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Endangered and Threatened Wildlife and Plants; Determination of Threatened Status and Special Rule for the Southwest Alaska Distinct Population Segment of the Northern Sea Otter (Enhydra lutris kenyoni); Final Rule and Proposed Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AI44

Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Southwest Alaska Distinct Population Segment of the Northern Sea Otter (Enhydra lutris kenyoni)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the Fish and Wildlife Service (Service), determine threatened status for the southwest Alaska distinct population segment of the northern sea otter (*Enhydra lutris kenyoni*) under the authority of the Endangered Species Act of 1973, as amended (Act). Once containing more than half of the world's sea otters, this population segment has undergone an overall population decline of at least 55–67 percent since the mid-1980s. In some areas within southwest Alaska, the population has declined by over 90 percent during this time period. This final rule extends the Federal protection and recovery provisions of the Act to this population segment.

DATES: This rule is effective on September 8, 2005.

ADDRESSES: The complete file for this final rule is available for inspection, by appointment, during normal business hours at the Marine Mammals Management Office, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503.

FOR FURTHER INFORMATION CONTACT: Douglas Burn, (see **ADDRESSES**) (telephone 907/786–3800; facsimile 907/786–3816).

SUPPLEMENTARY INFORMATION:

Background

This section has been updated from the proposed rule to incorporate comments from peer reviewers, and to include new survey results collected in 2003 and 2004.

The sea otter (*Enhydra lutris*) is a mammal in the family Mustelidae and it is the only species in the genus *Enhydra.* The overall range of *E. lutris* from northern Japan to southern California is approximately 10,000 kilometers (km) (6,212 miles (mi)). There are three recognized subspecies (Wilson *et al.* 1991): *E. l. lutris,* known as the northern sea otter, occurs in the Kuril Islands, Kamchatka Peninsula, and Commander Islands in Russia; *E. l. kenyoni,* also known as the northern sea otter, has a range that extends from the Aleutian Islands in southwestern Alaska to the coast of the State of Washington; and *E. l. nereis,* known as the southern sea otter, occurs in coastal southern California. The taxonomy of sea otters is complicated by the lack of historical information prior to their discovery in 1741, as well as the population bottlenecks (reductions in genetic diversity as a result of small population sizes) that resulted from commercial fur harvests that extirpated the species throughout much of its range. Figure 1 in the Proposed Rule illustrates the approximate ranges of the three currently recognized subspecies.

The two subspecies of northern sea otter (*E. l. kenyoni* and *E. l. lutris*) are separated by an expanse of open water that measures approximately 320 km (200 mi) between the Near Islands of the United States and the Commander Islands in Russia. Wide, deep-water passes serve as a barrier to sea otter movements (Kenyon 1969), and interchange between these two subspecies is considered to be low. (See later sections on food habits and animal movements.) Genetic analyses show some similarities between sea otters in the Commander Islands and Alaska (Cronin *et al.* 1996), which indicates that movements between these areas has occurred, at least over evolutionary/geologic time scales.

The southernmost extent of the range of *E. l. kenyoni* is in Washington state and British Columbia, and is the result of translocations of sea otters from Alaska between 1969 and 1972 (Jameson *et al.* 1982). The Washington and British Columbia population is separated from the nearest sea otters in Alaska by a distance roughly of 483 km (300 mi) to the north, and is separated from the southern sea otter (*E. l. nereis*) by a distance of more than 965 km (600 mi) to the south.

It is the smallest marine mammal in the world, except for the South American marine otter (*Lontra* (= *Lutra*) *felina*) (Reidman and Estes 1990). Adult males average 130 centimeters (cm) (4.3 feet (ft)) in length and 30 kilograms (kg) (66 pounds (lb)) in weight; adult females average 120 cm (3.9 ft) in length and 20 kg (44 lb) in weight (Kenyon 1969). The northern sea otter in Russian waters (*E. l. lutris*) is the largest of the three subspecies, characterized as having a wide skull with short nasal bones (Wilson *et al.* 1991). The southern sea otter (*E. l. nereis*) is smaller and has a narrower skull with a long rostrum and small teeth. The northern sea otter in Alaska (*E. l. kenyoni*) is intermediate in size and has a longer mandible than either of the other two subspecies.

Sea otters lack the blubber layer found in most marine mammals and depend entirely upon their fur for insulation (Riedman and Estes 1990). Their pelage consists of a sparse outer layer of guard hairs and an underfur that is the densest mammalian fur in the world, averaging more than 100,000 hairs per square centimeter (645,000 hairs per square inch) (Kenyon 1969). As compared to pinnipeds (seals and sea lions) that have a distinct molting season, sea otters molt gradually throughout the year (Kenyon 1969).

Sea otters have a relatively high rate of metabolism as compared to land mammals of similar size (Costa 1978; Costa and Kooyman 1982, 1984). To maintain the level of heat production required to sustain them, sea otters eat large amounts of food, estimated at 23–33 percent of their body weight per day (Riedman and Estes 1990). Sea otters are carnivores that primarily eat a wide variety of benthic (living in or on the sea floor) invertebrates, including sea urchins, clams, mussels, crabs, and octopus. In some parts of Alaska, sea otters also eat epibenthic (living upon the sea floor) fishes (Estes *et al.* 1982; Estes 1990).

Much of the marine habitat of the sea otter in southwest Alaska is characterized by a rocky substrate. In these areas, sea otters typically are concentrated between the shoreline and the outer limit of the kelp canopy (Riedman and Estes 1990), but can also occur further seaward. Sea otters also inhabit marine environments that have soft sediment substrates, such as Bristol Bay and the Kodiak archipelago. As communities of benthic invertebrates differ between rocky and soft sediment substrate areas, so do sea otter diets. In general, prey species in rocky substrate habitats include sea urchins, octopus, and mussels, while in soft substrates, clams dominate the diet.

Sea otters are considered a keystone species, strongly influencing the species composition and diversity of the nearshore marine environment they inhabit (Estes *et al.* 1978). For example, studies of subtidal communities in Alaska have demonstrated that, when sea otters are abundant, epibenthic herbivores such as sea urchins will be present at low densities whereas kelp, which are consumed by sea urchins, will flourish. Conversely, when sea otters are absent, grazing by abundant sea urchin populations creates areas of low kelp abundance, known as urchin barrens (Estes and Harrold 1988).

Sea otters generally occur in shallow water areas near the shoreline. They

primarily forage in shallow water areas less than 100 meters (m) (328 ft) in depth, and the majority of all foraging dives take place in waters less than 30 m (98 ft) in depth (Bodkin *et al.* 2004). As water depth is generally correlated with distance to shore, sea otters typically inhabit waters within 1–2 km (0.62–1.24 mi) of shore (Riedman and Estes 1990). While sea otters can also be found at greater distances from shore, this typically occurs in areas of, or near, shallow water. For example, a broad shelf of shallow water extends several miles from shore in Bristol Bay, along the north side of the Alaska Peninsula. Prior to the onset of the sea otter population decline (described below), large rafts of sea otters were commonly observed above this shelf of shallow water at distances as far as 40 km (25 mi) from shore (Schneider 1976).

Movement patterns of sea otters have been influenced by the processes of natural population recolonization and the translocation of sea otters into former habitat. While sea otters have been known to make long distance movements up to 350 km (217 mi) over a relatively short period of time when translocated to new or vacant habitat (Ralls *et al.* 1992), the home ranges of sea otters in established populations are relatively small. Once a population has become established and has reached equilibrium density within the habitat, movement of individual sea otters appears to be largely dictated by environmental and social factors, including gender, breeding status, age, climatic variables (*e.g.* weather, tidal state, season), and human disturbance, as described below.

Home range and movement patterns of sea otters vary depending on the gender and breeding status of the otter. In the Aleutian Islands, breeding males remain for all or part of the year within the bounds of their breeding territory, which constitutes a length of coastline anywhere from 100 m (328 ft) to approximately 1 km (0.62 mi). Sexually mature females have home ranges of approximately 8–16 km (5–10 mi), which may include one or more male territories. Male sea otters that do not hold territories may move greater distances between resting and foraging areas than territorial males (Lensink 1962, Kenyon 1969, Riedman and Estes 1990, Estes and Tinker 1996).

Juvenile males (1–2 years of age) are known to disperse later and for greater distances, up to 120 km (75 mi), from their natal (birth) area than 1-year-old females, for which the greatest distance traveled was 38 km (23.6 mi) (Garshelis and Garshelis 1984, Monnett and Rotterman 1988, Riedman and Estes 1990). Intraspecific aggression between breeding males and juvenile sea otters may cause juvenile otters to move from their natal areas to lower quality habitat (Ralls *et al.* 1996), and survival of juvenile sea otters, though highly variable, is influenced by intraspecific aggression and dispersal (Ballachey *et al.* 2003).

Sea otter movements are also influenced by local climatic conditions such as storm events, prevailing winds, and in some areas, tidal states. Sea otters tend to move to protected or sheltered waters (bays, inlets, or lees) during storm events or high winds. In calm weather conditions, sea otters may be encountered further from shore (Lensink 1962, Kenyon 1969). In the Commander Islands, Russia, weather, season, time of day, and human disturbance have been cited as factors that induce sea otter movement (Barabash-Nikiforov 1947, Barabash-Nikiforov *et al.* 1968).

Due to their dependence on shallow-water feeding areas, most sea otters in Alaska occur within State-owned waters, which include the area from mean high tide to 4.8 km (3 mi) offshore, and any that go further offshore are within the U.S. Exclusive Economic Zone, which extends 370.4 km (200 nautical miles) seaward from the coast of the United States.

While sea otters typically rest in the water, they can also haul out and rest on shore (Kenyon 1969). Female sea otters typically give birth in the water, however, they have also been observed to give birth while on shore (Barabash-Nikiforov *et al.* 1968, Jameson 1983). Although they typically haul out and remain close to the water's edge, sea otters have been observed on land at distances up to several hundred meters from the water (Riedman and Estes 1990). The majority of coastal lands within the range of the southwest Alaska population of the northern sea otter are part of the Service's National Wildlife Refuge (NWR) system, including Alaska Maritime NWR, Izembek NWR, Alaska Peninsula/Becharof NWR, and Kodiak NWR. The National Park Service also has large parcels of coastal lands in southwest Alaska, including Katmai National Park and Aniakchak National Monument and Preserve. The vast majority of remaining coastal lands in southwest Alaska are owned by the State of Alaska and Alaska Native Corporations. Privately owned lands constitute a very minor proportion of coastal lands in southwest Alaska.

Female sea otters in Alaska live an estimated 15–20 years, while male lifespan appears to be about 10–15 years (Calkins and Schneider 1985). First-year survival of sea otter pups is generally substantially lower than that for prime age (2–10 years old) animals (Monson and DeGange 1995, Monson *et al.* 2000). Male sea otters appear to reach sexual maturity at 5–6 years of age (Schneider 1978, Garshelis 1983). The average age of sexual maturity for female sea otters is 3–4 years, but some appear to reach sexual maturity as early as 2 years of age. The presence of pups and fetuses at different stages of development throughout the year suggests that reproduction occurs at all times of the year. Most areas that have been studied show evidence of one or more seasonal peaks in pupping (Rotterman and Simon-Jackson 1988).

Similar to other mustelids, sea otters can have delayed implantation of the blastocyst (developing embryo) (Sinha *et al.* 1966). As a result, pregnancy can have two phases: from fertilization to implantation, and from implantation to birth (Rotterman and Simon-Jackson 1988). The average time between copulation and birth is 6–7 months. Female sea otters typically will not mate while accompanied by a pup (Lensink 1962; Kenyon 1969; Schneider 1978; Garshelis *et al.* 1984). The interval between pups is typically 1 year.

Estes (1990) estimated population growth rates ranging from 17–20 percent per year for four northern sea otter populations expanding into unoccupied habitat. While Bodkin *et al.* (1999) also reported similar population growth rates, they also note that population growth rates in translocated populations were significantly greater than for remnant populations. After the initial period of growth, populations typically reach an equilibrium density, defined as the average density, relatively stable over time, that can be supported by the habitat (Estes 1990).

Distribution and Status

Historically, sea otters occurred throughout the coastal waters of the north Pacific Ocean, from the northern Japanese archipelago around the north Pacific rim to central Baja California, Mexico. The historic distribution of sea otters is depicted in Figure 2 of the Proposed Rule.

Prior to commercial exploitation, the range-wide estimate for the species was 150,000–300,000 individuals (Kenyon 1969, Johnson 1982). Commercial hunting of sea otters began shortly after the Bering/Chirikof expedition to Alaska in 1741. Over the next 170 years, sea otters were hunted to the brink of extinction first by Russian, and later by American, fur hunters.

Sea otters became protected from commercial harvests under the International Fur Seal Treaty of 1911, when only 13 small remnant populations were known to still exist (Figure 2 in the Proposed Rule). The entire species at that time may have been reduced to only 1,000–2,000 animals. Two of the 13 remnant populations (Queen Charlotte Island and San Benito Islands) subsequently became extinct (Kenyon 1969, Estes 1980). The remaining 11 populations began to grow in number, and expanded to recolonize much of the former range. Six of the remnant populations (Rat Islands, Delarof Islands, False Pass, Sandman Reefs, Shumagin Islands, and Kodiak Island) were located within the bounds of what we now recognize as the southwest Alaska population of the northern sea otter (see Distinct Vertebrate Population Segment). All 6 of these remnant populations grew during the first 50 years following protection from further commercial hunting. At several locations in the Aleutian Islands, the rapid growth of sea otter populations appears to have initially exceeded the carrying capacity of the local environment, as sea otter abundance at these islands then declined, either by starvation or emigration, eventually reaching equilibrium density (Kenyon 1969).

Population Trends of Sea Otters in Southwest Alaska

The following discussion of population trends is related to the southwest Alaska distinct population segment of sea otters addressed in this final rule. The southwest Alaska population ranges from Attu Island at the western end of Near Islands in the Aleutians, east to Kamishak Bay on the western side of lower Cook Inlet, and includes waters adjacent to the Aleutian Islands, the Alaska Peninsula, the Kodiak archipelago, and the Barren Islands (see Figure 3 of the Proposed Rule).

