alaska (Piatt et al. 2006). No breeding habitat is located within the action area.

After fledging, immature short-tailed albatross either move immediately north to the western Aleutian Islands, or remain within northern Japan and Kuril Islands for the remainder of the summer, and in September move north to the Aleutian Islands. During the non-breeding season, short-tailed albatross range along the continental shelf and slope regions of the North Pacific. Short-tailed albatross tend to favor the steeply sloped edges of the Gulf of Alaska and Bering Sea shelf. Piatt et al. (2006) identified hot spots where short-tailed albatross feed and possibly molt

along the shelf areas and canyons; large groups of short-tailed albatross have been seen over the Bering Sea canyons. Short-tailed albatross are continental shelf specialists due to their limited diving ability (Piatt et al. 2006). The continental shelf brings prey close to the surface, providing easy access to a bird with a poor diving ability (Piatt et al. 2006).

The Aleutian Islands and Bering Sea may be especially important during molting. Data from albatrosses captured at sea in the Aleutian Islands showed that most birds were undergoing extensive flight feather molt (R. Suryan and K. Courtot, unpublished data). Satellite tracking data indicated individuals spent an average of 19 consecutive days (maximum of 53 days) within a 62-mile radius of some Aleutian passes (R. Suryan and K. Courtot, unpublished data). Seasonal distribution among juveniles was found to shift from the Bering Sea shelf in the summer, to the Aleutian Islands in the winter (O'Connor et al. 2013).

EFFECTS OF THE ACTION

Fisheries research conducted by the AFSC and IPHC would occur primarily in the offshore waters of Alaska, approximately 3 to 200 nautical miles from the coast, using a variety of gear types and vessels. Although the fishing gear types and methods used would vary according to the specific research plan, most of the research would be conducted using vessels (ships and boats).

Direct Effects

The AFSC's biological assessment states that death or injury of short-tailed albatross has not been documented in the AFSC's research fisheries over the last five years or the IPHC research fisheries in approximately 18 years (NMFS 2017). However, death and injury of short-tailed albatross has been documented in recent years in the closely related commercial fisheries using similar gear types to those proposed for fisheries research (Appendix A, USFWS 2015, USFWS 2018). In addition, the AFSC and the IPHC have documented death and injury of other North Pacific albatross species due to interactions with longline research gear (NMFS 2016, NMFS 2017). The AFSC has documented death and injury of Laysan albatross and black-footed albatross, although these two species are more abundant in the action area than the short-tailed albatross. However, as the population of short-tailed albatross increases, the likelihood of direct effects (death or injury) to short-tailed albatross from the AFSC's and IPHC's research fishing gear is expected to also increase.

Implementation of the AFSC and the IPHC's proposed avoidance and minimization measures would reduce the number of interactions between all albatross, including short-tailed albatross, and fisheries research gear; death or injury of short-tailed albatrosses from research fisheries gear interactions would therefore also be expected to be reduced by these measures. However, these avoidance and minimization measures would not completely eliminate the risk of interactions, or the associated risk of death or injury. Interaction with fisheries research gear or vessels is expected to pose a continued risk of death or injury to short-tailed albatross.

Indirect Effects

Contaminants

The potential release of contaminants due to research activities could introduce chemicals and oil into offshore waters, potentially impairing the ability of short-tailed albatross to forage. Vessels that are damaged or sink may release oil and fuel from on-board tanks. Although contaminant releases associated with the AFSC's research program are possible, they are not likely.

Debris

Derelict fishing gear and debris lost off of vessels could accumulate within the action area. Debris that floats in the water column can be consumed by seabirds, including the short-tailed albatross, when the birds are foraging. The ingestion of plastic may compromise seabirds and can result in dehydration and starvation, intestinal blockage, internal injury, and exposure to dangerous toxins (Sievert and Sileo 1993). Short-tailed albatross on Torishima commonly regurgitate large amounts of plastic debris (USFWS 2003). There is a slight chance that gear lost from the AFSC or IPHC research vessels could cause injury to short-tailed albatross that come in contact with it.

