

ENVIRONMENTAL ASSESSMENT
OF A
NATIONAL MARINE FISHERIES SERVICE ACTION TO DESIGNATE
CRITICAL HABITAT FOR STELLER SEA LIONS

Summary

This environmental assessment (EA) was prepared to analyze the environmental and economic effects of designating critical habitat for the Steller sea lion (*Eumetopias jubatus*), a species listed as threatened under the Endangered Species Act (ESA). The National Marine Fisheries Service (NMFS) is proposing to designate (1) all Steller sea lion rookeries and major haulouts (i.e. >200 Steller sea lions) located within state and Federally managed waters off Alaska, including a zone that extends 3,000 feet (0.9 km) landward and vertical of each rookery and major haulout boundary, and that extends either 3,000 feet (0.9 km) seaward from rookeries and major haulouts in Alaska located east of 144° W. longitude, or 20-nm seaward from rookeries and major haulout sites west of 144° W. longitude; (2) all Steller sea lion rookeries in state and Federally managed waters off Washington, Oregon and California, including the zone that extends 3,000 feet (0.9 km) vertical and seaward from each rookery; and (3) three aquatic foraging habitats within the core of the Steller sea lion's geographic range, one aquatic zone located exclusively in the Gulf of Alaska (GOA), and two aquatic zones in the Bering Sea/Aleutian Islands area (BSAI). No adverse environmental or economic effects are expected to result from the proposed critical habitat designation.

Background

Because of a drastic population decline, NMFS issued an emergency interim rule on April 5, 1990, that listed the Steller sea lion as a threatened species throughout its range and established protective regulations and requested comments (55 FR 12645). Since the emergency interim rule was only effective for 240 days, an expeditious permanent rulemaking process was undertaken to avoid any lapse in ESA status. Thus, NMFS decided to postpone critical habitat designation and consideration of additional conservation measures, and issued proposed and final rules to permanently list the species that were essentially identical to the emergency rule (July 20, 1990, 55 FR 29793; November 26, 1990, 55 FR 49204).

The final rule listing the Steller sea lion as threatened became effective on December 4, 1990, and incorporated the protective regulations established in the emergency interim rule. Specifically, coincident with the listing, NMFS (1) prohibited

shooting at or near Steller sea lions; (2) with limited exceptions, prohibited vessels from entering within 3 nautical miles (nmi) (5.5 kilometers (km)) and individuals on land from approaching within 0.5 mile (0.8 km) or within sight of listed Steller sea lion rookeries in the Gulf of Alaska (GOA), Bering Sea and Aleutian Islands (BSAI); and (3) limited the allowable annual take of Steller sea lions incidental to commercial fisheries to 675 animals in Alaskan waters and adjacent areas of the U.S. exclusive economic zone west of 141°W longitude (50 CFR 227.12). These protective regulations are intended to reduce sea lion mortality, restrict opportunities for unintentional and intentional harassment of sea lions, and minimize disturbance and interference with sea lion behavior, especially at pupping and breeding sites.

Since the species' listing, NMFS has implemented additional regulations under the Magnuson Fishery Conservation and Management Act (Magnuson Act) to reduce the possible adverse effects of the GOA and BSAI Federally managed groundfish fisheries on Steller sea lions, their habitats, and food resources. Effective January 20, 1992, NMFS (1) prohibited trawling year-round within 10 nmi of listed GOA and BSAI Steller sea lion rookeries, (2) prohibited trawling within 20 nmi of the Akun, Akutan, Sea Lion Rock, Agligadak, and Sequam rookeries during the BSAI winter pollock roe fishery, and (3) placed spatial and temporal restrictions on the GOA pollock harvest to divert some fishing effort away from sea lion foraging areas and to spread effort over the calendar year. Protective regulations have focused on the geographic area where the sea lion population has experienced the greatest decline.

