
DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17**

RIN 1018-AB73

Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Pacific Coast Population of the Western Snowy Plover**AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes to determine the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) as threatened pursuant to the Endangered Species Act of 1973, as amended (Act). The Pacific coast breeding population of the western snowy plover extends from the State of Washington to Baja California, Mexico, with the majority of breeding birds found in California. These plovers winter primarily in coastal California and Mexico. The Pacific coast population of the western snowy plover is threatened throughout its range in the United States by loss and disturbance of nesting sites. This proposed rule, if made final, would extend the Act's protection to the Pacific coast population of the western snowy plover in the United States and Mexico. The Service seeks data and comments from the public on this proposed rule.

DATES: Comments from all interested parties must be received by March 16, 1992. Public hearing requests must be received by February 28, 1992.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, 2800 Cottage Way, room E-1803, Sacramento, California 95825-1846. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. Wayne S. White, Field Supervisor, at the above address or telephone (916) 978-4613; FTS 460-4613.

SUPPLEMENTARY INFORMATION:**Background***Taxonomy*

The snowy plover is a small, pale colored shorebird with dark patches on either side of the upper breast. The species was first described in 1758 by Linnaeus (American Ornithologists' Union 1957). Twelve subspecies of the snowy plover occur worldwide (Rittinghaus 1961 in Jacobs 1986).

Two subspecies of the snowy plover are recognized in North America (American Ornithologists' Union 1957). These are the western snowy plover (*Charadrius alexandrinus nivosus*) and the Cuban snowy plover (*C. a. tenuirostris*). According to the American Ornithologists' Union (1957), the western snowy plover breeds on the Pacific coast from southern Washington to southern Baja California, Mexico, and in interior areas of Oregon, California, Nevada, Utah, New Mexico, Colorado, Kansas, Oklahoma, and north-central Texas, as well as coastal areas of extreme southern Texas, and possibly extreme northeastern Mexico. Although previously observed only as a migrant in Arizona, small numbers have bred there in recent years (Monson and Phillips 1981 and Davis and Russell 1984 in Page *et al.* 1991). The Cuban snowy plover breeds along the Gulf coast from Louisiana to western Florida and south through the Caribbean. The subspecific status of populations breeding east of the Rocky Mountains has been questioned (Johnsgard 1981, Jacobs 1986). These populations are considered to belong more appropriately to the subspecies *tenuirostris*.

The Pacific coast population of the western snowy plover is defined as those individuals that nest adjacent to or near tidal waters, and includes all nesting colonies on the mainland coast, peninsulas, offshore islands, adjacent bays, and estuaries.

The Pacific coast population of the western snowy plover is considered to be distinct from western snowy plovers breeding in the interior (Gary Page, Point Reyes Bird Observatory, pers. comm., 1990). Evidence of intermixing between coastal and interior populations is limited to one documented instance—one banded female hatched at Monterey Bay was observed nesting the following year at Mono Lake, California (Gary Page, *in litt.*, 1989). Three snowy plovers banded as chicks on the California coast were observed at interior Oregon breeding sites during the breeding season in 1990 (Stern *et al.* (1991). No nesting, however, was documented. No breeding plovers banded at Abert Lake, an interior

breeding site in Oregon, were observed breeding at any coastal site (Stern *et al.* 1990).

Life History

The Pacific coast population of the western snowy plover breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. Nesting habitat is unstable and ephemeral as a result of unconsolidated soil characteristics influenced by high winds, storms, wave action, and colonization by plants. Other less common nesting habitat includes salt pans, coastal dredged spoil disposal sites, dry salt ponds, and salt pond levees (Widrig 1980, Wilson 1980, Page and Stenzel 1981). Sand spits, dune-backed beaches, unvegetated beach strands, open areas around estuaries, and beaches at river mouths are the preferred coastal habitats for nesting (Stenzel *et al.* 1981, Wilson 1980).

