

**2014 WESTERN SNOWY PLOVER MONITORING REPORT
GUADALUPE RESTORATION PROJECT
SAN LUIS OBISPO COUNTY, CALIFORNIA**



**Prepared for:
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
and the
UNITED STATES FISH AND WILDLIFE SERVICE**

Recovery Permit TE-211100-0

January 2015

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	ES1
1.0 INTRODUCTION.....	3
2.0 SURVEY AREA.....	4
3.0 METHODS.....	10
4.0 RESULTS AND DISCUSSION.....	12
4.1 WESTERN SNOWY PLOVER NUMBERS.....	12
4.2 WESTERN SNOWY PLOVER NESTS.....	14
4.3 WESTERN SNOWY PLOVER NEST DEPREDATION AND FAILURE.....	17
4.4 NEST ENCLOSURES.....	19
4.5 WESTERN SNOWY PLOVER EGGS AND CHICKS.....	20
4.6 WESTERN SNOWY PLOVER NESTING WITHIN NEWLY RESTORED BEACH EXCAVATION SITES.....	20
4.7 TRESPASS INCIDENTS WITHIN WESTERN SNOWY PLOVER HABITAT.....	21
5.0 CONCLUSIONS AND RECOMMENDATIONS.....	22
5.1 MONITORING STUDY CONCLUSIONS.....	22
5.2 RECOMMENDATIONS.....	22
6.0 REFERENCES.....	24

TABLES

4-1	2014 Breeding Season Western Snowy Plover Nest Fates at GRP.....	10
4-2	Western Snowy Plover Nest Failure at GRP in 2014.....	14

FIGURES

1	Site Location Map.....	3
2	Field Map.....	4
3	Western Snowy Plover Nest Locations (2014).....	5
4	Western Snowy Plovers Observed per Month at GRP in 2014.....	8
5	Number of Western Snowy Plover Nests at GRP in 2014.....	9
6	Fate of Western Snowy Plover Nests at GRP in 2014.....	10
7	Number of Nests Located and Hatched between 1995 - 2014 at GRP.....	11
8	Total Western Snowy Plover Nests by Location at GRP in 2014.....	12

TABLE OF CONTENTS (CONTINUED)

APPENDIX A

A-1	Survey Dates and Western Snowy Plover Numbers in 2014	A1
A-2	Color Banded Western Snowy Plovers Recorded in 2014	A4
A-3	Western Snowy Plover Nests Located in 2014.....	A6
A-4	Predator Sightings and Other Possible Threats During Western Snowy Plover Surveys in 2014.....	A8

APPENDIX B

CAHFS Necropsy Final Report.....	B1
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LIST OF ACRONYMS

AB	Alyssa Berry (Padre Associates, Inc.)
CAHFS	California Animal Health and Food Safety Laboratory
CCC	California Coastal Commission
CESA	California Endangered Species Act
CEMC	Chevron Environmental Management Company
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
EL	Eva von Thury (Padre Associates, Inc.)
FESA	Federal Endangered Species Act
GRP	Guadalupe Restoration Project (Site or Project)
JK	Jennifer Klaib (Padre Associates, Inc.)
JM	Jeanette Moore (Padre Associates, Inc.)
JL	Jennifer Langford (Padre Associates, Inc.)
KLG	Kenneth Gilliland (Padre Associates, Inc.)
KW	Ken Wimer (Padre Associates, Inc.)
KKP	Kimberly Paradis (Padre Associates, Inc.)
MH	Michaela Hoffman (Padre Associates, Inc.)
ODSVRA	Oceano Dunes State Vehicular Recreation Area
RD	Rosalino Dolorez (Padre Associates, Inc.)
RZ	Ryan Zukor (Padre Associates, Inc.)
RWQCB	Regional Water Quality Control Board
SBMNH	Santa Barbara Museum of Natural History
SS	Stephanie Seay (Padre Associates, Inc.)
USFWS	U.S. Fish and Wildlife Service (or Service)
USCG	United States Coast Guard
VAFB	Vandenberg Air Force Base
WSPL	Western snowy plover

EXECUTIVE SUMMARY

Padre biologists who perform the western snowy plover (*Charadrius nivosus nivosus*) (WSPL) surveys are permitted by the United States Fish and Wildlife Service (USFWS) to independently survey for the WSPL as permittee or subpermittees under a USFWS Recovery Permit 10(a)(1)(A) TE-211100-0 and a California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU). The USFWS requires the submittal of an annual report to the Recovery Permit Coordinator at the Ventura Fish and Wildlife Service following each year the USFWS Recovery Permit is in effect. The County of San Luis Obispo administered the Conditions of Approval for the Guadalupe Restoration Project (GRP). Section F.62.m, requires a field-wide management plan for each sensitive species that is potentially impacted by site characterization, oil spill remediation, oil field abandonment, infrastructure removal, or other Project-related activities. As part of the field-wide Sensitive Species Management Plan, the WSPL Monitoring Program requires a written report summarizing the data collected to be submitted to Chevron Environmental Management Company (Chevron).

Monitoring of breeding WSPL was conducted at the Chevron Guadalupe Restoration Project (GRP) from March 3, 2014 to September 15, 2014. WSPL were present during all 85 surveys conducted during this reporting period. In 2014, an average of 15 birds were observed each day during the peak breeding months from April through June. A total of 50 nests were initiated in 2014. WSPL nests were present on the beach from March 21, 2014 through August 11, 2014. Of these 50 nests, 22 nests hatched successfully, 25 failed (with known fates), and three had unknown fates. WSPL placed 22 nests on previously restored dunes, four of these nests being located in the 7X/A-6 area that was restored in 2013. Ten (45 percent) of those nests placed in the restored dunes successfully hatched eggs (refer to Figure 8 - Total Snowy Plover Nests by Location). The overall hatching success at GRP stayed consistent with 44 percent success rates in both 2013 and 2014.

In the first quarter of 2014, a total of 1.28 acres of WSPL critical habitat was disturbed and restored at the A-8 Pad, A-6 West, and the A Road. Historically, the A-8 Area has not had suitable WSPL nesting habitat and nests have not been found in that area. Following excavation activities of these sites, restoration efforts included seeding and installation of sand fence for sand stabilization. Additionally, straw plugs were added to A-6 West and the A Road.

Predators depredated 16 of the 25 nests that failed to hatch. In 2014, coyotes (*Canis latrans*) were the most significant nest predator and were confirmed to have depredated six nests. Raccoon (*Procyon lotor*), feral pig (*Sus scrofa*), common raven (*Corvus corax*), and an unknown avian predator each depredated a single nest. Unknown predators depredated six nests. Due to the high winds after the nests were depredated, no predator tracks could be identified. Of the remaining failed nests, nine were abandoned, five of which were abandoned during high wind events. Peregrine falcons (*Falco peregrinus*) were present on the beach intermittently throughout the season; however, predation of adults, chicks, and fledglings by this species was not observed. Nest enclosures were not placed on the beach during the 2014 season. The decision was made by the biologist not to use predator enclosures based on adult WSPL fatalities possibly associated with the enclosures recorded in previous years. The lack of enclosure utilization reduced the risk of coyotes being attracted to the enclosed nests and attempting to dig under the enclosures as they have been observed during previous years. In

2014, no adult fatalities were observed due to predators, and no chick or fledgling fatalities were observed.

In the portion of the Restoration Dunes referred to as the 5X Beach Area, Chevron contractors, under the direction of California Department of Fish and Wildlife (CDFW), USFWS, United States Coast Guard (USCG), and the Regional Water Quality Control Board (RWQCB), continued to conduct 5X beach monitoring to monitor the potential release of petroleum hydrocarbons into the ocean that was observed in 2010. WSPL did not show any signs of stress from the additional personnel on the beach.

1.0 INTRODUCTION

Padre Associates, Inc. (Padre) has prepared this report to document the results of western snowy plover (*Charadrius nivosus nivosus*) (WSPL) surveys and monitoring events conducted during the 2014 breeding season at the Guadalupe Restoration Project (GRP), San Luis Obispo County, California (Project Site). Refer to Figure 1 - Site Location Map. The WSPL species is listed as threatened under the Federal Endangered Species Act (FESA). In accordance with the terms and conditions of the GRP specific Biological Opinion (1-8-03-F/C-57) issued by the United States Fish and Wildlife Service (USFWS), monitoring of WSPL activities were conducted three times per week during the period from March 3, 2014 through September 15, 2014. The biologists who performed the surveys are permitted by the USFWS to independently survey the WSPL under a USFWS Recovery Permit 10(a)(1)(A) TE-211100-0 and CDFW Memorandum of Understanding (MOU).

2.0 SURVEY AREA

The WSPL survey area includes the entire coastal area that forms the western edge of the Project Site. Refer to Figure 2 - Field Map. The eastern boundary of the survey area can be divided into two parts. The southern portion of the eastern boundary is defined by the location of the former A Road, that was once a gravel road running parallel with the beach approximately 1,000 feet (300 meters) inland from the ocean. Refer to Figure 3 - Western Snowy Plover Nest Locations (2014). This road has been removed and restoration in this area is being performed. North of the former A Road, the eastern survey boundary is at the crest of high dunes backing the beach. The western border of the survey area is roughly the mean high tide line along the Pacific Ocean. The survey areas northern border is where GRP property meets the Guadalupe-Nipomo Dunes National Wildlife Refuge. The southern border of the survey area lies on a sandspit created by the Santa Maria River. In prior years, the river has crossed near the GRP property line; however, in 2014, it was approximately 500 feet (152 meters) south of the property boundary. The length of the survey area from the northern to southern boundary is nearly 1.5 miles (2.4 kilometers) and the survey area covers approximately 97 acres (39 hectares).

