

Snowy Plover
(*Charadrius nivosus*)

State Status: Endangered, 1995
Federal Status: Threatened, 1993
Recovery Plans: Federal, 2007;
 State, 1995

The Pacific coast population of the snowy plover breeds from Midway Beach, Washington, south to Bahia Magdalena, Baja California, Mexico. The snowy plover winters mainly in coastal areas from southern Washington to Central America (Page et al. 1995).



Figure 1. Western snowy plover (photo by Gregg Thompson).

The Pacific coast population of the snowy plover breeds primarily above the high tide line on coastal beaches. Less common nesting habitats include bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars. In winter, snowy plovers are found on many of the beaches used for nesting as well as on beaches where they do not nest, in man-made salt ponds, and on estuarine sand and mud flats. Habitat degradation caused by human disturbance, building development, introduced beachgrass (*Ammophila* spp.), and expanding predator populations have resulted in a decline in active nesting areas and in the size of the breeding and wintering populations (USFWS 2007). Human activity on beaches, such as walking, jogging, walking pets, operating off-road vehicles, and horseback riding, during the plover breeding season can inadvertently cause destruction of eggs and chicks.

A range-wide breeding season survey in 2012 tallied 1,855 adult western snowy plovers along the U.S. Pacific Coast. Prior to 1970, the coastal population was thought to have nested at more than 50 locations along the coast. Today, only 28 major nesting areas remain.

Historically, five areas supported nesting plovers in Washington (Figure 2; Richardson 1995), but that number has slowly declined to just 2 or 3 areas since 2009 (Table 1). Causes of reduced nest success and local population declines in Washington include predators eating plover eggs, disturbance by recreational activities, and habitat degradation from shoreline modification and dune stabilization (i.e., spread of non-native and invasive beachgrasses; Richardson 1995).

Population monitoring. WDFW, U.S. Fish and Wildlife Service, and Oregon Department of Fish and Wildlife coordinate their monitoring efforts to provide the information needed to assess recovery progress and to assess the effectiveness of conservation actions. This coordinated effort was initiated in 2006 although state-specific monitoring was initiated years before.

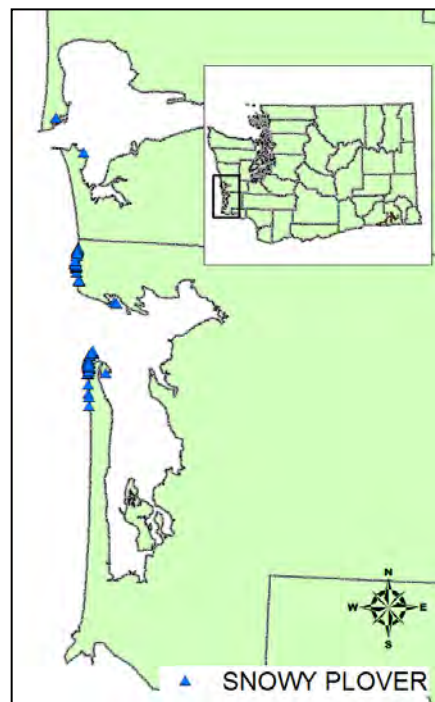


Figure 2. Snowy plover nesting areas in Washington, 2000-2012.

Table 1. Mean counts (95% CI) of breeding adults at four nesting sites in Washington, 2006-2011 (Pearson et al. 2013).

Site	2006	2007	2008	2009	2010	2011	2012
Damon Point	1 (0-2)	0	0	0	0	0	-
Graveyard	2 (-1-5)	2(-1-4)	1(0-2)	0	0	0	2 (0-3)
Midway Beach	21(14-28)	18(14-21)	14(10-19)	15(13-17)	14(11-18)	19(8-30)	14 (5-23)
Leadbetter Pt.	35(26-45)	25(20-30)	32(23-40)	17(10-24)	21(17-26)	12(6-19)	18 (6-29)
Total	59(48-70)	44(36-53)	47(33-60)	31(23-39)	36(33-38)	31(15-47)	33 (15-52)

During 2012, 31 surveys were conducted on 8 sites to assess occupancy or count the number of nesting adults. Snowy plovers were found nesting only on Leadbetter Point, Midway Beach, and Graveyard Spit. The adult breeding population estimate for Washington in 2012 was 33 birds (Table 1).

