BIOLOGICAL OPINION

For the

Effects of the Fishery Management Plans for the Gulf of Alaska and Bering Sea/Aleutian Islands Groundfish Fisheries and the State of Alaska Parallel Groundfish Fisheries

Consultation with
National Marine Fisheries Services

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1.0 INTRODUCTION

This document transmits the U.S. Fish and Wildlife Service's (USFWS) Biological Opinion (BO) in accordance with section 7(a)2 of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq*., as amended; ESA), on the effects of the Fishery Management Plans (FMP) for the Gulf of Alaska (GOA) and Bering Sea/Aleutian Islands (BSAI) groundfish fisheries and the State of Alaska parallel groundfish fisheries on the endangered short-tailed albatross (*Phoebastria albatrus*) and the threatened Alaska-breeding population of Steller's eider (*Polysticta stelleri*) and its federally designated critical habitat.

This BO is based on the best available scientific and commercial information from a variety of sources including the Biological Assessment (BA) prepared by the National Marine Fisheries Service (NMFS), Sustainable Fisheries Division, published literature, agency and researchers' biological surveys and reports, and personal communication with species experts.

Section 7(a)2 of the ESA states that Federal agencies must ensure that their activities are not likely to:

- Jeopardize the continued existence of any listed species, or
- Result in the destruction or adverse modification of designated critical habitat.

The Alaska breeding population of Steller's eiders was listed as threatened in 1997 (62 FR 31748). The Alaska breeding population nests on the tundra adjacent to small ponds or within drained lake basins, generally near the coast on the Arctic Coastal Plain and on the Yukon-Kuskokwim Delta. Outside of nesting season Steller's eiders spend their time in shallow, near-shore marine waters. Non-listed Steller's eiders (also *P. stelleri*) from the Russian breeding population mix with Alaska-breeding eiders during molting and wintering periods. The Service estimates that less than 1% of Steller's eiders molting and wintering in Alaskan waters are from the listed population. While Steller's eiders are known to collide with vessels, the chances of an encounter of a listed Steller's eider colliding with a fishing vessel is discountable. In addition Steller's eiders spend most of their time nearshore, not within the range of the groundfish fishery.

The USFWS concurs with the NMFS that the continued operation of the Federal and State parallel groundfish fisheries in the GOA and BSAI may affect, but is not likely to adversely affect Steller's eider, and is not likely to adversely modify their designated critical habitat. The remainder of this BO addresses the effects of the groundfish fishery on short-tailed albatross.

Consultation History

September 19, 2000 – The USFWS received NMFS' request to initiate section 7 consultation on the effects of the GOA and BSAI groundfish fishery on short-tailed albatross and Steller's eiders.
August 27, 2003 – The USFWS issued a BO on the effects of the FMPs for the GOA and BSAI Groundfish Fishery on the short-tailed albatross and Steller's eider. Take of two short-tailed albatross per year, or four in a two year period was authorized for the hook-and-line fishery. The additional take of two short-tailed albatross over the life of the BO was authorized for the trawl fishery.
2010 – Two short-tailed albatross were observed to be taken in the hook-and-line groundfish fishery in the Bering Sea - the first observed birds to be taken under the 2003 BO incidental take statement.
2011 – One short-tailed albatross was observed to be taken in the hook-and-line groundfish fishery.
2011 – 2013 Substantial changes occurred in the NMFS Groundfish and Halibut Observer Program, improving observer data quality and increasing observer coverage of vessels.
June 13, 2013 – NMFS requested concurrence that the effects of the Federal and State parallel groundfish fisheries in the GOA and BSAI may affect, but are not likely to adversely affect the southwest distinct population segment of the northern sea otter (*Enhydra lutris kenyoni*), listed as threatened or its federally designated critical habitat.
July 10, 2013 – The USFWS concurred with NMFS, the Federal and State parallel groundfish fisheries in the GOA and BSAI may affect, but is not likely to adversely affect, the northern sea otter.
2014 – Three short-tailed albatross were observed to be taken in the Bering Sea hook-and-line groundfish fishery.
August 12, 2015 – The NMFS requested reinitiation of formal consultation on the effects of the Federal and State parallel groundfish fisheries in the GOA and BSAI on the short-tailed albatross and the Alaska-breeding population of Steller's eider.
September 2, 2015 – The USFWS issued notice to NMFS that information was adequate and formal consultation was initiated.

2.0 DESCRIPTION OF THE PROPOSED ACTION

The Federal and State parallel groundfish fisheries in the GOA and BSAI are managed under FMPs (16 U.S.C. 1801 2(b)(4)) developed by the North Pacific Fishery Management Council (Council) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Unlike management of the nation's timber, mineral, grazing, and water resource, for which policy is dictated by the responsible agency, the U.S. Congress instituted a regional council system for marine fisheries resources. These regional councils use a formal public process that strives toward consensus- building in shaping policy, balancing competing interests, and addressing resource conservation issues. The Council is one of eight regional fishery

management councils established by Section 302(a) of the MSA. The regional councils respond to the basic concept of the MSA that the needs of fishery users vary across the nation and should be addressed at a regional level.

The FMPs are the overall guiding and planning documents for the management of the groundfish fisheries; they establish the goals for fishery management under the MSA and other Congressional authorities. FMPs and FMP amendments are developed by the regional councils, submitted to the Secretary of Commerce for review, and, if approved, implemented by Federal regulations. FMP components generally include: management objectives, management units, habitat issues, management alternatives, summary of benefits and adverse impacts of each alternative, management measures, discussion of rationale and net benefit, a plan for continuing Council review and monitoring of the FMP or amendment, and supporting material describing the fishery, and its ecological, economic, and social setting.

The original BSAI FMP was approved by the Secretary of Commerce (Secretary) on October 27, 1979 and implemented by regulations published on December 31, 1981 (46 FR 63295) and corrected January 28, 1982 (47 FR 4083). The GOA FMP was approved by the Secretary on February 24, 1978, and implemented by regulations published on November 14, 1978 (44 FR 52709).

The Secretary approves or disapproves the FMPs and proposed amendments to the FMPs (NMFS 2015). NMFS implements and enforces the FMPs. The FMPs contain conservation and management measures necessary to prevent overfishing and rebuild overfished stocks to protect, restore, and promote the long-term health and stability of the fisheries. The FMPs establish the management provisions for the groundfish fisheries; they identify groundfish species, prohibited species incidentally caught, and ecosystem components. The acceptable biological catch (ABC), overfishing level (OFL), and total allowable catch (TAC) amounts for each species or group of species are published in the Federal Register (80 FR 11919; 80 FR10250). See Table 1 for a list of fisheries managed under the GOA and BSAI FMP.

The ABC, OFL, and TAC for the BSAI for 2015 and 2016 were recommended by the Council, approved by the Secretary, and published in the Federal Register on March 5, 2015 (80 FR 11919). Similarly the Council's recommendations for the GOA fisheries were approved by the Secretary, and published in the Federal Register on February 25, 2015 (80 FR 10250). The FMPs for the BSAI and GOA can be found on the Council's webpage: http://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIfmp.pdf and http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmp.pdf.

Table 1. Federal and State parallel groundfish fisheries managed under the GOA and BSAI FMPs. For additional information see North Pacific Fishery Management Council (2011).

GOA FMP	BSAI FMP
Pollock (*Theragra chalcogramma*)	Pollock (*Theragra chalcogramma*)
Pacific cod (*Gadus macrophalus*)	Pacific cod (*Gadus macrophalus*)
Sablefish (*Anoplopoma fimbria*)	Sablefish (*Anoplopoma fimbria*)
Deepwater flatfish (3 spp.)	Yellowfin sole (*Limanda aspera*)
Shallow-water flatfish (8 spp.)	Greenland turbot (*Reinhardtius hippoglossoides*)
Rex sole (*Glyptocephalus zachirus*)	Arrowtooth flounder (*Astheresthes stomias*)
Flathead sole (*Hippogloissoides elassodon*)	Kamchatka flounder (*Astheresthes evermanni*)
Arrowtooth flounder (*Astheresthes stomias*)	Northern and southern rock sole (*Lepidopsetta polyxstra and L. bilineatus*)
Pacific ocean perch (*Sebastes alutus*)	Flathead sole (*Hippogloissoides elassodon*)
Northern rockfish (*Sebastes polyspinus*)	Alaska plaice (*Pleuronectes quadrituberculatus*)
Shortraker rockfish (*Sebastes borealis*)	Other flatfish (*Spp.*)
Rougheye rockfish **(*Sebastes aleutianus*)**	Pacific ocean perch (*Sebastes alutus*)
Other slope rockfish (*Sebastes spp.*)	Northern rockfish (*Sebastes polyspinus*)
Pelagic shelf rockfish (*Sebastes spp.*)	Shortraker rockfish (*Sebastes borealis*)
Demersal shelf rockfish (*Sebastes spp.*)	Rougheye rockfish (*Sebastes aleutianus*)
Thornyhead rockfish (*Sebastolobus spp.*)	Other rockfish (*Sebastes spp.*)
Atka mackerel (*Pleurogrammus monopterygius*)	Atka mackerel (*Pleurogrammus monopterygius*)
Squid (14 spp.)	Squid (14 spp.)
Sharks (8 spp.)	Sharks (8 spp.)
Skates (15 spp.)	Skates (15 spp.)
Sculpins (39 spp.)	Sculpins (6 spp.)
Octopus (7 spp.)	Octopus (7 spp.)

The management framework for the fisheries, as described in the BSAI and GOA FMPs, include a variety of fixed elements and routine management measures that may be adjusted through a biennial harvest specifications process and in-season management actions. The management measures are intended to constrain the total fishing mortality to within the Annual Catch Limits set for individual species or species complexes. Additionally, they are designed to achieve other goals and objectives that pertain to socioeconomics and equitable utilization of the resource.

The FMPs establish gear types and harvest effort within the GOA and BSAI. Authorized gear types for groundfish include: pelagic and non-pelagic trawls, hook-and-line (demersal), pots, jigs, and other gear as defined in regulations at 50 CFR 679.2. The Federal fisheries off Alaska are managed under a variety of programs including open-access fisheries and Limited Access Privilege Programs (LAPPs). Open-access fisheries are open to anyone with a Federal Fishing Permit, and these fisheries can be targeted until an entire quota is obtained. The LAPPs are

programs that issue Federal Permits that represent a portion of the TAC that allow for exclusive use by a person, thereby limiting the number of participants in some fisheries (AFSC 2012). The TAC is set at ABC levels, or below. The NMFS manages the groundfish fisheries based on TAC and prohibited species catch (PSC) amounts for target species and PSC amounts for species that may not be retained (NMFS 2015). If TAC is caught before the end of the year, all retention of the FMP groundfish species is prohibited (NMFS 2015).

Vessels that participate in the Alaska groundfish fishery can be divided into two categories: vessels that catch fish and vessels that process or transport fish (Cahalan et al. 2014). Vessels that catch fish include catcher/processor (CPs), which catch and process fish while at sea, and catcher vessels (CVs), which deliver their catch to either a shoreside processing facility or a vessel with the ability to process fish, including CPs. Vessels that only process or transport fish include motherships, stationary floating processors, and tender vessels. Motherships are large processing vessels (generally greater than 200 feet in length) that, unlike a stationary floating processor, are not tied to a single geographic location. Both motherships and stationary floating processors receive and process unsorted catch from CVs. Tender vessels deliver catch received from CVs to shoreside processing facilities.

Authorized gear types for groundfish in the GOA and BSAI include pelagic and non-pelagic trawls, hook-and-line (demersal), pots, jigs, and other gear as defined in the regulations at 50 CFR 679.2. Hook-and-line is the predominant gear type used in the GOA, followed by jig gear. However, pelagic and non-pelagic trawl account for the greatest amount (metric tons) of groundfish. Trawl gear is the predominant gear used in the BSAI fisheries and accounts for the greatest amount of groundfish caught.

