CNLM ANNUAL REPORT OF MANAGEMENT ACTIVITIES FOR THE 2013-2014 FISCAL YEAR ON THE

DANA POINT PRESERVE

Owned and Managed by CNLM (CNLM No. S033)

Photo courtesy of Ranger Tom Maloney

Prepared for:
U.S. Fish and Wildlife Service (10-B-0615)
California Department of Fish and Wildlife
City of Dana Point

Prepared by

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SUMMARY of 2013-14 ACTIVITIES

- Trail base and trail fencing maintenance activities were conducted
- Vegetation communities were monitored
- Coastal California gnatcatcher (*Polioptila californica californica*) surveys were conducted
- Potential predators to the pacific pocket mouse were monitored using a remote camera
- Pacific pocket mice (*Perognathus longimembris pacificus*) were monitored using track tubes
- Argentine ant bait surveys were conducted
- Invasive plant species were removed and/or treated
- Erosion control measures were installed along the bluff edge
- Vegetation was thinned along the property boundary at Dana Strand Road
- The Dana Strand Gate was relocated and the City installed an informational kiosk
- Two part-time enforcement rangers patrolled the Preserve
- Volunteer work days were held periodically on the Preserve

I.INTRODUCTION

The Dana Point Preserve (Preserve) is located in the City of Dana Point (City), Orange County, California. The Preserve has been owned and managed by the Center for Natural Lands Management (CNLM) since December 2005. The Preserve was part of the Headlands Development Project (Project), which was led by the Headlands Reserve, LLC. The Project consists of 125 residential homes, a 65-to-90 room seaside inn, and public open space. The Project was guided by the "Headlands Development and Conservation Plan" (City of Dana Point, 2002; HDCP), which was approved through the California Coastal Commission's certification of the 2004 amendments to the City's Local Coastal Program.

The Preserve consists of 29.4 acres of native coastal sage and coastal bluff scrub habitat. Another 11.5 acres of natural open space, owned and managed by the City, known as the Hilltop Park, are adjacent to the Preserve. URS Corporation prepared the Habitat Management and Monitoring Plan (HMMP) for Dana Point Headlands Biological Open Space for all preserve lands associated with the Project, including the CNLM-owned and -managed Preserve. The HMMP was reviewed by the California Coastal Commission, United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the City. However, we have no record that the final HMMP, dated April 18, 2005, was approved by the California Coastal Commission, USFWS, or CDFW. Despite this uncertainty, CNLM has been managing the Dana Point Preserve according to the HMMP and will continue to do so until CNLM revises the management plan in consultation with the USFWS and CDFW (Wildlife Agencies). On January 4, 2012, CDFW did respond via an electronic mail message to CNLM that they are in agreement with CNLM to manage the Preserve according to the HMMP until an updated Habitat Management and Monitoring Plan is prepared.

This document details the management activities which occurred during the 2014 Fiscal Year (FY) (October 2013 - September 2014). Four primary management objectives are identified in the HMMP:

1. Maintain the Preserve to permit ecological processes to function.
2. Contribute to the preservation and restoration of the endangered or threatened species and their habitats that are present on the Preserve.
3. Contribute to the preservation and restoration of non-listed sensitive species that contribute to biodiversity.
4. Develop a public awareness program that informs local residents and visitors of the sensitivity and ecological importance of the Preserve.

The specific tasks identified in the FY 2014 Work Plan (CNLM 2012b) to serve these objectives were to:

1. Enforce restrictions over general public access, through use of patrols, fences, and signs.
2. Monitor rare plants.
3. Monitor a subset of vegetation transects for plant community monitoring.
4. Track native and non-native predator use of the Preserve.
5. Conduct presence-absence monitoring of coastal California gnatcatcher (*Polioptila californica californica*; CAGN).
6. Monitor pacific pocket mice (*Perognathus longimembris pacificus;* PPM) using track tubes.
7. Conduct habitat maintenance activities to benefit PPM.
8. Install erosion control measures on the trail and bluff edge.
9. Prepare an updated Habitat Management and Monitoring Plan.
10. Remove non-native plant species opportunistically throughout the Preserve.
11. Coordinate with the City of Dana Point regarding adjacent land use activities.
12. Coordinate with Headlands Reserve, LLC, and their contractors, as necessary.
13. Expand the GIS database as necessary.
14. Record Preserve management and monitoring activities in an annual report for the Wildlife Agencies and City.
15. Seek additional funding through grants and donations to fund reconstruction of the public trail base.
16. Continue the public outreach program and educational opportunities within the Preserve, including collaborating with the City of Dana Point Natural Resources Protection Officer, Nature Interpretive Center (NIC) facilities, and City docents at the NIC.
17. Provide opportunities for the public to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).

The following tasks were inadvertently omitted from the above list in the FY 2014 Work Plan: 1) Maintain an inventory of flora and fauna on the Preserve and 2) Maintain the public trail, trail fencing and perimeter fencing. In addition, two other tasks were added after the completion of the FY 2014 Work Plan: 1) Conduct ant surveys on the Preserve and 2) Conduct fuel modification treatment. The implementation and results of these tasks in FY 2014 is described below. They are organized within the following budget categories: Capital Improvements, Biotic Surveys, Habitat Maintenance and Restoration, Public Service and General Maintenance, Reporting, Endowment and Income.

II. CAPITAL IMPROVEMENTS

***Task 1**: Maintain the public trail, trail fencing, and perimeter fencing.*

The trail, trail fencing, and perimeter fencing continued to require a substantial amount of CNLM staff time; however, due to the drought, the vegetation did not need to be trimmed and minimal trail base maintenance was necessary.

To better armor the trail base for winter rain, approximately 100 sand bags were again installed along the trail in the most erosive areas. CNLM continued to use the same filled monofilament sandbags used last year. A group of volunteers from Dana Hills High School installed the sandbags that were stockpiled (still full of sand) in the City Nature Interpretive Center (NIC) parking lot. Since they were last year's sandbags, they were all filled with loose native sand that accumulated on the trail or above grade adjacent to the trail.

CNLM continued a policy of closing the trail to the public during rain events and for whatever length of time required to repair the trail after such events. However, there was only one significant rain event on February 28, 2014 (0.68 inch of rain) which required closure of the trail for the entire day.

Photos 1 & 2: Monofilament Sandbags and Trail Base Erosion February 28, 2014

Trail fencing required some maintenance throughout the year, such as replacing post caps, tightening fence cable slack, and painting.

As stated in last year's annual report, the entire trail fence was not able to be painted last year. A group of volunteers from Capistrano Valley High School painted the trail fence from the second overlook to the third overlook on September 20, 2014. CNLM initially intended to only close the stretch of trail that was being painted. However, and unfortunately, the public would not abide by the closure which forced the closure of the trail at the Dana Strand Gate until the painting was complete and dry. Volunteer groups will continue to be recruited to paint the remaining portions of the fence in FY 2015.

The Dana Strand Gate was damaged on January 4, 2014. This was the third known incident of a car driving into the perimeter fence and gate. In order to better protect the gate and provide space for an educational sign, CNLM chose to relocate the fence and gate during the repair process. This has proven to be successful in reducing damage to the gate and fence and provided space for an educational kiosk that the City created in consultation with CNLM.

Photo 3: Damaged Dana Strand gate (1/5/14)

Photo 4: New Dana Strand gate location (2/21/14)

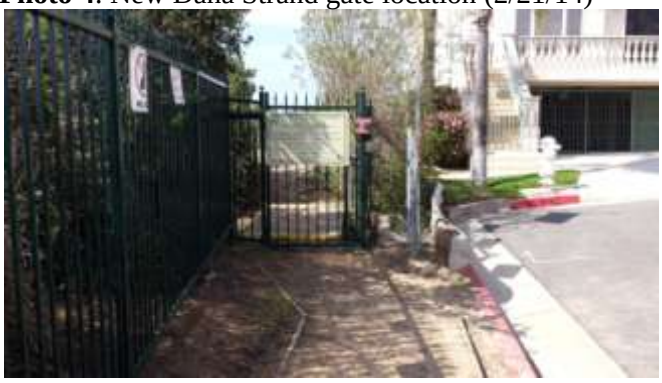


Photo 5: New kiosk at Dana Strand gate entrance (8/25/14)

***Task 2**: Seek additional funding through grants and donations to fund reconstruction of the public trail base.*

CNLM staff intended to continue to pursue grant opportunities, or find other outside funding sources, to complete the trail base reconstruction. The Recreational Trails Program (RTP) grant from California Department of Parks and Recreation is the most suitable grant for this project. Unfortunately, the RTP grant has not been advertised again since our application was denied in January 2013. The California Department of Parks and Recreation website stated the following as of December 15, 2014: RTP Non-Motorized Project Application Filing Deadline is unknown and will be no earlier than January 2016. CNLM continued to collect donations via a donation box within the City of Dana Point Nature Interpretive Center (NIC) for the trail base reconstruction (See INCOME Section of this Report). Such donations will be valuable in helping reach the match required of most grants programs.

III. BIOTIC SURVEYS

***Task 1**: Monitor rare plants.*

Rare plant monitoring was planned for this fiscal year, however, this activity was cancelled due to drought conditions and the relatively few annuals observed on the Preserve.

Note that the HMMP recommends that annuals and herbaceous perennials be monitored during the spring season after the area experiences an annual rainy season that exceeds 75-90 percent of the long-term average annual precipitation to allow for an unbiased assessment of the population status under comparable weather conditions between more intense monitoring years. Rainfall was again below average in Dana Point for FY 2014. According to the closest weather station at Dana Strands Beach (www.weatherunderground.com), the annual precipitation for FY 2014 was 2.04 inches. This is 10.36 inches below average, assuming 12.4 inches of rain is average for Dana Point. This is the lowest amount of rainfall recorded since CNLM began management of the site.

***Task 2**: Monitor a subset of vegetation transects for plant community monitoring.*

In 2006, CNLM began a long-term coastal sage scrub monitoring program at the Preserve. The purpose of the monitoring effort was to examine how changes in coastal sage scrub habitat over time may affect changes in the populations of sensitive species, such as the PPM or the CAGN. Initially, only shrub cover was measured with the rational being that the dominant characteristic of coastal sage scrub habitat is cover of shrubs. In 2009, measurements of herbaceous plant and ground cover (defined as either "litter" or "bare") were added to gain more information to better understand changes in the entire coastal sage scrub plant community for both CAGN and PPM. Bare ground, forb and grass are essential components of PPM habitat; thus, measuring ground cover and herbaceous cover will provide an indication of changes in coastal sage scrub as it relates to PPM habitat.

In 2006, five, twenty-five meter long point-intercept transects were installed at random locations throughout the portion of the Preserve located south of the former Marguerita Road (Appendix A). At the time of the transect installation, restoration activities were still ongoing on the former Marguerita Road and north of the road; thus, this area was not sampled. In 2012 the former Marguerita Road and north of the road was available for sampling and results of the 2012 PPM monitoring efforts revealed PPM use of these areas. Thus, the Preserve Manager was interested in including this area in the long-term coastal sage scrub monitoring program.

The total number of transects employed was not determined arbitrarily but via a power analysis of 2006 and 2009 data (SAS Institute, Inc., Version 9.3). The results indicated that if the number of transects was increased to 20, 36 percent of the 55 potential outcomes (11 times 5 transects) would have sufficient power. Thus, the Preserve Manager increased the sample to 20 transects. This will require sampling 10 transects every three years because of retaining the original 5 transects from 2006. Thus, every three years a total of 20 transects will be available for analysis and 5 of the new transects will be sampled every year to address annual variation.

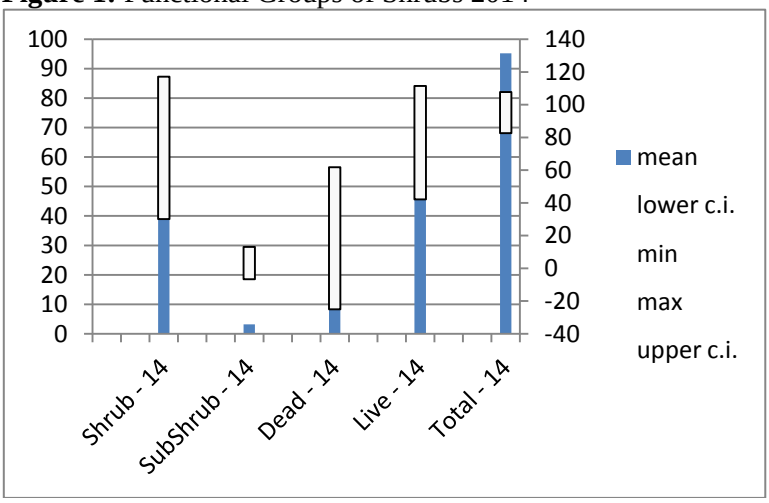
A random numbers table was used to select 15 PPM grid cells (see figure attached). The transects were set from the southeast corner to the northwest corner of each grid cell so that the transect is perpendicular to the slope of the land. In addition, to attempt to gain a measure of plant diversity, the design was modified in 2012 to include a 2 meter belt transect (1 meter on each side of the tape).

The following five transects were sampled in 2014: D11, E7, H3, H13, and J9 (Appendix A). The same 25-meter long point-intercept transect methodology was used where all plant species that intercepted the vertical point extending above and below each 0.5 meter marker on the transect (0.5, 1.0, 1.5, 2.0, etc. up to meter 25, for a total of 50 points) were recorded. Any dead shrubs intercepting transect points were also recorded as "Dead". Shrubs were considered dead if they had no foliage and no living green tissue. Once again, to attempt to gain a measure of plant diversity the design was modified in 2012 to include a 2 meter belt transect (1 meter on each side of the tape) to record any species observed that did not occur on the transect points. Ground cover was also identified as either "litter" or "bare" for simplicity.

The data were analyzed for comparison between years of functional groups and species composition. The results are summarized below and the full report is available upon request (CNLM 2014a).

The five new transects had a 73.6% mean percent cover of shrubs (Figure 6). The range from other transects in previous years has been 41% (2009) to 77.2% (2006). The timing of these surveys has ranged from May through June. The mean percent cover of sub-shrubs was only 3.2%, which is similar to last year of 2.8%, although lower than the range from previous years on other transects was between 8.0% and 10.0%. Dead shrubs were 18.4%, which again is within range from previous years between 13.0% and 24.8%. The mean percent of "Live" cover (includes "shrubs" and "sub-shrubs") was 76.8%, which is again within the previously recorded range of cover for "Live" from other transects (51% and 86.4%).

Figure 1: Functional Groups of Shrubs 2014



Species of Shrubs: Eleven different species of shrubs and sub-shrubs were encountered on the transects and within the 2-meter belt (the same number reported last year on other transects). The most abundant shrub species encountered on transects were *Artemisia californica* (mean=27.6%), *Encelia californica* (mean= 26%), and *Eriogonum fasciculatum* ssp. *fasciculatum* (mean=14.8%). *Artemisia californica* was again the only shrub or subshrub species found on all five transects.

Functional Groups of Herbaceous Plants. A majority of the herbaceous plants on the transects were actually non-native grass cover with a mean percent total of 5.6% (Figure 7). Native forbs were the only other functional group of herbaceous plants recorded with a mean percent cover of 2.4%.

Species of Herbaceous Plants. The most abundant species encountered on transects was *Bromus madritensis* spp. *rubens* (mean=5.6%). The other species closest in abundance was *Pterostegia drymarioides* (mean = 2%) and *Deinandra fasciculata* (mean = 2%). No one herbaceous plant species was found on all five transects. Most species were found on just one of the five transects. Only non-native grasses occurred on two of the five transects.

Ground Cover. Litter and bare ground were recorded at each 0.5 location on the transect with litter recorded on 76.4% of the transect locations, while bare ground made up an average of 20% of the cover (Figure 8). The mean cover of litter and bare ground were similar to means calculated for 2009 and 2013.

Species Diversity. The mean number of species recorded on the transects was 6. If the species recorded within the 2 meter belt transect are added, the mean number of species recorded increases to 8.6.

Figure 2: Functional Groups of Herbaceous Plants 2014

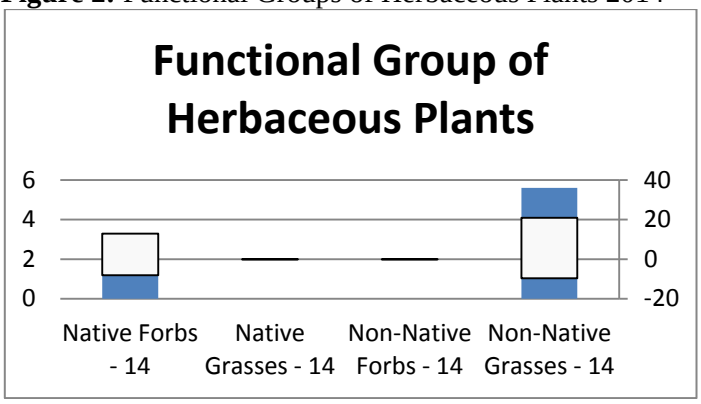
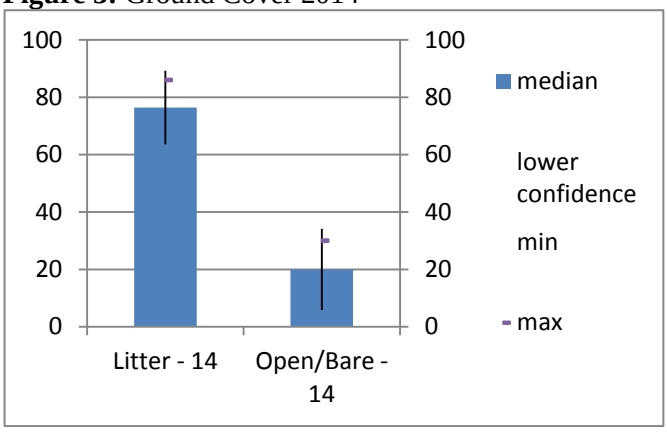


Figure 3: Ground Cover 2014



The Preserve is in relatively good condition regarding shrub cover. Herbaceous species diversity was low, but this is most likely due to the third year of low rainfall. Again, no non-native shrubs or forbs were recorded on the transects. The abundance and distribution of non-native plants was solely from the non-native grass, foxtail chess, with an average percent cover of only 5.6%. The mean percent cover of dead shrubs was 18.4%. However, this is a product of the dead shrubs remaining in place from the die-off of many of the shrubs identified in 2009 (the majority of those being *A. californica* and *L. scoparius*).

It continues to be recommended that future monitoring occur when most forbs are identifiable. This is typically possible even late in the season due to remaining desiccated plant structure. In 2014, vegetation surveys were conducted sooner than the two previous years, but being the third consecutive drought year, few forbs or grasses emerged.

***Task 3**: Conduct presence-absence monitoring of coastal California gnatcatcher.*

CAGN were monitored by permitted biologist, Lee Ann Carranza. Surveys were performed from late February through mid July (Table 1). Surveys were conducted on February 20; March 4, 14, 21, and 28; April 4, 11 and 25; May 2, 9, 16, 23, and 30; June 6, 18, and 27; and July 2, 11 and 18, 2014.

Seven pair were initially recorded on the Preserve in 2014 (as in 2012 and 2013), however, 1 female was no longer observed partially through the season which resulted in a single male (Pair 3) and another pair also was no longer observed; leaving only 5 pair and 1 single male by mid-March. It is unclear whether the missing pair was Pair 2 or Pair 5; their territories were small, adjacent, and they were found within the other's territory on occasion throughout last season and this season. It is likely that Pair 2 disappeared because the majority of observations of the remaining pair were within the original territory of Pair 5.

In addition, only one banded male was observed in 2014, as opposed to three banded males in 2013. The one banded male is from Pair 1. All CAGN locations were recorded using a Trimble GPS unit and in a field notebook. The data is summarized in Table 1 below and graphically displayed in Appendix B.

It is unclear the cause of the loss of an adult female and the loss of a pair of CAGN on the Preserve. It could be due to age, stress of the drought, predation, or movement into an adjacent area. Interestingly, the two pair with missing adult CAGN were the same two pair that had nests with dead chicks in 2013. The cause of the chick mortality was never determined, but could possibly be due to genetic inbreeding or disease. Regardless, additional measures to increase the population are not currently warranted.

Nest monitoring activities were conducted throughout the Preserve during the survey dates identified above. Nest monitoring is conducted to minimize potential impacts to nesting CAGN during PPM track tube monitoring efforts, vegetation transect monitoring and an argentine ant surveys. Preserve conditions were poor due to the third year of drought and CAGN behavior was observably different. Some such differences included, delay in nest building, delay in egg laying once the nest was complete, and site selection of nests. Nests were easily observed from a distance due to the dry and sparse condition of the vegetation. As a result, very few nests were approached this season in order to minimize the potential for adverse affects from monitoring. Only 3 of the 6 pair had a successful brood (Table 2).

Table 1: S033 Dana Point Preserve CAGN 2014 Survey Data Summary

Date (2014)	Time	Weather	Type of Survey
February 20	8:00am – 11:20am	<5% cloud cover, 2 - 5 mph wind, 67°F	CAGN Presence/Absence
March 4	11:30 am – 2:00 pm	90 - 75% cloud cover, 3 - 4 mph wind, 66 - 70°F	CAGN Presence/Absence
March 14	7:15 am – 11:45 am	0% cloud cover, 3 – 7 mph wind, 51 - 72°F	CAGN Presence/Absence
March 21	8:15 am – 12:00 pm	95-15% cloud cover, 1 - 5 mph wind, 58-68°F	CAGN Presence/Absence
March 28	7:45 am – 12:45 pm	0 - 20% cloud cover, 3 - 7 mph wind, 53 - 64°F	CAGN Presence/Absence
April 4	8:00 am – 12:15 pm	90 - 75% cloud cover, 1 - 5 mph wind, 58 - 75°F	CAGN Presence/Absence and nest monitoring
April 11	8:15 am – 11:49 pm	0% cloud cover, 0 - 4 mph wind, 62-70°F	CAGN Presence/Absence and nest monitoring
April 25	7:15 am – 9:05 am	90-100% cloud cover, 5 - 10 mph wind, 60-61°F	CAGN Presence/Absence and nest monitoring
May 2	8:15 am –11:15am	0% cloud cover, 0 - 1 mph wind, 70°F	CAGN Presence/Absence and nest monitoring
May 9	8:30 am –11:30 am	5 - 15% cloud cover, 1 - 5 mph wind, 65 - 68°F	CAGN Presence/Absence and nest monitoring
May 16	8:30 am –10:15am	5 - 0% cloud cover, 1 - 3 mph wind, 74 - 75°F	CAGN Presence/Absence and nest monitoring
May 23	8:15 am – 12:15 pm	95-5% cloud cover, 0 - 6 mph wind, 63 - 65°F	CAGN Presence/Absence and nest monitoring
May 30	9:30 am – 12:30 pm	90% cloud cover, 4 – 6 mph wind, 68 - 73°F	CAGN Presence/Absence and nest monitoring
June 6	8:30 am – 12:20 pm	100 - 40% cloud cover, 1 - 10 mph wind, 63-69°F	CAGN Presence/Absence and nest monitoring
June 18	8:25 am – 12:00 pm	90 - 0% cloud cover, 4 - 9 mph wind, 64- 66°F	CAGN Presence/Absence and nest monitoring
June 27	9:00 am – 11:30 am	90 - 5% cloud cover, 13 - 4 mph wind, 67- 72°F	CAGN Presence/Absence and nest monitoring
July 2	8:30 am – 11:40 am	100 - 98% cloud cover, 1 - 5 mph wind, 67- 69°F	CAGN Presence/Absence and nest monitoring
July 11	8:15 am – 11:30 am	100 - 0% cloud cover, 1 -89 mph wind, 68- 72°F	CAGN Presence/Absence and nest monitoring
July 18	8:45 am – 10:20 am	10 - 90% cloud cover, 6 - 8 mph wind, 78- 72°F	CAGN nest monitoring

Table 2: S033 Dana Point Preserve CAGN 2014 Nest Monitoring Results

CAGN ID	Status	# Nesting Attempts	# Nestlings Observed	# Fledglings
1	Pair	5/2/14 nest building	Nest not approached	3 confirmed 7/2/14
2	Pair	None observed. May have had one nest low on cliff face. Pair disappeared after 3/8/14	N/A	N/A
3	Pair → single male	None observed. Female disappeared after 3/4/14	N/A	N/A
4	Pair	Nest observed 4/25/14	Nest predated by 5/18/14	N/A
5	Pair	None observed.	N/A	3 confirmed 7/18/14
6	Pair	5/23/14 = Nest discovered	Nest predated at nestling stage before 6/6/14	N/A
7	Pair	1st nest in encelia = 4/4/14 2nd nest = 5/2/14 3rd nest in buckwheat = 5/30/14	1st nest = abandoned 2nd nest = never approached 3rd nest = chicks (never approached)	3 confirmed

***Task 4**: Track native and non-native predator use of the Preserve.*

Predator monitoring activities included scat and print identification and the continued use of one infrared camera (Bushnell Scout®) located generally within the center of the Preserve (Same location as 2013). The camera was deployed in the same location throughout FY 2014.

