STATE OF WASHINGTON September 2022

Periodic Status Review for the Snowy Plover

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Washington Department of FISH AND WILDLIFE Wildlife Program

The Washington Department of Fish and Wildlife maintains a list of endangered, threatened, and sensitive species (Washington Administrative Codes 220-610-010 and 220-200-100). In 1990, the Washington Wildlife Commission adopted listing procedures and for writing recovery and management plans for listed species (WAC 220-610-110, Appendix A). The Washington Department of Fish and Wildlife is directed to conduct reviews of each endangered, threatened, or sensitive wildlife species at least every five years after the date of its listing by the Washington Fish and Wildlife Commission. The periodic status reviews are designed to include an update of the species status report to determine whether the status of the species warrants its current listing status or deserves reclassification. The agency notifies the general public and specific parties who have expressed their interest to the Department of the periodic status review at least one year prior to the five-year period so that they may submit new scientific data to be included in the review. The agency notifies the public of its recommendation at least 30 days prior to presenting the findings to the Fish and Wildlife Commission. In addition, if the agency determines that new information suggests that the classification of a species should be changed from its present state, the agency prepares documents to determine the environmental consequences of adopting the recommendations pursuant to requirements of the State Environmental Policy Act.

This document is the Periodic Status Review for the Snowy Plover. It contains a review of information pertaining to the status of the Snowy Plover in Washington. It was reviewed by species experts and was available for a 90-day public comment period, 7 May-5 August 2022. All comments received were considered during the preparation of the final document. The draft document included an update of the state recovery plan; however, in response to comments, that revision was removed and put on hold until the results of ongoing analyses of plover data are completed. The Department presented the results of this periodic status review to the Fish and Wildlife Commission at the 23 September 2022 meeting in Ocean Shores. The Commission voted to keep the Snowy Plover listed as endangered in Washington.

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On the cover: photo of Snowy Plover at the mouth of the Queets River by Andrew Annanie, Quinault Indian Nation, used by permission; background photo of Midway Beach by the author. Black and white illustration on title page by Darrell Pruett

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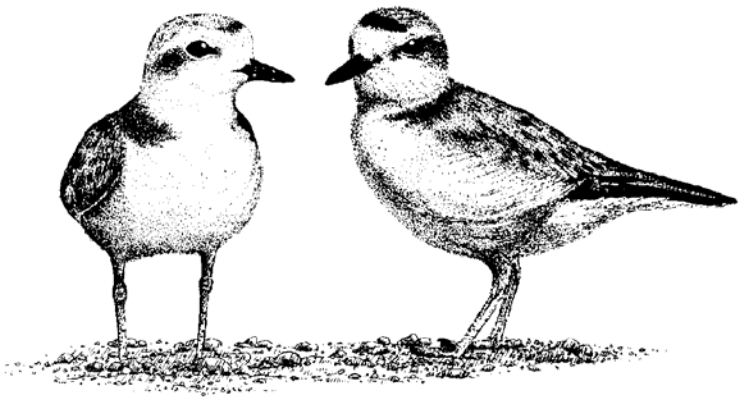

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EXECUTIVE SUMMARY

The Pacific coast population of Snowy Plover (*Charadrius nivosus*) breeds from Grays Harbor County, Washington, south to Bahia Magdalena, Baja California, Mexico, and winters mainly in coastal areas from southern Washington to Central America. The Snowy Plover is currently state listed as endangered in Washington and a state recovery plan was completed in 1995 (Richardson 1995). The Pacific coast population of the Snowy Plover was listed as threatened by the U. S. Fish and Wildlife Service in 1993, and a federal recovery plan was completed in 2007 (USFWS 2007). This document updates the information in the 2016 status review.

Snowy Plovers have recently been consistently nesting at 3 sites in Washington, but began nesting at sites both north and south of these areas; in 2020, they nested on beaches at Connor Creek and Copalis Spit for the first time since 1984! In 2019 the population was estimated at 93 adults; 47 were counted in 2020, but some areas were not surveyed due to restrictions on field operations during the COVID pandemic. Factors affecting productivity of Snowy Plovers in Washington include degradation of habitat by introduced beach grasses, human disturbance during the nesting period, and low productivity due to predation on eggs and chicks. In 2013, a new predator management strategy was initiated on Washington nesting beaches that includes direct hazing and occasional removal of crows and ravens, the main nest predators. Predator management appears to have improved reproductive success in Washington and has helped facilitate recovery to the numbers specified in one of the recovery criteria for federal Recovery Unit 1 (Washington & Oregon). Management attention to minimize human disturbance, particularly during days opened for razor clam digging, has also likely helped improve nest success and increase the Washington population.

A population viability analysis suggested that the West Coast population would not reach the objective of 3,000 individuals identified in the federal recovery plan without additional habitat restoration (Hudgens and others 2014). As a result of this need for additional plover habitat, control of beachgrass and management to reduce human disturbance are ongoing.

Although the Snowy Plover population in the region appears to be increasing as a result of management actions in Washington and Oregon, the increase in Washington seems to be due largely to recruitment of birds fledged in Oregon. The number in Washington is still small, and continued intensive management of human disturbance and predators, and habitat restoration are needed. It is recommended that the Snowy Plover remain listed as an endangered species in Washington at this time.

ACKNOWLEDGMENTS

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INTRODUCTION

This document is an update of the 2016 periodic status review. A recent re-evaluation of monitoring activity resulted in a focus on adult numbers, and the cessation of comprehensive nest monitoring. This change and the metrics for measuring recovery are currently being analyzed; draft revisions of the recovery plan were included in the public draft of this document, but those were put on hold until ongoing analyses are completed and a draft revised recovery plan will be issued in the coming year.

Figure 1. Snowy Plover (*photo by Gregg Thompson*).

DESCRIPTION AND LEGAL STATUS

The Snowy Plover (*Charadrius nivosus*) is a small shorebird (about 6.5 inches [15–17 cm] long; approximately 1.4 oz [40 g]); they are pale gray-brown above and white below, with dark bill and gray legs (Fig. 1). The Snowy Plover was formerly considered conspecific with the Old World, *C. alexandrinus* (Kentish Plover; Chesser and others 2011).

The species was listed as endangered in Washington in 1981, and a state recovery plan was completed in 1995 (Richardson 1995). The Pacific coast population of the Western Snowy Plover was listed as threatened by the U. S. Fish and Wildlife Service in 1993, and a federal recovery plan was completed in 2007 (USFWS 2007). The birds in Washington and along the Pacific coast are the Western subspecies (*C. n. nivosus*) and are part of the Distinct Population Segment listed under the U. S. Endangered Species Act (USFWS 1993, 2006). Critical Habitat was designated in 2005 and revised in 2012 (USFWS 2012). According to the U.S. Fish and Wildlife Service (2007), "*Habitat degradation caused by human disturbance, urban 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*".

DISTRIBUTION

The Pacific coast population of the Snowy Plover breeds from southwestern Washington, south to Bahia Magdalena, Baja California, Mexico and winters mainly in coastal areas from Washington to Central America (Page and others 1995). In Washington, Snowy Plovers historically nested in five areas including Graveyard Spit, Leadbetter Point, Damon Point, Westport Spit, and Copalis Spit (Richardson 1995; Fig. 2). They began nesting on Midway (Grayland) Beach in 1998, but in recent years, they had only nested on Midway Beach, Graveyard Spit, and Leadbetter Point; small number nested further south on Long Beach in 2018 and 2019

(Pearson and others 2019; Ritchie and others 2020). In 2020, several nests or broods were found northofGrays Harbor on the beach along Connor Creek and on Copalis Spit in Griffith-Priday State Park, the furthest north in perhaps 30 years (W. Michaelis, and C. Sundstrom 2020, pers. comm.).