Fisheries observers have been deployed by NMFS since 1972. The Observer Program, run by NMFS, monitors fish, bycatch, and marine mammal and seabird interactions in Alaska's Federally managed groundfish fisheries and parallel groundfish fisheries in State waters. Information collected by observers, used in conjunction with reporting and weighing requirements, provides the foundation for in season fisheries management and for tracking species-specific catch and bycatch amounts. The purpose of the Observer Program is to allow observers to collect Alaska fisheries data deemed by NMFS Regional Administrator to be necessary and appropriate for management, compliance monitoring, and research of groundfish fisheries and for the conservation of marine resources and their environment (50 CFR 679.50). In addition, the observers are trained on how to identify dead seabirds, as well as specific information for the identification of species of interest, including: short-tailed albatross, red-legged kittiwake (*Rissa brevirostris*), Steller's eider, spectacled eider (*Somateria fischeri*), marbled murrelet (*Brachyramphus marmoratus*), and Kittlitz's murrelet (*B. brevirostris*).

Substantial changes to the Observer Program were implemented in 2011 and 2013 to improve observer data quality and to distribute the industry's observer coverage costs, including observer coverage on vessels less than 60 feet length overall (LOA) for the first time (77 FR 70062)

(NMFS 2015). Historically, observers were only required aboard vessels equal to or greater than 60 feet LOA and at shoreside processors that process more than 500 metric tons of groundfish in a single monthly period. Since the USFWS's initial consultation with NMFS and the resulting BO in 2003 (USFWS 2003), observer coverage has expanded significantly in the BSAI and GOA. Seabird interactions occur primarily in the hook-and-line fisheries, and many of the changes in the Observer Program and observer coverage requirements have improved the monitoring in the hook-and-line fisheries. In 2011, Amendment 91 established regulations in the BSAI groundfish fishery that facilitate enforcement of sampling. This amendment required at-sea observers on all vessels fishing for pollock in the Bering Sea and at shoreside processors receiving Bering Sea pollock deliveries. Pollock are generally harvested with large vessels using pelagic trawls. Additional regulations implemented in 2012 (77 FR 59053) require increased observer coverage or the use of flow scales for the Bering Sea hook-and-line CP fleet.

In January 2013 additional changes were implemented in the Observer Program, for the first time observer coverage included vessels less than 60 feet LOA (77 FR 70062). These changes increase the statistical reliability of data collected by the program and expand coverage to previously unobserved fisheries. NMFS now has discretion on when and where observers are deployed according to management and conservation needs. All vessels and processors with a Federal fisheries permit and operating in the GOA and BSAI are classified in one of two observer categories: 1) full coverage, or 2) partial coverage.

Vessels in the full coverage category include CPs (with limited exceptions for non-trawl vessels that process only a small amount of fish and do not participate in a LAPP); motherships; CVs while participating in American Fisheries Act or community development quota (CDQ) pollock fisheries (except sablefish; and pot or jig gear CVs); CVs while participating in the Central GOA rockfish program; and inshore processors when receiving or processing Bering Sea pollock. All CPs are now required to have 100 % observer coverage, an increase from the 2003 consultation (NMFS 2015). Vessels in the full coverage category have 100 % coverage with the observer monitors sampling between 50 and 100 % of individual hauls (Cahalan et al. 2014).

Partial coverage vessels include CVs designated on a Federal fisheries permit when directed fishing for groundfish in Federally managed or parallel fisheries, except those in the full coverage category; CVs when fishing for halibut individual fishing quota (IFQ) or CDQ; CVs when fishing for sablefish IFQ or fixed gear sablefish CDQ; and shoreside or stationary floating processors, except those in the full coverage category (NMFS 2015). In addition, the following CPs may be included in the partial observer coverage category: 1) CPs less than 60 feet LOA with a history of CP and CV activity in a single year from January 1, 2003, through January 1, 2010; 2) any CP with an average daily groundfish production of less than 5,000 pounds round weight equivalent in the most recent full calendar year of operation from January 1, 2003, to January 1, 2010; or 3) CPs that processed no more than one metric ton round weight of groundfish on any day (up to a maximum of 365 metric tons per year) in the previous calendar year. The owner of a CP that falls under number 1 or 2 may make a one-time election of partial

coverage at least 30 days before the first fishing trip with the vessel under the new Observer Program. The owner of a CP that falls under number 3 may elect partial observer coverage in any year that follows a year when the vessel processed no more than one metric ton of groundfish on any day in that previous year.

Total catch estimates in the groundfish fisheries off Alaska are generated by the NMFS Alaska Region and are used to manage about 600 separate groundfish quotas and prohibited species catch limits in the BSAI and GOA. The Catch Accounting System (CAS) allows NMFS to estimate seabird bycatch in the GOA and BSAI from 2007 to present. The CAS provides near real-time catch data for fishery managers. The primary purpose of CAS is to allow NMFS to make in season decisions regarding the fisheries. Data collected onboard vessels by observers is entered electronically and uploaded to CAS every night. Seabird estimates are based on at-sea sampling by observers (AFSC 2015). In CAS, observer data are used to create seabird bycatch rates (a ratio of the estimated bycatch to the estimated total catch in sampled hauls). The information from the at-sea observer samples is used to create bycatch rates that are applied to unobserved vessels. For trips that are unobserved, the bycatch rates are applied to industry supplied landings of retained catch. Expanding on the observer data that are available, the extrapolation from observed vessels to unobserved vessels is based on varying levels of aggregated data. A complete description of the CAS and methods for generating total catch estimates from the observer sample data is provided in Cahalan et al. (2014).

Seabird bycatch in the GOA and BSAI occurs primarily in the hook-and-line fisheries (AFSC 2014). In 1997 NMFS promulgated regulations, requiring operators with Federally permitted hook-and-line vessels fishing for groundfish in the BSAI and GOA, and parallel State fisheries to employ bird avoidance techniques to reduce seabird bycatch and incidental seabird mortality (62 FR 23176). From 1999 – 2000 studies were undertaken by the University of Washington Sea Grant Programs and supported by the AFSC and industry to minimize seabird bycatch in the BSAI and GOA groundfish fisheries. See § 679.24(e) and 679.51(e)(1)(viii)(F) for complete seabird avoidance program requirements for vessels fishing with hook-and-line gear; see § 679.24(e)(1) for applicable fisheries (74 FR 13358, March 27, 2009; Table 20 to 50 CFR part 679).

2.1 Action Area

The action area is defined in the implementing regulations for section 7 at 50 CFR 402 as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."

The Federal fisheries are managed in the waters of the Exclusive Economic Zone (EEZ; 3 to 200 nautical miles [nm] offshore) of Alaska. The management area defined for the BSAI groundfish FMP effectively covers the east Bering Sea and the portion of the North Pacific Ocean adjacent to the Aleutian Islands west of 170^{o} W. longitude up to the United States – Russian Convention

Line of 1867 (Figure 1). The GOA FMP applies to the EEZ of the North Pacific Ocean, exclusive of the Bering Sea, between the eastern Aleutian Islands at 170 ^{o} W. longitude and Dixon Entrance at 132^{o} 40' W. longitude (Figure 1, NMFS 2015).

The Alaska Department of Fish and Game (ADF&G) has jurisdiction over the commercial groundfish fisheries from 0 – 3 nm offshore. The ADF&G manages the commercial fishery concurrent with Federal fishery openings and closures. Harvest guidelines and regulations for the Federal fisheries and parallel State fisheries are established in the FMP. Fish harvested within the parallel waters count against the Federal TAC, established in the FMPs (NMFS 2010). The State parallel fisheries are considered interdependent with this Federal action and analyzed as part of the proposed action. In addition, fishing vessels traveling to the EEZ must travel through State waters (0 – 3 nm); therefore State waters and the parallel fisheries are included in the action area.

The action area for this BO includes the EEZ and State waters within the areas of the BSAI and GOA groundfish FMPs. This area includes areas directly affected by fishing, processing, and those that are likely affected indirectly by the removal of fish at nearby sites.

All direct and indirect effects to short-tailed albatrosses related to the activities authorized by the BSAI and GOA FMPs are believed to occur within these areas, as defined.

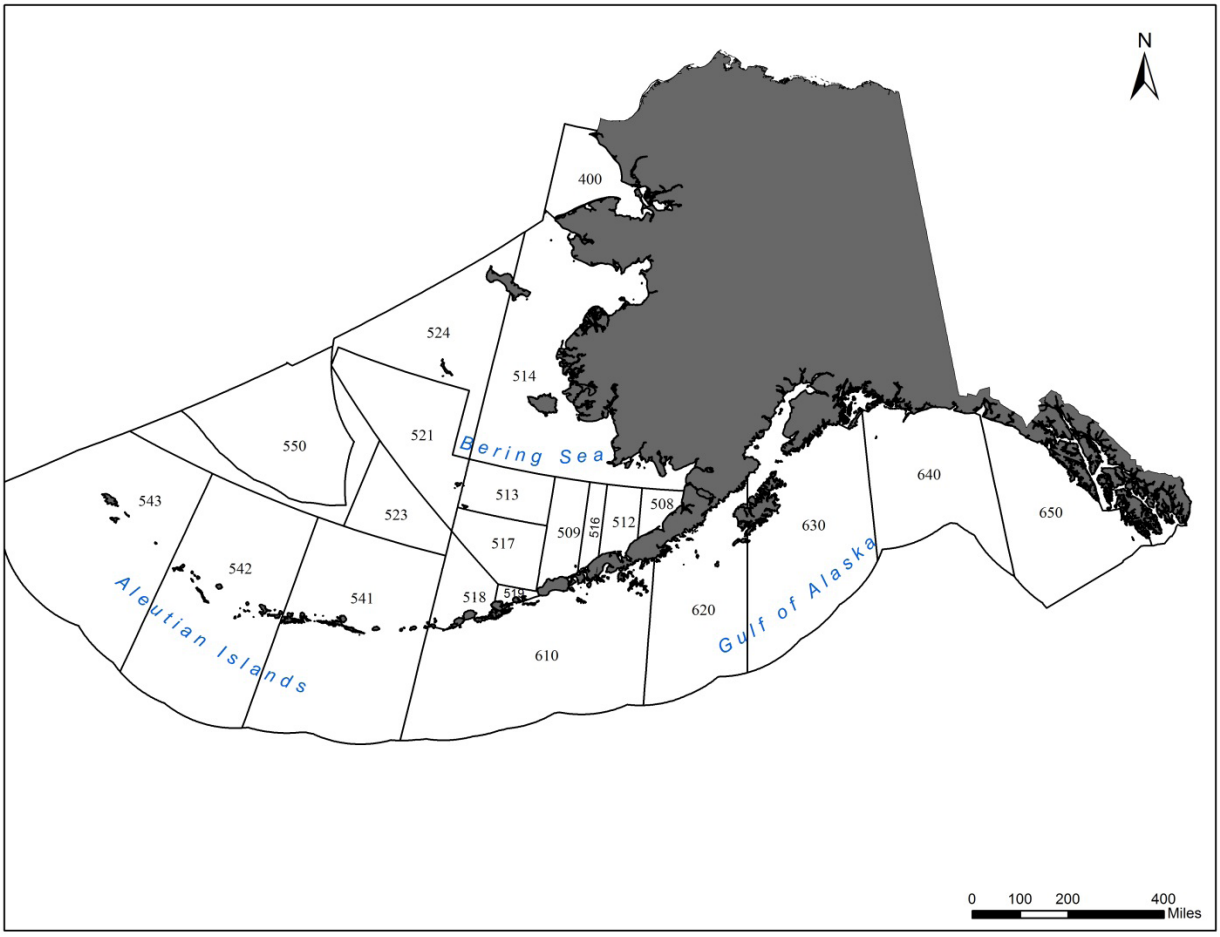

Figure 1. Action Area for the Gulf of Alaska and Bering Sea/Aleutian Islands groundfish fishery (NMFS 2015).