The survey area is divided into five monitoring territories which are from North to South: 1) Northern Territory; 2) 7X Complex; 3) A Road; 4) Restoration Dunes; and 5) Sandspit. Refer to Figure 3 - Western Snowy Plover Nest Locations (2014).

Habitat types within the survey area include beach, foredune, and vegetated back dunes interspersed with sandy or rocky open areas. The beach is scattered with driftwood of various sizes, kelp, wrack, and some man-made debris. During winter storms, the Santa Maria River occasionally discharges various types of natural and anthropogenic debris down the river and onto the beach resulting in increased camouflage from predators for WSPL nests. The beach received a significant amount of wrack (surf-cast kelp) throughout the nesting season resulting in suitable foraging and nesting habitat. The beach width varies throughout the year, generally being narrowest in late winter and building throughout the summer. In addition, the southern half of the beach is generally broader than the northern half of the beach.

The foredunes support sparse vegetation consisting of beach-bur (*Ambrosia chamissonis*), yellow sand verbena (*Abronia latifolia*), and sea rocket (*Cakile maritima*). The foredunes also provide habitat for the beach spectacle pod (*Dithyrea maritima*) and surf thistle (*Cirsium rhotophilum*), both listed as threatened under the California Endangered Species Act (CESA).

Remediation of the foredune habitat, an area now covered by roughly 24 dunes, was completed in 2001 and was approved and signed off in 2014 by the California Coastal Commission (CCC) and San Luis Obispo County indicating that these areas meet the established restoration performance criteria. This area is now commonly referred to as the "Restoration Dunes". Restoration activities will continue until the area meets the restoration performance criteria set by the County and CCC. The beach and foredunes, including restored areas, provide suitable and occupied habitat for nesting WSPL along their entire length.



LEGEND:

— Guadalupe Restoration Project Boundary



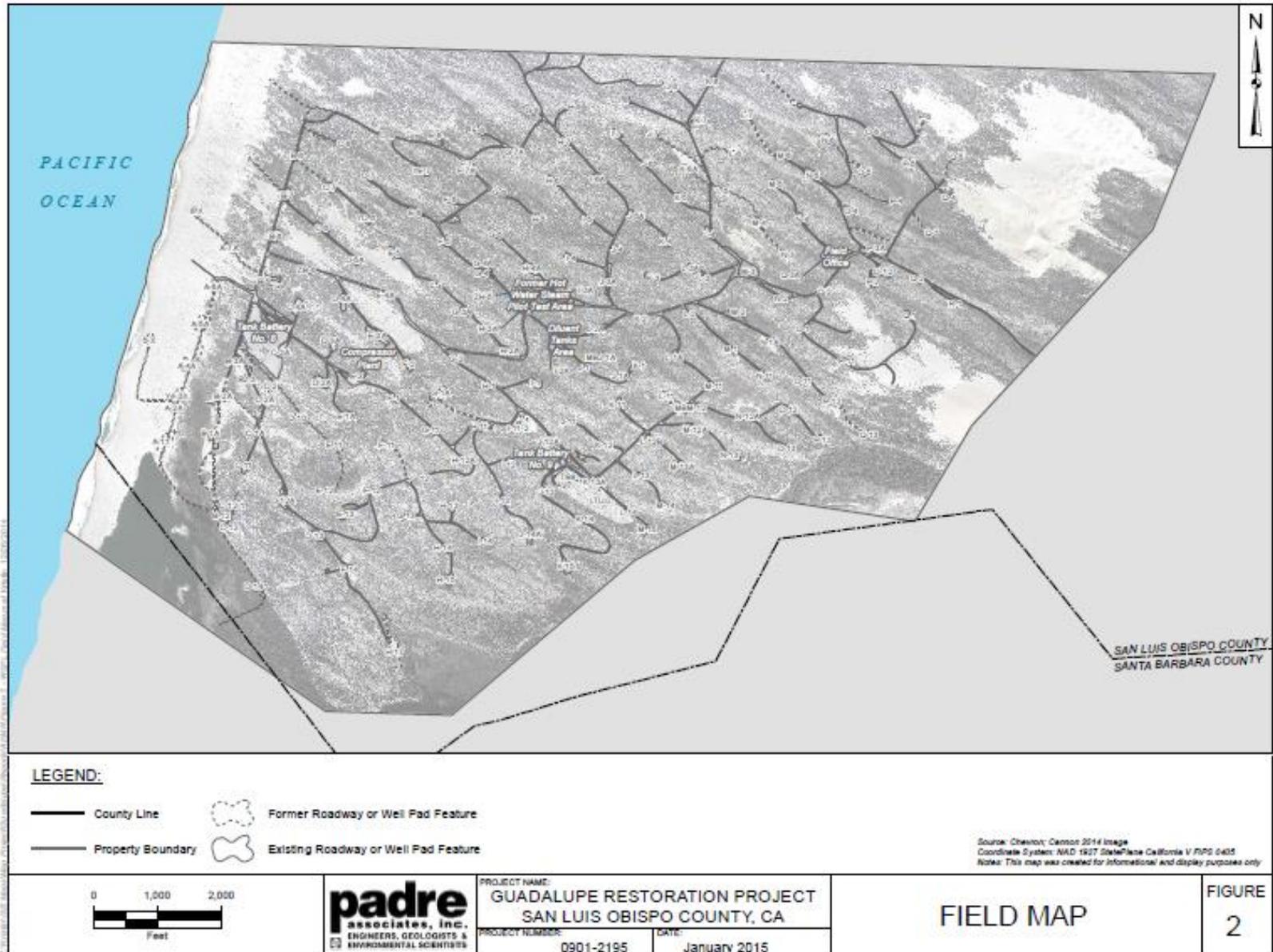
Source: USGS Topo Quad - ES/R Online
 Coordinate System: NAD 1983 StatePlane California V FIPS 4025 Feet
 Note: This map was created for informational and display purposes only

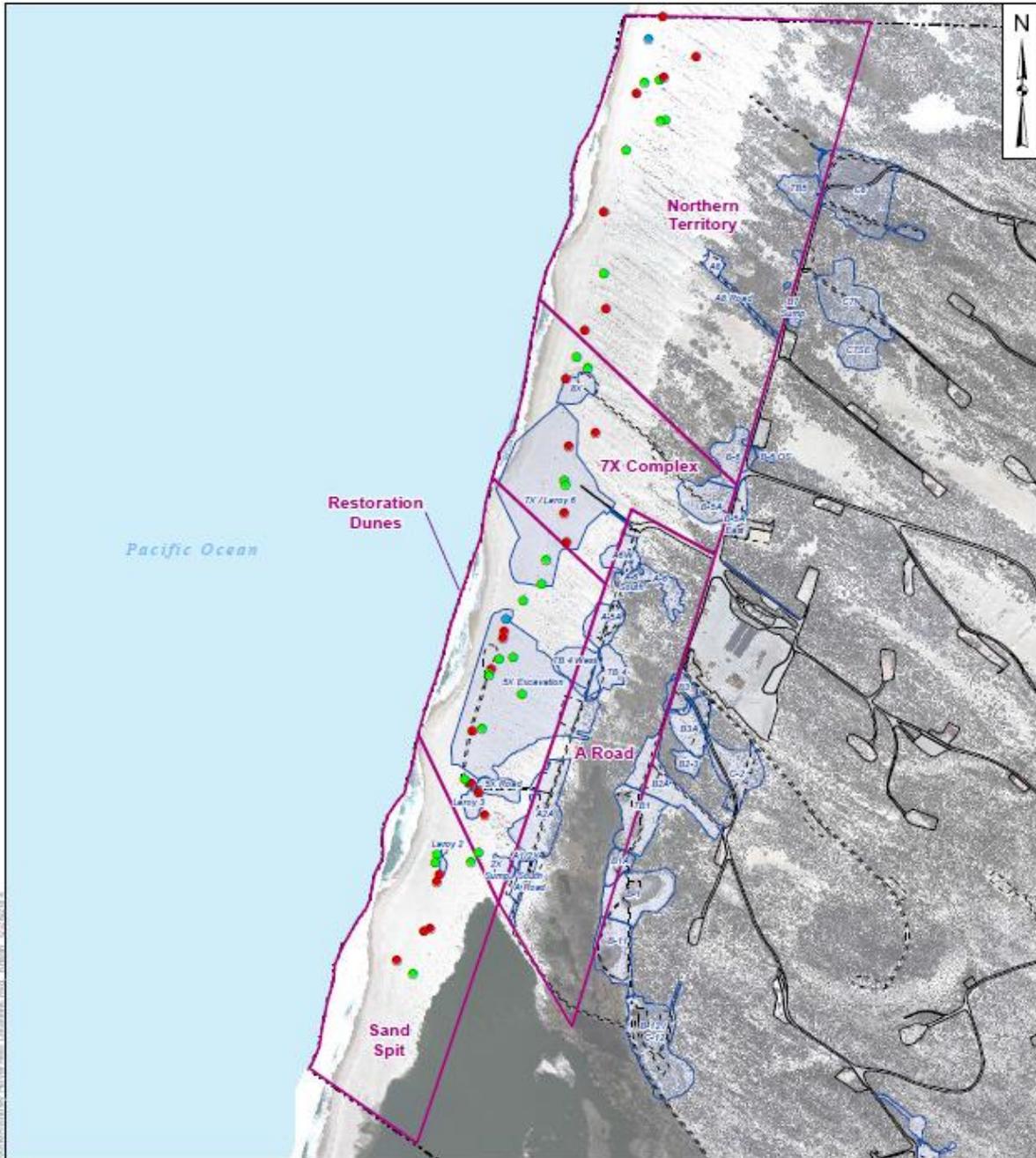


PROJECT NAME: GUADALUPE RESTORATION PROJECT SAN LUIS OBISPO, CA	
PROJECT NUMBER: 0901-2195	DATE: January 2015

SITE LOCATION MAP

FIGURE
1

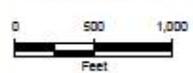




LEGEND:

