

**ENDANGERED SPECIES ACT: SECTION 7 CONSULTATION
BIOLOGICAL OPINION**

Action Agencies: National Marine Fisheries Service Office of Protected Resources
and Department of Interior, Bureau of Land Management

Activity: Land Survey and Conveyance Pursuant to Section 14(h)(1) of the
Alaska Native Claims Settlement Act, and Issuance of an
Associated Incidental Take Authorization Pursuant to Section
101(a)(5) of the Marine Mammal Protection Act

Consulting Agency: National Marine Fisheries Service, Alaska Region

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1. INTRODUCTION

Section 7(a)(2) of the Endangered Species Act (ESA) requires each federal agency to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. When a federal agency's action "may affect" a protected species or its critical habitat, that agency is required to consult with the National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service (USFWS), depending upon the endangered species, threatened species, or designated critical habitat that may be affected by the action (50 CFR §402.14(a)).

The actions that are the subject of this consultation are (1) NMFS Office of Protected Resources – Permits and Conservation Division's (NMFS PR1) proposed issuance of an Incidental Harassment Authorization (IHA) to take marine mammals by harassment under the MMPA incidental to a field-based land survey of cultural sites located on three small islands within the eastern Aleutian Islands archipelago for a land claim made by an Alaska Regional Native Corporation under the Alaska Native Claims Settlement Act (ANCSA), and (2) the Bureau of Land Management's (BLM) implementation of that survey. We refer to these actions jointly herein as the "proposed action." The consulting agency is NMFS Alaska Region (AKR).

This opinion evaluates the effects of the proposed action on the western distinct population segment (DPS) Steller sea lion and upon Steller sea lion critical habitat incidental to Land Survey Activities within the Eastern Aleutian Islands Archipelago, Alaska, 2015 (80 FR 21213, April 17, 2015), and analyzes the effects of the surveys and related operations on the endangered western distinct population segment (DPS) Steller sea lion (*Eumetopias jubatus*).

In formulating this biological opinion, AKR used information presented in the following documents or sources:

- Biological assessment for land surveys and conveyance within Steller sea lion habitat (BLM 2015);
- Takes of marine mammals incidental to specified activities; land survey activities within the eastern Aleutian Islands archipelago, Alaska, 2015 (80 FR 21213, April 17, 2015.)
- Application for marine mammal incidental take authorization for the Bureau of Land Management, Alaska; ANCSA Land Survey Project
- Recovery Plan for the Steller sea lion; Eastern and western distinct population segments (*Eumetopias jubatus*) (NMFS 2008);
- Published scientific studies; and
- Unpublished data and reports from NMFS and the State of Alaska.

Consultation History

By memo dated April 9, 2015, NMFS PR1 requested formal consultation with NMFS AKR on the proposed issuance of an IHA under the MMPA to take marine mammals by harassment during land surveys on Tanginak Island, Alaska. Included with that letter were copies of BLM's biological assessment (BLM 2015), BLM's application for an IHA, and the proposed rule to issue an IHA (80 FR 21213, April 17, 2015). BLM also proposes surveys on Akun and Chowiet

Islands. As described in the biological assessment, BLM determined that surveys on those two islands may affect, but are not likely to adversely affect, Steller sea lions, and none of the surveys are likely to adversely affect Steller sea lion critical habitat (BLM 2015).

2. PRESENTATION of the ANALYSIS in the BIOLOGICAL OPIONION

Biological opinions are constructed around several basic sections that represent specific requirements placed on the analysis by the ESA and implementing regulations. These sections contain different portions of the overall analytical approach described here. This section is intended as a basic guide to the reader on the other sections in this biological opinion and the analyses found in each section. Every step of the analytical approach described below will be presented in this biological opinion in either detail or summary form.

Description of the Proposed Action

This section contains a basic summary of the proposed federal action and any interrelated and interdependent actions. This description forms the basis of the first step in the analysis where we consider the various elements of the action and determine the stressors expected to result from those elements. The nature, timing, duration, and location of those stressors define the action area and provide the basis for our exposure analyses.

Status of the Species

This section provides the reference condition for the species and critical habitat at the listing and designation scale. These reference conditions form the basis for the determinations of whether the proposed action is likely to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat. Other key analyses presented in this section include information on the biological and ecological requirements of the species and critical habitat and the impacts to species and critical habitat from existing stressors.

Environmental Baseline

This section provides the reference condition for the species and critical habitat within the action area. By regulation, the baseline includes the impacts on the species and critical habitat of all past and present actions and future federal actions for which consultation has been completed (except the effects of the proposed action). This section also contains summaries of the impacts from stressors that will be ongoing in the same areas and times as the effects of the proposed action (future baseline). This information forms part of the foundation of our exposure, response, and risk analyses.

Effects of the Proposed Action

This section details the results of the exposure, response, and risk analyses NMFS AKR conducted for listed species and elements, functions, and areas of critical habitat.

Cumulative Effects

This section summarizes the impacts of future non-federal actions reasonably certain to occur within the action area, as required by regulation. Similar to the rest of the analysis, if cumulative effects are expected, NMFS AKR determines the exposure, response, and risk posed to individuals of the species and features of critical habitat.

Synthesis and Integration

In this section of the biological opinion, NMFS AKR presents the summary from the effects identified in the preceding sections and then details the consequences of the risks posed to individuals and features of critical habitat to the species at issue. Finally, this section concludes whether the proposed action is likely to jeopardize the continued existence of a species or destroy or adversely modify designated critical habitat.

Legal and Policy Framework

The purposes of the ESA, “...are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.” 16 U.S.C. § 1531(b). To help achieve these purposes, the ESA requires that, “Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [designated critical] habitat...” 16 U.S.C. § 1536(a)(2).

Jeopardy Standard

The jeopardy standard has been further interpreted in regulation (50 CFR 402.02) as a requirement that federal agencies ensure that their actions are not reasonably expected to *reduce appreciably the likelihood of the survival or recovery of the species in the wild by reducing its numbers, reproduction, or distribution.*¹ The purpose of the analysis is to determine whether appreciable reductions are reasonably expected, but not to quantify precisely the amount of those reductions. As a result, our assessment often focuses on whether a reduction is expected, but not on detailed analyses designed to quantify the absolute amount of reduction or the resulting population characteristics (abundance, for example) that could occur as a result of implementing the proposed action.

Parameters such as productivity, abundance, and population spatial structure are important to consider because they are predictors of extinction risk and recovery potential. The parameters reflect general biological and ecological processes that are critical to the survival and recovery of the listed species, and these parameters are consistent with the “reproduction, numbers, or distribution” criteria found within the regulatory definition of jeopardy (50 CFR 402.02).

Our analysis of the effects of an action comport with regulatory requirements at 50 CFR 402.14. Conclusions related to “jeopardy” and “destruction or adverse modification” require an evaluation of the direct and indirect effects from the proposed action, related actions, and the overall context of the impacts to the species and habitat from past, present, and future actions as well as the condition of the affected species. Recent court cases have reinforced the requirements provided in section 7 regulations (50 CFR 402.02) that NMFS must evaluate the effects of a

¹For purposes of this opinion, NMFS interprets this definition consistent with the court’s opinion in *National Wildlife Federation v. NMFS*, 524 F.3d 917 (9th Cir. 2008). NMFS’s jeopardy analysis considers how the proposed action may affect the likelihood of survival of the species and how it may affect the likelihood of recovery of the species.

proposed action within the context of the current condition of the species and critical habitat, including other factors affecting the survival and recovery of the species and the functions and value of critical habitat.

Consultations conclude with the issuance of a biological opinion or a concurrence letter. Section 7 of the ESA, the implementing regulations (50 CFR 402), and associated guidance documents (e.g., USFWS and NMFS 1998) require biological opinions to present: 1) a description of the proposed federal action; 2) a summary of the status of the affected species and its critical habitat; 3) a summary of the environmental baseline within the action area; 4) a detailed analysis of the effects from the proposed action on the affected species and critical habitat; 5) a description of cumulative effects; and 6) a conclusion as to whether it is reasonable to expect the proposed action is not likely to reduce appreciably the species' likelihood of surviving or recovering in the wild, by reducing its numbers, reproduction, or distribution or result in the destruction or adverse modification of the species' designated critical habitat.

3. PROPOSED ACTION and ACTION AREA

BLM proposes to conduct field-based surveys on land claims made by Alaska Regional Native Corporations pursuant to Section 14(h)(1) of ANCSA on Akun and Tanginak Islands in the eastern Aleutian Islands archipelago and Chowiet Island in the central Gulf of Alaska (Figure 1). The project is proposed to begin in June 2015 and conclude no later than July 31, 2015, but if weather is poor, the survey may not be completed until the 2016 field season. The surveying of Tanginak Island, the only proposed site where harassment of Steller sea lions is likely to occur as a result of the surveys, will require less than 12 hours. The land surveys on Akun and Chowiet Islands will each require 1-2 days to complete.

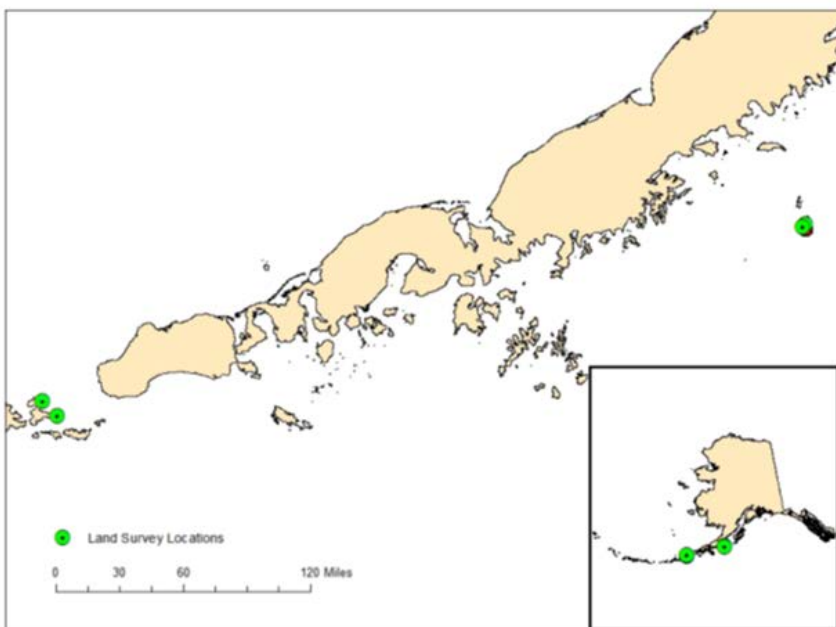


Figure 1. Location of the three islands where surveys will occur.

3.1 Purpose of the Proposed Action

Section 14(h)(1) of ANCSA and regulations at 43 CFR 2653.5 allow Alaska Regional Native Corporations to select existing cemetery sites and historical places for conveyance to their ownership. Land surveys to support the conveyances are required under ANCSA Section 22(j). The lands claimed are administered by the USFWS, and are within the Alaska Maritime National Wildlife Refuge. The Bureau of Indian Affairs has certified that the selected cemetery sites and historic places exist, and that they meet the cultural criteria required by regulation.

3.2 Project Area

BLM's land based surveys would occur on one lot that totals 20 acres on Akun Island; two lots that total approximately 20 acres on Chowiet Island; and throughout a Steller sea lion haulout on Tanginak Island, an island of less than five acres. The land surveys will occur within 3 nautical miles (nm) of two Steller sea lion major rookeries and one haulout, as identified in NMFS's regulations (50 CFR 223.202).

3.3 Action Area

The action area is defined in the ESA regulations (50 CFR 402.02) as the area within which all direct and indirect effects of the project will occur. The action area is distinct from, and larger than, the project footprint because some elements of the project may affect listed species some distance from the project footprint. The action area, therefore, extends out to a point where no measurable effects from the project are expected to occur. We define the action area for this consultation to include the lands upon which surveys are proposed and waters within 30.5 meters (m) (100 feet [ft.]) of vessels used to support and transport field crews to the survey sites. In addition, the action area includes the 3 nm marine buffer around the three rookeries, and the 914 m (3,000 ft.) critical habitat terrestrial zone and 914 m (3,000 ft.) critical habitat air zone around each haulout and rookery (Table 1).