Based on the most recent surveys, a total of 28 snowy plover breeding sites or areas currently occur on the Pacific coast of the United States. Two sites occur in southern Washington—one at Ledbetter Point, in Willapa Bay (Widrig 1980), and the other at Damon Point, in Grays Harbor (Anthony 1985). In Oregon, nesting birds were recorded in six locations in 1990 with three sites (Bayocean Spit, North Spit Coos Bay and spoils, and Bandon State Park-Floras Lake) supporting 81 percent of the total number of nesting birds in coastal Oregon (Oregon Department of Fish and Wildlife, unpubl. data, 1991). A total of 20 plover breeding areas currently occur in coastal California (Page *et al.* 1991). Eight areas support 78 percent of the California coastal breeding population: San Francisco Bay, Monterey Bay, Morro Bay, the Callendar-Mussel Rock Dunes area, the Point Sal to Point Conception area, the Oxnard lowland, Santa Rosa Island, and San Nicolas Island (Page *et al.* 1991).

Snowy plovers breed in loose colonies with the number of adults at coastal breeding sites ranging from 2 to 381 (Page and Stenzel 1981; Oregon Department of Fish and Wildlife 1990; Eric Cummins, Washington Department of Wildlife, pers. comm., 1991; James Atkinson, U.S. Fish and Wildlife Service, pers. comm., 1991). On the Pacific coast, larger concentrations of breeding birds occur in the south than in the north, suggesting that the center of the plovers' coastal distribution lies closer to the southern boundary of California (Page and Stenzel 1981). If coastal southern California lies in the center of the species distribution, then Baja California may also support substantial breeding populations (Page

and Stenzel 1981). Although Wilbur (1987) describes the snowy plover as a common resident of both coasts of the Baja California, only five nesting sites have been verified on the Pacific coast side of the northern province of Baja California (Gary Page, pers. comm., 1991). No quantitative information on nesting colonies has been collected.

Nest sites typically occur in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent (Widrig 1980, Wilson 1980, Stenzel *et al.* 1981). The majority of snowy plovers are site-faithful, returning to the same breeding site in subsequent breeding seasons. Birds often nest in the exact locations as the previous year (Warriner *et al.* 1986).

The breeding season of the coastal population of the western snowy plover extends from mid-March through mid-September. Nest initiation and egg laying occurs from mid-March through mid-July (Wilson 1980, Warriner *et al.* 1986). The usual clutch size is three eggs. Incubation averages 27 days (Warriner *et al.* 1986). Both sexes incubate the eggs.

Plover chicks are precocial, leaving the nest within hours after hatching to search for food. Fledging (reaching flying age) requires an average of 31 days (Warriner *et al.* 1986). Broods rarely remain in the nesting territory until fledging (Warriner *et al.* 1986).

Snowy plovers will reneest after loss of a clutch or brood (Wilson 1980, Warriner *et al.* 1986). Double brooding and polygamy (i.e., the female successfully hatches more than one brood in a nesting season with different mates) have been observed in coastal California (Warriner *et al.* 1986) and may also occur in Oregon (Jacobs 1986). After loss of a clutch or brood or successful hatching of a nest, plovers may reneest in the same colony site or move, sometimes up to several hundred miles, to other colony sites to nest (Gary Page, pers. comm., 1991; Warriner *et al.* 1986).

Widely varying nest success (percentage of nests hatching at least one egg) and reproductive success (number of fledged per female, pair, or nest) are reported in the literature. Nest success ranges from 0 to 80 percent for coastal snowy plovers (Widrig 1980, Wilson 1980, Saul 1982, Wilson-Jacobs and Dorsey 1985, Wickham unpub. data in Jacobs 1986, Warriner *et al.* 1986). Instances of low nest success have been attributed to a variety of factors, including predation, human disturbance, and inclement weather conditions. Reproductive success ranges from 0.05 to 2.40 young fledged per female, pair or

nest (Page *et al.* 1977, Widrig 1980, Wilson 1980, Saul 1982, Warriner *et al.* 1986, Page 1988). Page *et al.* (1977) estimated that snowy plovers must fledge 0.8 young per female to maintain a stable population. Reproductive success falls far short of this threshold at many nesting sites (Widrig 1980, Wilson 1980, Warriner *et al.* 1986, Page 1988, Page 1990).