Purpose and need

Section 4 of the ESA directs the Secretary to designate critical habitat to the "maximum extent prudent and determinable" at the time a species is listed. The ESA defines critical habitat as:

- "(i) the specific areas within the geographical area occupied by the species, at the time it is listed ... on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and
- (ii) specific areas outside the geographical area occupied by the species at the time it is listed ... upon a determination by the Secretary that such areas are essential for the conservation of the species"

Steller sea lions were listed as a threatened species under the ESA in 1990, but critical habitat for this species has not yet been officially designated. NMFS has implemented several regulations concurrent with, and subsequent to, the listing to

provide protection to essential Steller sea lion habitats, and believes that critical habitats for this species can be defined. Thus, NMFS is now proposing to fulfill the ESA mandate by designating critical habitat for Steller sea lions.

Essential Habitats of the Steller Sea Lion

The physical and biological habitat features that support reproduction, foraging, rest, and refuge are essential to the conservation of the Steller sea lion. For the Steller sea lion, essential habitat includes both terrestrial and aquatic areas.

Terrestrial Habitat

The most well known Steller sea lion habitats are the rookeries, where adult animals congregate during the reproductive season for breeding and pupping. Rookeries typically occur on relatively remote islands, rocks, reefs, and beaches where access by terrestrial predators is limited. A rookery may extend across low-lying reefs and islands, or may be restricted to a relatively narrow strip of beach by steep cliffs. Rookeries are occupied by breeding animals and some subadults throughout the breeding season, which extends from late May to early July throughout the range. Female sea lions frequently return to pup and breed at the same rookery in successive years (Gentry 1970), and this site may be the same rookery, or approximate rookery (same island) as the female's natal site (Calkins and Pitcher 1982).

Steller sea lion rookeries are found from the central Kuril Islands around the Pacific Rim of the Aleutian Islands to Prince William Sound (Seal Rocks, at the entrance to Prince William Sound, Alaska, is the northernmost rookery) and south along the coast of North America to Año Nuevo Island, California, the southernmost rookery. Loughlin *et al.* (1984) identified 51 Steller sea lion rookeries; since that time, two additional rookeries have been identified in Southeast Alaska (Hazy Islands and White Sisters) bringing the total to 53 (43 of which are within U.S. borders).

Haulouts are areas used for rest and refuge by reproductively active adult sea lions during the non-breeding season and by non-breeding adults and subadults throughout the year. Sites used as rookeries in the breeding season may also be used as haulouts during other times of the year. Many rocks, reefs, and beaches are used as haulout sites; Steller sea lions are also occasionally observed hauled out on sea ice and manmade structures such as breakwaters, navigational aids, and floating docks.

The Steller Sea Lion Recovery Team has identified 121 major haulout sites. Major haulouts are defined as sites where greater than 200 animals have been counted. There are many more haulout sites throughout the range that are used by fewer animals or may be used irregularly.

Aquatic Habitat

Although they are most commonly seen and studied while on land, Steller sea lions spend most of their time at sea. The principal essential at-sea activity is presumably feeding.

Nearshore waters around rookeries and haulouts: Although for regulatory purposes the waterward boundary of rookeries and haulouts has been defined as the mean low water mark, biologically, the boundaries are not that simply delineated. Nearshore waters surrounding rookeries and haulouts are an integral component of these habitats. Animals must regularly transit this region as they go to, and return from, feeding trips. As pups mature they spend an increasing amount of time in waters adjacent to rookeries, where they develop their swimming ability and other aquatic behaviors (Sandegren 1970). Waters surrounding rookeries and haulouts also provide a refuge to which animals may retreat when they are displaced from land by disturbance.

Rafting sites: In addition to rookeries and haulouts, sea lions also use traditional rafting sites. These are locations where the animals rest on the ocean surface in a tightly packed group (Bigg 1985). Although the reasons for rafting are not fully understood, their widespread use and traditional nature indicate that they are likely an essential part of Steller sea lion habitat. Available information is not sufficient to identify any specific rafting sites that are in need of special management consideration. Therefore, rafting sites are not included in this critical habitat designation.