Table 1. Major rookeries and haulout potentially affected by the proposal.

Site Name	Marine Buffer (3 nm)	Designated Critical Habitat Areas Affected (914 m / 3,000 ft.)		
		Terrestrial Zone	Marine Zone	Air Zone
Akun Island Major Rookery	Vessel transit and mooring	None	None	None
Chowiet Island #1 Major Rookery	Vessel transit and mooring	None	None	None
Chowiet Island #2 Major Rookery	Vessel transit and mooring	None	None	None
Tanginak Island Major Haulout	N/A ¹	Land Survey	Land Survey	None

¹ 3 nm Vessel Transit and Mooring restrictions do not exist for Tanginak Island.

Akun Island

Akun Island is part of the Fox Island group. The Fox Islands are in the eastern Aleutian Islands, east of Akutan Island and southwest of Unimak Island (the easternmost island in the Aleutians), across Unimak Pass. Akun Island has a land area of 166 square kilometers (km²) (64 square miles [mi.²]); it is 22.6 km (14 mi.) long and 18 km (11 mi.) wide. Akun Island is primarily composed of basalt, with several sea caves. Akun Island is rolling hills with tundra vegetation, natural grasses, wetland areas, and small streams. There are approximately 1,200 cattle on the island that were introduced by the Russians. The airport at Akun is Akutan's primary airport, and is located upland from Surf Bay, southwest Akutan Island with a paved runway, measuring 1,373 x 23 m (4,500 x 75 ft.). High winds and storms are frequent in the winter and fog is common in the summer.

There are two major Steller sea lion rookeries on the northwest area of Akun Island, located at Billings Head (54° 18.0 N / 165° 32.5W to 54° 18.0 N / 165° 31.5 W), both between 9-10 nm from the airport (Figure 2). Vessel transit will be necessary within the 3 nm marine buffer zone. However, the island has sufficient topographic relief to ensure that line of site is obstructed between the major rookeries at Billings Head and the lot where the survey will occur, thereby minimizing the potential for disturbance at the rookeries. Additional sea lion haulouts occur on Akun Island, but these sites are more than 3 nm from the survey site and are outside the action area.

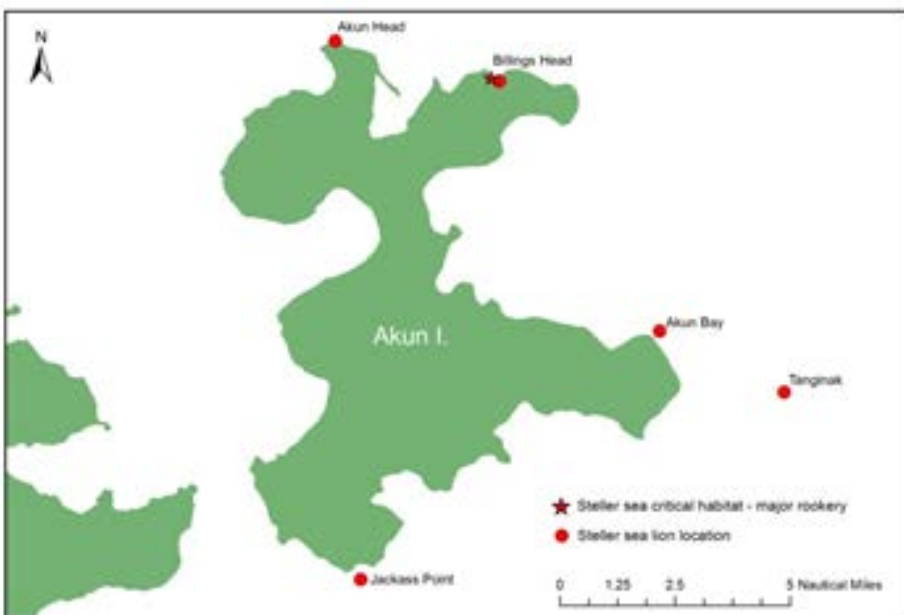


Figure 2. Two identified Steller sea lion rookeries at Billings Head near the survey site. Additional haulout sites at Akun Bay, Akun Head, and Jackass Point are outside the action area.

Chowiet Island

Uninhabited Chowiet Island, part of the Kodiak Island Borough, is 145 km (90 mi.) southwest of Kodiak Island and accessible only by water (boats and/or floatplanes). Chowiet Island is part of the Alaska Maritime National Wildlife Refuge, and is one of the largest islands within the Semidi Island group (Figure 3). Chowiet Island is mostly bordered by sheer cliffs along the

coast, especially on its west side. The island has alder and grass covered ridges, with many bedrock outcrops and cairn shaped rock piles. The primary Steller sea lion rookery is located at the south end of Chowiet Island in a small bay formed by a chain of low rocks and two steep sided islets extending southeast (NMFS 2008).

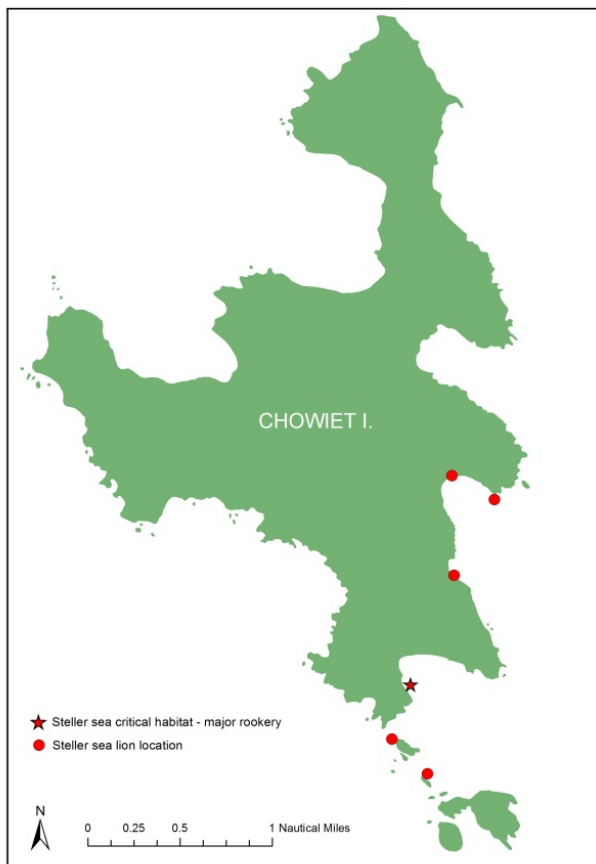


Figure 3. Chowiet Island with identified Steller sea lion rookery and other terrestrial use areas near the two land survey sites.

There are major Steller sea lion rookeries on the southwest area of Chowiet Island (located at $56^{\circ} 00.5' N / 156^{\circ} 41.5' W$ to $56^{\circ} 00.5' N / 156^{\circ} 42.0' W$; Figure 3). Vessel transit will be necessary within the 3 nm marine buffer zone. However, the island has sufficient topographic relief to ensure that line of site is obstructed between the major rookeries and two lots where survey activities will occur, thereby minimizing the potential for disturbance at the rookeries. Additional sea lion haulouts occur closer to the two lots, but these are also visually shielded from the to-be-conveyed site by terrain of up to 206 m (675 ft.) elevation (BLM 2015).

Tanginak Island

Uninhabited Tanginak Island, is part of the Aleutians East Borough, and is located 3.5 km (2.2 mi.) east of Akun Island. It is part of the Alaska Maritime National Wildlife Refuge and is within the Fox Island group, the eastern Aleutian Islands, east of Akutan Island and southwest of Unimak Island. Despite the moniker, Tanginak Island is comprised of two juxtaposed islets (Figure 4). It is 300 m (984 ft.) long, extremely rugged, with a flat land area of less than five acres. Fresh water is available from a small spring on the island (Stein 1977).

The Steller sea lion haulout that will be disturbed by a project-associated land survey is on Tanginak Island (located at 54° 13.0 N / 165° 19.5 W). The survey site is within designated Steller sea lion critical habitat (within the 914 m [3,000 ft.] terrestrial zone).

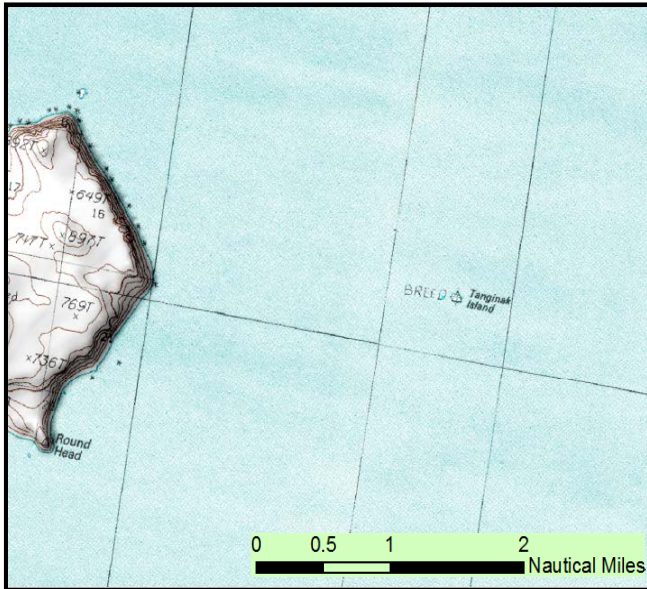


Figure 4. Tanginak Island, a Steller sea lion haulout

3.4 Description of the Proposed Action

Transport and live-aboard facilities will be provided by a vessel of approximately 50 m in length. A small skiff will be used to shuttle surveyors and their equipment from the vessel to land at or near the survey sites. Some sites may need to be accessed by helicopter if vessel transport is infeasible due to weather, scheduling needs, or topographic limitations. However, helicopter is not the preferred mode of access due to both expense and potential for marine mammal disturbance. Once on land, surveyors will walk to the survey sites; motorized ground vehicles will not be used.

Land surveys will be carried out by small crews, typically four people. Hand tools, such as global position system units, shovels, digging bars, and mallets will be used for setting official U.S. Survey markers into the ground. Power tools will not be used. The land survey markers are cast medal disks with stamped legends on their face and will be sunk in rock ledges or embedded in the ground. These markers will remain in place indefinitely, but will not be visible above ground, and therefore, once in place, the survey markers will not adversely affect Steller sea lions on the islands or critical habitat. All other survey tools and supplies will be removed. After land surveys are completed, the conveyance process will proceed without additional site visits. BLM will identify lands approved for conveyance in a Decision to Convey. The decision shall become final, unless appealed to the Interior Board of Land Appeals in accordance with 43 CFR 4(E).

Each site survey will typically require 6-10 hours of field time, up to a maximum of 12 hours. Island-specific actions and considerations are described below.

Federal regulations for ANCSA provide several provisions for conveyed lands that are existing cemetery sites and/or historical places. These regulations will indirectly serve to protect Steller sea lions and their critical habitat from development after lands on these islands are transferred to private ownership. For example, there shall be a covenant running with lands conveyed providing that the regional corporation shall not 1) authorize mining or mineral activity of any type, and 2) authorize any use which is incompatible with or is in derogation of the values as a cemetery site or historic place (43 CFR 2653.11[b]); and the U.S. reserves the right to seek enforcement of the covenant in an action of equity. These sites have always been accessible to Alaska Natives (i.e., for possible ceremonial purposes). However, there are no reports of such visits to these sites. Due to their remote locations, and associated transportation costs, NMFS concludes that conveyance will not affect frequency of human activity at these sites. The regional corporation must maintain and preserve the cemetery sites and historical places solely as cemetery sites and historic places (43 CFR 2653.5[a]).

