

**California State Parks
Western Snowy Plover Management
2008 System-wide Summary Report**

In 1993, the coastal population of western snowy plover (WSP) in California, Washington and Oregon was listed as a threatened species under the Federal Endangered Species Act due to habitat loss and disturbance throughout its coastal breeding range. In 2001, the U.S. Fish and Wildlife (USFWS) released a draft WSP recovery plan that identified important management actions needed to restore WSP populations to sustainable levels. Since California State Parks manages about 25% of California's coastline and a significant portion of WSP nesting habitat, many of the actions called for were pertinent to state park lands. Many of the management recommendations were directed at reducing visitor impacts since visitor beach use overlaps with WSP nesting season (March to September).

In 2002, California State Parks developed a comprehensive set of WSP management guidelines for state park lands based on the information contained in the draft recovery plan. That same year a special directive was issued by State Park management mandating the implementation of the most important action items which focused on nest area protection (such as temporary fencing), nest monitoring, and public education to increase visitor awareness and compliance to regulations that protect plover and their nesting habitat. In 2007 USFWS completed its Final Recovery Plan for the WSP, which is accessible on the Internet at: http://ecos.fws.gov/docs/recovery_plan/070924_2.pdf. Both a hard copy and an electronic copy are kept at the Natural Resources Division Office.

This 2008 State Parks System-wide Summary Report summarizes management actions taken during the 2008 calendar year and results from nest monitoring. This information was obtained from the individual annual area reports prepared by State Park districts offices and by the Point Reyes Bird Observatory - Conservation Science PRBO (for Monterey Bay and Oceano Dunes State Vehicular Recreation Area). A 7-Year System-wide Summary chart is included that summarizes nesting data from state park lands over the last 7 years by region and by system-wide total.

In this report both total nest attempts and total nests hatching at least one egg (successful nests) are summarized, along with the percentage of total nests that are successful. Numbers of chicks reaching fledging age (28 days) are only reported where they are banded and tracked by permitted biologists. This is done in the Monterey, Oceano Dunes, and San Diego Coast areas, which includes a large portion of the WSP population in the State Parks system. Overall, when tracking the progress of WSP nests year to year, total successful nests is a better parameter to follow than total nest attempts since it indicates the number of nests producing chicks. Snowy plover pairs often re-nest several times if the adults are disturbed, if the eggs are taken by predators, or the nests are destroyed by high tides or wind. In addition, females normally pair with more than one male in a given year. The number of additional nests initiated by a pair can vary from year to year depending on the birds' fitness or environmental variables causing nest loss.

Management Activities:

- **Public Education.** Districts distributed the new western snowy plover (WSP) brochures, revised in 2007 by the Natural Resources Division, providing better information on WSP natural history and their threatened status, and on what the Department is doing to help recovery the species. The brochures also explain how visitors can help protect habitat and nesting plovers and the importance of complying with park regulations. The

Mendocino District continued its collaboration with Mendocino Coast Audubon Society, which in 2007 had secured a \$12,000 grant to fund "Save Our Shorebirds" project. The goal of this project is to increase the abundance of shorebirds on Mendocino area beaches and to educate the public concerning the snowy plover and other shorebirds. Twenty-two volunteers provided 550 hours to this project, which included help with monitoring snowy plovers. They were also awarded the "Together Green" grant from Toyota. The Channel Coast District used a campground host as a public contact person to inform visitors about snowy plover management and to lead occasional "bird walks." The San Luis Obispo Coast District installed two new interpretive panels in Montaña de Oro State Park in 2007 & 2008 to educate the public about the snowy plover. On July 4th, a WSP informational booth was set up at Morro Strand State Beach, and State Parks staff increased their presence on the beach to answer questions and to encourage the public to comply with park regulations concerning fireworks.