NATURAL HISTORY

Habitat requirements. Snowy Plovers nest primarily above the high tide line in unvegetated or sparsely vegetated areas of 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. Snowy Plovers also seem to nest semi-colonially (territories aggregating at low densities; Pearson and others 2014a).

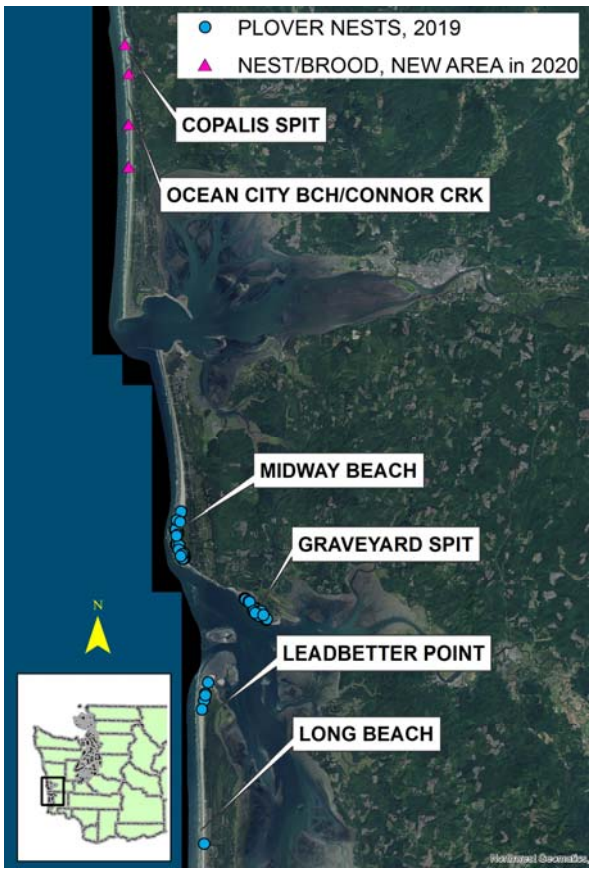

Figure 2. Snowy Plover nesting areas in Washington (2020 nests at traditional sites not shown due to reduced efforts; locations of 2020 nests/broods approximate only).

Diet and foraging. Snowy Plovers are primarily visual foragers, using the run-stop-peck method of feeding typical of *Charadrius* species. They forage on invertebrates in the wet sand and amongst surf-cast kelp within the intertidal zone, in dry sand areas above the high tide, and sometimes they pick insects from low-growing plants. Their diet includes marine and terrestrial invertebrates; during the breeding period on the Oregon coast, adult Snowy Plovers fed on sand hoppers (Orchestoidea) and tiny fish (USFWS 2007). Other food items reported include Pacific Mole Crabs (*Emerita analoga*), Striped Shore Crabs (*Pachygrapsus crassipes*), polychaetes (Neridae, *Lumbrineris zonata, Polydora socialis, Scoloplos acmaceps)*, amphipods (*Corophium* ssp., *Ampithoe* spp., *Allorchestes angustus*), tanadacians (*Leptochelia dubia*), shore flies (Ephydridae), beetles (Carabidae, Buprestidae, Tenebrionidae), clams (*Transenella* sp.), and ostracods (Page and others 1995).

Reproduction. Males defend nesting territories from conspecifics, but 'off-duty' parents often forage with other plovers in non-defended areas of wet sand up to several kilometers from the nest (Page and others 1995). Snowy Plovers initiate clutches of eggs (3 typically) from April through July. Nests are a simple shallow scrape on open sand, or sometimes under an object or clump of vegetation. Many clutches are lost to predators, buried by wind-blown sand, or abandoned due to human disturbance during the incubation period of about 27–32 days. The precocial chicks are led from the nesting territory shortly after hatching and

quickly become mobile and elusive. The female leaves the mate and brood within a few days of hatching to find a new mate and start a new nest, while the male rears the brood. Females attempt to produce two or occasionally three clutches during a season. Males may also remate to initiate a second nest after the brood learns to fly.

Figure 3. Snowy Plover eggs in a nest scrape.

Predation, survival, and longevity. Most nest failures are due to predation, and Common Ravens (*Corvus corax*) and crows (*C. caurinus, C. brachyrhyncos*) are the most frequent identified predators. Northern Harriers (*Circus cyaneus*) can also be a problem, as they depredated half the nests on Graveyard Spit in 2018. Raccoons (*Procyon lotor*), Striped Skunks (*Mephitis mephitis*), Coyotes (*Canis latrans*), and Peregrine Falcons (*Falco peregrinus*) will also occasionally take eggs, chicks, or adults. Adult apparent survival was 0.71 +/- 0.01 based on Oregon mark-resight data from 1990 to 2014 (Gaines and others 2020). Mean annual survival for plovers in Oregon during 1992-2002 was estimated at 75% for both males and females (USFWS 2007). The longevity record belongs to a male banded in Humboldt County, California, in 2001 that was still rearing young in 2017 (Colwell and others 2017).

Migration and dispersal. Snowy Plovers are a partial migrant, with some individuals residing year-round in their breeding areas and others migrating, typically further south, for the winter. Many Washington birds winter locally, while some winter in Oregon and northern California, and a very small number have been observed further south. In northern California, chicks that fledged early in the season were more likely to be migratory, while later fledging birds more often joined a local post-breeding flock and became winter residents (Colwell and others 2007). In central California, most birds (64%) settled <10 km from natal sites, but 16% moved >50 km for their first breeding season (maximum = 360 km for males, 790 km for females; Stenzel and others 2007). Colwell and others (2007) reported that the average dispersal distance for both males and females in northern California approached 20 km (median distances were ~5 km; similar to those reported by Stenzel and others (2007).

The Pacific coast populations of Snowy Plovers are linked by occasional dispersal between breeding areas. Birds banded in Washington have been observed elsewhere, including 2 banded in 2013, observed in Oregon in 2014, and three observed in 2019 (Lauten and others 2014). One Washington banded plover observed in 2017 was a female banded in 2013 and had been observed in Oregon since 2014 (Lauten and others 2017). Colwell and others (2007) recorded several plovers hatched from northern California nests that bred at Leadbetter Point or Midway Beach, Washington, and birds banded in Oregon are often observed in Washington.

POPULATION AND HABITAT STATUS

Western Snowy Plover, U.S. west coast population. Snowy Plovers are believed to have nested at about 78 locations on the U.S. west coast prior to 1970, but today only 28 major nesting areas remain (USFWS 2007). The 2019 Breeding Window Surveys produced a raw count of 2,217 breeding-age adults. The number was down slightly from 2,375 in 2018 but has increased from 1,537 in 2007 (USFWS 2019). The raw count for federal Recovery Unit 1 (Washington and Oregon) increased from 137 in 2005, to 479 in 2019, as a result of protections and recovery actions (Fig. 4).