Akun Island

The approximately 20 acre lot associated with the proposed project on Akun Island (Land Case File Number AA-012242) is to be surveyed and conveyed. This lot is approximately 1.4 km (0.9 mi.) from the two Steller sea lion rookeries at Billings Head, with a 481 m (1,577 ft.) steep ridge in between (Figure 2). The site to be conveyed falls outside the designated Steller sea lion critical habitat areas for the terrestrial zone (914 m [3,000 ft.]) and air zone (914 m [3,000 ft.]). Although a skiff will transit within the 3 nm marine buffer around the Billings Head rookeries, the terrain of the northeast section of the island will provide a visual barrier between the rookery and the skiff with its associated crew.

Chowiet Island

The two lots on Chowiet Island associated with the proposed project total approximately 20 acres (Land Case File Number AA-011774). Lots 1 and 2 are approximately 2.1 km (1.3 mi.) and 3.2 km (2 mi.) away from the major rookery, respectively (Figure 3). These distances are well beyond the designated critical habitat areas: terrestrial zone (914 m [3,000 ft.]) and air zone (914 m [3,000 ft.]).

Tanginak Island

The approximately five acre Tanginak Island (Land Case File Number AA-012241) is proposed to be surveyed and conveyed. One Steller sea lion haulout is located on its shores (Figure 4). The site to be conveyed is within designated Steller sea lion critical habitat (the 914 m [3,000 ft.] terrestrial zone). The skiff and its associated crew will transit within the 3 nm marine buffer zone around the Tanginak Island haulout. Without topographic relief, the skiff will be visible to the hauled-out sea lions and the survey will occur within the haulout site. From 2004-2014, no more than six Steller sea lions have been observed hauled out at this site at any one time (<http://www.afsc.noaa.gov/nmml/alaska/>).

3.4.1 Dates and Duration of the Action

Since the Aleutian Islands and Central GOA regions experience rough seas and inhospitable weather much of the year, the land surveys will be conducted between June 1 and July 31, when weather and sea conditions more reliably allow safe access. Work will probably occur in 2015, but if weather is poor, the survey work may not be completed until the 2016 field season.

3.4.2 Mitigation Measures

Western DPS Steller sea lion responses to occasional disturbance range from no visible reaction to all animals' immediate departure from the haulout or rookery (NMFS 2005). To minimize the possibility of incidental harassment to the endangered western DPS Steller sea lions, BLM included a series of mitigation measures as part of the project description.

The mitigation measures for Akun, Chowiet, and Tanginak islands include the use of Protected Species Observers (PSOs) who:

1. Are present during all approaches to the survey sites.
2. Are knowledgeable about identification and behavior of Steller sea lions and other marine mammals.
3. Will monitor and accurately report the abundance of observed Steller sea lions and other threatened and endangered marine mammal species.
4. Will communicate marine mammal observations to boat operators and the onshore survey crew as appropriate to minimize risk of take.

The mitigation measures for Akun and Chowiet islands include:

1. Vessel speeds that are maintained at 8 knots or less when vessels are within 3 nm of Steller sea lion rookeries.
2. Vessel approaches that maintain a maximum separation distance from hauled out Steller sea lions.
3. Vessel navigation and maneuvers that minimize disturbance to Steller sea lions and maintain a distance of 91 m (100 yds.) from Steller sea lions on land and in the water².
4. PSOs that ensure all personnel associated with this project do not disturb or harass Steller sea lions or other ESA listed species.
5. Use of terrain as a visual and acoustic barrier between hauled-out Steller sea lions and vessels, aircraft, and people whenever possible.
6. Use of aircraft flight paths that maintain maximum possible distances from hauled-out Steller sea lions, always remaining at least 914 m (3,000 ft.) slant distance from hauled-out Steller sea lions.
7. Use of aircraft flight paths that avoid sudden disturbance of hauled-out Steller sea lions at distances less than 3 nm.

The mitigation measures for Tanginak Island include:

1. Vessel speeds that are maintained at 8 knots or less when vessels are within 3 nm of Tanginak Island.
2. Not placing skiffs in the path of swimming Steller sea lions that may be present.
3. Use of binoculars to detect and count Steller sea lions before close approach.
4. PSOs that ensure all personnel associated with this project do not disturb or harass other ESA listed species.
5. Avoidance of loud noises on Tanginak Island (i.e., revving boat motor).
6. Helicopter flight shall take paths that minimize disturbance to swimming animals by:
 - a. Flight paths that maintain maximum possible distances from swimming Steller sea lions.

² As recommended by NMFS marine mammal viewing guidelines.

- b. Use of aircraft flight paths that avoid sudden disturbance of hauled-out Steller sea lions at distances less than 3 nm.
- 7. Departing Tanginak Island immediately after the land survey is completed.
- 8. Monitoring the offshore area for predators (i.e., killer whales [*Orcinus orca*])
 - a. Not flushing Steller sea lions into the water when predators are observed within 3 nm of Tanginak Island.

4. STATUS of the SPECIES and CRITICAL HABITAT

The Steller sea lion was listed as a threatened species under the ESA on November 26, 1990 (55 FR 49204). In 1997, NMFS reclassified Steller sea lions as two DPSs based on genetic studies and other information (62 FR 24345); at that time the eastern DPS was listed as threatened and the western DPS was listed as endangered. On November 4, 2013, the eastern DPS was removed from the endangered species list (78 FR 66139). Information on Steller sea lion biology and habitat (including critical habitat) is available at:

<http://alaskafisheries.noaa.gov/protectedresources/stellers/default.htm>.

4.1 Western DPS Steller Sea Lions

A detailed description of the Steller sea lions' biology, habitat, threats and recovery factors may be found in the Steller Sea Lion Recovery Plan (NMFS 2008) and in the NMFS stock assessment report at: http://www.nmfs.noaa.gov/pr/sars/pdf/ak2013_final.pdf, as well as on the NMFS AKR web site at: <http://alaskafisheries.noaa.gov/protectedresources/stellers/default.htm>. Portions of the proposed project occur within Steller sea lion critical habitat, including critical habitat surrounding a rookery on Akun Island, two rookeries on Chowiet Island, and a haulout on Tanginak Island.

4.1.1 Species Description and Taxonomy

Steller sea lions belong to the family Otariidae, which includes fur seals (*Callorhinus ursinus*). Steller sea lions are the largest otariid and show marked sexual dimorphism with males 2-3 times larger than females. The average standard length is 282 cm (9 ft.) for adult males and 228 cm (7.5 ft.) for adult females; while the average weigh for adult males is 566 kg (1,248 lbs.) and adult females is 263 kg (580 lbs.; Fiscus 1961; Calkins and Pitcher 1982; Loughlin and Nelson 1986; Winship et al. 2001). The pelage is light buff to reddish brown and slightly darker on the chest and abdomen. Naked parts of the skin are black (King 1954). Adult males have long, coarse hair on the chest, shoulders, and back; the chest and neck are massive and muscular. Newborn pups are about 1 m (3 ft.) long, weigh 16-23 kg (35-51 lbs.), and have a thick, dark-brown coat that molts to lighter brown after six months (Daniel 2003).

4.1.2 Range

The range of the Steller sea lion extends across the North Pacific Ocean rim from northern Japan, the Kuril Islands and Okhotsk Sea, through the Aleutian Islands and Bering Sea, along Alaska's southern coast, and as far south as the California Channel Islands (NMFS 2008; Figure 5). The eastern DPS Steller sea lions includes sea lions born on rookeries from California north through Southeast Alaska; the western DPS Steller sea lions includes those animals born on rookeries from Prince William Sound westward, with an eastern boundary set at 144°W (NMFS 2008).

4.1.3 Distribution and Movements

Prior to the Steller sea lion decline in the west, most large rookeries were in the GOA and Aleutian Islands (Kenyon and Rice 1961, Calkins and Pitcher 1982; Loughlin et al. 1984, 1992; Merrick et al. 1987). Historically, these areas supported large numbers of Steller sea lions; however, as the decline continued, rookeries in the west became progressively smaller. Consequently, the largest rookeries are now in Southeast Alaska and British Columbia.

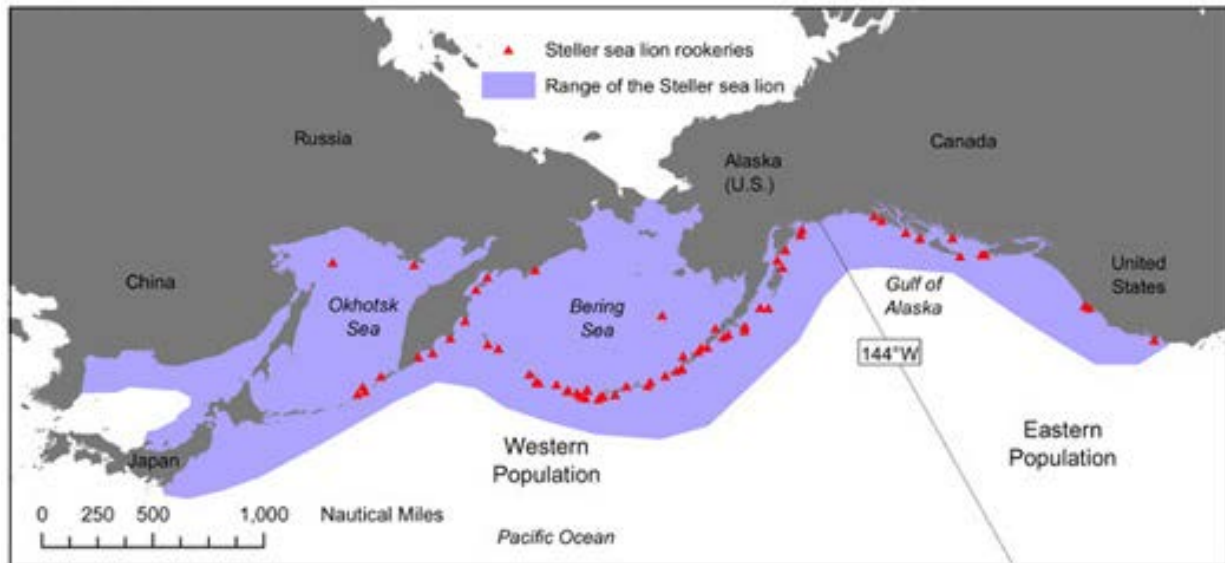


Figure 5. Range of the Steller sea lion.

Most adult Steller sea lions occupy rookeries during the pupping and breeding season, which extends from late May to early July (Pitcher and Calkins 1981, Gisiner 1985). However, during the breeding season some juveniles and non-breeding adults occur at or near the rookeries. Adult males, in particular, may disperse widely after the breeding season. During fall and winter many Steller sea lions disperse from rookeries and increase use of haulouts, particularly terrestrial sites but also sea ice in the Bering Sea.

4.1.4 Hearing

The ability to detect sound and communicate underwater is important for a variety of Steller sea lion life functions, including reproduction and predator avoidance. Steller sea lions have similar hearing thresholds in-air and underwater as other otariids. In-air hearing ranges from 0.250-30 kHz, with their best hearing sensitivity at 5-14.1 kHz (Muslow and Reichmuth 2010). An underwater audiogram shows the typical mammalian U-shape. Higher hearing thresholds, indicating poorer sensitivity, were observed for signals below 16 kHz and above 25 kHz (Kastelein et al. 2005).

4.1.5 Population Abundance and Trends

The 2013 Stock Assessment Report for the western DPS Steller sea lions indicates an abundance estimate of 79,300 individuals in this stock, with Russia and U.S. surveys combined (Allen and Angliss 2014). During 2008-2012, the U.S. portion of this stock's minimum population estimate is 45,659 sea lions. Population trend of western DPS Steller sea lions during 2000-2012 varies regionally, from -7.23% per year in the Western Aleutians to 4.51% per year in the eastern GOA.

Currently, the overall western DPS Steller sea lions is estimated to be increasing at about 1.67% per year from 2000-2012 (Allen and Angliss 2014).