- **Training.** Many districts trained and used volunteers to help with plover monitoring. Park employees and concessionaires also had formal training in WSP natural history and stewardship responsibilities, such as the importance of driving parks vehicles slowly in the wet sand zone, away from breeding and foraging plovers. The Mendocino District provided their staff with required WSR training. San Luis Obispo Coast District presented one-hour training to all staff in the southern coastal sector, as well as WSP training to city staff, harbor patrol staff, and police. San Diego District also had a trained docent program for more public outreach.
- **Enforcement.** Public compliance with the dog leash rule was variable in each district, but continued to be an enforcement issue. Both San Luis Obispo Coast and Mendocino Districts have offered the public a solution by designating certain beaches known to be unused by plovers as "dog walking" beaches, while continuing to enforce dog leash rules and dogs prohibited rules at nesting beaches. However, monitors in some districts continued to note many dogs off leash. In addition, there were continued problems with some park visitors crossing the symbolic fence and destroying plover nests or vandalizing fences or signs. Some districts, such as San Luis Obispo Coast, reported a number of citations given for dogs off leash or for trespassing in areas closed for plover nesting, but enforcement has also been reported as low in other districts.
- **Beach Restoration.** Restoration efforts, most notably the removal of the exotic European beach grass, continued in several districts along the coast, including Mendocino, Santa Cruz, San Luis Obispo Coast, Oceano Dunes, and Channel Coast Districts. Methods utilized included controlled burning followed by herbicides, dune reformation with heavy equipment, or broadcasting of native plant seed.
- **Predator Control.** Predation of nests and chicks continues to be the top limiting factor in WSP reproductive success. Many districts had contracts with permitted predator control specialists (usually USDA Wildlife Services) to monitor and remove predators where they posed a special threat to WSP reproduction. For example, the San Obispo Coast District reported red fox, ground squirrel, feral cat, and crow removal during the 2007 breeding season. Predation accounted for about 52% of the system wide nest failures identified in 2008, with avian predators representing over 61% of the total known predators. Reported avian predators in 2008 included: common raven, gull-billed tern, northern harrier, American crow, great horned owl, and various gull species. Most districts were more judicious this year in use of wire nest enclosures as their use has been shown to actually attract more avian predators, which cue in on the plover nest. Oceano Dunes practiced trapping and relocation of some raptor species in their unit.

- **Field Management and Monitoring.** Management effort continued to focus on nest area protection and nest monitoring. Actions included installing temporary symbolic fencing and signage, providing for public education, enforcing of State Park regulations, restoring habitat and monitoring all nesting areas. Nest monitoring was performed in many areas up to 5 times per week in order to record the number of nests initiated, and the number of chicks hatched and their fate. Intensive nest monitoring allowed for early detection of nest disturbance and predation, and provided information necessary to take appropriate corrective management actions. System-wide information collected each year represents thousands of hours of nest monitoring. WSP nest monitoring activities were again achieved in cooperation between State Parks, Point Reyes Bird Observatory, U. S. Fish & Wildlife, and other conservation organizations. Many volunteers continued to help State Parks protect WSP nest sites. The Department also participated in range-wide WSP summer and winter population surveys.

Major Results:

Western snowy plover nesting was reported in 10 units managed by the Department, down from 16 units in 2007, 19 units in 2006, and 23 units in 2005. Out of 538 nest attempts, a total of 310 nests were reported to have successfully hatched a clutch in state park units (58% success). This is a 17% increase in the number of successful nests compared to 2007, after three consecutive years of decline (see attached graphic).

Causes of nest loss were varied, but 52% of system-wide losses were directly attributed to predation, with avian predators reported more than mammal predators. Wind and tide inundation were the next highest cause of nest loss (24%), with abandonment the third in importance (14%). Nest abandonment is commonly caused by disturbance of the breeding pair during the process of egg laying and incubation. Human caused nest loss was low (1.2%) and represents two reported acts of vandalism.

Of a system-wide total of 560 banded and monitored chicks, 176 (31.2%) of those were reported to have reached fledging age (28 days from hatching). This is a decrease from a 45% fledging rate for the chicks in 2007, though the total number of chicks hatched is about the same.

The following is a brief overview of the 2008 nest monitoring data that is reported in detail in the individual area reports and entered into the Department's WSP data base. A summary of this information and comparison with previous years is shown in the 7-Year Annual Summary Chart.

- Santa Cruz and Monterey Bay area units include both Santa Cruz and Monterey Districts, stretching from Manresa State Beach to Monterey State Beach. These districts reported 109 nests successful in hatching at least one egg (52% of 211 nesting attempts). The previous year had 245 nest attempts and 115 successful nests (47% of total). For the first time since 1998, a nest was initiated at Monterey State Beach, although it failed. Predator-caused nest loss was 33% of all nest attempts in 2008 and was about the same as in 2007 (35%). Nest loss due to avian predators was again higher than those due to ground predators (44 nests compared to 13 nests).