- | | | |
|----------------|--|-----------------------|
| ● Failed Nest | ▭ Plover Monitoring Territory | --- Property Boundary |
| ● Hatched Nest | ⊞ Excavation Area | |
| ● Fate Unknown | ⊞ Removed Roadway or Well Pad Feature | |
| | ⊞ Existing Roadway or Well Pad Feature | |

Source: NAD 1983 2014 Aerial Imagery
 Coordinate System: NAD 1983 StatePlane California V FIPS 5405
 Note: This map was created for informational and display purposes only.



PROJECT NAME: GUADALUPE RESTORATION PROJECT
 PROJECT NUMBER: 0901-2195 DATE: January 2015

WESTERN SNOWY PLOVER
 NEST LOCATIONS (2014)

FIGURE
 3

3.0 METHODS

USFWS-approved biologists surveyed all potential WSPL habitat within the survey area three times per week on non-consecutive days, when possible. Surveys were cancelled or rescheduled, when wind speeds greater than 15 to 20 miles per hour (mph) were observed.

During each survey, the biologists followed a designated route through the survey area. Beginning at the intersection of the former A Road and the B Road, the biologists walked the former A Road south to where the road turns to the southeast (refer to Figure 3). At this point, the route followed the estuary edge traveling west until reaching the southwest corner of the GRP property. From there, the biologists proceeded to the northern boundary of the survey area. Returning south from the northern boundary, the former 8X Pad area was surveyed. The biologists then walked south along the western edge of the dunes to the former 7X Road and returned to the intersection of the A Road and B Road. At least once a week the survey route was traveled in reverse. The biologists would routinely take minor deviations from this route to follow tracks or other evidence of WSPL activity. To avoid disturbing rare plant species, every monitor was trained in special-status plant identification and was careful to avoid affecting them when surveying in the dunes.

Surveys were conducted by traveling the survey route with biologists stopping at roughly 325-foot (100 meter) intervals, scanning a 360 degree circle for WSPL, and noting the number, age, sex, and presence of colored leg identification bands of all observed WSPL. When a WSPL was observed with colored leg identification bands, extra effort was made to record the band combinations. As WSPL tend to visit their nests several times a day during nest initiation and egg-laying stages, scanning areas with dense concentrations of WSPL footprints was the primary technique used to locate active WSPL nests. Nests were also located opportunistically or by observing the behavior of adult WSPL.

During each survey, the status of every active nest was checked and assigned to one of the following categories:

- **Active/Tended** - Eggs present, with adults or fresh tracks near the nest;
- **Untended/Abandoned** - Eggs present, but no fresh tracks near the nest. Eggs partially covered in sand or present more than five days after expected hatch date;
- **Hatched** - Chicks or egg pips (small fragments of eggshell produced during hatching) present in nest. In the absence of pips, due to wind, nests that were empty on the expected hatch date without any signs of depredation;
- **Failed** - Eggs gone before expected hatch date, or physical evidence of egg loss present (e.g. broken shells, spilled yolk in nest scrape, evidence of predator presence); and
- **Unknown** - This category was assigned to nests that did not leave unequivocal clues to their fate.

The nest status, data, and the location of the nest (GPS coordinates) were collected during each survey and written on a nest card that was used to monitor each individual nest. The location data were placed on a map indicating the success of each nest based on color

(refer to Figure 3). Any predators or predator tracks that were observed during each survey along with human trespassers were also recorded. The time of the survey; biologists present; weather (wind speed and temperature); prior weather; visibility; estuary height; surf conditions; and presence of fisherman, beachcombers, surfers, and joggers was also recorded. All of these data were collected in field notebooks and input into an electronic database. The color combinations of each unique colored leg identification bands were reported to Point Blue Conservation Science, which apprised the USFWS approved biologists that banded these birds of these observations. Reporting of WSPL colored leg identification bands observations help biologists understand the range-wide status, movements, and distribution of the species.

Additional WSPL monitoring was conducted during the monitoring of the 5X Area for evidence of potential hydrocarbon releases into the ocean. Two separate paths were designated depending on where nests were located during the time of beach monitoring activities. One path was from the former A Road to 7X Area and out to the shoreline. The second path was south on the A Road to an open dune near 5X Area and out to the shoreline. The paths were surveyed by an approved WSPL monitor prior to any hydrocarbon monitoring activities. Additionally, approved WSPL biologists accompanied all monitoring personnel during each monitoring event.

Periodically, site activities required a search for WSPL scrapes or nests outside the normal survey zone. If a proposed project would disturb an area west of the A Road, but outside the normally surveyed section or east of the former A Road in an area that had any likelihood of sheltering a WSPL nest, the WSPL monitor would be called upon to survey the area for WSPL prior to the initiation of remediation activities. The area east of the B-ponds are surveyed and cleared for foot and ORV traffic once a week. WSPL have not been seen in this area for the past few years and the vegetation continues to grow, decreasing the availability of suitable nesting habitat.

4.0 RESULTS AND DISCUSSION

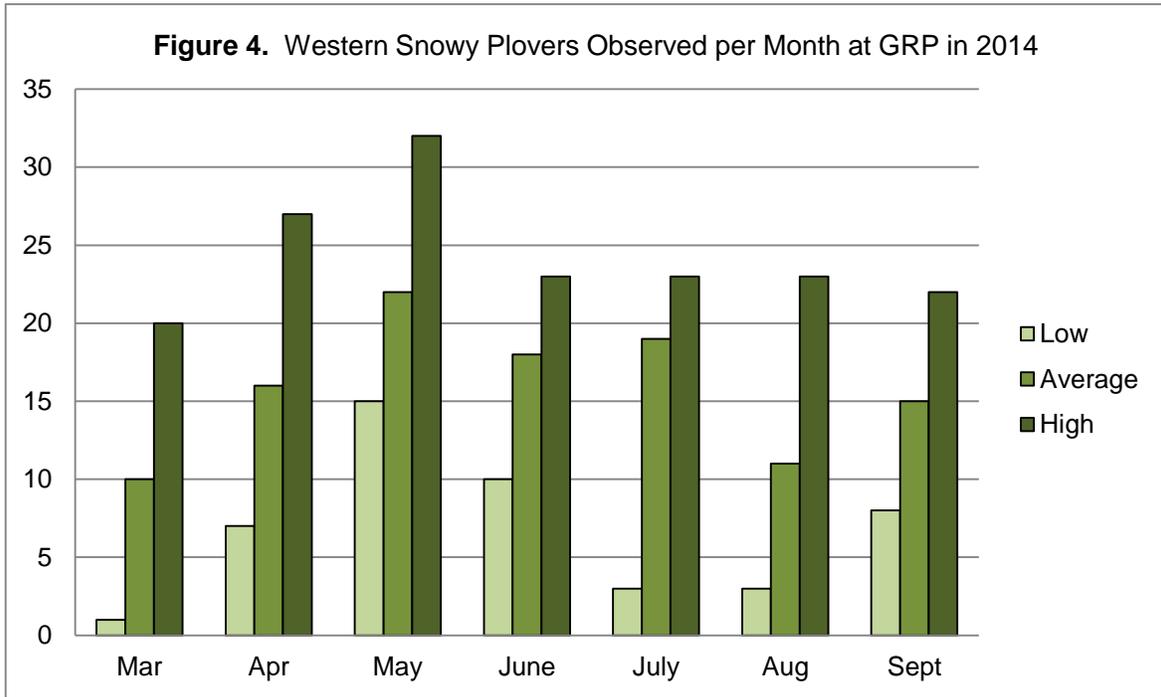
4.1 WESTERN SNOWY PLOVER NUMBERS

The WSPL biologists conducted 85 surveys during the period from March 3, 2014, to September 15, 2014. The survey data are provided in Appendix A, Table A-1, Survey Dates and Western Snowy Plover Numbers. The number of WSPL counted each month ranged from a minimum of zero observed on August 14, 2014, to a maximum of 37 observed on May 20, 2014. The number of observations are presented on Figure 4 - Western Snowy Plovers Observed per Month in 2014 at GRP, which depicts the minimum, average, and maximum number of WSPL observed each respective month in 2014. An average of 15 WSPL were observed at the GRP during the peak breeding months of April through June.