Effects on Recovery

Direct and indirect effects of the AFSC and IPHC continued research activities are not expected to affect the recovery of the short-tailed albatross. The short-tailed albatross is wide-ranging in the North Pacific Ocean, but does not rely on any one location for foraging. Suitable nesting habitat appears to be the primary factor limiting species recovery, and there is no nesting habitat in the action area.

Summary of Effects

The potential that interactions with the research fishing gear will cause the death or injury of a short-tailed albatross remain after implementation of the proposed avoidance and minimization measures (e.g., use of PSOs, use of streamers, avoiding setting gear in areas with large concentrations of albatross), and effects are expected to be similar to those seen on the closely related commercial fishing vessels using similar gear. The avoidance and minimization measures will, however, greatly reduce any interactions between short-tailed albatross and the fishing gear, even while not completely removing the possibility of these interactions. Contaminant and debris release due to the proposed action are possible, but are not likely.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. We do not consider future Federal actions that are unrelated to the proposed action in this section because they require separate consultation pursuant to section 7 of the ESA.

Sport and subsistence fishing activities are likely to continue in the action area into the foreseeable future. Commercial fishing within 3 nautical miles of the shoreline, which is managed by the State of Alaska, is also likely to continue into the foreseeable future. The effects of these continued fishing activities on the short-tailed albatross are expected to be similar to those from existing fishing activities, with the possibility that birds could be injured or killed in low numbers from interaction with the fishing gear or vessel strikes.

CONCLUSION

The regulatory definition of “to jeopardize the continued existence of the species” focuses on assessing the effects of the proposed action on the reproduction, numbers, and distribution, and their effect on the survival and recovery of the species being considered in the biological opinion. For that reason, we have used those aspects of the short-tailed albatross status as the basis to assess the overall effect of the proposed action on the species.

Reproduction

No short-tailed albatross nesting occurs in the action area, and there is no suitable nesting habitat in the action area, so the continuation of existing fishing research activities will not measurably affect short-tailed albatross reproduction.

Numbers

Although the proposed activities may remove a small number of individual short-tailed albatross from the breeding population, the population is increasing at a rate of approximately 8.5 percent per year (Sievert and Hasegawa, unpublished population model, 2017). Thus, the loss of a small number of individuals will be undetectable, as they represent a very small percentage of the total population, and these individuals will likely be replaced during the next breeding cycle.

Distribution

The loss of a small number of individual short-tailed albatross from the population will not measurably affect the species’ distribution. The short-tailed albatross is a wide-ranging species, and is found throughout the North Pacific Ocean, including the waters of Alaska, during its non-breeding life stage. There are multiple foraging and resting opportunities for the short-tailed albatross available in the action area. The short-term disturbance of short-tailed albatross due to fishing research activities and vessels will not change the distribution of the population as a whole in the North Pacific.

Recovery

The effect of the AFSC's proposed action, continuing fisheries research using a variety of gear types and vessels, is consistent with the goals of the recovery plan. Recovery Action Five is to continue research on fisheries operations and mitigation measures that will help managers reduce take of short-tailed albatross throughout their range, while Recovery Action Seven is to conduct other management-related activities that will facilitate recovery. The continuation of AFSC's fisheries research will be used to inform NMFS's management decisions related to commercial fishing quotas, allowable gear types, and required mitigation measures protective of the short-tailed albatross. The information provided by AFSC's research activities will continue to contribute to information about fisheries and short-tailed albatross interactions.

After reviewing the current status of the short-tailed albatross, the environmental baseline for the action area, the effects of the proposed AFSC and IPHC continued fisheries research, and the cumulative effects, it is the USFWS' biological opinion that the continuation of AFSC's and IPHC's fisheries research, as proposed, is not likely to jeopardize the continued existence of the short-tailed albatross, because:

