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# Snowy Plover Summary Report

## 2023

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### *Gravel Extraction Surveys*

**February 1, 2024**



Cover photo: Sean McAllister

## **Project Description**

**Title:** Snowy Plover Surveys for Gravel Extraction

**Purpose:** Habitat Conservation Plan (HCP) monitoring

**Date Initiated:** March 1999

**Projected End Date:** Ongoing

**Manager:** Sal Chinnici, Director, Forest Sciences

### **Executive Summary:**

The HRC HCP Section 6.6 (PALCO 1999), Snowy Plover Conservation Plan, requires reconnaissance-level surveys for the Federally threatened western snowy plover (*Charadrius nivosus nivosus*) for implementation of gravel extraction permits on Eel River gravel bars upriver from the Rio Dell Bridge. The HCP objective is to avoid impacts to western snowy plovers nesting on gravel bars. The breeding season is defined in the HCP as 24 March to 15 September. In 2023 HRC did not conduct any gravel extraction operations, and therefore no snowy plover surveys were conducted during the 2023 breeding season.

No change in monitoring strategies or intensity is recommended at this time.

**Project Manager / Primary Author**



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## INTRODUCTION

The HRC HCP Section 6.6, Snowy Plover Conservation Plan, requires reconnaissance-level surveys for the federally threatened western snowy plover (*Charadrius nivosus nivosus*) for implementation of gravel extraction permits on gravel bars upriver from the Rio Dell Bridge. In 2023 HRC did not conduct any gravel extraction operations. Potential impacts to snowy plovers were avoided in 2023 in the project area because there was no disturbance on the gravel bars. No snowy plover surveys were conducted.

The HRC gravel bars upriver from the mouth of the Van Duzen River do not currently require western snowy plover surveys per the Army Corps of Engineers (ACOE) Letter of Permission (LOP 2015-1) for gravel mining in Humboldt County. However, the snowy plover is a covered species of the HRC HCP, and the U.S. Fish and Wildlife Service (USFWS) has recommended that surveys be completed prior to extraction, although at a less-intensive level than is required where plovers have previously been found nesting on river bars (e.g., near Fernbridge). The less-intensive level of survey effort is in recognition of the history of negative surveys for the area, in addition to the location of the HRC gravel bars several miles upriver from any known snowy plover nesting. Surveys have been conducted since 1996 for plovers and other avian species along the Eel River on gravel bars where extraction may take place, including in 2019, with no snowy plover detections recorded.

In 2003 the USFWS clarified that the HCP reconnaissance-level surveys are those surveys conducted within a two-week period prior to operations on the gravel bars. In keeping with the HCP requirements, if the reconnaissance-level surveys detect snowy plovers, full protocol surveys are to be conducted on all gravel bars within one mile of the detection, and mitigation measures applied for any nests that are found.

## METHODS

During the surveys a qualified biologist traverses the gravel bars searching for snowy plovers, and records other sensitive avian species that are detected. Survey methods involve walking and stopping frequently to scan with binoculars the entire exposed, contiguous gravel habitat,

including areas separated by narrow river channels, as snowy plover chicks have been observed crossing such channels (McAllister 2019).

The reconnaissance-level surveys require each gravel bar to be thoroughly searched twice for adult plovers, young, and eggs prior to extraction, with searches six to seven days apart, and apply to gravel bars that are to be operated on between 1 March and 15 September.

## **RESULTS**

The HCP objective is to avoid impacts to western snowy plovers nesting on gravel bars. The breeding season is defined in the HCP as 24 March to 15 September. Gravel extraction operations would typically occur August or September to October. Potential impacts to snowy plovers were avoided by not conducting any gravel extraction operations in 2023.

## **DISCUSSION**

No snowy plover surveys were conducted in 2023. Snowy plover surveys were last conducted prior to 2019 gravel extraction operations with negative results. No surveys were conducted prior to operations in 2017 or 2018 because operations were conducted outside of the established plover breeding season.

Prior to 2019, 2016 was the most recent season in which pre-extraction reconnaissance-level surveys were conducted prior to the beginning of operations. No snowy plovers were detected in 2016 either. The 2019 surveys marked more than 14 years of snowy plover surveys on the HRC gravel bars along the Eel River, all with negative results for snowy plovers.

There may be several reasons why snowy plovers are not nesting further upriver than their known extent, including on the HRC river bars. Some biologists have suggested a difference in nesting habitat; for example, increasing confinement of the river channel and narrowing of the canyon, and differences in nesting substrate (for example, see previous HRC annual reports).

Research has indicated that snowy plovers nest on wider beaches compared to random locations (Patrick and Colwell 2014). According to McAllister (2019), there are no snowy plover records from anywhere upstream of the Van Duzen River confluence with the Eel River, and although



the plovers were found breeding at sites below the confluence from 1996 to 2010, there have not been any detections there since 2010 (Feucht et al. 2019, McAllister pers. comm.).