The average number of WSPL observed during the period from March through September is consistent with the average number of WSPL observed over the past five years during the same period. The average number of WSPL observed in 2013 (n=16) is the same as 2012 (n=16), and slightly higher than 2011 (n=15), 2010 (n=12), and 2009 (n=15). The increase in WSPL numbers observed in May is presumed to be due to the WSPL still moving between suitable nesting areas throughout the region before choosing a location to begin the nesting cycle.

Among the WSPL observed in 2014, 49 individuals were marked with colored identification leg bands placed on the birds by different monitoring sites throughout the WSPL breeding range. Refer to Appendix A, Table A-2, Color Banded Western Snowy Plovers Recorded. Seven of these banded birds were confirmed as nesting on-site throughout the season. Thirty-one of the 49 banded WSPL wore band combinations placed on the chicks by Oceano Dunes State Vehicular Restoration Area (ODSVRA), located to the north of the Project Site. It should be noted that eight of the 31 ODSVRA birds were banded in 2014.

On the morning of September 8, 2014, at 0930 an adult WSPL was located dead on the side of the Main Road at Project Site. The Main Road runs west to east and the location where the bird was found was towards the west side of the Project Site closer to the beach. The bird was located on the road, approximately three feet from the southern edge of the road. Overhead power lines are located on the northern edge of the road. There was little traffic on the road that morning. The bird showed no signs of trauma when collected by the WSPL monitor. Padre immediately notified the USFWS of the deceased WSPL and it was recommended that a necropsy be performed to help understand the cause of death. The WSPL was sent to an approved facility, the California Health and Food Safety Laboratory at the University of California, Davis (CAHFS). The findings from the necropsy were inconclusive. The results of the necropsy are detailed in the final report from the laboratory (refer to Appendix B – CAHFS Necropsy Final Report, title).



4.2 WESTERN SNOWY PLOVER NESTS

The biologists located a total of 50 WSPL nests within the survey area during the 2014 breeding season. Refer to Figure 3. The number of nests recorded in 2014 is greater than the 45 nests found in 2013. The first nest was observed on March 21, 2014, and the last nest hatched on August 8, 2014. The nest location data are presented in Appendix A, Table A-3, Western Snowy Plover Nests Located. April and July were the most active nesting months. Of the 50 nests observed, 22 hatched, 25 failed, and three nests had unknown fates. Sixteen of the failed nests were confirmed depredations. Nine nests were abandoned and no nests were washed away by high tides in 2014. Refer to Figure 5 - Number of Western Snowy Plover Nests at GRP in 2014 and Figure 6 - Fate of Western Snowy Plover Nests at GRP in 2014.

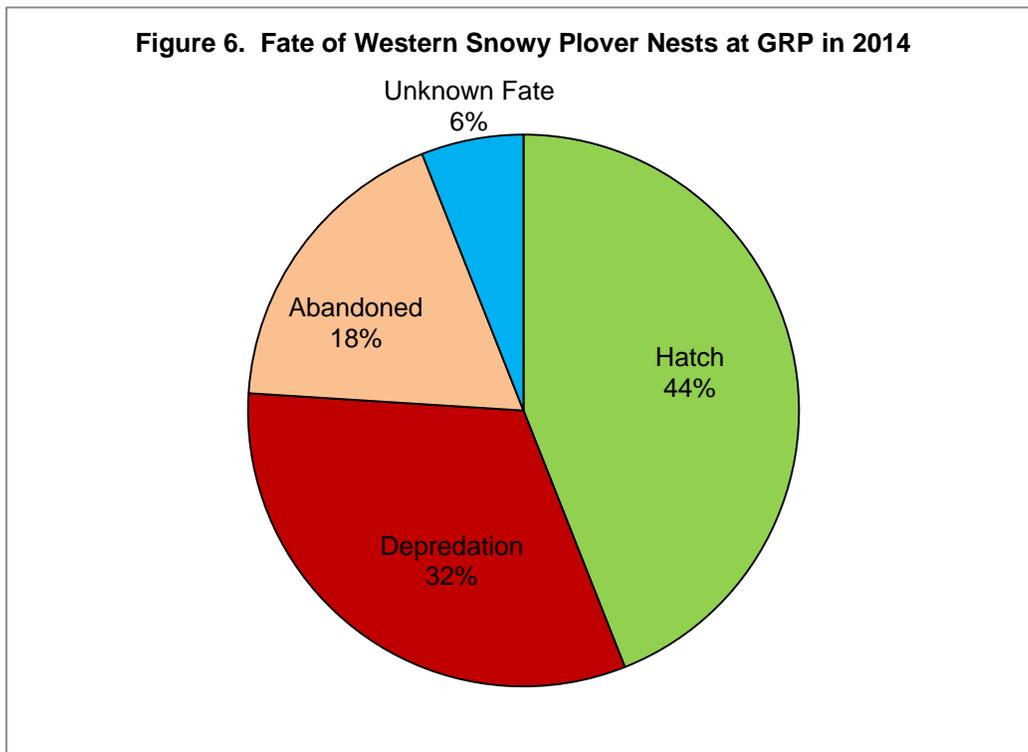
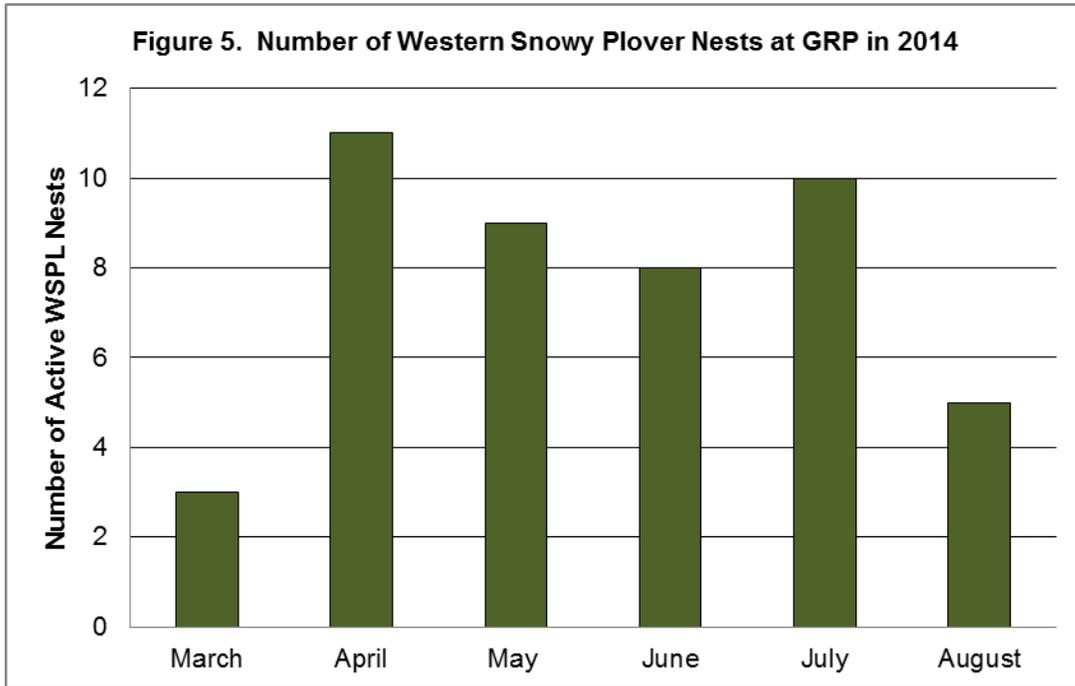
A total of 37 nests (74 percent) were located before clutch completion (i.e., before there were three eggs in the nest), allowing for the calculation of an accurate expected hatch date. Refer to Table 4-1 - Western Snowy Plover Nest Fates for 2014 Breeding Season at GRP. Biologists were able to assign relatively accurate hatching dates to another 13 nests found after clutch completion due to recent nest searches in these locations.

Table 4-1. 2014 Breeding Season Western Snowy Plover Nest Fates at GRP

Nests	Hatched	Failed	Fate Unknown	Total
Found Before Completion	15	20	2	37(74%)
Found Completed	7	5	1	13 (26 %)
Total	22 (34%)	25 (50%)	3 (6%)	50

The percentage of successful nests whose eggs hatched in 2014 stayed consistent with 44 percent hatch success in 2013. Refer to Figure 7 - Number of Nests Located and Hatched between 1995 - 2014 at GRP. In 2014, there were more eggs that hatched as compared to 2013 (54 eggs versus 51 eggs, respectively).

Fifteen nests (30 percent) were laid in the Northern Territory, followed by the Sandspit (20 percent), the Restored Dunes (17 percent), and 7X Complex (16 percent). The former A Road did not have any WSPL nests in 2014. Figure 8 - Total Western Snowy Plover Nests by Location at GRP in 2014 depicts the spatial arrangements of the WSPL nests within the four monitoring territories.