The coastal population of the western snowy plover consists of both resident and migratory birds. Some birds winter in the same areas used for breeding (Warriner *et al.* 1986, Wilson-Jacobs, pers. comm. in Page *et al.* (1986). Other birds migrate either north or south to wintering areas (Warriner *et al.* 1986). Plovers occasionally winter in southern coastal Washington (Brittall *et al.* 1976). Up to 100 plovers may winter in Oregon, primarily on 3 beach segments (Page *et al.* 1986, Oregon Department of Fish and Wildlife 1990). The majority of birds, however, winter from Bodega Bay, California, south (Page *et al.* 1986). Wintering plovers occur in widely scattered locations on both coasts of Baja California and significant numbers have been observed on the mainland coast of Mexico at least as far south as San Blas, Nayarit (Page *et al.* 1986). Many interior birds west of the Rocky Mountains winter on the Pacific coast (Page *et al.* 1986). Birds winter in habitats similar to those used during the nesting season.

Snowy plovers forage on invertebrates in the wet sand and amongst surf cast kelp within the intertidal zone; in dry, sandy areas above the high tide; on salt pans; and along the edges of salt marshes and salt ponds. Little quantitative information is available on food habits (Reader 1951).

Poor reproductive success, resulting from human disturbance, predation, and inclement weather, combined with permanent or long-term loss of nesting habitat to urban development and encroachment of introduced European beachgrass (*Ammophila arenaria*) has led to a decline in active nesting colonies as well as an overall decline in the breeding and wintering population of the western snowy plover along the Pacific coast of the United States.

Petition Background

On March 24, 1988, the Service received a petition from Dr. J.P. Myers of the National Audubon Society to list the Pacific coast population of the western snowy plover as a threatened species under the Act. On November 14, 1988, the Service published a 90-day petition finding (53 FR 45788) that substantial information had been presented

indicating the requested action may be warranted. At that time, the Service acknowledged that questions pertaining to the demarcation of the subspecies and significance of interchange between coastal and interior stocks of the subspecies remained to be answered. Public comments were requested on the status of the coastal population of the western snowy plover. A status review of the entire subspecies has been in progress since the Service's December 30, 1982, Vertebrate Notice of Review (47 FR 58454). In that notice, as in subsequent notices of review (September 18, 1985 (50 FR 37958); January 6, 1989 (54 FR 554)), the western snowy plover was included as a category 2 candidate. Category 2 candidates are species for which information now in possession of the Service indicates that proposing to list as endangered or threatened is possibly appropriate, but for which conclusive data on biological vulnerability and threat are not currently available to support proposed rules. The public comments period on the petition was closed on July 11, 1989 (54 FR 26811, June 26, 1989). The Service completed a status report on the western snowy plover in September 1989. Based on the best scientific and commercial data available and other comments submitted during the status review, the Service made a 12-month petition finding on June 25, 1990, that the petitioned action was warranted, but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act. Publication of this proposed rule constitutes the final finding on the petitioned action.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations promulgated to implement the listing provisions of the Act (50 CFR part 424) set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 49(a)(1). These factors and their application to the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) are as follows:

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

Historic records indicate that nesting western snowy plovers were once more widely distributed in coastal California, Oregon, and Washington than they are currently. In coastal California, snowy plovers bred at 53 locations prior to 1970

(Page and Stenzel 1981). Since that time, no evidence of breeding birds has been found at 33 of these 53 sites, representing a 62 percent decline in breeding sites (Page and Stenzel 1981). The greatest losses of breeding habitat were in southern California, within the central portion of the snowy plover's coastal breeding range. In Oregon, snowy plovers historically nested at 29 locations on the coast (Charles Bruce, Oregon Department of Fish and Wildlife, pers. comm., 1991). In 1990 only six nesting colonies remained, representing a 79 percent decline in active breeding sites. In Washington, snowy plovers formerly nested in at least five sites on the coast (Eric Cummins, pers. comm., 1991). Today only two colony sites remain active, representing, at minimum, a 60 percent decline in breeding sites.