4.1.6 Threats

It is likely that multiple factors are affecting western DPS Steller sea lion population trends (NMFS 2008). These factors may include food web perturbations; predation (e.g., killer whales); nutritional stress due to competition for prey that is related to commercial fisheries and regime change; incidental take by commercial fisheries; subsistence harvest; illegal shooting; entanglement in marine debris and fishing gear; disease; parasitism; toxic substances; and anthropogenic disturbance (ex., aircraft, vessels).

4.2 Steller Sea Lion Critical Habitat

NMFS designated critical habitat for Steller sea lions in Alaska (58 FR 45269, August 27, 1993) which includes: 1) a terrestrial zone that extends 900 m (3,000 ft.) landward from the baseline or base point of each major rookery and major haulout; 2) an air zone that extends 900 m (3,000 ft.) above the terrestrial zone, measured vertically from sea level; 3) an aquatic zone that extends 900 m (3,000 ft.) seaward in State and Federally managed waters from the baseline or base-point of each major haulout that is east of 144° W longitude; 4) an aquatic zone that extends 20 nm seaward in State and Federally managed waters from the baseline or base-point of each major rookery and major haulout that is west of 144° W longitude; and 5) three special aquatic foraging areas: Bogoslof, Seguam Pass, and Shelikof Strait areas (Figure 6).

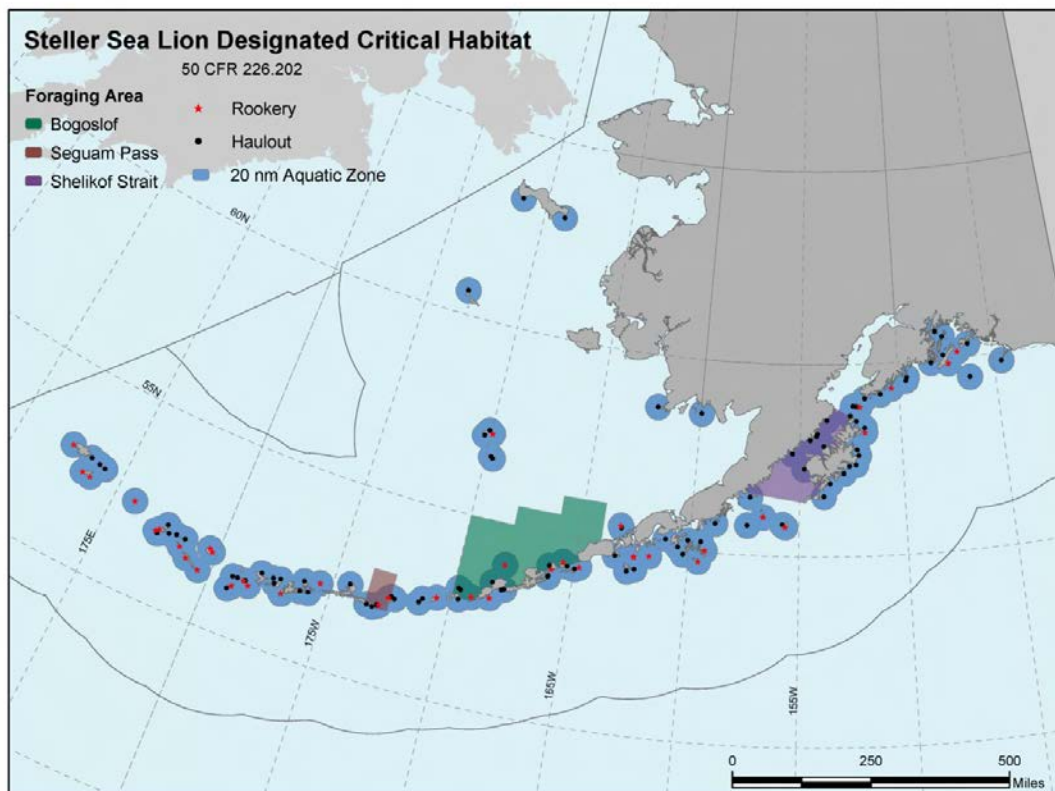


Figure 6. Federally designated critical habitat for Steller sea lions.

5. ENVIRONMENTAL BASELINE

The “environmental baseline” includes the past and present impacts of all federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

This section focuses on existing anthropogenic activities and their influences on western DPS Steller sea lions. Existing anthropogenic activity in the action area discussed in this section consists of past and present anthropogenic actions that may have affected listed species. Although some anthropogenic activities discussed below are outside the action area, they may still have an influence on the western DPS Steller sea lions in the action area.

5.1 Factors Affecting the Species within the Action Area

Western DPS Steller Sea lions within the action area may be affected by many threats (Table 2). In addition, they may be disturbed by aircraft.

5.1.1 Noise

Ambient Noise

Ambient noise is environmental background noise that includes sources such as wind, waves, ice, current, and tidal flow (Richardson et al. 1995). Ambient noise levels vary with location, time, weather, and many other factors.

Noise Pollution

Vessel Traffic Noise

Vessel traffic includes large shipping, commercial and support vessels, commercial fishing vessels, and personal water craft. Vessel traffic can produce noise (in-air and in-water) that disturbs Steller sea lions. However, little noise is expected from vessel traffic at these three locations because they are remote and removed from shipping lanes. The rookeries at Akun and Chowiet islands also have a 3 nm no-entry zone buffer for all disturbances, as established in NMFS regulations.

Aircraft Noise In-Water

Most acoustic energy is reflected upwards at the water surface when sound encounters an air-water boundary (Richardson et al. 1995; Blackwell and Greene 2003). Underwater received sound levels from noise associated with aircraft depends on the aircraft altitude, aspect and strength of the source; marine mammal’s depth; waterbody’s propagation characteristics (e.g., bottom characteristics and water depth; Richardson et al. 1995), and position of the receiver relative to the source. Sound is generally reflected at angles greater than 13 degrees and does not penetrate the water; this is particularly true with calm sea conditions, deep water, or shallow water with a non-reflective bottom (Richardson et al. 1995).

Aircraft Noise In-Air

Richardson et al. (1995) indicates peak helicopter output at a frequency of 0.01-0.1 kHz, but with higher frequencies resulting from tail rotors and engine noise (up to 2 kHz). Given the known in-

air hearing range of Steller sea lions (0.250-30 kHz, with their best hearing sensitivity at 5-14.1 kHz) (Muslow and Reichmuth 2010), we conclude that helicopters can readily be heard by Steller sea lions.

Table 2. Synopsis of anthropogenic environmental baseline threats to Steller sea lions. Each threat can be either direct (directly reduces survivorship of individual sea lions) or indirect (indirectly reduces body condition, and subsequently survival and reproduction) (NMFS 2008).

Threat	Most Vulnerable Age Class	Frequency of Threat Occurring	Uncertainty	Relative Impact to Recovery
Alaska Native Subsistence Harvest	Adult and Juvenile Males	Medium	Low	Low
Competition with Fisheries	Adult Females and Juveniles	High	High	Potentially High
Disease and Parasitism	Adult Females and Pups	High	Medium	Low
Disturbance from Vessel Traffic and Tourism	Pups	Medium	Medium	Low
Entanglement in Marine Debris	Juveniles	Medium	Medium	Low
Environmental Variability	Adult Females and Juveniles	High	High	Potentially High
Illegal Shooting	Non-Pups	High	High	Potentially High
Incidental Take by Fisheries	Juveniles	Medium	Medium	Low
Killer Whales	Juveniles and Pups	High	High	Potentially High
Toxic Substances	Adult Females and Pups	High	High	Medium

Calkins and Pitcher (1982) found that disturbance from aircraft traffic has extremely variable effects on hauled-out sea lions. Sea lion reaction to occasional disturbances ranges from no reaction at all to complete and immediate departure from the haulout area. The type of reaction appears to depend on a variety of factors. Sea lions have temporarily abandoned some areas after repeated disturbance (Thorsteinson and Lensink 1962), but in other situations they continued using the areas after repeated and severe harassment. Johnson et al. (1989) evaluated the potential vulnerability of various Steller sea lion haulout sites and rookeries to noise and disturbance; and also noted a variable effect on sea lions. Kenyon (1962) noted permanent

abandonment of areas in the Pribilof Islands that were subjected to repeated disturbance. The consequences of such disturbance to the overall population are difficult to measure. Disturbance may have exacerbated the decline, although it is not likely to have been a major factor.

5.1.2 Direct Mortality

Within the proposed action area, there are several means by which listed species may die or be killed, including disease, interactions with fisheries, predation, poaching, research, and subsistence harvest

Disease

Steller sea lions have been exposed to phocid herpesviruses, caliciviruses, canine adenovirus, and *C. psittaci* or to cross-reactive organisms in regions of both increasing and decreasing sea lion abundance (Burek et al. 2005). Some of these agents cause mortality or reproductive failure in other marine mammal species, but their effects on Steller sea lions have not been well documented because there are not many sick or fresh dead animals available for examination (NRC 2003). Burek et al (2005) examined available Steller sea lion data (published data, unpublished data, and recent collections [1997-2000]) to determine whether infectious disease may have played a role in the decline of Steller sea lions in the GOA and Aleutian Islands (Burek et al. 2005). Based on similar antibody prevalence estimates from the declining western DPS Steller sea lions and the increasing eastern DPS Steller sea lions, these agents are unlikely to have been the primary cause of the population decline. They may have contributed to the decline or impeded population recovery, however, because of undetected mortality and morbidity or reductions of fecundity and body condition in animals under other stresses (Burek et al. 2005).

Interactions with Fisheries

Fishing is a major industry in Alaska. As long as fish stocks are sustainable, commercial, personal use, recreational, and subsistence fishing will continue to occur in Alaska. The area inhabited by the western DPS Steller sea lions is a fished ecosystem where large quantities of commercially-targeted species that have been harvested since the 1960s. Prior to 1989, a large proportion of harvest was by foreign fleets. By 1989, these fisheries were entirely domestic. These fisheries may result in direct mortality of western DPS Steller sea lions through ship strikes and entanglement in fishing gear.

During 2007-2011 (the most recent data available) interactions between western DPS Steller sea lions and the Bering Sea/Aleutian Island (BSAI) and GOA commercial fisheries were variable (Table 3). Combining the mortality estimates from the BSAI groundfish trawl and GOA longline fisheries (15.1 sea lions) with the estimate from the Prince William Sound salmon drift gillnet fishery (14.5 sea lions) results in an estimated mean annual mortality rate in the observed fisheries of 29.6 (CV = 0.49) sea lions per year from this stock (Allen and Angliss 2014).

Fishery related strandings during 2007-2011 suggest an estimated annual mortality of 0.8 animals from this stock (Allen and Angliss 2014). This estimate is considered a minimum because not all entangled animals strand and not all stranded animals are found or reported.

Using the best data available for the commercial fisheries observer data (29.6 mean annual mortality rate) and stranding data where the cause of death is from non-sampled fisheries (0.8 mean annual mortality rate), the minimum estimated mortality rate incidental to commercial and recreational fisheries is 30.4 sea lions a year (Allen and Angliss 2014).

Table 3. The summary of western DPS Steller sea lion incidental mortality due to fisheries, using the most recent data available (2007-2011), and calculated to the mean annual mortality rate (Allen and Angliss 2014).

Fishery Name	Average observer coverage (%)	Observed mortality in given years (range)	Mean annual mortality
BSAI trawl			
Atka mackerel	98.6	0.0-1.0	0.20 (CV = 0.05)
Flatfish	94.4	3.0-11.0	6.00 (CV = 0.06)
Pacific cod	60.2	0.0-3.0	1.00 (CV = 0.07)
Pollock	88.0	2.0-9.0	7.36 (CV = 0.11)
GOA longline			
Pacific cod	22.8	0.0-1.0	0.54 (CV = 1.0)

Predation

Killer Whale Predation

Steller sea lions are preyed upon by killer whales, and given their reduced abundance at multiple sites; these successful predators may exacerbate the decline in local areas (e.g., Barrett-Lennard et al. 1995). Research indicates that the transient (migratory) killer whales rely on marine mammal prey to a greater extent than resident and offshore killer whales (Barrett-Lennard et al. 1995; Heise et al. 2003; Krahn et al. 2005). According to observations in the GOA, western DPS Steller sea lions may be a preferred prey item for killer whales in this region; researchers observed that 79% of the killer whale attacks in this area were on Steller sea lions.