3.0 FRAMEWORK FOR JEOPARDY ANALYSES

In accordance with policy and regulation, the jeopardy analysis in this BO relies on four components: (1) the *Status of the Species,* which evaluates the short-tailed albatross's range-wide condition, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline,* which evaluates 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) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities 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 short-tailed albatross's current status, taking into account cumulative effects, to determine if implementation of the proposed action is

likely to cause an appreciable reduction in the likelihood of both the range-wide survival and recovery needs of the short-tailed albatross.

4.0 STATUS OF THE SHORT-TAILED ALBATROSS (*Phoebastria albatrus*)

4.1 Taxonomy and Species Description

The short-tailed albatross is a large pelagic bird with long, narrow wings adapted for soaring above the water surface. The largest of the three albatross species in the North Pacific: others are the Laysan albatross (*Phoebastria immutabilis*) and the black-footed albatross (*P. nigripes*). The short-tailed albatross has a body length of 33-37 inches and wingspan of 84-90 inches. Adults have a white head and body and golden cast to crown and nape. The tail is white with a black terminal bar. A disproportionately large pink bill distinguishes it from other North Pacific albatrosses and its hooked tip becomes progressively bluer with age. Juveniles of the species are blackish-brown, progressively whitening with age. Short-tailed albatross are also the only North Pacific albatross that develops an entirely white back at maturity (USFWS 2008).

4.2 Listing Status

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 not prudent (65 FR 46651). The Short-tailed Albatross Recovery Plan was finalized in 2008 (USFWS 2008).

4.3 Historic and Current Distribution

Historically, the short-tailed albatross was probably the most abundant albatross in the North Pacific, with 14 known breeding colonies in the northwestern Pacific and potentially 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, no birds were observed breeding and the species was thought to be extinct. The species 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 (Figure 2). Torishima, a Japanese island that is an active volcano, is estimated to contain 80 - 85 % of the existing breeding population. The remaining population is believed to nest in the Senkaku Islands (USFWS 2008). 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 population data are extrapolated from the 2002 data under the assumption that factors affecting population growth have remained similar to those observed on Torishima.

In 2008, 10 chicks were translocated to a former colony site on Mukojima, a non-volcanic island south of Torishima, in the hope of re-establishing a colony on this island. All chicks in this group survived to fledging. From 2009 through 2012, an additional 15 chicks per year have been moved to Mukojima and reared to fledging. All but one of the 70 chicks fledged successfully.

The relocation effort may be attracting additional breeding adults to this island; an egg was laid by a pair in 2012 and again in 2013.

In the Northwestern Hawaiian Islands, one 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.

As of 2013 - 2014, there were also two breeding sites with one pair each in the Ogasawara (Bonin) Islands and on Nakodo-jima near Mukojima.

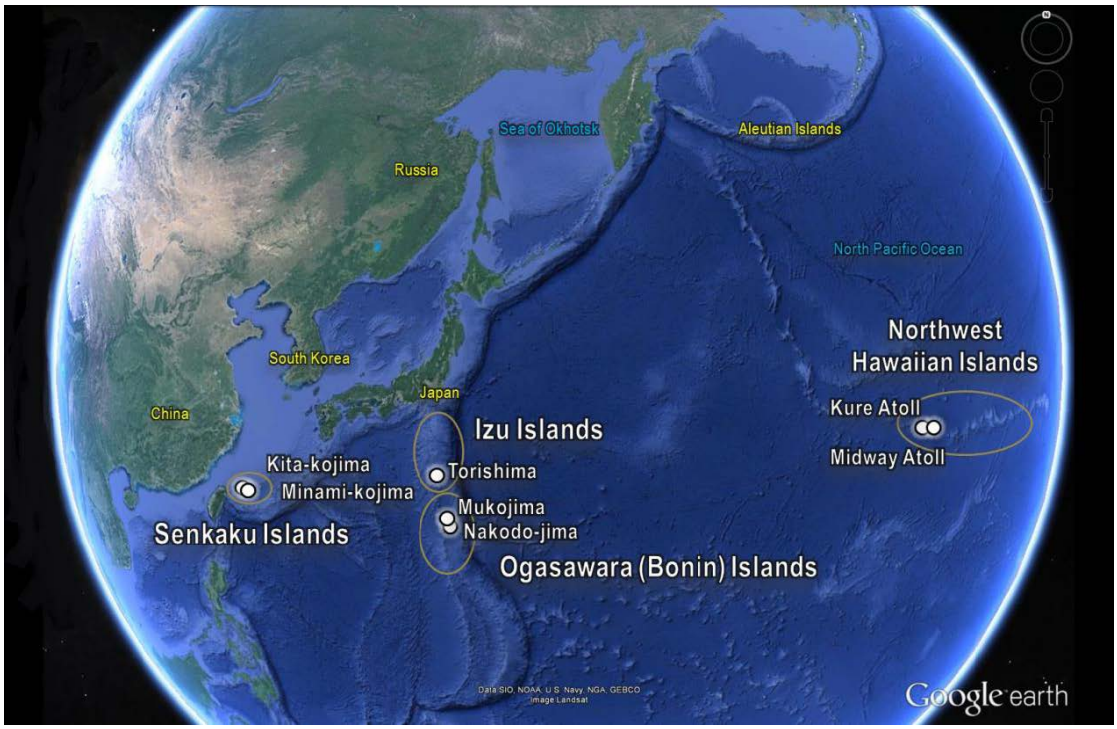

Figure 2. Short-tailed albatross breeding locations in the North Pacific.

4.4 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 six. Birds arrive on Torishima in October, but as many as 25 % 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). 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 2 feet in diameter on the ground, lined with sand and vegetation. Tickell (1975) described the 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, while they 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). 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 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 (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).

4.5 Habitat Description

Distribution

Juveniles and younger sub-adult birds (up to two years old) have a wider range than adults and can be found in the Sea of Okhotsk, a broader 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 outer 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, 2000). 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 100's) 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/Aleutian Islands region. Overall the much higher abundance of albatrosses in the Aleutians compared to the Bering Sea mirrored the relative density of squid, which is estimated to be approximately seven times higher in the Aleutians (Ormseth 2012).

Breeding Habitat

Short-tailed albatross nest on isolated, windswept, offshore islands, with restricted human access. On Torishima, 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, where vegetated, is dominated by a clump-forming grass, *Miscanthus sinenesis* 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.

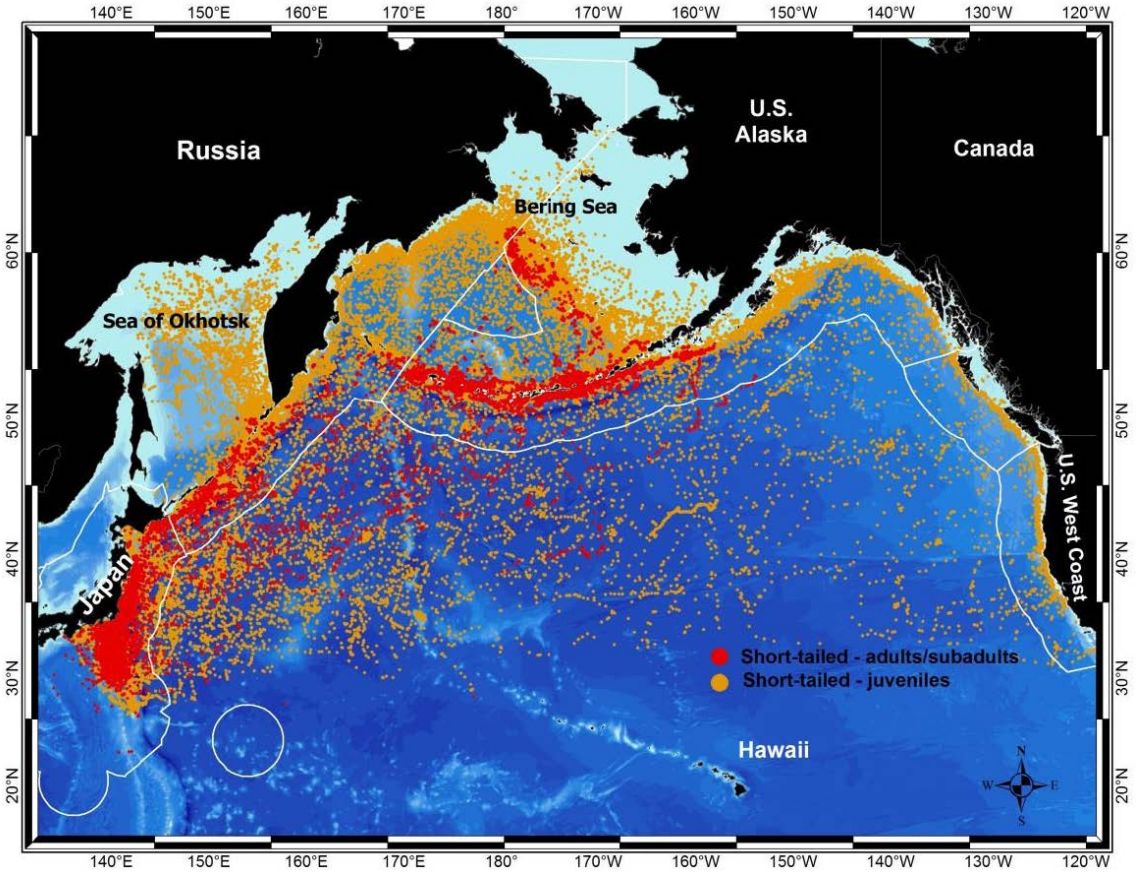

Figure 3. Locations of 99 short-tailed albatross tracked between 2002 – 2012, showing adult and juvenile distributions in the North Pacific (Suryan et al. 2006, 2007a, 2008, Suryan and Fischer 2010, Deguchi et al. 2014). White lines represent the Exclusive Economic Zones of countries within the range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

4.6 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 (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.

Commercial Fishing

Albatross, like many seabirds, attack baited hooks of both pelagic and demersal longlines after the hooks are deployed; if they get 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 reported 11 short-tailed albatross mortalities in GOA and BSAI groundfish fisheries, and one in the Pacific Coast groundfish fishery (Table 2). Nine of the mortalities occurred in the hook-and-line Pacific cod groundfish fishery, and three mortalities from the IFQ sablefish fishery, including the Pacific Coast mortality (Table 2).

Commercial Fishing in Russia

Russian longline cod fisheries implemented experimental use of streamers in 2004 - 2008 (Artukhin et al. 2013). The frequency of reported seabird attacks was 5 - 9 times lower on boats with paired streamers, and total catch of fish was 4 - 12% higher. The study recommended wide application of streamer line in the Far Eastern Seas of Russia. Although consistent funding has been a problem, the World Wildlife Fund has continued to work with Russian partners to educate the Russian commercial fishing communities about the benefits of using streamer lines and promote their use to reduce seabird bycatch and improve fishing success (World Wildlife Fund 2014).

Commercial Fishing in Japan

Japan developed a National Plan of Action for seabird conservation and management (Fisheries Agency of Japan 2004, 2009). In areas where short-tailed albatrosses occur (north of 23° N latitude), vessels must employ two of the following measures, one of which must be from the first four listed, and streamer lines are obligatory within 20 mi of Torishima in October through May: side setting with a bird curtain and weighted branch lines, night setting with minimum deck lighting, streamer (tori) lines, weighted branch lines, blue-dyed bait, deep setting line shooter, and/or management of offal discharge. Japan has also implemented an observer program on their longline and purse seine fisheries to observe bycatch of non-target species, including seabirds (Uosaki et al. 2013, 2014). The only observed seabirds incidentally caught north of the 23˚N latitude were a black-footed albatross in 2012 and an unidentified petrel in 2013 (Uosaki et al. 2013, 2014). However, only a small percentage of deployed hooks are observed.