In addition to loss of nesting sites, declines in the overall breeding population also have been documented in Oregon and California. Breeding season surveys of the Oregon coast from 1978 to 1990 show that the number of adult snowy plovers has declined significantly at an average annual rate of about 6 percent (calculated from Oregon Department of Fish and Wildlife data). The average number of adults has declined from 90 to 57 over this time period (Oregon Department of Fish and Wildlife 1990). If the current trend continues, breeding snowy plovers could disappear from coastal Oregon within the next 10 years. In 1981, the coastal California breeding population of snowy plovers was estimated to be 1,565 adults (Page and Stenzel 1981). In 1989, surveys revealed 1,386 plovers (Page *et al.* 1991), an 11 percent decline in the breeding population. The population decline in California may be greater than indicated. The 1989 survey results are considered more reliable than the earlier estimates which may have underestimated the overall population size (Gary Page, pers. comm., 1991).

Although there are no historic data for Washington, it is doubtful that the snowy plover breeding population in Washington was ever very large (Brittall *et al.* 1976). However, loss of nesting sites in this State probably has resulted in a reduction in their overall population size. In recent years, less than 30 birds have nested on the southern coast of Washington (James Atkinson, pers. comm. 1990; Eric Cummins, pers. comm., 1991).

Survey data also indicate a decline in wintering snowy plovers particularly in southern California. The number of snowy plovers observed during Christmas Bird Counts from 1962 to 1984 significantly decreased in southern

California despite an increase in observer participation in the counts (Page *et al.* 1986). This observed decline was not accompanied by a significant loss of wintering habitat over the same time period (Page *et al.* 1986).

Human activity (e.g., walking, jogging, running pets, horseback riding, off-road vehicle use, and beach raking) is believed to be a primary factor in these observed declines in snowy plover coastal breeding sites and breeding populations in California, Oregon, and Washington. Snowy plovers also are subjected to similar high levels of human disturbance at nesting sites in Baja California, Mexico (Barbara Massey, Proesteros, pers. comm., 1990; Daniel Anderson, University of California, Davis, pers. comm., 1990). With 81 percent of the Oregon snowy plover population supported at three of six remaining nesting sites and 78 percent of the California population breeding in eight areas, loss of just a few of these sites could dramatically reduce the coastal plover population.

The nesting season of the western snowy plover (mid March to mid September) coincides with the season of greatest human use of beaches of the west coast (Memorial Day through Labor Day). Human activities of particular detriment to nesting snowy plovers include unintentional disturbance and trampling of eggs and chicks by people (Stenzel *et al.* 1981, Warriner *et al.* 1986), off-road vehicle use (Widrig 1980, Stenzel *et al.* 1981, Anthony 1985, Warriner *et al.* 1986, Page 1988), horseback riding (Woolington 1985, Page 1988), and beach raking (Stenzel *et al.* 1981). Page *et al.* (1977) found that snowy plovers were disturbed more than twice as often by such human activities than all other natural causes combined.

Intensive beach use by humans results in abandonment of nesting sites or reductions in nesting density or nesting success. In southern California where human activity on beaches is extensive, plover nesting is restricted to managed preserves. The disappearance of nesting plovers at South Beach on the Oregon coast coincided with opening of a new State park adjacent to the beach (Wilson 1980). Nipomo Dunes beach in southern California, which receives high human use, including significant off-road vehicle activity, supported one-fifth the density of plover nests as occurred at Point Purisima beach, within Vandenberg Air Force Base (closed to public use) (Stenzel *et al.* 1981). This relationship held true even though nesting habitat at Nipomo Dunes was of higher quality than that of Point

Purisima. Hatching success was found to be much lower on Zmudowski State Beach in Monterey County, California, than on an undisturbed salt pan just 1 kilometer (km) away (Warriners, unpubl. data in Page and Stenzel 1981).

In the few instances where human intrusion into snowy plover nesting areas has been precluded either through area closures or by natural events, nesting success has improved. The average number of young fledged per nesting pair increased from 0.75 to 2.00 after the nesting site at Leadbetter Point, Washington, was closed to human activities (Saul 1982). Similarly, vehicle closure on a portion of Pismo Beach, California, led to an eight-fold increase in the nesting plover population (W. David Shuford, Point Reyes Bird Observatory, *in litt.*, 1989). Fledging success increased 16 percent at Moss Landing Beach, California, after beach access was virtually eliminated by the 1989 earthquake (Page 1990).