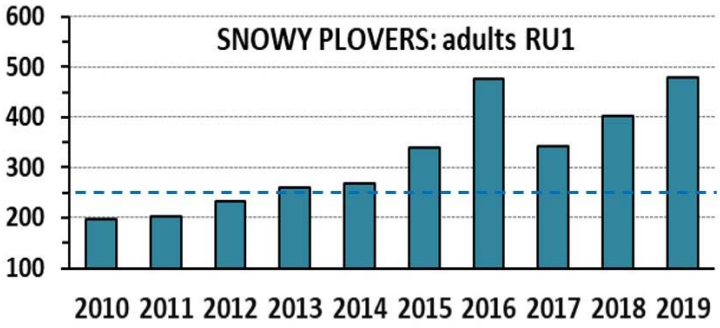

Figure 4. Number of adult Snowy Plovers counted during Breeding Window Survey in federal Recovery Unit 1 (Washington and Oregon; USFWS 2019); dashed line is the recovery objective (250).

Hudgens and others (2014) reported an apparent latitudinal gradient in growth potential that results from differences in both adult survival and fecundity. They suggested that northern populations, such as Washington's, are affected more by winter weather extremes and would need to be managed more intensively than southern ones to achieve the same demographic goals. However, management intensity may affect productivity more than latitude (E. Gaines 2021, pers. comm.). Hudgens and others (2014) noted, however, that even sites projected to be sink habitat based on their demographic rates play an important role in maintaining and recovering Snowy Plovers if they represent substantial protected habitat; they also suggested that habitat restoration increased the metapopulation size regardless of where habitat was restored. The population viability analysis conducted by Hudgens and others (2014) suggested that the West Coast population would not reach the recovery objective of 3,000 identified in the federal recovery plan (USFWS 2007), without additional habitat restoration. It also suggested that range-wide demographic objectives (e.g. 1 fledgling/male/year) may not be appropriate and consistently attainable for all recovery units, in part because productivity is affected by density, with populations at carrying capacity showing lower productivity (Hudgens and others 2014).

Washington. Historically, five areas supported nesting plovers in Washington (Richardson 1995), but that number declined to just 2 or 3 areas since 2009 (Table 1). Between 2006 and 2011, the Washington population declined, but has been stable or increased during the last 6 years (Fig. 5). Nest numbers have decreased at Leadbetter since 2015 for unknown reasons, but increased dramatically on Graveyard Spit, and expanded south on Long Beach from south of Oysterville Road to south of Klipsan Beach in 2019. One nest was also discovered north of Leadbetter Point on Gunpowder Sands Island, and multiple nests or broods were found north of Grays Harbor at Connor Creek and Copalis Spit.

In 2018, we located 72 nests (28 at Midway Beach, 38 at Graveyard Spit, and 6 at Leadbetter Point), and at least 3 other nests went undiscovered based on the number of broods or nests found post-predation. Of the

Table 1. Mean counts[a] (range) of breeding adults at nesting areas in Washington, 2008-2020 (Pearson and others 2019; Ritchie and others 2020; Sundstrom and others 2021).

Year	Midway	Graveyard	Leadbetter Pt.	Long Beach	Ocean Shores/ City	Connor Crk	Copalis Spit	Total
2008	14 (10–19)	1 (0–2)	32 (23–40)	ns[a]	ns	ns	ns	47 (33–60)
2009	15 (13–17)	0	17 (10–24)	ns	ns	ns	ns	31 (23–39)
2010	14 (11–18)	0	21 (17–26)	ns	ns	ns	ns	36 (33–38)
2011	19 (8–30)	0	12 (6–19)	ns	ns	ns	ns	31 (15–47)
2012	14 (5–23)	2 (0–3)	18 (6–29)	ns	ns	ns	ns	33 (15–52)
2013	20 (16–24)	4 (1–6)	20 (19–20)	ns	ns	ns	ns	43 (41–45)
2014	11(9–13)	7 (6–8)	24 (21–28)	ns	ns	ns	ns	41(40–43)
2015	24 (19–33)	8 (3–11)	43 (34–54)	ns	ns	ns	ns	77 (65-98)
2016	37 (33–40)	21 (18–25)	33 (25–32)	2 (0–2)	0	0	1	93 (85–103)
2017	36 (35–36)	21 (18–24)	21 (14–32)	13 (0–13)	0	0	0	78 (70–86)
2018	31 (23–40)	35 (28–42)	21 (13–29)	1 (0–1)	1 (0-3)	1(1–2)	0	87 (80–91)
2019	33 (28–39)	31 (30–32)	16 (7–21)	11 (7–19)	1	0	0	93 (78–100)[b]
2020	33 (29–37)	33 (30–35)	ns	ns	2	4(3–4)	4(2–6)	65 (47–76)[c]
2021	33 (29–36)	43 (35–49)	14 (12–17)	1 (0–4)	ns	2(2-3)	6(5-7)	100

[a]Breeding window protocol with ~3 replicates; ns= no survey.

[b]Includes 1 bird at Ocean Shores, and 1 bird on Gunpowder Sands Island, north of Leadbetter.

[c] Reduced survey effort due to COVID restrictions.

72 monitored nests, 32 hatched (44%), and ~76% of the nests that failed were lost to predation, mostly by crows or ravens). Using the Mayfield measure of nest success, nest survivorship was 4% at Midway, 54% at Graveyard and 29% at Leadbetter Point (but Leadbetter had only 6 nests). Nest success was low in 2018 and was similar to pre-predator management levels. Since predator management was initiated, predation was low until 2018; why effectiveness seemed to change is unclear.

The total number of adults detected in 2021 was 100; 26 nests were found, but with reduced effort; 16 of these were on Graveyard Spit. Nests were not monitored on Midway, and monitoring effort was reduced on Leadbetter. In 2019, many nests were empty before their anticipated hatch date, but no predator tracks were present, making it difficult to determine cause of failure. Fair

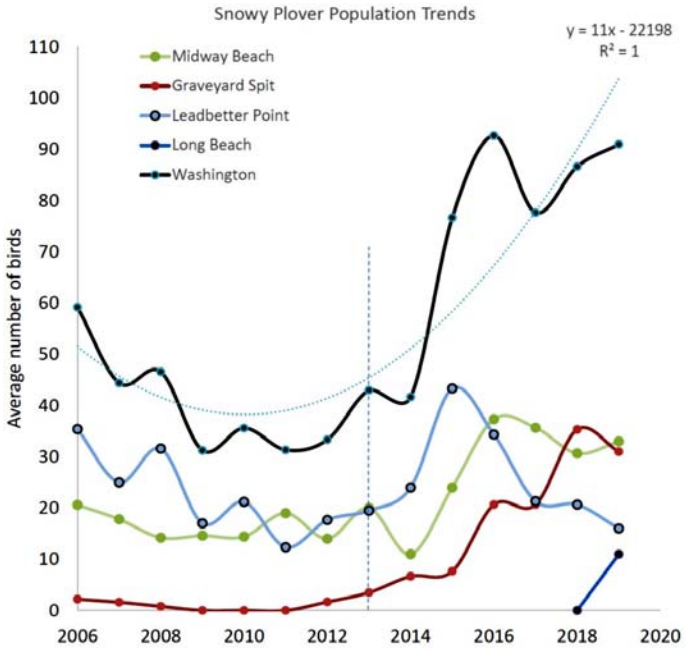

Figure 5. Breeding adult Snowy Plover trend for Washington sites, 2006-2019. The circles represent the average (of 3 counts) and the dotted curved line is the quadratic relationship of the overall estimate. Vertical line indicates when predator management started (Pearson and others 2019; Ritchie and others 2020).

weather likely produced more windy days, so many outer beach nests may have been buried by sand. In 2020, 47 adults were detected during the protocol Breeding Window Survey, but no survey was done on Leadbetter or Graveyard Spit due to COVID restrictions; there was a higher proportion of males (28) than females (17). The mean total of adults for the 2 or 3 surveys was 65 (Sundstrom and others 2021). The 2020 surveys found plovers at three sites north of Ocean Shores (Table 1), and successful nesting and fledging was observed at Griffiths-Priday State Park (Copalis Spit) for the first time since 1984.