Shark Predation

Steller sea lions may also be attacked by sharks, though little evidence exists to indicate that sharks prey on Steller sea lions. The Steller Sea Lion Recovery Plan did not rank shark predation as a threat to the recovery of the western DPS Steller sea lion (NMFS 2008). Sleeper shark and sea lion home ranges overlap (Hulbert et al. 2006) and one study suggested that predation on Steller sea lions by sleeper sharks may be occurring (Horning and Mellish 2014). A significant increase in the relative abundance of sleeper sharks occurred during 1989-2000 in the central GOA; however, samples of 198 sleeper shark stomachs found no evidence of Steller sea lion predation (Sigler et al. 2006). Sigler et al. (2006) sampled sleeper shark stomachs collected in the GOA near sea lion rookeries when pups may be most vulnerable to predation (i.e., first water entrance and weaning) and found that fish and cephalopods were the dominant prey. Tissues of marine mammals were found in 15% of the shark stomachs, but Steller sea lion tissues were not detected.

Intentional Shooting

There is a long history of fishermen shooting sea lions in Alaska (NRC 2003). In part, shooting was motivated by the belief that declines in salmon runs during the 1930s-1950s was partly due to predation by sea lions (Mathisen 1959); and the shooting of sea lions has continued at least until the 1980s (NRC 2003). Non-subsistence-related intentional shooting of Steller sea lions was thought to be a potentially significant source of mortality prior to listing the Steller sea lion under the ESA (55 FR 12645, April 5, 1990) and such shooting has been illegal since the species was listed (Allen and Angliss 2014)³. Records from NMFS enforcement indicate that there were two cases on illegal shootings of Steller sea lions in the Kodiak area in 1998, and both were successfully prosecuted (NMFS, unpublished data). However, there is little documentation on the number of Steller sea lions killed by fishermen or others, and lacking such a systematic reporting on sea lions killed by fishermen (and/or others) makes it impossible to provide reliable estimates on the impact from shooting on the population (NRC 2003).

Research

Mortalities may occasionally occur that are incidental to marine mammal research activities authorized under ESA and MMPA permits issued to a variety of government, academic, and other research organizations. During 2006-2010, there were no mortalities resulting from research on the western DPS Steller sea lions (Allen and Angliss 2014).

Subsistence Harvest

The MMPA provides an exemption from its prohibitions that allows Alaska Natives to harvest marine mammals for subsistence purposes and for traditional handicrafts. The mean annual subsistence take from this stock during 2004-2008 (the most recent five years of data), combined with the mean take during 2007-2011 from St. Paul, was 199 Steller sea lions per year. Subsistence hunters from Akutan, near the Akun Island rookery, regularly hunt Steller sea lions for subsistence purposes.

5.1.3 Steller Sea Lion Critical Habitat

Critical habitat was designated for the Steller sea lion on August 27, 1993 (58 FR 45269) based on the location of terrestrial rookery and haulout sites, spatial extent for foraging trips, and availability of prey items (Figure 6). The areas designated as critical habitat for the Steller sea lion were determined using the best information available at the time (50 CFR 226.202), including information on land use patterns, the extent of foraging trips, and the availability of prey items (NMFS 2008). Particular attention was paid to life history patterns and the areas where animals haul out to rest, pup, nurse their pups, mate, and molt.

Essential Features of Marine Critical Habitat

Aquatic Buffers

Prey resources are the most important feature of marine critical habitat for Steller sea lions (58 FR 45269, August 27, 1993). Areas around rookeries were chosen based on evidence that many foraging trips by lactating adult females in summer may be relatively short (20 km [12 mi] or less; Merrick and Loughlin 1997). Also, mean distances for young-of-the-year in winter may be relatively short (about 30 km [19 mi]; Merrick and Loughlin 1997, Loughlin et al. 2003). These

³The 1994 Amendments to the MMPA made intentional lethal take of any marine mammal illegal except for subsistence take by Alaska Natives or where imminently necessary to protect human life.

young animals are just learning to feed on their own, and the availability of prey in the vicinity of rookeries and haulout sites may be crucial to their transition to independent feeding after weaning. Similarly, haulouts around rookeries are important for juveniles, because most juveniles are found at haulouts not rookeries. Evidence indicates that decreased juvenile survival may be an important proximate cause of the sea lion decline (York 1994, Chumbley et al. 1997). Therefore, the areas around rookeries and haulout sites must contain essential prey resources for at least lactating adult females, young-of-the-year, and juveniles, and those areas were deemed essential to protect (NMFS 2008).

Foraging Areas

Three “special aquatic foraging areas in Alaska” (Bogoslof, Shelikof Strait, and Seguam Pass) were chosen based on 1) at-sea observations indicating that sea lions commonly used these areas for foraging, 2) records of animals killed incidentally in fisheries in the 1980s, 3) knowledge of sea lion prey and their life histories and distributions, and 4) foraging studies.

Essential Features of Terrestrial Critical Habitat

Long-used terrestrial sites were likely selected by sea lions for a variety of reasons, including substrate and terrain, protection from land-based and marine predators, protection from harsh wave or surf conditions, and local availability of prey.

Rookeries

Rookeries are occupied by breeding animals and some sub-adults throughout the breeding season, which extends from late May to early July. Rookeries are defined as those sites where males defend territory and where pupping and mating occurs. Three rookeries on two islands (Akun and Chowiet islands) occur in the action area.

Haulouts

The SSL Recovery Team identified 121 major haulout sites.⁴ Haulouts are areas of rest and refuge by all ages and both sexes of sea lions during the non-breeding season; and by nonbreeding adults and sub-adults during the breeding season. One haulout on Tanginak Island occurs in the action area.

5.1.4 Environmental Change

Data indicates the planet is warming (IPCC 2014). With this warming changing weather patterns occur, which tends towards more extreme events (IPCC 2014).

Eastern Aleutian Islands and GOA are very dynamic environments that experience continual change in their physical and structural composition, with their strong currents and extreme winds.

The climate along Chowiet Island is driven by the Alaska Coastal Current, freshwater discharge from the mountainous and coastal regions around the GOA and the consequent nearshore confinement of this low-salinity water by westward winds (Stabeno et al. 1995). The Alaska Coastal Current flows most intensely through the Shelikof Strait, between the Alaska Peninsula

⁴A major haulout is defined as a site where more than 200 animals have been counted. There are many more haulout sites throughout the range that are used by fewer animals or used irregularly (58 FR 17181).

and Kodiak Island, near Chowiet Island. The climate along Akun and Tanginak islands is driven by the swift, narrow deep water Alaskan Stream that flows westward just south of the Alaska Peninsula and Aleutian Islands.

The Pacific Decadal Oscillation (PDO) is a pattern of Pacific climate variability, similar to El Nino, except it lasts much longer (20-30 years in the 20th century) and switches between a warm phase and a cool phase. PDO's phase changes have been correlated with changes to marine ecosystems in the northeast Pacific: warm phases have been accompanied by increased biological productivity in coastal waters off Alaska and decreased productivity off the west coast of Canada and the U.S.; while cold phases have been associated with the opposite pattern.

Marine ecosystems are susceptible to impacts from climate change and ocean acidification linked to increasing anthropogenic carbon dioxide emissions. Climate change and ocean acidification may affect the western DPS Steller sea lions as there is strong evidence that ocean pH is decreasing and that ocean temperatures are increasing. Scientists are working to understand the impacts of these changes to marine ecosystems, however the extent and timescale over which the western DPS Steller sea lions may be affected by these changes is unknown.

6. EFFECTS OF THE ACTION

“Effects of the action” means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

For the purposes of this opinion, all proposed survey activities and associated support activities are considered to be part of the action. These include: impacts due to the presence of the support vessel, the presence of watercraft and aircraft to support survey crews, impacts associated with survey gear, and the presence of the survey crews themselves. Effects are expected to be in the form of highly localized disturbance of 6-12 hours per site.

In this section we consider the potential effects on Steller sea lions and their critical habitat jointly, but we focus on the effects to the animals. Any effects on hauled out sea lions would be caused by disturbance that also temporarily reduces the value of the haulout or rookery (critical habitat areas) occupied by the animals. Any such disturbance would be short-term in nature and would have no lasting effects on Steller sea lion critical habitat

6.1 Direct Effects of the Action

The proposed survey program may directly affect western DPS Steller sea lions by introducing noise into the environment; increasing the potential for direct injury from ship strikes; increasing the vessel use in and around the 3 nm no-entry zone buffer, thus creating temporary habitat disturbance; and also increasing the potential for oil spills from vessels.

6.1.1 Noise and Visual Impacts from Vessels and Aircraft

Steller sea lions use hearing and sound transmission to perform vital life functions. Introducing sound, in-air and in-water, into their environment could disrupt those behaviors. Sound (hearing and vocalizations) serves four primary functions for marine mammals, including: 1) providing information about their environment, 2) communication, 3) prey detection, and 4) predator detection. The distances that vessel noise and other noise associated with this survey is audible depend upon the source levels, frequency, ambient noise levels, environmental propagation characteristics, and receptor sensitivity (Richardson et al. 1995).

The effects from anthropogenic noise, such as vessels and aircraft, on marine mammals might include one or more of the following: tolerance; masking natural sounds; behavioral disturbance; and temporary or permanent hearing impairment, or non-auditory physical effects (Richardson et al. 1995).

Human-induced noises in the action area include large and small vessels, and aircraft. The effects from human caused noise and associated increased background noises on Steller sea lions depend on several factors, including: the noise's intensity, frequency, and duration; the animal's location and behavior; and the ambient acoustic environment. High frequency noise generally attenuates more rapidly than low frequency noise. Underwater sound also propagates less efficiently in shallow waters and over soft bottoms (sand and mud). The action area is characterized by its shallow depth, with strong winds and currents; thereby making it a relatively poor environment for acoustic propagation.

Since 1997 (70 FR 1871), NMFS has been using generic sound exposure thresholds to determine when an activity in the ocean produces sound that potentially results in impacts to a marine mammal and causes MMPA Level B take by harassment (i.e. the zone of responsiveness and zone of masking). For pinnipeds, NMFS current in-water acoustic threshold for Level B take resulting from non-pulse noise, such as noise from boat motors, is 120dB re 1 μ Pa. Generic in-air acoustic thresholds for determining Level B take for non-harbor seal pinnipeds is 100 dB re 20 μ Pa. Based on past reports of aircrafts and watercraft causing Steller sea lions to exhibit escape-type behaviors (i.e. retreating to the water) we determined this Level B take of western DPS Steller sea lions is likely. For the reasons discussed below, NMFS does not expect noise from activities associated with BLM land surveys to cause injurious take, because the level B in-water and in-air acoustic thresholds will not likely be exceeded.

Effects from Vessel Noise

Vessel noise associated with the island surveys will be transmitted in-air and through water; and constitutes a continuous noise source (versus an impulse noise). Marine mammal responses to vessels are generally associated with the noise (in-air and in-water), and depend on changes in the engine and propeller speed (Richardson et al. 1995). Visual cues may also contribute to marine mammals' reactions to nearby vessels (Richardson et al. 1995).

Noise created by cavitation of high RPM outboard motor propellers produces sound in the frequency range of 0.1-1.0 kHz (Urick 1983). Therefore, we conclude that small watercraft can readily be heard by Steller sea lions. We expect the noise will not be sufficiently loud to disturb the sea lions because the in-water acoustic output will be below Level B acoustic threshold of 120 dB re 1 μ Pa within 15 m (50 ft.). While Steller's sea lions could be exposed to Level B

acoustic harassment if they approach within 15 m (50 ft.) of small watercraft at full volume operation, we expect the visual disturbance created by the boats will prevent such a close approach. In addition, boat operator best practices described in the mitigation measures for this project will further reduce the potential for Sea lion/vessel encounters that are sufficiently close to cause Level B acoustic harassment. The majority of boat engine noise is propagated underwater; we expect no in-air acoustic harassment of sea lions from operation of watercraft.