When beach visitors travel through plover nesting areas, plovers flush repeatedly. Incubating plovers at Point Reyes left their nests in response to human activity 65 to 78 percent of the time when disturbances occurred within 100 meters (m) or less of nests (Page *et al.* 1977). Dogs intimidated plovers even more, with plovers flushing more frequently and remaining off their nests significantly longer when disturbed by people with dogs versus people without dogs (Page *et al.*, 1977).

Prolonged absences from the nest and the subsequent longer incubation period increase the likelihood of nest failures by prolonging exposure of eggs and nesting birds to predators (Page *et al.* 1983) and other detrimental factors. High levels of human disturbance also may increase chick mortality by altering chick behavior. Frequently disturbed piping plover chicks fed less often and at a reduced rate (Flemming *et al.* 1988). Fewer chicks survived to 17 days in areas heavily disturbed by humans. Human disturbance also may increase exposure of eggs or chicks to inclement weather. In an attempt to avoid intruders, adult snowy plovers have been observed leaving chicks wet and unattended in the rain (Wilson 1980) and allowing wind blown sand to bury their eggs (Charles Bruce, pers. comm., 1991). Prolonged absences from the nest on sunny days may result in overheating of the eggs.

In addition to indirect effects, direct losses of chicks and adults also result from human activities. In the Monterey Bay area, two males were found run over on their nests (J.P. Myers, National Audubon Society, *in litt.*, 1988). Chicks and adults are particularly vulnerable

because of their habit of crouching in depressions, such as tire tracks or footprints. Vehicle tracks have been noted in nesting areas at a number of beaches, including Damon Point (Anthony 1985) and Leadbetter Point (Widrig 1980) in Washington; New River (Wickham 1981) and Coos Bay (Oregon Department of Fish and Wildlife 1990) in Oregon; and Point Reyes (Page 1988) and the Pajaro River mouth (Warriner *et al.* 1986) in California. On military bases, such as Camp Pendleton in California, plovers are directly and indirectly affected by military training exercises on the beach (Loren Hays, U.S. Fish and Wildlife Service, pers. comm., 1991).

In all of Los Angeles County and parts of Orange County, California, entire beaches are raked on a daily to weekly basis to remove trash and tidal debris. Even if human activity was low on these beaches, grooming activities completely preclude the possibility of successful nesting attempts (Stenzel *et al.* 1981). Plover food availability on raked beaches also may be depressed for both breeding and wintering birds, because surf cast kelp and associated invertebrates are removed and the upper centimeter of the sand substrate is disturbed (J.P. Myers, *in litt.*, 1988).

Habitat destruction is also an important factor contributing to the loss of snowy plover breeding sites. The construction of residential and industrial developments, and recreational facilities, including placement of access roads, parking lots, summer homes, and supportive services, have permanently eliminated valuable nesting habitat on southern Washington (Brittall *et al.* 1976), Oregon (Oregon Department of Fish and Wildlife 1990), and California beaches (Page and Stenzel 1981). Snowy plover use of man-made habitat, such as salt evaporators and dredged spoil sites, apparently has not compensated for loss or degradation of habitat in other areas (Page and Stenzel 1981).

Another important factor contributing to habitat loss for coastal breeding snowy plovers is encroachment of European beachgrass (*Ammophila arenaria*). This non-native plant was introduced to the west coast around 1989 to stabilize dunes (Wiedemann 1987). Since then it has spread up and down the coast and now is found from British Columbia to southern California (Ventura County). Stabilizing sand dunes with European beachgrass has reduced the amount of unvegetated area above the tideline, decreased the width of the beach, and increased its slope. These changes have reduced the amount of potential snowy plover nesting habitat on many beaches. It is currently

a major dune plant at about 50 percent of California breeding sites and all of those in Oregon and Washington (J.P. Myers, *in litt.*, 1988). The presence of beachgrass may also adversely affect plover food supplies. The abundance and diversity of sand dune arthropods are markedly depressed in areas dominated by European beachgrass (Slobodchikoff and Doyen 1977).

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

Egg collecting has been observed at several California nesting colonies (Stenzel *et al.* 1981, Warriner *et al.* 1986). The significance of this factor on nesting success is unknown.