- 1) The AFSC has developed avoidance and minimization measures that will reduce the level of death and/or injury to short-tailed albatross individuals due to interactions with fishing gear or vessel strikes.
- 2) No short-tailed albatross nesting occurs in the action area, and there is no suitable nesting habitat in the action area.
- 3) Research activities will not measurably affect short-tailed albatross numbers or distribution, and any short-tailed albatross injured or killed by the AFSC's research activities will be quickly replaced in the next breeding cycle.
- 4) The short-tailed albatross is a wide-ranging species with abundant foraging opportunities in the waters of the North Pacific Ocean, including the waters of Alaska. Although research activities and vessels will disrupt short-tailed albatross habitat in the action area for a relatively limited amount of time, additional habitat is available in the action area that will not be disturbed by the proposed activities.
- 5) The proposed continuation of AFSC's and IPHC's research activities will not affect the short-tailed albatross' potential for recovery.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened wildlife species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the USFWS to include significant habitat modification or degradation that results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the USFWS as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal

behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

In June 2015, the USFWS finalized new regulations implementing the incidental take provisions of section 7(a)(2) of the ESA. The new regulations also clarify the standard regarding when the USFWS formulates an Incidental Take Statement [50 CFR 402.14(g)(7)], from "...if such take may occur" to "...if such take is reasonably certain to occur." This is not a new standard, but merely a clarification and codification of the applicable standard that the USFWS has been using and is consistent with case law. The standard does not require a guarantee that take will result; only that the USFWS establishes a rational basis for a finding of take. The USFWS continues to rely on the best available scientific and commercial data, as well as professional judgment, in reaching these determinations and resolving uncertainties or information gaps.

Regulations adopted in 2015 allow for Incidental Take Statements to rely on the use of "surrogates" for estimating the amount of take that is reasonably certain to occur as a result of the proposed action in certain circumstances. To use a surrogate to estimate take, the following criteria must be met: (1) the Incidental Take Statement must describe the causal link between the surrogate and the take of the listed species; (2) the Incidental Take Statement must explain why it is not practical to express the amount or extent of anticipated take or to monitor take-related impacts in terms of individuals of the listed species; and (3) the Incidental Take Statement must set a clear standard for determining when the level of anticipated take of the listed species has been exceeded.

We anticipate that some short-tailed albatross could be taken as a result of the proposed action. We expect the incidental take to be in the form of injury or death from interactions with a variety of fisheries research gear and vessels.

We cannot quantify the precise number of short-tailed albatross that may be taken as a result of the actions that the AFSC has proposed because short-tailed albatross are a wide-ranging species and move throughout the North Pacific Ocean. For example, animals may have entered or departed the action area after the PSO has cleared an area, or may escape detection of the PSO before or during research activities are initiated. Birds that strike vessels or interact with research fishing gear may not be observed, or may be observed too late to avoid injury or death to the bird. The protective measures proposed by AFSC are likely to prevent mortality or injury of most individuals. In addition, finding a dead or injured short-tailed albatross that has struck the fishing gear or vessel is not certain, as the bird may fall into the ocean before it can be retrieved, may be taken by predators, or may be pulled underwater by the fishing gear.

Consequently, we are unable to reasonably anticipate the actual number of short-tailed albatross that would be taken by the proposed project; however, we must provide a level at which formal consultation would have to be reinitiated. The Environmental Baseline and Effects Analysis sections of this biological opinion indicate that adverse effects to short-tailed albatross would likely be low given the nature of the proposed activities, and we, therefore, anticipate that take of short-tailed albatross would also be low. We also recognize that for every short-tailed albatross found dead or injured, other individuals may be killed or injured that are not detected, so when we determine an appropriate take level we are anticipating that the actual take would be higher and we set the number below that level.

We have set the take estimate for the AFSC's and IPHC's research fishing activities by using the closely associated commercial fisheries as a proxy (USFWS 2015, USFWS 2018). Therefore, if two adult, subadult, or juvenile short-tailed albatross are found dead or wounded in a rolling two-year period (to be defined as any two consecutive years within the five year period covered by this consultation), or if more than three short-tailed albatross are found dead or wounded during the next five years as a result of the AFSC's and/or the IPHC's research activities, AFSC must contact our office immediately to reinitiate formal consultation. Project activities that are likely to cause additional take should cease during this review period because the exemption provided under section 7(o)(2) would lapse and any additional take would not be exempt from the section 9 prohibitions.