Table 2. Reported short-tailed albatross mortalities associated with Pacific fishing activities since 1983 (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 Pacific cod	Yes	No	5 years	Bering Sea	NMFS 2014
9/7/2014	Hook-and-line CP targeting Pacific cod	Yes	Yes	Sub-adult	Bering Sea	NMFS 2014b
12/16/14	Hook-and-line CP targeting Pacific cod	Yes	Yes	< 1 year	Bering Sea	NMFS 2015

*"In Sample" refers to whether a specimen was in a sample of catch analyzed by fisheries observer

**Specifics regarding the type of fishery are unknown

Japanese fishermen pioneered the use of streamer (tori) lines to deter seabirds, and researchers have continued to assess their use. Researchers have continued to examine methods to improve the effectiveness of streamer lines. Yokota et al. (2011) and Sato et al. (2012) assessed types and lengths of streamers for their effectiveness and found that lighter lines with shorter streamers are as effective as those with long streamers, although the shorter lines are thought to be safer and less likely to tangle. Sato et al. (2013) further examined the use of paired versus single streamer lines and determined that paired lines were more effective than single lines in reducing bait attacks and seabird mortality. The continuing research by Japan has been an important contribution to minimizing longline fisheries bycatch of short-tailed albatrosses.

Driftnet Fishing in the North Pacific

United Nations General Assembly Resolutions 44/225, 45/197, and 46/215 (United Nations 1989, 1990, 1991) called for a global driftnet moratorium on the high seas by June 30, 1992, and the resolution has been re-adopted biennially. The NMFS and the State Department worked to implement the moratorium for the U.S. According to NMFS (2013), high seas driftnet fishing continues to occur in the North Pacific Ocean. The fishing effort targets species of squid and occurs toward the end of the fishing season. Both of these factors increase the threat to short-tailed albatrosses. While the numbers of sightings and apprehensions of vessels driftnetting in the North Pacific high seas appear to be decreasing, non-compliance with the moratorium continues to pose a risk of mortality to short-tailed albatrosses entangled in nets.

Canadian Fishing Operations

Off Canada's west coast, deployment of seabird avoidance gear has been mandatory for all hook and line groundfish fisheries since 2002 - 2005. Most bycatch monitoring in these fisheries is done by on-board Electronic Monitoring Systems. Following each fishing trip, approximately 10% of the imagery is audited. Although there have been no reported takes of short-tailed albatross bycatch in the groundfish fisheries, in a recent examination of imagery collected between 2006 and 2012, 79 albatrosses were detected; a third of which were identified only as "albatross species". Based on the proportions of sets audited, an estimated 120 albatrosses were predicted to have been caught each year (range 0 - 269). Given the high proportion of albatrosses that are not identified to species and the fact that more than a third of all birds detected during the audits were listed as "unidentified bird", one might expect that one or two short-tailed albatrosses are killed each year in Canadian west coast groundfish longline fisheries (COSEWIC 2014).

Invasive Species

Black rats (*Rattus rattus*) were introduced to Torishima at some point during human occupation. The effect of these rats on short-tailed albatross is unknown, but rats are known to feed on chicks and eggs of other seabird species (Atkinson 1985), and there have been numerous efforts to eradicate rats to protect other seabird colonies (Taylor et al. 2000).

Disease and Parasites

Diseases and parasites are not currently a threat to the short-tailed albatross. Tick parasites, feather louse and a carnivorous beetle have been documented infesting short-tailed albatross on

Torishima, although not recently (USFWS 2008). No diseases have been documented in short-tailed albatross.

Predation

Shark predation is documented among other albatross species, but has not been observed for short-tailed albatross (USFWS 2008). This predation would likely include sharks preying upon fledgling short-tailed albatross as they depart their natal colony.

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 seabirds thermoregulations 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 and 2009).

Plastic Pollution

Plastics have been found in 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 (in review) 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 dephenyl 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.

Contaminants

Radiation

Approximately 80% of the radiation released from the Fukushima Daiichi Nuclear Plant, which was damaged by a March 11, 2011 earthquake and tsunami, was believed to have entered the Pacific Ocean (Tanabe and Subramanian 2011; Steinhauser et al. 2013, 2014). The area east of the plant is a primary feeding area for nesting short-tailed albatrosses. Although recent analysis has shown no detectable levels of radiation in short-tailed albatross, the impact of these continuing releases on short-tailed albatrosses or their food resources is unknown.

Organochlorines, pesticides and metals

Albatross and other birds may be exposed to organochlorine contaminants such as polychlorinated biphenyls (PCBs) and pesticides, and to toxic metals (e.g., mercury, lead) via atmospheric and oceanic transport. Vo et al. (2011) examined mercury and methylmercury in tissues of black-footed albatross. They compared the levels of mercury and methylmercury in museum specimens ($n = 25$) from a 120-year collection period (1880 - 2002). They found no temporal trend in mercury concentrations, but measured significantly higher concentrations of

methylmercury through time. Finkelstein et al. (2007) found mercury concentrations in black-footed albatross were associated with decreased immune response. Similar effects would be expected for short-tailed albatross.

High concentrations of lead at Midway Atoll are a concern. Taylor et al. (2009) described neurological impacts of lead-based paints on Laysan albatross chicks. Since then, the USFWS has initiated removal and remediation of lead-based paint and contaminated soils on Sand Island (NW Demolition and Environmental 2015). Although only one pair has successfully nested on Midway at Eastern Island, this remediation will reduce exposure to any offspring or future nesting birds on Sand Island. The degree to which any of these or other toxins impact short-tailed albatross remains uncertain, and further research is needed to examine the prevalence of these contaminants in short-tailed albatrosses and their impact on the population.

Global Changes

Climate change impacts to short-tailed albatrosses could include changes to nesting habitat or changes to prey abundance or distribution. Fortunately, the nesting habitats on Torishima, the Ogasawara Islands, and the Senkaku Islands are high enough above sea level (above 70 ft) to avoid inundation by projected sea level rise. Models for the Northwestern Hawaiian Islands indicate nesting habitat used by short-tailed albatrosses 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*], 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.

Nesting Habitat Destruction

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, accidental introduction remains a threat. Catastrophic events listed under *Natural Events* above, can change habitat at breeding colonies. These events can result in permanent loss of habitat.

4.7 Recovery Plan Delisting Criteria

The short-tailed albatross may be delisted under the following conditions:

- The total breeding population of short-tailed albatross reaches a minimum of 1000 pairs; (population totaling 4,000 or more birds); AND
- The 3-year running average growth rate of the population as a whole is ≥6% for ≥7 years; AND
- At least 250 breeding pairs exist on 2 island groups other than Torishima, each exhibiting ≥6% growth for ≥7 years; AND

- A minimum of 75 pairs occur on a site or sites other than Torishima and the Senkaku Islands.

4.8 Recovery Actions

The Recovery Plan for the Short-tailed Albatross (USFWS 2008) recommends the following Recovery Actions:

1. Support ongoing population monitoring and habitat management on Torishima
2. Monitor the Senkaku population
3. Conduct telemetry studies to determine at-sea habitat use
4. Establish 1 or more nesting colonies on non-volcanic islands
5. Continue research on fisheries operations and mitigation measures
6. Conduct other research that will facilitate recovery
7. Conduct other management-related activities
8. Conduct outreach and international negotiations as appropriate
9. Develop models and protocols as needed

Specific to Recovery Action Five, the NMFS and 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 ft to deploy streamer lines while setting gear (USFWS 2009). In 2008, efforts were undertaken to begin establishment of a nesting colony on a non-volcanic island (Recovery Action 4) and former breeding site, Mukojima. Seventy chicks from Torishima were translocated to Mukojima and hand-reared until fledging. Fledging success was 98 % over the four years. Hand-reared birds are now making their way back to Mukojima (Yamashina Institute 2015). However, deterministic population models do not project the population to reach 50 breeding pairs until 2046, and 75 breeding pairs in 2052 (USFWS 2014).

4.9 Population

A species thought to be extinct in the 1940s, the short-tailed albatross population has steadily increased to almost 5,000 individuals (Table 3). The population is increasing at an average annual rate of 7.5 % (USFWS 2014).

Table 3. Short-tailed alabatross population estimates on Torishima and Senkakus Islands, Japan (Sievert 2010)

		Torishima	Senkakus	Total
2009 – 2010 Breeding Season	Breeders	1194	262	
	Non-breeders	1177	307	2940
2010-2011 Breeding Season	Breeders	1284	290	
	Non-breeders	1265	342	3181
2011 – 2012 Breeding Season	Breeders	1380	322	
	Non-breeders	1360	379	3441
2012 – 2013 Breeding Season	Breeders	1484	397	
	Non-breeders	1461	466	3808
2013 – 2014 Breeding Season	Breeders	1714	440	
	Non-breeders	1690	518	4362
2014 – 2015 Breeding Season	Breeders	1981	488	
	Non-breeders	1952	575	4996

5.0 ENVIRONMENTAL BASELINE

5.1 Status in the Action Area

These wide-ranging seabirds are found throughout the North Pacific and Bering Sea within the action area. The current population estimate is 4,996 individuals. The population growth rate is approximately 7.5% per year (range from 5.2 - 9.4%; USFWS 2014). 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. Waters around the Aleutian Islands are important for feeding, particularly during the summer non-breeding season. Albatross may be found in the action area all times of year. Juveniles and up to 25% 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 up the Aleutian Islands. During the non-breeding season, short-tailed albatross range along the continental shelf and slope regions of the North Pacific (Figures 3 and 4). Short-tailed albatross tend to favor the steeply sloped edges of the GOA 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 through observations of researchers. Short-tailed albatross are continental shelf specialists due to their limited diving ability (Hyrenbach et

al. 2002). 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 were spending an average of 19 consecutive days (maximum of 53 days) within a 100 km (62 mi) radius of some Aleutian passes (R. Suryan and K. Courtot, unpublished data). O'Connor et al. (2013) examined locations of sub-adult short-tailed albatross and fishing locations of vessels in 2008 - 2011 and found albatross-vessel association hot spots at several canyons along the Bering Sea shelf, including Navarin, Pribilof, Zhemchug, St. Matthew, and Pervenets (Figure 4 and 5). Seasonal distribution among juveniles was found to shift from the Bering Sea shelf in the summer, to the Aleutians in the winter (O'Connor et al. 2013).

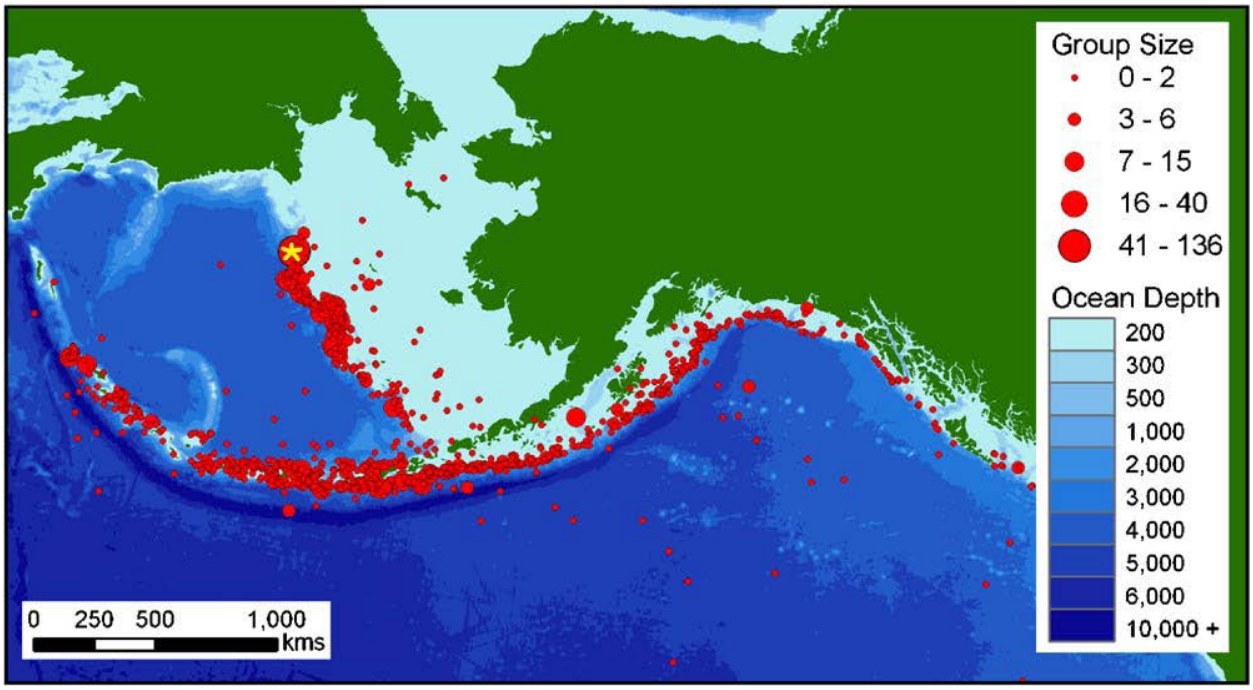

Figure 4. Sighting of short-tailed albatross in the North Pacific (1940 – 2004) from Piatt et al. 2006. The yellow star represents the largest aggregation of albatross observed, at least 200 birds congregated around a long-line fishing vessel.