Food resources: Adequate food resources are an essential component of the Steller sea lion's aquatic habitat. Steller sea lions are opportunistic carnivores that prey predominantly upon demersal and off-bottom schooling fishes; invertebrates, e.g., squid and octopus, also appear to be regular components of their diet (Pitcher 1981). Prey consumption is expected to vary geographically, seasonally, and over years in response to fluctuations in prey abundance and availability (Pitcher 1981, Hoover 1988).

Data on Steller sea lion prey consumption are fairly limited. Results of limited diet studies conducted in Alaska since 1975 indicate that walleye pollock (*Theragra chalcogramma*) has been the principal prey in all areas over this time period, with

Pacific cod (Gadus macrocephalus), octopus (Octopus sp.), squid (Gonatidae), Pacific herring (Clupea harengus), Pacific salmon (Onchorhynchus spp.), capelin (Mallotus villosus), and flatfishes (Pleuronectidae) also consumed (Pitcher 1981, Calkins and Pitcher 1982, Calkins and Goodwin 1988, Lowry et al. 1989). Few data are available on Steller sea lion prey preferences in Alaska prior to 1975; however, what data are available indicate that pollock may have been a less important component of the diet in previous years (Fiscus and Baines 1966, Pitcher 1981). Limited food habits data from California and Oregon show a predominance of rockfish (Scorpaenidae) and hake (Merluccius productus) in the diet, with flatfish, squid, octopus, and lamprey (Lampetra tridentatus) also eaten.

Foraging habitats: Specific foraging sites, and their constancy over time, have not been well defined. NMFS' ongoing studies in the central GOA and Aleutian Islands using satellite telemetry are providing more detailed information on feeding areas and diving patterns in Alaskan waters.

NMFS has deployed 52 satellite-linked time depth recorders on Steller sea lions since 1989. Results indicate that waters in the vicinity of rookeries and haulouts are important foraging habitats, particularly for post-parturient females and young animals. These investigations strongly suggest that sea lion foraging strategies and ranges change seasonally, and according to the age and reproductive status of the animal.

Summertime foraging by postpartum females, whose foraging range is probably restricted by the need to return to the rookery to nurse pups, appears to occur mainly in relatively shallow waters within 20 nmi of the rookeries. Data from tagged animals without pups and females with pups during the winter indicate that adult sea lions have the ability to forage at locations far removed from their rookeries and haulout sites and at great depths. Sea lion pups by their 6th month are also capable of travelling extended distances from land. However, dive depth appears to be more limited and may restrict foraging success. Few observed dives by juvenile sea lions (younger than 11 months) have exceeded 20 meters (m), whereas adult animals have been observed diving to depths greater than 250.

Need for Special Management Considerations or Protection

The following discussion outlines the specific essential habitats that may require special management considerations or protection. Under separate rulemakings, NMFS has already determined that certain Steller sea lion habitats require special management considerations or protection and has limited human activities in these areas. These management actions and the essential habitats they protect are also described below.

Terrestrial Habitat

The Steller sea lion's use of traditional sites and the link of territorial males, postpartum females, and pups to rookery sites during the breeding season make them particularly vulnerable to intentional harassment. Observed responses to human disturbance vary from no reaction at all to mass stampedes into the water. In some cases, haulout sites have been completely abandoned after repeated disturbances whereas in other cases sea lions have continued to use sites even after extreme harassment (Hoover, 1988). The remote locations of most rookeries and haulouts help to reduce the frequency of harassment, but disturbance of sea lions by air and water craft continues to occur. Steller sea lions are vulnerable to harassment and disruption of essential life functions (e.g., breeding, pup care, and rest) at rookeries and haulouts throughout their range.

Aquatic Habitat

Nearshore waters around rookeries and haulouts: Nearshore waters associated with terrestrial habitats are subject to the same types of disturbance as rookeries and haulouts. NMFS has prohibited vessel entry within 3 nmi of all Steller sea lion rookeries west of 150°W longitude, the area where the greatest population decline has occurred, primarily to protect sea lions using these habitats from intentional and unintentional harassment. The Steller Sea Lion Recovery Team has recommended that waters extending 3,000 feet from rookeries and major haulouts are essential habitats that merit special management consideration.