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 chicks fledged per breeding male should increase population size at a moderate pace (Nur and others 1999). At the two main nesting areas (Leadbetter and Midway), the Washington birds produced ≥1.0 fledgling/male in 2011, 2013, 2014, 2015, and 2017 (Table 2; Pearson and others 2014b, 2015; Ritchie and others 2019). Nesting and fledging success has improved since predator management began in 2013, although fledging success (but not nest success) was also high in 2011, prior to predator management. Fledging success was low in 2018, in part due to the predation by a pair of Northern Harriers on Graveyard Spit.

Table 2. Number and 4-year average of breeding pairs and chicks fledged per adult male Snowy Plovers in Washington, 2009-2018 (Pearson and others 2016, 2019; Novack and others 2018).

Year	No. chicks fledged/male (95%CI)	No. breeding pairs (95%CI)	4-year average of pairs
2009	0.71 (0.5–0.96)	17–18 (13–22)	25 (19–31)
2010	0.57 (0.53–0.62)	21–22 (20–23)	22.5 (18–27)
2011	1.59 (1.4–1.66)	22 (11–33)	22 (16–28)
2012	0.68 (0.46–0.94)	19	20 (11–20)
2013	1.04 (0.92–1.18)	22–24	21 (13–20)
2014	1.88 (1.67–2.13)	23–27	22 (14–21)
2015	1.74 (1.24–2.2)	42 (35–55)	26 (20–32)
2016	0.96 (0.7–1.21)	43–57	36
2017	1.7 (1.55–1.83)	28–51	40
2018	0.76 (0.65–093)	34–37	42
2019	No data	No data	-

Hudgens and others (2014) reported that the populations in northern California and Washington (before predator management) appeared to be 'sinks,' which were supported by immigration from the more productive areas. For example, Colwell and others (2013) reported that in 2013, 1/3 of breeding adults in northern California came from elsewhere, primarily Oregon. Many birds observed at Leadbetter and Midway

Beach also were banded as chicks in Oregon and California and are in their first potential breeding period; of 44 banded birds observed in 2019, 42 were from Oregon and 1 from California (W. Ritchie, pers. comm.). Given the relatively low fledging rates, the population would likely decline in Washington without immigration.

Despite the colder weather conditions encountered on northern beaches (Hudgens and others 2014), plovers may be expanding their current range. There have been several nest/brood and adult breeding season records of plovers north of Grays Harbor, including the nests/broods at Connor Creek and Copalis Spit in 2020, a plover observed at the mouth of the Queets in June 2018 (A. Annanie 2018, pers. comm.), and two plovers observed at Wickanninish Beach, Pacific Rim National Park Reserve, on the south west coast of Vancouver Island, BC on 23 May 2019 (N. Hentze, BC Bird Records Committee Chair 2019, pers. comm.). In Oregon, plovers have been reliably nesting in all coastal counties since 2018, after having been absent north of Lane County since the 1970s (Lauten and others 2019). These individuals are filling the gap between core nesting areas near Florence, Oregon and Leadbetter.

Wintering numbers. A total of 167 plovers were detected in 2021 during the Winter Window Survey in Washington, more than double any previous count (Table 3). Numbers were also high in Oregon with 536 plovers recorded, up from 396 in 2020 and 359 in 2019.

Table 3. Washington Winter Window Survey counts, 2009-2021 (Pearson and others 2014b, 2015, 2019; Ritchie and others 2020; A. Novack, C. Sundstrom 2021, pers. comms.)

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
19	35	22	34	28	71	22	69	66	50	80	75	167

Habitat Status–Nesting Areas

These sandy coastal nesting areas are dynamic, and winter storms can change the area of sand available, or create or eliminate islands; for example, Leadbetter Point changes shape year to year, and the sandy islands are sometimes subtidal for years. In addition, these coastal habitats are particularly vulnerable to climate change related factors such as increased storm severity, storm surges, and beach erosion, which may cause declines in important habitat (Table 4). However, surges that eliminate vegetation have been called 'natural restoration' in California and the resulting sandy areas had improved nest success (Raby & Colwell 2020). Future changes may affect the area of sandy habitat available and affect human access and the level of disturbance. As described below (see *Habitat Degradation...*), all the nesting beaches are affected to some degree by introduced invasive vegetation, particularly beachgrasses (*Ammophila* spp.).

Leadbetter Point and Midway Beach. Most Snowy Plover nests have been on Willapa National Wildlife Refuge (NWR), state park, and Shoalwater Bay Tribe lands. There is also some nesting on private land at Midway Beach, and Graveyard Spit. An objective in the 1995 state recovery plan called for at least two nesting areas on "secure" habitat. This term was not defined, but Leadbetter Point is a NWR and is 'secure';

the other two main sites (Midway, also called Grayland, and Graveyard Spit) may not be secure due to mixed ownerships and disturbance issues. We define 'secure' below (see *Recovery*). Recreational disturbances at coastal sites has been documented, including off-leash dogs, vehicles, bicycles, horseback riders and clam diggers (Richardson 1995; C. Sundstrom 2021, pers. comm.). Seasonal signage, radio annoucements, social media posts, and temporary fencing help restrict human presence in the dune areas where Snowy Plovers nests.

Table 4. Estimated habitat area and length of beach at Western Snowy Plover nesting areas in Washington.

Site	Approx. area habitat ac (ha)	Beach miles (km)	Source
Leadbetter Point	1,270 (514)	7.8 (12.5)	USFWS (2007)
Midway Beach	895 (362)	1.6 (2.6)	USFWS (2007)
Graveyard Spit	96 (39)	2 (3.2)	(estim.)
Copalis Spit & Connor Creek	473 (191)	8 (12.8) [1]	USFWS (2007)
Damon Pt. & Oyhut Wildlife Area	1,207 (488)[2]	5.1 (8.2)	USFWS (2007)

[1]Length measured with GIS included spit, south to Oyhut (USFWS 2007 listed 1.6 mi).

[2]Most of Damon Pt. is currently unsuitable due to Scotch Broom, etc.and both areas subject to high chronic disturbance.

Graveyard Spit. Graveyard Spit is a sand spit east of Cape Shoalwater, across the mouth of Willapa Bay from Leadbetter Point in Pacific County. It is a mix of ownership of the Shoalwater Bay Indian Tribe, state, and private landowners (Richardson 1995; Herter and others 2015). The state lands are part of the Seashore Conservation Area, under the jurisdiction of the Washington State Parks and Recreation Commission. There has been a recent increase in disturbance there from beach walkers and ATV use from residents and commercial establishments on the nearby mainland, but despite these issues the number of plover territories has increased. A plover management plan for the tribal land and intermixed state lands on Graveyard Spit outlines needed actions (Herter and others 2015).

Copalis Spit and Ocean City Beach/Connor Creek. Copalis Spit is a ~1.5 mile long beach that is part of Griffith-Priday State Park, and the park has begun assisting by posting signs, etc. during the nesting season; Copalis Spit was designated Critical Habitat unit WA-1 (USFWS 2012). The Ocean City Beach/Connor Creek area, from Second Ave, north to the Connor Creek outlet has ~3.3 mi of beach between the ocean and the creek, before the creek turns west to empty into the Pacific Ocean; the majority is part of the Seashore Conservation Area, under jurisdiction of the Washington State Parks and Recreation Commission, , and beach driving is restricted 15 April to Labor Day.