Survey methods vary in different locations. In some parts of southwest Alaska, sea otters have been counted from boats or aircraft within a narrow band of water adjacent to the shoreline; in others, transects have been used to sample an area, and the resulting sea otter density is extrapolated to generate a population estimate for the entire study area. Like survey efforts of most species, detection of all the individuals present is not always possible. Sea otters spend considerable time under water, and it is not possible to detect individuals that are below the surface at the time a survey is conducted. Also, observers do not always detect every individual present on the surface. Only a few surveys have been conducted using methods that allow for calculation of a correction factor to adjust for the estimated proportion of otters not detected by observers. One way to make this adjustment requires an independent estimate of the actual number of otters present in an area, also known as ''ground-truth,'' combined with the regular survey data in order to calculate a correction factor to adjust for sea otters not detected during the survey. Thus, survey results can be of several types: they can be direct counts or estimates, either of which may be adjusted or unadjusted for sea otters not detected by observers. In areas where we compare unadjusted sea otter counts or estimates, we assume that there is no significant difference between the proportion of otters not detected by observers.

In the following discussion of population trends, results are presented separately for surveys conducted in the Aleutian Islands, the Alaska Peninsula, the Kodiak Archipelago, and Kamishak Bay. For the Alaska Peninsula, results are presented for various surveys that have been conducted for north Peninsula offshore areas, south Peninsula offshore areas, south Alaska Peninsula Islands, and the South Alaska Peninsula shoreline. The general locations of the survey areas are depicted in Figure 4 A–D of the Proposed Rule.

Unless otherwise specified, the survey results are unadjusted for otters not detected by observers. Within each study area, recent surveys were conducted using methods similar to those used in the past, so that counts or estimates would be as comparable as possible with baseline information for that area. Although there may be slight differences in the time of year that surveys were conducted, we do not believe these timing differences hinder comparisons of survey results because otters are likely to remain in the same general area, as they are not migratory. A summary of sea otter survey data from each survey area within the southwest Alaska population is presented in Table 1, followed by a narrative description of the results for each area.

TABLE 1.—SUMMARY OF SEA OTTER POPULATION SURVEYS IN SOUTHWEST ALASKA

[Estimates include 95 percent confidence intervals where available. Estimates for the Kodiak archipelago and Kamishak Bay are the only values adjusted for sea otters not detected.]

Survey area	Year	Count or estimate	Source
Aleutian Islands	1965	9,700	Kenyon (1969).
	1992	8,048	Evans et al. (1997).
	2000	2,442	Doroff et al. (2003).
North Alaska Peninsula Offshore Areas	1976	11,681	9,215 ± 3,709 (AUG)
	*1986	6,474 ± 2,003 (JUN)	7,539 ± 2,103 (OCT) Schneider (1976). Brueggeman et al. (1988), Burn and Doroff (2005).
	2000	4,728 ± 3,023 (MAY)	Burn and Doroff (2005).
South Alaska Peninsula Offshore Areas	*1986	13,900 ± 6,456 (MAR) 14,042 ± 5,178 (JUN) 17,500 ± 5,768 (OCT)	Brueggeman et al. (1988), Burn and Doroff (2005).
	2001	1,005 ± 1,597 (APR)	Burn and Doroff (2005).
South Alaska Peninsula Islands	1962	2,195	Kenyon (1969).
	1986	2,122	Brueggeman et al. (1988).
	1989	1,589	DeGange et al. (1995).
	2001	405	Burn and Doroff (2005).
South Alaska Peninsula Shoreline	1989	2,632	DeGange et al. (1995).
	2001	2,651	Burn and Doroff (2005).
Kodiak Archipelago	1989	13,526 ± 2,350	DeGange et al. (1995).
	1994	9,817 ± 5,169	Doroff et al. (in prep.).

TABLE 1.—SUMMARY OF SEA OTTER POPULATION SURVEYS IN SOUTHWEST ALASKA—Continued

[Estimates include 95 percent confidence intervals where available. Estimates for the Kodiak archipelago and Kamishak Bay are the only values adjusted for sea otters not detected.]

Survey area	Year	Count or estimate	Source
	2001	5,893 ± 2,630	Doroff et al. (in prep.).
	2004	6,284 ± 1,807	Doroff et al. (in prep.).
Kamishak Bay	2002	6,918 ± 4,271	USGS in litt. (2002).

*Estimates recalculated by the Service (Burn and Doroff 2005) from original data of Brueggeman et al. (1988).

Aleutian Islands

The first systematic, large-scale population surveys of sea otters in the Aleutian Islands (Figure 4A of the Proposed Rule) were conducted from 1957 to 1965 by Kenyon (1969). The descendants of two remnant colonies had expanded throughout the Rat, Delarof, and western Andreanof Island groups. The total unadjusted count for the entire Aleutian archipelago during the 1965 survey was 9,700 sea otters. In 1965, sea otters were believed to have reached equilibrium densities throughout roughly one-third of the Aleutian archipelago, ranging from Adak Island in the east to Buldir Island in the west (Estes 1990). Islands in the other two-thirds of the archipelago had few sea otters, and researchers expected additional population growth in the Aleutians to occur through range expansion.

From the mid-1960's to the mid-1980's, otters expanded their range, and presumably their numbers as well, until they had recolonized all the major island groups in the Aleutians. Although the maximum size reached by the sea otter population is unknown, a habitat-based computer model estimates that the population in the late-1980s may have numbered approximately 74,000 individuals in the Aleutians (Burn *et al.* 2003).

In a 1992 aerial survey of the entire Aleutian archipelago, we counted a total of 8,048 otters (Evans *et al.* 1997), approximately 1,650 (19 percent) fewer than the total reported for the 1965 survey. Although sea otters had recolonized all major island groups, they had unexpectedly declined in number by roughly 50 percent in portions of the western and central Aleutians since 1965, based on a comparison of the 1965 and 1992 survey results. Sea otter surveys conducted from skiffs during the mid-1990s also indicated substantial declines at several islands in the western and central Aleutians (Estes *et al.* 1998). It was not known at the time if these observed declines were representative of the entire Aleutian sea otter population or merely a local phenomenon.

In April 2000, we conducted another complete aerial survey of the Aleutian archipelago. We counted 2,442 sea otters, which is a 70-percent decline from the count 8 years previously (Doroff *et al.* 2003). Along the more than 5,000 km (3,107 miles) of shoreline surveyed, sea otter density was at a uniformly low level, which clearly indicated that sea otter abundance had declined throughout the archipelago.

The aerial and skiff survey data both indicate that the onset of the decline began in the latter half of the 1980s or early 1990s. Doroff *et al.* (2003) calculated that the decline proceeded at an average rate of -17.5 percent per year in the Aleutians. Although otters declined in all island groups within the archipelago, the greatest declines were observed in the Rat, Delarof, and Andreanof Island groups. This result was unexpected, as the remnant colonies in these island groups were the first to recover from the effects of commercial harvest, and sea otters were believed to have been at equilibrium density at most of these islands in the mid-1960s.

Doroff *et al.* (2003) used skiff-based counts at six islands in the western and central Aleutians as ground-truth data, and calculated that aerial observers detected roughly 28 percent of the sea otters present. Adjusting for otters not detected by observers, the estimated population size in April 2000 was 8,742 sea otters. Additional skiff-based surveys at these islands conducted in the summer of 2003 indicated that the sea otter population has declined by a further 63 percent at an estimated annual rate of 29 percent per year (Estes *et al.* 2005). If the declines at these islands are representative of the Aleutian archipelago as a whole, the entire population in this area may number as few as 3,311 individuals.

In July 2004, we also conducted aerial surveys of sea otters at several islands in the eastern Aleutians using the same methods as the 2000 survey. Due to dense fog, we were only able to survey 223 km of the total shoreline (62 percent). In 2000 we counted 73 otters within this surveyed area, but only 38 otters there in 2004; a decline of 48 percent, at an estimated annual rate of 15 percent per year (USFWS in litt.). These results indicate that similar to the western and central Aleutians, the sea otter decline has not abated in the eastern Aleutians.

Alaska Peninsula

Three remnant colonies (at False Pass, Sandman Reefs, and Shumagin Islands) were believed to have existed near the western end of the Alaska Peninsula after commercial fur harvests ended in 1911 (Kenyon 1969). During surveys in the late 1950s and early 1960s, substantial numbers of sea otters were observed between Unimak Island and Amak Island (2,892 in 1965) on the north side of the Peninsula, and around Sanak Island and the Sandman reefs (1,186 in 1962), and the Shumagin Islands on the south side (1,352 in 1962) (Kenyon 1969).

As summarized in Table 1 and described below, surveys of sea otters along the Alaska Peninsula have covered four areas, with the same method used in a given area. For the north Alaska Peninsula offshore area (Figure 4B of the Proposed Rule), shoreline counts are not an appropriate survey method due to the broad, shallow shelf in Bristol Bay, a condition under which sea otters occur further from the shore than elsewhere. Consequently, the north Alaska Peninsula offshore area has been surveyed from aircraft using north-south transects extending from the shoreline out over the shelf. Using this method, Schneider (1976) calculated an unadjusted population estimate of 11,681 sea otters on the north side of the Alaska Peninsula in 1976, which he believed to have been within the carrying capacity for that area. Brueggeman *et al.* (1988) conducted replicate surveys of the same area during three time periods in 1986. We re-analyzed the original 1986 survey data to address computational errors in the survey report; our re-calculated estimates range from 6,474–9,215 sea otters for this area for the three surveys in 1986 (Burn and Doroff 2005). In May 2000, we replicated the survey design of Brueggeman *et al.* (1988) using identical

survey methods. The 2000 survey estimate of 4,728 sea otters indicates abundance on the north side of the Alaska Peninsula had fallen by 27–49 percent in comparison with the minimum and maximum point estimates of the 1986 survey (Burn and Doroff 2005).

The largest aggregations of sea otters in May 2000 were observed in Port Moller. This concentration of sea otters has been described as a seasonal phenomenon, as surveys conducted later in the summer have not recorded similar numbers of sea otters (B. Murphy, Alaska Department of Fish and Game, in litt. 2002). To test this assumption, we conducted sea otter surveys in the Port Moller, Herendeen Bay, and Nelson Lagoon areas in May and July 2004 (USFWS in litt. 2004). Sea otter abundance was high during both survey periods, so it is not clear to what degree there may be seasonal use of these areas.

Offshore areas on the south side of the Alaska Peninsula (Figure 4B of the Proposed Rule) were surveyed at three different time periods in 1986 (Brueggeman *et al.* 1988). Noting computational errors in the survey report, we re-analyzed the original 1986 survey data, resulting in estimates of 13,900–17,500 sea otters for the three surveys conducted in 1986 (Burn and Doroff 2005). We replicated the survey in April 2001, when our estimate of 1,005 otters for the south Alaska Peninsula offshore area indicated a decline in abundance of at least 93 percent when compared with the minimum and maximum point estimates in this area from the 1986 surveys. Specific areas of high sea otter concentrations in 1986, such as Sandman Reefs, were almost devoid of sea otters when surveyed in 2001 (Burn and Doroff 2005).

Several island groups along the south side of the Alaska Peninsula (Figure 4C of the Proposed Rule; Pavlof and Shumagin Islands, as well as Sanak, Caton, and Deer Islands) are another survey area. In 1962, Kenyon (1969) counted 1,900 otters along these islands. Twenty-four years later, in 1986, Brueggeman *et al.* (1988) counted 2,122 otters in the same survey area. In 1989, DeGange *et al.* (1995) counted 1,589 otters along the shorelines of the islands that had been surveyed in 1962 and 1986, which was approximately 16–28 percent fewer sea otters than were reported in the earlier counts. This decrease was the first indication of a sea otter population decline in the area of the Alaska Peninsula. When we counted sea otters in these island groups in 2001, we recorded only 405 individuals (Burn and Doroff 2005), which is an 81-percent decline from the 1986 count reported by Brueggeman *et al.* (1988). We conducted additional aerial surveys at 13 of these islands in May and July of 2004 using similar methods as in 2001. Sea otter counts at these islands declined a further 33 percent from 268 to 179 in the past 3 years (USFWS in litt. 2004). Similar to recent surveys in the Aleutians, these results indicate that the sea otter population decline in this area has not abated.

The southern shoreline of the Alaska Peninsula from False Pass to Cape Douglas (Figure 4D of the Proposed Rule) is another survey area. In 1989, DeGange *et al.* (1995) counted 2,632 sea otters along this stretch of shoreline. In 2001 we counted 2,651 sea otters (Burn and Doroff 2005), nearly the same as the 1989 count. When we subdivided and compared the results for the eastern and western components of the survey areas, we found that sea otter density along the eastern end of the Peninsula, from Cape Douglas to Castle Cape, increased approximately 4 percent, from 1989 to 2001 (Burn and Doroff 2005). For the western end of the Peninsula from False Pass to Castle Cape, however, there was evidence of a population decline, with sea otter density falling by 35 percent over the same time period. We also counted 42 sea otters along the shoreline of Unimak Island in 2001, but there is no suitable baseline data for comparison. Based on what is known about sea otter movements and the distance between the eastern and western ends of the Peninsula, we believe that it is unlikely that these observations represent a change in distribution. In May 2004 we conducted an aerial survey of Sutwick Island and counted only 23 sea otters along the shoreline. In May 2001 we counted 73 otters in this area, which is further evidence that the sea otter decline in southwest Alaska has not abated (USFWS in litt).

The results from the different survey areas along the Alaska Peninsula indicate various rates of change. Overall, the combined counts for the Peninsula have declined by 65–72 percent since the mid-1980s, based on the data presented in Table 1.

We have calculated an estimate of the sea otter population for the entire Alaska Peninsula using the most recent survey data, including an adjustment for otters not detected by observers. In making this calculation, we first revised the combined total number of sea otters observed during the most recent surveys (8,789), to account for potential double-counting in an area of overlap between two of the study areas along the Peninsula. We then multiplied this revised number of otters (8,328) by the correction factor of 2.38 provided by Evans *et al.* (1997) for the type of aircraft used, to account for otters not detected by observers. The result is an adjusted estimate of 19,821 sea otters along the Alaska Peninsula as of 2001.