Nests in 2008 produced 289 chicks, a modest decrease over the number of chicks hatched the previous year (332). Of these chicks, 79 were reported to have successfully fledged, a 27% fledging rate (compared to 53% in 2007). This is the lowest fledge rate since 1999. The units containing the highest chick numbers were

Salinas River, Sunset, and Zmudowski State Beaches (94, 52, & 51 chicks respectively), and the heaviest avian predation was experienced at the same units.

The annual report by Point Reyes Bird Observatory (PRBO) indicates that the overall Monterey Bay area, which includes State Park property, has experienced a decline in breeding adults since 2004. This was determined by measuring the percent of banded adults returning each year to nest. Actual fledging rate for Monterey Bay last year (2007) was reported as 1.37 young per male, which reportedly is sufficient to sustain the population (the rate required by the Recovery Plan is 1 chick per male for 5 straight years along with a range-wide population of 3,000 breeding adults). This indicates that the survival rate of adults has been below average for a number of years and that much of the mortality are occurring prior to the breeding season. Analyzing the winter WSP count data in the PRBO study area shows a similar downward trend in numbers of wintering WSP. Between 2004 and 2007 there has been a 38% drop in wintering WSP numbers.

The Santa Cruz/Monterey Bay area has the longest record of plover monitoring and protection in the state, dating back to efforts in the mid-1980s led by the PRBO. Since then, State Parks and USFWS have become increasingly involved in cooperative monitoring and management activities in the larger study area, which includes State Park System units, other state lands, federal property, and private lands. PRBO prepares and publishes annual reports on nesting activities for the study area which stretches from Waddell Creek to the City of Monterey and includes lands other than State Parks. Since the recent expansion of Wilder Ranch State Park to include coast to the north, the results for the Laguna Creek beach are now included in the annual report, though no nesting occurred this year.

In 2007, 72% of the total nests documented in the PRBO study area (State Park and other lands) were on State Park System lands, the percentage in 2008 was 59%. Nest hatching success on DPR lands in the study area was 53% in 2008, and for non-DPR lands it was 65%. Fledging success on State Park lands was 27% in 2008, higher than on non-DPR lands (21%).

- San Luis Obispo Coast District units reported 72 nests successfully hatching at least one egg (40% of a total of 180 nesting attempts). This was a vast improvement over the previous year (27% success rate) which proved to be the worst year for reproduction in this area of coast since management started in 2002.

At Montaña de Oro State Park (Sandspit area), 56 nests were successful at hatching at least one egg (58% of 96 nesting attempts). All nests were located in the Sandspit area of the park, and normally comprise the largest population for this State Parks region. This year represents a high level of percent nest success, although the total number of nest attempts was lower than in 2007 (lowest since 2002). Determination of an accurate chick count and fledging rate was not possible due to the lack of a banding program at the San Luis Obispo Coast District. Other park units in this region with nesting reported in 2008 included the Estero Bay/Villa Creek Beach unit with a total of 16 nesting attempts and 8 successful nests (50% hatching success). Again, this was the lowest number of nest attempts and the second lowest successful nest count since records were kept in 2001. Morro Strand State Beach had only 6 successful nests, 18% of the 33 recorded nesting attempts. The renamed Hearst San Simeon State Park had 2 successful nests out of a total of 2 nests initiated; monitoring now includes all of the newly acquired land in an 18-mile strip of coastline. In 2006,

when monitoring started for all newly lands, the number of nest attempts was 11 and the number of successful nests was 7.

Predation has always been the chief cause of clutch loss in this district. At the Sandspit, nest loss predation was mainly caused by coyote (17 of 20 depredated nests), which is a change from 2007 when avian predators were the main culprit. Otherwise, coyotes have been a major source of predation since 2004. The district has utilized various methods of controlling predator damage, including use of custom-made exclosures (designed to prevent avian predators from perching on them) and contracting Wildlife Services to remove some predators.

- Oceano Dunes State Vehicular Recreation Area reported a total of 83 nests hatching eggs successfully (69% of the 121 nesting attempts) in 2008. Over 44% of nest loss at Oceano Dunes SVRA was due to abandonment, while nearly 37% was due to predation.