Effects from Survey Activities

We expect the relative risk perceived by sea lions would be greater when humans, vessels, and aircraft are visible on the ground, as opposed to when project-associated air or vessel-based activities are under way. Controlled field observations support this expectation. Kucey (2005) recorded disturbance events from aircraft, birds, sea lions, humans, boats, and researchers collecting beach-cast samples at eight sites used by Steller sea lions in the summer and six sites used in the winter/spring season. Kucey (2005) observed more than 1,000 disturbance events, of which slightly more than 40% caused animals to leave the site. Humans collecting samples (a level of disturbance that is similar to the presence of surveyors evaluated here) caused all animals to enter the water when researchers went ashore; whereas only 5% of the animals left the haulout sites in response to aircraft disturbance and 15% of the animals left the haulout in response to boat disturbance (Kucey 2005). Kucey (2005) also observed that the nature of the vessel approach (i.e., speed, noise, fumes, combined with other variables like weather) influenced the magnitude of the sea lion's response.

Land surveys on Akun and Chowiet islands will be distant from the rookeries and we have determined that noise from surveys at these sites is extremely unlikely to harass Steller sea lions. The land survey on Tanginak Island is likely to cause any Steller sea lions to flush into the water. As noted above, from 2004-2014, no more than six Steller sea lions have been observed hauled out at this site at any one time (<http://www.afsc.noaa.gov/nmml/alaska/>). The number of sea lions expected to be present is sufficiently small that even if all the sea lions attempt to depart at once, we do not expect any sea lions to be injured due to a stampede. We expect that any sea lions flushed from the site would quickly return once the surveyors leave.

Summary of Effects from Vessel Noise and Survey Activities

We conclude that noise from the skiffs associated with this project will be heard by Steller sea lions, but will not be sufficiently loud to disturb them because the acoustic output will be below 120 dB re 1 μ Pa within 15 m (50 ft.). Protected species observers will monitor the skiff, making it extremely unlikely that skiff operations will affect individual sea lions. The support vessel will remain sufficiently distant from the haulout and rookeries, and will operate in a sufficiently slow and quiet manner to avoid Level B harassment of animals near the survey sites. Thus, the effects of vessel noise on Steller sea lions in the water will be insignificant and discountable.

The probability that Steller sea lions associated with the rookeries on Akun and Chowiet islands will react to noise from survey vessels or visual disturbance from surveyors on land is extremely low because the island's terrain will act as both an acoustic and visual barrier, preventing sea lions from hearing and observing the surveyors.

All animals hauled out on Tanginak Island at the time of the survey are expected to be taken through harassment. Whether the animals flee the haulout upon the approach of the lightering watercraft or upon the field crew's approach to the haulout on foot remains speculative, but one of those two activities will almost certainly cause all animals present to leave the haulout site. Given the implementation of project mitigation measures, it is extremely unlikely that any animals will experience sound sufficiently loud to cause level B take.

Other types of agonistic behavior may occur in response to anthropogenic disturbance, such as increased vocalizations and agitated movements (Kucey 2005). Animals resting at haulouts that shift to a flight response would increase their metabolic demand for an unknown period of time. Given the apparent site fidelity to Steller sea lion haulouts, it is anticipated that once the noise (vessel with surveyors) has ceased, and surveyors have departed Tanginak Island, displaced Steller sea lions will quickly return to their haulout. Thus, we expect, at most, ephemeral displacement from habitat affecting small numbers of western DPS Steller sea lions (no more than 20). This harassment will last for 6-12 hours and we expect it to have only a temporary effect on the individual sea lions.

Effects from Aircraft Noise

If transport by watercraft is impractical or unsafe, a helicopter may be used to transport the survey crew to the survey sites. Marine mammal responses to aircraft noise depend on the aircraft type, flight pattern, altitude, and the activity of the animal (Richardson et al. 1995). However, visual cues may also play a role in a marine mammal's reactions to nearby aircraft (Richardson et al. 1995).

If a helicopter is used for survey activities, noise associated with the aircraft may result in Level B take of western DPS Steller sea lions at Tanginak Island. The loudest in-air activity associated with this project is helicopter landings. Helicopter A Bell J-2A measured 100 dB at 30.5 m (100 ft.), which is equivalent to the threshold for Level B harassment take. Much larger helicopters produced more noise. For example, the AH-64 Apache, Bell 1H-Iroquois, and Blackhawk measured 104 dB, 102 dB, and 108 dB at 30.5 m (100 ft.) respectively.⁵ Because NMFS does not expect that helicopters larger than Bell 1H-Iroquois will be used during this project activity, and because helicopters will land at a distance of not less than 30.5 m (100 ft.) from the Steller sea lions, NMFS does not expect noise from project associated air activities to cause injury. .

Aircraft noise is not likely to result in Level B take elsewhere in the action area. Because known haulouts and rookeries in other areas of the action area are sufficiently distant and shielded by terrain, we do not expect the helicopter noise will exceed 100 dB re: 20 μ Pa sound threshold for Level B take for non-harbor seal pinnipeds. Mitigation measures that will maintain a minimum 914 m (3,000 ft.) slant distance from hauled out Steller sea lions will further minimize the degree of harassment on all hauled-out sea lions.

⁵ <http://www.cavalrypilot.com/fm1-301/ch7.htm>

6.1.2 Direct Injury

Vessel Strikes

Vessel traffic in and around the action area will temporarily increase to support the land survey program. However, there will only be two additional vessels necessary for this project. These two vessels will operate throughout the project area. Vessel collisions can result in possible serious injuries or death. Steller sea lions may display avoidance reactions when approached by watercraft, particularly small, fast-moving craft that can maneuver quickly and unpredictably. Collision with slow moving vessels, like the vessels adhering to speed restrictions for these surveys, is very unlikely given the underwater agility of these animals.

Collisions between vessels and Steller sea lions are uncommon. During 1978-2014, there were two confirmed sea lion fatalities resulting from ship collisions in Sitka, Alaska; and two unconfirmed reports in Kachemak Bay, Alaska (NMFS unpublished data). These collisions occurred well outside the action where there are more boats and ships. Because of their slower speed and mitigation measures, the boat and skiff used to conduct the proposed land surveys are extremely unlikely to strike western DPS Steller sea lions.

Project vessels will be operating at vessel speeds of 8 knots or less when vessels are within 3 nm of the Steller sea lion haulout and rookeries, transiting to and from the survey sites in as direct a route as possible. PSOs will alert vessel captains as animals are detected to ensure safe and effective measures are applied to minimize impacts. If necessary the captains may alter course and speed to avoid a collision with a sea lion. Given these measures, and the Steller sea lions' ability to avoid collisions with boats, ship strikes associated with this survey are extremely unlikely to occur.

Increased Risk of Predation

Killer whales predation on western DPS Steller sea lions was identified as potentially important threats to their recovery (Allen and Angliss 2014; Heise et al. 2003).

It is not expected that sea lions on Akun and Chowiet islands will be disturbed during land surveys; consequently, the effects from killer whale predation associated with these two sites are extremely unlikely to occur.

On Tanginak Island, there is some risk in increasing the likelihood of predation by displacing sea lions from the haulout into marine waters against their will, due to the presence of field crews near or within the haulout for 6-12 hours. If the displaced animals lack a suitable alternate haulout location, killer whales or other marine predators could take those animals. BLM will monitor the adjacent critical habitat for predators (i.e., killer whales) and will not flush Steller sea lions into the water when predators are observed within 3 nm of Tanginak Island. We conclude that land surveys on Tanginak Island have the potential to affect Steller sea lions by increasing their susceptibility to predation by killer whales and other marine predators, but the consequences of this slightly elevated risk are expected to be minimal. Even in the very unlikely event that all flushed sea lions are consumed by predators, the loss would be a small number of animals in a population that is increasing overall.

Water Pollution

The two marine vessels that operate during the land survey effort will increase the risk for marine fuel spills in the area from: leaks or breaks in fueling equipment for the skiff, vessel collisions or sinking, mechanical or structural failures, or human errors. Fueling the skiff will be down outside the 3 nm buffer area, so it is unlikely that fuel, if spilled, would reach the Steller sea lions on the two rookeries or one haulout.

Summary of Effects from Direct Injury

The proposed land surveys have the potential to cause direct injury to marine mammals if they are struck by a vessel. However, the vessels used for this project will maintain slow speeds when they are within established marine buffers (3 nm); with speeds further reduced as skiffs approach the islands. To avoid potential collisions with sea lions, vessels will engage in evasive maneuvering when safe to do so, given weather, water depth, current conditions, and other vessel traffic. The probability of vessels colliding with Steller sea lions is extremely unlikely, given that the mid-size marine vessel and small skiff will adhere to the mitigation measures. Consequently, vessel strikes associated with this survey project are extremely unlikely to occur and the effects are therefore discountable.

The proposed land surveys have the potential to cause direct injury to western DPS Steller sea lions by displacing sea lions into the marine waters against their will, due to boating to Tanginak Island and surveyors working on the island. However, BLM will avoid displacing sea lions into the water in the nearby presence of predators (i.e., killer whales) by making sure the 3 nm buffer is clear of predators prior to approaching Tanginak Island.

With a skiff transiting to the haulout and rookery areas, and within the 3 nm buffer, fuel leaks are possible. However, the standard best management practices in place and an experienced boat captain and crew with the vessels will reduce the potential for these actions to occur.

6.2 Indirect Effects of the Action

Indirect effects are defined in regulation as effects from the proposed action that occur later in time (after activity cessation), but are still reasonably certain to occur (50 CFR 402.02). We have determined that this project will not have any foreseeable indirect effects upon western DPS Steller sea lions or their critical habitat.

6.3 Interrelated and Interdependent Effects

Interrelated actions are actions that are part of a larger action and depend on the larger action for their justification (50 CFR 402.02). Interdependent actions are actions that have no independent utility apart from the proposed action (50 CFR 402.02). NMFS has not identified any interrelated or interdependent effects associated with this action.

6.4 Exposure Analysis

As discussed in the *Approach to the Assessment* section of this opinion, exposure analyses are designed to identify the listed resources that are likely to co-occur with these effects in space and time and the nature of that co-occurrence. In this step of our analysis, we try to identify the number, age (or life stage), and gender of the individuals that are likely to be exposed to an action's effects and the populations or subpopulations those individuals represent.

For the proposed project, between 0 and 20 western DPS Steller sea lions are expected to be harassed off of their haulout site on Tanginak Island. We have little information regarding age of animals using Tanginak Island other than from 2004-2014, on 5 aerial surveys of the island, pups were never seen there, and a maximum of 6 adults/juveniles were seen.

6.5 Response Analysis

As discussed in the *Approach to the Assessment* section of this opinion, response analyses determine how listed species are likely to respond after being exposed to an action's effects on the environment or directly on listed species themselves. Our assessments try to detect the probability of lethal responses, physical damage, physiological responses (particular stress responses), behavioral responses, and social responses that might result in reducing the fitness of listed individuals. Ideally, our response analyses consider and weigh evidence of adverse consequences, beneficial consequences, or the absence of such consequences.

Western DPS Steller sea lions on Akun and Chowiet Islands are not likely to exhibit any response to this proposed action. Sea lions on Tanginak Island are likely to experience a stress response due to disturbance that drives them into the water and keeps them away from this haulout site for 6-12 hours. Behavioral responses to watercraft (or aircraft) and humans may range from animals swimming near the haulout site assessing the situation for prolonged periods of time to embarking on a foraging trip that may extend well beyond the period of terrestrial disturbance. No lasting physiological consequences are anticipated. We do, however, acknowledge that this involuntary retreat into the marine system creates an opportunity for predation to occur, most likely by killer whales. Mitigation measures are in place to reduce the likelihood of causing increased predation.