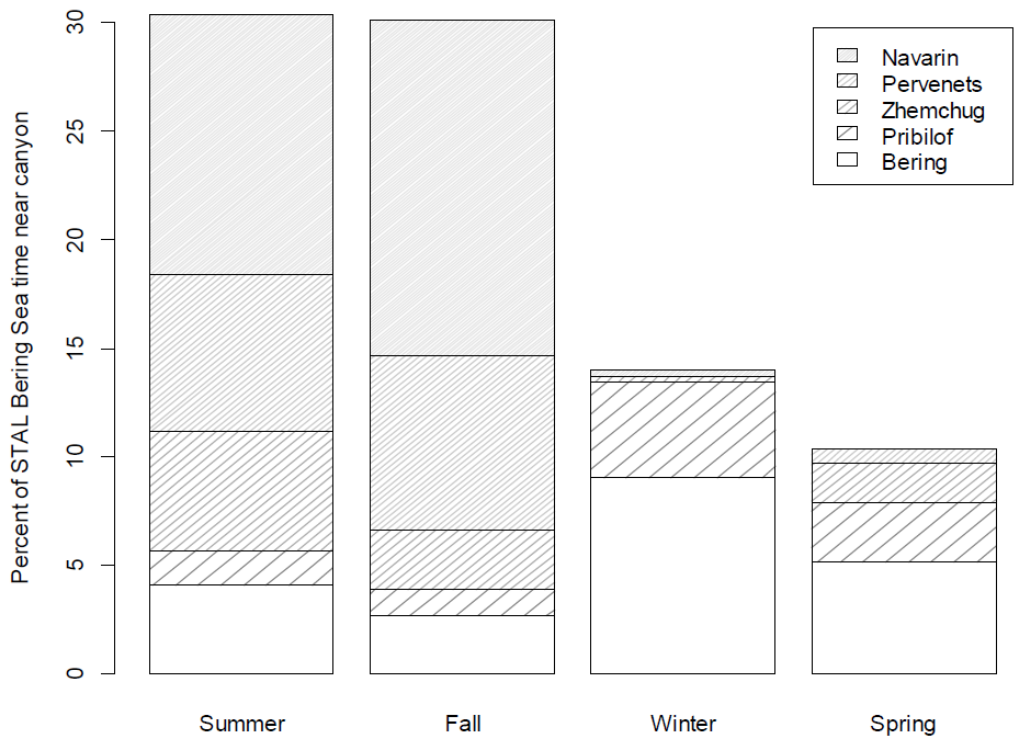

Figure 5. Short-tailed albatross use of Bering Sea Canyons (O'Connor et al. 2013).

5.2 Factors Affecting the Species' Environment within the Action Area

Commercial Fishing

Short-tailed albatross are periodically captured in the commercial hook-and-line groundfish fishery (Figure 6). Birds dive after baited hooks as they are being set, get hooked, and drown while being dragged below the water's surface with the sinking line. The USFWS, NMFS, and the fishing industry have taken steps to monitor and reduce seabird interactions incidental to the groundfish fisheries. These measures have included: implementing an observer program to monitor catch of target species and bycatch; fishing industry participation in seabird bycatch mitigation research, requiring use of seabird avoidance and minimization measures such as bird deterrence streamers (tori lines); supplying free streamer line kits to commercial longline vessel owners; and conducting a 50% cost-share program to reimburse owners of certain longline vessels for half of the costs of purchasing tori line-deployment booms. In addition, NMFS has conducted public awareness and education campaigns to improve use of streamers on smaller vessels.

Controlled and large scale field studies have demonstrated that properly deployed paired streamer lines are effective at reducing seabird attacks on the gear by 85 - 100% (Melvin et al. 2001). Dietrich et al. (2009) found seabird bycatch rates have decreased in Alaska by 78 % since the implementation of streamer lines. Further analyses found a small number of vessels were responsible for the majority of seabird bycatch (Dietrich and Fitzgerald 2010). The effectiveness of streamer lines is documented in the bycatch data, which shows continued reduction in bycatch rate since fishermen began using the lines in 1999 (NMFS 2015a). Single streamer lines are

slightly less effective than paired lines, reducing seabird bycatch by 96% and 71% for the sablefish and Pacific cod fisheries respectively (Melvin et al. 2001). The use of integrated weight longlines, used simultaneously with paired streamers, reduces seabird mortality almost completely (Dietrich et al. 2008). Tools and techniques continue to improve; Melvin et al. (2011) compared a third wire snatch block, warp boom, and paired streamer lines on two trawlers in the eastern Bering Sea. They determined that bird strikes could be diminished by deploying streamer lines at least a meter above the third-wire block and by minimizing the aerial extent of the third wire.

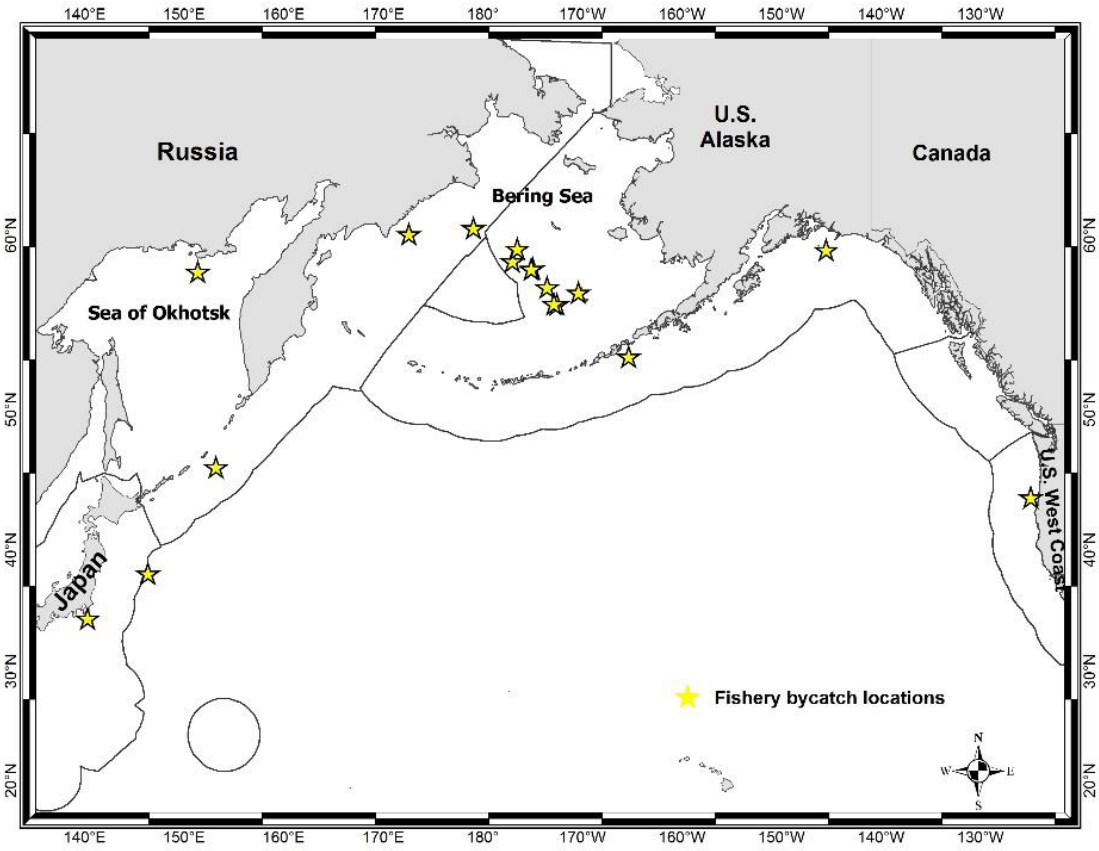

Figure 6. Short-tailed albatross fishery bycatch in the hook-and-line groundfish fishery (NMFS and Yamashina Institute for Ornithology unpub. data).

Oil Spills

The number and volume of oil and other hazardous materials spills in the marine waters of the State of Alaska is highly variable. Between 1995 and 2012 the number of marine spills reported annually ranged from 11 - 37, and total annual spill volume ranged from 5,017 - 352,602 gallons Most spills in Alaska marine waters from 1995 - 2012 were non-crude oil spills (primarily diesel and other lighter fuels). Crude oil spills were much less frequent ranging from zero to two per year, with total volumes ranging from 0 - 924 gallons. The Aleutian Islands region had the greatest volume of spills in marine waters from 1995 – 2006 (ADEC 2007).

Shipping is a major source of spills in the Aleutian Islands and Bering Sea. Shipping between North America and East Asian countries is increasing, especially among deep draft shipping vessels travelling along the Great Circle Route (DNV and ERM 2010a, 2010b, Nuka 2014). Geographically, the greatest spill risk from vessels is predicted along the Aleutian Island chain, particularly at Unimak Pass and Akutan Pass (DNV and ERM 2010b) where short-tailed albatross concentrations may be high. Albatrosses that are molting in these areas may be less mobile and more sensitive to threats that occur in the vicinity, including oil spills. Due to the high overlap with important foraging areas for short-tailed albatross and high risk of spills in these areas, substantial impacts to adult and juvenile birds could occur. Shipping increases are also likely along the west coast of Canada and the contiguous U.S. Spills in these areas could affect locations where a high proportion of immature short-tailed albatrosses have been tracked (Guy et al. 2013).

The risk of oil spills in the Bering and Chukchi seas is also increasing. As sea-ice recedes due to climate change, the potential for increases in Arctic shipping continues to grow. Although short-tailed albatross have only rarely been observed in the Chukchi Sea, the reduction in sea-ice and the increasing numbers of widely-ranging subadult short-tailed albatrosses may result in a greater number of albatrosses in Arctic waters (Day et al. 2013; Gall et al. 2013) where they could be exposed to petroleum products spilled in Arctic shipping accidents.

Another major source of spills is from oil and gas industries. At the present time, the Aleutians have limited potential for oil and gas development. Approximately 1.75 million offshore acres along the Alaska Peninsula are available for development, but current restrictions require development to be conducted from onshore facilities. Potential in the area is considered low to moderate and no large scale oil exploration or development is being conducted.

Although the risk of spills and potential for impacts to short-tailed albatrosses exists in many places throughout their range, most spills occurring in the action area would not affect enough albatross to raise concerns for the well-being of the population. This is because short-tailed albatross have a very broad range, spills generally have localized effects, and large spills with wide-spread impacts are highly unlikely to occur.