REASONABLE AND PRUDENT MEASURES

The measures described below are non-discretionary, and must be undertaken by the AFSC or made binding conditions of any agreement with the IPHC or other contractors, as appropriate, for the exemption in section 7(o)(2) to apply. The AFSC has a continuing duty to regulate the activity covered by this incidental take statement. If the AFSC (1) fails to assume and implement the terms and conditions or (2) fails to require the IPHC or other contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to agreements, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the AFSC must report the progress of the action and its impact on the species to the USFWS as specified in the incidental take statement [50 CFR 402.14(i)(3)].

The USFWS believes the following reasonable and prudent measure (RPM) is necessary and appropriate to minimize the impacts of the incidental take of the short-tailed albatross:

RPM 1: The AFSC must ensure that the effects of their action are commensurate with the analysis contained within this biological opinion.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the ESA, the AFSC must comply with the following terms and conditions, which implements the reasonable and prudent measure described above, and outlines reporting and monitoring requirements. These terms and conditions are non-discretionary.

Terms and conditions (T&C) include monitoring, review, reporting (see 50 CFR 402.14(i)(3)), and disposition of specimens (see 50 CFR 402.14(i)(1)(v)):

T&C 1 for RPM 1: The USFWS anticipates a maximum of three (3) short-tailed albatross will be incidentally taken as a result of the proposed fishing research in the next 5 years. If, during the course of the proposed action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The AFSC must immediately provide an explanation of the causes of the taking and review with the USFWS the need for possible modification of the reasonable and prudent measures.

The USFWS will not refer the incidental take of any federally listed migratory bird (in this case, short-tailed albatross) for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

REPORTING REQUIREMENTS

Pursuant to 50 CFR 402.14(i)(3), the AFSC must report the progress of the action and its impact on the short-tailed albatross to the USFWS as specified in this incidental take statement.

- 1) The AFSC will continue to require that all short-tailed albatross caught, regardless of gear type, and regardless of whether the mortality occurs in a sampled portion of the haul, be retained and reported immediately to the AFSC. The AFSC will then inform the USFWS of any mortality within 2 business days of the initial reporting. The following USFWS notifications should be made:

Alaska U.S. Fish and Wildlife Law Enforcement Office: 800-858-7621,
Anchorage Fish and Wildlife Conservation Office, Field Supervisor: 907-271-2888.

- 2) The AFSC will provide to the USFWS, on an annual basis, the number of short-tailed albatross taken by the AFSC's research fisheries activities, and those IPHC activities. The bycatch estimates should also include a bycatch rate and information on individual vessel bycatch rates to the extent allowed by applicable law. Reports must be sent to the Anchorage Fish and Wildlife Conservation Office, Field Supervisor, 4700 BLM Rd., Anchorage, Alaska 99507, by June of the following year.

DISPOSITION OF DEAD OR INJURED SPECIMENS

As part of this incidental take statement and pursuant to 50 CFR 402.14(i)(1)(v), the following procedures will be followed upon locating a dead or injured short-tailed albatross.

The AFSC will request that all research vessels temporarily keep all unidentified albatross taken during a haul until the PSO has had the opportunity to identify as a listed or non-listed species. In the event the albatross cannot be readily identified, carcasses should be retained for confirmation of non-listed albatross, and pictures documenting the species should be taken for verification.

The AFSC will advise PSOs and vessel crew that every effort should be made to recover any dead short-tailed albatross, including gaffing them if they fall off of the hook. Short-tailed albatross specimens should be frozen immediately, with identification tags attached directly to the carcass, and a duplicate identification tag attached to the bag or container. Identification tags should include species, date of mortality, name of vessel, location (latitude and longitude) of mortality, PSO or skipper name, and any band numbers. The specimen must remain frozen and shipped as soon as possible. Coordinate with the Anchorage Fish and Wildlife Conservation Office prior to shipping.