In the Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (USFWS 2007) HRC lands fall within Recovery Unit 2 (RU2), including Del Norte, Humboldt, and Mendocino counties.

Colwell et al (2017) reported that, from 2001 to 2016, the number of breeding adults in Recovery Unit 2 (RU2) varied between 19 and 74, and that there were two distinct time intervals of change: first, there was a decline from 2001 to 2009 of 74 to 19 breeding adults, which was followed by seven consecutive years of growth at an annual rate of 22%. During the seven-year period of growth, immigrants from other sites comprised an average of 62% of the breeding adults.

Based on their 2017 results, Feucht et al (2017) reported that the RU2 population did not grow in 2017, which ended a trend of positive growth for seven consecutive years. Immigration continued to play a critical role in this population growth, as the arrival of 24 first-time breeders from outside RU2 were observed. Breeding occurred on 11 beaches, with the majority nesting occurring on the South Spit of Humboldt Bay (26%), Clam Beach (26%), and Centerville Beach (17%). Breeding was documented at Freshwater Lagoon for the first time. The principal cause of nest failure was predation by corvids and other species. Reproductive success (fledglings per male) was greater than the recovery objective for RU2 for the second year in a row in 2017 (Feucht et al 2017).

Feucht et al. (2018) reported that 63 adults (29 males, 34 females) bred in RU2 in 2018, representing a 12% decline from 2017, and the first decrease in nine years. Western snowy plovers nested on 13 beaches (12 in Humboldt Co. and one in Mendocino Co.), with chicks hatching at ten locations and juveniles fledging from eight. They found nests on two sites (Elk River Spit and McNutt Gulch) for the first time since regular monitoring began in 2001. In total, plovers initiated 75 nests, hatched 80 chicks, and fledged 48 juveniles. Plover reproductive success was  $1.66 \pm 1.42$  fledglings per male, surpassing the recovery objective of 1.0 for the third year in a row (Feucht et al. 2018). There were no breeding activities recorded on Eel River gravel bars in 2018.

According to Feucht et al. (2019), in 2019, 72 adults (34 males, 38 females) bred in RU2, a 14% increase from 2018. Plovers nested on seven beaches (six in Humboldt and one in Mendocino) and fledged chicks at five locations. The sites with the most breeding plovers were the South Spit of Humboldt Bay (n=30) and Centerville Beach (n=15). The most common cause of nest failure was predation by common raven (*Corvus corax*) and striped skunk (*Mephitis mephitis*) (17% of nests). Reproductive success was  $1.71 \pm 1.31$  fledglings per male, the highest to date and surpassing the recovery objective of 1.0 for the fourth year in a row (Feucht et al. 2019). There was no breeding activity observed on Eel River gravel bars in 2019 or 2021, although surveys were not comprehensive.

RU2 surveys conducted in 2022 indicated that the highest reproductive activity occurred at Centerville Beach and the South Spit of Humboldt Bay. Overall, the plover population was lower in 2022 than reported in 2020-2021, but still above the 20-year average, and reproductive success was below the recovery goal of one or more fledged chicks per male. There was no breeding activity noted on gravel bars in 2022 although surveys were limited to those bars near the Eel and Van Duzen River confluence (McAllister, pers. comm.).

For 2023, information gleaned from the 2023 Snowy Plover Pacific Coast Winter Window Survey (Ashford 2023) indicated that 294 plovers were detected in RU2, with a total of 114 snowy plovers detected in Humboldt County. Most plovers were observed at the mouth of the Mad River to Lanphere Dunes (n=36), Clam Beach North (n=21), and on the Samoa Peninsula to the North Jetty (n=16). Observations included 20 male plovers, 28 females, and 66 with sex unknown. No surveys were recorded for the Eel River gravel bars.

The 2023 RU2 breeding summary indicated that the 2023 breeding population of 101 snowy plovers was likely the second largest on record (McAllister, pers. comm. 2024). 103 total nests were found, with the most occurring on Centerville Beach and the South Spit. A 50% hatch rate was recorded, with an approximate fledge rate of hatched chicks of 47%. The rate of fledged chicks per male of 1.07-1.26 was the highest recorded since 2004 (McAllister, pers. comm. 2024). There were three surveys conducted on Eel River gravel bars at the mouth of the Van Duzen River. No snowy plover nesting has been observed on the gravel bars for approximately 15 years.

Although raven predation appeared to be lower during the 2023 breeding season, predation of eggs and young by ravens, striped skunks, and other species, as well as human disturbance of nesting habitat, continue to be significant problems for snowy plover reproduction in this recovery unit.

## **RECOMMENDATIONS**

- No changes in monitoring strategies or intensity are recommended at this time.
- Continue using reconnaissance-level surveys as currently required for gravel extraction operations during the breeding season.