The bobcat, coyote, raccoon, and skunk remained detected by the wildlife camera throughout the year (Table 3). The long-tailed weasel, domestic dog, burrowing owl, common poorwill and domestic cat were not recorded on the wildlife camera in FY 2014.

Table 3: Species Documented by Wildlife Camera

	Common Name	Latin Name	Mode of Detection	Date Recorded
1	Raccoon	*Procyon lotor*	Wildlife Camera and Prints	On-site since 02-08-08
2	Skunk	*Mephitis mephitis*	Wildlife Camera and Prints	On-site since 05-02-08
3	Domestic dog	*Canis familiaris*	Wildlife Camera	Not recorded since 10-15-10
4	Grey Fox	*Urocyon cinereoargenteus*	Wildlife Camera and Scat	Recorded 11-20-14 (previous record was 2009)
5	Long-tailed weasel	*Mustela frenata*	Photo by volunteer taken May 2010	Not observed on-site in FY 2012, 2013, and 2014
6	Coyote	*Canis latrans*	Wildlife Camera, Scat, and Prints	On-site since 5-28-08
7	Bobcat	*Lynx rufus*	Observed, Wildlife Camera, Scat and Prints	On-site since 4-5-11
8	Burrowing Owl	*Athene cunicularia*	Observed	Not recorded since December 2012
9	Common Poorwill	*Phalaenoptilus nattallii*	Observed, but not on Wildlife Camera	Not recorded since 11-26-12
10	Opossum	*Didelphis virginiana*	Wildlife Camera	On-site since 11-30-12

Photo 6: Bobcat (wildlife camera 11/09/13)

Photo 7: Fox (wildlife camera 11/13 camera date error)

***Task 5**: Monitor Pacific pocket mice using track tubes.*

Seasonal Survey. CNLM again employed only track tubes in 2014. To sample emergence, extent of above ground activity and absence throughout the site with limited effort, the same three pairs of grid cells were monitored: D4 and D5; H13 and I13; and C18 and D18. A total of 24 track tubes were deployed with four track tubes spaced 12 meters apart in each grid cell.

On February 20, 2014, 24 track tubes were deployed in the field by CNLM (Lee Ann Carranza). Each track tube was set in the corner of the grid cell to achieve 12-meter spacing. The bait used was 100 percent millet that was treated in a microwave for 2 minutes prior to use to render the seed unviable.

The track tubes were removed on February 27, 2014 due to a severe winter storm warning. The track tubes were again deployed on March 6, 2014 and reset weekly. CNLM assistant Preserve Manager, Sarah Godfrey, helped reset track tubes under supervision by Lee Ann Carranza. On April 14, 2014, the track tubes were removed by Sarah Godfrey to prepare for the site-wide survey. The seasonal survey was discontinued at this time.

The track cards were removed from each track tube and labeled on the back with the date and the unique grid cell location. If scat was observed on the card and PPM prints were detected, the scat was collected in the microcentrifuge tubes, labeled, and stored in the freezer. Otherwise, the cards were not analyzed in the field. During the scat collection process one pair of tweezers were used to collect the scat. However, reusing the same tweezers may have contaminated the samples.

A total of seven sets of occurrence data was taken between February 20 and April 18, 2014. PPM were detected beginning March 11, 2014 within three grid cells and all grid cells by March 20, 2014. The number of track tubes with PPM detections fluctuated between 0 and 24 track tubes on any given sampling period. Activity was fairly similar in all three areas, except that it again seems PPM were more active in the D4/D5 area.

Table 4: Grid Cell Occupancy 2014 Seasonal Survey

	2/27/14	**3/11/14**	**3/20/14**	**3/28/14**	**4/4/14**	**4/11/14**	**4/18/14**
D4	0	1	1	1	1	1	1
D5	0	1	1	1	1	1	1
C18	0	1	1	1	1	1	1
D18	0	0	1	1	1	1	1
H13	0	0	1	1	1	1	1
I13	0	0	1	1	1	1	1
Total	0	3	6	6	6	6	6
#Areas (1 – 3)	0	2	3	3	3	3	3

Other species recorded were harvest mouse (*Reithrodontomys megalotis*: REME) and deer mouse (*Peromyscus maniculatus*; PEMA); however this data was not recorded within the excel spreadsheet.

Site-wide Survey. To confirm continued use and estimate percent area used by PPM throughout the entire Preserve, CNLM used track tubes. To sample the entire Preserve at the same time, which had

not been done with previous trapping or track tube efforts, one track tube was placed within the center of each of the 126 grid cells.

On April 25, 2014, 125 track tubes were deployed in the field by CNLM (Lee Ann Carranza & Sarah Godfrey) and USFWS (Will Miller). Each track tube was set in the nearest suitable location within 1 meter of the flagged GPS position of the center point of each grid cell. The bait used was 100 percent millet that was treated in a microwave for 2 minutes prior to use to render the seed unviable.

The track cards were reset every 3 nights for a total of 4 data sets with the help of Will Miller, Sarah Godfrey and Sean Vogt (under direct supervision). The track tubes were removed at the conclusion of the survey on May 7, 2014 with the help of California Department of Fish and Wildlife (Nancy Frost and Jennifer Edwards). The track cards were removed from each track tube and labeled on the back with the date and the unique grid cell location. If scat was observed on the card and small prints were detected, the scat was collected in the microcentrifuge tubes, labeled, and stored in the freezer. It was decided that it would be easier to collect all scat from cards that had small looking prints than to train people who helped reset track tubes on how to identify PPM prints. It is possible to remove the microcentrifuge tubes with no PPM detections from the sample. Scat was collected from the cards directly into the microcentrifuge tubes without the use of tweezers.

Although track tubes were deployed for 15 days in 2013, they were only deployed for 12 days in 2014. This is because detection rates have been high in the past and PPM were being detected on a substantial number of track cards as the survey continued. Thus, it was found to be unnecessary to continue the survey for another 3 days.

Few challenges were encountered in 2014. No theft or tampering occurred to the track tubes. In addition, very few track cards were damaged by carpenter ants (*Camponotus* sp.) and brown garden snails (*Cornu aspersum*). However, a storm event occurred on April 25, 2014, and this caused some track cards to get wet and blowing sand produced ink marks on the track cards.

On June 13, 2014, photos were taken of each of the grid cells. They were taken with a hand held digital camera from above the grid cell with the track tube location in the center of the photos far enough away to maximize the amount of the grid cell within the photo.

The weather during the monitoring period was different than past years in that this year was much warmer and drier. The temperatures ranged from a low of 53 to a high of 95^{o} Fahrenheit (64.5^{o} Fahrenheit average) and average wind speed of 1.4 miles per hour. There was a significant weather event on April 25, 2014. Although only 0.12 inch of precipitation was recorded, the rain occurred all at once with a sideways driving wind. This resulted in some of the track plates getting wet and some with small ink spots created by blowing sand. There was only one foggy drizzle morning the next day on April 26, 2014 that resulted in 0.02 inch of precipitation.

The moon phase during the sampling period began with a waning gibbous moon (71% visibility) on April 20, 2014, a waning crescent (27% visibility) on April 24, 2014, a new moon (1% visibility) on

April 28, 2014, and a first quarter moon (38% visibility) on May 4, 2014. The moon phase at the end of the study on May, 7, 2013 was a waxing gibbous moon (66% visibility).

A total of 270 track cards were identified with PPM prints with a range of 41 to 84 per sampling period (Table 5). This is nearly twice as many as identified in the 2013 site-wide survey. Other species recorded were harvest mouse (REME) and deer mouse (PEMA).

Table 5: 2014 Summary of Small Mammals Identified on Track Cards (Site-wide Survey)

	PPM	**REME**	**PEMA**
April 25 – 28	41	50	71
April 28 – May 1	68	39	49
May 1 – 4	84	72	34
May 4 – 7	77	85	45
TOTAL	**270**	**246**	**199**

PPM prints were identified at least once within 102 of the 125 grid cells. To estimate percent habitat used by PPM, the data for each grid cell was reviewed for PPM presence. PPM were considered present within a grid cell if at least one of the four track cards for that grid cell had a medium or high confidence PPM occurrence (Appendix C). Only 2 of the 102 grid cells (E13 and J5) had only a low confidence PPM detection. PPM have not been detected in either of these grid cells in the past, thus they were not considered occupied in the occupancy analysis. A naïve occupancy estimate would be 80% (100/125) of the Preserve is occupied by PPM (Table 6).

Table 6: Number of Grid Cells with PPM Detections (Site-wide Survey)

	Cells with PPM (At least one High Confidence)	Cells with PPM (Only Medium Confidence)	Cells with PPM (Only Low Confidence)	
24-m x 24-m cells				**Total**
1 track tube in center of 125 grid cells (12 nights)	94 (75.2%)	6	2	102 (81.6%)

Seventeen grid cells where PPM were detected in 2014 represent new locations for PPM. However, nine of these grid cells have never been trapped, 6 have only been trapped once in 2012, and nine are located within the former Marguerita Roadbed or north of the former road. All three grid cells that represented new locations for PPM in 2013 had PPM detections again in 2014: D9, I8, and H5.

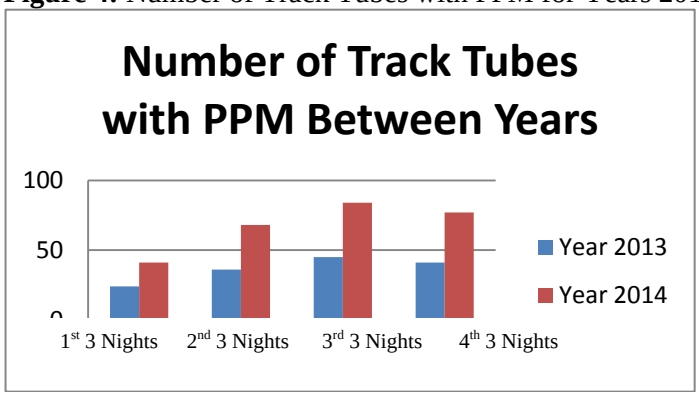
It is not possible to estimate abundance from track tube sampling. Thus, to estimate habitat use, we used the Occupancy Estimation function in Program MARK and applied the single season, single species (MacKenzie et al. 2002, MacKenzie et al. 2006) to track tube data collected at each sampled grid cell or "site." This analysis pools individual animal capture records within each site by capture occasion to estimate the proportion of sites occupied or used (Ψ) by the target species. This data was analyzed using the single season time dependent model [p(t), psi(.)] with a constant capture probability among survey occasions. The three missing track cards were assumed to be a zero detection of PPM in the model. The 2014 model averaged habitat use estimate as 80.7 percent (95%C.I. 72.6-86.8%). The Program MARK results suggest a slightly higher use estimate than the naïve estimate of 80 percent.

The number of grid cells with a PPM occurrence in 2014 was substantially greater than the number of grid cells with PPM in 2013. If the average PPM use area is less than 24 meters, each track tube with PPM presence recorded could be assumed to represent a unique individual. Thus, resulting in a number of unique individual PPM between 41 and 84 individuals. However, each track tube could conversely represent more than one PPM.

In comparison to results from 2013 where the same methodology was used, the number of track cards with PPM occurrences was significantly higher in 2014 (p value = .007901). In order to compare the two years data, the last set (5th set) of data for 2013 was ignored since only 4 data sets were collected in 2014. A graphic comparison between 2013 and 2014 is illustrated in Figure 1 below.

It is impossible to confirm with the data available whether the higher number grid cells with PPM occurrences are a result of an increased population size. However, it at least suggests 80 percent of the Preserve is suitable for use by PPM.

Figure 4: Number of Track Tubes with PPM for Years 2013 & 2014



This is the third year of significant drought conditions and substantially reduced forb and grass cover. If food is scarce due to the drought, the increased number of track cards and grid cells with PPM may not represent an increase in population, but rather may be a result of individual PPM traveling farther to find adequate seed resources. It may also be that PPM have learned that seed can be found within the track tubes (after three years of monitoring PPM with track tubes) and actively pursuing the track tubes or are at least more willing to enter the track tubes.

It is recommended that monitoring PPM with track tubes continue in 2015 using the same methodology as used in 2014. It is also recommended that a systematic repeatable photo documentation method be developed that could be used to document change of conditions over time at the grid cell level.

A full report of the methods and results summarized above are available upon request (CNLM 2014b).

Meetings. The Preserve Manager participated in two meetings organized by the USFWS, on December 3, 2013 and March 12, 2014, to share information on PPM management, research and recovery.

Task 6: *Conduct ant surveys on the Preserve.*

CNLM applied for grant money under Section 4 of the United States Endangered Species Act jointly with USGS to conduct an Argentine ant (*Linepithema humile*) surveys on the Preserve. USGS has conducted Argentine ant surveys on Marine Corps Base Camp Pendleton. Unfortunately, it was not selected for funding, but due to the threat Argentine ants pose to PPM and CAGN on the Preserve, CNLM conducted a bait survey using USGS protocol. The purpose of this study was to identify the presence and extent of Argentine ants on the Preserve.

USGS survey methods for assessing presence of Argentine Ants using bait (Matsuda et al 2014) were used to implement the study. This entailed setting bait cards using tuna, recording the location, and checking the bait cards after 45 minutes. A photo was taken of each bait card after being set for 45 minutes. Several individual ants of each species encountered were collected and placed in 1.5mL capacity microcentrifuge tubes containing 95% ethanol alcohol, graciously provided by USGS. Each microcentrifuge tube was labeled with the specific location and date and provided to USGS for species verification and storage.

The same size grid cell previously chosen as the basis for habitat use monitoring (24 meters x 24 meters) of PPM on the Preserve was used to identify bait card placement. One bait card was placed in the center of each of the 126 grid cells (the same location previously used to monitor PPM with track tubes) within the Preserve.

The survey was conducted on July 24 and 25, 2014. A total of 125 bait cards were analyzed for Argentine ants. Other species recorded were harvester ants and little black ants. Ms. Matsuda (USGS) identified the little black ants collected as *Monomorium ergatogyna*. The other ants were confirmed as Argentine ants and harvester ants.

The results are summarized in Table 7 below.

Table 7: 2014 Summary of Ant Species Identified on Bait Cards

	Argentine Ants	**Little Black Ants**	**Harvester Ants**
July 24, 2014	29	0	3
July 25, 2014	53	21	3
TOTAL	**82**		

Argentine ants were identified on 82 of the 125 grid cells. A naïve occupancy estimate would be 65.6% (82/125) of the Preserve is occupied by Argentine ants.

Argentine ants were detected on a majority of grid cells (74) where PPM were detected in 2014 using track tubes. Appendix D displays the 2014 PPM track tube results and the Argentine Ant survey results.

The quantity of Argentine ants was estimated on the bait card in each photo. The quantity was estimated within three categories: High >250 Argentine ants; Medium >25 and <250 Argentine ants; and Low <25 Argentine ants. The results are color coded and provided in Appendix E. A similar number of grid cells had High, Medium and Low numbers of Argentine Ants. No one category dominated the study area.

The number of grid cells with Argentine ants were higher than expected and in some cases did not occur in locations expected. For example, it was unexpected to find Argentine ants at the very southwestern end of the Preserve, but no Argentine ants surrounding the NIC and parking lot.

We chose to use tuna as the bait, rather than pecan sandies cookies. After having implemented the study, I would continue to use tuna and not cookies. Although the tuna is greasy and hard to keep from getting the supplies greasy, I suspect the cookies would be harder to actually collect the specimens and harder to ensure no bait is left behind when removing the card.

The quantity of Argentine ants on each card in most cases was large and difficult to ensure there were no Argentine ants left on ourselves, the equipment, or bag. Thus, it is a concern that implementing such a study could transport Argentine ants to areas where they did not previously exist. Before initiating this study in the future and/or in other locations, it is recommended that the risk of spreading Argentine ants be considered and weighed against whether the information collected is worth the risk. The adverse affects of Argentine ants on the Preserve to federally listed species is so high that the risk was determined acceptable to better understand the site conditions of the Preserve to better guide future management of the Preserve and adjacent properties. In addition, the Preserve is so small, that if Argentine ants find an area on the Preserve with acceptable conditions, they will find the area without any help from such a study.

It is recommended that this study be repeated in the future, especially after the hotel site is developed east of the Preserve. If this study is repeated, it is recommended that tuna be used as bait and all cards are checked before the end of the day to ensure none are left on the Preserve.

A full report of the methods and results summarized above are available upon request (CNLM 2014c).

***Task 7**: Maintain an inventory of flora and fauna on the Preserve.*

All newly recognized flora and fauna were recorded. A list of vascular plants documented on the Preserve is provided in Appendix F. No new plant species were added to the Preserve list in FY2014. The total taxa remains at 165 with 104 native and 61 non-native.

A list of all animal species known to occur or have occurred on the Preserve to date is provided in Appendix G. Four species were added to the Preserve list in FY2014: 1) Southern pacific

rattlesnake (*Crotalus oreganus helleri*); 2) Argentine ant (*Linepithema humile*); 3) Little black ant (*Monomorium ergatogyna*); and 4) Northern cardinal (*Cardinalis cardinalis*). The list of animals on the Preserve is now 25 invertebrates, 113 birds, 11 amphibians and reptiles, and 20 mammals recorded on-site. In addition, a nightsnake (*Hypsiglena ochrorhyncha klauberi*) was observed adjacent to the Preserve, but not within the Preserve boundary. This is a new species for the area.

The pair of peregrine falcons previously documented using the Preserve were observed again during nesting season. Nancee Wells, DeeDee McGann-Gollwitzer, and Dr. Joel Pagel, raptor ecologist with the Carlsbad Fish and Wildlife Office, monitored the pair during the 2014 nesting season. A summary report of the monitoring results between 2011 and 2014 was prepared in October 2014 for internal record keeping purposes.

IV. HABITAT MAINTENANCE AND RESTORATION

***Task 1**: Coordinate with Headlands Reserve, LLC, and their contractors, as necessary.*

Headlands Reserve, LLC had an obligation under the Onsite Mitigation and Revegetation Plan to restore a total of 26.2 acres to coastal sage scrub through enhancement and creation activities throughout the natural open space associated with the Project (URS Corporation, 2005). Some of the enhancement and creation areas are located within the Preserve. Headlands Reserve, LLC conducted no activities within the Preserve this fiscal year. It is our understanding that Headlands Reserve, LLC has completed all their intended activities within the Preserve.

The growth of native vegetation in the former Marguerita Roadbed remained high as can be observed in Figure 13. The increasing cover of coyote brush (*Baccharis pilularis*) is becoming a concern for PPM. This species creates substantial cover and leaf litter. As a result, numerous saplings within open areas north of the former Marguerita roadbed were removed by hand pulling.

Photo 8: Former Marguerita Roadbed (9/26/12)

Photo 9: Former Marguerita Roadbed (9/22/14)

As fully described in the FY 2010 Annual Report, CNLM issued a Notice of Violation of Conservation Easement on March 12, 2010, to the City due to permanent impacts to the Preserve. The violation occurred in FY 2010; however the remediation plan was implemented in FY 2011. On November 1, 2010, two California sagebrush (*Artemisia californica*) plants were relocated from elsewhere within the Preserve and sandbags filled with native sand were placed to reduce further erosion of the area. The remediation continues to be doing well as evidenced by Figure 11. It is expected that next year is the last year this item will be addressed in the annual report.

Photo 10: Impact Area Post Remediation (10/24/11)

Photo 11: Impact Area Post Remediation (9/22/14)

Taske 2*: Remove non-native plant species opportunistically throughout the Preserve.*

CNLM staff treated and removed exotic plant species in FY 2014. The following species again were opportunistically removed from the Preserve, as last year; however, in lesser number due to the lack of rainfall: short-pod mustard, bridal creeper (*Asparagus asparagoides*), tocalote (*Centaurea melitensis*), Short-fruited filaree (*Erodium brachycarpum*), Red-stemmed filaree (*Erodium cicutariu*), Russian thistle (*Salsola tragus*), Perez's sea lavender (*Limonium perezii*), and Scarlet pimpernel (*Anagallis arvensis*).

Non-native species removed on the bluff edge included: Perez's sea lavender, Scarlet pimpernel, Russian thistle (*Salsola tragus*), Crystal iceplant (*Mesembryanthemum crystallinum*), and Sahara mustard (*Brassica tournefortii*). Crystal iceplant was removed by hand along the bluff edge between overlooks 3 and 4 from an area approximately 10 meters in size.

As noted above, bridal creeper was again observed on-site in FY 2014. The same treatment method used since 2011 was repeated in 2014. This method entails cutting the plant at the base and chemically treating the cut stem with a mixture of 50% water and 50% glyphosate (47% active ingredient). Only CNLM staff conducted bridal creeper treatment. We again chose not to dig the tubers out of the ground because of potential impacts to PPM habitat. Approximately 14 locations were treated in 2014 (Appendix H). This is a substantial decrease from the 72 locations treated in 2013 and 65 locations treated in 2012. All but one of the 14 locations seemed to be new individual

plants. The following same additional attribute data recorded in 2013, was taken in 2014 at each treatment site: 1) number of individual stems; 2) height of tallest stem; 3) Habitat type; 4) quality of habitat condition; and 5) ground cover type. A total of 61individual stems were treated in 2014 compared to 234 individual stems treated in 2013. Positively, only 21 percent of the locations treated were large plants (over 10 cm tall) and only one individual was at a previously treated location. However, this exotic plant species remains a great concern since rainfall was substantially lower than average for the third consecutive year.

It is expected that the dead shrub and duff removal effort will help reduce the occurrence and spread of bridal creeper. Only 15% of the locations were in open sand in 2013 and none of the occurrences were in open sand in 2014. At the least, it is easier to observe and treat the plant in open sand, rather than nested in a dead shrub or pile of woody debris.

The Preserve Manager posted a fact sheet on the threat and treatment of bridal creeper for display at the NIC during the months of treatment. Signs were also posted at the entrance gates on the days that treatment was conducted.

***Task 3**: Install erosion control measures on the bluff edge.*

Winter rains continue to cause substantial movement of sand along the bluff edges where trespassers continue to walk and prevent vegetation from growing. Since 2011, CNLM has been using straw wattles to prevent water from flowing at high speed downhill in erosive areas and gullies on the bluff edges above rare plant populations to help prevent siltation of these areas near overlooks 2, 3, and 4. CNLM has also been using dead brush and duff cleared from grid cells to benefit PPM as erosion control materials in these same areas.

Photo 12: Erosion Control at Overlook 2 (10/09/14)

Photo 13: Erosion Control at Overlook 2 (10/09/14)

As identified in last year's annual report, an Eagle Scout project to address erosion issues on the Preserve was performed by a volunteer last fiscal year. The effectiveness of the project remains unclear due to the lack of significant rainfall. However, CNLM added to this area dead shrubs and duff from grid cells cleared to benefit PPM.

Photo 14: Eagle Scout Erosion Control Project (11/26/12) **Photo 15**: Eagle Scout Erosion Control Project (10/09/14)

Task 4: *Conduct fuel modification treatment*

CNLM staff trimmed and thinned vegetation along the northern Preserve boundary for fuel modification purposes. Further treatment will be necessary to maintain the openness and height of the vegetation.