Kodiak Archipelago

One of the remnant sea otter colonies in southwest Alaska is thought to have occurred at the northern end of the Kodiak archipelago (Figure 4D of the Proposed Rule), near Shuyak Island. In 1959, Kenyon (1969) counted 395 sea otters in the Shuyak Island area. Over the next 30 years, the sea otter population in the Kodiak archipelago grew in numbers, and its range expanded southward around Afognak and Kodiak Islands (Schneider 1976, Simon-Jackson *et al.* 1984, Simon-Jackson *et al.* 1985). DeGange *et al.* (1995) surveyed the Kodiak archipelago in 1989 and calculated an adjusted population estimate of 13,526 sea otters. In July and August 1994, we conducted an aerial survey using the methods of Bodkin and Udevitz (1999) and calculated an adjusted population estimate of 9,817, approximately 27 percent lower than the estimate for 1989 (Doroff *et al.* in prep.). In June 2001, we surveyed the Kodiak archipelago using the same observer, pilot, and methods as in 1994. The result was an adjusted population estimate of 5,893 sea otters for the archipelago in 2001 (Doroff *et al.* prep.), which is a 40-percent decline in comparison to the 1994 estimate and a 56-percent decline from the 1989 estimate.

In summer 2004 we surveyed the Kodiak archipelago using the same methods as in 1994 and 2001 and estimated the current population size at 6,284 sea otters. While this represents a slight increase since 2001, the estimates are not significantly different from one another ($Z = 0.24$, $p = 0.81$; Doroff *et al.* in prep.). Although these results suggest that, in contrast to the Aleutian archipelago and Alaska Peninsula study areas, the sea otter population in the Kodiak archipelago likely has not declined in the past several years; the current estimate remains 36 percent lower than in 1994, and 54 percent lower than in 1989.

Kamishak Bay

Kamishak Bay is located on the west side of lower Cook Inlet, north of Cape Douglas (Figure 4D of the Proposed Rule). In the summer of 2002, the U.S. Geological Survey (USGS), Biological Resources Discipline conducted an aerial survey of lower Cook Inlet and the

Kenai Fiords area. This survey was designed, in part, to estimate sea otter abundance in Kamishak Bay. The method used was identical to that of the 2001 aerial survey of the Kodiak archipelago, which includes a correction factor for sea otters not detected by the observer (Bodkin and Udevitz 1999). Sea otters were relatively abundant within Kamishak Bay during the 2002 survey, with numerous large rafts of sea otters observed. The adjusted estimate for the current sea otter population size in Kamishak Bay is 6,918 (USGS in litt. 2002). As no previous estimates for Kamishak Bay exist, the population trend for this area is unknown.

Overall Comparison

The history of sea otters in southwest Alaska is one of commercial exploitation to near extinction (1742 to 1911), protection under the International Fur Seal Treaty (1911), and population recovery (post-1911). By the mid-to late-1980s, sea otters in southwest Alaska had grown in numbers and recolonized much of their former range. The surveys conducted in various areas, described above, provide information about the geographic extent and magnitude of declines within those areas. Due to differences in the years of the various baseline surveys for different areas (1962, 1965, 1976, 1989), it is difficult to combine those surveys as a basis for estimating the overall size of the sea otter population throughout southwest Alaska at the onset of the decline. Therefore, as part of our effort to evaluate information reflecting the overall magnitude of the decline, we also have considered information provided by Calkins and Schneider (1985), who summarized sea otter population estimates worldwide based on data collected through 1976. Much of the information they present is from unpublished Alaska Department of Fish and Game survey results, and we include this information as it is the only comprehensive reference for estimating the overall magnitude of the sea otter decline in southwest Alaska.

Calkins and Schneider (1985) provided estimates from survey data collected as of 1976, adjusted for animals not detected by observers, for the Aleutian Islands (55,100–73,700), north Alaska Peninsula (11,700–17,200), south Alaska Peninsula (22,000–30,000) and Kodiak archipelago (4,000–6,000). They did not report a specific estimate for the Kamishak Bay area, which presumably was included within their estimate for the Kenai Peninsula and Cook Inlet area (2,500–3,500 otters), and we are assuming that half of the sea otters estimated for Kenai Peninsula and Cook Inlet occurred in Kamishak Bay (1,250–1,750). Combining these estimates, the sea otter population in the area encompassing the range of the southwest Alaska population was believed to have numbered between 94,050–128,650 animals as of 1976. As sea otters had not yet fully recolonized southwest Alaska or reached equilibrium density in all areas in 1976, additional population growth was expected. Therefore, the overall population prior to the onset of the decline in the 1980's probably was higher than the population estimate for 1976.

Our current estimate of the size of the southwest Alaska population of the northern sea otter, which includes the 2004 estimate for the Kodiak archipelago, is 41,865 animals (Table 2). This estimate is based on range-wide survey information collected from 2000–2004, and is adjusted for animals not detected. As recent site-specific surveys indicate the decline has not abated in the Aleutian archipelago and south Alaska Peninsula study areas, it is possible that the current population size in 2004 is actually lower.

TABLE 2.—RECENT POPULATION ESTIMATES FOR THE SEA OTTER IN SOUTHWEST ALASKA

[Alaska Peninsula and Unimak Island counts are adjusted using a correction factor of 2.38 for twin-engine aircraft surveys of sea otters according to Evans *et al.* (1997). Aleutian Islands, Kodiak Archipelago, and Kamishak Bay surveys are adjusted using survey-specific correction factors.]

Survey area	Year	Unadjusted count or estimate	Adjusted count or estimate	Reference
Aleutian Islands	2000	2,442	8,742	Doroff *et al.* (2003).
North Alaska Peninsula Offshore Areas	2000	4,728	11,253	Burn and Doroff (2005).
South Alaska Peninsula Offshore Areas	2001	1,005	2,392	Burn and Doroff (2005).
South Alaska Peninsula Shoreline	2001	[a] 2,190	5,212	Burn and Doroff (2005).
South Alaska Peninsula Islands	2001	405	964	Burn and Doroff (2005).
Unimak Island	2001	42	100	Burn and Doroff (2005).
Kodiak Archipelago	2004	.....	6,284	Doroff *et al.* (in prep.).
Kamishak Bay	2002	.....	6,918	USGS Unpublished data.
Total	.....	.....	41,865	

[a] Does not include a count of 461 sea otters from False Pass to Seal Cape, which was also surveyed as part of the south Alaska Peninsula Offshore Areas survey.

The 1976 population estimate based on the work of Calkins and Schneider (1985) is not directly comparable to our current estimate because of somewhat different survey approaches and estimation techniques. Nevertheless, the results provide a basis for at least a rough comparison of the overall extent of the decline of sea otters in southwest Alaska. When compared to the estimate of 94,050 to 128,650 from Calkins and Schneider (1985), the current estimate of approximately 41,865 sea otters is 52,185 to 86,785 lower, which is 55 to 67 percent less than the estimate for 1976.

Translocated Sea Otter Populations

As part of efforts to re-establish sea otters in portions of their historical range, otters from Amchitka Island (part of the Aleutian Islands) and Prince William Sound were translocated to other areas outside the range of what we now recognize as the southwest Alaska distinct population segment, but within the range of *E. l. kenyoni* (Jameson *et al.* 1982). These translocation efforts met with varying degrees of success. From 1965 to 1969, 412 otters (89 percent from Amchitka Island, and 11 percent from Prince William Sound, which is in southcentral Alaska, outside the range of the southwest Alaska DPS) were translocated to six sites in southeast Alaska (Jameson *et al.* 1982). In the first 20 years following translocation, these populations grew in numbers and expanded their range (Pitcher 1989).

The most recent survey of southeast Alaska, conducted in the summers of 2002 and 2003, estimated the sea otter population at just over 9,000 individuals (USGS in litt. 2003). Comparing this survey with skiff survey data from the late 1980s, it appears that further range expansion and population growth in southeast Alaska has not occurred in the past decade.

Sea otters from Alaska also were translocated to Washington, Oregon, and British Columbia, Canada, between 1969 and 1972 (Jameson *et al.* 1982). Sea otters translocated to British Columbia were captured at Amchitka Island and Prince William Sound; the otters translocated to Washington and Oregon were captured at Amchitka Island only. The British Columbia and Washington populations have grown in number and expanded their range, while the Oregon population disappeared. The most recent estimates of population size are 743 in Washington and 2,000 in British Columbia (Jameson and Jefferies 2004; Watson *et al.* 1997). Although these populations, as well as sea otters in southeast Alaska, are at least in part descended from sea otters at Amchitka Island, they are geographically isolated from the southwest Alaska population and their parent population by hundreds of kilometers (see Distinct Vertebrate Population Segment) and are not included in this proposed listing action.

The total number of otters removed from Amchitka as part of this translocation program was just over 600 animals (Jameson *et al.* 1982). Estes (1990) estimated that the sea otter population at Amchitka Island remained essentially stable at more than 5,000 otters between 1972 and 1986, and consequently there is no evidence that removals for the translocation program were a contributing factor in the current population decline.

Previous Federal Action

Based on the results of the April 2000 sea otter survey in the Aleutian Islands, we added sea otters in the Aleutians to our list of candidate species on August 22, 2000 (65 FR 67343). The Center for Biological Diversity (Center) filed a petition to list the Aleutian population of the northern sea otter as endangered on October 26, 2000. Although the petition referred to it as the ''Aleutian population,'' the verbal description of the geographic extent corresponded to the southwest Alaska DPS. On November 14, 2000, we received a Notice of Intent to sue from the Center challenging our decision not to propose to list sea otters in the Aleutians under the Act. We responded to the Center that funds were not available during Fiscal Year 2001 to prepare a proposed listing rule.

On August 21, 2001, we received a petition from the Center to designate the Alaska stock of sea otters (State-wide) as depleted under the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 *et seq.*). Under the MMPA, a marine mammal species or population stock is considered to be depleted when it is below its Optimum Sustainable Population (OSP) level. The OSP is defined in the MMPA as: ''the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.'' In accordance with the MMPA, we published a notice in the **Federal Register** on September 6, 2001, announcing the receipt of this petition (66 FR 4661). On November 2, 2001, we published our finding on the petition in the **Federal Register** (66 FR 55693). While we acknowledged the evidence of a population decline in the southwest Alaska stock, the best available information at that time suggested that the southeast Alaska stock was increasing, and the southcentral Alaska stock was either stable or increasing. We found that the petitioned action was not warranted under the MMPA for the following reasons: (1) The best estimate of the population size for the entire State of Alaska was greater than the value presented in the petition; (2) based on the best estimate of population size, the Alaska stock of sea otters was above OSP level; and (3) recent information had identified the existence of three stocks of sea otters in Alaska: southwest, southcentral, and southeast (Gorbics and Bodkin 2001). The boundaries of these three stocks are depicted in Figure 5 of the Proposed Rule.

We recently revised the MMPA stock assessment reports for sea otters in Alaska. Draft stock assessment reports identifying the three stocks of sea otters were made available for public review and comment from March 28 to June 26, 2002 (67 FR 14959) (March 28, 2002). The sea otter stock assessment reports were finalized on August 20, 2002, and notice of their availability was published on October 9, 2002 (67 FR 62979).

On January 11, 2002, we received a petition from the Sea Otter Defense Initiative (SODI), a project of the Earth Island Institute, in Deer Isle, Maine. The petition requested that we emergency and permanently list the southwest Alaska stock of sea otters as endangered. We responded to SODI on February 1, 2002, informing them that, based on the best available population estimate that we prepared in response to the Center's petition to list the Alaska stock of sea otters as depleted under the MMPA, an emergency listing of the southwest Alaska stock was not warranted. We also notified SODI that we had begun the preparation of this proposed rule during Fiscal Year 2002.

Based on additional sea otter surveys along the Alaska Peninsula and Kodiak archipelago, and the identification of multiple stocks of sea otters in Alaska, we expanded the candidate species designation on June 3, 2002, to include the geographic range of the southwest Alaska stock of the northern sea otter. Notification of this change was included in our June 13, 2002, notice of review of candidate species (67 FR 40657).

The Center filed a second Notice of Intent to sue on May 5, 2003, and on December 4, 2003, the Center and the Turtle Island Restoration Network (TIRN) filed a lawsuit against Assistant Secretary for Fish and Wildlife and Parks Craig Manson, Secretary of the Interior Gale Norton, and the U.S. Fish and Wildlife Service for failure to comply with non-discretionary provisions of the Act. Specifically, the plaintiffs challenged the defendants' determination that processing the Center's October 26, 2000, petition was ''warranted but precluded'' by higher listing actions. Plaintiffs also challenged the defendants' failure to issue 90-day and 12-month findings on the petition, and for failure to implement an effective system to monitor the status of the southwest Alaska DPS. Finally, the plaintiffs challenged the defendants' adoption and implementation of their 1996 Petition Management Guidance policy for processing petitions that request the listing of candidate species.

On February 11, 2004, we published the proposed rule to list the southwest Alaska DPS of the northern sea otter as threatened (69 FR 6600). On May 13, 2004, the December 4, 2003, lawsuit by the Center and TIRN was voluntarily dismissed.

Summary of Comments and Recommendations

In the February 11, 2004, proposed rule, we requested all interested parties to submit factual reports, information, and comments that might contribute to development of a final determination. A 120-day public comment period closed on June 10, 2004. We contacted appropriate Federal agencies, State agencies, county and city governments, Alaska Native Tribes and tribal organizations, scientific organizations,

affected landowners and other interested parties to request comments. The Secretary personally announced this action and issued a press release on February 5, 2004, notifying the public of the proposed listing and comment period. Newspaper articles appeared in the Anchorage Daily News and Los Angeles Times on February 6, 2004, that also notified the public about the proposed listing and comment period. We requested 5 peer reviewers to comment on the proposed rule in compliance with our policy, published in the **Federal Register** on July 1, 1994 (59 FR 34270). We held public meetings at 6 locations in Alaska: Cold Bay (May 3, 2004), King Cove (May 4, 2004), Anchorage (May 13, 2004), Kodiak (May 19, 2004), Sand Point (May 24, 2004), and Unalaska (May 27, 2004). These meetings were attended by approximately 50 people in total.

We received requests for public hearings in Kodiak, Unalaska, Sand Point, and Dillingham, Alaska, and held one public hearing in Kodiak, Alaska on May 19, 2004, immediately following a public meeting. We published an announcement of the public hearing in the **Federal Register** on May 5, 2004 (69 FR 25055), the Anchorage Daily News on May 9, 2004, and the Kodiak Daily Mirror on May 14, 17, 18, and 19, 2004. The public hearing was attended by 18 individuals in person, and 5 more by teleconference.