5.3 Short-tailed Albatross Recovery Plan

Specific to the action area the Recovery Plan for short-tailed albatross recommends continued research on fisheries operations and mitigation measures (Recovery Action Five). Great progress has been made in developing seabird bycatch avoidance measures that minimize seabird bycatch in the Alaska demersal longline fisheries. This work needs to be continued and further research needs to be conducted on other aspects of commercial fisheries (e.g. trawl fisheries) (USFWS 2008).

6.0 EFFECTS OF THE ACTION

Effects of the action refer to the permanent or temporary direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Indirect effects are those that are caused by the proposed action, occur later in time, but are still reasonably certain to occur.

7.0 EFFECTS TO THE SPECIES

7.1 Direct Effects

The domestic groundfish fishery off Alaska is the largest fishery by volume in the United States (NMFS 2015). Short-tailed albatross can be found within the fishery year-round, with a large amount of time spent in the Eastern Bering Sea (Suryan et al. 2007; O'Connor et al. 2013; Piatt et al. 2006). Short-tailed albatross visit and follow commercial fishing vessels in Alaska that target sablefish, Pacific cod, Pacific halibut, and pollock (USFWS 2008; Suryan et al. 2007; Figure 7). Since 1995, 11 short-tailed albatross mortalities have been recorded in the Alaska groundfish fisheries (Table 2, Figure 6).

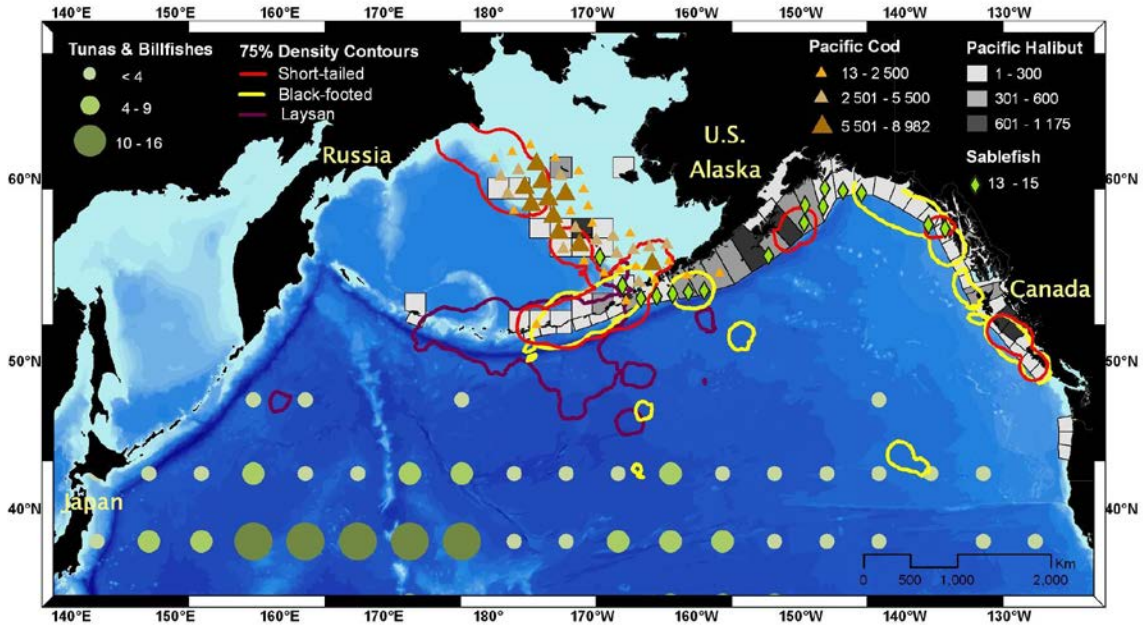

Figure 7. Non-breeding albatross overlap with longline fisheries (2002 – 2003) (Suryan et al. 2007 and Fischer et al. 2009).

Hook-and-line groundfish fishery

The hook-and-line groundfish fisheries off Alaska include vessels using hook-and-line gear to target Pacific cod, Pacific halibut, sablefish, turbot, and some rockfish species (AFSC 2011). Birds are attracted to baited hooks when the gear is set. Birds that attempt to steal bait are

hooked, pulled underwater as the mainline is set, and drowned. Birds may also sustain injuries from interactions with baited hooks during the process of setting and hauling the mainline, which could impair their ability to fly or forage, ultimately resulting in mortality. Discarded fish offal is also an attractant to birds.

Short-tailed albatross appear to have the greatest potential for interaction with sablefish fisheries, as at sea sighting and satellite-tracking data indicates that the birds most often frequent the continental shelf break and slope regions in the North Pacific, areas where sablefish fisheries occur (NMFS 2015). However, since Pacific cod fisheries on the Bering Sea shelf have greater fishing effort, and the Bering Sea shelf is a short-tailed albatross hotspot, therefore, there is a great potential for short-tailed albatross interaction with the Pacific cod fishery (Piatt et al. 2006, Suryan et al. 2007, O'Connor et al. 2013, Figure 7). Short-tailed albatross spend a large amount of time, during the non-breeding season of summer and fall, along the Bering Sea shelf, foraging (O'Connor et al. 2013; Figures 5 and 8). Most of the short-tailed albatross mortality documented in the hook-and-line groundfish fisheries has occurred in the fall with immature birds in the Bering Sea.

Seabird mortality related to bycatch has shown to threaten species viability in albatrosses (Weimerskirch and Jouventin 1987, Gales 1997). To reduce incidental take of short-tailed albatross, NMFS requires vessels using hook-and-line gear in the BSAI and GOA groundfish fishery to employ bird avoidance techniques, such as using buoy or streamer lines with performance standards specified in regulations (50 CFR 679.24, Figure 8). Regulations were revised in 2004 as a result of previous consultation with the USFWS to require the use of streamer lines.

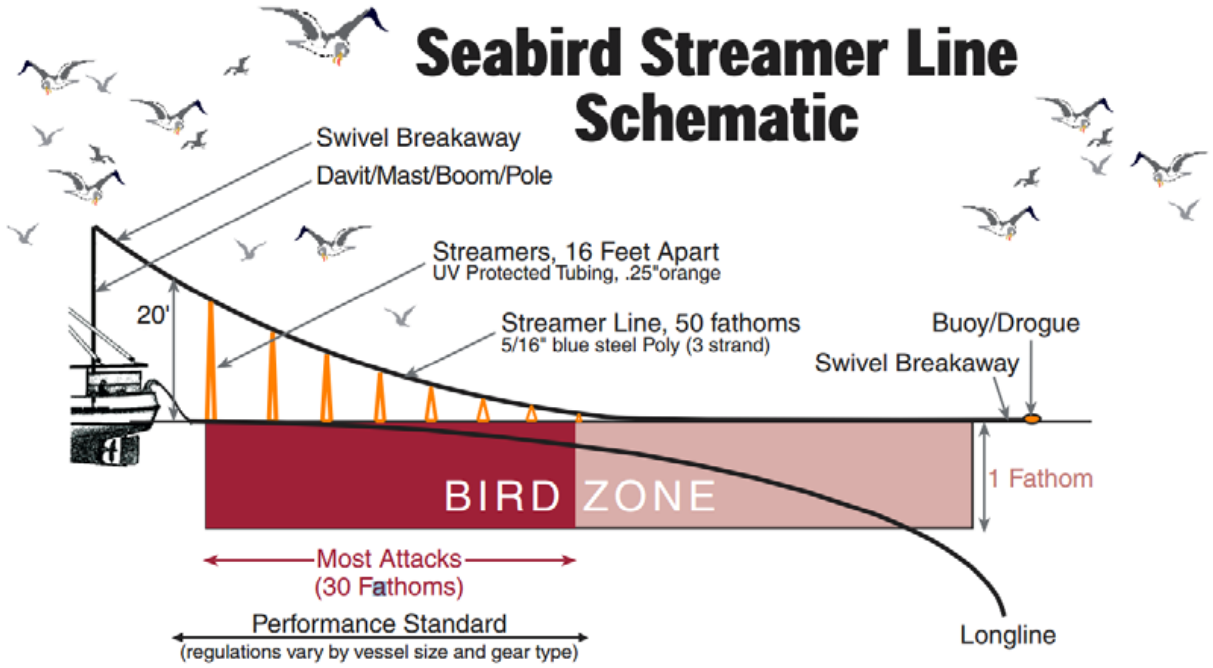

Figure 8. Streamer lines used to reduce seabird bycatch in hook-and-line groundfish fisheries (Melvin 2000).

Melvin et al. (2001) found a reduction of 88 to 100 % seabird bycatch could be achieved in the hook-and-line groundfish fishery when paired streamer lines were employed. While streamer lines have greatly reduced bycatch, it has only been a reduction of 78 %, not the potential 88 to 100 % (Dietrich and Fitzgerald 2010). A small number of vessels are responsible for a majority of seabird bycatch (Dietrich and Fitzgerald 2010). However, this reporting is based on total number of birds caught, not a standardized catch rate. Seabird bycatch rate is an important metric when evaluating bycatch of short-tailed albatross. A vessel may catch 10 birds on 250,000 hooks, resulting in a bycatch rate of 0.04 birds per 1,000 hooks, another vessel may catch 10 birds on 500,000 hooks resulting in a rate of 0.02 birds per 1,000 hooks. When only the total bycatch is reported it is difficult to extrapolate which vessel has the highest impact on seabirds (Dietrich and Fitzgerald 2010).

Short-tailed albatross generally attack the lines as they leave the boat, once the lines have been baited. Weighting of the long lines causes the lines to sink quicker, minimizing the time that the birds have access to the lines and bait when the gear is set. Weighted lines in coordination with streamer lines provide the most effective means to reduce seabird and short-tailed albatross bycatch (Dietrich et al. 2008). Weighted lines work best with the auto-bait systems found on larger CVs, but the additional weight makes them impractical for smaller vessels (Dietrich et al. 2008; Ed Melvin pers. comm.).

Since 1995 there have been 11 observed takes of short-tailed albatross in the BSAI and GOA hook-and-line groundfish fishery. In 2000 the NMFS initiated formal consultation with the USFWS on the Alaska groundfish fishery. From 1999 to 2000 the University of Washington Sea Grant Program worked with the fishing industry to develop minimization measure for the hook-and-line fishery. In 2004 the seabird avoidance measures were revised for the Alaska hook-and-line groundfish fishery to require vessels greater than 55 feet LOA within the EEZ must use a minimum of a paired streamer line of a specified performance and material standard. Smaller vessels (greater than 26 feet LOA and less than or equal to 55 feet LOA) must use a minimum of a single streamer line or, in limited instances, a minimum of one buoy bag line. The regulations at 50 CFR part 679.24(e)(2) provide specific requirements. Since implementation of the minimization measures in 2004, an additional six observed short-tailed albatross have been taken in the hook-and-line catcher processor fleet targeting Pacific cod in the Bering Sea.

From 2010 through 2014 the number of hooks deployed by the CP fleet has increased (NMFS). 2014). However, incidental take of short-tailed albatross did not increase with an increase in the number of hooks deployed. The years 2010 and 2014 had the highest rate of observed take of short-tailed albatross, but 2011 through 2013 had a higher number of hooks set. Although the short-tailed albatross population is steadily increasing, the observed take is not rising at the same level.

The NMFS is able to estimate seabird mortality during the sampling period using CAS catch estimation. The number of hooked seabirds observed during a sampling period is extrapolated to all unsampled hooks in a haul and other unsampled events across the fisheries (NMFS 2015), see Cahalan (et al. 2014) for a description of the methods. CAS can estimate the total number of short-tailed albatross taken across the fisheries. Only observed takes of short-tailed albatross are counted towards the incidental take statement. NMFS estimated short-tailed albatross takes to be 15 birds in 20104, 5 in 2011, and 9 in 2014 (AFSC 2014 in NMFS 2015). The observed take of short-tailed albatross was two in 2010, two in 2011, and three in 2014 (Table 2).