Task 5: *Conduct habitat maintenance activities to benefit the Pacific pocket mouse.*

As in 2013, CNLM again conducted duff removal treatment along with removal of all dead shrubs in specifically identified grid cells to benefit PPM. Leaf litter, woody debris, and other organic material collectively referred to here as duff has accumulated under the coastal sage scrub vegetation. This has led to the hypothesis that accumulated duff on the ground surface in addition to high vegetation cover is reducing the availability of bare soil, and contributing to the degradation of habitat quality for PPM.

Due to the significant number of hours required to complete dead shrub and duff removal of one 24 square meter grid cell (23 hours by one person), volunteers were recruited to complete the task. The workload associated with duff and dead shrub removal is substantial. It also requires careful action. In order to minimize the cost and risk of such activity, CNLM invited the advance placement science students from three local high schools to help remove duff and dead shrubs from the following 6 pre-selected grid cells: G7, F6, F3, E4, B10 and C9.

These six grid cells were selected based on the following criteria: 1) No grid cells that previously had duff removal treatment; 2) No grid cells on the bluff edge; 3) No grid cells in the former roadbed or north of the roadbed; and 4) No grid cells that had PPM present all years. For ease of logistics for three teams to treat the grid cells the following criteria were used: a) The grid cells will be paired (3 sets of two adjacent) and b) Each pair of grid cells will be geographically separated to reduce congestion while hauling off material.

Only three grid cells were treated (C9, E4, and G7) on November 17, 2013 by the high school volunteers. The quantity of duff, woody debris, and dead shrubs was too great to allow treatment of additional grid cells. Each of the high school teams of 7 to 10 people worked 4 hours on their assigned grid cell. Another 4 hours was spent by CNLM staff on each grid cell doing detail work removing woody debris and duff from under live shrubs and lastly another hour was spent by a new group of volunteers to haul off the fine detail work piles created by CNLM staff. Thus, each grid cell took 15 people over 9 hours to treat.

All of the brush and woody debris was retained on-site as erosion control at overlooks 2, 3, and 4 and along the eroding bluff edge at these overlooks. Some duff was also placed within the public trail in areas where sand had eroded away.

A representative before and after photo is provided below. The duff and dead shrub removal treatment increases the amount of openness each of these grid cells substantially. Visual estimates suggest 35 to 50% more openness after treatment.

Photo 16: Grid Cell G7 Before Treatment

Photo 17: Grid Cell G7 After Treatment

Although a positive statistically significant treatment effect on PPM has not been shown, duff and dead shrub removal have proven effective at increasing openness and not harmful to PPM. Treatment is not simple and must be done with caution. Not just the activity of picking up duff and dead shrubs, but the location, process, and manner in which the material is hauled off must be considered.

It is recommended that the removal of dead shrubs and duff at the 24 m^2 grid cell scale be continued annually within the Preserve for at least 3 grid cells a year. Grid Cell E8 should be completed and the next grid cells on the list for treatment would be Grid Cell F6, F3, and B10.

It is also recommended that before and after visual estimates of percent cover be performed for each grid cell treated. A full report of the methods and results summarized above are available upon request (CNLM 2014d).

V. PUBLIC SERVICE AND GENERAL MAINTENANCE

***Task 1**: Enforce restrictions over general public access, through use of patrols, fences and signs.*

The trail was open to the public daily from 7:00 a.m. to sunset, except on February 28, 2014, when it was closed due to heavy rain and the need for trail maintenance. The trail was partially closed on February 21, 2014 to reconfigure the fence and gate at the dead end of Selva Road and September 20, 2014 for volunteers to paint a portion of the trail fence.

The solar powered magnetic gate lock and gate closer mechanism for the Dana Strand entrance gate was operational the entire year with only one occurrence of malfunction.

Contractors to the City did not lock nor unlock any CNLM gates from October 1, 2014 to June 24, 2014. Beginning at that time, City contractors began unlocking the CNLM gate near the NIC in the morning, per request by CNLM. They continued to lock and unlock the NIC parking lot and pedestrian gate every evening at sunset and every morning at 7:00am.

Public use remained high throughout the year and slightly higher than last fiscal year. The trail counters installed on April 12, 2011, with funding through Nature Reserve of Orange County (by direction of the USFWS), remained functional. Thus, this is now the third fiscal year where an entire year's worth of data is available. From October 1, 2013 through September 30, 2014, there was 10 months of data recorded at the Scenic Drive Gate (due to the counter not working properly) with 109,720 passes total (last year 12 months of data recorded 125,786 passes total) and an average of 356 passes per day (last year with 12 months of data there were an average of 347 passes per day). Eleven months of data was recorded on the Dana Strand gate counter with 114,196 passes total (last year 11 months of data recorded 85,507 passes total) and an average of 351passes per day (last year 11 months of data recorded an average of 279 passes per day).

A substantial amount of variation of use occurred between the two gate entrances and among the months of the year this fiscal year. For example, January was the highest use month for the Dana Strand gate, while March was the highest use month for the Scenic Drive gate. Last year the highest use occurred in April and May and the year before it was July. The daily remained the highest on Saturday and Sunday and the hours of use were again highest between 8:00 and 11:00 a.m. These results are summarized by the TrafX program and graphically displayed in Appendix I.

Unwanted public use issues continue to include off-trail use, bike riding (and bike walking), smoking, people with dogs (pets), and littering (mainly cigarette butts). The number of people bringing their dogs on the trail again remained low in FY 2014 likely due to continued frequent patrol of the trail entrance and education to the public via CNLM staff, City staff and City docents. However, off-trail activities continued to persist. The most common locations of off-trail activity remained at the second and third overlooks. There was no observance (or evidence) of trespass within the middle of the Preserve. Most activity is from young kids and young adults seeking a private ocean view while drinking and/or smoking. They often leave no trash, but contribute to erosion, potential crushing of PPM burrows, limit the expansion of the rare plant populations, and increase risk to the Preserve from fire. Off-trail use is an even greater threat during the bird nesting

season where such activity likely disrupts the peregrine falcon, the CAGN whose territories include these areas, and other nesting bird species.

Two part-time CNLM Rangers continued to patrol the Preserve in the late afternoon/evening hours before closing on school holidays and weekends. The Preserve Manager, and assistant Preserve Manager, Sarah Godfrey, also patrolled the Preserve and locked the Preserve in the evening on average 1 to 2 nights a week. Among the four CNLM staff, the Preserve was patrolled and locked at sunset, every evening during spring break and six nights of the week during summer break. Even with a CNLM Ranger or staff person present on-site, some people continued to violate the rules. An example of active violations observed and recorded by the CNLM staff for a one-month period is provided in Table 8 below. This does not include the following: 1) foot tracks observed off-trail; 2) items recovered off-trail which confirm off-trail use; 3) and violations that occurred when CNLM staff were not on-site. Although the Orange County Sherriff's Department was called on some occasions, no citations were known to be issued to trespassers on-site in FY 2014. The names of trespassers encountered continues to be tracked to ensure repeat offenders are identified.

The time period presented below is the same as that provided in the FY 2010 through FY 2013 reports which had 26, 12, 12, and 23 violations, respectively, recorded by the Rangers. The total number of violations, 5, in FY2014 was the lowest recorded. However, the weather was very warm and humid. Trespass events continued daily because off-trail shoe prints were observed nearly daily at the overlooks on the Preserve. It is unclear whether the shoe prints are from after hours trespass or during the day before CNLM staff began patrol. The need remains to dedicate resources for patrol and enforcement.

Table 8: Enforcement Log (June 16 – July 16, 2014)

	Date & Time	**Violation**	**Location**
1	6-26-14	Off-trail (2 persons)	Overlook 3
2	6-30-14	Off-trail (2 persons)	Overlook 2
3	7-8-14	Off-trail (2 persons)	Overlook 3
4	7-16-14	Off-trail (1 person)	Overlook 4
5	7-16-14	Dog	Overlook 1

In attempt to reduce the likelihood of people going off trail at overlooks 2 and 3, dead shrubs removed from duff treated grid cells were again placed along the edge of the fencing at the overlooks. However, it remains that the most effective means of keeping people on trail and dogs off the Preserve is by having someone present to enforce the rules (CNLM staff, CNLM Ranger, docents, and/or City staff).

The trail counter data was downloaded monthly to identify after hours use of the Preserve. The results were summarized and sent to the Orange County Sheriff's Department and City staff. This data was useful for the Sheriff's Department to identify problem times and areas to better patrol the general area. However, no patterns were detected consistently. For example, in June the most common day of after hour trespass was Friday and Saturday evening, in July it was Tuesday and Wednesday, and in August it was Thursday evening. In the event the after hour trespass was a reoccurring group of individuals, CNLM partnered with the City and Sheriff's Department to patrol the Preserve after closing. On August 16, 2014, one CNLM ranger and staff person were stationed

at the Dana Strand gate and another CNLM Ranger and staff person were stationed at the Scenic Drive gate from closing to 1:00 am. No after hours trespass occurred on the Preserve that evening. It is recommended that such after hour patrol occur periodically throughout the year.

***Task 2**: Expand the GIS database as necessary.*

CNLM created GIS coverages for data collected in FY 2014.

Table 9: GIS Coverages on File

Coverage	Source	Source Year
Vegetation Transects	CNLM	2014
Bridal Creeper Locations	CNLM	2014
Gnatcatcher (points, use area, nest locations)	CNLM	2014
Vegetation Transects	CNLM	2013
Bridal Creeper Locations	CNLM	2013
Gnatcatcher (points, use area, nest locations)	CNLM	2013
Rare Plant Points	CNLM	2013
PPM Capture Locations for captive breeding collection	San Diego Zoo	2012
PPM 24x24 Grid extended to former Marguerita Road bed and North of the road bed	USFWS	2012
Vegetation Transects	CNLM	2012
Gnatcatcher (points, use area, nests locations)	CNLM	2012
Bridal Creeper Locations	CNLM	2012
PPM 16x16 Grid extended to former Marguerita Road bed and North of the road bed	USFWS	2011
Rare Plant Points	CNLM	2011
Gnatcatcher (points, use area, nests locations)	CNLM	2011
Location of dead PPM	CNLM	2010
Rare Plant Points	CNLM	2010
Gnatcatcher (points, use area, nests locations)	CNLM	2010
Rare Plant Points	CNLM	2009
Gnatcatcher (points, use area, nests locations)	CNLM	2009
Veg Baseline Transect Locations	CNLM	2009
Pacific Pocket Mouse Points	USFWS	2009
Aerial Photo	Eagle Aerial	2008
Final Trail Route	CNLM	2008
Rare Plant Points	Fred Roberts	2008
PPM 16x16 Grid	USFWS	2008
Gnatcatcher (points, use area, nests locations)	CNLM	2008
Bobcat Point	CNLM	2007
Revegetation Areas & Seedmix	URS Corporation	2007
Gnatcatcher (points, use area, nests locations)	CNLM	2007
General Wildlife (whiptail and red racer)	CNLM	2007
Cliff Spurge Points	CNLM	2006
Veg Baseline Transect Locations	CNLM	2006
Aerial Photos	URS Corporation	2006 and 1991
PPM Habitat Areas	URS Corporation	
Vista Points	URS Corporation	
Pacific Pocket Mouse Points	USFWS	1993-2007
Cliff Spurge Points	URS Corporation	2007
Trail Location Options	URS Corporation	2007
Sensitive Species (Cliff spurge and Boxthorn)	URS Corporation	2006
Vegetation Communities	URS Corporation	unknown
Gnatcatcher Locations	URS Corporation	unknown
Coastal Commission ESHA Boundaries	URS Corporation	unknown

Jurisdictional Channels	URS Corporation	unknown
Open Space	URS Corporation	unknown
Headlands LLC Project Boundaries	URS Corporation	unknown
Headlands LLC Revegetation Areas	URS Corporation	unknown

***Task 3**: Continue public outreach and educational opportunities within the Preserve, including collaborating with the City of Dana Point Natural Resources Protection Officer, Nature Interpretive Center (NIC) facilities, and City docents at the NIC.*

The NIC was open throughout FY 2014 from 10:00 a.m. to 4:00 p.m. Tuesday through Sunday. The Preserve Manager was available to interact with the public and answer questions while at the NIC on average two and a half days a week.

Nature walks along the public trail were provided to interested organizations upon request, such as a first grade school field trip. A sunset walk was developed jointly with City docents and conducted once a month starting in June on the CNLM trail with either a ranger of the Preserve Manager.

***Task 4**: Provide opportunities for the public to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).*

Volunteer work days were again continued in FY2014. However, they were no longer organized on recurring dates, but in response to a specific need. Seven volunteer events occurred throughout the fiscal year as identified in table 10 below. The number of volunteers ranged from 4 to 44 individuals.

Table 10: Volunteer Events

	Date	**Event**	**Group**	**# of Volunteers**
1	10-19-13	Place sandbags on trail	S.O.S. (Dana Point H.S.)	13
2	11-16-13	Duff & dead shrub removal	Local H.S. A.P. Science	44
3	1-18-14	Continue duff removal	S.O.S. (Dana Point H.S.)	11
4	1-26-14	Continue duff removal	A.P. Science	5
5	5-24-14	Remove sandbags from trail	S.O.S. (Dana Point H.S.)	8
6	8-27-14	Duff & dead shrub removal	Pomona College	39
7	9-20-14	Paint trail fence	Capo Valley H.S. Green Club	9

VI. REPORTING

***Task 1:** Prepare an updated Habitat Management and Monitoring Plan.*
Draft a Five-year Management Plan, an Annual Report, and a Work Plan.

A low effect HCP draft permit application was submitted by CNLM to the USFWS in FY 2008 to address the potential for take of CAGN and pocket mice from future management actions. The process was not completed and will continue in FY 2014. CNLM is in the process of creating a new habitat management plan that addresses only the portion of land that CNLM owns and manages, utilizes the results of the rare plant, CAGN, and small mammal surveys completed from 2008 through 2014, and addresses the inadequacies of the April 18, 2005 HMMP prepared by URS

Corporation. However, the low effect HCP process and CNLM-prepared management plan may ultimately become one in the same. The HMMP will be updated in FY 2015.

Task 2: *Record Preserve management and monitoring activities in an annual report for the Wildlife Agencies and City.*

A work plan for FY 2014 (October 2013 through September 2014) was completed and provided to the USFWS, CDFW, and City on October 23, 2013 in electronic format. A Work Plan for FY 2015 (October 2014 through September 2015) was completed and provided to the USFWS, CDFW, and City on September 9, 2014 in electronic format.

A comprehensive management and monitoring report is required every three years to provide specific management recommendations to reverse any declining trends in habitat or species' populations. The next comprehensive management and monitoring report will be produced in FY2015.

VII. ENDOWMENT

The original endowment provided to CNLM was in the amount of $1,747,844. The endowment balance as of September 30, 2014 was $2,432,112.

VIII. INCOME

CNLM continued to receive income in FY 2014 due to the presence of a CNLM donation box within the NIC. In order to help fund the trail base reconstruction, all funds collected in FY 2014 are earmarked for such work. A total of $938.00 was collected in FY 2014 which brings the account total to $3,209.50.

IX. REFERENCES

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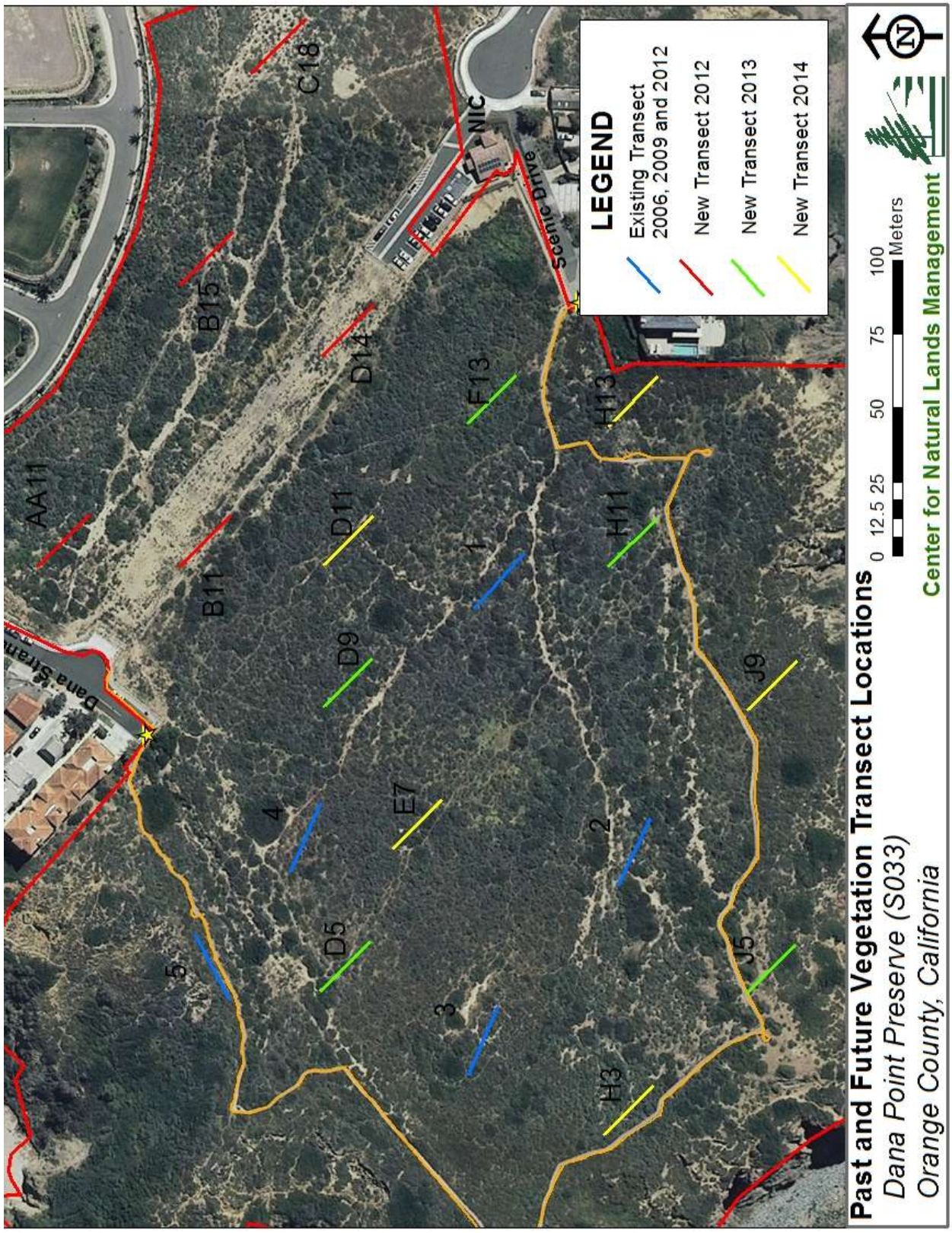
Appendix A


LEGEND
Existing Transect 2006, 2009 and 2012
New Transect 2012
New Transect 2013
New Transect 2014
Past and Future Vegetation Transect Locations
Dana Point Preserve (S033)
Orange County, California
0 12.5 25 50 75 100 Meters
Center for Natural Lands Management
Scenic Drive
Dana Strand
AA11
B11
B15
C18
D14
D11
D9
D5
E7
F13
H13
H11
H3
J9
J5
1
2
3
4
5

Appendix B

2014 Coastal California Gnatcatcher Survey Results
Dana Point Preserve (S033)
Orange County, California

Appendix C


LEGEND
Seasonal Survey Locations
Site-Wide Survey Sampled
Track Tube Location w/ PPM
Location without PPM
Low Confidence PPM Only
California Gnatcatcher Nest
2014 Pacific Pocket Mouse Track Tube Results
CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA
60 30 0 60 Meters
Center for Natural Lands Management
N

Appendix D


LEGEND
Grid Cell Not Surveyed
Grid Cell Sampled
Grid Cell with Argentine Ants
PPM Location 2014
2014 Location without PPM
2014 Low Confidence PPM
2014 Argentine Ant Survey Results
CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA
60 30 0 60 Meters
Center for Natural Lands Management
N

Appendix E


LEGEND
Grid Cell Not Surveyed
High # LIHU
Medium # LIHU
Low # LIHU
PPM Location 2014
2014 Location without PPM
2014 Low Confidence PPM
2014 Argentine Ant Survey Results (Quantity of LIHU)
CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA
60 30 0 60 Meters
N
Center for Natural Lands Management

Appendix F: Plant Species Identified on the Dana Point Preserve

	Family	**Species**	**Common Name**	**Origin**
		FERNS		
1	POLYPODIACEAE	*Polypodium californicum*	California Polypody	Native
2	PTERIDACEAE	*Pellaea andromedifolia*	Coffee fern	Native
3	PTERIDACEAE	*Pentagramma triangularis subsp. viscosa*	Silver back fern	Native
		MONOCOTS		
4	AMARYLLIDACEAE	*Narcissus sp.*	Paperwhites	Non-native
5	ARECACEAE	*Washingtonia robusta*	Mexican fan palm	Non-native
6	ASPARAGACEAE	*Asparagus officinalis* var. *officinalis* (Replaces A. densiflorus)	Common asparagus	Non-native
7	ASPARAGACEAE	*Asparagus asparagoides*	Bridal Creeper	Non-native
8	ASPHODELACEAE	*Aloe saponaria*	Soap Aloe	Non-native
9	IRIDACEAE	*Sysyrinchium bellum*	Blue eyed grass	Native
10	POACEAE	*Agrostis viridis*	Water bent grass	Non-native
11	POACEAE	*Arundo donax*	Giant reed	Non-native
12	POACEAE	*Avena fatua*	Common wild oat	Non-native
13	POACEAE	*Bromus diandrus*	Common ripgut grass	Non-native
14	POACEAE	*Bromus hordeaceus*	Soft chess	Non-native
15	POACEAE	*Bromus madritensis* subsp. *rubens*	Foxtail chess	Non-native
16	POACEAE	*Cortaderia selloana*	Sellow's pampass grass	Non-native
17	POACEAE	*Cynodon dactylon*	Bermuda grass	Non-native
18	POACEAE	*Distichlis spicata*	Salt grass	Native
19	POACEAE	*Ehrharta erecta*	Panic veldtgrass	Non-native
20	POACEAE	*Elymus condensatus*	Giant wildrye	Native
21	POACEAE	*Lamarckia aurea*	Golden top	Non-native
22	POACEAE	*Melica imperfecta*	Small flowered melic grass	Native
23	POACEAE	*Muhlenbergia microsperma*	Little-seed muhly	Native
24	POACEAE	*Parapholis incurva*	European sickle-grass	Non-native
25	POACEAE	*Schismus barbatus*	Mediterranean schismus	Non-native
26	POACEAE	*Stipa (Nassella) lepida*	Foothill needlegrass	Native
27	POACEAE	*Stipa (Nassella) pulchra*	Purple needlegrass	Native
28	POACEAE	*Vulpia myuros*	Rattail fescue	Non-native