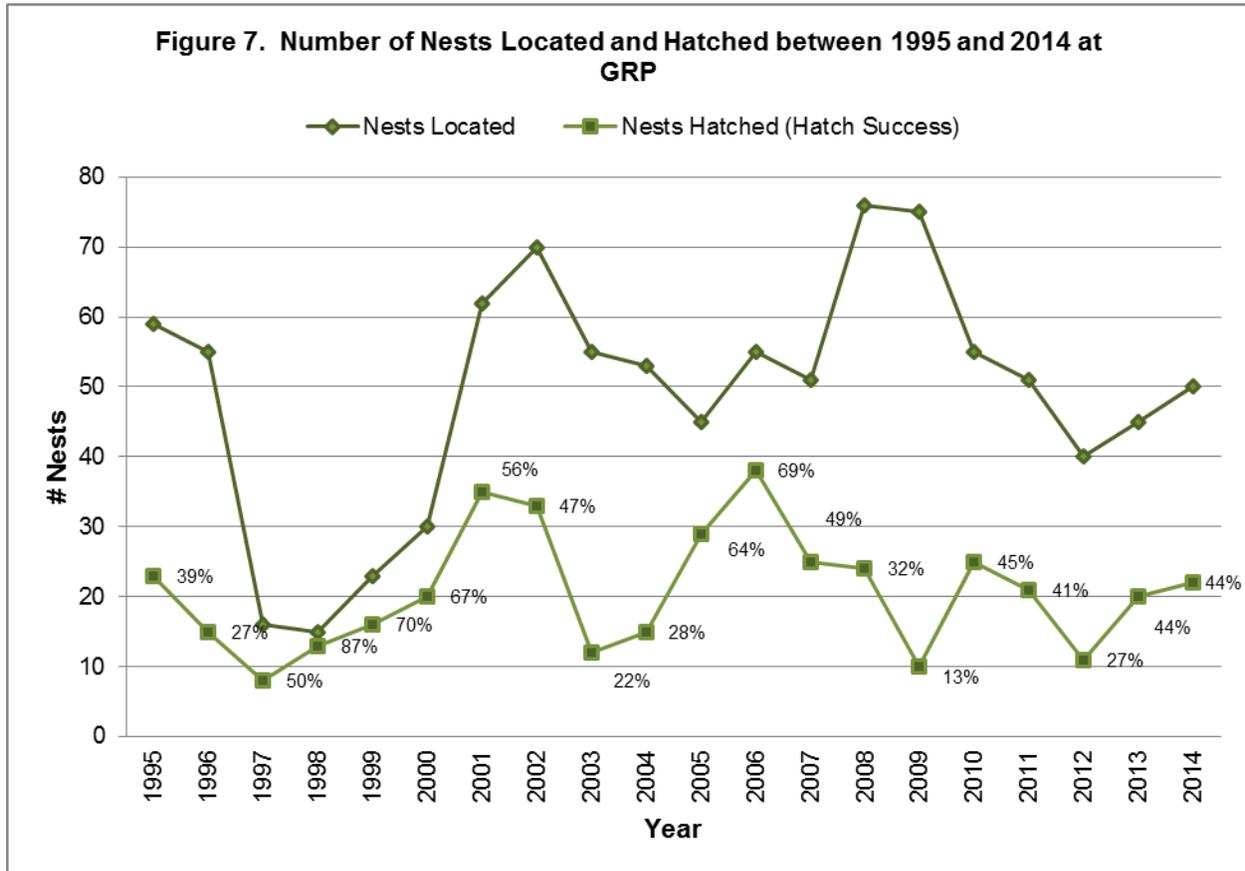
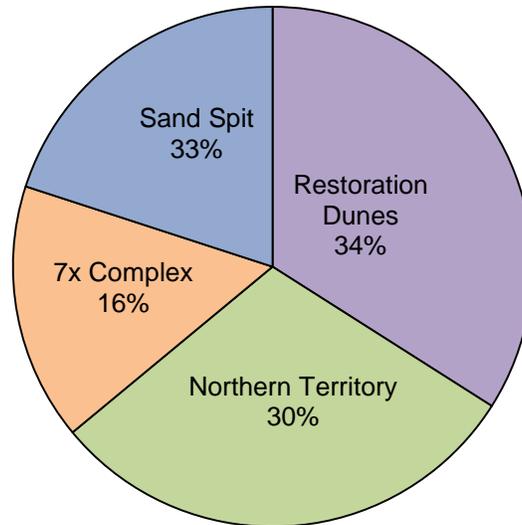


Figure 8. Total Western Snowy Plover Nests by Location at GRP in 2014



4.3 WESTERN SNOWY PLOVER NEST DEPREDATION AND FAILURE

In 2014, the most common nest predators were coyotes. A total of 16 confirmed depredations were identified; six were confirmed coyote, one was confirmed pig, one was confirmed raccoon, one was confirmed common raven, one was an unknown avian predator and six were unknown predators. In 2013, common ravens were the primary predator of nests. In 2014, common ravens were observed at the GRP, but these observations occurred primarily outside of suitable WSPL nesting habitat. Additional potential WSPL predators (nest and/or adults, chicks, fledglings) including northern harrier (*Circus cyaneus*), great-horned owl (*Bubo virginianus*), peregrine falcon, merlin (*Falco columbarius*), burrowing owl (*Athene cunicularia*) red-tailed hawk (*Buteo jamaicensis*), striped skunks (*Mephitis mephitis*), mountain lion (*Puma concolor*), and various gull species (*Larus* spp.), were observed within suitable WSPL nesting habitat at GRP throughout the 2014 nesting season; however, no confirmed depredations were recorded by these species.

Unknown predators were suspected to be avian if it was not windy the previous day (e.g., potential tracks were not obscured), and there were no mammalian tracks leading up to the nest. In most instances, any avian predator tracks at the nests were covered by extensive WSPL tracks following the predation, making it difficult to identify the predator species. Any predator tracks observed were measured and any conditions of egg remains were documented to aid in potential predator identification.

Padre's WSPL biologists coordinate closely with WSPL biologists at sites, as well as the entire Recovery Unit 5 (San Simeon south to Ventura, California), when necessary. The WSPL biologists distribute a weekly update including predator sightings to Rancho Guadalupe Park

USFWS approved WSPL biologists, Guadalupe-Nipomo Dunes Wildlife Refuge USFWS approved WSPL biologists, Oceano ODSVRA, USFWS approved WSPL biologists and United States Department of Agricultural (USDA Wildlife Services representatives and ODSVRA predator managers, USFWS representatives, and CDFW representatives. When common ravens or other potential avian WSPL predators are observed at GRP, ODSVRA USFWS approved WSPL biologists, USDA Wildlife Services representatives, and ODSVRA predator managers are notified by phone immediately.

In years past, common ravens were seen on the beach near the estuary flying over the Sandspit, up through the restoration dunes, and north to the Guadalupe Nipomo Dune Complex National Wildlife Refuge. In 2014, a pair was observed flying over the beach in March and tracks were seen near the end of May. Common ravens were observed flying inland of the beach on one other occasion in July. The WSPL biologists on the Rancho Guadalupe Dunes Preserve documented multiple sightings of common ravens flying towards GRP throughout the season (M. Kelly, personal communication, 2013). Common ravens are often found in breeding pairs and are highly territorial, causing them to remain relatively inconspicuous with only one pair present in a large territory. A breeding pair can devastate a breeding population of WSPL over a large area in a short amount of time (Boarman and Heinrich, 1999).

In 2011, 2012, and 2013, nest predation by common ravens at GRP was identified as the most significant factor limiting the nesting success of WSPL at GRP. The USFWS Biological Opinion (1-8-03-FC-57) and the *USFWS Western Snowy Plover Recovery Plan* indicate that the reduction of predation caused by this species provides a benefit to the nesting success of the WSPL. Terms and Conditions 13 of the USFWS Biological Opinion for the GRP states: *When determined appropriate by the Service-approved biological monitor(s), Unocal (Chevron EMC) must implement predator control to reduce excessive predation on western snowy plovers or California red-legged frogs.*

To reduce the affects of common raven on the nesting success of the WSPL, Chevron applied for and was issued a USFWS Migratory Bird Depredation Permit (MB23433B-0) dated January 7, 2014, to lethally remove 10 common ravens annually. The USFWS Migratory Bird Depredation Permit allows for the lethal removal through shooting with a shotgun, or trapping with padded leg-hold or Swedish goshawk traps. To perform these activities, the Chevron has entered into an informal agreement with the ODSVRA and USDA Wildlife Services to perform these activities. In 2014, a single confirmed nest depredation by common ravens was observed and few observations of common ravens in suitable WSPL nesting habitat were recorded; therefore, no lethal control of common ravens consistent with the USFWS Migratory Bird Depredation Permit were conducted at GRP in 2014.

High winds did not play a large role in nest failure in 2014 at the GRP. During survey days, high winds were recorded gusting above 15 to 20 mph on seven different occasions starting in March and continuing through the latter half of June. Winds were recorded by biologists during the early mornings when surveys were being conducted. In 2014, many afternoons became extremely windy and five of the abandoned nests occurred during high wind events. The three nests with unknown outcomes were discovered after the hatch date without eggs after high winds. In 2014, peregrines were present but other than the one abandonment, there were no other negative effects presumably caused by this species.

In 2014, six nests were depredated by coyotes. The nests were observed with coyote tracks leading to them and egg fragments and wet yolk were found in the nest bowl, consistent with a coyote predation. One nest was depredated in the northern territory by pigs. The nest was observed with multiple pig tracks leading to it. No egg fragments or nest remains were found. One nest was depredated by a raccoon in the Northern Territory. The nest was found with raccoon tracks walking up to it and egg fragments and wet yolk in the nest bowl. Refer to Table 4-2 - Western Snowy Plover Nest Failure at GRP in 2014.