Population modeling indicates that productivity of at least 1 chick fledged per breeding male per year is needed for a stable population and productivity of 1.2 or more chicks fledged per breeding male should increase population size at a moderate pace (Nur et al. 1999). In 2012, the average number of young fledged per adult male in Washington was 0.68 (range 0.46–0.94). The only year during 2006–2012 when productivity was adequate to maintain the Washington population was 2011 when 1.7 (95% CI = 0.9–2.7) young fledged per adult male (Pearson et al. 2013).

Since 2006, the mean population has declined about 4 birds per year, although the population has been stable for the last 4 years (Figure 3). The population decline in Washington would likely be greater without immigration. Many birds banded in Oregon and northern California, are observed at Leadbetter and Midway Beach indicating that birds are moving into Washington. Oregon’s plover population is larger and increasing and has had higher fledging success (≥ 1.0 ; Lauten et al. 2012), which apparently result in immigration of Oregon birds into Washington.

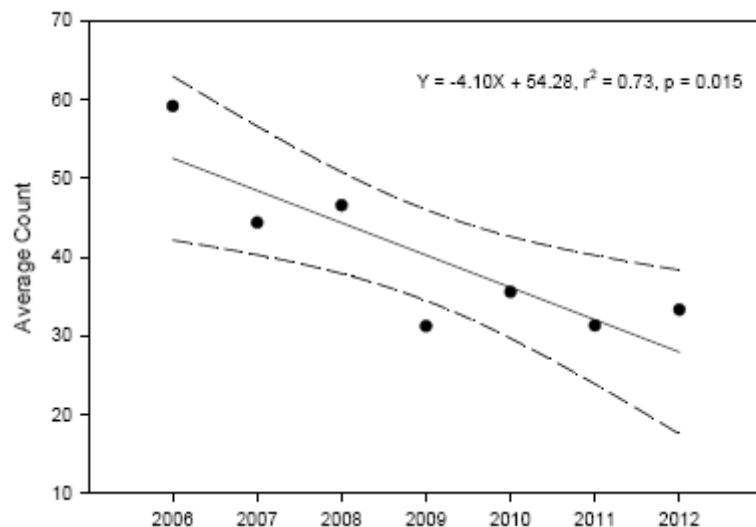


Figure 3. Trend (95% CI) of average yearly count of adult plovers for all Washington sites, 2006 – 2012 (Pearson et al. 2013).

During the 2012 nesting season, the probability of nest survivorship was 26% at Midway Beach and 17% at Leadbetter (Pearson et al. 2013). Of 47 nests found, 15 hatched (32%); predation caused 60% of nest failures. Thirteen nests were protected by exclosures, and 10 of these hatched, while only 5 of 34 unexclosed nests hatched. Although exclosures appeared to increase nest success, there is some evidence that exclosures may increase adult predation as noted in 2008 (Lauten et al. 2004, Pearson et al. 2009a, 2009b). The percent of nests surviving from egg laying through hatching was 21% (including exclosed and unexclosed). Common ravens (*Corvus corax*), the only identified nests predator, were responsible for 9 nest failures in 2012.

Recent conservation actions. In 2012, WDFW biologists put nest exclosures around 3 nests on Midway Beach, and 10 nests on Refuge and State Park lands at Leadbetter Point. Willapa National Wildlife Refuge continued to collect data on nest predators that occurred in and adjacent to plover nesting areas at Leadbetter Point.

A number of the management actions that occurred in 2012 involved minimizing some human activities near active Snowy Plover nesting sites during the nesting season. Human disturbance during the nesting season is well known to cause reduced hatching success and chick survival in snowy plovers (Warriner et al. 1986, Ruhlen et al. 2003). Disturbances to wintering Snowy Plovers are 16 times higher at a public beach than at a protected beach. Human disturbance negatively affects hatching rates and chick survival for various plover species (Flemming et al. 1988, Buick and Paton 1989, Dowling and Weston 1999).