Prey resources and foraging habitats: Reduction in food availability, quantity, and/or quality is considered to be a possible factor in the Steller sea lion population decline (Calkins and Goodwin 1988, Merrick *et al.* 1987, Loughlin and Merrick 1989, Lowry *et al.* 1989). Most of the data on proximate causes of the Alaska sea lion decline point to reduced juvenile survival as a significant causative agent. There are also indications that decreased juvenile survival is due to a lack of food post weaning and during the winter/spring of the first year. Calkins and Goodwin (1988) found that Steller sea lions collected in the GOA in 1985-1986 were significantly smaller (girth, weight, and standard length) than same aged animals collected in the GOA in the 1970s. Reduced body size at age was interpreted as an indicator of nutritional stress.

Conservation and management of prey resources and foraging areas appears essential to the recovery of the Steller sea lion population. The quality and quantity of these resources may be

degraded by human activities, e.g., pollutant discharges, habitat losses associated with human development, and commercial fisheries. Available data indicate that contamination of sea lion food resources by anthropogenic pollutants has not been a significant factor in the Steller sea lion decline. Changes in prey base due to physical habitat alteration also appear insignificant. Local degradation of sea lion food resources may occur near human population centers, along shipping lanes, and near drill sites. Presently, there is insufficient information to identify any specific geographic areas where additional management measures to protect sea lion food resources from contaminant inputs and habitat loss, beyond the existing State and Federal regulations, are necessary.

The relationship between commercial fisheries and the Steller sea lion's ability to obtain adequate food is presently unclear. The BSAI/GOA geographic region where Steller sea lions have experienced the greatest population decline is also an area where large commercial fisheries have developed. Many of the Steller sea lion's preferred prey species are harvested by commercial fisheries in this region, and food availability to Steller sea lions may be affected by fishing. At present, NMFS believes that the exploitation rates in Federally managed fisheries are unlikely to diminish the overall abundance of fish stocks important to Steller sea lions. However, spatial and temporal regulation of fishery removals in some areas appears necessary to ensure that local depletion of prey stocks in essential habitats does not occur.

Because of concerns for the effects of commercial fisheries on Steller sea lions, NMFS amended the BSAI and GOA groundfish Fishery Management Plans to reduce the likelihood that commercial groundfish removals would deplete Steller sea lion prey abundance in essential habitats. Under the Magnuson Act, NMFS (1) prohibited trawling year-round within 10 nmi of listed GOA and BSAI Steller sea lion rookeries; (2) prohibited trawling within 20 nmi of the Akun, Akutan, Sea Lion Rock, Agligadak, and Sequam rookeries during the BSAI winter pollock roe fishery to mitigate concentrated fishing effort on the southeastern Bering Sea shelf and in Sequam Pass; and (3) placed spatial and temporal restrictions on the GOA pollock harvest to divert some fishing effort away from sea lion foraging areas and to spread effort over the calendar year. NMFS is also proposing to expand seasonally the 10 nmi no trawl zone around Ugamak Island in the eastern Aleutians to 20 nmi (57 FR 57726; December 7, 1992). The expanded seasonal buffer at Ugamak Island is intended to better encompass Steller sea lion winter habitats and juvenile foraging areas in this region during the BSAI winter pollock fishery.

Essential Steller sea lion prey resources and foraging habitats also occur outside of the GOA and BSAI. However, we presently do not have sufficient information to identify specific foraging areas to the east of 144°W longitude that require special management considerations.

Description of Alternatives

Alternative 1--Status quo - No critical habitat designation: Under this alternative, critical habitat for Steller sea lions would not be designated.