29	POACEAE	*Vulpia octoflora*	Six-weeks fescue	Native
30	THEMIDACEAE	*Dichelostemma capitatum*	Wild hyacinth or School bells	Native
		EUDICOTS (Formerly Dicots)		
31	ADOXACEAE	*Sambucus nigra* subsp. *caerulea*	Blue elderberry	Native
32	AIZOACEAE	*Carpobrotus edulis*	Hottentot fig	Non-native
33	AIZOACEAE	*Malephora crocea*	Croceum iceplant	Non-native
34	AIZOACEAE	*Mesembryanthemum crystallinum*	Crystal iceplant	Non-native
35	AIZOACEAE	*Mesembryanthemum nodiflorum*	Small-flowered iceplant	Non-native
36	AIZOACEAE	*Tetragonia tetragonioides*	New Zealand spinach	Non-native
37	AMARANTHACEAE	*Aphanisma blitoides*	Aphanisma	Native
38	AMARANTHACEAE	*Atriplex californica*	California saltbush	Native
39	AMARANTHACEAE	*Atriplex lentiformis subsp. lentiformis*	Brewer's saltbush	Native
40	AMARANTHACEAE	*Atriplex semibaccata*	Australian saltbush	Non-native
41	AMARANTHACEAE	*Chenopodium californicum*	California goosefoot	Native
42	AMARANTHACEAE	*Chenopodium murale*	Nettle-leaved goosefoot	Non-native
43	AMARANTHACEAE	*Salsola tragus*	Russian thistle	Non-native
44	AMARANTHACEAE	*Suaeda taxifolia*	Woolly sea-blite	Native
45	ANACARDIACEAE	*Rhus integrifolia*	Lemonade berry	Native
46	APIACEAE	*Apiastrum angustifolium*	Mock parsely	Native
47	APIACEAE	*Daucus pusillus*	Rattlesnake weed	Native
48	ARALIACEAE	*Hedera helix*	English ivy	Non-native
49	ASTERACEAE	*Amblyopappus pusillus*	Coastweed	Native
50	ASTERACEAE	*Ambrosia chamissonis*	Beach bur	Native
51	ASTERACEAE	*Ambrosia psilostachya*	Western ragweed	Native
52	ASTERACEAE	*Argyranthemum foeniculatum*	Canary Island marguerite	Non-native
53	ASTERACEAE	*Artemisia californica*	Coastal sagebrush	Native
54	ASTERACEAE	*Baccharis pilularis* subsp. *consanguinea*	Coyote brush	Native
55	ASTERACEAE	*Baccharis salicifolia*	Mule fat	Native
56	ASTERACEAE	*Centaurea melitensis*	Tocalote	Non-native
57	ASTERACEAE	*Chaenactis glabriuscula* var. *glabriuscula*	Yellow pincushion	Native
58	ASTERACEAE	*Chaenactis glabriuscula* var. *orcuttiana*	Orcutt’s pincushion	Native
59	ASTERACEAE	*Chrysanthemum coronarium*	Garland crysanthemum	Non-native

60	ASTERACEAE	*Cirsium occidentale*	Cobweb thistle	Native
61	ASTERACEAE	*Conyza canadensis*	Common horseweed	Native
62	ASTERACEAE	*Conyza coulteri*	Coulter's horseweed	Native
63	ASTERACEAE	*Corethrogyne filaginifolia* var. *virgata*	Virgate sand aster	Native
64	ASTERACEAE	*Deinandra fasciculata*	Fascicled tarplant	Native
65	ASTERACEAE	*Encelia californica*	California encelia	Native
66	ASTERACEAE	*Filago californica*	California filago	Native
67	ASTERACEAE	*Filago gallica*	Narrow-leaved filago	Non-native
68	ASTERACEAE	*Heterotheca grandiflora*	Telegraph weed	Native
69	ASTERACEAE	*Hypochaeris glabra*	Smooth cat's ear	Non-native
70	ASTERACEAE	*Isocoma menziesii* var. *sedoides*	Prostrate goldenbush	Native
71	ASTERACEAE	*Isocoma menziesii* var. *vernonioides*	Coastal goldenbush	Native
72	ASTERACEAE	*Lasthenia gracilis*	Coastal goldfields	Native
73	ASTERACEAE	*Layia platyglossa*	Common tidytips	Native
74	ASTERACEAE	*Malacothrix saxatilis var. saxatilis*	Cliff malacothrix	Native
75	ASTERACEAE	*Microseris lindleyi*	Silver puffs	Native
76	ASTERACEAE	*Osmadenia tenella*	Osmadenia	Native
77	ASTERACEAE	*Osteospermum ecklonis*	Trailing african daisy	Non-native
78	ASTERACEAE	*Pseudognaphalium bioletti*	Bi-colored cudweed	Native
79	ASTERACEAE	*Pseudognaphalium californicum*	California everlasting	Native
80	ASTERACEAE	*Pseudognaphalium stramineum*	Cotton batting plant	Native
81	ASTERACEAE	*Senecio californicus*	California butterweed	Native
82	ASTERACEAE	*Senecio vulgaris*	Common groundsel	Non-native
83	ASTERACEAE	*Sonchus oleraceus*	Common sowthistle	Non-native
84	ASTERACEAE	*Stephanomeria exigua* subsp. *exigua*	Wreath plant	Native
85	ASTERACEAE	*Stylocline gnaphaloides*	Everlasting nest straw	Native
86	BORAGINACEAE	*Cryptantha clevelandii*	Cleveland's cryptantha	Native
87	BORAGINACEAE	*Cryptantha intermedia*	Common cryptantha	Native
88	BORAGINACEAE	*Echium candicans*	Pride of madera	Non-native
89	BORAGINACEAE	*Heliotropium curassavicum* subsp. *oculatum*	Salt or Alkali heliotrope	Non-native
90	BORAGINACEAE	*Phacelia distans*	Common phacelia	Native
91	BRASSICACEAE	*Brassica geniculata*	Short pod mustard	Non-native

92	BRASSICACEAE	*Brassica tournefortii*	Sahara mustard	Non-native
93	BRASSICACEAE	*Cakile maritima*	Sea rocket	Non-native
94	BRASSICACEAE	*Descurainia pinnata*	Western tansy mustard	Native
95	BRASSICACEAE	*Lepidium lasiocarpum* var. *lasiocarpum*	Sand pepper grass	Native
96	BRASSICACEAE	*Raphanus sativus*	Wild radish	Non-native
97	CACTACEAE	*Cylindropuntia prolifera*	Coastal cholla	Native
98	CACTACEAE	*Opuntia littoralis*	Coastal prickly pear	Native
99	CACTACEAE	*Opuntia* x*vaseyi*	Mesa prickly pear	Native
100	CACTACEAE	*Opuntia oricola*	Oracle cactus	Native
101	CLEOMACEAE	*Cleome isomeris*	Bladderpod	Native
102	CARYOPHYLLACEAE	*Cardionema ramosissimum*	Sandmat	Native
103	CARYOPHYLLACEAE	*Polycarpon tetraphyllum*	Four leaved polycarp	Non-native
104	CARYOPHYLLACEAE	*Silene antirrhina*	Snapdragon catchfly	Native
105	CARYOPHYLLACEAE	*Silene gallica*	Common catchfly	Non-native
106	CARYOPHYLLACEAE	*Stellaria media*	Common chickweed	Non-native
107	CONVOLVULACEAE	*Dichondra occidentalis*	Western dichondra	Native
108	CRASSULACEAE	*Crassula connata*	Sand pygmy stonecrop	Native
109	CRASSULACEAE	*Crassula tillaea*	Mossy pygmy stonecrop	Non-native
110	CRASSULACEAE	*Dudleya lanceolata*	Liveforever	Native
111	CRASSULACEAE	*Dudleya pulverulenta* subsp. *pulverulenta*	Chalky live-forever	Native
112	CUCURBITACEAE	*Marah macrocarpus*	Wild cucumber	Native
113	EUPHORBIACEAE	*Croton californicus*	California croton	Native
114	EUPHORBIACEAE	*Euphorbia misera*	Cliff spurge	Native
115	EUPHORBIACEAE	*Euphorbia peplus*	Petty spurge	Non-native
116	FABACEAE	*Acacia longifolia*	Sydney golden wattle	Non-native
117	FABACEAE	*Astragalus trichopodus* ssp. *lonchus*	Ocean locoweed	Native
118	FABACEAE	*Lotus scoparius* subsp. *scoparius*	Coastal deerweed	Native
119	FABACEAE	*Lotus strigosus* var. *strigosus*	Strigose lotus	Native
120	FABACEAE	*Lupinus truncatus*	Collar lupin	Native
121	FABACEAE	*Medicago polymorpha*	Bur clover	Non-native
122	FABACEAE	*Melilotus indicus*	Yellow sweet clover	Non-native
123	FAGACEAE	*Quercus dumosa*	Nuttall's scrub oak	Native
124	GERANIACEAE	*Erodium brachycarpum*	Short-fruited filaree	Non-native

125	GERANIACEAE	*Erodium cicutarium*	Red-stemmed filaree	Non-native
126	HYPERICACEAE	*Hypericum canariense*	Canary Islands St. John's wort	Non-native
127	LAMIACEAE	*Marrubium vulgare*	Horehound	Non-native
128	LAMIACEAE	*Salvia columbariae*	Chia	Native
129	MYRSINACEAE	*Anagallis arvensis*	Scarlet pimpernel	Non-native
130	NYCTAGINACEAE	*Mirabilis laevis* var. *crassifolia*	California wishbone bush	Native
131	ONAGRACEAE	*Camissonia bistorta*	California suncup	Native
132	ONAGRACEAE	*Camissonia cheiranthifolia* subsp. *suffruticosa*	Beach evening primrose	Native
133	ONAGRACEAE	*Camissonia micrantha*	Small flowered evening primrose	Native
134	OROBANCHACEAE	*Castilleja exserta* subsp. *exserta*	Purple owl's clover	Native
135	OXALIDACEAE	*Oxalis pes-caprae*	Bermuda buttercup	Non-native
136	PAPAVERACEAE	*Eschscholzia californica*	California poppy	Native
137	PAPAVERACEAE	*Platystemon californicus*	Cream cups	Native
138	PHRYMACEAE	*Mimulus aurantiacus* var. *puniceus*	Red bush monkeyflower	Native
139	PLANTAGINACEAE	*Antirrhinum nuttallianum* subsp. *subsessile*	Nuttall's snapdragon	Native
140	PLANTAGINACEAE	*Linaria canadensis* var. *texana*	Larger blue toad flax	Native
141	PLANTAGINACEAE	*Plantago erecta*	California plantain	Native
142	PLUMBAGINACEAE	*Limonium perezii*	Perez's sea lavender	Non-native
143	POLYGONACEAE	*Chorizanthe procumbens*	Prostrate spineflower	Native
144	POLYGONACEAE	*Eriogonum fasciculatum* subsp. *fasciculatum*	California buckwheat	Native
145	POLYGONACEAE	*Eriogonum parvifolium*	Bluff buckwheat	Native
146	POLYGONACEAE	*Polygonum aviculare*	Common knotweed	Non-native
147	POLYGONACEAE	*Pterostegia drymarioides*	Granny's hair net	Native
148	PORTULACACEAE	*Calandrinia ciliata*	Red maids	Native
149	PORTULACACEAE	*Calandrinia maritima*	Seaside calandrinia	Native
150	PORTULACACEAE	*Claytonia parviflora* subsp. *parviflora*	Narrow leaved miner's lettuce	Native
151	RANUNCULACEAE	*Clematis pauciflora*	Ropevine	Native
152	RANUNCULACEAE	*Delphinium parryi* subsp. *parryi*	Parry's larkspur	Native
153	ROSACEAE	*Heteromeles arbutifolia*	Toyon	Native
154	ROSACEAE	*Raphiolepis indica*	Indian hawthorn	Non-native
155	SCROPHULARIACEAE	*Myoporum laetum*	Myoporum	Non-native
156	SOLANACEAE	*Datura wrightii*	Jimson weed	Native

157	SOLANACEAE	*Lycium californicum*	California boxthorn	Native
158	SOLANACEAE	*Nicotiana clevelandii*	Cleveland's tobacco	Native
159	SOLANACEAE	*Nicotiana glauca*	Tree tobacco	Non-native
160	SOLANACEAE	*Solanum americanum*	White nightshade	Non-native
161	SOLANACEAE	*Solanum douglasii*	Doublas' nightshade	Native
162	SOLANACEAE	*Solanum umbelliferum* var. *glabrescens*	Bluewitch	Native
163	URTICACEAE	*Hesperocnide tenella*	Western nettle	Native
164	URTICACEAE	*Parietaria hesperia* var. *californica*	California Pellitory	Native
		FUNGI		
165	LYCOPERDACEAE	*Calvatia pachyderma*	Puffball mushroom	Native

refers to species newly observed in 2014

Appendix G: Animal Species Identified on the Dana Point Preserve (includes intertidal birds).

Scientific Name	**Common Name**
INVERTEBRATES	
Order Araneae	
Family Araneidae	
Argiope argentata	Silver Argiope
Family Miturgidae	
Cheiracanthium sp.	Un-identified sac spider
Order Coleoptera	
Family Curculionidae	
Scyphophorus yuccae	Yucca weevil
Family Scarabaeidae	
Cotinus mutabilis	Green fruit beetle
Paracotalpa puncticollis	Little bear
Family Tenebrionoidea	
Eleodes acuticauda	Darkling beetle
Order Heminoptera	
Family Apidae	
Xylocopa sp.	Unidentified carpenter bee
Family Pompilidae	
Pepsis sp.	Unidentified tarantula hawk
Order Hemiptera	
Family Cercopidae	
Aphrophora sp.	Unidentified spittle bug
Family Pentatomidae	
Murgantia histrionic	Harlequin bug
Order Hymenoptera	
Family Apidae	
Apis mellifera	European honey bee
Family Formicidae	
Linepithema humile	Argentine ant
Monomorium ergatogyna	Little black ant
Pogonomyrmex sp.	Unidentified species of harvester ant

Order Lepidoptera
Family Hesperiidae
Hylephila phyleus Fiery skipper

Family Lycaenidae
Leptotes marina Marine blue
Strymon melinus pudica Gray hairstreak

Family Lymantriidae
Orgyia vetusta Western tussock moth

Family Papilionidae
Papilio zelicaon Anise swallowtail

Family Pieridae
Colias eurytheme Orange sulphur

Family Riodinidae
Apodemia mormo Mormon metalmark
Apodemia virgulti Behr's metalmark

Family Saturniidae
Hemileuca electra Electra buckmoth

Order Orthoptera
Family Acrididae
Schistocerca nitens Vagrant grasshopper

Order Scorpiones
Family Scorpionidae
Anuroctonus phaiodactylus Burrowing scorpion

REPTILES AND AMPHIBIANS

Order Salientia **Frogs and Toads**

Family Hylidae
Hyla regilla Pacific treefrog

Order Squamata **Lizards and Snakes**

Family Anniellidae
Anniella stebbinsi Legless lizard

Family Anguidae
Elgaria multicarinatus Southern alligator lizard

Family Colubridae

Diadophis punctatus	Western ringsnake
Lampropeltis getula californiae	California kingsnake
Masticophis flagellum piceus	Red racer, Coachwhip
Pituophis catenifer annectens	San Diego gopher snake

Family Iguanidae

Sceloporus occidentalis	Western fence lizard
Uta stansburiana	Side-blotched lizard

Family Scincidae

Eumeces skiltonianus	Western skink

Family Teiidae

Cnemidophorus hyperythrus	Orange-throated whiptail

Family Viperidae

Crotalus oreganus helleri	Southern pacific rattlesnake

BIRDS

Order Anseriformes **Ducks, Geese and Swans**

Framily Anatidae

Branta bernicla	Brant

Order Apodiformes **Swifts and Hummingbird**

Family Apodidae

Aeronautes saxatalis	White-throated swift
Chaetura vauxi	Vaux's swift

Family Trochilidae

Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Selasphorus sasin	Allen's hummingbird
Selasphorus rufus	Rufous hummingbird

Order Caprimulgiformes **Nightjars**

Family Caprimulgidae

Phalaenoptilus nuttallii	Common poorwill

Order Charadriiformes **Shorebirds, Gulls, and Relatives**

Family Charadriidae

Charadrius vociferus	Killdeer
Pluvialis squatarola	Black-bellied plover
Family Haematopodidae	
Haematopus bachmani	Black oystercatcher
Family Laridae	
Larus heermanni	Heermann's gull
Larus delawarensis	Ring-billed gull
Larus californicus	California gull
Larus occidentalis	Western gull
Larus glaucescens	Glaucous-winged gull
Sterna caspia	Caspian tern
Thalasseus maximus	Royal tern
Family Scolopacidae	
Actitis macularius	Spotted sandpiper
Arenaria melanocephala	Black turnstone
Aphriza virgata	Surfbird
Calidris alba	Sanderling
Catoptrophorus semipalmatus	Willet
Limosa fedoa	Marbled godwit
Numenius phaeopus	Whimbrel
Order Columbiformes	**Pigeons and Doves**
Family Columbidae	
Columba livia	Rock dove (feral pigeon)
Streptopelia decaocto	Eurasian collared dove
Zenaida asiatica	White-winged dove
Zenaida macroura	Mourning dove
Order Cuculiformes	**Cuckoos**
Family Cuculidae	
Geococcyx californianus	Greater roadrunner
Order Falconiformes	**Vultures, Hawks, and Falcons**
Family Accipitridae	
Accipiter striatus	Sharp-shinned hawk
Accipitridae cooperii	Cooper's hawk
Buteo jamaicensis	Red-tailed hawk
Circus cyaneus	Northern harrier
Elanus leucurus	White-tailed kite
Pandion haliaetus	Osprey
Family Cathartidae	

Cathartes aura	Turkey vulture
Family Falconidae	
Falco columbarius	Merlin
Falco peregrinus	Peregrine falcon
Falco sparverius	American kestrel
Order Galliformes	**Megapodes, Curassows, Pheasants, and Relatives**
Family Phasianidae	
Callipepla californica	California quail
Order Passeriformes	**Perching Birds**
Family Aegithalidae	
Psaltriparus minimus	Bushtit
Family Cardinalidae	
Cardinalis cardinalis	Northern cardinal
Pheucticus melanocephalus	Black-headed grosbeak
Piranga ludoviciana	Western tanager
Family Corvidae	
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Family Emberizidae	
Geothlypis trichas	Common yellowthroat
Pipilo erythrophthalmus	Spotted towhee
Pipilo crissalis	California towhee
Melospiza melodia	Song sparrow
Agelaius phoeniceus	Red-winged blackbird
Molothrus ater	Brown-headed cowbird
Pheucticus melanocephalus	Black-headed grosbeak
Wilsonia pusilla	Wilson's warbler
Carduelis psaltria	Lesser goldfinch
Carpodacus mexicanus	House finch
Vermivora celata	Orange-crowned warbler
Vermivora ruficapilla	Nashville warbler
Dendroica coronata	Yellow-rumped warbler
Dendroica nigrescens	Black-throated gray warbler
Dendroica townsendii	Townsend's warbler
Dendroica occidentalis	Hermit warbler
Oporornis tolmiei	MacGillivray's warbler
Spizella passerina	Chipping sparrow

Melospiza lincolnii	Lincoln's sparrow
Zonotrichia atricapilla	Golden-crowned sparrow
Zonotrichia albicollis	White-throated sparrow
Zonotrichia leucophrys	White-crowned sparrow
Sturnella neglecta	Western meadowlark
Euphagus cyanocephalus	Brewer's blackbird
Icterus bullockii	Bullock's oriole
Icterus cucullatus	Hooded oriole
Family Hirundidae	
Stelgidopteryx serripennis	Northern rough-winged swallow
Hirundo rustica	Barn swallow
Family Laniidae	
Lanius ludovicianus	Loggerhead shrike
Family Mimidae	
Mimus polyglottos	Northern mockingbird
Toxostoma redivivum	California thrasher
Family Regulidae	
Regulus calendula	Ruby-crowned kinglet
Family Sturnidae	
Sturnus vulgaris	European starling
Family Sylviidae	
Polioptila caerulea	Blue-gray gnatcatcher
Polioptila californica californica	Coastal California gnatcatcher
Family Timaliidae	
Chamaea fasciata	Wrentit
Family Troglodytidae	
Campylorhynchus brunneicapillus cousei	Coastal cactus wren (not observed since early 1990's)
Salpinctes obsoletus	Rock Wren
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	House wren
Family Turdidae	
Catharus guttatus	Hermit thrush
Sialia Mexicana	Western bluebird
Family Tyrannidae	

Contopus sordidulus	Western wood peewee
Empidonax hammondii	Hammond's flycatcher
Empidonax difficilis	Pacific-slope flycatcher
Sayornis nigricans	Black pheobe
Sayornis saya	Say's phoebe
Myiarchus cinerascens	Ash-throated flycatcher
Pyrocephalus rubinus	Vermilion flycatcher
Tyrannus vociferans	Cassin's kingbird
Tyrannus verticalis	Western kingbird

Family Vireonidae

Vireo gilvus	Warbling vireo

Order Pelecaniformes **Tropicbirds, Pelicans, Herons and Relatives**

Family Ardeidae

Ardea alba	Great egret
Ardea herodias	Great blue heron
Butorides striatus	Green heron
Egretta thula	Snowy egret

Family Pelecanidae

Pelecanus erythrorhynchos	White pelican
Pelecanus occidentalis	Brown pelican

Family Phalacrocoracidae

Phalacrocorax auritus	Double-crested cormorant
Phalacrocorax pelagicus	Pelagic cormorant
Phalacrocorax penicillatus	Brandt's cormorant

Order Piciformes **Woodpeckers and Relatives**

Family Picidae

Picoides nuttallii	Nuttall's woodpecker
Colaptes auratus	Northern flicker

Order Strigiformes **Owls**

Family Strigidae

Asio flammeus	Short-eared owl
Athene cunicularia	Burrowing owl (on City Preserve)
Bubo Virginianus	Great horned owl

MAMMALS

Order Didelphimorphia	**Common Opossums**
Family Didelphidae	
Didelphis virginiana	Virginia opossum
Order Lagomorpha	**Rabbits, Hares, and Pikas**
Family Leporidae	
Sylvilagus audubonii	Desert cottontail
Sylvilagus bachmani	Brush rabbit
Order Rodentia	**Squirrels, Rats, Mice, and Relatives**
Family Sciuridae	
Spermophilus beecheyi	California ground squirrel
Family Cricetidae	
Microtus californicus	California vole
Peromyscus californicus	California mouse
Family Cricetidae Continued	
Peromyscus maniculatus	Deer mouse
Reithrodontomys megalotis	Western harvest mouse
Neotoma bryanti	Desert woodrat
Family Heteromyidae	
Perognathus longimembris pacificus	Pacific pocket mouse
Family Muridae	
Mus musculus	House mouse
Rattus norvegicus	Norway rat
Order Carnivora	**Carnivores**
Family Canidae	
Canis latrans	Coyote
Urocyon cinereoargenteus	Grey Fox
Family Felidae	
Lynx rufus	Bobcat
Family Mephitidae	
Mephitis mephitis	Striped skunk
Family Mustelidae	
Mustela frenata	Long-tailed weasel

Family Otariidae
Zalophus californianus California sea lion (offshore)

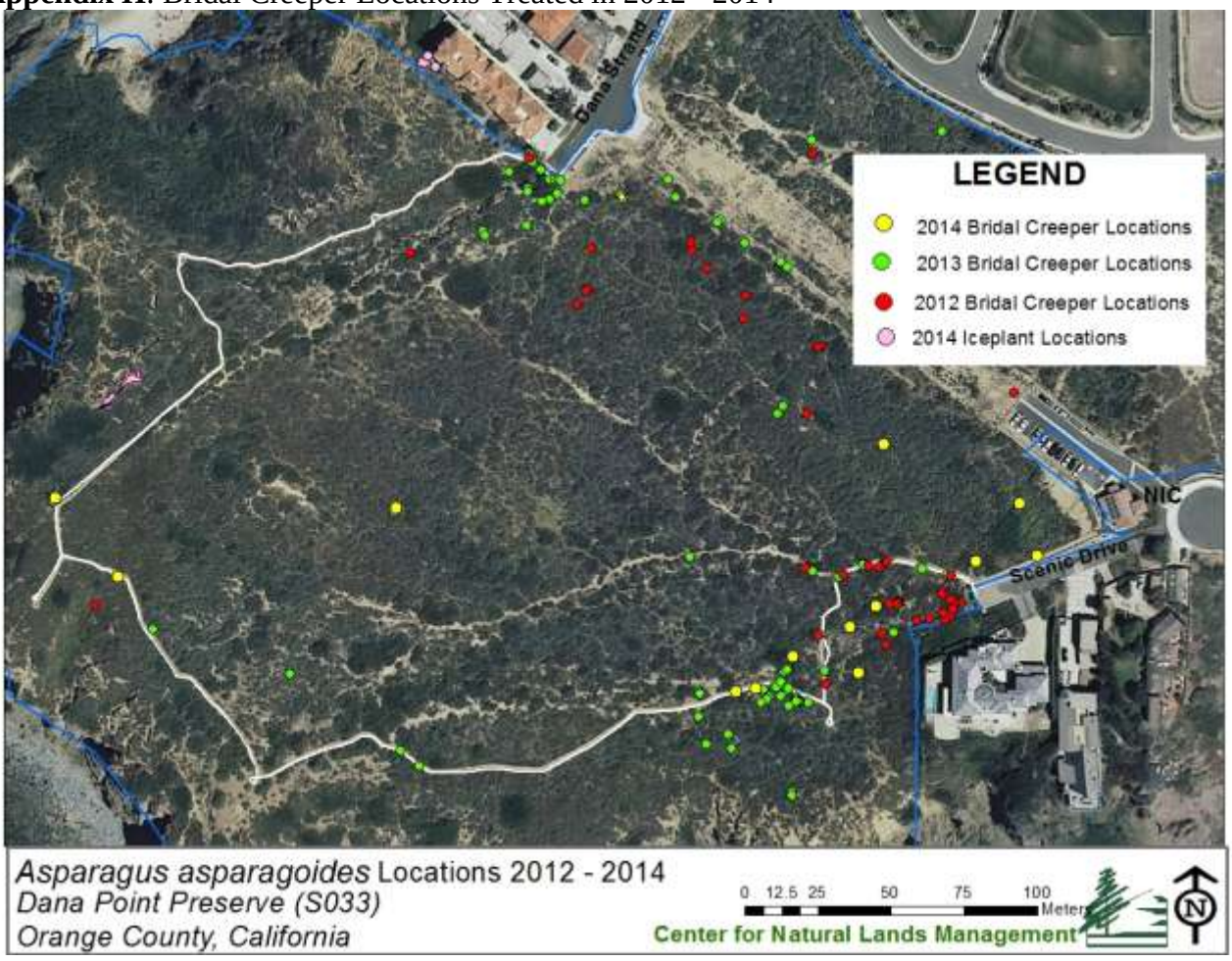
Family Phocidae
Phoca vitulina Harbor seal (offshore)