In accordance with Secretarial Order 3225 regarding the Act and subsistence uses in Alaska, we engaged in government-to-government consultation with Alaska Native tribes. Since 1997, we have signed cooperative agreements annually with The Alaska Sea Otter and Steller Sea Lion Commission (TASSC) to fund their activities. As a tribally-authorized Alaska Native Organization, TASSC represents the interests of sea otter hunters throughout the State of Alaska. We attended TASSC board meetings during the preparation of the proposed rule and public comment period, regularly briefing their board of commissioners and staff on relevant issues. In addition to working closely with TASSC, we sent copies of the proposed rule to 52 Alaska Native Tribal Councils specifically requesting their comments on this listing action.

During the public comment period, we received a total of 6,860 comments by letter (27), facsimile (4), e-mail (6,819), and public hearing testimony (10). We received comments from Alaska Native Tribes and tribal organizations, Federal commissions, State agencies, local governments, commercial fishing organizations, conservation organizations, and private citizens. Seventeen commenters opposed the listing, and 6,831 supported it. The remaining 12 commenters expressed neither opposition or support for the listing, but voiced concerns about the possible effects of listing. The vast majority of comments were the result of an organized e-mail campaign that produced 6,787 identical comments in support of the listing. Most of the comments that were opposed to the listing were from residents of southwest Alaska. Several comments were received after the public comment period closed.

We revised the final rule to reflect comments and information we received during the comment period. We address substantive comments concerning the rule below. Comments of a similar nature are grouped together (referred to as ''Issues'' for the purpose of this summary).

Issue 1: Sea Otter Population Decline

Comment 1: One commenter stated that the current population level of sea otters in southwest Alaska does not warrant listing under the Act. Two other commenters noted that following protection from commercial hunting in 1911, the sea otter population recovered from as low as 1,000–2,000 individuals.

Our Response: Our determination that the southwest Alaska DPS of the northern sea otter warrants listing as threatened is based on the observed declining population trend, rather than the absolute number of sea otters remaining. The definition of a threatened species is one that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Recent surveys conducted in 2003 and 2004 indicate that the population decline has not abated in several areas within southwest Alaska. If the decline continues at the observed rates, the population may become extirpated throughout portions of its range within the next decade (Estes *et al.* 2005), at which point the DPS may be in danger of extinction. Therefore, the southwest Alaska DPS of the northern sea otter meets the definition of threatened, as it is likely to become endangered in the foreseeable future.

Although sea otters rebounded from an estimated 1,000–2,000 individuals after the cessation of commercial hunting, those remaining otters were distributed in 13 isolated colonies. The current distribution of sea otters is different in that they occur throughout their former range, but at extremely low densities in most areas. Otters are now absent, or nearly so at some of the smaller islands in the Aleutian archipelago to the point where it is possible that Allee effects (reduced productivity at low population densities) may occur (Estes *et al.* 2005).

The recovery of sea otters following the cessation of commercial hunting demonstrated that the species has the potential for recovery once the cause of its decline has been removed. As the cause of the current decline is not known with certainty, the future recovery of the southwest Alaska DPS of the northern sea otter is likewise uncertain.

Comment 2: Several commenters state that sea otters have not really declined, they have simply moved to other areas.

Our Response: Aerial surveys that documented the geographic extent and magnitude of the sea otter decline covered the vast majority of available sea otter habitat in southwest Alaska, so it is highly unlikely that there has been a redistribution of otters within the region. As sea otters typically inhabit relatively small home ranges, it is also unlikely that there has been such a large-scale emigration of animals outside southwest Alaska. The magnitude of the decline is estimated to be more than 50,000 otters, so it is highly unlikely that redistribution on this scale would go unnoticed. Survey data in adjacent areas, such as the Commander Islands, Russia to the west, and Kachemak Bay, Kenai Fiords, and Prince William Sound to the east, do not show population increases that would account for animal movements. See Population Trends of Sea Otters in Southwest Alaska.

Comment 3: Several commenters were critical of the survey data used to estimate the sea otter population size and trend. Specific criticisms included the age of the survey data used, the length of time between surveys, differences in timing of surveys, differences in methods, and the variability of the estimates.

Our Response: We used the best scientific information available to estimate sea otter population size and trend. Although some survey data is now 3–4 years old, more recent surveys in 2003 and 2004 indicate that the sea otter population decline has not abated. Although the length of time between surveys makes it difficult to estimate the onset of the population decline, it does not affect our ability to estimate the magnitude of the decline. Differences in timing of surveys is likely not a factor because study areas were large enough that movement of individual otters would have minimal effect on the overall population estimate. To the greatest extent possible, aerial surveys

of sea otters in southwest Alaska have been conducted using similar methods to earlier surveys to allow for direct comparison of results. While some of the sea otter population estimates (such as the pre-decline surveys along the Alaska Peninsula) have considerable variability, the magnitude of the decline in these areas is so great that the likelihood that the population has not declined is exceedingly small.

Comment 4: Several commenters questioned whether sea otters have declined in some areas within southwest Alaska. Three commenters stated that there has been no decline of sea otters in the Kodiak archipelago, and five commenters cited survey data that suggests the population at Unalaska Island has been stable for the past 4 years.

Our Response: The results of our summer 2004 aerial survey of the Kodiak archipelago indicate that the sea otters in this area may not have continued to decline since 2001; however, the two estimates are not significantly different statistically. The current estimate remains 36 percent lower than in 1994, and 54 percent lower than in 1989 (Doroff *et al.* in prep.).

Doroff *et al.* (2003) estimated that the onset of the decline in the Aleutians occurred in the late 1980s or early 1990s. In 1992, observers recorded 554 sea otters along the shoreline of Unalaska island. In 2000, only 374 otters were observed, which is a decline of 32 percent over the intervening 8-year period. By the time that skiff survey data from Unalaska were collected beginning in 1999, the majority of the decline had already occurred. It is not possible to determine sea otter population trends from the Unalaska skiff survey data, as it has not been standardized by the amount of survey effort to allow for a valid comparison over time.

Comment 5: Several commenters stated that the sea otters have exceeded the carrying capacity of the environment, and that decline is part of a natural cycle. Some commenters stated that archaeological data shows that changes in sea otter abundance have occurred over time.

Our Response: As sea otters recolonized their former range during the 20th century, the typically observed pattern was for initial rapid population growth, followed by a period of decline until the population reached equilibrium density. The driving factor in the subsequent decline was prey scarcity, which led to either starvation and/or emigration of otters. If sea otters had in fact exceeded the carrying capacity of the environment, we would expect to see fewer prey and more starving sea otters, neither of which have been observed. Contrary to this expectation, the biomass of sea urchins, the preferred prey species of sea otters in the Aleutians, is significantly greater in areas where otters have declined, and sea otter carcasses are relatively scarce (Estes *et al.* 1998).

We are aware of some recent archaeological information from a small number of sites that indicates the presence of sea otter remains in midden sites has fluctuated over long time scales; however, several interpretations are possible from these data. For example, it is not known if the abundance of items in these sites is a function of their abundance in the environment or hunter selectivity. It is also not clear if cultural uses of sea otters may have varied over time, resulting in changes in the deposition of bones present in middens. For example, if otters were harvested for their pelts only and the remainder of the carcass were not retrieved, it is unlikely that their bones would be represented in midden sites.

Comment 6: One commenter stated that the use of counts in some areas and estimates in other areas was confusing.

Our Response: We revised the rule to clarify the difference between the counts and estimates in an earlier section (see Population Trends of Sea Otters in Southwest Alaska). While there are differences between the two types of surveys, in all cases we compare counts with counts and estimates with estimates to determine sea otter population trends.

Comment 7: One commenter stated that there are no reliable estimates of pre-decline abundance of sea otters in southwest Alaska.

Our Response: We acknowledge that the data record for sea otters in southwest Alaska is sparse, and that with the exception of Calkins and Schneider (1985), there are no comprehensive population estimates for the pre-decline population. Burn *et al.* (2003) used computer models to estimate the carrying capacity and pre-decline abundance of sea otters in the Aleutian islands, and their result was comparable to that of Calkins and Schneider (1985). Regardless of the lack of a comprehensive pre-decline estimate, comparisons between baseline (1986–1992) and recent (2000–2001) surveys clearly indicate that the sea otter population in southwest Alaska has undergone a substantial decline. Furthermore, aerial and skiff-based surveys conducted in 2003 and 2004 indicate that the decline has not abated throughout much of the region.

Comment 8: One commenter stated that there appears to be different rates of decline between the different study areas within southwest Alaska.

Our Response: This observation is correct. In addition to differences in the overall magnitude of the decline between study areas, there are also differences in the estimated annual rates of decline between regions as well as time periods. For example, Doroff *et al.* (2003) estimated that sea otters declined at an annual rate of 17.5 percent per year during the 1990s. During the same time period, sea otters in the Kodiak archipelago declined at an estimated rate of 6–7 percent per year (Doroff *et al.* in prep.). More recently, otters in the western and central Aleutians have declined by an estimated 29 percent per year between 2000 and 2003 (Estes *et al.* 2005). As the cause of the decline is not known with certainty, it is unclear why there are differences in the estimated rates of decline. That the rates are different does not alter the fact that the sea otter population has declined significantly throughout much of southwest Alaska.

Issue 2: DPS Justification

Comment 9: Two commenters stated that the sea otter population in southwest Alaska does not meet the test of discreteness because it is not genetically distinct from translocated populations. One commenter also noted that studies indicate there is further genetic differentiation of sea otters within southwest Alaska. This commenter also stated that there is no long-term genetic separation in evolutionary time, and that there is nothing genetically special about sea otters in southwest Alaska. Lastly, this commenter stated that the proposed rule did not consider all available genetics information.

Our Response: Genetic distinctness may be important in recognizing some DPS's, but this kind of evidence is not specifically required in order for a DPS to be recognized. Genetic information can play two different roles in the evaluation of whether a population should be recognized as a distinct vertebrate population segment for the purposes of listing under the Act. First, quantitative genetic information may, but is not required to, provide evidence that the population is markedly separated from other populations and thus meets the DPS policy's criterion of being discrete. The DPS policy's standard for discreteness is meant to allow an entity given DPS status under the Act to be adequately defined and

described. The standard adopted is believed to allow entities recognized under the Act to be identified without requiring an unreasonably rigid test for distinctness. At the same time, the standard does not require absolute separation of a DPS from other members of its species, because this can rarely be demonstrated in nature for any population of organisms. Second, genetic characteristics that differ markedly from other populations may be one consideration in evaluating the DPS's biological and ecological significance to the taxon in which it belongs.

We considered all available genetic information in our discreteness evaluation. Some of these studies were specifically conducted to look at population structuring, while others were designed to look at the amount of genetic variability of both remnant and translocated sea otter populations. All existing sea otter populations have experienced at least one genetic bottleneck caused by the commercial fur harvests from 1741 to 1911. Translocated populations experienced a second bottleneck, as it is likely that only an unknown portion of the available genetic diversity was sampled in the process of moving sea otters into other areas (Larson *et al.* 2002). Furthermore, we can consider an entity eligible for listing if the entity meets the third factor of our DPS policy: evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside of its historic range.

Rather than rely on genetic information alone to determine if sea otters in southwest Alaska are markedly separated from other populations, we gave considerable weight to the work of Gorbics and Bodkin (2001), who followed the phylogeographic approach of Dizon *et al.* (1992) to identify stock structure. We believe that this approach, which considers multiple lines of evidence including distribution, population response, morphology, and genetics, provides a more robust assessment of separation than any single technique alone.

Comment 10: One commenter stated that morphological differences between sea otters may reflect differences in environmental conditions, rather than genetic differences.

Our Response: We agree with this observation, which is one reason we did not base our determination of discreteness for the DPS on morphological information alone. As outlined in our response to comment 9, we relied upon a method that considered multiple types of information including morphology, genetics, and geographic distribution (Dizon *et al.* 1992).

Comment 11: One commenter and one peer reviewer questioned whether Cook Inlet constitutes a barrier to sea otter movements.

Our Response: As the historical distribution of sea otters prior to the onset of commercial fur harvests in 1741 included ice-free waters of the Pacific rim from northern Japan to Baja, Mexico, it is clear that expanses of deep water such as Cook Inlet do not constitute an impenetrable barrier to animal movements. Available survey information suggests that this may not be a common occurrence, however. In accordance with our DPS policy, absolute reproductive isolation is not a prerequisite to recognition of a DPS. This would be an impracticably stringent standard, and one that would not be satisfied even by some recognized species that are known to sustain a low frequency of interbreeding with related species.

Comment 12: One commenter stated that the Service subdivided the Alaska population into three population stocks under the MMPA in order to invoke the Act and list sea otters in southwest Alaska as a DPS.

Our Response: The Service initially proposed the identification of three stocks of sea otters in Alaska in March 1998 (63 FR 10936). The preparation of three draft stock assessment reports occurred prior to both the initial publication of information about the sea otter decline in the Aleutians (Estes *et al.* 1998) and completion of aerial surveys that determined the geographic extent and magnitude of the decline. Our proposal of three sea otter stocks in 1998 was challenged by the Alaska Sea Otter Commission (ASOC, name now changed to TASSC), an Alaska Native Organization, in accordance with Section 117(b)(2) of the MMPA. The Service and ASOC entered into a memorandum of agreement to resolve this disagreement. After additional genetic analysis addressing the issue of stock identification was completed, in March 2002 we once again proposed the identification of three stocks of sea otters in Alaska (67 FR 14959). ASOC did not challenge the proposal, and we finalized the stock assessment reports in August 2002 (67 FR 62979). The identification of three stocks of sea otters in Alaska was based on the best available scientific information, that had been published in peer-reviewed scientific journals and was reviewed and approved by the Alaska Regional Scientific Review Group that advises the Service on our stock assessment reports.

Comment 13: One commenter stated that the sea otter population in southwest Alaska does not meet the test of significance because other genetic information suggests other population groupings are possible.

Our Response: This comment cited studies that indicate there is a degree of genetic similarity between sea otters in the Commander Islands, Russia, and California with otters in southwest Alaska. We relied on the most recent and generally scientifically accepted taxonomic classification of the sea otter by Wilson *et al.* (1991) to determine the significance of the southwest Alaska DPS to both the species (*Enhydra lutris*) and the subspecies (*Enhydra lutris kenyoni*). The loss of this population would result in a significant gap of over 2,500 km (1,552 miles) in the range of both the species and subspecies.