Table 4-2. Western Snowy Plover Nest Failure at GRP in 2014

Cause	Number of Failed Nests
Depredated – Raven	1
Depredated – Coyote	6
Depredated - Feral Pig	1
Depredated - Raccoon	1
Depredated - Unknown Avian	1
Depredated - Unknown Predator	6
Abandoned	9
Total	25

4.4 NEST ENCLOSURES

Although nest enclosures have been used at the site in past years, no nest enclosures were used in 2013 or 2014. The decision was made by the USFWS approved biologist to not use predator enclosures based on adult WSPL fatalities potentially influenced by the placement of enclosures in previous years. The decision was made at the beginning of the season to assess the severity of the predation on WSPL nests before using enclosures. The use of enclosures was still an option if the USFWS approved biologists deemed it necessary.

In the past, coyotes have approached enclosures and dug under in attempt to depredate the nest. In some cases, these nests were later abandoned. In one case, the nest had hatched and the coyote dug under in attempt to reach the chicks. The majority of the nests that have been keyed into by coyotes have been in the 7X/A6 Areas where the topography is flatter and open. It is also an area that is easily accessible by the former A Road and is heavily traveled by coyotes. The WSPL biologists pulled enclosures in this area when the coyotes began keying into them. In 2014, four of the six nests that were taken by coyote were all near the 7X/A6 Areas where coyotes have been an issue in the past. Ravens have also been documented walking up to and circling enclosures with active nests inside at GRP. It is very likely that the ravens were sitting atop these same enclosures.

In 2011 and 2012, adult WSPL were found dead outside of enclosures. These adult mortalities were presumably caused by raptors. This event happened at two separate enclosures in the Restoration Dunes in 2011, and both enclosures were removed that morning. The dead WSPL were found with coyote tracks around them, but the cause of death was uncertain. One of the nests continued to be incubated and later hatched. The second nest

associated with the adult mortality was not attended to and was deemed abandoned. The eggs were eventually eaten by a coyote. In 2012, a common raven sign (i.e., tracks) was also observed adjacent to nest enclosures

Although nest enclosures have been shown to increase WSPL nest hatching success, they pose potential hazards to adult WSPL. The scientific literature and USFWS approved biologists' professional experience with nest enclosures indicate that small raptors including American kestrel (*Falco sparverius*) and merlin (*Falco columbarius*) may correlate the presence of enclosures with the presence of all life stages of WSPL, and may use this association to serially depredate WSPL. On the GRP Site specifically, peregrine falcons are present the majority of the WSPL breeding season. Therefore, due to the potential risk that enclosures pose to adult WSPL, GRP biologists elected not to enclose any WSPL nests in 2013 or 2104. Throughout the range of the WSPL, many WSPL biologists are focusing their efforts on the removal of potential predators, and are working toward the elimination of enclosures due to the potential threats this method poses to the adult WSPL.

4.5 WESTERN SNOWY PLOVER EGGS AND CHICKS

The 50 recorded nests contained 127 eggs of which 54 hatched and 44 eggs were taken by predators. Of the remaining 29 eggs, 16 were abandoned, nine had unknown fates, one partially hatched, and three were non-viable

The biologists observed few chicks and juveniles early in the season March and April at GRP. Chicks are not actively sought by the biologists during surveys to avoid separating attending adult birds from their chicks. Consequently, the number of chicks observed is presumed to be a conservative estimate. As has been observed in past years, older chicks and juveniles were more commonly observed later in the 2014 season.

4.6 NEWLY RESTORED DISTURBANCE AREAS WITHIN WESTERN SNOWY PLOVER CRITICAL HABITAT

Environmental regulatory agency-approved remediation activities within WSPL breeding habitat are scheduled outside of the WSPL nesting season. In the first quarter of 2014, a total of 1.28 acres of WSPL critical habitat was disturbed and restored at the A-8 pad, A-6 West, and the A road. Historically, the A8 Area has not had suitable WSPL nesting habitat and nests have not been found in that area. Following excavation activities of these sites, restoration efforts included seeding and installation of sand fence for sand stabilization. Additionally, straw plugs were added to A6 West and the A Road.

From 2001 through 2014, WSPL utilized the Restoration Dunes Area for nesting. In 2001 these dunes were restored to successful suitable WSPL breeding habitat. In 2014, 17 nests were placed on these dunes and an additional four within the A6 Area, which was restored to suitable WSPL habitat in 2013. Of the 21 nests in these areas, 10 hatched successfully (48 percent), one nest was taken by a coyote, two to unknown predators, five were abandoned, and one was lost to an unknown avian predator. When compared to 2013, this is a five percent decrease in the proportion of nests hatched in the Restoration Dunes. In 2014, the main cause for nest loss was abandonment and unknown predator takes after strong winds.

4.7 TRESSPASS INCIDENTS WITHIN WESTERN SNOWY PLOVER HABITAT

In 2014, there were two instances where human trespassers' footprints were observed in suitable WSPL habitat at GRP. In one instance, the human trespassers tracks were observed walking through the Restored Dunes possibly collecting drift wood. No nests were adversely affected by these visitors. Most trespassers enter the property from the south at the Rancho Guadalupe Dunes County Park, usually crossing the Sandspit to the estuary edge and then the southern dunes. The biologists at the Rancho Guadalupe Dunes County Park actively keep trespassers out of the WSPL habitat by educating visitors before they arrive on the beach and contacting them when in WSPL habitat.

At the end of March 2014 there was a search and rescue operation being conducted on the Rancho Guadalupe Dunes County Park. The Coast Guard was involved along with California State Park personnel who accessed the County beach from ODSVRA. The vehicles drove in the wet sand along GRP beach. Low flying helicopters and ocean vessels were also used in the search and rescue throughout the day. No WSPL or nests were affected by the activity on the beach.

On the weekend of October 25, 2014, a full size pickup truck drove from the north down the beach and entered the dunes at the A5A Area. The tracks show the truck had driven up and down the former A Road where it may have gotten stuck around the A6/7X Area before exiting near the 5X Area. The truck drove through newly restored areas but not over any sensitive plants. The route of the tire tracks were recorded by Padre staff the following workday, no WSPL were found in the area and after a windy few days, the tracks were no longer visible.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 MONITORING STUDY CONCLUSIONS

The WSPL nests found at the GRP Site in 2014 (n=50) was higher than the number of nests found in 2013 (n=45) and 2012 (n=40). The percentage of nests whose eggs hatched in 2014 (44 percent) stayed consistent with 2013 percentages. In 2014, there were more eggs that hatched as compared to 2013 (54 eggs versus 51 eggs, respectively). In 2014, 32 percent of the nests were depredated as compared to 2013 when 42 percent were depredated. In 2014, coyotes and other unknown predators were the main cause of nest predation. Another factor in 2014 that contributed to the failure of nests and eggs was the abandonment of nests by the adult WSPL. High tides did not contribute to nest failure in 2014.

5.2 RECOMMENDATIONS

During the 2015 WSPL nesting season, the GRP USFWS-approved biologists plan to work with ODSVRA representatives and USDA Wildlife Services representatives to lethally control common ravens, if warranted. These activities will be performed in compliance with project-specific USFWS Migratory Bird Depredation Permit (MB23433B-0) to improve WSPL nesting success. The GRP USFWS-approved biologists will coordinate with representatives from Rancho Guadalupe Park, Guadalupe-Nipomo Dunes Wildlife Refuge, and ODSVRA throughout the 2015 season regarding the common ravens activity in WSPL habitat.

If the WSPL biologists deem it necessary, due to loss of WSPL nests or individuals, USDA Wildlife Services may be called to assist in the lethal removal of common ravens at GRP. USDA Wildlife Services will be working with ODSVRA throughout the season; however, since common ravens are capable of causing harm to multiple WSPL beaches; it is beneficial to all neighboring sites for USDA Wildlife Services to support other beaches when available.

If nest enclosures are used in 2015, they will be embedded deep into the sand to deter possible effects caused by coyotes. Communication should continue between the neighboring sites regarding predators and various management strategies implemented to increase snowy WSPL nesting success.

In 2015, if eggs fail to hatch due to abandonment or unviability, they will be collected and transported to the Santa Barbara Museum of Natural History (SBMNH) for the Museum's collection. Any deceased WSPL will be reported immediately to USFWS and either sent to SBMNH or CAHFS depending on USFWS recommendation.

To ensure that site characterization, oil field abandonment, remediation, infrastructure removal, or other project-related activities don't significantly affect the WSPL or suitable WSPL nesting habitat at GRP, monitoring activities in 2015 shall be consistent with past WSPL nesting seasons. The intent of the continued effort at GRP is to monitor the status of all life stages of WSPL, as well as to adaptively manage the population and habitat to support productivity of the species.

Prior to the 2015 season, all signs should be checked for wear and replaced if needed. Signs present along the beach should continue to be outfitted with Nixalite© bird spikes to discourage perching from any raptors.

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6.0 REFERENCES

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Personal communications

Greenwald, Glen, Refuge manager and Monitor at Rancho Guadalupe Dunes Preserve and Guadalupe-Nipomo Dunes National Wildlife Refuge in 2014. Frequent personal communication regarding depredations by unknown avian predators at Rancho Guadalupe Dunes Preserve and Guadalupe-Nipomo Dunes National Wildlife Refuge.