In 2012, nesting areas above the wet sand were again closed to all human use on Grayland and South Beach State Parks and on National Wildlife Refuge and State Park lands at Leadbetter Point. These closures involved about 7.5 miles of nesting habitat at Leadbetter Point and 1 mile of habitat at Midway/Grayland Beach. The lower beach adjacent to the ocean in both areas remained open to the public. The Midway Beach Road access, which cuts through the center of the highest use area for plover nesting on this beach, has been closed each nesting season since 2009 and has resulted in much less disturbance of plovers in this area. At Leadbetter Point, temporary symbolic fencing was installed along access trails at Long Beach by U.S. Fish and Wildlife Service staff to direct people toward the wet sand and away from plover nesting habitat. Area closures are facilitated through the placement of signs notifying the public to stay out and through increased patrolling. Symbolic fencing was used on State Park land at Midway/Grayland Beach at 5 specific high-intrusion locations along the posted sign line. Rope was used more as a reinforcement alert to the public not to enter the closed area. This method was very successful in reducing the number of human intrusions into the posted nesting area. There are two dog restriction signs at trail junctions and trailheads on the Leadbetter Point Refuge lands and there is a “Share the Beach” sign posted at Grayland Beach State Park and on the Refuge trails at Leadbetter Point.

As in previous years, WDFW, Washington State Parks, and U.S. Fish and Wildlife Service again coordinated enforcement activities during razor clam dig days in 2012 to reduce the amount of human activity in active nesting areas at Leadbetter Point and Midway/Grayland Beach. In addition, USFWS provided funding for two portable toilets that were placed on the Refuge beaches during razor clam days. These toilets were successful in reducing the number of human intrusions into the posted nesting area. The refuge received favorable public response to this action. Also, fireworks were prohibited on beaches where State Parks and U.S. Fish and Wildlife Service (USFWS) are the upland land owners.

Also in 2012, Willapa National Wildlife Refuge produced and distributed a revised outreach brochure informing the public about Snowy Plover conservation and habitat restoration actions at Leadbetter Point.

Habitat restoration. In 2012, the U.S. Fish and Wildlife Service added 15 ac to the habitat restoration area (HRA) at Leadbetter Point, which now totals over 250 acres. Oyster shell was added to approximately 62 acres. The non-native beachgrass control included aerial and hand spraying 110 acres in the south central portion of the HRA. The north end of the shelled area in the HRA was harrowed to redistribute shells and bulldozed to remove beachgrass. No habitat restoration work was conducted on State Parks lands at Leadbetter Point or Midway Beach in 2012.

Critical habitat. In 2012, the U.S. Fish and Wildlife Service designated approximately 24,527 acres of coastal habitat in Washington, Oregon and California as critical habitat for the Pacific Coast population of the western snowy plover (USFWS 2012). The designation revises the Service’s 2005 critical habitat designation for the species. Designated critical habitat includes coastal beach-dune ecosystem habitat along the Pacific Coast essential to the survival and recovery of the plover. A total of 60 units were

designated, with 4 of those units in Washington totaling 6,077 acres. These included Copalis Spit (WA1), Damon Point (WA2), Midway Beach and Shoalwater/Graveyard Spit (WA3), and Leadbetter Point and Gunpowder Sands (WA4).

Critical habitat identifies geographic areas containing features essential for the conservation of a threatened or endangered species, and which may require special management considerations or protection. Designation of critical habitat does not affect land ownership and has no impact on private landowners taking actions on their land that do not require federal funding or permits. It is used to notify federal agencies of areas that must be given special consideration when they are planning, implementing, or funding activities that may affect designated critical habitat.

Partners and cooperators: U.S. Fish and Wildlife Service (Willapa National Wildlife Refuge and the Washington State office), Oregon Department of Fish and Wildlife, Oregon Biodiversity Information Center, Washington State Parks, Shoalwater Tribe.

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