Criteria for judging the significance of a DPS includes, but is not limited to, the four examples listed in our DPS policy (see Distinct Vertebrate Population Segment). Of the 11 surviving remnant populations present in 1911, 6 occurred within the range of the southwest Alaska DPS. Although otters were translocated from Amchitka Island, they were most likely descended from only one remnant colony. Therefore we believe the extinction of this DPS would constitute a loss of a significant portion of the genetic diversity of the taxon.

Issue 3: Causes of the Decline

Comment 14: Several commenters stated that the cause of the decline is unknown. Other commenters stated that the decline was not caused by human activities, and one commenter stated that killer whales are not responsible for the decline.

Our Response: We agree that the cause of the decline is not known with certainty. Although there is still considerable disagreement within the scientific community, the weight of evidence at this time suggests that the cause of the decline may be increased predation by killer whales. It is not a requirement for listing under the Act that the threat to a species be caused by human activities, nor is it a requirement that the cause be known at the time of listing.

Comment 15: One commenter stated that none of the five factors under the Act are applicable in this instance.

Our Response: The third factor in the five factor analysis identified in section 4(a)(1) of the Act is Disease or Predation. As stated in our response to comment 14, the best available scientific information suggests that the cause of

the decline may be predation by killer whales, so this factor is applicable to the sea otter decline.

The fourth factor in the five factor analysis is the Inadequacy of Existing Regulatory Mechanisms. The MMPA of 1972 is the primary existing statute that protects sea otters in U.S. waters, yet the southwest Alaska DPS of sea otters has declined despite these existing protections. Additional provisions that would regulate subsistence harvest and minimize incidental take in fisheries are not likely to help conserve the DPS, as the impact of these factors is believed to be negligible.

The remaining three factors in the five factor analysis (Habitat, Overutilization, and Other Natural or Manmade factors), while likely not causes of the current decline, could become threats to the DPS. If the current population trend continues, sea otters may disappear from parts of the range of the DPS, and the remaining areas of high concentration may be more vulnerable to catastrophic events such as disease epidemics and oil spills.

Comment 16: Several commenters expressed concern over the impacts of a variety of human activities, including commercial fisheries, fish waste from processors, oil spills, and contaminants.

Our Response: As stated in our response to comment 15, we do not believe that these activities have played a significant role in the sea otter decline in southwest Alaska, and do not pose an immediate threat to the DPS. We anticipate that these factors will be more fully considered during the development of a recovery plan.

Issue 4: Threatened vs. Endangered Status

Comment 17: There were 6,814 commenters who stated that the southwest Alaska DPS of the northern sea otter should be listed as endangered rather than threatened. Although these commenters did not express a rationale for listing at the endangered level, one other commenter stated that the magnitude of the decline in the Aleutian islands, which constitute a ''significant portion of the range,'' warrants listing the DPS as endangered.

Our Response: The southwest Alaska DPS contains areas with diverse population trends, including: (1) The Aleutians and portions of the Alaska Peninsula that have declined precipitously and are continuing to decline; (2) the Kodiak archipelago, which has declined overall but not during the past 3 years; and (3) Port Moller and Kamishak Bay, which do not appear to have declined, and continue to support high concentrations of sea otters that have the potential to recolonize the rest of the DPS. The population trend in the Aleutian archipelago, which constitutes approximately 30 percent of the available habitat within the range of the DPS, is a cause for concern: The continuation of the current trends could lead to the loss of all of the otters in that area in the foreseeable future. Although that loss would not result in the extinction of the DPS, it might put the DPS in danger of extinction at that time (see Conclusion of Status Evaluation). Therefore, a designation of threatened status is most appropriate for the southwest Alaska DPS of the northern sea otter.

Issue 5: Subsistence Harvest

Comment 18: Several commenters stated that the subsistence harvest of sea otters by Alaska Natives is contributing to the sea otter decline, and that the removal of 100 otters per year from the population is not prudent. Several other commenters stated that the subsistence harvest is not contributing to the decline.

Our Response: The best available scientific information does not indicate that the subsistence harvest has had a major impact on the southwest Alaska DPS of the northern sea otter. Some of the largest observed sea otter declines have occurred in areas where subsistence harvest is either nonexistent (the Near and Rat islands in the Aleutians) or extremely low (the Shumagin and Pavlof islands). The majority of the subsistence harvest in southwest Alaska occurs in the Kodiak archipelago, where the level of subsistence harvest ranged from 0.4–1.3 percent of the estimated population size from 1989'2001 (Doroff *et al.* in prep.). Given the estimated population growth rate of 10 percent per year estimated for the Kodiak archipelago by Bodkin et al. (1999), we would expect that these harvest levels by themselves would not cause a population decline.

Section 10(e) of the Act provides an exemption that allows Alaska Natives to take endangered or threatened species for subsistence purposes. The Service may only prescribe regulations on subsistence harvest if we determine that such taking materially and negatively affects the endangered or threatened species. Areas within the southwest Alaska DPS with the steepest population declines, such as the Aleutian islands, have virtually no subsistence harvest due to minimal human habitation. The majority of the subsistence harvest occurs in the Kodiak archipelago, where the harvest has been well below the estimated population growth rate. Given the geographic distribution and historic levels of the subsistence harvest relative to the size of the sea otter population, we do not believe the harvest is materially and negatively affecting the DPS at this time. If the sea otter population continues to decline in southwest Alaska, however, it is possible that the harvest of 100 otters per year could materially and negatively impact the remaining population, and regulation of the harvest would be warranted.

Comment 19: One commenter stated that the subsistence harvest should be managed. Conversely, several commenters expressed concern that the rights of Alaska Natives to take sea otters for subsistence should be protected.

Our Response: In order to regulate the subsistence harvest of sea otters by Alaska Natives, the Secretary would have to make a determination that the harvest was materially and negatively impacting the DPS, and promulgate regulations under Section 10(e)(4) of the Act. In addition, once it is listed as threatened under the Act, the southwest Alaska stock of the northern sea otter will automatically be considered ''depleted'' under the MMPA, and the Secretary could prescribe regulations of the subsistence harvest under section 101(b)(3) of the MMPA. In order to do so, the Secretary would be responsible for demonstrating that such regulations are ''supported by substantial evidence on the basis of the record as a whole.'' As stated in the response to Comment 18, we do not believe that the subsistence harvest poses an immediate threat to the southwest Alaska DPS; therefore, regulation of the harvest is not warranted at this time.

Comment 20: Several other commenters expressed concern that listing under the Act may result in the prohibition on export of authentic Native handicrafts made from sea otters.

Our Response: Our regulations at 50 CFR 17.31 of the Act outline prohibited activities, including import or export of listed species from the United States. As we do not believe the current level of subsistence harvest poses a threat to the southwest Alaska DPS, in today's **Federal Register**, we proposed the promulgation of a special rule under Section 4(d) of the Act that would align the provisions of the Act relating to the creation, shipment, and sale of the authentic native handicrafts and clothing by Alaska Natives with what is already allowed under the MMPA. Export for commercial purposes is prohibited under both the MMPA and the Act, and would not be authorized under the proposed special rule.

Issue 6: Impacts of Listing

Comment 21: Several commenters expressed concern that listing under the Act may result in additional regulation of commercial fisheries in southwest Alaska. Other commenters expressed concern about the impacts of listing on harbor and dock projects in the region.

Our Response: The best available scientific information indicates that interactions between commercial fisheries and sea otters, either in the form of competition for prey species or entanglement in gear, do not pose an immediate threat to sea otters in southwest Alaska. Information on fishery interactions is limited, however, and additional observer programs directed at fisheries with the greatest potential for entanglement of sea otters is recommended.

Harbor and dock projects that have a Federal nexus and that may affect listed species require interagency consultation under Section 7 of the Act. Those projects that are likely to adversely affect the species must undergo formal consultation, which may result in minor changes to the project design to minimize the impact to sea otters.

Lastly, while economic impacts are considered when designating critical habitat for a listed species, they do not factor into decisions about listing.

Issue 7: Critical Habitat

Comment 22: Several commenters state that habitat protection is important for the survival of sea otters in southwest Alaska. Other commenters stated that it was unclear how critical habitat will be designated. Yet another commenter stated that critical habitat should not be broadly defined, and that shallow coves and lagoons may be important for sea otters as refugia from predators.

Our Response: Although there is no evidence to suggest that loss of habitat has been a contributing factor in the sea otter decline, we agree that habitat protection may be an important factor in the recovery of the population. However, the extent of critical habitat is not yet determinable. The Service specifically requested input on this subject during the public comment period, and we are currently considering how best to delineate critical habitat for the southwest Alaska DPS of the northern sea otter. Once we are able to determine the geographic extent of critical habitat, it will be designated through a separate rulemaking process that will include an opportunity for public review and comment.

Comment 23: One peer reviewer and one commenter stated that if killer whale predation is the cause of the sea otter decline, then the true critical habitat for this DPS may actually be further offshore in areas not inhabited by the otters themselves. That is, changes in killer whale habitat may be responsible for increased predation of sea otters.

Our Response: We find that designation of critical habitat for the southwest Alaska DPS of the northern sea otter is not determinable at this time because we are unable to identify the physical and biological features essential to the conservation of this DPS. See Critical Habitat. We will consider designating critical habitat for this species later, as allowed under the Act when the Service considers critical habitat ''not determinable'' at the time of listing.

Issue 8: Interagency Consultation and Recovery Planning

Comment 24: One reviewer stated that interagency consultation under Section 7 of the Act will not be an effective means of enhancing the sea otter population in southwest Alaska.

Our Response: The purpose of interagency consultation is to determine if activities with a Federal nexus may affect listed species. Although we cannot identify any human activities that have been directly responsible for the sea otter decline, interagency consultation will help minimize the impacts of future activities on the recovery of the DPS.

Comment 25: One commenter stated that the Service should promptly form a recovery team and begin the process of recovery planning.

Our Response: We agree that recovery planning should commence as soon as possible, and have been working throughout the listing process with potential members of a recovery team. We anticipate forming the recovery team and beginning the process of recovery planning within the first year following publication of this final rule.

Comment 26: Several commenters stated that, as there is no evidence that human activities are directly responsible for the sea otter decline, a recovery plan will not be effective. Similarly, several other commenters stated that there are no human actions that can be taken that would increase the sea otter population in southwest Alaska.

Our Response: We believe that it is premature to conclude that there are no human actions that could be taken to conserve the sea otter population in southwest Alaska. This issue will be more appropriately addressed in the recovery planning process. Although there is no evidence to suggest that human activities are directly responsible for the decline, we also believe that the development of a recovery plan will help identify potential future threats to the southwest Alaska DPS of the northern sea otter. Protection from these threats would become even more important should the population continue to decline. For example, although there is no evidence to suggest that oil spills have caused the sea otter decline, there may be areas of high concentrations of sea otters that could benefit from additional spill response planning and protection measures. The recent spill from the M/V *Selendang Ayu* underscores the unpredictable, and potentially catastrophic, effects of oil spills in southwest Alaska.

Comment 27: One commenter proposed that sea otters could be translocated from southeast to southwest Alaska to help reverse the population decline.

Our Response: As evidenced by the success of translocations to southeast Alaska, Washington State, and British Columbia, Canada, this technique has been effective at re-establishing sea otter populations in areas where they had been extirpated by commercial fur harvests. Specific measures to help conserve the sea otter population in southwest Alaska will be considered during the recovery planning process.

Comment 28: One commenter proposed that management authority for sea otters should be transferred to the Alaska Department of Fish and Game.

Our Response: The MMPA delegates authority for sea otters in U.S. waters to the Secretary of the Interior. Sections 109(b) and 109(f) of the MMPA outline the procedure for transfer of management authority from Federal to State jurisdiction. Any transfer of authority must be initiated by a request from the State, which has not occurred.

Issue 9: Research Needs

Comment 29: Several commenters stated that additional research is needed, including studies into the cause of the decline, the genetic structure of sea otter populations in Alaska, population surveys, tagging and tracking individual otters, and fisheries observer programs, prior to listing the population under the ESA.

Our Response: We fully agree that additional research is needed to help determine the cause of the sea otter decline as well as identify future threats to the southwest Alaska DPS. In April 2002 we convened a workshop in Anchorage, Alaska, to review available information regarding the sea otter

decline in southwest Alaska and develop recommendations for future research. In April 2004, a second similar workshop was hosted by the Alaska SeaLife Center in Seward, Alaska. We have continued to monitor the population at several locations throughout southwest Alaska, and have initiated several studies in conjunction with the U.S. Geological Survey, Alaska SeaLife Center, and TASSC.

The need for additional research does not preclude us from listing the DPS at this time, as the Act requires us to consider the best scientific and commercial data available. Although some of these studies are ongoing now, to postpone this listing action until additional research has been completed would not improve the status of the species, and would not be in keeping with the mandates of the Act.

Issue 10: The Listing Process

Comment 30: Several commenters stated that the Service did not follow standard operating procedures and Secretarial Order 3225 regarding government-to-government consultation with Alaska Native Tribes.

Our Response: As detailed in the introduction to this section of the final rule, the Service actively engaged in consultation with Alaska Native Tribes in southwest Alaska. From the time that we developed plans to conduct the aerial survey of sea otters in the Aleutians in January 2000 until publication of the proposed rule in February 2004, the Service kept TASSC, a tribally authorized organization, fully informed on this issue. The Service attended multiple board meetings each year to present updated information on survey plans and results, as well as progress on the development of the proposed rule. In addition to board meetings, we provided TASSC with monthly updates on these issues. Following publication of the proposed rule, the Service actively solicited comments from 52 Alaska Native Tribes within the range of the southwest Alaska DPS of the northern sea otter. We received comments on the proposed rule from six tribal councils, as well as TASSC and the Aleut Marine Mammal Commission, both tribally-authorized Alaska Native Organizations.

Comment 31: Several commenters stated that the listing action was not initiated by individuals, communities, or organizations within southwest Alaska.