Damon Point and Oyhut Wildlife Area. This area has not been used for nesting since 2006. Damon Point has been largely invaded by Scotch Broom, Shore Pine (*Pinus contorta contorta*), and other vegetation, though it was designated as the WA-2 Critical Habitat unit (USFWS 2012). Oyhut Wildlife Area has a small pocket beach (<25–30 ac), but is subject to a high level of human disturbance.

Long Beach. The Long Beach peninsula south of Leadbeater, has ~20 miles of beach, but much of it is fairly narrow providing little buffer for any nesting plovers and any human or other traffic. Recently there was some plover nesting activity in the northern portion, south of Oysterville Road to perhaps Ocean Park. This portion of the beach is a little wider, but also is affected by very high levels of human disturbance, and the mixed ownership pattern limits the ability to manage access and disturbance. It is not likely to be a consistently productive plover nesting area.

FACTORS AFFECTING SNOWY PLOVERS IN WASHINGTON

Adequacy of Regulatory Mechanisms

Federal protection. The Pacific coast population of the Western Snowy Plover was listed as threatened under the U.S. Endangered Species Act by the U. S. Fish and Wildlife Service in 1993 (USFWS 1993). Critical Habitat was designated in 2005 and revised in 2012 (USFWS 2012). The Endangered Species Act protects endangered and threatened species by prohibiting take of listed animals and the interstate or international trade in listed plants and animals, including their parts and products, except under Federal permit. Critical habitat designation affects actions that have a federal nexus (federal entity funds, authorizes or carries out an action) occurring on designated lands.

Critical habitat. Critical habitat identifies geographic areas containing features essential for the conservation of a listed species, and which may require special management considerations or protection. Designation of critical habitat does not affect non-federal land ownership and has no impact on private landowners taking actions on their land that do not require federal funding or permits. 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 Snowy Plover (USFWS 2012); the designation revised a 2005 critical habitat designation for the species. Designated critical habitat includes coastal beach-dune 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).

***State, county, and city protections*.** The Snowy Plover is protected from 'take' as an endangered species in state law (RCW 77.12.020, RCW 77.15.120). Protecting plovers from disturbance that can crush eggs and/or chicks, or lead to nest abandonment or predation is a complicated issue, which requires considerable attention. The area occupied by nesting plovers on the beaches shifts and changes in size during and between nesting seasons and requires monitoring to adapt signage, symbolic fencing, and enforcement

presence to the current situation. Also managing human activities requires cooperation between multiple agencies with different mandates.

Shoreline Management Act. The ocean beaches are considered 'Shorelines of Statewide Significance' under Washington's Shoreline Management Act (SMA). Preferred uses, in order of priority, are to "recognize and protect the statewide interest over local interest; preserve the natural character of the shoreline; result in long term over short term benefit; protect the resources and ecology of the shoreline; increase public access to publicly owned shoreline areas; and increase recreational opportunities for the public in the shoreline area" (RCW 90.58.020). The SMA establishes a balance of authority between local and state government, with cities and counties as the primary regulators. The state Department of Ecology acts in a support and review capacity, providing technical assistance, and funding in the form of grants. Department of Ecology also reviews certain kinds of permits (*conditional use* and *variance permits*) for compliance with state law, and must review local shoreline master programs to ensure they also comply. Under SMA, each city and county with "shorelines of the state" must prepare and adopt a Shoreline Master Program that is based on state laws and rules but is tailored to the specific geographic, economic, and environmental needs of the community. The local Shoreline Master Program is essentially a shoreline-specific combined comprehensive plan, zoning ordinance, and development permit system. Most shoreline master programs were originally written between 1974 and 1978. Ecology adopted updated guidelines in 2003, and Pacific and Grays Harbor counties are in the process of a comprehensive update of their shoreline programs to meet the requirements of the new guidelines.

Habitat Degradation, Predation, and Human Disturbance

Three main factors are thought to limit recovery of Snowy Plovers via negative effects on breeding productivity: 1) excessive predation of eggs, chicks, and adults; 2) encroachment of invasive vegetation that degrades breeding habitats; and 3) human activity, which causes direct mortality of eggs, chicks, and adults, facilitates predation by flushing adults, or indirectly affects the distribution of plovers (USFWS 2007).

Tall perennial beachgrasses can eliminate sparsely vegetated sand areas used for nesting by Snowy Plovers. Two species, European Beachgrass (*Ammophila arenaria* (L.) Link) from Europe, and American Beachgrass (*Ammophila breviligulata* Fern.) from eastern North America (Seabloom and Wiedemann 1994), have become naturalized along the West Coast of North America and replaced much of the native vegetation that comprised foredune habitat (Wiedemann 1987). The introductions of these two *Ammophila* species caused a change in dune geomorphology (Zarnetske and others 2012). These two species are now hybridizing, with uncertain implications for dune morphology and plovers (Mostow and others 2021). Beachgrass control has been ongoing at Willapa NWR to restore nesting areas for Snowy Plovers. Raby & Colwell (2020) reported that habitat in northern California that had been restored by human effort or by natural tidal processes had higher nest survival rates than unrestored habitat.

Habitat loss due to beach stabilization and development has eliminated many nesting areas. The number of nesting areas in California, Oregon and Washington had declined 68% from the number known historically, although several sites on the northern coast of Oregon, and the Copalis and Connor Creek sites have been re-occupied in the last few years. Factors affecting Snowy Plover habitat include development on beaches

and interruptions of the dynamic erosion/accretion processes by jetties, the Columbia River dams (which trap sediment), and other structures.

Human activity on beaches during the plover breeding period can cause nest failure directly through the destruction of eggs and chicks, or indirectly by flushing adults, and exposing eggs to extreme temperatures, wind-blown sand, and predation by crows and Common Ravens. Disturbance can involve pedestrians, dog-walking, clam digging, horseback riding, and vehicular traffic. Human related disturbance negatively affects hatching success (Warriner and others 1986; Schulz and Stock 1993). Mortality of Snowy Plover chicks at Point Reyes National Seashore, California, was about three times greater on weekends and holidays than on weekdays (Ruhlen et. al. 2003). DeRose-Wilson and others (2018) also reported Piping Plover chick survival was negatively correlated with beach recreation and suggested that plover territory selection before increased seasonal recreation may create an ecological trap whereby plovers select areas with better foraging, which is impacted by recreation later in the season. Disturbances to wintering Snowy Plovers were 16 times higher at a public beach than at beaches with little or no public access, and plover feeding rates declined in response to disturbance (Lafferty 2001a). Most management attention throughout the range has been focused on nesting habitat, and much less attention has been given to protection of plovers and habitat during winter. The federal recovery plan for the plover requires long-term management and protection of wintering sites, including prevention of disturbance by humans and their pets, restricting off-road vehicles, and creating and enhancing existing winter habitat (U.S. Department of Interior 2007).