Trawl groundfish fishery

The trawl fisheries in the GOA and BSAI compromise a large portion of the total harvest for the Alaskan groundfishery. Seabirds, including short-tailed albatross, are attracted to trawl vessels when fish waste from processing is discharged. In the Alaska trawl fishery, offal discards are greater in the fall and lower in the winter (Furness et al. 2007). Additionally the highest numbers of seabirds were counted in plumes with macerated discards and the trend in the data is in the direction of more birds with greater discard volume (Zador and Fitzgerald 2008). Birds attracted to the trawl vessels are at risk when the birds strike cables in the air or water or become entangled in the nets (Bartle 1991, Weimerskirch et al. 2000). Cable interactions include trawl warps, the cables that pull the net, and data transmission cables, also called third wires (Melvin et al. 2010). The third wire is part of a trawl's sonar system, which provides a 360 degree picture of the net, water column, and target fish. Large winged birds, such as the short-tailed albatross, are more susceptible to cable strikes than entanglement (CCAMLR 2006). Onboard

observations of birds (including Laysan albatross) colliding with the third wire have been made by researchers and observers (Labunski and Kuletz 2003).

Several southern hemisphere fisheries banned the use of third wires in the early 1990's due to albatross mortality from third wire strikes (Bartle 1991, Weimerskirch et al. 2000). Warp strikes have also been documented to kill albatross in several southern hemisphere fisheries (CCAMLR 2006, Sullivan et al. 2006). Wireless, hull mounted acoustic systems are available in place of third wire communication device; however, the third wire system is more reliable and maximizes fishing efficiency (Dietrich and Melvin 2008, Melvin et al. 2011). There is no documented short-tailed albatross mortality from third wire strikes.

To date, striking of trawl vessels or gear by the short-tailed albatross has not been reported by observers. However, observers on trawl vessels are rarely stationed on deck; instead they are below-deck in the fish processing area (Fitzgerald et al., in prep). The observer program in the trawl fishery is not structured to observe bycatch mortality in trawls. To be observed, the bycatch must make it into the net, which is rare if the bird strikes the third wire or warp cables (Fitzgerald et al., in prep). Trawl-induced mortality is difficult to quantify because birds that strike the cables often fall into the water and go unobserved (Dietrich and Melvin 2007, Zador and Fitzgerald 2008). Anecdotal and observational information from trawl observers documents that seabird mortality does occur from sources not accounted for in the observer sample (Labunski and Kuletz 2003). Bycatch estimates are biased low in the trawl fishery, but determining the magnitude of the bias is difficult (Fitzgerald et al., in prep). Due to the size and complexity of the trawl vessel, there is no location in which an observer can view all gear during haulback (Fitzgerald et al., in prep). Melvin et al. (2011) found fisheries observers failed to detect most net mortality. Fishery observers detected only three in 200 trawls, while seabird observers detected 17 in 170 of those same trawls (Melvin et al. 2011).

Short-tailed albatross mortality is a rare event in the GOA and BSAI groundfish fishery. However, due to the difficulty in assessing bycatch in the GOA and BSAI trawl fishery, a possibility exists that short-tailed albatross could be taken in the trawl fishery. Within the GOA and BSAI trawl fishery there have been documented Laysan albatross mortality (Labunski and Kuletz 2003, Fitzgerald et al., in prep). As mentioned above seabirds, including short-tailed albatross, are attracted to discards from trawl vessels. The attraction to trawl vessels combined with the overlap of the pelagic trawl fleet with the range of the short-tailed albatross makes interactions with the fleet likely. Radio-tagged juvenile short-tailed albatross were found to overlap with the pelagic trawl fishery near the Pervenets and Zemchug canyons in the Bering Sea during the summer, fall, and winter months (O'Connor et al. 2013, Figure 9). Non-pelagic trawl associations were predominantly in Navarin, Pribilof, and Bering Canyons during summer, fall, and spring (O'Connor et al. 2013, Figure 9).

Within the pelagic trawl fleet, discards vary greatly, with the largest of catcher processor operating fish meal plants that result in little discard, to other vessels that discard whole fish or a macerated offal (Zador and Fitzgerald 2008, Melvin et al. 2011). Seabird attraction to vessels varies based on the type and amount of discard. Vessels operating fish meal plants provide very little biomass in their overboard discharge and as a result attract few seabirds (Melvin et al. 2011, Abraham et al. 2008).

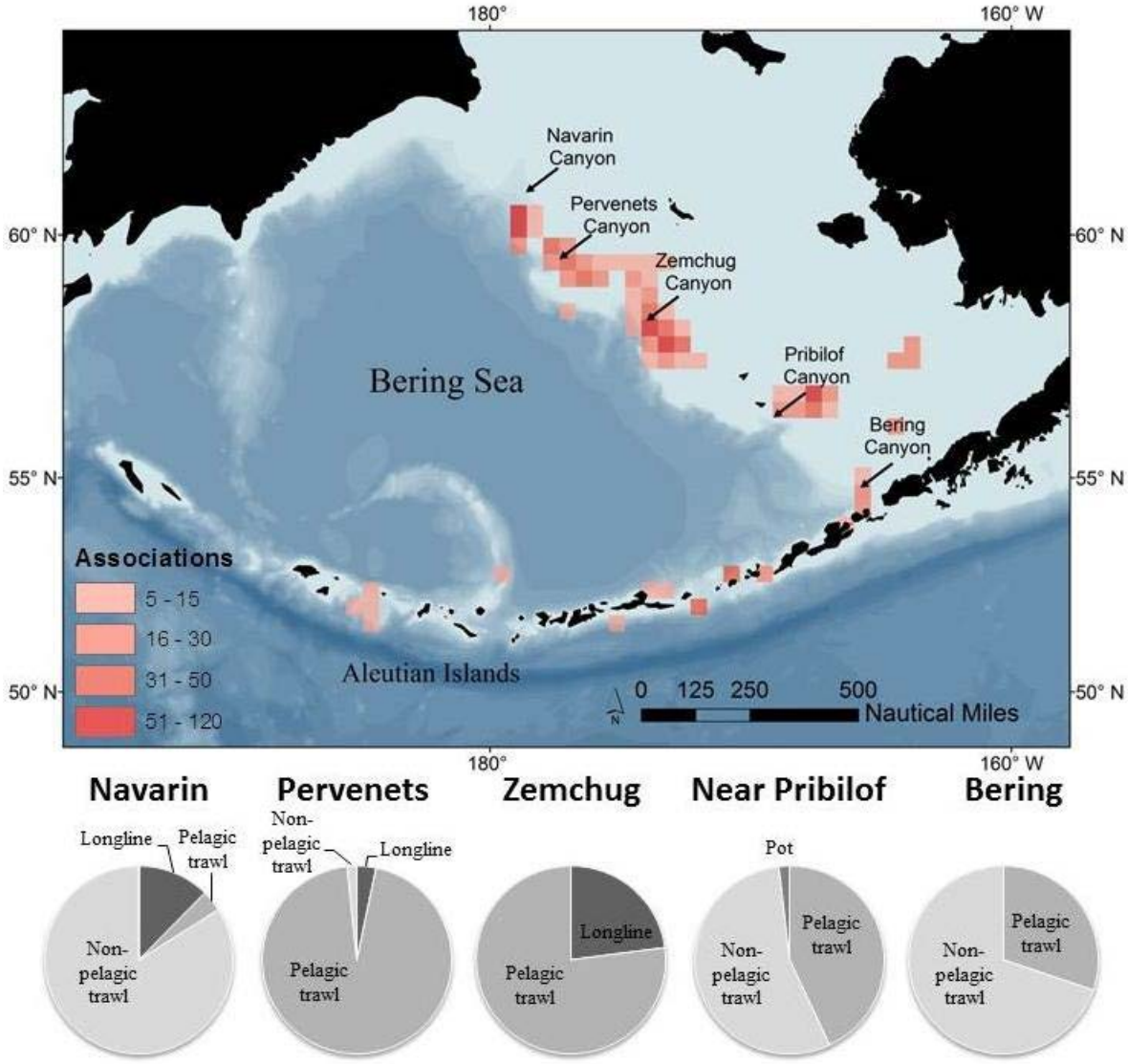

Figure 9. Alaskan fishing vessel overlap with short-tailed albatross. Pie charts depict gear types associated with short-tailed albatross "hotspots" near canyons (O'Connor et al. 2013).

7.2 Indirect Effects

Derelict fishing gear and debris lost off of fishing vessels can 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).

The potential release of contaminants due to fishing activities also exists. Vessels that are damaged or sink may release oil from fuel tanks. Contaminants from onboard seafood processing discharge may also be an indirect effect. However, little research has been done to quantify the amount of contaminants in the discharge. As discussed under direct effects, the size of the discharge pieces influences whether short-tailed albatross may consume them.

7.3 Population Effects

The operation of the Federal and State parallel groundfish fisheries in the GOA and BSAI is imposing additional (non-natural) mortality on short-tailed albatross. In addition to directly reducing the population size, harm of these individual short-tailed albatross will also result in a reduction to the population growth rate as a result of lost future reproductive success of the birds killed, and temporary loss of reproductive success of the mates of any adult birds killed by this action. A further indirect effect of albatross-fisheries interactions is the lowered future reproductive and survival potential suffered by those individuals who may suffer short or long-term debilitating injuries that do not necessarily result in mortality.

The following take estimation is from the BA (NMFS 2015):

"The total estimated take of short-tailed albatross is 41 birds over 21 years (1993 through 2014) with an average of 1.9 short-tailed albatross estimated to be taken incidental to the hook-and-line fishery each year. No extrapolations were done for the birds not within the observer sample, but if we add the three known takes not within the observer sample to the 8 reported takes within the observer sample there are 11 birds over 21 years, averaging 0.5 short-tailed albatross per year.

If we only consider the take from 2004 through 2014, there have been 5 observed in-sample short-tailed albatross takes (0.5 per year) and 29 (2.6 per year) estimated short-tailed albatross incidentally caught in the Pacific cod hook-and-line fishery.

Based on data from the last 10 years, the best estimate of the total number of short-tailed albatross takes with the groundfish hook-and-line fisheries is 2.6 birds per year. Because observer coverage in the BSAI CP sector is 100 percent of fishing days (as described in Section 4.3.4), with a high percentage of hooks monitored, and with additional observer coverage in previously unobserved fisheries in the GOA due to the restructured observer program, we can anticipate that 3 short-tailed albatross may be observed and recorded taken in each calendar year, on average."

The Short-tailed Albatross Recovery Plan reported that a population decline would occur if an additive mortality of 5 – 6 % above current conditions was to occur (USFWS 2008). For instance, at a population estimate of 4,996 birds, that is 249-300 birds per year above current mortality. An estimated three deaths per year from the continued operation of the Federal and State parallel groundfish fishery, results in less than a 1.2 % of the additional mortality level required to cause a population decline (3 deaths a year/249 additional yearly mortality needed x

100). Therefore, the proposed action will not appreciably reduce the likelihood that the short-tailed albatross population will survive.

The current growth rate of the short-tailed albatross is estimated at 7.5 % (USFWS 2014), and this is occurring with the operation of the Federal and State parallel groundfish fisheries in the BSAI and GOA. Mortality from the fishery has and will prevent killed birds from producing young and contributing to recovery. Given that the population has increased at a rapid rate while this fishery has been operating, and that the current estimated annual mortality is three birds per year, it is the USFWS's opinion that the proposed action will not appreciable reduce the likelihood of the short-tailed albatross recovery.

Short-tailed albatross mortality and population growth rate will need to be monitored into the future to ensure that the Federal and State parallel groundfish fisheries in the BSAI and GOA stays within expected impacts to the species. Mortality from the fishery is likely to change due to fishery changes, such as changes in fishing effort or gear type, and increased observer coverage. Mortality may increase with a growing short-tailed albatross population, and may decrease with additional minimization measures. The population growth rate is likely to change due to changes in threats, and is likely to slow as the population grows.