Family Procyonidae
Procyon lotor Raccoon

** Amphibian, reptile, bird, and mammal nomenclature follows Laudenslayer et al., 1991.

___ Species added to the list in FY 2014

Appendix H: Bridal Creeper Locations Treated in 2012 - 2014



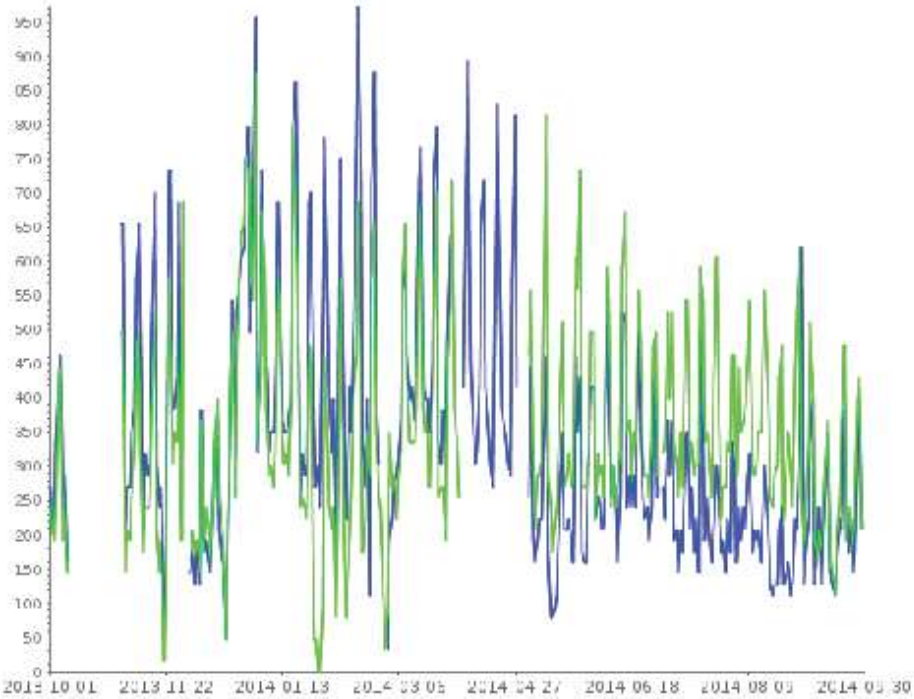
Appendix I: TRAFx Data Summary

Daily totals report

Covering 365 days from 2013-10-01 to 2014-09-30

Report generated on 2014-10-17 09:26:52 (UTC -06:00) by lcarranza@cnlm.org

TRAFx DataNet (http://www.trafx.net/)



Site Name	Average	Min	Max
Dana Point Preserve	356.2	1.0	889.0
Dana Strand Gate	351.4	44.0	975.0

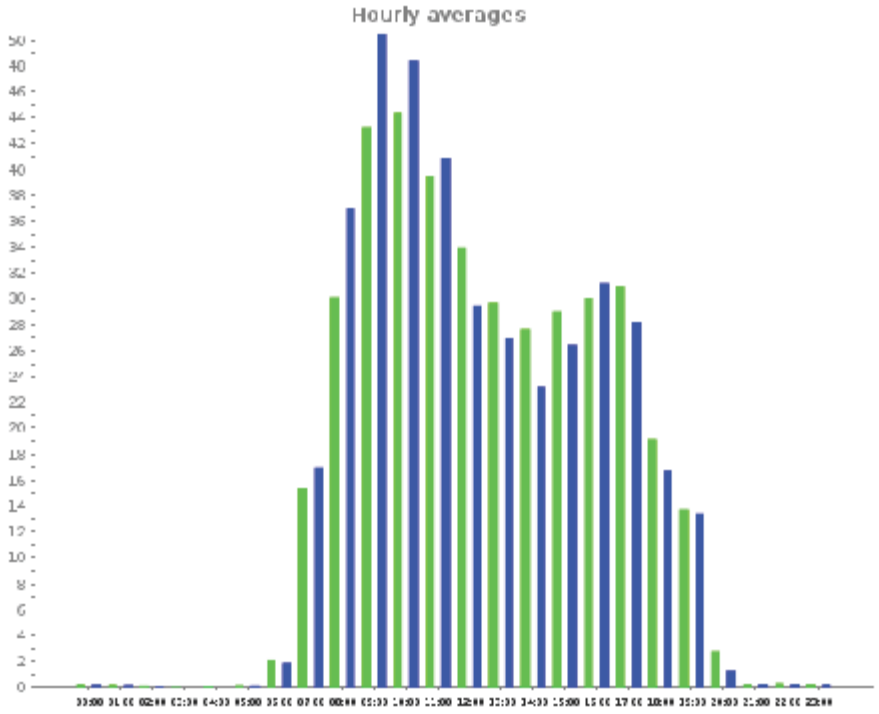
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Hours of the day

From 2013-10-01 to 2014-09-30

Report generated on 2014-10-16 18:47:15 (UTC -06:00) by lcarranza@cnlm.org

TRAFx DataNet (http://www.trafx.net/)



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	16.4	14.6	16.0	0.0	44.4
Dana Strand Gate	17.9	16.9	16.8	0.1	50.5

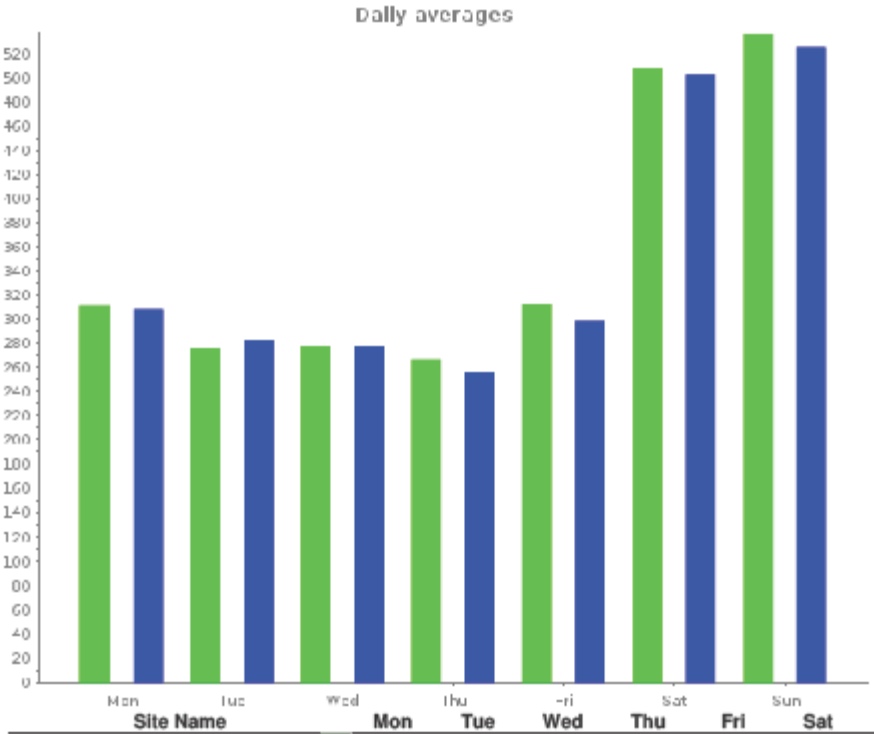
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Days of the week

From 2013-10-01 to 2014-09-30

Report generated on 2014-10-16 18:48:17 (UTC -06:00) by lcarranza@cnlm.org

TRAFx DataNet (http://www.trafx.net/)



Site Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dana Point Preserve	311.1	275.9	277.6	267.5	312.9	507.6	536.4
Dana Strand Gate	308.9	282.1	278.1	256.4	299.1	502.5	525.8
Daily Averages	310	279	278	262	306	505	531

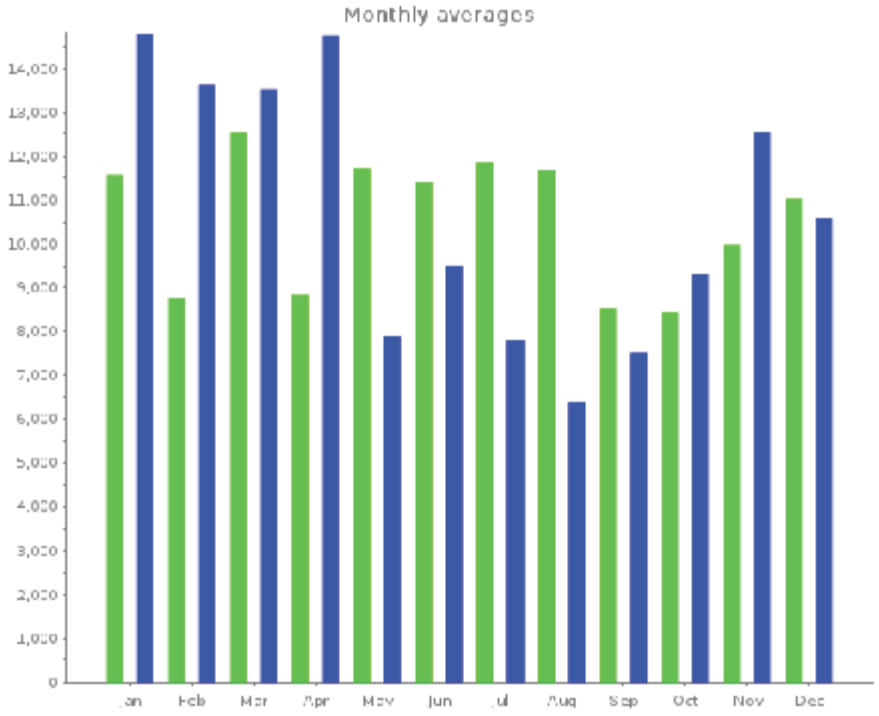
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Months of the year

From 2013-10-01 to 2014-09-30

Report generated on 2014-10-16 18:48:48 (UTC -06:00) by lcarranza@cnlm.org

TRAFx DataNet (http://www.trafx.net/)



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	10,534.9	11,232.5	1,454.0	8,432.0	12,522.0
Dana Strand Gate	10,689.0	10,035.4	2,908.6	6,410.0	14,799.4

A = adjustment applied, D = divide by 2 applied, F = filtering applied

Annual Report for the 2014-15 Fiscal Year
(October 2014 - September 2015)

on the

Dana Point Preserve
(S033)

Compiled by:

Michelle Labbé
The Center for Natural Lands Management
Conservation Analyst

May 14, 2020

October 2014 (CNLM Preserve Manager: L A. Carranza)

- Rangers continued to patrol the Preserve, maintain trail fence and remove trash. They were on-site on average two evenings a week.
- I patrolled and locked the gates of the Preserve one night a week.
- Changed the time on the automatic gate closure locks as necessary.
- Pulled trail data. Day use summary: Use was higher than the last few months in terms of daily averages. Once again, Sunday remained the busiest day of the week

Day of the week	Scenic Drive Preserve Daily averages	Dana Strand Gate Daily averages
Mon	No data recorded	306.3
Tue	No data recorded	302.0
Wed	No data recorded	277.0
Thu	No data recorded	254.6
Fri	No data recorded	306.3
Sat	No data recorded	480.8
Sun	No data recorded	526.0

	Average daily	Min	Max
Dana Strand Gate	351.7	201.0	559.0

- This month Sunday had the most occurrences of trespass, but Tuesday night had trespass at 3:00 and 4:00am. Wednesday and Saturday night both had trespass, but all before 8:30pm. Monday, Thursday and Friday had no occurrences of trespass. Trespass times were over a greater range this month from 7:00pm to 4:00am. The time patterns are as follow (Only two evenings had events after midnight): 7:00 – 7:30pm (4 occurrences); 8:00-8:30am (3 occurrences); 9:15pm (1 occurrence); 10:00pm (1 occurrence); 12:49 am (1 occurrence); 3:00am (1 occurrence); 4:00am (1 occurrence)
- Pulled donation box funds: $94.00 received
- Pulled wildlife camera card: Mourning doves, rabbits and towhees were recorded.
- Continued coordination with City on new signs.
- Completed draft Annual Report to be sent to Markus S. for review.
- Finalized report on the Argentine Ant survey conducted on the Preserve.
- Coordinated with Cecily and worked on grant application to Massen Greene Foundation.
- Organized volunteer events for November.
- Completed final 5-year report of peregrine monitoring on the Preserve.
- Prepared PP presentation for CNLM PPM related activities for USFWS PPM workshop.
- Attended PPM Workshop (with Sarah Godfrey) at USFWS on October 23, 2014.

November 2014 (CNLM Preserve Manager: L A. Carranza)

- Rangers continued to patrol the Preserve, maintain the trail fence and remove trash. They were on-site on average two evenings a week. I patrolled and locked the gates of the Preserve on average 2 nights a week.
- Changed time on automatic gate closure locks as necessary (ranged 5:15pm to 5:00pm)
- Pulled trail data. Day use summary: Use was again higher than the last few months in terms of daily averages. The Saturday usage may be a bit skewed due to the volunteer word day events where we had between 14 and 20 kids on the trail at each of the two events. Sunday remained the busiest day of the week.

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Daily averages	316.3	317.8	279.4	348.6	330.0	511.3	610.9
Scenic Drive Gate	292.0	291.8	250.0	295.5	258.3	464.0	508.8
Dana Strand Gate	340.5	343.8	308.8	401.8	401.8	558.5	713.0

	Average	Min	Max
Scenic Drive Gate	340.1	172.0	564.0
Dana Strand Gate	438.3	218.0	809.0

- This month Wednesday and Thursday had the most events of trespass, but only two occurrences each. There was not one night where trespass did not occur on the Preserve. However, trespass from the Selva gate only occurred twice, both on a Wednesday night. Trespass from the Scenic Drive gate occurred every night of the week, except Wednesday.
- Trespass times ranged from 7:15pm to 4:00am. The time patterns are as follows, only two evenings had events after midnight: 7:14 – 7:30pm (2 occurrences); 8:00-8:30am (3 occurrences); 9:30pm (3 occurrences) 10:00pm (2 occurrences); 10:30 – 10:45 pm (3 occurrences); 11:45 pm (1 occurrence); 12:00 am (1 occurrence); 12:21 – 12:45 am (2 occurrences); 1:19 am (1 occurrence); 3:40am (1 occurrence); 4:00am (1 occurrence)
- Pulled donation box funds: $81.00 received
- Pulled wildlife camera card: Five evenings of raccoon activity were recorded. Docent Kevin Van Fleet has taken over this task at until another Preserve Manager is on-site.
- Continued coordination with City on new signs.
- Coordinated with Cecily on ideas for use of Massen Greene funds.
- Arranged for and met invertebrate experts on-site to confirm identification of ant species and look for species not previously identified on the Preserve. The following individuals came on-site: Michael Martinez (retired OC Vector Control, numerous publications on ants), Rick Vetter (arachnid specialist with UCR), and Dr. Lenny Vincent (Arachnid specialist Fullerton College)
- Met Ev Mena on-site, trained on duff/dead shrub removal for upcoming volunteer event.
- Conducted two volunteer events:
  - November 8, 2014: High School SOS group came and deployed over 75 sandbags on the trail with the help of Sarah Godfrey.
  - November 15, 2014: High School A.P. Science classes came and worked on duff and dead shrub removal within three separate grid cells for PPM habitat enhancement with the help of Sarah Godfrey and Ev Mena.
- Attended November 20, 2014 docent meeting with City
- Organized most materials and some responsibilities in preparation of my departure. I will continue to work on both of these items the next two weeks.

December 2014 (Interim CNLM Preserve Manager for Dana Point: S. Godfrey)

- Patrol

January 2015 (Interim CNLM Preserve Manager for Dana Point: S. Godfrey)

- Patrol
- Led high school group volunteer duff removal work day with Ranger Ev Mena

February 2015 (Interim CNLM Preserve Manager for Dana Point: S. Godfrey)

- Patrol and lock up
- Participation in SDMMP PPM workshop

March 2015 (CNLM Preserve Manager: D. Erickson)

- Met with Tom Maloney, Sean Vogt and was introduced to volunteers and interns
- Discussed trail maintenance and introduced to trail realignment project Site and trail orientation with Tom, encountered trespassers
- Counted $323 in donations and deposited to Citibank account

April 2015 (CNLM Preserve Manager: D. Erickson)

- Met with Rangers Tom and Dave onsite to review work duties, schedules, and plan future projects
- On April 15th, USFWS representative Joel Pagel banded four Peregrine Falcon chicks, two male and two female, in the nest on the cliff

May 2015 (CNLM Preserve Manager: D. Erickson)

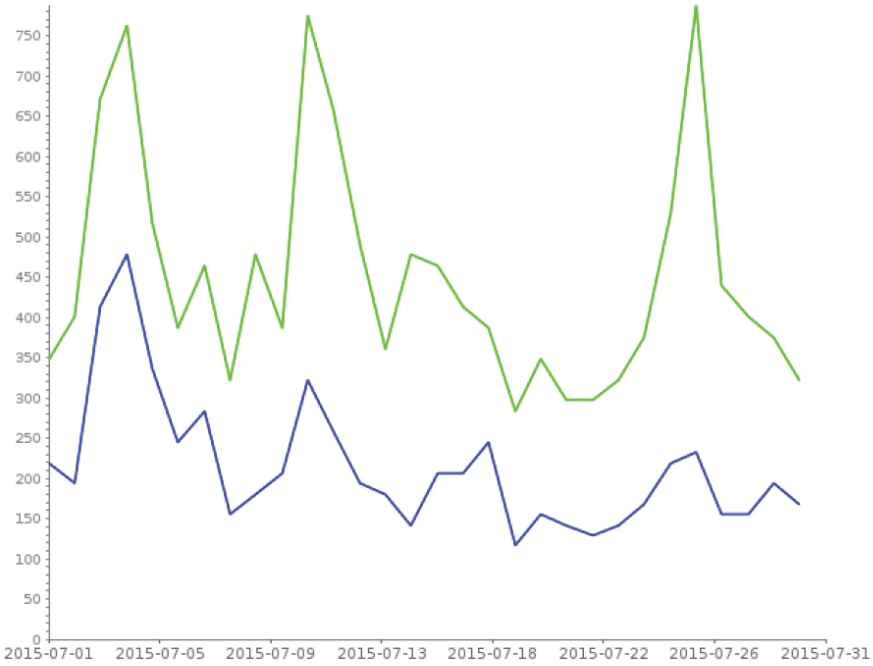
- Donations pulled on May 12th totaled $258.28
- Trail counter data collected but has yet to be analyzed
- Rangers patrolling, removing trash, maintaining trails and locking up twice per week. Rangers are approaching, collecting information, and escorting trespassers off the preserve. A recent report from David M stated that upon approaching a woman on the trail near sunset and letting her know the gate will be locked soon, she remarked that it was ok because she had used a towel to keep the gate open to prevent it from locking her in. He informed her that this could lead to a misdemeanor violation in the future.
- Changed the time on the automatic gate closure lock as necessary
- Read through past monthly reports from Lee Ann to help determine ranger schedules, surveys, invasives removal, etc
- Trail maintenance: removed graffiti from benches and two posts, replaced a broken post at Overlook and stabilized a post leaning into the trail
- Worked with condo owner to the north, Kelly Gwin, to figure out fencing situation. Currently awaiting bids from fencing contractors for the installation of 180’ of new fence
- Wrote thank you letters to supporters of our Spring Appeals
- Worked with Sean V. (City of Dana Point) and cleaned out and reorganized storage sheds
- Took photos of trail after rains and uploaded photos to Box. No trail damage from rain
- Developing plan for trail realignment through calls with D. L. Rogers and C. Clemons
- Met onsite with David Monroe for orientation, oral history of preserve, and visit to Marblehead
- CAGN survey conducted. I have completed 31 of the 40 hours necessary for a permit
- Docent Kevin Van Fleet is managing the game camera and caught a bobcat on our camera this month
- Arranged for a meeting with Will Miller (USFWS) and Sarah Godfrey on June 5th to discuss PPM monitoring and permitting for fence construction

June 2015 (CNLM Preserve Manager: D. Erickson)

- Rangers continue to patrol, remove trash, and educate the public four evenings per week
    - I locked up for the first time and will continue to lock up a couple times per month
- Continued with the fencing project along our boundary with the condos
    - Had two fencing companies (Fenceworks and La Habra Fence) come out to give bids for the installation of a new fence- I have received one bid so far.
- Read past PPM reports to determine best survey/monitoring methods
- Met with Will Miller and Sarah Godfrey to discuss fence project permitting
- Met with Sarah Godfrey onsite to discuss PPM monitoring and fence project
    - Flagged site wide and long term PPM monitoring grids to prep for track tube monitoring in late July
    - Set up track tubes and prepped for deployment
- Flagged the center point of 126 grid cells in preparation for Argentine ant survey
- Collected buckwheat and brittlebush seeds for propagation in the fall
- Read 2015-2020 management plan, PAR, and HMP
- Conducted CAGN monitoring prior to site wide flagging

July 2015 (CNLM Preserve Manager: D. Erickson)

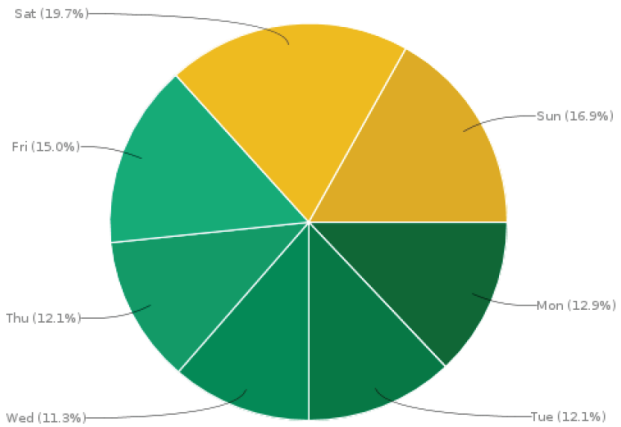
- Rangers continue to patrol, remove trash, and educate the public four evenings per week
- Continued with the fencing project along our boundary with the condos
    - Emails and calls to Will Miller (USFWS) stated that we will need a take permit if we decide to place the fence on our property
- Collected and deposited $125 in donations
- Met CNLM board members Richard Burgi and David Thoreau
    - Assisted with the creation of a CNLM promotional video
- Collected and analyzed TRAFx trail counter data, see below