Although Washington code (WAC 352-37-030) prohibits driving on dry sand areas of the beach where nesting occurs, this is difficult to monitor and enforce, and violations occur. Where not prohibited, vehicle traffic is allowed on the wet, packed sand portion of beaches. Once the eggs hatch, chicks often forage on the wet sand where foraging may be interrupted by human activity, and there is more potential for collisions with vehicles. Occasional high levels of traffic (e.g. during razor clam seasons, July 4th, etc.) at Midway Beach, Copalis Spit, Connor Creek, and Leadbetter Point, can result in destruction of nests (Pearson and others 2014, C. Sundstrom 2021, pers. comm.), and likely higher levels of abandonment and loss to predation, and reduced chick survival (Lafferty 2001b, 2006; Ruhlen and others 2003; USFWS 2007). Razor clam season days are popular and require deliberate and continued management, outreach, and enforcement attention to minimize conflicts with nesting plovers. WDFW and USFWS worked together to identify a cut-off date for late spring razor clamming days to minimize and avoid impacts to Snowy Plover nests and chicks. Eggs and chicks may also experience high predation rates from the high populations of ravens and crows associated with human food sources, as well as occasional predation by Northern Harriers (*Circus cyaneus*) and Great Horned Owls (*Bubo virginianus*). Peregrine Falcons (*Falcon peregrinus*) take chicks and adults. Placement of Purple Martin (*Progne subis*) nesting boxes on beaches is being tested in Oregon; the martins harass and may exclude harriers and falcons from their territories; however, the martins do not establish territories until mid-June and harriers were problematic on beaches with and without martin boxes in 2021 (E. Gaines 2021, pers. comm.).

Beach Erosion, Sea Level Rise, and Climate Change

The coastal beaches used by plovers are dynamic, ever changing with erosion and accretion of sands, particularly during storms (Figure 6). The changing substrate can prevent the establishment of vegetation

that would make the beaches unsuitable for nesting (such as has happened on Damon Point in recent decades), but major storms or shifts of an erosional trend could eliminate nesting areas. Long-term shoreline change has generally been one of accretion at most beaches in southwestern Washington during the past century primarily due to the construction of jetties at both the mouth of the Columbia River and at Grays Harbor (Ruggiero and others 2013). Exceptions to the pattern of progradation include erosion hotspots at Cape Shoalwater (including 'Washaway Beach') and the beach north of Cape Disappointment from North Head to Pacific Park (State of the Beach/State Reports/WA/Beach Erosion). The general pattern has also been changing, with several locations where beaches had been rapidly prograding now either prograding more slowly or eroding (Ruggiero and others 2013).

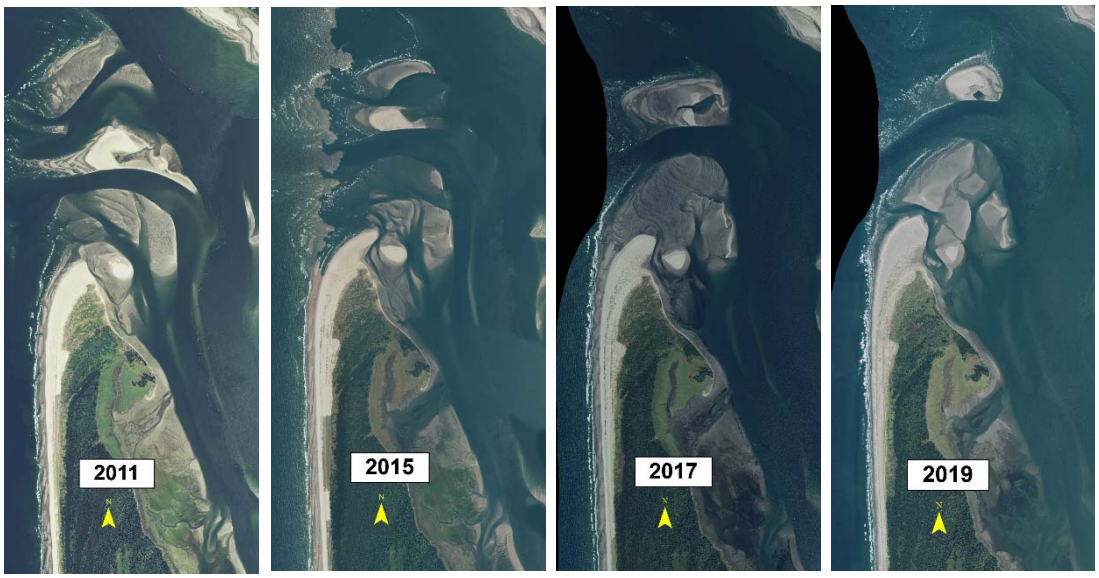

Figure 6. Changes in Leadbetter Point, 2011-2019.

Climate change will affect plovers and their habitat to an uncertain extent. Thermal expansion of the oceans, melting of alpine glaciers and polar and Greenland ice sheets, and pumping of groundwater will increase absolute sea level. Recent modeling suggests, the most likely scenarios predict a relative rise of 1–3 ft by 2100, somewhat less than other areas due to the uplifting of the land at Washington's outer coast of about 1 ft/century due to tectonic forces (Miller and others 2018). However, positive feedback 'tipping point' scenarios may result in devastating impact on coastal beaches and plovers by 2100, or sooner, if CO_2 emissions are not dramatically curtailed and global temperatures exceed 2 C° (Steffen and others 2018).

Increasing wave height and energy along with sea level rise, could be more important, or at least as important, than sea level rise for coastal erosion in coming decades (Ruggerio 2013). Beach erosion can be particularly dramatic during El Nino events, such as 2015-2016 (Barnard and others 2017), and can eliminate all the accretion of the intervening years; and some studies predict an increasing frequency of extreme El Nino events with climate change (Wang and others 2019). Storm surges and wave action may affect beach topography, and prey abundance and distribution in unknown ways. The increase in the frequency and severity of storms predicted with climate change may have significant impacts on Snowy Plovers. High winds

during nesting can result in widespread burial of eggs, and require renesting, and delayed hatching and fledging, as occurred in 2017, and limit the number of second broods. Colwell and others (2013) reported that unusually cold winter weather adversely affected annual adult survival in northern California. Modeling by Eberhart-Phillips and Colwell (2014) and Hudgens (2014) suggested that cold winter storms and weather appear to affect plover over-winter survival and population growth, either through survival or resulting in a shorter breeding season. Gaines and others (2020) found no effect of cold weather on winter survival in Oregon, but did find a small but significant negative effect of winter precipitation; they also found no relationship with of an El Nino index; however, winter weather may be more severe on Washington's coast.

Ocean acidification as a result of increased CO_2 levels may affect the invertebrates on which plovers feed. Small crustaceans make up a significant portion of the breeding season diet of plovers. Crustaceans are generally thought to be tolerant of changes in pH, however, crustaceans show a variety of responses to changes in ocean carbon chemistry. Exposure of the caridean shrimp, *Lysmata californica*, exhibited significant changes in exoskeleton calcification and shrimp transparency within just three weeks of exposure to reduced pH with potential impacts on crypsis, physical defense, and predator avoidance (Taylor and others 2015). It is not yet known if acidification will impact the prey base available to plovers.