Alternative 2--Designation of (1) all Steller sea lion rookeries and major haulouts (i.e. >200 Steller sea lions) located within state and Federally managed waters off Alaska, including a zone that extends 3,000 feet (0.9 km) landward and vertical of each rookery and major haulout boundary, and that extends either 3,000 feet (0.9 km) seaward from rookeries and major haulouts in Alaska located east of 144° W. longitude, or 20-nm seaward from rookeries and major haulout sites west of 144° W. longitude; (2) all Steller sea lion rookeries in state and Federally managed waters off Washington, Oregon and California, including the zone that extends 3,000 feet (0.9 km) vertical and seaward from each rookery. These areas provide essential habitat for breeding, rearing of pups, rest, and refuge and are vulnerable to human disturbance.

Alternative 3--Designation of (1) all Steller sea lion rookeries and major haulouts (i.e. >200 Steller sea lions) located within state and Federally managed waters off Alaska, including a zone that extends 3,000 feet (0.9 km) landward and vertical of each rookery and major haulout boundary, and that extends either 3,000 feet (0.9 km) seaward from rookeries and major haulouts in Alaska located east of 144° W. longitude, or 20-nm seaward from rookeries and major haulout sites west of 144° W. longitude; (2) all Steller sea lion rookeries in state and Federally managed waters off Washington, Oregon and California, including the zone that extends 3,000 feet (0.9 km) vertical and seaward from each rookery; and (3) three aquatic foraging habitats within the core of the Steller sea lion's geographic range, one aquatic zone located exclusively in the Gulf of Alaska (GOA), and two aquatic zones in the Bering Sea/Aleutian Islands area (BSAI) (Figures 1-3). These areas provide essential habitat for breeding, rearing of pups, rest, refuge, and feeding.

Environmental and Economic Effects of Critical Habitat Designation

The designation of critical habitat does not, in itself, restrict human activities within the area or mandate any specific management or recovery action. A critical habitat designation

contributes to species conservation primarily by identifying critically important areas and describing the features within the areas that are essential to the species, thus alerting public and private entities to the importance of the area.

Under the ESA, the only direct impact of a critical habitat designation is under the provisions of section 7. Section 7 applies only to actions with Federal involvement, and does not affect strictly state or private activities. Under the section 7 provisions, a designation of critical habitat would require Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to destroy or adversely modify the designated critical habitat. Activities that adversely modify critical habitat are defined as those actions that "appreciably diminish the value of critical habitat for both the survival and recovery" of the species (50 CFR 402.02).

With or without a critical habitat designation, Federal agencies must ensure that their actions are not likely to jeopardize the continued existence of the listed species. Activities that jeopardize a species are defined as those actions that "reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of the species" (50 CFR 402.02). Activities that destroy or adversely modify critical habitat also are expected to jeopardize the species. Therefore, the protection provided by a critical habitat designation essentially duplicates the protection provided under the section 7 jeopardy provision.

Critical habitat designation may provide additional benefits to a species over listing alone in cases where areas outside of the species' current range have been designated. In these cases, it is expected that Federal agencies would be required to consult on additional actions occurring in these areas. No critical habitat outside the range of the Steller sea lion is proposed for designation in this case; thus, no additional consultations are likely.

NMFS has already reinitiated ESA section 7 consultation on Federal actions that occur within the range of the Steller sea lion, including those that occur within these proposed critical habitat areas. Section 7 consultations on the Federally managed groundfish fisheries of the BSAI and GOA management areas have resulted in changes in the manner in which these fisheries are prosecuted, specifically to protect Steller sea lions and their essential habitats. Economic effects attributable to these regulations were analyzed in the EA and other regulatory documents produced in support of these decisions. These economic effects are attributable to the species listing. The economic effects of any additional regulations deemed necessary as a result of future section 7 consultations will be assessed at the

time they are proposed. Such additional restrictions would be expected to occur with or without the proposed critical habitat designation.

In summary, no specific restrictions on human activities or additional protection for Steller sea lions beyond those already provided by the species listing are associated with this critical habitat designation. No significant environmental or economic effects are expected to result from a critical habitat designation for Steller sea lions.