C. Disease or Predation

Western snowy plover eggs, chicks, and adults are taken by a variety of avian and mammalian predators. These losses, particularly to avian predators, are exacerbated by human disturbances. Of the many predators, American crows (*Corvus brachyrhynchos*), ravens (*C. corax*), and red fox (*Vulpes vulpes*) have had a significantly adverse affect on reproductive success at several colony sites. Because crows and ravens, in particular, thrive in urban/agricultural areas, present-day coastal populations of these species are probably greater than historic populations. At nesting sites on the Oregon coast, nest losses of up to 68 percent have been attributed to crows and ravens (Wilson-Jacobs and Meslow 1984). Ravens were also significant predators at a Point Reyes breeding site, destroying 67-69 percent of the clutches in 1988-1989 (Page 1988, Page 1990). In recent years, concern has increased regarding loss of snowy plover nests to the introduced eastern red fox. The fox apparently now occurs throughout the Monterey Bay area (John and Jane Warriner, Point Reyes Bird Observatory, *in litt.*, 1989), in San Francisco Bay (Leora Feeney, Biological Field Services, pers. comm., 1991), and in Orange County, California (Gary Page, *in litt.*, 1988). At the Marina breeding site in Monterey Bay, red fox destroyed 45 percent of the nests in 1988 (Page 1988). This predator was also the likely cause of nest failures at least at three other breeding sites in Monterey Bay in 1989-1990 (Page 1990). In the Salinas River area, the number of chicks fledged between 1984 and 1989 was reduced by 75 percent as red fox expanded into the area (John and Jane Warriner, *in litt.*, 1989).

Although predation represents an important mortality factor at several colony sites, the significance of

predation on the overall coastal population of the snowy plover is unknown. Nevertheless, this factor remains an issue of concern.

B. The Inadequacy of Existing Regulatory Mechanisms

The western snowy plover is protected by the Federal Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*) and by State law as a nongame species. The plover's breeding habitat, however, is not protected by these laws. In the State of Washington, the western snowy plover was listed as an endangered species in 1981 by the Wildlife Commission. This designation, however, does not provide for consultation between the Department of Wildlife and other State agencies regarding impacts of proposed projects on the snowy plover. Preparation of a management plan for the snowy plover is not required under State law. There are also no penalties imposed under Washington law for take of endangered species' habitat. In Oregon, the plover was listed as a threatened species in 1975. The Oregon Threatened and Endangered Species Act of 1987 requires other State agencies to consult with the Department of Fish and Wildlife. The State Act, however, does not provide adequate protection for either the birds or their habitat. A management plan for the snowy plover in Oregon is currently being developed (Oregon Department of Fish and Wildlife 1990). Although protective measures are being implemented on an experimental basis at some nesting sites (Charles Bruce, pers. comm., 1990) and many beaches have been closed to vehicles, a comprehensive conservation program has yet to be implemented in this State. In California, where the majority of nesting occurs, the snowy plover is classified as a "Species of Special Concern" (Remsen 1978). This designation provides no special, legally mandated protection. Snowy plovers have no protective status in Mexico.

The Clean Water Act (section 404) and the Rivers and Harbors Act (section 10) are the primary Federal laws that could provide some protection of nesting and wintering habitat of the western snowy plover that is determined by the U.S. Army Corps of Engineers (Corps) to be wetlands or navigable waters of the United States. These laws, however, do not afford any special protection for candidate species, and would apply to only a small fraction of the nesting and wintering areas of the western snowy plover on the Pacific coast.

In 1985, the Nongame Program of the Service prepared management guidelines for the western snowy plover

(Fish and Wildlife Service 1985), which included strategies to reduce human disturbance at nesting sites and prevent structural alteration of breeding habitat. Some management actions have been carried out since publication of the guidelines, but major strategies have yet to be implemented.