Site Name	Average	Min	Max
Dana Point Preserve	458.1	296.0	788.0
Dana Strand Gate	220.5	125.0	489.0

A = adjustment applied, D = divide by 2 applied, F = filtering applied

Figure 1a



Site Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dana Point Preserve	426.0	386.3	371.4	402.2	467.8	619.5	569.0
Dana Strand Gate	195.0	196.8	172.8	180.6	253.0	325.8	241.8
Daily Averages	311	292	272	291	360	473	405

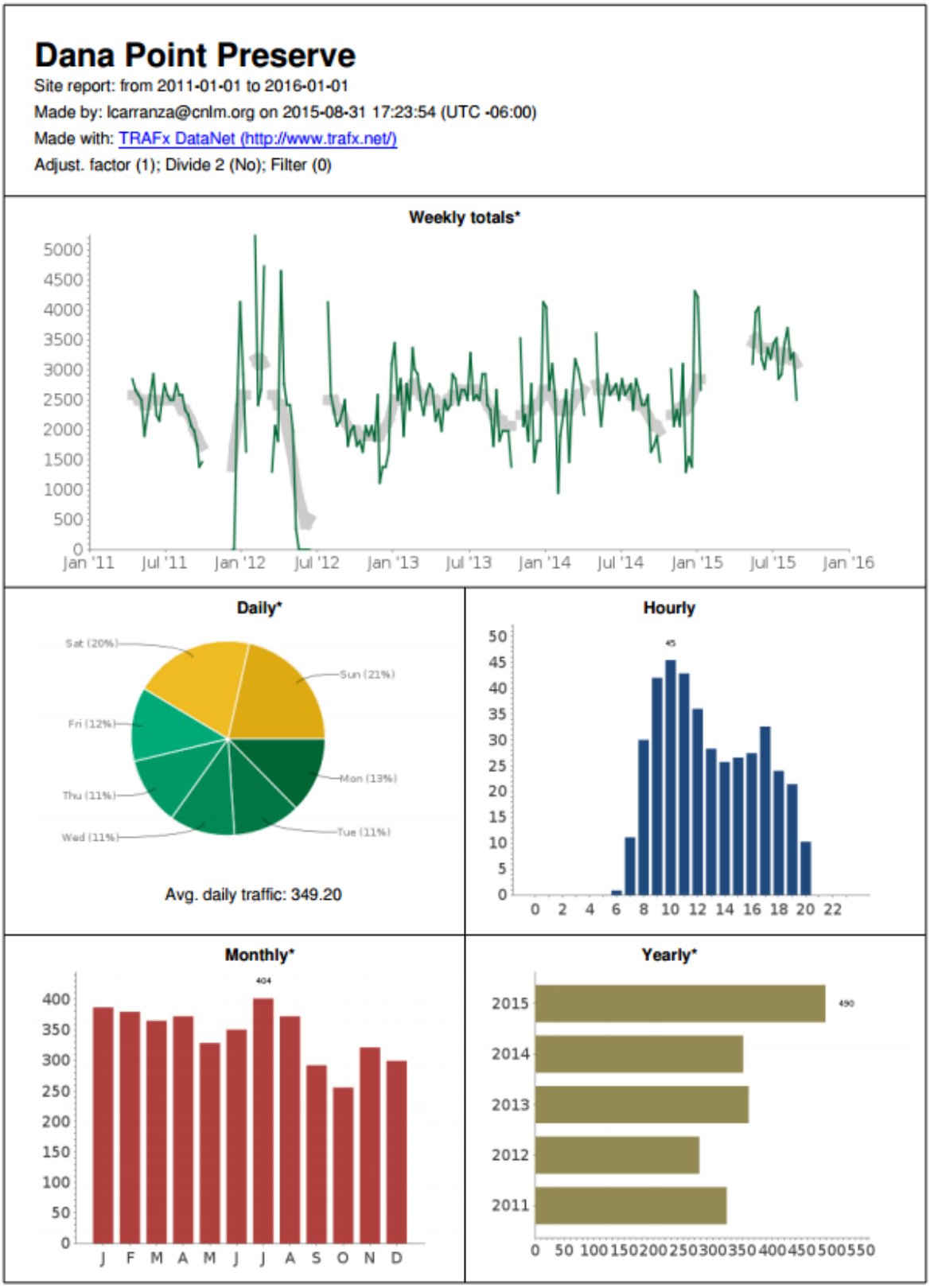
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Figure 1b

Figure 1a and 1b. TRAFx trail counter data for the Dana Point Preserve, July 2015.

August 2015 (CNLM Preserve Manager: D. Erickson)

- Rangers continued to patrol, remove trash, and educate the public four evenings per week
- Reviewed Argentine ant survey protocol and prepped for surveys
- Completed two days of Argentine ant surveys
    - Analysis of results still in processing
- Continued with the fencing project along our boundary with the condos
    - Calls with USFWS Will Miller regarding permitting
    - Calls with Deborah Rogers and David Monroe regarding how to move forward
    - Met onsite with USFWS Will Miller and neighbor Kelly Gwin
- Collected and deposited $109 in donations
- Met with Sean Vogt (City of Dana Point) to discuss and update Headlands Management Plan 2015-2020
- Collected and analyzed TRAFx trail counter data, see below an interesting analysis of the data since 2011.



* Weekly and Daily are calculated from Average Daily Traffic (ADT); Monthly and Yearly show ADT values.

Figure 2. TRAFx trail counter data for the Dana Point Preserve, 2011-2016.

September 2015 (CNLM Preserve Manager: D. Erickson)

- Rangers continue to patrol, remove trash, and educate the public two evenings per week
- Analyzed Argentine Ant data
    - Prepared a draft Argentine ant report
- Purchased and installed erosion control products
- Commenced trail maintenance
    - Repaired and stabilized a leaning post on the trail
    - Trimming vegetation overhanging trail fence
- Reviewed trail stabilization/restoration/grant information from Lee Ann's tenure
- Continued with the fencing project along our boundary with the condos
- Collected and deposited $125 in donations
- Patrolled preserve and reset Selva gate timer to close preserve at 7:05pm
- Reviewed and contacted volunteer groups for trail work
    - Working with local high schools to have a volunteer day to clear debris for PPM habitat
    - Set up a volunteer day for Saturday October 31st
- Reviewed and updated information for informational trail signs provided by the City of Dana Point
- Continued updating 2015-2020 management plan
- Closed the trail for one day on September 15th due to rain and erosion on trail
    - Photographed trail and uploaded photos to Box

CNLM ANNUAL REPORT OF MANAGEMENT ACTIVITIES
FOR THE 2015-2016 FISCAL YEAR

DANA POINT PRESERVE

Owned and Managed by CNLM (CNLM No. S033)

Prepared for:
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April 23, 2017

Table of Contents

SUMMARY of 2015-16 ACTIVITIES

- Trail base and trail fencing maintenance activities were conducted
- Vegetation communities were monitored
- Coastal California gnatcatcher (*Polioptila californica californica*) surveys were conducted
- Pacific pocket mice (*Perognathus longimembris pacificus*, PPM) were monitored using track tubes
- Potential predators to the PPM were monitored using a remote camera
- Invasive plant species were removed
- Erosion control measures were installed along the bluff edge
- Vegetation was thinned within grid cells
- The City installed interpretive panels at the overlooks
- Three part-time enforcement rangers patrolled the Preserve
- Volunteer work days were held periodically on the Preserve

I.**Error! Bookmark not defined.**INTRODUCTION

The Dana Point Preserve (Preserve) is located in the City of Dana Point (City), Orange County, California. The Preserve has been owned and managed by the Center for Natural Lands

Management (CNLM) since December 2005. The Preserve was part of the Headlands Development Project (Project), which was led by the Headlands Reserve, LLC. The Project consists of 125 residential homes, a 65-to-90 room seaside inn, and public open space. The Project was guided by the "Headlands Development and Conservation Plan" (City of Dana Point, 2002; HDCP), which was approved through the California Coastal Commission's certification of the 2004 amendments to the City's Local Coastal Program.

The Preserve consists of 29.4 acres of native coastal sage and coastal bluff scrub habitat. Another 11.5 acres of natural open space, owned and managed by the City, known as the Hilltop Park, are adjacent to the Preserve. URS Corporation prepared the Habitat Management and Monitoring Plan (HMMP) for Dana Point Headlands Biological Open Space for all preserve lands associated with the Project, including the CNLM-owned and -managed Preserve. The HMMP was reviewed by the California Coastal Commission, United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the City. However, we have no record that the final HMMP, dated April 18, 2005, was approved. Despite this uncertainty, CNLM has been managing the Dana Point Preserve according to the HMMP and will continue to do so until CNLM revises the management plan in consultation with the USFWS and CDFW (Wildlife Agencies). On January 4, 2012, CDFW responded via electronic mail message to CNLM that they are in agreement with CNLM managing the Preserve according to the HMMP until an updated Habitat Management and Monitoring Plan is prepared.

This document details the management activities which occurred during the 2016 Fiscal Year (FY) (October 2015 - September 2016). Four primary management objectives are identified in the HMMP:

1. Maintain the Preserve to permit ecological processes to function.
2. Contribute to the preservation and restoration of the endangered or threatened species and their habitats that are present on the Preserve.
3. Contribute to the preservation and restoration of non-listed sensitive species that contribute to biodiversity.
4. Develop a public awareness program that informs local residents and visitors of the sensitivity and ecological importance of the Preserve.

The specific tasks identified in the FY 2016 Annual Work Plan (CNLM 2015) to serve these objectives were to:

1. Enforce restrictions over general public access, through use of patrols, fences, and signs.
2. Monitor a subset of vegetation transects for plant community monitoring.
3. Track native and non-native predator use of the Preserve.
4. Conduct presence-absence monitoring of coastal California gnatcatcher (*Polioptila californica californica*; CAGN).
5. Monitor pacific pocket mice (*Perognathus longimembris pacificus*; PPM) using track tubes.
6. Conduct habitat maintenance activities to benefit PPM.
7. Install erosion control measures on the trail and bluff edge.
8. Remove non-native plant species opportunistically throughout the Preserve.

9. Coordinate with the City regarding adjacent land use activities.
10. Expand the GIS database as necessary.
11. Record Preserve management and monitoring activities in an annual report for the Wildlife Agencies and City.
12. Continue the public outreach program and educational opportunities within the Preserve, including collaborating with the City of Dana Point Natural Resources Protection Officer, Nature Interpretive Center (NIC) facilities, and City docents at the NIC.
13. Provide opportunities for the public to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).
14. Maintain an inventory of flora and fauna on the Preserve.
15. Maintain the public trail, trail fencing and perimeter fencing.

II. CAPITAL IMPROVEMENTS

***Task 1**: Maintain the public trail, trail fencing, and perimeter fencing*.

The trail, trail fencing, and perimeter fencing continued to require a substantial amount of CNLM staff time; however, due to the drought, the vegetation needed minimal trimming and minimal trail base maintenance was necessary.

To better armor the trail base for winter rain, approximately 100 sand bags were again installed along the trail in the most erosive areas. CNLM continued to use the same filled monofilament sandbags used last year, in addition to newly purchased bags. A group of volunteers from Habitat Works installed the sandbags that were stockpiled (empty/not full of sand) in the City Nature Interpretive Center (NIC) storage closet. Since the sandbags were empty, they were all filled with loose native sand that accumulated on the trail or above grade adjacent to the trail.

Trail fencing required some maintenance throughout the year, such as replacing post caps, tightening fence cable slack, and repairing and installing new cable.

CNLM continued a policy of closing the trail to the public during rain events and for whatever length of time required to repair the trail after such events. However, there was only one significant rain event which required closure of the trail for the entire day.

Photos 1 & 2: Monofilament Sandbags and Trail Base Erosion


Please Stay
On Trail
Habitat Restoration
In Progress

In December 2015 a new fence was installed to replace the existing chain-link fence along the north side of the Preserve, adjacent to the condominiums. Due to the recent sale of the condominiums in FY 2014, the new owners of the condominiums did not want the existing fence, stating that it was unsightly and unnecessary for their uses. CNLM was contacted by the new owners in early May of 2015 and immediately contacted USFWS for a consultation on the removal/installation of a new fence and impacts to PPM. CNLM initiated consultation with USFWS to prevent the occasion where our new neighbor would remove the fence prior to the installation of a new fence, thus leaving the Preserve vulnerable to trespass. USFWS was invited to the Preserve to make a determination on any potential negative impacts to sensitive species from tearing out the old fence and installing a new one, and visited the site in early June and again with the new condo owners in late August. While consulting with USFWS, CNLM was trying to determine who the fence belonged to and had a survey done on October 29th that determined that the fence was on the shared property boundary.

Before initiating a fencing contract, CNLM followed up with the City to determine if a building permit was required for the installation of a new fence. Because the new fence is going to match the existing 6-foot green wrought iron fencing, the City found that the project is consistent with the Headlands Development Conservation Plan (HDCP) and the Master Coastal Development Permit that was approved for the entire Headlands project and does not require a building permit.

A fencing contract with La Habra Fence was signed on November 2nd, 2015 and a representative came to the Preserve the following week to confirm length, color, and installation process of the new fence.

On November 9th, 2015, the new owners of the condos tore down the shared boundary fence without consultation or contacting CNLM. In response, CNLM staked the boundary with T-posts, posted signs, and strung "Caution" tape across the posts. This measure was the most cost effective way to prevent trespass for a few weeks until the new fence is installed. CNLM also increased Ranger patrols along the northern boundary to further prevent trespass and degradation of habitats until the new fence was installed in December.

***Task 2**: Seek additional funding through grants and donations to fund reconstruction of the public trail base*.

CNLM staff intended to continue to pursue grant opportunities, or find other outside funding sources, to complete the trail base reconstruction. The Recreational Trails Program (RTP) grant from California Department of Parks and Recreation is the most suitable grant for this project. Unfortunately, the RTP grant has not been advertised again since our application was denied in January 2013. The California Department of Parks and Recreation website stated the following as of June 16, 2016: The next RTP Non-Motorized application cycle administered by the California Department of Parks and Recreation (DPR) Office of Grants and Local Services (OGALS) has not yet been determined.

CNLM continued to collect donations via a donation box within the City of Dana Point Nature

Interpretive Center (NIC) for the trail base reconstruction. Such donations will be valuable in helping reach the match required of most grants programs.

III. BIOTIC SURVEYS

***Task 1**: Monitor rare plants.*

Rare plant monitoring was planned for this fiscal year, however, this activity was cancelled due to drought conditions and the relatively few annuals observed on the Preserve.

Note that the HMMP recommends that annuals and herbaceous perennials be monitored during the spring season after the area experiences an annual rainy season that exceeds 75-90 percent of the long-term average annual precipitation to allow for an unbiased assessment of the population status under comparable weather conditions between more intense monitoring years. Rainfall was again below average in Dana Point for FY 2016. According to the closest weather station at Dana Strands Beach (www.weatherunderground.com), the annual precipitation for FY 2016 (October 1, 2015 to September 30, 2016) was 4.43 inches. This is 36 percent of normal (approximately 12.4 inches of rain annually) for Dana Point. This is the second lowest amount of rainfall recorded since CNLM began management of the site.

***Task 2**: Monitor a subset of vegetation transects for plant community monitoring.*

In 2006, CNLM began a long-term coastal sage scrub monitoring program at the Preserve. The purpose of the monitoring effort was to examine how changes in coastal sage scrub habitat over time may affect changes in the populations of sensitive species, such as the PPM or the CAGN. Initially, only shrub cover was measured with the rational being that the dominant characteristic of coastal sage scrub habitat is cover of shrubs. In 2009, measurements of herbaceous plant and ground cover (defined as either "litter" or "bare") were added to gain more information to better understand changes in the entire coastal sage scrub plant community for both CAGN and PPM. Bare ground, forb and grass are essential components of PPM habitat; thus, measuring ground cover and herbaceous cover will provide an indication of changes in coastal sage scrub as it relates to PPM habitat.

In 2006, five 25-meter long point-intercept transects were installed at random locations throughout the portion of the Preserve located south of the former Marguerita Road (Appendix A). At the time of the transect installation, restoration activities were still ongoing on the former Marguerita Road and north of the road; thus, this area was not sampled. In 2012 the former Marguerita Road and north of the road was available for sampling and results of the 2012 PPM monitoring efforts revealed PPM use of these areas. Thus, the Preserve Manager was interested in including this area in the long-term coastal sage scrub monitoring program.

The total number of transects employed was determined using a power analysis of 2006 and 2009 data (SAS Institute, Inc., Version 9.3). The results indicated that if the number of transects was increased to 20, 36 percent of the 55 potential outcomes (11 times 5 transects) would have sufficient

power. Thus, the Preserve Manager increased the sample size to 20 transects. This will require sampling 10 transects every three years because of retaining the original 5 transects from 2006. Thus, every three years a total of 20 transects will be available for analysis and 5 of the new transects will be sampled every year to address annual variation.

A random numbers table was used to select 15 PPM grid cells. The transects were set from the southeast corner to the northwest corner of each grid cell so that the transect is perpendicular to the slope of the land.

The original five baseline transects that were sampled in 2006, 2009, and 2012 were sampled on May 24, 2016. The same 25-meter long point-intercept transect methodology was used where all plant species that intercepted the vertical point extending above and below were recorded every half-meter for a total of 50 points. Any dead shrubs intercepting transect points were also recorded as "Dead". Shrubs were considered dead if they had no foliage and no living green tissue. Ground cover was recorded at every point and identified as either "litter" or "bare" for simplicity.

The data were analyzed for comparison between years of functional groups and species composition.

The mean percent cover across the five transects was 24.3% for shrubs. This value is below the average range across different transects in previous years, 41% (2009) to 77.2% (2006). The timing of these surveys has ranged across the years from May through June. Dead shrubs were 33.2% in 2016, which is higher than previous years which resulted between 13.0% and 24.8%. The mean percent cover of "Live" vegetation (includes "shrubs" and "sub-shrubs") was 21.5% in 2016, which was again below the previously recorded range of cover for "Live" from other transects (51% to 86.4%).

Species of Shrubs: Four different species of shrubs and sub-shrubs were encountered on the transects. The most abundant shrub species encountered on transects were *Artemisia californica* (mean=16%), *Encelia californica* (mean= 10.6%), and *Eriogonum fasciculatum* ssp. *fasciculatum* (mean=9.5%). *Artemisia californica* was again the only shrub or subshrub species found on all five transects.

Functional Groups of Herbaceous Plants. A low count of the herbaceous plants on the transects were actually non-native grass cover with a mean percent total of 4%. Native forbs were the only other functional group of herbaceous plants recorded with a mean percent cover of 3%.

Species of forbs. The most abundant species encountered on transects was *Croton californicus* (mean=3%) and it was found on only two of the five transects. No one herbaceous plant species was found on all five transects. Non-native grasses occurred on one of the five transects.

Ground Cover. During 2016, average cover of litter was 32.4% and bare ground was 22% cover. The mean cover of bare ground was similar to means calculated for 2009 and 2013.

The Preserve is in relatively poor condition regarding shrub cover. Herbaceous species diversity

was low, but this is most likely due to the fifth year of low rainfall. Again, no non-native shrubs or forbs were recorded on the transects. The abundance and distribution of non-native plants was solely from the non-native grass. The mean percent cover of dead shrubs has increased, as has the amount of open ground. However, this is a product of the drought and the dead shrubs remaining in place from the die-off of many of the shrubs identified in 2009 (the majority of those being *A. californica* and *L. scoparius*).

It continues to be recommended that future monitoring occur when most forbs are identifiable. This is typically possible even late in the season due to remaining desiccated plant structure.

***Task 3**: Conduct presence-absence monitoring of coastal California gnatcatcher.*

All suitable gnatcatcher habitat was surveyed by Mr. Dave Erickson for presence/absence activity throughout the entire 29.4 acres according to the USFWS protocol and permit conditions (TE-221411-3.2). Mr. Erickson walked slowly through habitat, stopping at intervals to play recorded CAGN vocalizations for several seconds, and waiting several minutes for response. At least three passes were conducted in areas where gnatcatchers were not documented. Areas where CAGN was identified but not confirmed as a pair were revisited at least three times in an attempt to identify quantity, sex, and breeding status of CAGN. All areas resurveyed were conducted at least seven days from the last visit to the same area. All CAGN locations were mapped using a GPS.

The Preserve was surveyed by Mr. Erickson nine times from March through May (Table 1). A total of nine observations were documented during the 2016 CAGN breeding season. All of the observations were documented as breeding pairs. Based on these surveys, the CAGN breeding population is estimated to be at least six breeding pairs.

Table 1: S033 Dana Point Preserve CAGN 2016 Survey Data Summary

Date	Time	Weather Conditions
11-March-16	**700 – 1025**	**60-70% cloud cover, wind 2-10 mph, 56-60°F**
18-March-16	**800 – 1130**	**0-20% cloud cover, wind 1-8 mph, 59-61°F**
25-March-16	**800 – 1130**	**0-10% cloud cover, wind 3-5 mph, 57-65°F**
1-April-16	**720 – 1030**	**50-65% cloud cover, wind 9-10 mph, 55-63°F**
13-April-16	**900 – 1130**	**50-90% cloud cover, wind 7-10 mph, 60- 62°F**
22-April-16	**830 – 1030**	**70-80% cloud cover, wind 5-7 mph, 61-63°F**
6-May-16	**1100 – 1230**	**95-100% cloud cover (rain), wind 13 mph, 57°F**
10-May-16	**940 – 1045**	**100% cloud cover, wind 4-8 mph, 62°F**
20-May-16	**800 – 1115**	**95-100% cloud cover, wind 10-12 mph, 57-61°F**

Potential impacts to the resident pairs continue due to indirect effects from people on the trail, a potential increase in predators due to increased human use of the area, and direct impacts to nesting birds from trail users who do not follow the rules and either go off-trail on foot or bring their dog(s) on the Preserve. A continued presence by the Preserve Manager, Ranger, and City of Dana Point employees and docents is utilized to ensure people follow the trail rules as much as possible.

***Task 4**: Track native and non-native predator use of the Preserve.*

Predator monitoring activities included scat and print identification and the continued use of one infrared camera (Bushnell Scout®) located generally within the center of the Preserve (Same location as 2013). The camera was deployed in the same location throughout FY 2016.

The bobcat, coyote, raccoon, and skunk remained detected by the wildlife camera throughout the year (Table 2). The long-tailed weasel, domestic dog, burrowing owl, and common poorwill were not recorded on the wildlife camera in FY 2016. However, both a domestic cat and trespassers were captured by the wildlife cameras in FY 2016.

Table 2: Species Documented by Wildlife Camera

	Common Name	Latin Name	Mode of Detection	Date Recorded
1	Raccoon	*Procyon lotor*	Wildlife Camera and Prints	On-site since 02-08-08
2	Skunk	*Mephitis mephitis*	Wildlife Camera and Prints	On-site since 05-02-08
3	Domestic dog	*Canis familiaris*	Wildlife Camera	Not recorded since 10-15-10
4	Grey Fox	*Urocyon cinereoargenteus*	Wildlife Camera and Scat	Not recorded since 11-20-14
5	Long-tailed weasel	*Mustela frenata*	Photo by volunteer taken May 2010	Not observed on-site in FY 2012, 2013, 2014, 2016
6	Coyote	*Canis latrans*	Wildlife Camera, Scat, and Prints	On-site since 5-28-08

	Common Name	Latin Name	Mode of Detection	Date Recorded
7	Bobcat	*Lynx rufus*	Observed, Wildlife Camera, Scat and Prints	On-site since 4-5-11
8	Burrowing Owl	*Athene cunicularia*	Observed	Not recorded since December 2012
9	Common Poorwill	*Phalaenoptilus nattallii*	Observed, but not on Wildlife Camera	Not recorded since 11-26-12
10	Opossum	*Didelphis virginiana*	Wildlife Camera	On-site since 11-30-12
11	Domestic cat	*Felis catus*	Wildlife camera	Recorded 4/08/16

Photo 3: Domestic Cat (wildlife camera 4/08/16)

Photo 4: Trespassers (wildlife camera 4/08/16)

***Task 5**: Monitor Pacific pocket mice using track tubes.*

Site-wide Survey.
The same-sized grid cells previously chosen as the basis for habitat use monitoring (24 meters x 24 meters) in 2008-2009 and 2011-2014 were used along with the expanded sample frame provided by USFWS in 2011 to include the former Marguerita Roadbed and restored habitat to the north. This resulted in a total of 130 grid cells within the Preserve available to sample with track tubes.