Comparison of Alternatives

Alternative 1 is not considered feasible since it would be inconsistent with the ESA. The ESA mandates NMFS to designate critical habitat in all situations where critical habitat can be determined and the designation would be beneficial to the species. Essential habitats for Steller sea lions that are in need of special management considerations are identifiable, in fact, NMFS has already taken steps to protect some of these areas. Designation of critical habitat would benefit Steller sea lions because Federal, state, and private entities would be better informed regarding the importance of these habitats.

Alternative 2 focuses only on terrestrial habitats and does not include essential aquatic foraging habitat.

Alternative 3 is the preferred alternative which encompasses both aquatic foraging habitats and terrestrial sites.

Conclusion

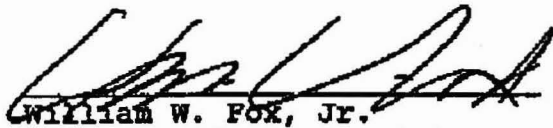
This EA analyzes the environmental and economic effects of designating critical habitat for the Steller sea lion. Of the alternatives considered, Alternative 3 best describes the essential habitats of the Steller sea lion that may require special management considerations, and has been selected as the preferred action. Under Alternative 3, all rookeries, major haulouts, nearshore waters associated with these habitats, and specific foraging habitats in the BSAI and GOA would be designated. No adverse environmental or economic effects are associated with any of the alternatives considered, including the proposed action.

Finding of No Significant Impact

None of the alternatives is likely to affect significantly the quality of the human environment, and the preparation of an environmental impact statement for selection of any alternative

as the proposed action is not required by section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.

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William W. Fox, Jr.
Acting Assistant Administrator
for Fisheries
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

References

- Calkins, D. G. and K. W. Pitcher. 1982. Population assessment, ecology and trophic relationships of Steller sea lions in the Gulf of Alaska. Alaska Dept. Fish and Game, Final Report, Research Unit 243, Contract No. 03-5-022-69 for U.S. Dept. Interior, Bureau of Land Manage., Outer Continental Shelf Environmental Assessment Program, April 18, 1982. 129 pp.
- Calkins, D. and E. Goodwin. 1988. Investigation of the declining sea lion population in the Gulf of Alaska. Alaska Dept. Fish and Game, Final Report, August 15, 1988. 76 pp.
- Fiscus, C. H. and G. A. Baines. 1966. Food and feeding behavior of Steller and California sea lions. J. Mammal. 47: 218-223.
- Gentry, R. L. 1970. Social behavior of the Steller sea lion. Ph.D. dissertation, Univ. California at Santa Cruz, Santa Cruz, California. 113 pp.
- Hoover, A.A. 1988. Steller Sea Lion, Eumetopias jubatus. Pages 159-193 in J.W. Lantfer, ed. Selected Marine Mammals of Alaska: Species Accounts with Research and Management Recommendations. Marine Mammal Commission, Washington, D.C.
- Loughlin, T. R., D. J. Rugh and C. H. Fiscus. 1984. Northern sea lion distribution and abundance, 1956-80. J. Wildl. Manage. 48: 729-740.
- Loughlin, T. R. and R. L. Merrick. 1989. Comparison of the commercial harvest of walleye pollock and northern sea lion abundance in the Bering Sea and Gulf of Alaska. pp. 679-700 In Proc. Intl. Symp. on the Biology and Management of Walleye Pollock, November 1988, Univ. Alaska, Fairbanks, Alaska.
- Lowry, L. F., K. J. Frost and T. R. Loughlin. 1989. Importance of walleye pollock in the diets of marine mammals in the Gulf of Alaska and Bering Sea and implications for fishery management. pp. 701-726 In Proc. Intl. Symp. on the Biology and Management of Walleye Pollock, November 1988, Univ. Alaska, Fairbanks, Alaska.
- Merrick, R. L., T. R. Loughlin and D. G. Calkins. 1987. Decline in abundance of the northern sea lion, Eumetopias jubatus, in Alaska, 1956-1986. Fish. Bull. 85: 351-365.
- Pitcher, K. W. 1981. Prey of the Steller sea lion, Eumetopias jubatus, in the Gulf of Alaska. Fish. Bull. 79: 467-472.