E. Other Natural or Man-Made Factors Affecting its Continued Existence

Because the majority of snowy plover nesting sites occur in unstable sandy substrates, nest losses caused by weather-related natural phenomena commonly occur. Events such as extreme high tides (Wilson 1980, Stenzel *et al.* 1981, Warriner *et al.* 1986, Page 1988), river flooding (Stenzel *et al.* 1981), and heavy rain (Wilson 1980, Warriner *et al.* 1986, Page 1988) have been reported to destroy or wash away individual nests as well as entire colony sites. Wind-driven sand contributes to nest failure by burying eggs (Wilson 1980, Stenzel *et al.* 1981, Warriner *et al.* 1986). The percentage of total nest losses attributed to weather-related phenomena has varied from 15 to 38 percent (Wilson 1980, Warriner *et al.* 1986, Page 1988). Although natural phenomena contribute significantly to nest failures at some plover breeding sites, the significance of this factor on the overall coastal breeding population is unknown.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by the Pacific coast population of the western snowy plover in determining to issue this proposed rule. Based on this evaluation, the preferred action is to list the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) as threatened. This population of the western snowy plover is threatened by loss and modification of nesting habitat resulting from human development of the coast, encroachment of European beachgrass, and extensive human recreational use of nesting areas. Predation, which is often exacerbated by human disturbance, poses a significant threat to a number of nesting colonies. The Act's definition of an endangered species is a species which is in danger of extinction throughout all or a significant portion of its range. A threatened species is a species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Because the center of the breeding range of the coastal population is in California where the numbers of breeding birds are greater and have not declined as

dramatically as in Washington and Oregon, the Service believes the snowy plover is not currently in danger of extinction. However, the population is likely to become in danger of extinction in the foreseeable future if the impacts analyzed in this proposed rule continue. Thus the Pacific coast population of the western snowy plover fits the Act's definition of threatened. Critical habitat is not determinable at this time for reasons discussed in the "Critical Habitat" section of this rule.

Critical Habitat

Section 4(a)(2) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary designate critical habitat concurrently with determining a species to be endangered or threatened. The Service finds that designation of critical habitat is not presently determinable for the Pacific coast population of the western snowy plover. The Service's regulations (50 CFR 424.12(a)(2)) state that critical habitat is not determinable if information sufficient to perform required analyses of the impacts of the designation is lacking or if the biological needs of the species are not sufficiently known to permit identification of an area of critical habitat. Critical habitat is defined as "specific areas within the geographical area currently occupied by a species . . . on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection . . ." (50 CFR 424.02(d)).

The breeding and wintering range of the coastal population of the western snowy plover is extensive, discontinuously covering over 1,930 km (1,200 miles) of coastline in the United States. Designation of critical breeding habitat is complicated by the ephemeral nature of the substrate at many of the colony sites, movements of breeding birds among colony sites, and lack of information on the value of adjacent tide flats, salt marshes, lagoons, rivers, and salt ponds in maintaining breeding birds. Although nesting sites of the western snowy plover have been carefully documented, very few of the 28 coastal nesting areas have been studied sufficiently to determine exactly where broods move to feed during the fledging stage. In the absence of this information, the conservative approach would be to designate entire stretches of beach as critical habitat. Accurate information on brood movements, however, would allow for refinement of critical habitat boundaries and a better understanding of how human activities can be

successfully integrated during the breeding season. The relative importance of specific wintering habitat sites to maintenance of the coastal population of the subspecies also has not been determined at this time. The Service will work with plover experts to collect and refine information on the physical and biological features of plover habitat that are essential to conservation of the species and which may require special management considerations or protection. Analyses have not been conducted on the impacts of designating critical breeding or wintering habitat.

During the proposed comment period, the Service will seek additional agency and public input on critical habitat, along with information on the biological status of and threats to the snowy plover. The Service intends to use this and other information in order to make a determination on a proposed designation of critical habitat.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The endangered Species 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 all the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to 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 the Service.

Federal agencies that may be involved as a result of this proposed rule are the Service, Bureau of Land Management, National Park Service, U.S. Forest Service, and the Departments of the Army (including the Corps of Engineers (Corps)), Navy, and Air Force. In California, approximately 34 percent of the breeding plover population occurs on Federal lands (J.P. Myers, *in litt.*, 1989). At least 50 percent of breeding habitat is under Federal agency jurisdiction in Oregon (J.P. Myers, *in litt.*, 1989). In Washington, the breeding site at Leadbetter Point is within a National Wildlife Refuge.