Little, Stephanie, Environmental Scientist at Oceano Dunes State Vehicular Recreation Area (ODSVRA). Snowy plover monitor at the Rancho Guadalupe Dunes Preserve in 2014. Frequent personal communication regarding nest depredation and predator sightings on ODSVRA and Rancho Guadalupe Dunes Preserve.

Kelly, Melissa, Assistant Naturalist at Rancho Guadalupe Dunes Preserve in 2014. Personal communication regarding nest depredations and predator sightings on the Preserve.

Oceano Dunes State Vehicular Recreation Area State Park in 2014. Frequent personal communication with various plover biologists and USDA Wildlife service trappers regarding depredations within the State park.

APPENDIX A

Table A-1: Survey Dates and Western Snowy Plover Numbers in 2014

Table A-2: Color Banded Western Snowy Plovers Recorded in 2014

Table A-3: Western Snowy Plover Nests Located in 2014

Table A-4: Predator Sightings and Other Possible Threats During Western Snowy Plover Surveys in 2014

APPENDIX B

CAHFS Necropsy Final Report

Table A-1. Survey Dates and Western Snowy Plover Numbers in 2014

Survey Date	Survey Crew	Total # of plovers
3/3/14	KP, AB	2
3/5/14	JM, AB	2
3/6/14	KP, SS	1
3/10/14	KP, KG	11
3/12/14	KP, KG	12
3/14/14	KP, SS	11
3/17/14	KP, AB, RD	9
3/19/14	KP, KG	12
3/21/14	KP, SS, RZ,	11
3/24/14	KP, AB	20
3/26/14	KP, AB, RD	10
3/28/14	KP, SS	10
3/31/14	KP, AB	14
4/2/14	KP, SS, AB, RD	18
4/4/14	KP, SS	27
4/7/14	KP, KG, RD	19
4/9/14	KP, JM, RD	14
4/11/14	KP, SS	10
4/14/14	KP, JK, KG, RD, RZ	13
4/16/14	KP, KG	14
4/18/14	SS, AB	7
4/21/14	KP, KG	19
4/23/14	KP, KG	19
4/25/14	KP, SS	11
4/28/14	KP, KG	23
4/30/14	KP, KG, RD	15
5/2/14	KP, SS	18
5/5/14	KP, KG	27
5/7/14	KP, KG	27
5/9/14	KP, SS	17
5/12/14	KP, JM	28
5/14/14	KP, SS	21
5/16/14	KP, SS	32
5/19/14	KP, JM	29
5/21/14	KP, SS, RD, EL	24
5/23/14	KP, SS	24
5/27/14	KP, SS	15
5/28/14	KP, JM	15
5/30/14	KP, SS	15
6/2/14	JM, KG	17
6/4/14	KP, SS	19
6/6/14	KP, SS	18
6/9/14	KP, JM	20

Survey Date	Survey Crew	Total # of plovers
6/11/14	KP, KG, RD	17
6/13/14	KP, KG	17
6/16/14	KP, KG	22
6/18/14	KP, KG	15
6/20/14	KP, KW	19
6/23/14	KP, JM	23
6/25/14	KP, SS	10
6/27/14	KP, SS	20
6/30/14	KP, JM	20
7/2/14	KP, KW	19
7/3/14	KP, AB	11
7/7/14	KP, JM	8
7/9/14	KP, JM	8
7/11/14	KP SS	7
7/14/14	KP, JM, KG	7
7/16/14	KP, KG, RD	20
7/18/14	KP, SS	14
7/21/14	KP, KG	10
7/23/14	SS, JM	3
7/25/14	KP, SS	10
7/28/14	KG, AB	23
7/30/14	KG, AB	13
8/1/14	KG, AB	3
8/4/14	KP, KG	5
8/6/14	KP, KG	4
8/8/14	KP, SS	10
8/11/14	KP, AB	4
8/13/14	KP, KG	7
8/15/14	KP, SS	8
8/18/14	KP, KG	20
8/20/14	KP, KG	13
8/21/14	KP, KW	11
8/25/14	KP, JK	20
8/27/14	KP, KG	23
8/28/14	KP, KW	18
9/2/14	KP, JK	14
9/3/14	KP, MH	16
9/4/14	KP, JL	19
9/8/14	KP, KG	8
9/10/14	KG, AB	11
9/11/14	KP, JK	13
9/15/14	KP, JK	22
Average number of western snowy plovers observed		15

Table A-2. Color Banded Western Snowy Plovers Recorded in 2014

Left Bands	Bands Right	Sex	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total times seen	Confirmed Nesting at GRP	Band site (year banded)
AB	AB	F			1						1		Marina State Beach, Monterey (2011)
AP	GR								2	2	4		Monterey Bay Aquarium (2014)
AR	BW	M		1							1		Marina State Beach, Monterey (2013)
AR	WW	F			1						1		Reservation Road (2013)
BB	GY	M		2	4	5	2	4	3		20	3 nests	ODSVRA (2006)
BB	RY	M		5	5	3	5				18		ODSVRA (2010)
BB	YW	F					2				2		ODSVRA (2010 or 2013)
BWB	V	J							1		1		Oregon (2014)
BY	RR	M				8					8		Salinas (2011)
GA	AG	M				2	1				3		ODSVRA (2012 or 2013)
GA	WB	M				1		1			2		ODSVRA (2012 or 2013)
GA	YG									1	1		ODSVRA (2011 or 2013)
GA	YR	J								1	1		ODSVRA (2014)
GG	PG	M				1					1		ODSVRA
GG	BB	F						2			2	1 nest	ODSVRA (2005, 2010 or 2013)
GG	AB	M			1						1		ODSVRA (2007)
GG	GR	M				2					2		ODSVRA (2011 or 2013)
GG	YG	F		5	4	5			1	3	18	1 nest	ODSVRA (2011 or 2013)
GG	LY	F		4	7	3	2	6			22	2 nests	ODSVRA (2012)
GG	RY	F							4		4		ODSVRA (2012)
GG	OG	M				5	7	2	1		15	1 nest	ODSVRA (2013)
GG	VG	J							1		1		ODSVRA (2014)
gN	RW	F		2	1		3				6		Oregon
NO	BY	F		1							1		Vandenberg (2013)
NR	PR	F						2			2		Vandenberg (2012)
OB	AA	J								2	2		Pajaro Spit (2014)

Left Bands	Bands Right	Sex	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total times seen	Confirmed Nesting at GRP	Band site (year banded)
OG	OW	J							1		1		Salinas (2014)
OO	WR	J								1	1		Pajaro Spit (2014)
OY	BB	F							1		1		Sunset State Beach (2005)
PG	RY	J								1	1		ODSVRA (2014)
PG	GY	J								1	1		ODSVRA (2014)
PG	AB	M		3	1	1					5	1 nest	ODSVRA (2012)
PG	GG	F		1							1		ODSVRA (2012 or 2013)
PG	PG	J							1		1		ODSVRA (2014)
PV	GG	J							1		1		ODSVRA (2014)
PV	BW	J							1		1		ODSVRA (2014)
RG	AB	M		1							1		Oregon
RR	PR	F					1				1		ODSVRA (2008)
RR	WG	M		3	2	4	6	2	1		18		ODSVRA (2012)
V	BR					2					2		ODSVRA
VG	VW	M			5	8	7	3			23	2 nests	ODSVRA (2008, 2011, 2013)
VG	GY	M		2	1						3		ODSVRA (2013)
VG	PY	J							4		4		ODSVRA (2014)
VV	BB	M			1					1	2		ODSVRA (2011 or 2013)
VW	BB	F			1	2					3		ODSVRA (2010 or 2013)
WG	RR									1	1		Fort Ord (2014)
WG	GY									1	1		Salinas NWR (2014)
Y	WRW	M			1	4					5		VAFB (2013)

Color band codes:

A=aqua, B= blue, G= green, K=black L=lime, N=brown, O=orange P=pink, R=red, V=violet, W=white, Y=yellow