Our Response: It is not a requirement of the Act that listing actions be initiated by residents of the area where the species, subspecies, or DPS occurs. The listing action was initiated by the Service, the Federal agency with management responsibility for sea otters in U.S. waters. Biologists from the Marine Mammals Management Office in Anchorage, Alaska, conducted the aerial surveys of sea otters in 2000 and 2001 that determined the geographic extent and magnitude of the decline. Based on the results of these surveys, the Service designated sea otters in the Aleutians as a candidate species in August 2000. We later expanded candidate species designation to encompass the range of the southwest Alaska DPS in June 2002.

Comment 32: The Service did not follow its own policy on the recognition of distinct vertebrate population segments under the Act (61 FR 4722).

Our Response: As detailed in our responses to earlier comments, the Service followed the DPS policy. We first examined the discreteness of the population segment in relation to the remainder of the species to which it belongs. Next we determined the significance of the population segment to the species to which it belongs, and finally, we evaluated the population segment's conservation status in relation to the Act's standards for listing. In doing so, we found that the sea otters in southwest Alaska meet the definition of a DPS (see Distinct Vertebrate Population Segment).

Comment 33: One commenter stated that the public comment period was inconvenient.

Our Response: The typical public comment period for a proposed rule to list a species under the Act is 60 days. Understanding that many residents of southwest Alaska rely on subsistence and/or commercial fishing, and that these activities are seasonal in nature, we established a 120-day public comment period to give people more time to review and comment on the proposed rule. We also scheduled the public comment period to avoid conflict with summer fishing activities.

Peer Review

In accordance with our July 1, 1994, Interagency Cooperative Policy for Peer Review in Act Activities (59 FR 34270), we solicited review from five experts in the fields of ecology, conservation, genetics, taxonomy, pathology, and management. Three of these experts have direct experience with sea otters in Alaska, and the other two experts are well-known marine mammal biologists. The purpose of such a review is to ensure that listing decisions are based on scientifically sound data, assumptions, and analyses, including input from appropriate experts. Two reviewers sent us letters during the public comment period. Neither reviewer expressed support or opposition to the listing of the southwest Alaska DPS of the northern sea otter as threatened, but both provided corrections on minor factual issues, interpretation of data, and citations. Their information has been incorporated, as appropriate.

Distinct Vertebrate Population Segment

Pursuant to the Act, we must consider for listing any species, subspecies, or, for vertebrates, any distinct population segment (DPS) of these taxa if sufficient information indicates that such action may be warranted. To interpret and implement the DPS provision of the Act and Congressional guidance, the Service and the National Marine Fisheries Service published, on December 21, 1994, a draft Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Act and invited public comments on it (59 FR 65885). After review of comments and further consideration, the Services adopted the interagency policy as issued in draft form, and published it in the **Federal Register** on February 7, 1996 (61 FR 4722). This policy addresses the recognition of DPSs for potential listing actions. The policy allows for more refined application of the Act that better reflects the biological needs of the taxon being considered, and avoids the inclusion of entities that do not require its protective measures.

Under our DPS policy, three elements are considered in a decision regarding the status of a possible DPS as endangered or threatened under the Act. These are applied similarly for additions to the list of endangered and threatened species, reclassification, and removal from the list. They are: (1) Discreteness of the population segment in relation to the remainder of the taxon; (2) the significance of the population segment to the taxon to which it belongs; and (3) the population segment's conservation status in relation to the Act's standards for listing (*i.e.*, is the population segment, when treated as if it were a species, endangered or threatened?). A systematic application of the above elements is appropriate, with discreteness criteria applied first, followed by significance analysis. Discreteness refers to the isolation of a population from other members of the species and we evaluate this based on specific criteria. We determine significance by using the available scientific information to determine the DPS's importance to the taxon to which it belongs. If we determine that a population segment is discrete and significant, we then evaluate it for

endangered or threatened status based on the Act's standards.

Discreteness

Under our Policy Regarding the Recognition of Distinct Vertebrate Population Segments, a population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions:

1. It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation.

2. It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

The focus of our DPS evaluation is the subspecies *E. l. kenyoni,* which occurs from the west end of the Aleutian Islands in Alaska, to the coast of the State of Washington (Wilson *et al.* 1991), as depicted in Figure 1 of the Proposed Rule. To the west of the Aleutian Islands, the sea otters in Russia are recognized as a separate subspecies, *E. l. lutris.* Although sea otters in Russia are also delimited by an international governmental boundary, differences in control of exploitation, management of habitat, conservation status, and regulatory mechanisms are not clear. Russia includes the sea otter as a species that is recovering in its Red Data Book of the Russian Federation (the Red Data Book is a listing of species afforded special recognition or legal protection within Russia). Sea otters in Russia are under jurisdiction of the Ministry of Natural Resources, and are protected from all hunting, although poaching remains a concern. The distance between the Near Islands in the Aleutians to the Commander Islands in Russia is approximately 320 km (200 mi), and the amount of interchange between the two subspecies is believed to be low because of the long distance between island groups over deep water.

In the lower portion of Cook Inlet, a different type of barrier exists in the form of an expanse of deep water. The distance across lower Cook Inlet ranges from 50–90 km (31–56 miles). While sea otters are physically capable of swimming these distances, the water depths of up to 260 m (142 fathoms) and lack of food resources for sea otters in deep water areas makes such movements across this open water area unlikely. The degree to which this barrier limits sea otter movements is not known with certainty.

Surveys conducted for sea otters and other species in the area of lower Cook Inlet confirm the discontinuity of sea otters in this area. In the summer of 1993, Agler *et al.* (1995) conducted boat-based surveys of marine birds and mammals, including sea otters, in lower Cook Inlet. During approximately 1,574 km (978 miles) of survey effort, only one sea otter was observed in the center of the Inlet. More recently, during an aerial survey of sea otters conducted in the summer of 2002, no otters were observed on 324 km (201 miles) of transects flown across the center of Cook Inlet (USGS in litt. 2002).

Information gathered incidental to surveys of other species also indicates that sea otters rarely occur in the offshore areas of lower Cook Inlet, further confirming the discontinuity of sea otters in this area. The NMFS has conducted aerial surveys of beluga whales, *Delphinapterus leucas,* in Cook Inlet since 1993. In addition to beluga whales, observers recorded observations of other marine mammals, including sea otters. During these surveys, which covered a combined total of 11,583 km (7,197 miles) of systematic transects flown across the inlet over several years, no sea otters were observed in the deeper, offshore areas of Cook Inlet (Rugh *et al.* 2000). The NMFS also conducted a marine mammal observer program during the Cook Inlet salmon drift and set gillnet fisheries in 1999 and 2000 (Fadely and Merklein 2001). During this period with several thousand hours of observations, no sea otters were recorded in the offshore areas of Cook Inlet. Given the amount of survey effort that has been expended, the almost complete lack of observations in deeper offshore waters suggests that there may be only limited exchange of sea otters between the eastern and western shores of lower Cook Inlet.

Sea otters in southwest and southcentral Alaska also differ morphologically. Comparison of 10 skull characteristics between 26 adult sea otters from Amchitka Island and 42 sea otters from Prince William Sound showed numerous statistically significant differences, with the Amchitka otters being the larger of the two (Gorbics and Bodkin 2001).

Genetic and morphological differences were part of the basis for identification of sea otter population stocks under the MMPA (USFWS 2002a, USFWS 2002b, USFWS 2002c). The Service and NMFS have adopted the methods of Dizon *et al.* (1992), who outlined four criteria for consideration when identifying marine mammal population stocks: (1) Distribution; (2) population response; (3) morphology; and (4) genetics. Applying these criteria to the best available scientific information, Gorbics and Bodkin (2001) identified three stocks of sea otters in Alaska, the southwest, southcentral, and southeast stocks, with ranges as depicted in Figure 5 of the Proposed Rule.

Within the range of the southwest Alaska stock of the northern sea otter, we recognize that there are differences in the rates and magnitude of population decline since the mid-1980s. Although there is some evidence of additional genetic differentiation within the southwest Alaska stock (Cronin *et al.* 2002), the best available scientific information on taxonomy, genetics, and morphometrics does not support identification of additional sea otter stocks at this time. The stock assessment process outlined in Section 117 of the MMPA includes oversight by Regional Scientific Review Groups (SRGs) composed of non-Federal marine mammal experts. The information upon which the Service based currently recognized stock structure was reviewed by the Alaska Regional SRG, who concurred with the identification of three sea otter stocks in Alaska. As both the identification of marine mammal stocks under the MMPA and the discreteness evaluation of a DPS under the Act are based upon similar criteria, we believe that the appropriate geographic extent for this DPS corresponds to the entire southwest Alaska stock, rather than any smaller area within the stock boundary.

In summary, sea otters from the Aleutian Islands to lower western Cook Inlet are a population that differs from other sea otters in several respects. Sea otters to the west of the Aleutians are geographically separated by an expanse of approximately 320 km of open water and an international boundary, and are recognized as belonging to a different taxon, the subspecies *E. l. lutris.* Within the taxon *E. l. kenyoni,* there are physical barriers to movement across the upper and the lower portions of Cook Inlet, and there are morphological and some genetic differences between sea otters that correspond to the southwest and southcentral Alaska stocks that we identified under the MMPA, with Cook Inlet being the boundary separating these stocks. The geographic separation between the southwest and southeast Alaska stocks is even greater than between the southwest and southcentral Alaska stocks.

Based on our consideration of the best scientific information available, we find

that the southwest Alaska population of the northern sea otter that occurs from the Aleutian Islands to Cook Inlet, corresponding to the southwest Alaska stock as identified by us previously under the MMPA (Figure 5 of the Proposed Rule), is markedly separated from other populations of the same taxon as a consequence of physical factors, and there is genetic and morphological discontinuity that is evidence of this separation. Therefore, the southwest Alaska population of the northern sea otter meets the criterion of discreteness under our Policy Regarding the Recognition of Distinct Vertebrate Population Segments.

Significance

If we determine a population segment is discrete, we next consider available scientific evidence of its significance to the taxon to which it belongs. Our policy states that this consideration may include, but is not limited to, the following:

1. Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon,
2. Evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon,
3. Evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or
4. Evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

The sea otter population that corresponds to the southwest Alaska stock contains over 60 percent of the current geographic range for the subspecies *E. l. kenyoni.* Following protection from commercial exploitation in 1911, sea otters recovered quickly in southwest Alaska, which is a remote part of the State. In the mid-1980s, biologists believed that 94 percent of the subspecies *E. l. kenyoni,* and 84 percent of the world population of E. lutris, existed in southwest Alaska (Calkins and Schneider 1985). Loss of this population segment would result in a significant gap of more than 2,500 km (1,553 mi.), in both the current and historical range of the species, *E. lutris.* Loss of this DPS would result in the loss of a ''major geographic area'' to both the species and subspecies.

The range of the southwest Alaska DPS contains 6 of the 11 remnant sea otter populations that survived the commercial fur harvests. Descendants of only one of these remnant populations (Amchitka) have been translocated beyond the boundaries of the DPS to southeast Alaska, Washington State, and British Columbia, Canada. The genetic diversity of the other 5 remnant populations within the southwest Alaska DPS occurs nowhere else in the world. Loss of this DPS would therefore result in a significant loss of genetic diversity of both the species *E. lutris* and subspecies *E. lustris kenyoni.* The worldwide population of sea otters underwent a genetic bottleneck as a result of commercial fur harvests; additional loss of genetic diversity may reduce overall fitness of both the species and subspecies.

Therefore, we find that the southwest Alaska population segment is significant to the taxon to which it belongs because the loss of this segment would result in a significant gap in the range and the segment contains a significant amount of genetic diversity of the taxon.

Summary of Discreteness and Significance Evaluations

Based on the above consideration of the southwest Alaska population of the northern sea otter's discreteness and its significance to the remainder of the taxon, we find that it is a distinct population segment. The population's discreteness is due to its separation from other populations of the same taxon as a consequence of physical factors, and there are morphological and genetic differences from the remainder of the taxon that are evidence of this separation. The population segment's significance to the remainder of the taxon is due principally to the significant gap that its loss would represent in the range of the taxon. In addition, this population segment represents a considerable portion of the overall genetic variability of the species. We refer to this population segment as the southwest Alaska DPS throughout this final rule.

Conservation Status

Pursuant to the Act, we must consider for listing any species, subspecies, or, for vertebrates, any distinct population segment of these taxa, if there is sufficient information to indicate that such action may be warranted. We have evaluated the conservation status of the southwest Alaska DPS of the northern sea otter in order to make a determination relative to whether it meets the Act's standards for listing the DPS as endangered or threatened. Based on the definitions provided in section 3 of the Act, endangered means the DPS is in danger of extinction throughout all or a significant portion of its range, and threatened means the DPS is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal list. As defined in section 3 of the Act, the term ''species'' includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature. We may determine a species to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act. These factors, and their application to the southwest Alaska DPS of the northern sea otter, are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

Habitat destruction or modification are not known to be major factors in the decline of the southwest Alaska DPS of the northern sea otter. At present, no curtailment of range has occurred, as sea otters still persist throughout the range of the DPS, albeit at markedly reduced densities. As there is no evidence to suggest that the decline has abated, it is possible that additional population losses may occur that would curtail the range of sea otters in southwest Alaska. In particular, sea otters in the western and central Aleutian islands, and Shumagin and Pavlof islands, have declined by an order of magnitude or more, and recent survey data indicates the decline continues in these areas. If this trend continues, the range of sea otters in the southwest Alaska DPS may contract within the foreseeable future.

Human-induced habitat effects occur primarily in the form of removal of some of the prey species used by sea otters as a result of resource use such as commercial fishing, which occurs throughout southwest Alaska. While there are some fisheries for benthic invertebrates in southwest Alaska, there is little competition for prey resources due to the limited overlap between the geographic distribution of sea otters and fishing effort. In addition, the total commercial catch of prey species used by sea otters is relatively small (Funk 2003). In studies of sea otters in the Aleutians, there was no evidence that sea otters are nutritionally stressed in that area, and foraging behavior, measured as percent feeding success, has increased during the 1990's (Estes *et al.* 1998).

Development of harbors and channels by dredging may affect sea otter habitat on a local scale by disturbing the sea floor and affecting benthic invertebrates that sea otters eat. There are approximately 40 communities located within the range of the southwest Alaska DPS. As harbor and dredging projects typically impact an area of 50 hectares or less, we consider the overall impact of these projects on sea otter habitat to be negligible.