To repeat sampling methods used in 2014, the entire Preserve was sampled with one track tube located at the center of each grid cell. A total of 124 track tubes were deployed in 2014; however, in 2016 areas along the cliff were included in the study for a total of 130 track tubes. The track tubes were deployed for over a month, from April 8 to May 10, 2016.

On April 8, 2016, 130 track tubes were deployed in the field by CNLM Preserve Manager, Dave Erickson, the City of Dana Point Natural Resources Officer, Sean Vogt, and two volunteers under direct supervision of Mr. Erickson and Mr. Vogt. Mr. Erickson and Mr. Vogt are authorized to conduct PPM track tube monitoring as authorized individuals under Cheryl Brehme's (United States Geological Survey) 10(a)(1)(A) permit TE-045994-17.2. Each track tube was set in the nearest suitable location within 1 meter of the flagged GPS position of the center point of each grid cell. The bait used was 100 percent millet that was treated in a microwave for two minutes prior to use to

render the seed unviable. The track cards were reset every two weeks by Dave Erickson for a total of two data sets. The track tubes were removed at the conclusion of the survey on May 10, 2016. The track cards were removed from each track tube and labeled on the back with the date and the unique grid cell location. Track cards were reviewed for PPM prints by Dave Erickson and then the track cards were reviewed and verified by USGS.

On May 9 and 10, 2016 photos were taken of each of the grid cells. They were taken with a hand held digital camera from above the grid cell with the track tube location in the center of the photos far enough away to maximize the amount of the grid cell within the photo.

Pacific Pocket Mouse Results

The weather during the monitoring period was hotter and drier than the previous survey in 2014. The temperatures ranged from a low of 48 to a high of 87 degrees Fahrenheit (70.5 F average). There were weather events on April 10, and May 5, 6, 2016. Although only 0.14 of precipitation was recorded on April 10, the rain occurred all at once with a sideways driving wind. This resulted in some of the track plates getting wet and some with small ink spots created by blowing sand. There were two foggy drizzle mornings on May 5 and 6, 2016 that resulted in 0.02 inch of precipitation.

The moon phase during the sampling period began with a waxing crescent moon (2% visibility) on April 8, 2016, a first quarter moon (53% visibility) on April 14, 2016, a full moon (100% visibility) on April 22, 2016, a last quarter moon (46% visibility) on April 30, 2016, and a new moon (0% visibility) on May 6, 2016. The moon phase at the end of the study on May 10, 2016 was a waxing crescent moon (18% visibility).

A total of 151 track cards were identified with PPM prints with a range of 72 to 79 per sampling period (Figure 2). Tracks of other non-target species were not counted, but evidence suggested the presence of the harvest mouse (*Reithrodontomys megalotis*: REME) and deer mouse (*Peromyscus maniculatus*; PEMA) on the Preserve.

PPM prints were identified at least once within 92 of the 130 grid cells. To estimate percent habitat used by PPM, the data for each grid cell was reviewed for PPM presence. PPM were considered present within a grid cell if at least one of the two track cards for that grid cell had a medium or high confidence PPM occurrence. Thirty-three of the 130 grid cells did not have PPM tracks on track cards, and are considered unoccupied by PPM. A preliminary occupancy estimate would be 71% (92/130) of the Preserve is occupied by PPM (Table 3).

Table 3. Results Table (Site-wide Survey)

	24-m x 24-m Cells with PPM			
	High-Confidence	Medium-Confidence	Grid Cells without PPM	Total Grids with PPM
1 track tube in center of 130 grid cells	58 (75.2%)	34	33	92 (70.7%)

Track tube surveys cannot provide estimates of individual PPM; however, using track tubes to monitor PPM on the Preserve provides management a low stress, non-invasive way of estimating PPM habitat use.

Pacific Pocket Mouse Recommendations

The number of grid cells with a PPM occurrence in 2016 was less than the number of grid cells with PPM in 2014. If the average PPM use area is less than 24 meters, each track tube with PPM presence recorded could be assumed to represent a unique individual. This would result in a number of unique individual PPM between 34 and 92 individuals. However, each track tube could conversely represent more than one PPM. It is impossible to confirm with the data available whether the lower number grid cells with PPM occurrences are a result of a decreased population size. However, it at least suggests 70 percent of the Preserve is suitable for use by PPM.

This is the fifth year of significant drought conditions and substantially reduced forb and grass cover. If food is scarce due to the drought, the decreased number of track cards and grid cells with PPM may represent a decrease in population, due to less food availability in their range. It may also be that PPM have learned that seed can be found within the track tubes and are actively pursuing the track tubes or are at least visiting adjacent track tubes frequently.

It is recommended that monitoring PPM with track tubes continue in 2018 using the same methodology as used in 2014 and 2016. In 2018, it is recommended to reduce the amount of track tubes to 126, since the extra track tubes on the bluff edge did not reveal any PPM occupancy. It is also recommended that a systematic repeatable photo documentation method be developed that could be used to document change of conditions over time at the grid cell level.

Meetings. The Preserve Manager participated in one meeting organized by the USFWS, on December 16, 2015 to share information on PPM management, research and recovery.

Task 6: *Conduct ant surveys on the Preserve.*

Argentine ant (*Linepithema humile*) surveys were not done on the Preserve in FY 2016. They are planned to be done in FY 2017.

Task 7*: Maintain an inventory of flora and fauna on the Preserve.*

All newly recognized flora and fauna were recorded. A list of vascular plants documented on the Preserve is provided in Appendix D. No new plant species were added to the Preserve list in FY2016. The total taxa remains at 165 with 104 native and 61 non-native.

A list of all animal species known to occur or have occurred on the Preserve to date is provided in Appendix E. The list of animals on the Preserve is now 26 invertebrates, 113 birds, 11 amphibians and reptiles, and 20 mammals recorded on-site.

The pair of peregrine falcons previously documented using the Preserve were observed again during nesting season. Volunteers Nancee Wells, DeeDee McGann-Gollwitzer monitored the pair during

the 2016 nesting season. However, Dr. Joel Pagel, raptor ecologist with the Carlsbad Fish and Wildlife Office, did not tag the chicks during FY 2016.

IV. HABITAT MAINTENANCE AND RESTORATION

***Task 1**: Remove non-native plant species opportunistically throughout the Preserve*.

CNLM staff treated and removed exotic plant species in FY 2016. The following species again were opportunistically removed from the Preserve; however, in lesser number due to the lack of rainfall: short-pod mustard (*Hirschfeldia incana*), bridal creeper (*Asparagus asparagoides*), tocalote (*Centaurea melitensis*), short-fruited filaree (*Erodium brachycarpum*), red-stemmed filaree (*Erodium cicutariu*), Russian thistle (*Salsola tragus*), Perez's sea lavender (*Limonium perezii*), and scarlet pimpernel (*Anagallis arvensis*).

Non-native species removed on the bluff edge included: Perez's sea lavender, Scarlet pimpernel, Russian thistle, Crystal iceplant (*Mesembryanthemum crystallinum*), and Sahara mustard (*Brassica tournefortii*).

As noted above, bridal creeper was again observed on-site in FY 2016, although in much lower numbers than in the past due to the drought conditions. All plants were removed by hand without the use of herbicide.

***Task 3**: Install erosion control measures on the bluff edge.*

Winter rains continue to cause substantial movement of sand along the bluff edges where trespassers continue to walk and prevent vegetation from growing. Since 2011, CNLM has been using straw wattles to prevent water from flowing at high speed downhill in erosive areas and gullies on the bluff edges above rare plant populations to help prevent siltation of these areas. CNLM has also been using dead brush and duff cleared from grid cells to benefit PPM as erosion control materials in these same areas.

***Task 4:** Conduct habitat maintenance activities to benefit the Pacific pocket mouse*

As in 2015, CNLM again conducted duff removal treatment along with removal of all dead shrubs in specifically identified grid cells to benefit PPM. Leaf litter, woody debris, and other organic material collectively referred to here as duff has accumulated under the coastal sage scrub vegetation. This has led to the hypothesis that accumulated duff on the ground surface in addition to high vegetation cover is reducing the availability of bare soil, and contributing to the degradation of habitat quality for PPM.

Due to the significant number of hours required to complete dead shrub and duff removal of one 24 square meter grid cell (23 hours by one person), volunteers were recruited to complete the task. The workload associated with duff and dead shrub removal is substantial. It also requires careful action. In order to minimize the cost and risk of such activity, CNLM invited the advance placement

science students from a local high school to help remove duff and dead shrubs from the following grid cells: F3 and H11.

These two grid cells were selected based on the following criteria: 1) No grid cells that previously had duff removal treatment; 2) No grid cells on the bluff edge; 3) No grid cells in the former roadbed or north of the roadbed; and 4) No grid cells that had PPM present all years. The grid cells were treated on December 12, 2015 by the high school volunteers. Each of the high school teams of 7 to 10 people worked 4 hours on their assigned grid cell.

All of the brush and woody debris was retained on-site as erosion control at overlooks 2, 3, and 4 and along the eroding bluff edge at these overlooks.

A representative before and after photo is provided below. The duff and dead shrub removal treatment increases the amount of openness for each of these grid cells substantially. Visual estimates suggest 35 to 60% more openness after treatment.

Photo 5: Grid Cell F3 Before Treatment

Photo 6: Grid Cell F3 After Treatment

Although a positive statistically significant treatment effect on PPM has not been shown, duff and dead shrub removal have proven effective at increasing openness and not harmful to PPM. Treatment is not simple and must be done with caution. Not just the activity of picking up duff and dead shrubs, but the location, process, and manner in which the material is hauled off must be considered.

It is recommended that the removal of dead shrubs and duff at the 24 m^2 grid cell scale be continued annually within the Preserve for at least 3 grid cells a year.

It is also recommended that before and after visual estimates of percent cover be performed and photos taken for each grid cell treated.

V. PUBLIC SERVICE AND GENERAL MAINTENANCE

***Task 1**: Enforce restrictions over general public access, through use of patrols, fences and signs.*

The trail was open to the public daily from 7:00 a.m. to sunset, except when it was closed due to heavy rain and the need for trail maintenance.

The solar powered magnetic gate lock and gate closer mechanism for the Dana Strand entrance gate was operational the entire year with only one occurrence of malfunction.

Public use remained high throughout the year and slightly higher than last fiscal year. The trail counters installed on April 12, 2011, with funding through Nature Reserve of Orange County (by direction of the USFWS), remained functional. Thus, this is now the fifth fiscal year where an entire year's worth of data is available. From October 1, 2015 through September 30, 2016, there were 12 months of data recorded at the Scenic Drive Gate with 213,111 total passes (12 months of data recorded 125,786 passes total last year) and an average of 584 passes per day (last year with 12 months of data there were an average of 356 passes per day). Ten months of data was recorded on the Dana Strand gate counter with 125,783 passes total (last year 11 months of data recorded 114,196 passes total) and an average of 345 passes per day (last year 11 months of data recorded an average of 351 passes per day).

A substantial amount of variation of use occurred between the two gate entrances and among the months of the year this fiscal year. For example, December was the highest use month for the Dana Strand gate (17,360 passes), while February was the highest use month for the Scenic Drive gate (21,224 passes). Last year the highest use occurred in January and March and the year before it was April and May. The daily visits remained the highest on Saturday and Sunday and the hours of use were again highest between 8:00 and 11:00 a.m. These results are summarized by the TrafX program and graphically displayed in Appendix F.

Unwanted public use issues continue to include off-trail use, bike riding (and bike walking), smoking, people with dogs (pets), and littering (mainly cigarette butts). The number of people bringing their dogs on the trail again remained low in FY 2016 likely due to continued frequent patrol of the trail entrance and education to the public via CNLM staff, City staff and City docents. However, off-trail activities continued to persist. The most common locations of off-trail activity remained at the second and third overlooks. There was also observance (through wildlife camera) of trespass within the middle of the Preserve. Most activity is from young kids and young adults seeking a private ocean view while drinking and/or smoking. They often leave trash, and contribute to erosion, potential crushing of PPM burrows, limit the expansion of the rare plant populations, and increase risk to the Preserve from fire. Off-trail use is an even greater threat during the bird nesting season where such activity likely disrupts the peregrine falcon, the CAGN whose territories include these areas, and other nesting bird species.

Three part-time CNLM Rangers continued to patrol the Preserve in the late afternoon/evening hours before closing on school holidays and weekends. Among the CNLM and City staff, the Preserve was patrolled and locked at sunset, every evening during spring break and six nights of the week

during summer break. Even with a CNLM Ranger or staff person present on-site, some people continued to violate the rules. Trespass is evidenced not only by Rangers who catch and educate trespassers, but includes the following: 1) foot tracks observed off-trail; 2) items recovered off-trail which confirm off-trail use; 3) and violations that occurred when CNLM staff were not on-site. Although the Orange County Sherriff's Department was called on some occasions, no citations were known to be issued to trespassers on-site in FY 2016 by the Sheriff. However, CNLM worked with local DFW Game Wardens to cite trespassers. The Warden was able to cite 10 trespassers over May and June 2016. The names of trespassers encountered continues to be tracked to ensure repeat offenders are identified.

In attempt to reduce the likelihood of people going off trail at overlooks 2 and 3, dead shrubs removed from duff treated grid cells, as well as cactus pads, were placed along the edge of the fencing at the overlooks. However, it remains that the most effective means of keeping people on trail and dogs off the Preserve is by having someone present to enforce the rules (CNLM staff, CNLM Ranger, docents, and/or City staff).

The trail counter data was downloaded monthly to identify after hours use of the Preserve. However, no patterns were detected consistently. In the event the after hour trespass was a reoccurring group of individuals, CNLM partnered with the City and DFW Warden to patrol the Preserve after closing. On July 4, 2016, one CNLM ranger and DFW Warden patrolled the Preserve after hours. No afterhours trespass occurred on the Preserve that evening. It is recommended that such after hour patrol occur periodically throughout the year.

***Task 2**: Expand the GIS database as necessary.*

CNLM created GIS coverages for data collected in FY 2016.

Table 4: GIS Coverages on File

Coverage	**Source**	**Source Year**
Vegetation Transects	CNLM	2016
Northern boundary Fence line	CNLM	2015
Bridal Creeper Locations	CNLM	2016
Gnatcatcher (points, use area, nest locations)	CNLM	2016
Bridal Creeper Locations	CNLM	2013
Gnatcatcher (points, use area, nest locations)	CNLM	2013
Rare Plant Points	CNLM	2013
PPM Capture Locations for captive breeding collection	San Diego Zoo	2012
PPM 24x24 Grid extended to former Marguerita Road bed and North of the road bed	USFWS	2012
Vegetation Transects	CNLM	2012
Gnatcatcher (points, use area, nests locations)	CNLM	2012
Bridal Creeper Locations	CNLM	2012
PPM 16x16 Grid extended to former Marguerita Road bed and North of the road bed	USFWS	2011
Rare Plant Points	CNLM	2011
Gnatcatcher (points, use area, nests locations)	CNLM	2011
Location of dead PPM	CNLM	2010
Rare Plant Points	CNLM	2010
Gnatcatcher (points, use area, nests locations)	CNLM	2010
Rare Plant Points	CNLM	2009

Coverage	Source	Source Year
Gnatcatcher (points, use area, nests locations)	CNLM	2009
Veg Baseline Transect Locations	CNLM	2009
Pacific Pocket Mouse Points	USFWS	2009
Aerial Photo	Eagle Aerial	2008
Final Trail Route	CNLM	2008
Rare Plant Points	Fred Roberts	2008
PPM 16x16 Grid	USFWS	2008
Gnatcatcher (points, use area, nests locations)	CNLM	2008
Bobcat Point	CNLM	2007
Revegetation Areas & Seed mix	URS Corporation	2007
Gnatcatcher (points, use area, nests locations)	CNLM	2007
General Wildlife (whiptail and red racer)	CNLM	2007
Cliff Spurge Points	CNLM	2006
Veg Baseline Transect Locations	CNLM	2006
Aerial Photos	URS Corporation	2006 and 1991
PPM Habitat Areas	URS Corporation	
Vista Points	URS Corporation	
Pacific Pocket Mouse Points	USFWS	1993-2007
Cliff Spurge Points	URS Corporation	2007
Trail Location Options	URS Corporation	2007
Sensitive Species (Cliff spurge and Boxthorn)	URS Corporation	2006
Vegetation Communities	URS Corporation	unknown
Gnatcatcher Locations	URS Corporation	unknown
Coastal Commission ESHA Boundaries	URS Corporation	unknown
Jurisdictional Channels	URS Corporation	unknown
Open Space	URS Corporation	unknown
Headlands LLC Project Boundaries	URS Corporation	unknown
Headlands LLC Revegetation Areas	URS Corporation	unknown

Task 3: *Continue public outreach and educational opportunities within the Preserve, including collaborating with the City of Dana Point Natural Resources Protection Officer, Nature Interpretive Center (NIC) facilities, and City docents at the NIC.*

The NIC was open throughout FY 2016 from 10:00 a.m. to 4:00 p.m. Tuesday through Sunday. The Preserve Manager was available to interact with the public and answer questions while at the NIC on average one day a week. CNLM Rangers were onsite an average of two nights a week to answer questions and provide information to the public.

Task 4: *Provide opportunities for the public to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).*

Volunteer work days were again continued in FY2016. However, they were no longer organized on recurring dates, but in response to a specific need. Two volunteer events occurred throughout the fiscal year as identified in table 5 below. The number of volunteers ranged from 7 to 20 individuals.

Table 5: Volunteer Events

	Date	Event	Group	# of Volunteers
1	10-31-15	Place sandbags on trail	Habitat Works	10
2	12-12-15	Duff & dead shrub removal	Local H.S. A.P. Science	12
3	11-7-15	Duff & dead shrub removal	Local H.S. A.P. Science	12

VI. REPORTING

Task 1: *Prepare an updated Habitat Management and Monitoring Plan*

A low effect HCP draft permit application was submitted by CNLM to the USFWS in FY 2008 to address the potential for take of CAGN and pocket mice from future management actions. The process was not completed and will continue in FY 2016. CNLM is in the process of creating a new habitat management plan that addresses only the portion of land that CNLM owns and manages, and utilizes the results of the rare plant, CAGN, and small mammal surveys completed from 2008 through 2016, and addresses the inadequacies of the April 18, 2005 HMMP prepared by URS Corporation. However, the low effect HCP process and CNLM-prepared management plan may ultimately become one in the same. The HMMP will be updated in FY 2017.

Task 2: *Record Preserve management and monitoring activities in an annual report for the Wildlife Agencies and City.*

A work plan for FY 2016 (October 2015 through September 2016) was completed and provided to the USFWS, CDFW, and City on December 10, 2015 in electronic format. A Work Plan for FY 2017 (October 2016 through September 2017) was completed and will be provided to the USFWS, CDFW, and City in electronic format.

VIII. INCOME

CNLM continued to receive income in FY 2016 due to the presence of a CNLM donation box within the NIC. In order to help fund the trail base reconstruction, all funds collected in FY 2016 are earmarked for such work. A total of $1,209.32 in donations and $800.00 in trespass violations was collected in FY 2016 which brings the account total to $5,218.82.

IX. REFERENCES

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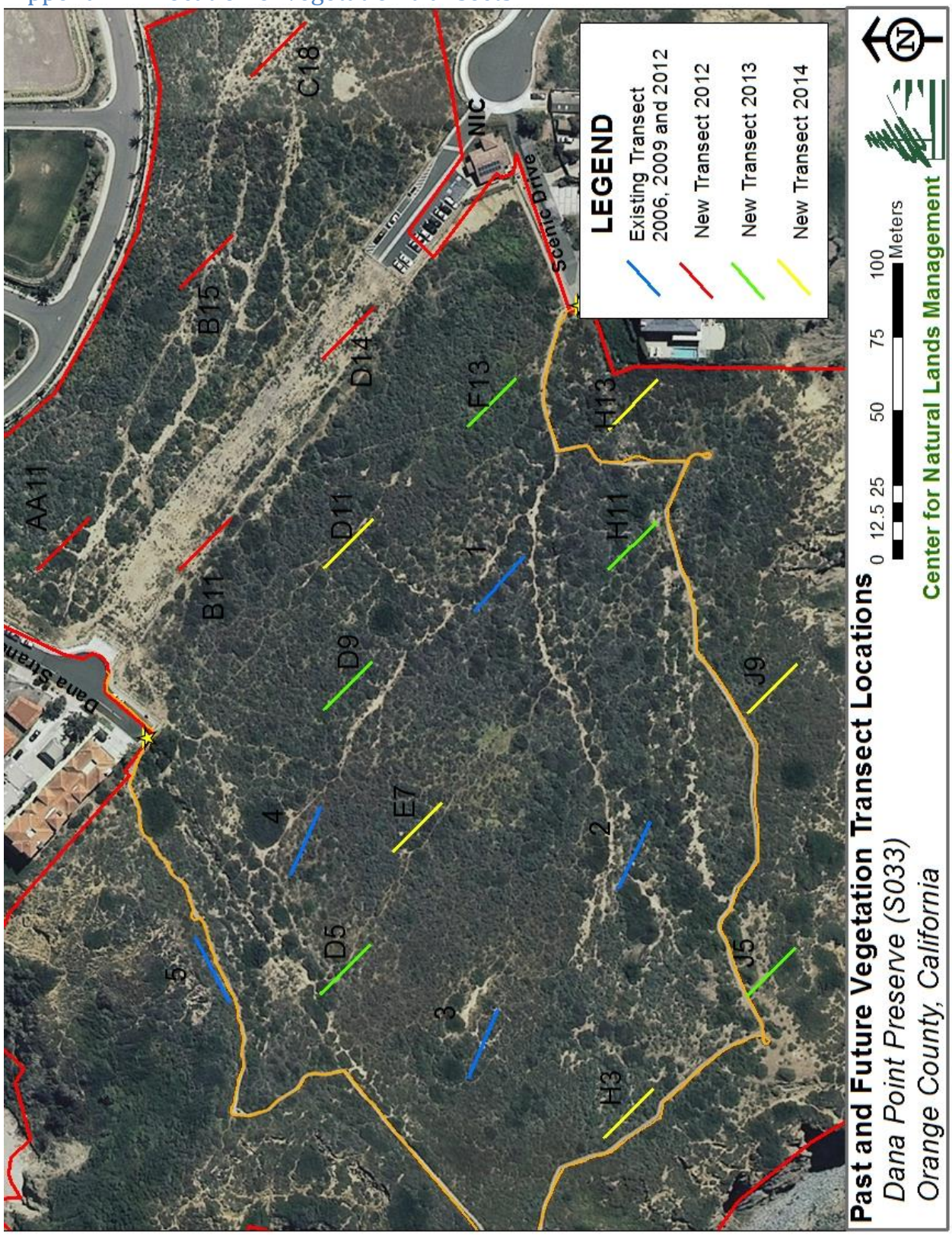
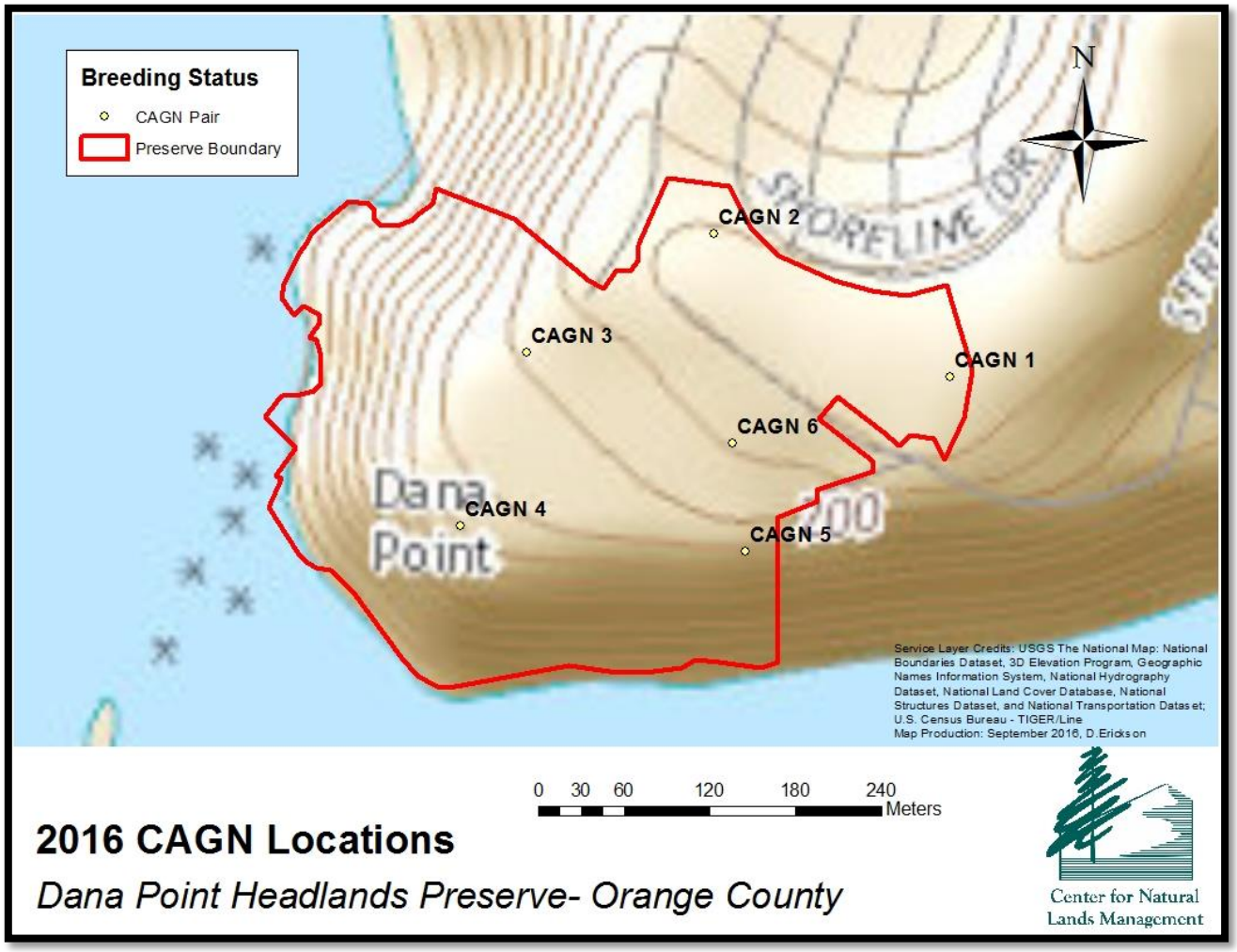
Appendix A: Location of vegetation transects