Oceano Dunes SVRA experienced an increase in nest attempts and successful nests compared to 2007 (91 and 70 respectively), however a lower hatching rate (69% compared to 77% in 2007). With the exception of 2003, hatching success at Oceano Dunes SVRA has been more consistent and higher than in most other regions over the past seven years. Nests this year produced 197 chicks and fledged 72 young (37% fledging success), similar to 2007, but still a notable improvement from the year before.

Habitat enhancement continued in three large exclosures of the breeding area. Driftwood, wood chips, and kelp collected from the beach were spread in small areas throughout the enclosure to provide disruptive cover, and these areas were used by plovers for nesting. Plovers were also observed utilizing areas that had been planted in sea rocket and beach-bur, using the plants for cover. Nest success proved to be higher in these areas than in areas without this substrate added (77% success compared to 60% success).

Predator management included both day and night surveys of predator activity, along with use of exclosures, padded leg traps, and removal of known habitual predators. This included relocation of raptorial predators. Observed predator species included coyote, raven, raptors, opossum, and skunk.

- San Diego Coast District reported a total of 29 successful nests (76% of the 38 nesting attempts), higher in nest number than in 2007, but a lower rate of hatching. Nest numbers and hatch rate were about equal to the averages reported between 2002 and 2006.

At Silver Stand State Beach, 18 of the 19 reported nests were successful in hatching chicks (95%), and approximately 17 of the 49 chicks produced fledged (35%). The number of fledged chicks, though not all based on banding, was the highest number since 2002. Dogs were still reported to be an increasing presence at this beach compared to past records. Predation of nests or chicks was not a problem at Silver Strand SB, and only one nest was reported lost to vandalism.

At Border Field SP, 12 of the 20 nests attempted were reported successful in hatching (60%). Counts of chicks reported 32 hatched and approximately 8 fledging (25%). Over half of the nest loss in 2008 was attributed to nest abandonment.

- Santa Barbara and Ventura area units (Channel Coast District) reported 17 nests being successful on property managed by State Parks, 85% of the 20 nesting attempts. This shows the highest number of both nest attempts and successful nests since records were kept.

In 2008, 16 nesting attempts were on McGrath State Beach and 2 nesting attempts on Mandalay State Beach, operated by Ventura County. At McGrath State Beach, 15 nests hatched eggs successfully (85%) and at Mandalay State Beach two nests were reported to be successful (50%). Reliable information on fledgling success was not obtained because chicks were not banded.

In addition to the snowy plover nesting population at McGrath SB, there were 97 California least tern nests (a State and Federal endangered species), 72 of which were located inside the symbolic fencing set up for WSP. The presence of least terns might be one reason that McGrath had a high hatching success rate; least terns actively harass avian predators.

- Sonoma Coast area units had one nest attempt this year at Salmon Creek, the same location as reported in the past. The nest failed. Salmon Creek is part of Sonoma Coast State Park, where snowy plovers have historically nested in high numbers. There are current plans to restore a 300 acre area of dune habitat south of Salmon Creek. If successful, the future potential for suitable snowy plover habitat will increase at the unit and will be located in an area of lower human disturbance.
- San Mateo and Northern Santa Cruz area units (Santa Cruz District) reported no nesting attempts at Half Moon Bay State Beach in 2008. This is the second year in a row that snowy plovers have not nested there, regardless of the habitat protection, enforcement of park regulations, and predator control program occurring at this state beach. Monitors recorded up to 15 breeding adults at Half Moon Bay SB in April, 2008, but none stayed to breed. In 2004 there were 25 nest attempts at Half Moon Bay State Beach. Snowy plovers continue to use this beach during the winter.
- Mendocino District units reported no nesting attempts along their coast. The district continues to maintain its management program, which includes beach restoration and education programs coordinated with the local Audubon Society chapter. Snowy plovers have only bred one time in this district in the past seven years.
- Del Norte and Humboldt coast units (North Coast Redwoods District) reported no nesting attempts for a second year in a row. This district is similar to the San Mateo / Northern Santa Cruz area in that plovers have used the area in low numbers for five years in a row since 2002, then stopped breeding there for two years. All other management activities are continuing in the district, such as beach restoration, public outreach, and predator surveys. Snowy plover continue to be recorded on some of these beaches during the winter window survey.

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