If an injured or sick short-tailed albatross is observed either on the water, or entangled in the fisheries gear, call the Alaska Sea Life Center stranded animal hotline at 1-888-774-7325. Then inform the USFWS at 1-800-858-7621. Live birds must be retained in a safe location. Release overboard shall occur if it looks normal and exhibits all of the following traits: the bird is capable of holding its head erect, and the bird response to noise and motion stimuli; the bird breathes without noise; the bird can flap both wings, and it can retract the wings to a normal folded position on the back; and the bird is capable of elevating itself to stand on both feet, with its toes pointed in the proper position (forward); and it is dry.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The USFWS believes the following conservation recommendation will reduce the impact of the proposed action on the short-tailed albatross within the action area:

- 1) The AFSC should continue to implement the use of streamer lines to minimize the chances of interaction between the short-tailed albatross and hook-and-line gear, and also continue to explore and research additional seabird conservation measures that could further reduce the risk of short-tailed albatross injury or mortality.

The USFWS requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in the AFSC's September 12, 2017, letter and biological assessment. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the exemption issued pursuant to section 7(o)(2) may have lapsed and any further take could be a violation of section 4(d) or 9. Consequently, we recommend that any operations causing such take cease pending reinitiation.

If you have any questions about this biological opinion, please contact Ms. Catherine Yeargan of my staff at 907-271-2066, or by e-mail at catherine_yeargan@fws.gov.

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Appendix A

Table A-1. Reported short-tailed albatross mortalities associated with Pacific fishing activities 1983 to 2014 (USFWS 2014).

Date	Fishery	Observer Program	In sample*	Bird Age	Location	Source
7/15/1983	Net	No	n/a	4 months	Bering Sea	USFWS 2014
10/1/1987	Halibut	No	n/a	6 months	Gulf of Alaska	USFWS 2014
8/28/1995	IFQ sablefish	Yes	No	1 year	Aleutian Islands	USFWS 2014
10/8/1995	IFQ sablefish	Yes	No	3 years	Bering Sea	USFWS 2014
9/27/1996	Hook-and-line CP targeting Pacific cod	Yes	Yes	5 years	Bering Sea	USFWS 2014
4/23/1998	Russian salmon drift net	n/a	n/a	< 1 year	Bering Sea, Russia	USFWS 2014
9/21/1998	Hook-and-line CP targeting Pacific cod	Yes	Yes	8 years	Bering Sea	USFWS 2014
9/28/1998	Hook-and-line CP targeting Pacific cod	Yes	Yes	Sub-adult	Bering Sea	USFWS 2014
7/11/2002	Russian **	n/a	n/a	3 months	Sea of Okhotsk, Russia	USFWS 2014
8/29/2003	Russian demersal hook- and-line	n/a	n/a	3 years	Bering Sea, Russia	USFWS 2014
8/31/2006	Russian **	n/a	n/a	1 year	Kuril Islands, Russia	USFWS 2014
8/27/2010	Hook-and-line CP targeting Pacific cod	Yes	Yes	7 years	Bering Sea/ Aleutian Islands	USFWS 2014
9/14/2010	Hook-and-line CP targeting Pacific cod	Yes	Yes	3 years	Bering Sea/ Aleutian Islands	USFWS 2014
4/11/2011	Sablefish demersal hook- and-line	Yes	Yes	1 year	Pacific Ocean, Oregon	USFWS 2014
10/25/2011	Hook-and-line CP targeting Pacific cod	Yes	Yes	1 year	Bering Sea	USFWS 2014
5/24/2013	Hook-and-line seabird bycatch research	No	n/a	1 year	Pacific Ocean, Japan	USFWS 2014
9/7/2014	Hook-and-line CP targeting Greenland turbot***	Yes	No	5 years	Bering Sea	NMFS 2014; S. Fitzgerald, personal communication,

						NOAA Fisheries AFSC, June 2015
9/7/2014	Hook-and-line CP targeting Greenland turbot***	Yes	Yes	Sub-adult	Bering Sea	NMFS 2014; S. Fitzgerald, personal communication, NOAA Fisheries AFSC, June 2015
12/16/14	Hook-and-line CP targeting Pacific cod***	Yes	Yes	< 1 year	Bering Sea	NMFS 2015; S. Fitzgerald, personal communication, NOAA Fisheries AFSC, June 2015
CP = catcher/processor * <i>In sample</i> refers to whether a specimen was in a sample of catch analyzed by a fisheries observer. **Specifics regarding the type of fishery are unknown. ***These data were not included in USFWS (2014).						