7. CUMULATIVE EFFECTS

"Cumulative effects" are those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation (50 CFR 402.02). Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Most major activities within the range of western DPS Steller sea lions require federal authorizations from one or more agencies (e.g., Bureau of Ocean Energy Management, Environmental Protection Agency, U.S. Army Corps of Engineers, or NMFS).

Cumulative effects to western DPS Steller sea lions are a function of many factors (e.g. commercial aviation, commercial shipping, and subsistence hunting). However, the impact from these factors on an individual and/or population is poorly understood (NMFS 2008).

7.1 Subsistence Hunting

We expect subsistence hunting of western DPS Steller sea lions by Alaska Natives to continue into the foreseeable future, as allowed by the MMPA. As noted above, average annual subsistence take of western DPS Steller sea lions during 2004-2008 (the only time for which region-wide estimates are available) was 136.9 animals, with an additional average of 35.3 struck and lost animals (Allen and Angliss 2014). The vast majority of the reported takes come from

just a few locations within the range of the western DPS Steller sea lions, including the Aleutian Islands. Patterns during the past years have been variable with levels of take increasing in some areas (e.g., Tatiklek) and decreasing in others. Thus, it is hard to predict the future pattern. The overall future impact of the subsistence harvest on the western population will be determined by the number of animals taken, their gender and age class, and their harvest location.

7.2 Commercial Shipping

Shipping occurs near the action area, but outside the 3 nm marine buffer for these sites. Shipping activities can adversely affect Steller sea lions and/or their critical habitat due to disturbance, ship strikes, modification of the marine acoustic environment, introduction of invasive species, and accidents that release pollutants and other cargoes. However, effects to animals on rookeries are mitigated by the 3 nm no-entry zone protections (50 CFR 223.202).

With respect to spills from shipping, the Transportation Research Board (TRB) summarized that “Some accidents involving these ships have resulted in oil spills that have had serious environmental consequences. Indeed, history has shown that oil spill accidents in the Aleutians are not uncommon, in large part because of the frequent and sudden storms, high winds, and severe sea conditions to which the region is subject (TRB 2008). Response to these events is often ineffective because of the severe weather and a lack of appropriate infrastructure.” TRB (2008) also stated that accidents and near accidents with potential significant environmental and economic impacts occur in the Aleutians each year. For example, TRB reported that there were 41 oil spill incidents in the Aleutian Islands during 1981-1999 in which the U.S. Coast Guard requested the assistance of NOAA’s Hazardous Materials Response Unit (NOAA 2000). TRB (2008) cites NOAA (2007) as stating that “for the past 25 years, the Aleutian Islands have averaged nearly one oil spill of 3.8 kiloliter (kl) (1,000 gallons [gal]) or more per year.” TRB concluded that the spill risk posed by vessels transiting the Aleutians will grow as new routes are established related to resource development in the Arctic and elsewhere and as traffic volume increases. While TRB characterized the example of the 2004 grounding and breakup of the *M/V Selendang Ayu* and the resulting spill of 1,272 kl (336,000 gal) of heavy fuel oil as “particularly severe,” it noted that “...other accidents, spills, and near misses have taken place and continue to occur in the region” (TRB 2008). Thus, we conclude that such shipping accidents are likely to occur in the future, but we cannot foresee what accidents will occur, where, when, or what the effects will be.

7.3 Aviation

Although flights are regularly scheduled at Akun Island airport, it is not expected that commercial flights will fly low enough over Chowiet and Tanginak islands to disturb Steller sea lions. Due to the remoteness of these islands, small aircraft are not common in the area; and any aircraft must avoid the 914 m (3,000 ft.) designated critical habitat air zone above the terrestrial zones.

7.4 State-Managed Commercial Fisheries

State managed fisheries for pollock, Pacific cod, herring, and salmon may compete with foraging Steller sea lions for fish. Given the importance of near shore habitats to Steller sea lions and the nearshore execution of State fisheries, this potential competition may have consequential effects for sea lions. Specifically, these potential interactions may contribute to nutritional stress for

Steller sea lions, and may reduce the value of the marine portions of designated Steller sea lion critical habitat. State managed fisheries will likely continue to reduce the availability of prey within these marine foraging areas and may alter the distribution of certain prey resources in ways that reduce the foraging effectiveness of Steller sea lions. More data on the foraging habits of Steller sea lions from research in key geographic areas could aid our understanding of where and when these effects might be most important.

8. INTEGRATION AND SYNTHESIS

In this section, we add the effects from the environmental baseline (section 5.0), effects of the action (section 6.0), and cumulative effects (Section 7.0) to formulate NMFS AKR's biological opinion as to whether the proposed action is likely to: 1) result in appreciable reductions in the likelihood of survival of the species in the wild by reducing its numbers, reproduction, or distribution; 2) result in appreciable reductions in the likelihood of recovery of the species in the wild by reducing its numbers, reproduction, or distribution; or (3) result in the adverse modification or destruction of proposed critical habitat. These assessments are made in full consideration of the status of the species (Section 4.0).

As we discussed in the Approach to the Assessment section of this opinion, we begin our risk analyses by asking whether the probable physical, physiological, behavioral, or social responses of endangered or threatened species are likely to reduce the fitness of endangered or threatened individuals or the growth, annual survival or reproductive success, or lifetime reproductive success of those individuals.

Western DPS Steller Sea Lion Risk Analysis

Kucey (2005) provides a good illustration of how acoustic and visual disturbance affect animals differently. A passing aircraft may not be perceived as a threat by most animals, a passing boat may be perceived as a somewhat greater threat than an aircraft, but human encroachment of a haulout or rookery always caused all animals to flee. Therefore, we expect the greatest likelihood of take associated with this project to be associated with human encroachment upon the Tanginak Island haulout.

We expect no more than 20 western DPS Steller sea lions, comprising 0.04% of the population of 45,659 (Allen and Angliss 2014), will be exposed to harassment during the BLM land surveys on the three islands. Animals could be disturbed by the support vessel, lightering vessel, or a helicopter, but the disturbance is most likely to be caused by the presence of a field crew on the ground at the Tanginak Island haulout.

We expect that the mitigation measures in place will make any disturbance due to the support and lightering watercraft extremely minor. The terrain will provide a visual and acoustic barrier between hauled-out sea lions and the survey activities on Akun and Chowiet Islands, making the likelihood of disturbance highly unlikely. Recall that using a helicopter as part of this project remains uncertain, shore access by watercraft is preferred.

Animals driven into the water by field crews on Tanginak Island may experience an increased probability of predation by killer whales or other marine predators. However, the probability of predation occurring as a result of this action is very low due to: 1) the low density of Steller sea lions expected at Tanginak Island (take of no more than 20 animals permitted, and observations of no more than 6 animals at this site at any one time since 2004), and 2) the low numbers of killer whales expected in the area (minimum population estimate for the GOA and BSAI transient stock is 587 killer whales)⁶ (Allen and Angliss 2014). We expect disturbance to the animals that have hauled out on Tanginak Island to last no longer than 12 hours, which gives the animals time to locate alternative haulout sites, or to move far enough away from the disturbed area that normal behaviors such as feeding may resume.

Steller Sea Lion Critical Habitat

Possible Effects to Aquatic Buffers

There is a small potential to disturb the aquatic buffer around the rookeries on Akun and Chowiet islands due to the temporary use by the skiff approaching and departing the islands to conduct land surveys. However, the limited extent of this disturbance and the dynamic nature of habitat components within these aquatic buffers make the effects from this portion of the action extremely small.

The only source of contamination to the marine areas around Akun, Chowiet, and Tanginak islands that may result from this project is from accidental releases from the boat and/or skiff. The maximum amount of accidentally-released contamination is limited primarily to the fuel and lubricant capacity of these vessels. It is extremely unlikely that this action will release contaminants into the nearby waters in amounts sufficient to affect Steller sea lion critical habitat.

Possible Effects to Foraging Areas

The three “special aquatic foraging areas in Alaska” (Bogoslof, Shelikof Strait, and Seguam Pass) designated as critical habitat do not occur in the action area and will not be affected.

Possible Effects to Terrestrial Sites

There is a small potential for disturbing the rookeries on Akun and Chowiet islands by conducting the land surveys due to the temporary disturbance caused by the skiff approaching and departing, and people on land with survey equipment. However, the extent of this potential disturbance is limited to 6-12 hours per survey at each site, and such disturbance is extremely unlikely to occur due to the terrain providing a visual and acoustic barrier.

Watercraft and surveyors probably will disturb Steller sea lions on Tanginak Island while conducting their land surveys there. Small metal survey markers will be permanently placed at several locations on the island using hand equipment. Some of these may occur within the haulout site itself. Permanent effects to habitat are limited to these small survey markers. Sea lion prey species may be temporarily disturbed by the activity, but this disturbance will be ephemeral.

⁶ At present, reliable data on trends in population abundance for the Aleutian Islands and Bering Sea portion of this stock of killer whales are unavailable (Allen and Angliss 2014).

The only known potential source of contamination to the terrestrial areas that may result from this project is from accidental releases from the boat and/or skiff. Fueling the skiff will be done outside the 3 nm buffer area, so it is unlikely that any fuel, if spilled, would reach the haulout.

8.1 Synthesis

Currently, the western DPS Steller sea lion population is estimated to be increasing at about 1.67% per year during 2000-2012. The portion of the DPS east of Samalga Pass, including animals associated with Akun and Tanginak islands is increasing at about 2.89% per year. The eastern GOA portion of the DPS, which includes Chowiet Island, is increasing at about 4.51% for non-pups and 3.97% for pups, per year during 2000-2012 (Allen and Angliss 2014).

The proposed land survey activities may affect a small number of individual Steller sea lions, but are unlikely to affect the western DPS at the population level because the land surveys are temporary actions which typically require only 6-12 hours field time for each site. In addition, animals at two of the three sites (Akun and Chowiet) are not expected to be disturbed at all due to the presence of terrain that will act as a visual and acoustic barrier from human activities. All animals that have hauled out at Tanginak are expected to escape into surrounding marine waters due to approaching watercraft, aircraft, or humans. They will likely avoid returning to the Tanginak haulout for up to 12 hours. Mitigation measures will be implemented to reduce the impacts of vessels, helicopters, humans, and associated project noise on western DPS Steller sea lions by using PSOs, maintaining vessel speeds no more than 8 knots within 3 nm of the islands, maintaining distance of 91 m (100 yds.) from swimming Steller sea lions, departing the islands immediately after survey completion, and monitoring the offshore area of Tanginak Island for predators and avoiding approach of the island if predators are observed. Take of Steller sea lions associated with this project will not rise to the level at which this slowly growing population will be measurably affected.

This project is expected to affect less than 1% (0.04%) of the western DPS Steller sea lions through take in the form of harassment. This percentage accounts for disturbance of 20 out of 45,659 western DPS Steller sea lions (the minimum population estimate) for a maximum of 12 hours. This take is associated with the Tanginak Island survey only. It is very likely that fewer than 20 animals will be present at the Tanginak site at the time of the land surveyors' visit, since no more than 6 animals have been seen at the site at any one time since 2004.

While all western DPS Steller sea lions present on Tanginak Island are expected to experience disruptions in their normal behavioral patterns, this disruption is not expected to cause any of the animals to be killed, injured, or experience measurable reductions in their fitness or current or expected future reproductive success. Because the proportion of the population expected to be affected is insignificant, we do not expect this action to have population-level effects on western DPS Steller sea lions.

We have determined that the effects to Steller sea lion critical habitat resulting from these land surveys are not likely to destroy or adversely modify critical habitat by placing a small number of unobtrusive survey markers, temporarily disrupting sea lion prey, temporarily intruding into critical habitat by watercraft and people, and a low probability of intruding by a helicopter.

9. CONCLUSIONS

After reviewing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, and cumulative effects, it is NMFS AKR's biological opinion that the proposed action is not likely to jeopardize the continued existence of the endangered western DPS Steller sea lion, and is not likely to destroy or adversely modify Steller sea lion critical habitat.