Catastrophic oil spills have the potential to adversely modify sea otter habitat, and are discussed in detail under Factor E.

Considering the broad range of the southwest Alaska DPS of the northern sea otter, along with the relatively minimal amount of human habitation and activities in this region, destruction or modification of habitat is not a threat to the continued existence of this DPS in the foreseeable future. If current population trends continue, however, the range of sea otters within the DPS may contract. Areas of higher otter concentrations may be more susceptible to catastrophic events such as oil spills, disease epidemics, and severe weather conditions that could remove a significant portion of the remaining sea otter population.

The most recent example of a catastrophic event occurred on December 8, 2004, when the M/V *Selendang Ayu*, a 225-m (738-ft) freighter lost power and ran aground near Spray Cape on Unalaska Island. The vessel split apart, spilling approximately 40,000 of the estimate 500,000 gallons of intermediate fuel oil 380 (IFO 380). It is uncertain how many otters were in the vicinity at the time of the spill, but as of January 31, 2005, two oiled otter carcassed had been recovered by response workers. The full impacts of this vessel grounding will likely not be known for several years. If a vessel of this size were to run aground in one of the remaining areas of high sea otter abundance, the potential exists for serious impacts to the remaining population.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Following 170 years of commercial exploitation, sea otters were protected in 1911 under the International Fur Seal Treaty, which prohibited further hunting. In 1972, the MMPA established a moratorium on the take of all marine mammals in U.S. waters. Section 101(b) of the MMPA provides an exemption for Alaska Natives to take marine mammals for subsistence purposes. Although the Native exemption was established in 1972, appreciable numbers of sea otters were not harvested until the mid-1980s (Simon-Jackson 1988). In October 1988, we initiated the marine mammal Marking, Tagging, and Reporting Program (MTRP) to monitor the harvest of sea otter, polar bear (*Ursus maritimus*), and Pacific walrus (*Odobenus rosmarus divergens*) in Alaska (50 CFR 18.23(f)).

The majority of the reported sea otter harvest occurs in southeast and southcentral Alaska. Information from the MTRP estimates that the subsistence harvest has removed fewer than 1,400 sea otters from the southwest Alaska DPS since 1989 (average = 85/year; range = 24 to 180/year). The majority of this harvest occurred in the Kodiak archipelago, where levels ranged from 0.4 to 1.3 percent of the estimated population size, which is well below the estimated growth rate of the population (Doroff *et al.* in prep.). Although the average harvest in Kodiak from 2001 to 2003 was 76 otters per year, recent survey results indicate that the sea otter population was relatively stable over that time period. Based on the geographic extent and magnitude of the decline, it appears that the current levels of subsistence harvest do not pose an immediate threat to the southwest Alaska DPS. The impact of the subsistence harvest will continue to be evaluated to insure that the level of harvest does not materially and negatively affect the DPS in the future.

Scientific research on sea otters occurs primarily as aerial and skiff surveys of abundance, and such surveys are conducted infrequently (once every few years) and when they occur, they last for very short durations of time. During the 1990s, 198 otters were captured and released as part of health monitoring and radio telemetry studies at Adak and Amchitka (T. Tinker, University of California at Santa Cruz, *in litt.* 2003). In 2004, sea otters from the southwest Alaska DPS were captured as part of a multi-agency health monitoring study. All of the 60 otters captured in this study were released back into the wild. All future scientific research on the southwest Alaska DPS will require permits under Section 10 of the Act. In addition, review of permit applications will require the Service to consult pursuant to Section 7 of the Act. Based on the magnitude of the current decline and the statutory permit review requirements, we do not believe that the impact of surveys, or the impact of capture/release activities, will be a significant threat in the immediate future.

Translocations of sea otters from southwest Alaska to other areas also has occurred. These translocations took place from 1965 to 1972, and involved removal of a total of just over 600 sea otters from Amchitka Island (Jameson *et al.* 1982). Estes (1990) estimated that the sea otter population at Amchitka Island remained essentially stable at more than 5,000 otters between 1972 and 1986, and consequently there is no evidence that removals for the translocation program have resulted in overutilization.

As there is no commercial use of sea otters in the United States, and recreational, scientific, and educational use have been regulated under the MMPA of 1972, we do not expect these factors will increase in the foreseeable future. Based on a review of historical harvest patterns, we also do not expect the subsistence harvest to increase in the foreseeable future.

C. Disease or Predation

Parasitic infection was identified as a cause of increased mortality of sea otters at Amchitka Island in 1951 (Rausch 1953). These highly pathogenic infestations were apparently the result of sea otters foraging on fish, combined with a weakened body condition brought about by nutritional stress. More recently, sea otters have been impacted by parasitic infections resulting from the consumption of fish waste. Necropsies of carcasses recovered in Orca Inlet, Prince William Sound (which is not within the range of the southwest Alaska DPS), revealed that some otters in these areas had developed parasitic infections and fish bone impactions that contributed to their deaths (Ballachey *et al.* 2002, King *et al.* 2000). Measures such as heating and grinding waste materials, or barging it further offshore, have proven successful at eliminating these impacts. There is no evidence that the fish processing operations are resulting in disease on any substantial scope or scale for the southwest Alaska DPS of the northern sea otter.

The cause of the sea otter decline in the Aleutians has been explored by reviewing available data on sea otter reproduction, survival, distribution, habitat, and environmental contaminants. Estes *et al.* (1998) concluded that the observed sea otter decline was most likely the result of increased adult mortality. While disease, pollution, and starvation may all influence sea otter mortality, no evidence available at this time suggests these factors are significantly contributing to the decline in the Aleutians. If the declining population

trend continues and sea otters disappear from portions of the range of the southwest Alaska DPS, however, the remaining otters that persist in areas of higher concentration may be more vulnerable to disease epidemics.

The weight of evidence of available information suggests that predation by killer whales (*Orcinus orca*) may be the most likely cause of the sea otter decline in the Aleutian Islands (Estes *et al.* 1998). Data that support this hypothesis include: (1) A significant increase in the number of killer whale attacks on sea otters during the 1990s, (Hatfield *et al.* 1998); (2) the number of observed attacks fits expectations from computer models of killer whale energetics; (3) the scarcity of beachcast otter carcasses that would be expected if disease or starvation were occurring; and (4) markedly lower mortality rates between sea otters in a sheltered lagoon (where killer whales cannot go) as compared to an adjacent exposed bay. Similar detailed studies have not yet been conducted in other areas within the southwest Alaska DPS, and the role of killer whale predation on sea otters outside of the Aleutians is unknown.

Doroff *et al.* (2003) speculated that killer whale predation on sea otters was density dependent, and that as of the April 2000 aerial survey of the Aleutians, a steady state between predator and prey may have been attained. Recent skiff survey results of Estes *et al.* (2005) indicate that further sea otter declines occurred between 2000 and 2003, so it is not clear if a steady state between predator and prey had been reached, or whether other factors were involved in the continuing decline in the Aleutians.

The hypothesis that killer whales may be the principal cause of the sea otter decline suggests that there may have been significant changes in the Bering Sea ecosystem (Estes *et al.* 1998). For the past several decades, harbor seals (*Phoca vitulina*) and Steller sea lions (*Eumetopias jubatus*), the preferred prey species of transient, marine mammal-eating killer whales, have been in decline throughout the western north Pacific. In 1990, Steller sea lions were listed as threatened under the Act (55 FR 49204). Their designation was later revised to endangered in western Alaska, and threatened in eastern Alaska, with the dividing line located at 144 degrees west longitude (62 FR 24345). Estes *et al.* (1998) hypothesized that killer whales may have responded to declines in their preferred prey species, harbor seals and Steller sea lions, by broadening their prey base to include sea otters. While the cause of sea lion and harbor seal declines is the subject of much debate, it is possible that changes in composition and abundance of forage fish as a result of climatic changes and/or commercial fishing practices may be contributing factors.

It also recently has been hypothesized that the substantial reduction of large whales from the North Pacific Ocean as a result of post-World War II industrial whaling may be the ultimate cause of the decline of several species of marine mammals in the north Pacific (Springer *et al.* 2003). Killer whales are considered to be the foremost natural predator of large whales. By the early 1970's, the biomass of large whales had been reduced by 95 percent, a result attributed to commercial harvesting. This reduction may have caused killer whales to begin feeding more intensively on smaller coastal marine mammals such as sea lions and harbor seals. As those species became increasingly rare, the killer whales that preyed on them may have expanded their diet to include the even smaller, and calorically inferior, sea otter. The information supporting this theory is still under review. Although the proximate cause of the current sea otter decline may be predation by killer whales, the ultimate cause remains unknown. If these hypotheses are correct, and prey selection by killer whales is closely tied to the availability of other species, we would not expect this threat to decrease in the future, perhaps until populations of other prey species recover in numbers, or transient killer whale populations decrease.

Besides killer whales, other predators on sea otters include white sharks (*Carcharodon carcharias*), brown bears (*Ursus arctos*), and coyotes (*Canis latrans*) (Riedman and Estes 1990). Carcasses of sea otter pups have been observed in bald eagle (*Haliaeetus leucocephalus*) nests (Sherrod *et al.* 1975). Although there is anecdotal information regarding shark attacks on sea otters in Alaska, available data does not suggest that the impact of sharks and predators other than killer whales on the southwest Alaska DPS of the northern sea otter is significant.

D. The Inadequacy of Existing Regulatory Mechanisms

The MMPA (16 U.S.C. 1361), enacted in 1972, is an existing regulatory mechanism that protects sea otters. The MMPA placed a moratorium on the taking of marine mammals in U.S. waters. Similar to the definition of ''take'' under section 3 of the Act, ''take'' is defined under the MMPA as ''harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill'' (16 U.S.C. 1362). The MMPA does not include provisions for restoration of depleted species or population stocks, and does not provide measures for habitat protection.

The MMPA defines depleted as a species or population stock that is below its optimum sustainable population (OSP), which is defined as ''the number of animals which will result in the maximum productivity of the population or the species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element.'' By definition, a marine mammal species or stock that is designated as ''threatened'' or ''endangered'' under the Act is also classified as ''depleted'' under the MMPA. The converse is not true, however, as a marine mammal species or stock may be designated as depleted under the MMPA, but not be listed as threatened or endangered under the Act.

Section 118 of the MMPA addresses the taking of marine mammals incidental to commercial fishing operations. This section, which was added to the MMPA in 1994, establishes a framework that authorizes the incidental take of marine mammals during commercial fishing activities. In addition, this section outlines mechanisms to monitor and reduce the level of incidental take due to commercial fishing. Information from monitoring programs administered by NMFS indicates that interactions between sea otters and commercial fisheries result in less than one instance of mortality or serious injury per year within the southwest Alaska DPS and are, therefore, not a cause for concern at this time (USFWS 2002a). An analysis of State-managed fisheries in southwest Alaska reached a similar conclusion that there is little geographic overlap between sea otters and commercial fishing activities (Funk 2003).

Although the MMPA contains provisions to regulate the take of sea otters by Alaska Natives and to reduce the level of incidental take in commercial fisheries, we do not believe that these impacts pose an immediate threat to the southwest Alaska DPS. Therefore, the MMPA is inadequate to prevent the continuing decline of sea otters in southwest Alaska.

Northern sea otters are not on the State of Alaska list of endangered species or species of special concern. Alaska Statutes sections 46.04 200–210 specify State requirements for Oil and Hazardous Substance Discharge and Prevention Contingency Plans. These sections include prohibitions against oil spills and provide for the development

of contingency plans to respond to spills should they occur. The potential impacts of oil spills on sea otters are addressed below in Factor E.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Sea otters are particularly vulnerable to contamination by oil (Costa and Kooyman 1981). As they rely solely on fur for insulation, sea otters must groom themselves frequently to maintain the insulative properties of the fur. Vigorous grooming bouts generally occur before and after feeding episodes and rest periods. Oiled sea otters are highly susceptible to hypothermia resulting from the reduced insulative properties of oil-matted fur. Contaminated sea otters also are susceptible to the toxic effects from oil ingested while grooming. In addition, volatile hydrocarbons may affect the eyes and lung tissues of sea otters in oil-contaminated habitats and contribute to mortality.

The sea otter's vulnerability to oil was clearly demonstrated during the *Exxon Valdez* oil spill in 1989, when thousands of sea otters were killed in Prince William Sound, Kenai Fjords, the Kodiak archipelago, and the Alaska Peninsula. Although the spill occurred hundreds of miles outside the range of the southwest Alaska DPS of the northern sea otter, an estimated 905 sea otters from this population segment died as a result of the spill (Handler 1990, Doroff *et al.* 1993, DeGange *et al.* 1994).

Although numerous safeguards have been established since the *Exxon Valdez* oil spill to minimize the likelihood of another spill of catastrophic proportions in Prince William Sound, vessels and fuel barges are a potential source of oil spills that could impact sea otters in southwest Alaska. Since 1990 in Alaska, more than 4,000 spills of oil and chemicals on water have been reported to the U.S. Coast Guard National Response Center. Of these, nearly 1,100 occurred within the range of the southwest Alaska DPS of the northern sea otter. Reported spills include a variety of quantities (from a few gallons to thousands of gallons) and materials (primarily diesel fuel, gasoline, and lubricating oils). Reports of direct mortality of sea otters as a result of these spills are lacking and the impact of chronic oiling on sea otters in general, or on the southwest Alaska DPS in particular, is unknown. Also, despite the fact that locations such as boat harbors have higher occurrences of small spills than more remote areas, individual sea otters have been observed to frequent boat harbors for years without apparent adverse impacts. The overall health, survival, and reproductive success of these otters is not known.

Currently, there is no oil and gas production within the range of the southwest Alaska DPS of the northern sea otter. Proposed Outer Continental Shelf (OCS) oil and gas lease sales are planned, however, for lower Cook Inlet. Based on a review of the draft Environmental Impact Statement for these lease sales, it is our opinion that the potential impacts of this development on the southwest Alaska DPS will be negligible as sea otters occur primarily in the nearshore zone and the lease sale area is at least 3 miles off shore. Therefore, sea otters do not significantly overlap with the lease sale area. As demonstrated by the *Exxon Valdez* oil spill, however, spilled oil can impact sea otters at great distances from the initial release site.