Table A-3. Western Snowy Plover Nests Located in 2014

Nest #	Date	Initial # eggs	Projected Hatch date	End	Fate	Location	Notes
KKP01	3/21/14	1	4.23.14	4.28.14	Unknown fate	Sand spit, north of the first sign.	Unbanded pair. No eggs were seen, so windy, no chicks seen. Adults were acting like chicks were nearby.
AJB02	3/24/14	1	4.23.14	4.12.14	Fail	Sand spit, south of the first sign.	Unknown predator. No tracks, heavy rain, some yolk and small shell.
AJB03	3.26.14	3	4.21.14	4.14.14	Fail	Northern Territory: far east in the dunes.	Depredated by pigs.
KKP04	3.31.14	1	5.1.14	5.2.14	Hatch	7X: south of the 7X trail	BB:GY Female 3 chicks hatched, pips seen.
AJB05	3.31.14	2	5.1.14	5.2.14	Hatch	Northern Territory: far north, near large well.	GG:LY female and PG:AB male All three hatched, pips seen.
AJB06	3.31.14	2		4.9.14	Fail	Restored Dunes: between markers 17 and 18.	Unbanded pair. Lost one egg, unknown. Abandoned one egg. Last egg eaten by coyote.
SMS07	4.4.14	3	5.1.14	4.30.14	Hatch	Restored Dunes: between markers 12 and 13.	Unbanded pair, all three eggs hatched, chicks seen.
SMS08	4.4.14	1		4.16.14	Fail	Restored Dunes: West of marker 8.	VG:GY Male near nest, became half buried after high winds. Abandoned
KKP09	4.9.14	1	5.11.14	5.12.14	Hatch	Sand spit:: in line with the southern property boundary.	Chicks seen on the beach after hatch.
JFM10	4.11.14	1		4.16.14	Fail	7X: gravel area.	Abandoned after high winds; egg was completely buried.
Dropped Egg	4.11.14	1				Restored Dunes: Gravel area north of perimeter fence.	Tracks around egg, not in nest bowl.
KLG12	4.14.14	3	5.11.14	5.9.14	Hatch	Northern Territory: North of the sign and pole.	One chick just hatched in nest bowl with 2 eggs left.
AJB13	4.18.14	1	5.20.14	5.23.14	Hatch	Restored Dunes: South of marker 7.	VG:VW Male One egg buried a few weeks before hatching. Hatched 2 eggs.
KLG14	4.21.14	1	5.25.14	5.27.14	Hatch	Restoration Dunes: East of marker 12 in gravel.	Hatch 2 eggs, one partial hatch
KLG15	4.21.14	3	5.18.14	5.16.14	Hatch	Restoration Dunes: East of marker 7 in gravel.	GG:YG female, VG:VW Male. Hatch all 3 eggs.
KKP16	4.23.14	3	5.20.14	5.16.14	Hatch	Restoration Dunes: North of marker 23.	2 chicks hatched and one egg pipped.

Table A-3. Western Snowy Plover Nests Located in 2014

Nest #	Date	Initial # eggs	Projected Hatch date	End	Fate	Location	Notes
Dropped Egg	4.25.14	1				Northern Territory: on the beach, west of nest 05.	
KLG17	4.30.14	2		5.4.14	Hatch	Sand spit: Just south of the fence line.	Pips found in the nest bowl
KLG18	5.5.14	1	6.1.14	5.19.14	Fail	7X: Far south in open sand.	Unknown predator. Yolk, shell no tracks.
SMS19	5.9.14	1		5.12.14	Fail	Northern Territory: Far north in back dunes.	Found at one egg on Friday. After a very windy weekend, the egg was found 80% buried on Monday.
SMS20	5.16.14	1		6.2.14	Fail	Northern Territory: Just north of 8X	Possibly a banded male. Unknown predator. Lots of tracks near the nest, coyote, raccoon, and pig.
KKP21	5.19.14	1		5.27.14	Fail	Sand spit: Between the first and second sign.	Raven tracks, no egg shell or yolk.
SMS22	5.23.14	2		6.2.14	Fail	Restored Dunes: West of marker 12.	Fail to an unknown predator. No predator tracks at the nest. No egg shell or yolk. Two days later saw large bird possibly raven tracks in area.
KKP23	5.23.14	1	6.26.14	6.25.14	Hatch	Restored Dunes: south east of marker 4.	All three chicks were seen in the nest bowl. No adults were near.
KKP24	5.23.14	1	6.29.14	6.30.14	Hatch	Northern Territory: South of the first sign after 8X	GG:OG male. After a very windy weekend, the nest was found with no sign of hatch or fail. GG:OG was seen later in week a chick.
SMS25	6.4.14	1	7.5.14	7.7.14	Hatch	Northern Territory: North of the last sign.	Pip in the nest bowl with 2 remaining eggs.
KKP26	6.4.14	2	7.3.14	6.9.14	Fail	Northern Territory: Close to the northern boundary in the back dunes.	Found with pig and coyote tracks all around. Egg yolk and shell in area.
KKP27	6.9.14	1	7.10.14	7.11.14	Fail	Sand spit: Between the perimeter and fence and first sign.	Abandoned after a windy weekend, one egg got buried. PEFA has been sitting near nest. Eggs were cold.
KKP28	6.9.14	1	7.10.14	6.30.14	Fail	Restored Dunes: In the gravel piles north of the perimeter fence	After a very windy weekend, the nest was gone with no sign of predators.
KKP29	6.11.14	1	7.13.14	7.11.14	Hatch	Restored Dunes: mid beach west of marker 9.	Pips found in nest bowl. All 3 eggs hatched.
KKP30	6.13.14	3	7.10.14	6.27.14	Unk Fate	Northern Territory: In the high tide zone, one sign south of the property line.	Was found with no eggs, pips, shell, yolk or tracks after a windy day.

Table A-3. Western Snowy Plover Nests Located in 2014

Nest #	Date	Initial # eggs	Projected Hatch date	End	Fate	Location	Notes
KLG31	6.16.14	3	7.13.14	6.20.14	Fail	7X: North of 7x road, far back dune.	Coyote tracks up to nest and large broken shell in nest bowl.
JFM32	6.23.14	2		6.27.14	Unk Fate	Restored Dunes: Between marker 7 and 8. Low in the habitat.	This nest was found at 2 eggs but was very decorated and had a bird doing broken wing. Was found with no eggs, pips, shell, yolk or tracks after a windy day.
SMS33	6.25.14	1		7.7.14	Fail	Restored Dunes: North west of marker 23.	Abandoned after very high winds, one egg rolled out of nest bowl, tracks were near. One week later saw another egg ¾ buried.
KKP34	6.27.14	1	7.29.14	7.21.14	Fail	Northern Territory: North of 8x	Coyote tracks all around nest. Yolk in nest bowl.
KKP35	6.27.14	2	7.27.14	7.28.14	Hatch	Northern Territory: Just north of 8x west of the sand fences.	3 pips found in nest bowl.
KKP36	6.30.14	1		7.3.14	Fail	Restored dunes: Just north east of marker 23.	A couple light avian tracks seen next to the nest bowl. No egg yolk or shell found. Unknown Avian.
JFM37	6.30.14	1		7.2.14	Fail	7x: A6 west of the two monitoring wells.	BB:GY male. Found with coyote tracks all around and egg yolk in nest bowl.
KKP38	7.2.14	1		7.7.14	Fail	Restored Dunes: West of marker 19 lower in the habitat.	Found at one egg after a windy weekend. Some tracks around egg, never went to two eggs.
KKP39	7.7.14	1	8.4.14	8.4.14	Hatch	7x: 2 feet north from 7x road	BB:GY Male. Hatch all 3 eggs.
KKP40	7.7.14	3	8.3.14	7.16.14	Hatch	Northern Territory: South of the sign and pole.	One chick and two eggs hatching.
KKP41	7.7.14	3	8.3.14	8.4.14	Hatch	Restored Dunes: Directly west of marker 10.	Hatch3 eggs
KKP42	7.7.14	2	8.3.14	7.21.14	Fail	Sand spit: North of the second sign facing the beach.	Coyote tracks up to nest. Shell and yolk near.
JFM43	7.9.14	1		4.14.14	Fail	Northern Territory: north of the large well lower in the shells.	Found at one egg. Stayed at one egg, no tracks or nest bowl.
KKP44	7.11.14	2	8.10.14	8.11.14	Hatch	Sand spit: south of the perimeter fence, lower in habitat surrounded by shells.	Found 3 pips in nest bowl.
KKP45	7.11.14	1		7.14.14	Fail	Restored Dunes: North of marker 8.	Found at one egg. Stayed at one egg, no tracks or nest bowl.

Table A-3. Western Snowy Plover Nests Located in 2014

Nest #	Date	Initial # eggs	Projected Hatch date	End	Fate	Location	Notes
KKP46	7.16.14	3	8.12.14	7.28.14	Fail	Sand spit: North of the southern boundary signs, low in habitat in shells.	Coyote Depredation; tracks and egg yolk seen.
KKP47	7.16.14	2		7.18.14	Hatch	Sand spit: South of the perimeter fence, low in habitat in shells.	Two chicks near nest.
KKP48	7.16.14	2	8.14.14	8.6.14	Fail	Northern Territory: A few feet south of the refuge fence.	Raccoon tracks up to nest and fail
KKP49	7.18.14	3	8.17.14	7.28.14	Fail	7X: On 8X dune below one of the sand fences.	Coyote Depredation; tracks and egg yolk seen.
KLG50	7.18.14	2		8.8.14	Hatch	Northern territory: North of the large well, east of the next sign. Back dunes.	Pips were found in the nest bowl.
Color band codes: A=aqua, B= blue, G= green, K=black L=lime, N=brown, O=orange P=pink, R=red, V=violet, W=white, Y=yellow Location territories:							

Table A-4. Predator Sightings and Other Possible Threats During Western Snowy Plover Surveys, 2014

Predator	March	Apr	May	Jun	Jul	Aug	Total
Northern harrier	2	0	1	0	0	1	4
Red-tailed hawk	0	0	1	0	0	0	1
Peregrine falcon	0	4	1	2	4	3	14
Gull, Coyote, and Raccoon	Tracks from these potential predators are found throughout Snowy Plover nesting habitat						
Common raven	2	0	1	0	2	0	5
American kestrel	0	0	0	0	0	0	0
Skunk (tracks)	0	0	0	0	(1)	0	1
Feral pig	Tracks from these potential predators are found throughout Snowy Plover nesting habitat						
Burrowing owl	2						2
Merlin	1						1
Mountain lion (tracks) ¹		(1)	(1)				2
Total	7	5	5	2	7	4	30
¹ Mountain lion tracks were observed walking the length of the former A road in the beginning of the season.							