MANAGEMENT ACTIVITIES

Predator management. Egg and chick predation, particularly where crows and ravens benefit from human sources of food, is an important factor limiting Snowy Plover population growth. Predator management has been a component of plover conservation in most recovery regions. Wire nest exclosures were used for several years to protect nests from predators (since 1992 in Oregon, sparingly since 2013; 2006-2013 in Washington); they succeeded in improving nest success, but they require time to install and maintain, and can result in increased predation on adults and chicks, and may not increase fledging success (Hardy & Colwell 2008; Pearson and others 2014a, Gaines and others 2020). Exclosures have not been used since 2013. In 2013, an Integrated Predator Damage Management Program was initiated at Willapa NWR to identify predators and minimize nest predation, through a contract with USDA-APHIS. Management activities included observing predator activities in plover nesting sites and then conducting targeted dispersal or lethal removal as appropriate. The high nest success after 2012 (Fig. 7) was likely a result of active predator management, but nest success was low in 2018 (and apparently again in 2019, W. Ritchie 2020, pers. comm.), so further evaluation is needed. Corvids may learn to avoid lethal control actions. Productivity in Oregon, as measured by fledging success, brood success, number of fledglings/male, and overall number of

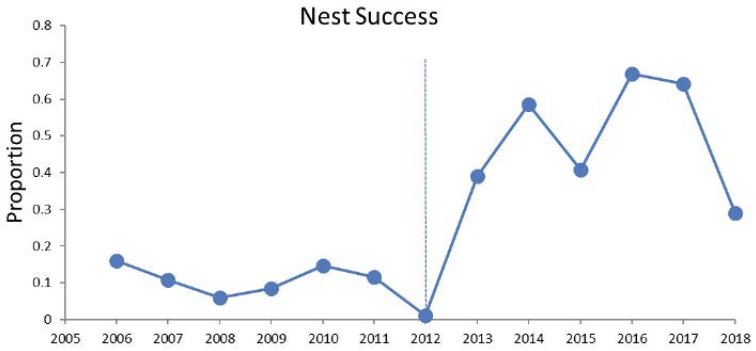

Figure 7. Snowy Plover nest success in Washington, 2006-2018; predator management began in 2013 (Pearson and others 2019).

fledglings produced, have all improved since active predator management was implemented in 2004 (Dinsmore et al. 2014, Lauten and others 2014). In a review, Colwell (2019) concluded that lethal removal has had a strong positive effect on productivity and population growth of Snowy Plovers; even where lethal control is not used, populations are growing owing to immigration from areas where lethal removal of predators is being done.

Habitat restoration. Hudgens and others (2014) stated that restoration sites that promote dispersal to relatively isolated populations in Washington and northern California may stabilize these populations. A Habitat Restoration Area (HRA) at Leadbetter Point which is mostly cleared of non-native beachgrass using mechanical and chemical methods, has increased in size annually since Willapa NWR began work in 2001. The Leadbetter HRA is probably the largest on the Pacific coast, now totaling ~460 acres of refuge and state park lands, and has been an important nesting area for the Washington population. Soon after its creation, plover nesting activity was concentrated there (e.g. 2007-2011); but nesting has been more dispersed in recent years. In 2021, Washington State Parks succeeded at getting two years of funding for additional habitat restoration at Leadbetter for removal of beachgrass and shore pine.

WDNR had been working on control of invasive vegetation on Damon Point, particularly Scotch Broom (*Cytisus scoparius*); 28 ac were controlled during 2014-2015 (R. Mitchell 2015, pers. comm.), and they have sought funding for additional work.

Management of human disturbance. Several management actions intended to minimize human disturbance of nesting Snowy Plovers have been conducted in Washington since their state-listing in 1981. More detail is provided in annual reports (Pearson and others 2014b, 2015-2017, 2019; Novack and others 2018; Ritchie and others 2020; Sundstrom and others 2021). During 2020, approximately 8.0 miles of beach at Leadbetter Point and approximately 2.6 miles of publicly owned beach (Washington State Parks Seashore Conservation Area) at Midway Beach were signed to discourage/restrict human access to critical nesting areas. The Shoalwater Bay Tribe posted approximately 15 acres of beach used by nesting Snowy Plover at Graveyard Spit (Sundstrom and others 2021). Symbolic fencing, totaling over 1,500 feet in length, was placed along three trails that access the beach on the Long Beach Peninsula (1 private access, 1 state park access, 1 refuge access) during a period of 26 weeks (Ritchie and others 2020). In 2021, State Parks began posting 36 acres (from the south river bank of the Copalis River southward for ~2600 linear feet then eastward into the vegetated dune area); this area of nesting habitat will be posted each season with possible increases in overall area of protection. Informational/educational signage will be posted as funds are made available.

Since 2012, WDFW, State Parks, and USFWS have coordinated enforcement activities during clam tides which reduced the amount of human activity in active nesting areas. USFWS and WDFW provided funding for two portable toilets that were placed on Willapa NWR beaches during the busiest weekend days open for razor clams during the nesting season to discourage people from traversing the dunes. In spring 2015, WDFW produced an educational brochure focused on alleviating potential conflicts during razor clam seasons (Fig. 8). Willapa NWR distributed a “Share the Beach” brochure informing the public about plover conservation and habitat restoration. In 2018, WDFW produced a 60-second public service announcement to promote plover conservation that was aired on Earth Day weekend (21-22 April) which coincided with

open razor clamming days; at Long Beach, of 14,000 diggers ~30% heard the PSA, and at Midway with 7,000 beachgoers, approximately 13% heard the message. And in 2022, USFWS produced a video ((658) Working For Plovers - YouTube), and WDFW and Washington State Parks collaborated on social media/video outreach.

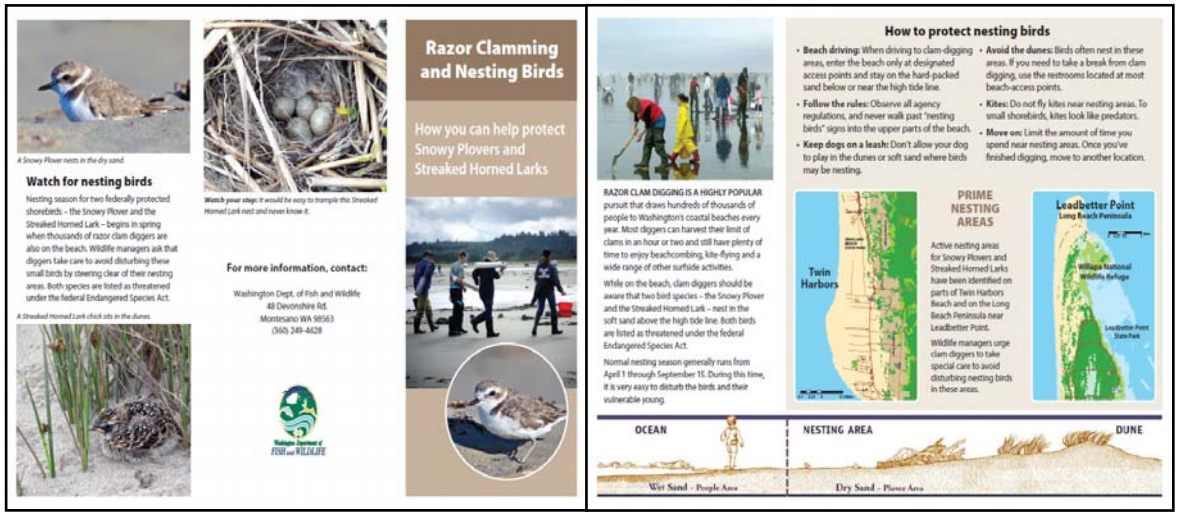

Figure 8. Brochure created for distribution during days open for razor clamming.