Contaminants may also affect sea otters and their habitat. Potential sources of contaminants include local sources at specific sites in Alaska, and remote sources outside of Alaska. One category of contaminants that has been studied are polychlorinated biphenyls (PCBs), which may originate from a wide variety of sources. Data from blue mussels collected from the Aleutian Islands in southwest Alaska through southeast Alaska indicate low background concentrations of PCBs at most sampling locations, with ''hot spots'' of high PCB concentrations evident at Adak (Sweeper Cove), Dutch Harbor, and Amchitka. Notwithstanding these ''hot spots,'' PCB levels in samples from southwest Alaska actually are lower than those in southeast Alaska sites. The PCB concentrations found in liver tissues of sea otters from the Aleutians were similar to or higher than those causing reproductive failure in captive mink (Estes *et al.* 1997, Giger and Trust 1997), but the toxicity of PCBs to sea otters is unknown. Population survey data for the Adak Island area indicates normal ratios of mothers and pups, which suggests that reproduction in sea otters is not being suppressed in that area (Tinker and Estes 1996). As PCBs typically inhibit reproduction rather than cause adult mortality, these findings do not suggest a reproductive impact due to PCBs. As sample sizes in these studies were limited, the data needed to fully evaluate the potential role of PCBs and other environmental contaminants in the observed sea otter population decline are incomplete. In summary, a link between the sea otter decline and the effects of specific contaminants in their environment has not been established.

Sea otters are sometimes taken incidentally in commercial fishing operations. Information from the NMFS list of fisheries indicates that entanglement leading to injury or death occurs infrequently in set net, trawl, and finfish pot fisheries within the range of the southwest Alaska DPS of the northern sea otter (67 FR 2410, January 17, 2002). During the summers of 1999 and 2000, NMFS conducted a marine mammal observer program in Cook Inlet for salmon drift and set net fisheries. No mortality or serious injury of sea otters was observed in either of these fisheries in Cook Inlet (Fadely and Merklein 2001). Similarly, preliminary results from an ongoing observer program for the Kodiak salmon set net fishery also report only four incidents of entanglement of sea otters, with no mortality or serious injury (Manly *et al.* 2003). Additional marine mammal observer programs will continue to improve our understanding of this potential source of sea otter mortality.

The distribution of sea otters in the southwest Alaska DPS now occurs at markedly low densities throughout much of their range, with some areas of higher concentrations. The consequence of this distribution is that Allee effects (as the probability of individuals to find mates is reduced) may occur in areas of low otter density (Estes *et al.* 2005). Conversely, areas of higher otter concentrations are more susceptible to stochastic events such as oil spills, disease epidemics, and severe weather conditions that could adversely affect a significant portion of the remaining sea otter population.

Conclusion of Status Evaluation

In making this determination, we have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by the southwest Alaska DPS of the northern sea otter. The Act defines an endangered species as one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become an endangered species in the foreseeable future throughout all or a significant portion of its range. Our status evaluation indicates that Threatened status is most appropriate for the southwest Alaska DPS of the northern sea otter.

To date, investigations of the cause(s) of the sea otter decline have been limited to the Aleutian Islands; little research has been conducted in other portions of the southwest Alaska DPS. Although killer whale predation has been hypothesized to be responsible for

the sea otter decline in the Aleutian Islands, the cause(s) of the decline throughout southwest Alaska are not definitively known. As detailed earlier in the response to public comments, it is not necessary to identify the cause of the decline with certainty to warrant listing of a species, subspecies, or DPS.

At present, sea otters have not been extirpated from any portion of the range of the southwest Alaska DPS; however, they have been reduced to markedly lower densities, particularly in the Aleutian Islands and south Alaska Peninsula areas. These areas of decline are balanced by other areas, such as Port Moller and Kamishak Bay, which do not appear to have declined and continue to maintain high concentrations of sea otters.

Recent survey information indicates that the southwest Alaska DPS has declined by at least 55 to 67 percent overall since the mid-1980s, and sea otters now occur at extremely low densities throughout much of the range of the DPS. Estimated annual rates of decline are sensitive to the geographic area and time period in question. The most recent survey data available indicate that within areas that continue to decline, annual rates range from 12.5 percent per year at islands along the south side of the Alaska Peninsula (USFWS in litt. 2004), to 15 percent per year in the eastern Aleutians (USFWS in litt. 2004) to 29 percent per year in the western and central Aleutians (Estes *et al.* 2005).

With the exception of the Kodiak archipelago, we have no evidence to indicate that the decline has abated; indeed, recent surveys indicate that the decline has continued throughout much of the southwest Alaska DPS, and we have no reason to expect that the decline in these areas will cease in the foreseeable future. Because the remaining areas of high sea otter concentrations have shown no evidence of declines to date, the DPS is currently not in danger of extinction. Consequently, the DPS does not meet the definition of endangered at the present time. If the decline continues at recently observed rates, however, sea otters could become extirpated in some portions of the range in the foreseeable future. Based on threats to the remaining population, including stochastic events, and our uncertainty regarding the cause of the decline, the DPS could become in danger of extinction at that time. Therefore, we are listing the southwest Alaska DPS of the northern sea otter as threatened, as it is likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

Critical Habitat

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist—(1) The species is threatened by taking or other activity and the identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species. With respect to whether it is prudent to designate critical habitat for the southwest Alaska DPS of the northern sea otter at the time of listing, such a designation would not be expected to increase the threat to the DPS. In addition, we are unable at this time to make a determination that designation of critical habitat would not be beneficial to the species. Therefore, we believe that designation of critical habitat for the southwest Alaska DPS of the northern sea otter would be prudent.

Our implementing regulations (50 CFR 424.12(a)(2)) state that critical habitat is not determinable if information sufficient to perform the required analyses of impacts of the designation is lacking, or if the biological needs of the species are not sufficiently well known to permit identification of an area as suitable habitat. We find that designation of critical habitat for the southwest Alaska DPS of the northern sea otter is not determinable at this time because we are unable to identify the physical and biological features essential to the conservation of this DPS. Although we are able to identify sea otter habitat in a broad sense, without a clear understanding of the cause of the population decline, we are unable to delineate areas in which are found those physical and biological features that are—(1) Essential to the conservation of the species, and (2) which may require special management considerations or protection. When a '''not determinable''' finding is made, we must, within one year of the publication date of the final listing rule, propose critical habitat, unless the designation is found to be not prudent. We will continue to protect the southwest Alaska DPS of the northern sea otter and their habitat through the recovery process and section 7 consultations to assist Federal agencies in avoiding jeopardizing this DPS.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing results in public awareness and conservation actions by Federal, State, and local agencies, private organizations, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is listed as endangered or threatened and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is subsequently listed, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with us under the provisions of section 7(a)(2) of the Act.

Several Federal agencies are expected to have involvement under section 7 of the Act regarding the southwest Alaska DPS of the northern sea otter. The Service will consult with itself on a variety of activities within southwest Alaska, such as Refuge operations and research permits. The National Marine Fisheries Service may become involved through their permitting authority for crab and groundfish fisheries. The Environmental Protection Agency may become involved through their permitting authority for the Clean Water Act. The U.S. Corps of Engineers may become involved through its responsibilities and permitting authority under section 404 of the Clean Water Act and through future development of harbor projects. The Minerals Management Service may become

involved through administering their programs directed toward offshore oil and gas development. The Denali Commission may be involved through their potential funding of fueling and power generation projects. The U.S. Coast Guard may become involved through their development of docking facilities. Other Federal agencies and departments, such as the National Park Service and Department of Defense, may conduct activities in southwest Alaska that will require consultation.

The listing of the southwest Alaska DPS of the northern sea otter will lead to the development of a recovery plan for this species. The recovery plan establishes a framework for interested parties to coordinate activities and to cooperate with each other in conservation efforts. The plan will set recovery priorities, identify responsibilities, and estimate the costs of the tasks necessary to accomplish the priorities. It will also describe site-specific management actions necessary to achieve the conservation of the southwest Alaska DPS of the northern sea otter. Additionally, pursuant to Section 6 of the Act, we will be able to grant funds to the State of Alaska for management actions promoting the conservation of the southwest Alaska DPS of the northern sea otter.

Section 9 of the Act prohibits take of endangered wildlife. In accordance with our regulations, these prohibitions extend to threatened wildlife as well (50 CFR 17.31(a)). The Act defines take to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. However, the Act also provides for the authorization of take and exceptions to the take prohibitions. Take of listed species by non-Federal property owners can be permitted through the process set forth in section 10 of the Act. For federally funded or permitted activities, take of listed species may be allowed through the consultation process of section 7 of the Act.

The Service has issued regulations (50 CFR 17.31) that generally apply to threatened wildlife the prohibitions that section 9 of the Act establishes with respect to endangered wildlife. Our regulations for threatened wildlife also provide that a ''special rule'' under Section 4(d) of the Act can be tailored for a particular threatened species. In a separate Section 4(d) rulemaking action published in today's **Federal Register**, we propose a special rule for the Alaska DPS of northern sea otters that would align the provisions of the Act relating to the creation, shipment, and sale of authentic Native handicrafts and clothing by Alaska Natives with what is already allowed under the MMPA. Thus the proposed rule would provide for the conservation of sea otters, while at the same time accommodating Alaska Natives' subsistence, cultural, and economic interests. See the proposed special rule published in today's **Federal Register** for complete details.

It is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Further, it is illegal for any person to commit, to solicit another person to commit, or cause to be committed, any of these acts. Certain exceptions to the prohibitions apply to our agents and State conservation agencies.

The Act provides for an exemption for Alaska Natives in section 10(e) that allows any Indian, Aleut, or Eskimo who is an Alaskan Native who resides in Alaska to take a threatened or endangered species if such taking is primarily for subsistence purposes. Non-edible by-products of species taken pursuant to section 10(e) may be sold in interstate commerce when made into authentic native articles of handicrafts and clothing.

The Act provides for the issuance of permits to carry out otherwise prohibited activities involving threatened or endangered wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in the course of otherwise lawful activities. Permits are also available for zoological exhibitions, educational purposes, or special purposes consistent with the purposes of the Act. Requests for copies of the regulations on listed species and inquiries about prohibitions and permits may be addressed to the Endangered Species Coordinator, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503.

It is our policy, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify, to the maximum extent practicable at the time a species is listed, those activities that would or would not likely constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effects of the listing on proposed and ongoing activities within a species' range.

For the southwest DPS of the northern sea otter, we believe that, based on the best available information, the following activities are unlikely to result in a violation of section 9, provided these activities are carried out in accordance with existing regulations and permit requirements:

(1) Possession, delivery, or movement, including interstate transport of authentic native articles of handicrafts and clothing made from northern sea otters that were collected prior to the date of publication in the **Federal Register** of a final regulation adding the southwest Alaska DPS of the northern sea otter to the list of threatened species;

(2) Sale, possession, delivery, or movement, including interstate transport of authentic native articles of handicrafts and clothing made from sea otters from the southwest Alaska DPS that were taken and produced in accordance with section 10(e) of the Act;

(3) Any action authorized, funded, or carried out by a Federal agency that may affect the southwest Alaska DPS of the northern sea otter, when the action is conducted in accordance with an incidental take statement issued by us under section 7 of the Act;

(4) Any action carried out for the scientific research or to enhance the propagation or survival of the southwest Alaska DPS of the northern sea otter that is conducted in accordance with the conditions of a section 10(a)(1)(A) permit; and

(5) Any incidental take of the southwest Alaska DPS of the northern sea otter resulting from an otherwise lawful activity conducted in accordance with the conditions of an incidental take permit issued under section 10(a)(1)(B) of the Act. Non-Federal applicants may design a habitat conservation plan (HCP) for the species and apply for an incidental take permit. HCPs may be developed for listed species and are designed to minimize and mitigate impacts to the species to the greatest extent practicable.

We believe the following activities could potentially result in a violation of section 9 and associated regulations at 50 CFR 17.3 with regard to the southwest DPS of the northern sea otter; however, possible violations are not limited to these actions alone:

(1) Unauthorized killing, collecting, handling, or harassing of individual sea otters;

(2) Possessing, selling, transporting, or shipping illegally taken sea otters or their pelts;

(3) Unauthorized destruction or alteration of the nearshore marine benthos that actually kills or injures individual sea otters by significantly impairing their essential behavioral patterns, including breeding, feeding or sheltering; and,

(4) Discharge or dumping of toxic chemicals, silt, or other pollutants (*i.e.*,

sewage, oil, pesticides, and gasoline) into the nearshore marine environment that actually kills or injures individual sea otters by significantly impairing their essential behavioral patterns, including breeding, feeding or sheltering.

We will review other activities not identified above on a case-by-case basis to determine whether they may be likely to result in a violation of section 9 of the Act. We do not consider these lists to be exhaustive and provide them as information to the public. You may direct questions regarding whether specific activities may constitute a violation of section 9 to the Field Supervisor, U.S. Fish and Wildlife Service, Anchorage Ecological Services Field Office, 605 West 4th Avenue, Room G–62, Anchorage, Alaska 99501.

Executive Order 13211

On May 18, 2001, the President issued Executive Order 13211 on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action and no Statement of Energy Effects is required.

National Environmental Policy Act

We have determined that we do not need to prepare an Environmental Assessment and/or an Environmental Impact Statement as defined under the authority of the National Environmental Policy Act of 1969, in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Paperwork Reduction Act

This rule does not contain any new collections of information that require approval of the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*). This final rule will not impose new recordkeeping or reporting requirements on State or local governments, individuals, business, or organizations. We may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

References Cited

A complete list of all references cited in this final rule is available upon request. You may request a list of all references cited in this document from the Supervisor, Marine Mammals Management Office (see **ADDRESSES**).

Author

The primary author of this rule is Douglas M. Burn, Marine Mammals Management Office (see **ADDRESSES**).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

■ Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

■ 2. Section 17.11(h) is amended by adding the following, in alphabetical order under MAMMALS, to the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
MAMMALS							
*	*	*	*	*	*	*	
Otter, northern sea	*Enhydra lutris kenyoni.*	U.S.A. (AK, WA)	Southwest Alaska, from Attu Island to Western Cook Inlet, including Bristol Bay, the Kodiak Archipelago, and the Barren Islands.	T	.....	NA	NA
*	*	*	*	*	*	*	

Dated: August 1, 2005.

Marshall P. Jones, Jr.,

Acting Director, Fish and Wildlife Service.

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