Additionally, continued implementation of streamer lines and other seabird bycatch reduction measures will help reduce the likelihood that a short-tailed albatross will be injured or drowned from commercial longline hooks or trawl gear. We believe seabird bycatch reduction methods will help to keep short-tailed albatross mortality at a low level in this fishery, even with a growing short-tailed albatross population.

8.0 CUMULATIVE EFFECTS

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

State Managed Fisheries

State managed fisheries occur zero to three nm offshore, with the exception of the Tanner crab fishery which extends into Federal waters. The salmon, herring, and shellfish State managed fisheries have the potential to overlap with short-tailed albatross in State waters. However, short-tailed albatross is a continental edge specialist. They can be common nearshore, but only where upwelling hotspots occur (Piatt et. al 2006). There is little chance of interaction between short-tailed albatross and the State managed fisheries, except near the Aleutian Islands (Figures 4 and 10).

Increased Marine Traffic

Increased marine traffic could impact short-tailed albatross through disturbance, collisions, and more significantly from accidental fuel spills. In the Chukchi and Beaufort seas, decline in the extent of Arctic sea-ice in the summer and increase in the length of the ice-free season has

prompted interest in shipping within and through Arctic waters via the Northwest Passage (Brigham and Ellis 2004). Ships operating, or that could operate in the area, include military vessels, pleasure craft, cruise ships, barges, scientific research vessels, and vessels related to oil, gas, or mineral development. The potential increase in the number of vessels operating in Arctic waters has been matched by an increase in U.S. Coast Guard (USCG) activities. The USCG conducted a number of major exercises in Arctic waters in recent years for which section 7 consultations were conducted.

Thousands of vessels transit the Great Circle Route through the Aleutians each year and the level of use is expected to double into the next several decades (Nuka 2005). DNV and ERM (2010) conducted an evaluation of existing and future spill risk through the Aleutians. Using models incorporating the frequency of use, the occurrence and consequences of spills, and projected future conditions, they estimated the amount of material spilled to increase by 48–83% by 2034, and frequency of accidents to increase by 11%. However, the average amount of material spilled per accident is expected to decline due to increasing numbers of vessels with double hulled protection (required for new tankers) (DNV and ERM 2010b). Increased spill risk in the Aleutians will increase baseline risk of contaminant exposure for listed species. New and improved risk reduction measures have been proposed and would benefit listed species (Nuka 2005).

9.0 CONCLUSION

After reviewing the current status of the short-tailed albatross, the environmental baseline for the action area, the effects of the proposed action on the short-tailed albatross, and the cumulative effects, it is the USFWS's biological opinion that the activity, as proposed, is not likely to jeopardize the continued existence of the short-tailed albatross.

Our findings are based on the following assumptions and factors: (1) the proposed action is likely to result in interactions between short-tailed albatross and the Alaskan groundfish fishery causing injury or mortality to individuals attempting to steal bait from hooks during longline setting and haulback, or from striking trawl cables or sonar cables; (2) calculations of the rate at which injuries or mortalities are likely to occur from the Alaska groundfish fishery indicate that approximately three or fewer short-tailed albatross are likely to suffer injury or death per year in the action area; (3) other methods of fishing not covered by the NMFS Observer Program proposed to be implemented through the proposed action have a very low likelihood of adverse effects rising to the level of significant injury or death to the short-tailed albatross; and (4) the estimated rate of injury or death of the species will not preclude the survival or recovery of the species, nor substantially delay the rate at which the species could recover in the absence of this injury or mortality.

This conclusion is consistent with the Short-tailed Albatross Recovery Plan which states that the short-tailed albatross is not declining due to seabird bycatch in commercial fisheries (USFWS 2008). However, the plan does state that it is important that we continue to make efforts to acquire adequate seabird bycatch information from all fisheries within the range of the short-

tailed albatross, so that we can detect which fisheries may begin to have deleterious population-level effects upon this species in the future (USFWS 2008).

10.0 INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or 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 listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined by the USFWS as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns that 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 intended as part of the agency action, is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this Incidental Take Statements (ITS).

The measures below are non-discretionary, and must be undertaken by NMFS so that they become binding conditions of any grant or permit issued to any applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The NMFS has a continuing duty to regulate the activities covered by this ITS. If NMFS (1) fails to assume and implement the terms and conditions or (2) fails to require cooperators to adhere to the terms and conditions of the ITS through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, NMFS must report the progress of the action and its impact on the species the USFWS as specified in this ITS.
[50 CFR §402.14(i)(3)]

11.0 AMOUNT OR EXTENT OF TAKE

The USFWS anticipates a yearly reported take of three short-tailed albatross as a result of this continuing action. The incidental take is expected to be in the form of lethal take, due to birds drowned as a result of encounters with hook and line groundfish gear, or taken by collision with trawl gear, including the third wire and warp cables.

To account for interannual variability in actual take levels, a floating two-year period beginning January 1, 2016, will be used to quantify the total reported take in each two-year take average. The reported take should not exceed six albatross in a two-year period.

12.0 EFFECT OF THE TAKE

In this BO, the USFWS determined that the level of anticipated take is not likely to result in jeopardy to the species.

13.0 REASONABLE AND PRUDENT MEASURES

The USFWS believes the following reasonable and prudent measures (RPM) are necessary and appropriate for NMFS to minimize take of short-tailed albatross:

RPM 1: The NMFS shall minimize the risk of short-tailed albatross interacting with the hook-and-line fishery. Because short-tailed albatross are caught and killed by baited hooks in the hook-and-line fishery, minimization measures shall be employed to reduce the likelihood that they will attack the baited hooks.

RPM2: The NMFS shall establish a multi-stakeholder, Alaska Groundfish and Short-tailed Albatross Working Group as an advisory body to the NMFS and the USFWS for the purposes of reducing fishery interactions with short-tailed albatross and seabirds. This group will work toward facilitating adaptive management to minimize and avoid take of short-tailed albatross and other seabirds.

RPM3: The NMFS shall monitor the groundfish fisheries for interactions with short-tailed albatross and report all observed, reported and estimated takes, of short-tailed albatross to the Service, and report on the efficacy of avoidance and minimization measures.

RPM4: The NMFS shall facilitate the salvage of short-tailed albatross carcasses taken by longline or trawl fishing vessels. Every effort should be made to retain short-tailed albatross carcasses for scientific and educational purposes.

14.0 TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the NMFS must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

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 NMFS shall continue to minimize seabird take through the existing hook-and-line seabird avoidance measures. The complete seabird avoidance measures for hook-and-line gear can be found at § 679.24(e) and 679.51(e)(1)(viii)(F); see § 679.24(e)(1) for applicable fisheries (74 FR 13358, March 27, 2009; Table 20 to 50 CFR part 679).

T&C 2 for RPM 1: The NMFS (and the Alaska Groundfish and Short-tailed Albatross Working Group) should evaluate the vessel effect on seabird bycatch, and determine, if feasible, whether the use of additional minimization measures would further reduce bycatch for individual vessels (see T&C 3 for RPM 2).

T&C 1 for RPM 2: NMFS shall develop and lead an Alaska Groundfish and Short-tailed Albatross Working Group. Working group development shall entail:

1. The NMFS shall identify preliminary membership for an Alaska Groundfish and Short-tailed Albatross Working Group within eight months of opinion issuance.
2. Within three months of opinion issuance, NMFS shall invite the Council and the USFWS to provide points of contact, participate in the Alaskan Groundfish and Short-tailed Albatross Working Group referenced within, and help develop terms of reference for the workgroup (see 4 below). NMFS shall request response within six month of opinion issuance.
3. The Alaska Groundfish and Short-tailed Albatross Working Group shall at a minimum convene on a biennial basis to consider all new information.
4. The Alaska Groundfish and Short-tailed Albatross Working Group shall recommend, and NMFS shall adopt, the final terms of reference for the Alaska Groundfish and Short-tailed Albatross Working Group. These terms shall document the purpose and structure of the Alaska Groundfish and Short-tailed Albatross Working Group, the basis for key recommendations, staff points of contact and their roles and responsibilities, resources needed to accomplish the Alaska Groundfish and Short-tailed Albatross Working Group purpose, and a breakdown of anticipated work schedules (e.g. for biennial reporting and completing a future consultation following a group recommendation reinitiate).
5. The Alaska Groundfish and Short-tailed Albatross Working Group's recommendations for mitigating short-tailed albatross bycatch, and other seabird bycatch as applicable, shall be made available to NMFS, the USFWS, and the Council.
6. With NMFS as lead, the Alaska Groundfish and Short-tailed Albatross Working Group shall be an advisory group responsible for review of new information and developing recommendations regarding changes to the Alaskan groundfish fishery that shall reduce risk of harm to short-tailed albatross. Example recommendations may include developing new analyses or reports, changes to sampling protocols, additional conservation measures to implement; updating species risk assessments, and advise if reinitiation is warranted.

T&C 2 for RPM 2: The NMFS shall evaluate the incidental take of a short-tailed albatross to determine if further measures can be implemented to reduce the chances of a future take on the same vessel.

This process is in compliance with the June 14, 2012, Memorandum of Understanding (MOU) between NMFS and the USFWS to promote the conservation of migratory bird populations (NMFS and UFSWS 2012).

T&C 1 from RPM 3: The NMFS shall 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 NMFS. NMFS shall then inform the USFWS of any mortality within two business days of the initial reporting. The following USFWS notifications should be made:

1. Alaska U.S. Fish and Wildlife Law Enforcement Office: 800-858-7621
2. Anchorage Fish and Wildlife Field Office, Field Supervisor: 800-272-4174

T&C 2 for RPM 3: The NMFS shall continue to provide to the USFWS, on an annual basis, bycatch estimates of the number of birds taken by species in the hook-and-line and trawl fisheries. The bycatch estimates should also include a bycatch rate and information on individual vessel bycatch rates to the extent allowed by applicable law. Reports should be sent to the Anchorage Fish and Wildlife Field Office, Field Supervisor, 4700 BLM Rd., Anchorage, Alaska 99507 by June of the following year.

T&C 3 for RPM 3: The NMFS shall encourage all fishing vessels to temporarily keep all unidentified albatross taken during a haul until the observer has had the opportunity to identify as a listed or non-listed species. If no observer is on board, carcass should be retained for confirmation of non-listed albatross, or pictures documenting the species should be taken for verification.

T&C 1 for RPM 4: The NMFS shall advise fishery observers and fishermen 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, observer 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 Field Office prior to shipping.

T&C 2 for RPM 4: If an injured or sick short-tailed albatross is located, call the Alaska SeaLife Center stranded animal hotline: 1-888-774-7325. Then inform the USFWS at 800-272-4174. 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.

The USFWS believes that a yearly average of three short-tailed albatross will be incidentally taken as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that

might otherwise result from the proposed action. If, during the course of the 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 Federal agency 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.

15.0 CONSERVATION RECOMMENDATIONS

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

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

1. Implement the use of streamer lines on the third wire on trawl vessels to minimize the chances of interaction between the short-tailed albatross and the third wire.
2. Continue the research and development of integrated weighted lines in the hook-and-line fisheries to further minimize incidental take of short-tailed albatross and continue to reduce seabird bycatch.
3. Avoid setting hook-and-lines or trawls when short-tailed albatross are in the area.
4. To the extent practicable offal should not be discharged while setting or retrieving hook-and-lines or trawl nets.
5. The NMFS should work with the fisheries to report to the Council and to the Alaska Groundfish and Short-tailed Albatross Working Group additional seabird bycatch minimization measures, if any, employed on the vessel.

16.0 REINITIATION NOTICE

This concludes formal consultation on the actions outlined in your BA. 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 maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agencies' action that may affect listed species or critical habitat in a manner or to an extent not considered in this BO; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this BO; 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, any operations causing such take must cease pending reinitiation of formal consultation.

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