NMFS has reached this conclusion because:

1. The probability of this action affecting western DPS Steller sea lions on Akun and Chowiet Islands is extremely low ;
2. The action is expected to adversely affect only those animals on Tanginak Island haulout, which are expected to number fewer than 20 animals, comprising an insignificant proportion of the western DPS (0.04%);
3. The duration of disturbance to these animals will last no more than 12 hours, at which time normal behaviors are expected to resume;
4. The mitigation measures included as part of this project are sufficient to protect Steller sea lions using habitats near the proposed survey sites. These measures include: control of vessel speeds to minimize the probability of ship strikes and alarm responses; when possible, establishing adequate buffers between watercraft and sea lions on land and in the water; when possible, use of terrain as visual and acoustic barriers; helicopter flight paths that minimize disturbance to hauled out animals; maintaining the quietest acoustic environment practicable during surveys; minimizing the time spent within the Tanginak haulout; and keeping watch for killer whales near sea lions that have been displaced into the marine environment by field survey crews.

10. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA prohibits the take of endangered species without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. The ESA, however, does not define harassment. USFWS has promulgated a regulation at 50 CFR. § 17.3 which defines harassment as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.” Under the MMPA, there is a definition of what is referred to as Level B harassment: “any act of pursuit, torment, or annoyance which . . . has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.” 16 U.S.C. §1362(18)(A)(ii).

Section 7(b)(4)(C) of the ESA provides that the operator needs to obtain authorization under section 101(a)(5) of the MMPA before this ITS can become effective. Accordingly, the terms of this statement and the exemption from Section 9 of the ESA that the statement affords are conditional upon the issuance of MMPA authorization to take the marine mammals identified here. Similarly, this biological opinion and ITS cover the entire scope of the proposed activities,

June-July 2015 (and possibly 2016) land survey and conveyance. The operator will need MMPA authorization for this take statement to become effective. The take that is noted in this ITS will be authorized only if MMPA authorization is also obtained.

10.1 Amount or Extent of the Take Authorized by this Biological Opinion

This biological opinion analyzes, and this incidental take statement covers, the take associated with BLM's land survey and conveyance activities proposed for June-July 2015 (and possibly 2016) on Akun, Chowiet, and Tanginak Islands.

NMFS AKR anticipates and authorizes the incidental take of no more than 20 western DPS Steller sea lions as a result of this action. Take is expected to be in the form of harassment resulting from activities associated with land-based surveys on Tanginak Island. NMFS AKR does not expect Steller sea lions to be injured or killed by BLM's survey activities and such takings are not authorized.

Our estimate of take assumes that all take will occur in association with the Tanginak Island surveys. We conclude that our take estimate for western DPS Steller sea lions is neither overly conservative nor overly liberal. It adequately accounts for the number of Steller sea lions that may reasonably be expected to be hauled out on Tanginak Island (typically 0-6 animals), but allows for the possibility that the surveyors may encounter an atypically large group on the island.

10.2 Effect of the Take

In the accompanying opinion, NMFS determined that the levels of anticipated incidental take associated with this proposed action are not likely to result in jeopardy to western DPS Steller sea lions or in destruction or adverse modification to Steller sea lion critical habitat. The effect of the take to individuals is expected to be no greater than temporary behavioral changes due to disturbances lasting from 6-12 hours. Normal behaviors are expected to resume shortly after cessation of disturbance.

10.3 Determining Whether Take Occurred

NMFS AKR assumes a "take" occurs due to sound exposure alone when a marine mammal is exposed to received-sound that is greater than or equal to the following levels.

In air:

- 100 dB re: 20 μ Pa (standard in-air threshold for Level B harassment for non-harbor seal pinnipeds).

In water:

- 190 dB re 1 μ Pa (standard in-water threshold for Level A injurious harassment for pinnipeds);
- 160 dB re 1 μ Pa for impulsive noises (standard in-water threshold for Level B harassment);
- 120 dB re 1 μ Pa for continuous noises (standard in-water threshold for Level B harassment);

An animal will also be considered taken if it:

- Is observed within (15 m [50 ft.]) of a watercraft under power by outboard motor (the presumed 120 dB re 1 μ Pa disturbance zone for continuous noise for lightering watercraft used in this project);
- Departs any haulout or rookery in apparent response to the presence of project-associated noise, watercraft, aircraft, and/or people.

10.4 Reasonable and Prudent Measures

“Reasonable and prudent measures” (RPMs) are nondiscretionary measures intended to minimize the amount or extent of incidental take (50 CFR 402.02). “Terms and conditions” implement the reasonable and prudent measures (50 CFR 402.14). The RPMs included below, along with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. NMFS AKR concludes that the following RPMs are necessary and appropriate to minimize or to monitor the incidental take of western DPS Steller sea lions resulting from the proposed action.

1. This ITS is valid only for the activities described in this biological opinion, and which have been authorized under section 101(a)(5) of the MMPA.
2. The taking of western DPS Steller sea lions shall be by incidental harassment only. Other forms of take are not authorized by this ITS. The taking of endangered Western DPS Steller sea lions or other endangered marine mammals by serious injury or death is prohibited under the ESA, and such taking of endangered species may result in the modification, suspension or revocation of the ITS. BLM must ensure that all land survey and conveyance activities comply with all applicable regulations, permit conditions, and requirements. Unauthorized take must be reported to NMFS within 24 hours of occurrence (see contacts at Term and Condition 4.3 below). BLM’s accounting of take must follow the guidelines at section 10.4 of this ITS.
3. A comprehensive mitigation, monitoring, and reporting program must be implemented to ensure that listed marine mammals are not taken in numbers greater than, or in a manner not authorized by, this biological opinion.
4. All quality assured and quality controlled marine mammal observation data recorded by project PSOs must be made available to NMFS in machine-readable format within 90 days of the completion of the survey.⁷ PSOs will record and report all marine mammal sightings.

10.5 Terms and Conditions

“Terms and conditions” implement the reasonable and prudent measures (50 CFR 402.14). These must be carried out for the exemption in section 7(o)(2) to apply.

⁷See (un-numbered) Executive Order of May 9, 2013: Making open and machine readable the new default for government information

In order to be exempt from the prohibitions of section 9 of the ESA, NMFS PR1, BLM, and their authorized representatives must comply with all of the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

Partial compliance with these terms and conditions may result in more take than anticipated, and may invalidate this take exemption. These terms and conditions constitute no more than a minor change to the proposed action because they are consistent with the basic design of the proposed action.

1. Terms and conditions associated with Reasonable and Prudent Measure 1: *This ITS is valid only for the activities described in this biological opinion, and which have been authorized under section 101(a)(5) of the MMPA.*

1.1. All survey related activity must comply with all applicable regulations, permit conditions, and requirements listed in the IHA, issued to the operator for this project under the authority of MMPA section 101(a)(5) and 50 CFR 216.107.

2. Terms and Conditions associated with Reasonable and Prudent Measure 2: *The taking of western DPS Steller sea lions shall be by incidental harassment only. Other forms of take are not authorized by this ITS. The taking of endangered Western DPS Steller sea lions or other endangered marine mammals by serious injury or death is prohibited under the ESA, and such taking of endangered species may result in the modification, suspension or revocation of the ITS. BLM must ensure that all land survey and conveyance activities comply with all applicable regulations, permit conditions, and requirements. Unauthorized take must be reported to NMFS within 24 hours of occurrence (see contacts at Term and Condition 4.3 below). BLM's accounting of take must follow the guidelines at section 10.4 of this ITS.*

2.1. Level A take is not authorized. If Level A take occurs, it must be reported immediately to NMFS (see term and condition 4.3). If a listed Steller sea lion is injured by vessel strike(s), then Level A take has occurred. The vessel that caused the injury must be immediately taken out of gear and remain so until the listed marine mammal has left or died, unless doing so compromises human safety. All takes must be recorded in BLM's report to NMFS (see Terms and Conditions 4.1-4.2 for required reporting parameters).

2.2. In determining the number of takes that have occurred, each individual Western DPS Steller sea lion must be considered a discrete take if it:

2.2.1. Occurs within the level A or level B harassment thresholds indicated in section 10.4 of this ITS;

2.2.2. Occurs within 15 m (50 ft.) of an outboard motor-powered watercraft under power.

2.2.3. Is hauled-out on land and occurs within 914 m (3,000 ft.) of a helicopter;

2.2.4. Departs a rookery or haulout in apparent response to project watercraft, aircraft, or humans.

3. **Terms and Conditions associated with Reasonable and Prudent Measure 3:** *A comprehensive mitigation, monitoring, and reporting program must be implemented to ensure that listed marine mammals are not taken in numbers greater than, or in a manner not authorized by, this biological opinion.*
- 3.1. All mitigation measures in this biological opinion must be implemented. The vessel operator(s) must possess on board:
- 3.1.1. A copy of this ITS issued under the authority of section 7 of the Endangered Species Act.
- 3.1.2. A current and valid IHA issued by NMFS PR1 to BLM under the authority of the MMPA.
- 3.2. Observers must ensure that no killer whales have been observed within critical habitat surrounding the island for 30 minutes prior to approaching the island. While surveyors are on the islands, observers must be strategically positioned both onshore and on the support vessel and must maintain a constant watch for killer whales. If killer whales are observed within the action area, and if western DPS Steller sea lions have been displaced into marine waters by survey activities, the shore crew must vacate the island immediately to provide terrestrial refuge to displaced western DPS Steller sea lions.
- 3.3. If helicopters are used to transport field crews to survey sites, care must be taken to avoid sea lions in the water to ensure that they are not within a 23 degree cone beneath the helicopter, the area within which helicopter sound is most efficiently propagated into the water column rather than reflected at the surface.
- 3.4. If helicopters are used to transport field crews to Tanginak Island, helicopters will land further than 30.5 m (100 ft.) from hauled-out Steller sea lions.
4. **Terms and Conditions associated with Reasonable and Prudent Measure 4:** *All quality assured and quality controlled marine mammal observation data made by project PSOs, must be made available to NMFS and the public in machine-readable format within 90 days of the completion of the survey.⁸ PSO's will record and report all marine mammal sightings.*
- 4.1. BLM must submit a trip report to AKR within 90 days of the conclusion of the survey. The report must be submitted to the e-mail addresses listed in term and condition 4.3.
- 4.1.1. The report will describe mitigation and monitoring effort and present results of these efforts (e.g., dates and times during which monitoring occurred, geographic extent of monitoring, coordinates of all marine mammal observations and takes with metadata indicating date and time of observation, species, group size, composition by age and sex (if determinable), distance from vessel or aircraft when behavioral reaction (if any) occurred, sea state, and qualitative description of visibility conditions, apparent cause of each take.
- 4.1.2. Analyses of the effects of survey operations on listed marine mammals.

⁸See (un-numbered) Executive Order of May 9, 2013: Making open and machine readable the new default for government information

- 4.2. These reporting requirements are in addition to those required by the MMPA IHA.
- 4.3. In the event that land survey activity causes the take of a marine mammal in a manner other than that authorized by this ITS, BLM must immediately cease the specified activities pending reinitiation of formal consultation with NMFS AKR; and must report the incident to:
- AKR Protected Resources Division at: 907-271-5006
NMFS stranding hotline at: 877-925-7773
and by email to:
barbara.mahoney@noaa.gov and Mandy.Migura@noaa.gov

11. CONSERVATION RECOMMENDATIONS

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

This discretionary measure is designed to minimize adverse effects to Steller sea lions from land survey activities.

1. Prior to approaching Tanginak Island, query other vessels in the area by radio as to the presence of killer whales, their position, and heading. Delay approaching Tanginak Island if killer whale presence near the island is likely.

In order for the NMFS, Alaska Region to be kept informed of actions minimizing or avoiding adverse effects or benefiting the endangered Steller sea lion, we request notification of the implementation of any conservation recommendations.

12. REINITIATION of CONSULTATION

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, section 7 consultation must be reinitiated immediately.

13. LITERATURE CITED

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