Monitoring. Monitoring is needed to assess progress toward the state and federal recovery goals and to inform recovery actions. Monitoring is also necessary to evaluate the impact of conservation actions, such as habitat restoration efforts, on Snowy Plover populations. Washington Department of Fish and Wildlife (WDFW) coordinates surveys with Willapa NWR, the Shoalwater Bay Tribe, USFWS, and Oregon Biodiversity Information Center. This coordinated effort was initiated in 2006, although state-specific monitoring was initiated much earlier. Surveys are conducted annually to determine the number of breeding Snowy Plover adults. The Breeding Window Survey occurs annually in late May-June along the entire U.S. Pacific coastline where Snowy Plovers are known to nest. The specific dates for a particular year are selected by the USFWS and all participants follow the methods of Elliot-Smith & Haig (2006a). The Winter Window Survey occurs annually in January along the entire U.S. Pacific coastline where Snowy Plovers nest or historically nested. All sites are surveyed using the same protocol (Elliot-Smith & Haig 2006b), during a specific week selected by the USFWS for any given year; in Washington the surveys are repeated, and conducted three times whenever conditions allow and the number of breeding adults and population trend are estimated from these surveys. The 1 chick/male requirement may not be appropriate for sites at carrying capacity (Hudgens and others 2014) or the best metric for measuring Lambda; WDFW suspended comprehensive monitoring of nests to estimate nest success in 2019 because of the staff time required. This also affects the ability to band chicks, which requires close monitoring of chick age. Banding of chicks was done 2007-2010, 2012-2014, and a few were banded during 2017-2018. This change may be re-evaluated after ongoing analyses, the results will be reviewed in an upcoming revision of the state recovery plan.

Recovery working groups:WDFW staff attend and work with Recovery Unit (WA/OR), and rangewide Snowy Plover working groups to coordinate data collection methods, exchange the latest science and management information, and work on advancing recovery.

CONCLUSIONS AND STATUS RECOMMENDATION

The main issues affecting plover recovery include predation and human-related disturbance. Although Washington does not have as much potential habitat as Oregon or California, habitat area does not seem to be currently a limiting factor in Washington. Plovers are semi-colonial and local populations move around, and there may be aspects of habitat that we do not understand. Band re-sight data and demographic modeling conducted before predator management suggested that the Washington sites were dependent upon immigration from populations further south to maintain their populations. However, modeling by Hudgens and others (2014) indicated that habitat restoration may help stabilize small populations like Washington and northern California, and that even these small populations contribute to reaching range-wide recovery objectives for the listed population. Nesting areas in Washington and further north may become more important as the climate changes.

Plover numbers have recovered somewhat, particularly since management of ravens and crows at nesting beaches began in 2013; in 2019, 87 birds were counted during the Breeding Window Survey, and the 2021 Winter Window count (167) was more than double the previous high count. Also encouraging, plovers nested on beaches at Copalis Spit and Connor Creek for the first time in over 30 years. The HRA on Leadbetter Point is now ~460 acres, and management of human disturbance on nesting beaches has been ongoing. Further recovery will likely require that management of crows, ravens, human disturbance, and maintenance of the Leadbetter HRA continue, and may be required for the foreseeable future; Snowy Plovers seem to be a 'conservation-reliant' species (Scott and others 2010; Goble and others 2012).

Snowy Plover numbers are still modest and they still seem to be dependent on recruitment from Oregon. Management of disturbance and predators are still needed, and the development of management agreements that provide additional secure suitable habitat in perpetuity is needed. Therefore, it is recommended that the species remain state-listed as endangered.

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The references cited in the Periodic *Status Review for the Snowy Plover* are categorized for their level of peer review pursuant to section 34.05.271 RCW, which is the codification of Substitute House Bill 2661 that passed the Washington Legislature in 2014. A key to the review categories under section 34.05.271 RCW is provided in Table A. References were categorized by the author in October 2015.

Individual papers cited cover a number of topics discussed in the report, including information on: 1) the species' description, taxonomy, distribution, and biology; 2) habitat requirements; 3) population status and trends; 4) conservation status and protections; 5) research, monitoring, and restoration activities; and 6) factors affecting the continued existence of the species.

Table A. Key to 34.05.271 RCW Categories:

Category Code	34.05.271(1)(c) RCW
i	(i) Independent peer review: review is overseen by an independent third party.
ii	(ii) Internal peer review: review by staff internal to the department of fish and wildlife.
iii	(iii) External peer review: review by persons that are external to and selected by the department of fish and wildlife.
iv	(iv) Open review: documented open public review process that is not limited to invited organizations or individuals.
v	(v) Legal and policy document: documents related to the legal framework for the significant agency action including but not limited to: (A) federal and state statutes; (B) court and hearings board decisions; (C) federal and state administrative rules and regulations; and (D) policy and regulatory documents adopted by local governments.
vi	(vi) Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under the processes described in (c)(i), (ii), (iii), and (iv) of this subsection.
vii	(vii) Records of the best professional judgment of department of fish and wildlife employees or other individuals.
viii	(viii) Other: Sources of information that do not fit into one of the categories identified in this subsection (1)(c).

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APPENDIX A. PUBLIC COMMENTS ON THE DRAFT PERIODIC STATUS REVIEW

WDFW received 27 letters during the 90-day public comment period for the *Revised recovery plan and periodic status review for the Snowy Plover in Washington*. All generally supported plover conservation. Five letters specifically supported maintaining the species status as endangered; one of these took exception to the use of the older name 'Western Snowy Plover' on our web site (rather than 'Snowy Plover'; this document already used 'Snowy' and state list had already been revised). The remaining 22 letters urged more action to reduce human disturbance on nesting beaches, particularly vehicles and to resume monitoring nests; 21 were form letters that mentioned Klipsan Beach (a portion of Long Beach), and one referred to vehicles on Copalis.

Washington State Status Reports, Periodic Status Reviews, Recovery Plans, and Conservation Plans

Periodic Status Reviews

2022 Brown Pelican
2022 American White Pelican
2022 Cascade Red Fox
2022 Snowy Plover
2021 Gray Whale
2021 Humpback Whale
2021 Greater Sage-grouse
2020 Mazama Pocket Gopher
2019 Tufted Puffin
2019 Oregon Silverspot
2018 Grizzly Bear
2018 Sea Otter
2018 Pygmy Rabbit
2017 Fisher
2017 Blue, Fin, Sei, North Pacific Right, and Sperm Whales
2017 Woodland Caribou
2017 Sandhill Crane
2017 Western Pond Turtle
2017 Green and Loggerhead Sea Turtles
2017 Leatherback Sea Turtle
2016 American White Pelican
2016 Canada Lynx
2016 Marbled Murrelet
2016 Peregrine Falcon
2016 Bald Eagle
2016 Taylor's Checkerspot
2016 Columbian White-tailed Deer
2016 Streaked Horned Lark
2016 Killer Whale
2016 Western Gray Squirrel
2016 Northern Spotted Owl
2016 Greater Sage-grouse
2016 Snowy Plover
2015 Steller Sea Lion

Conservation Plans

2013 Bats

Recent Status Reports

2019 Pinto Abalone
2017 Yellow-billed Cuckoo
2015 Tufted Puffin
2007 Bald Eagle
2005 Mazama Pocket Gopher, Streaked Horned Lark, and Taylor's Checkerspot
2005 Aleutian Canada Goose
1999 Northern Leopard Frog
1999 Mardon Skipper
1999 Olympic Mudminnow
1998 Margined Sculpin
1998 Pygmy Whitefish
1997 Gray Whale
1997 Olive Ridley Sea Turtle
1997 Oregon Spotted Frog

Recovery Plans

2020 Mazama Pocket Gopher
2019 Tufted Puffin
2012 Columbian Sharp-tailed Grouse
2011 Gray Wolf
2011 Pygmy Rabbit: Addendum
2007 Western Gray Squirrel
2006 Fisher
2004 Sea Otter
2004 Greater Sage-Grouse
2003 Pygmy Rabbit: Addendum
2002 Sandhill Crane
2001 Lynx
1999 Western Pond Turtle
1996 Ferruginous Hawk
1995 Pygmy Rabbit
1995 Snowy Plover

Status reports and plans are available on the WDFW website at:

http://wdfw.wa.gov/publications/search.php