## LIST OF REFERENCES

- Army Corps of Engineers. 2015. **Letter of Permission Procedure (LOP 2015-1) for Gravel Mining and Excavation Activities Within Humboldt County.** 53 pp.
- Ashford, M. 2023. 2023 Snowy Plover Pacific Coast Winter Window Survey. December 14, 2023. <https://www.fws.gov/media/2023-snowy-plover-pacific-coast-winter-window-survey>
- Colwell, M.A., L.J. Eberhart-Phillips, R.R. LeValley, S.E. McAllister, A.M. Patrick, W.J. Pearson, and S.A. Peterson. 2011. **Final Report: 2011 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 10pp.
- Colwell, M.A., L.J. Eberhart-Phillips, D.M. Herman, W.P. Lawton, S.D. Leja, S.E. McAllister, D.J. Orluck, A.M. Patrick, J.L. Patterson, and S.A. Peterson. 2012. **Final Report: 2012 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 12pp.
- Colwell, M.A., A.M. Patrick, D.M. Herman, M.J. Lau, S.D. Leja, D.J. Orluck, A.D. DeJoannis, A.R. Gottesman, T.R. King, G.J. Moulton, and S.E. McAllister. 2013. **Final Report: 2013 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 14pp.
- Colwell, M.A., D.M. Herman, A.M. Patrick, M.J. Lau, S.D. Leja, A.D. DeJoannis, D.J. Orluck, D.P. Harvey, K.L. Bonnette, G.B. Sandy, E.J. Feucht, M.R. Greitl, J.A. Ruvalcaba, and S.E. McAllister. 2014. **Final Report: 2014 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 15 pp.
- Colwell, M.A., E.J. Feucht, T.R. King, M.J. Lau, D.J. Orluck, and S.E. McAllister. 2015. **Final Report: 2015 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 17 pp.
- Colwell, M.A., E.J. Feucht, T.R. King, M.J. Lau, D.J. Orluck, S.E. McAllister, and A.N. Transou. 2017. **Recent Snowy Plover population increase arises from high immigration rate in coastal northern California.** Wader Study 124(1): 000-000.
- Feucht, E.J., M.A. Colwell, T. R. King, S. E. Murphy, D.J. Orluck, N. C. Papian, and S.E. McAllister. 2016. **Final Report: 2016 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 17 pp.
- Feucht, E.J., M.A. Colwell, D.J. Orluck, N. C. Papian, K.M. Raby, and S.E. McAllister. 2017. **Final Report: 2017 Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 17 pp.
- Feucht, E.J., M.A. Colwell, J.J. Pohlman, K.M. Raby, and S.E. McAllister. 2018. **Final Report: 2018 Western Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Final report submitted to U.S. Fish and Wildlife Service. 17 pp.
- Feucht, E.J., M.A. Colwell, K.M. Raby, J.A. Windsor, and S.E. McAllister. 2019. **Final Report: 2019 Western Snowy Plover Breeding in Coastal Northern California, Recovery Unit 2.** Unpublished report submitted to U.S. Fish and Wildlife Service, Arcata Field Office.
- Patrick, A.M. and M.A. Colwell. 2014. **Snowy Plovers select wide beaches for nesting.** Wader Study Group Bulletin. 121(2): 17-20.
- McAllister, S. 2012. **Upper Truck Shop Snowy Plover Survey Results.** Memorandum to Sal Chinnici, Humboldt Redwood Co. September 24, 2012. 1 p.

- McAllister, S. 2014. **Upper Truck Shop and 3-Mile Gravel Bar Snowy Plover Survey Results.** Memorandum to Sal Chinnici, Humboldt Redwood Co. September 15, 2014. 3 pp.
- McAllister, S. 2016. **Snowy Plover Surveys – Upper Truck Shop, Dinner, and 3-Mile Gravel Bars.** Memorandum to Sal Chinnici, Humboldt Redwood Co. September 9, 2016. 4 pp.
- McAllister, S. 2019. **2019 Eel River Snowy Plover Surveys – Upper Truck Shop, Dinner, and Elinor Gravel Bars.** Memorandum to Sal Chinnici, Humboldt Redwood Co. November 4, 2019. 3 pp.
- McAllister, S. 2023. Personal communication with Sal Chinnici, Humboldt Redwood Co. 9 January 2023.
- McAllister, S. 2024. Personal communication with Sal Chinnici, Humboldt Redwood Co. 23 January 2024.
- PALCO 1999. **Habitat conservation plan for the properties of The Pacific Lumber Company, Scotia Pacific Company LLC, and Salmon Creek Corporation.** The Pacific Lumber Company, Scotia, California, USA.
- U.S. Fish and Wildlife Service. 2007. **Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*).** In 2 volumes. Sacramento, California. Xiv + 751 pages.