On most Federal land containing active breeding sites, few measures have been implemented specifically to protect snowy plovers. In a few areas in California, plovers have benefited somewhat from protective measures taken for the endangered California least tern (*Sterna antillarum brownii*). At Vandenberg Air Force Base in southern California, beaches are closed to all foot and vehicular traffic during the least tern nesting season (Donna Brewer, U.S. Fish and Wildlife Service, pers. comm., 1991). Dogs and cattle have been restricted from some beaches at Point Reyes National Seashore (Gary Page, pers. comm., 1991), and some beaches on Federal land in Oregon have been closed to vehicles to protect plovers and other wildlife (Charles Bruce, pers. comm., 1991). Leadbetter Point in Washington (Fish and Wildlife Service) and a 10-acre spoil disposal site in Coos Bay in Oregon (Bureau of Land Management) are the only nesting sites where human access is restricted specifically for plover nesting. Most other nesting areas on Federal land, with the exception of military bases, have unrestricted human access all year. Access improvements for recreational purposes are ongoing at several beaches. At Coos Bay, Oregon, where the largest coastal Oregon plover colony occurs, several recreational facilities, including off-road vehicle access and campgrounds are proposed on Bureau of Land Management land (Bureau of Land Management 1989).

Because human disturbance is a primary factor affecting snowy plover reproductive success, any of the above mentioned Federal agencies would be required to consult with the Service if any action they fund, authorize, or carry out may affect the coastal population of the western snowy plover.

As discussed above, some western snowy plover nesting and wintering habitat may be regulated by the Corps under section 10 of the Rivers and Harbors Act and section 404 of the Clean Water Act. If a proposed project may affect the western snowy plover, the Corps would be required to consult with the Service under section 7 of the Act.

The Act and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series of general prohibitions and exceptions that apply to all threatened wildlife not covered by a special rule. These prohibitions in part, make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any such conduct), import or export, transport in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any such species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving threatened wildlife species under certain circumstances. Regulations governing permits for threatened species not covered by a special rule are at 50 CFR 17.32. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities. There are also permits for zoological exhibition, educational purposes, or special purposes consistent with the purposes of the Act.

If the western snowy plover is listed under the Act, the Service will review it to determine whether it should be placed upon the Annex of the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, which is implemented through section 2(A)(e) of the Act, and whether it should be considered for other appropriate international agreements.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited.

Comments particularly are sought concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this subspecies;
- (2) The location of any additional populations of this subspecies;
- (3) Additional information concerning the range, distribution, and population size of this species;
- (4) Current or planned activities in the subject area and their possible impacts on this subspecies;
- (5) The reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;
- (6) Constituent habitat elements critical for the conservation of the coastal population of the western snowy plover;
- (7) The location of additional nesting or wintering areas, including areas in Baja California, Mexico;
- (8) The location of areas important for other life history stages, especially feeding areas, and the relative value of such areas in maintaining breeding birds;
- (9) Any foreseeable economic and other impacts resulting from a proposed critical habitat designation; and
- (10) Economic values associated with benefits of designating critical habitat for this subspecies. Such benefits include those derived from non-

consumptive uses (birdwatching, beachwalking, photography, etc.).

Any final decision on this proposal will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor (see **ADDRESSES** section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein is available upon request from the Field Supervisor (see **ADDRESSES** section).

Author

The primary author of this proposed rule is Karen J. Miller, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement, Sacramento Field Office, 2800 Cottage Way, room E-1803, Sacramento, California 95825-1846 (916/978-4613) or FTS 460-4613).

List of Subjects in 50 CFR Part 17

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

Proposed Regulation Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

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

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1554; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500, unless otherwise noted.

2. It is proposed to amend § 1711(h) by adding the following, in alphabetical order under Birds, to the List of Endangered and Threatened Wildlife:

§ 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						
BIRDS							
Plover, western snowy.	<i>Charadrius alexandrinus nivosus.</i>	U.S.A. (CA, OR, WA, NV, AZ, UT, CO, NM, TX, OK, KS); Mexico.	U.S.A. (CA, OR, WA); Mexico (Baja CA) (Pacific coast population only).	T		NA	NA

Dated: January 6, 1992
Richard N. Smith,
Acting Director, U.S. Fish and Wildlife Service.
 [FR Doc. 92-897 Filed 1-14-92; 8:45 am]
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