Appendix B: Coastal California gnatcatcher pairs



Appendix C: PPM presence as indicated by track tube monitoring

Appendix D: Plant Species Identified on the Dana Point Preserve

	Family	Species	Common Name	Origin
		FERNS		
1	POLYPODIACEAE	*Polypodium californicum*	California polypody	Native
2	PTERIDACEAE	*Pellaea andromedifolia*	Coffee fern	Native
3	PTERIDACEAE	*Pentagramma triangularis* subsp. *viscosa*	Silver back fern	Native
		MONOCOTS		
4	AMARYLLIDACEAE	*Narcissus sp.*	Paperwhites	Non-native
5	ARECACEAE	*Washingtonia robusta*	Mexican fan palm	Non-native
6	ASPARAGACEAE	*Asparagus officinalis* var. *officinalis* (Replaces *A. densiflorus*)	Common asparagus	Non-native
7	ASPARAGACEAE	*Asparagus asparagoides*	Bridal creeper	Non-native
8	ASPHODELACEAE	*Aloe saponaria*	Soap aloe	Non-native

9	IRIDACEAE	*Sysyrinchium bellum*	Blue eyed grass	Native
10	POACEAE	*Agrostis viridis*	Water bent grass	Non-native
11	POACEAE	*Arundo donax*	Giant reed	Non-native
12	POACEAE	*Avena fatua*	Common wild oat	Non-native
13	POACEAE	*Bromus diandrus*	Common ripgut grass	Non-native
14	POACEAE	*Bromus hordeaceus*	Soft chess	Non-native
15	POACEAE	*Bromus madritensis* subsp. *rubens*	Foxtail chess	Non-native
16	POACEAE	*Cortaderia selloana*	Sellow's pampass grass	Non-native
17	POACEAE	*Cynodon dactylon*	Bermuda grass	Non-native
18	POACEAE	*Distichlis spicata*	Salt grass	Native
19	POACEAE	*Ehrharta erecta*	Panic veldtgrass	Non-native
20	POACEAE	*Elymus condensatus*	Giant wildrye	Native
21	POACEAE	*Lamarckia aurea*	Golden top	Non-native
22	POACEAE	*Melica imperfecta*	Small flowered melic grass	Native
23	POACEAE	*Muhlenbergia microsperma*	Little-seed muhly	Native
24	POACEAE	*Parapholis incurva*	European sickle-grass	Non-native
25	POACEAE	*Schismus barbatus*	Mediterranean schismus	Non-native
26	POACEAE	*Stipa* (*Nassella*) *lepida*	Foothill needlegrass	Native
27	POACEAE	*Stipa* (*Nassella*) *pulchra*	Purple needlegrass	Native
28	POACEAE	*Festuca* (*Vulpia*) *myuros*	Rattail fescue	Non-native
29	POACEAE	*Festuca* (*Vulpia*) *octoflora*	Six-weeks fescue	Native
30	THEMIDACEAE	*Dichelostemma capitatum*	Wild hyacinth or School bells	Native
		EUDICOTS (Formerly Dicots)		
31	ADOXACEAE	*Sambucus nigra* subsp. *caerulea*	Blue elderberry	Native
32	AIZOACEAE	*Carpobrotus edulis*	Hottentot fig	Non-native
33	AIZOACEAE	*Malephora crocea*	Croceum iceplant	Non-native
34	AIZOACEAE	*Mesembryanthemum crystallinum*	Crystal iceplant	Non-native
35	AIZOACEAE	*Mesembryanthemum nodiflorum*	Small-flowered iceplant	Non-native
36	AIZOACEAE	*Tetragonia tetragonioides*	New Zealand spinach	Non-native
37	AMARANTHACEAE	*Aphanisma blitoides*	Aphanisma	Native
38	AMARANTHACEAE	*Atriplex californica*	California saltbush	Native
39	AMARANTHACEAE	*Atriplex lentiformis subsp. lentiformis*	Brewer's saltbush	Native

40	AMARANTHACEAE	*Atriplex semibaccata*	Australian saltbush	Non-native
41	AMARANTHACEAE	*Chenopodium californicum*	California goosefoot	Native
42	AMARANTHACEAE	*Chenopodium murale*	Nettle-leaved goosefoot	Non-native
43	AMARANTHACEAE	*Salsola tragus*	Russian thistle	Non-native
44	AMARANTHACEAE	*Suaeda taxifolia*	Woolly sea-blite	Native
45	ANACARDIACEAE	*Rhus integrifolia*	Lemonade berry	Native
46	APIACEAE	*Apiastrum angustifolium*	Mock parsely	Native
47	APIACEAE	*Daucus pusillus*	Rattlesnake weed	Native
48	ARALIACEAE	*Hedera helix*	English ivy	Non-native
49	ASTERACEAE	*Amblyopappus pusillus*	Coastweed	Native
50	ASTERACEAE	*Ambrosia chamissonis*	Beach bur	Native
51	ASTERACEAE	*Ambrosia psilostachya*	Western ragweed	Native
52	ASTERACEAE	*Argyranthemum foeniculatum*	Canary Island marguerite	Non-native
53	ASTERACEAE	*Artemisia californica*	Coastal sagebrush	Native
54	ASTERACEAE	*Baccharis pilularis* subsp. *consanguinea*	Coyote brush	Native
55	ASTERACEAE	*Baccharis salicifolia*	Mule fat	Native
56	ASTERACEAE	*Centaurea melitensis*	Tocalote	Non-native
57	ASTERACEAE	*Chaenactis glabriuscula* var. *glabriuscula*	Yellow pincushion	Native
58	ASTERACEAE	*Chaenactis glabriuscula* var. *orcuttiana*	Orcutt’s pincushion	Native
59	ASTERACEAE	*Chrysanthemum coronarium*	Garland crysanthemum	Non-native
60	ASTERACEAE	*Cirsium occidentale*	Cobweb thistle	Native
61	ASTERACEAE	*Conyza canadensis*	Common horseweed	Native
62	ASTERACEAE	*Conyza coulteri*	Coulter's horseweed	Native
63	ASTERACEAE	*Corethrogyne filaginifolia* var. *virgata*	Virgate sand aster	Native
64	ASTERACEAE	*Deinandra fasciculata*	Fascicled tarplant	Native
65	ASTERACEAE	*Encelia californica*	California encelia	Native
66	ASTERACEAE	*Filago californica*	California filago	Native
67	ASTERACEAE	*Filago gallica*	Narrow-leaved filago	Non-native
68	ASTERACEAE	*Heterotheca grandiflora*	Telegraph weed	Native
69	ASTERACEAE	*Hypochaeris glabra*	Smooth cat's ear	Non-native
70	ASTERACEAE	*Isocoma menziesii* var. *sedoides*	Prostrate goldenbush	Native
71	ASTERACEAE	*Isocoma menziesii* var. *vernonioides*	Coastal goldenbush	Native

72	ASTERACEAE	*Lasthenia gracilis*	Coastal goldfields	Native
73	ASTERACEAE	*Layia platyglossa*	Common tidytips	Native
74	ASTERACEAE	*Malacothrix saxatilis var. saxatilis*	Cliff malacothrix	Native
75	ASTERACEAE	*Microseris lindleyi*	Silver puffs	Native
76	ASTERACEAE	*Osmadenia tenella*	Osmadenia	Native
77	ASTERACEAE	*Osteospermum ecklonis*	Trailing african daisy	Non-native
78	ASTERACEAE	*Pseudognaphalium bioletti*	Bi-colored cudweed	Native
79	ASTERACEAE	*Pseudognaphalium californicum*	California everlasting	Native
80	ASTERACEAE	*Pseudognaphalium stramineum*	Cotton batting plant	Native
81	ASTERACEAE	*Senecio californicus*	California butterweed	Native
82	ASTERACEAE	*Senecio vulgaris*	Common groundsel	Non-native
83	ASTERACEAE	*Sonchus oleraceus*	Common sowthistle	Non-native
84	ASTERACEAE	*Stephanomeria exigua* subsp. *exigua*	Wreath plant	Native
85	ASTERACEAE	*Stylocline gnaphaloides*	Everlasting nest straw	Native
86	BORAGINACEAE	*Cryptantha clevelandii*	Cleveland's cryptantha	Native
87	BORAGINACEAE	*Cryptantha intermedia*	Common cryptantha	Native
88	BORAGINACEAE	*Echium candicans*	Pride of madera	Non-native
89	BORAGINACEAE	*Heliotropium curassavicum* subsp. *oculatum*	Salt or Alkali heliotrope	Non-native
90	BORAGINACEAE	*Phacelia distans*	Common phacelia	Native
91	BRASSICACEAE	*Brassica geniculata*	Short pod mustard	Non-native
92	BRASSICACEAE	*Brassica tournefortii*	Sahara mustard	Non-native
93	BRASSICACEAE	*Cakile maritima*	Sea rocket	Non-native
94	BRASSICACEAE	*Descurainia pinnata*	Western tansy mustard	Native
95	BRASSICACEAE	*Lepidium lasiocarpum* var. *lasiocarpum*	Sand pepper grass	Native
96	BRASSICACEAE	*Raphanus sativus*	Wild radish	Non-native
97	CACTACEAE	*Cylindropuntia prolifera*	Coastal cholla	Native
98	CACTACEAE	*Opuntia littoralis*	Coastal prickly pear	Native
99	CACTACEAE	*Opuntia xvaseyi*	Mesa prickly pear	Native
100	CACTACEAE	*Opuntia oricola*	Oracle cactus	Native
101	CLEOMACEAE	*Cleome isomeris*	Bladderpod	Native
102	CARYOPHYLLACEAE	*Cardionema ramosissimum*	Sandmat	Native
103	CARYOPHYLLACEAE	*Polycarpon tetraphyllum*	Four leaved polycarp	Non-native

104	CARYOPHYLLACEAE	*Silene antirrhina*	Snapdragon catchfly	Native
105	CARYOPHYLLACEAE	*Silene gallica*	Common catchfly	Non-native
106	CARYOPHYLLACEAE	*Stellaria media*	Common chickweed	Non-native
107	CONVOLVULACEAE	*Dichondra occidentalis*	Western dichondra	Native
108	CRASSULACEAE	*Crassula connata*	Sand pygmy stonecrop	Native
109	CRASSULACEAE	*Crassula tillaea*	Mossy pygmy stonecrop	Non-native
110	CRASSULACEAE	*Dudleya lanceolata*	Liveforever	Native
111	CRASSULACEAE	*Dudleya pulverulenta* subsp. *pulverulenta*	Chalky live-forever	Native
112	CUCURBITACEAE	*Marah macrocarpus*	Wild cucumber	Native
113	EUPHORBIACEAE	*Croton californicus*	California croton	Native
114	EUPHORBIACEAE	*Euphorbia misera*	Cliff spurge	Native
115	EUPHORBIACEAE	*Euphorbia peplus*	Petty spurge	Non-native
116	FABACEAE	*Acacia longifolia*	Sydney golden wattle	Non-native
117	FABACEAE	*Astragalus trichopodus* ssp. *lonchus*	Ocean locoweed	Native
118	FABACEAE	*Lotus scoparius* subsp. *scoparius*	Coastal deerweed	Native
119	FABACEAE	*Lotus strigosus* var. *strigosus*	Strigose lotus	Native
120	FABACEAE	*Lupinus truncatus*	Collar lupine	Native
121	FABACEAE	*Medicago polymorpha*	Bur clover	Non-native
122	FABACEAE	*Melilotus indicus*	Yellow sweet clover	Non-native
123	FAGACEAE	*Quercus dumosa*	Nuttall's scrub oak	Native
124	GERANIACEAE	*Erodium brachycarpum*	Short-fruited filaree	Non-native
125	GERANIACEAE	*Erodium cicutarium*	Red-stemmed filaree	Non-native
126	HYPERICACEAE	*Hypericum canariense*	Canary Islands St. John's wort	Non-native
127	LAMIACEAE	*Marrubium vulgare*	Horehound	Non-native
128	LAMIACEAE	*Salvia columbariae*	Chia	Native
129	MYRSINACEAE	*Anagallis arvensis*	Scarlet pimpernel	Non-native
130	NYCTAGINACEAE	*Mirabilis laevis* var. *crassifolia*	California wishbone bush	Native
131	ONAGRACEAE	*Camissonia bistorta*	California suncup	Native
132	ONAGRACEAE	*Camissonia cheiranthifolia* subsp. *suffruticosa*	Beach evening primrose	Native
133	ONAGRACEAE	*Camissonia micrantha*	Small flowered evening primrose	Native
134	OROBANCHACEAE	*Castilleja exserta* subsp. *exserta*	Purple owl's clover	Native
135	OXALIDACEAE	*Oxalis pes-caprae*	Bermuda buttercup	Non-native

136	PAPAVERACEAE	*Eschscholzia californica*	California poppy	Native
137	PAPAVERACEAE	*Platystemon californicus*	Cream cups	Native
138	PHRYMACEAE	*Mimulus aurantiacus* var. *puniceus*	Red bush monkeyflower	Native
139	PLANTAGINACEAE	*Antirrhinum nuttallianum* subsp. *subsessile*	Nuttall's snapdragon	Native
140	PLANTAGINACEAE	*Linaria canadensis* var. *texana*	Larger blue toad flax	Native
141	PLANTAGINACEAE	*Plantago erecta*	California plantain	Native
142	PLUMBAGINACEAE	*Limonium perezii*	Perez's sea lavender	Non-native
143	POLYGONACEAE	*Chorizanthe procumbens*	Prostrate spineflower	Native
144	POLYGONACEAE	*Eriogonum fasciculatum* subsp. *fasciculatum*	California buckwheat	Native
145	POLYGONACEAE	*Eriogonum parvifolium*	Bluff buckwheat	Native
146	POLYGONACEAE	*Polygonum aviculare*	Common knotweed	Non-native
147	POLYGONACEAE	*Pterostegia drymarioides*	Granny's hair net	Native
148	PORTULACACEAE	*Calandrinia ciliata*	Red maids	Native
149	PORTULACACEAE	*Calandrinia maritima*	Seaside calandrinia	Native
150	PORTULACACEAE	*Claytonia parviflora* subsp. *parviflora*	Narrow leaved miner's lettuce	Native
151	RANUNCULACEAE	*Clematis pauciflora*	Ropevine	Native
152	RANUNCULACEAE	*Delphinium parryi* subsp. *parryi*	Parry's larkspur	Native
153	ROSACEAE	*Heteromeles arbutifolia*	Toyon	Native
154	ROSACEAE	*Raphiolepis indica*	Indian hawthorn	Non-native
155	SCROPHULARIACEAE	*Myoporum laetum*	Myoporum	Non-native
156	SOLANACEAE	*Datura wrightii*	Jimson weed	Native
157	SOLANACEAE	*Lycium californicum*	California boxthorn	Native
158	SOLANACEAE	*Nicotiana clevelandii*	Cleveland's tobacco	Native
159	SOLANACEAE	*Nicotiana glauca*	Tree tobacco	Non-native
160	SOLANACEAE	*Solanum americanum*	White nightshade	Non-native
161	SOLANACEAE	*Solanum douglasii*	Doublas' nightshade	Native
162	SOLANACEAE	*Solanum umbelliferum* var. *glabrescens*	Bluewitch	Native
163	URTICACEAE	*Hesperocnide tenella*	Western nettle	Native
164	URTICACEAE	*Parietaria hesperia* var. *californica*	California Pellitory	Native
		FUNGI		
165	LYCOPERDACEAE	*Calvatia pachyderma*	Puffball mushroom	Native

Appendix E: **Animal Species Identified on the Dana Point Preserve (includes intertidal birds).**

Scientific Name	**Common Name**
INVERTEBRATES	
Order Araneae	
Family Araneidae	
Argiope argentata	Silver Argiope
Family Miturgidae	
Cheiracanthium sp.	Un-identified sac spider
Order Coleoptera	
Family Curculionidae	
Scyphophorus yuccae	Yucca weevil
Family Scarabaeidae	
Cotinus mutabilis	Green fruit beetle
Paracotalpa puncticollis	Little bear
Family Tenebrionoidea	
Eleodes acuticauda	Darkling beetle
Order Heminoptera	
Family Apidae	
Xylocopa sp.	Unidentified carpenter bee
Family Pompilidae	
Pepsis sp.	Unidentified tarantula hawk
Order Hemiptera	
Family Cercopidae	
Aphrophora sp.	Unidentified spittle bug
Family Pentatomidae	
Murgantia histrionic	Harlequin bug
Order Hymenoptera	
Family Apidae	
Apis mellifera	European honey bee
Family Formicidae	
Linepithema humile	Argentine ant
Monomorium ergatogyna	Little black ant

Pogonomyrmex sp. Unidentified species of harvester ant

Order Lepidoptera

Family Hesperiidae

Hylephila phyleus Fiery skipper

Family Lycaenidae

Leptotes marina Marine blue

Strymon melinus pudica Gray hairstreak

Family Lymantriidae

Orgyia vetusta Western tussock moth

Family Papilionidae

Papilio zelicaon Anise swallowtail

Family Pieridae

Colias eurytheme Orange sulphur

Family Riodinidae

Apodemia mormo Mormon metalmark

Apodemia virgulti Behr's metalmark

Family Saturniidae

Hemileuca electra Electra buckmoth

Order Orthoptera

Family Acrididae

Schistocerca nitens Vagrant grasshopper

Order Scorpiones

Family Scorpionidae

Anuroctonus phaiodactylus Burrowing scorpion

REPTILES AND AMPHIBIANS

Order Salientia **Frogs and Toads**

Family Hylidae

Hyla regilla Pacific treefrog

Order Squamata **Lizards and Snakes**

Family Anniellidae

Anniella stebbinsi Legless lizard

Family Anguidae

Elgaria multicarinatus	Southern alligator lizard
Family Colubridae	
Diadophis punctatus	Western ringsnake
Lampropeltis getula californiae	California kingsnake
Masticophis flagellum piceus	Red racer, Coachwhip
Pituophis catenifer annectens	San Diego gopher snake
Family Iguanidae	
Sceloporus occidentalis	Western fence lizard
Uta stansburiana	Side-blotched lizard
Family Scincidae	
Eumeces skiltonianus	Western skink
Family Teiidae	
Cnemidophorus hyperythrus	Orange-throated whiptail
Family Viperidae	
Crotalus oreganus helleri	Southern pacific rattlesnake

BIRDS

Order Anseriformes	**Ducks, Geese and Swans**
Framily Anatidae	
Branta bernicla	Brant
Order Apodiformes	**Swifts and Hummingbird**
Family Apodidae	
Aeronautes saxatalis	White-throated swift
Chaetura vauxi	Vaux's swift
Family Trochilidae	
Calypte anna	Anna's hummingbird
Calypte costae	Costa's hummingbird
Selasphorus sasin	Allen's hummingbird
Selasphorus rufus	Rufous hummingbird
Order Caprimulgiformes	**Nightjars**
Family Caprimulgidae	
Phalaenoptilus nuttallii	Common poorwill
Order Charadriiformes	**Shorebirds, Gulls, and Relatives**

Family Charadriidae

Charadrius vociferus	Killdeer
Pluvialis squatarola	Black-bellied plover

Family Haematopodidae

Haematopus bachmani	Black oystercatcher

Family Laridae

Larus heermanni	Heermann's gull
Larus delawarensis	Ring-billed gull
Larus californicus	California gull
Larus occidentalis	Western gull
Larus glaucescens	Glaucous-winged gull
Sterna caspia	Caspian tern
Thalasseus maximus	Royal tern

Family Scolopacidae

Actitis macularius	Spotted sandpiper
Arenaria melanocephala	Black turnstone
Aphriza virgata	Surfbird
Calidris alba	Sanderling
Catoptrophorus semipalmatus	Willet
Limosa fedoa	Marbled godwit
Numenius phaeopus	Whimbrel

Order Columbiformes **Pigeons and Doves**

Family Columbidae

Columba livia	Rock dove (feral pigeon)
Streptopelia decaocto	Eurasian collared dove
Zenaida asiatica	White-winged dove
Zenaida macroura	Mourning dove

Order Cuculiformes **Cuckoos**

Family Cuculidae

Geococcyx californianus	Greater roadrunner

Order Falconiformes **Vultures, Hawks, and Falcons**

Family Accipitridae

Accipiter striatus	Sharp-shinned hawk
Accipitridae cooperii	Cooper's hawk
Buteo jamaicensis	Red-tailed hawk
Circus cyaneus	Northern harrier
Elanus leucurus	White-tailed kite
Pandion haliaetus	Osprey

Family Cathartidae	
Cathartes aura	Turkey vulture
Family Falconidae	
Falco columbarius	Merlin
Falco peregrinus	Peregrine falcon
Falco sparverius	American kestrel
Order Galliformes	**Megapodes, Curassows, Pheasants, and Relatives**
Family Phasianidae	
Callipepla californica	California quail
Order Passeriformes	**Perching Birds**
Family Aegithalidae	
Psaltriparus minimus	Bushtit
Family Cardinalidae	
Cardinalis cardinalis	Northern cardinal
Pheucticus melanocephalus	Black-headed grosbeak
Piranga ludoviciana	Western tanager
Family Corvidae	
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Family Emberizidae	
Geothlypis trichas	Common yellowthroat
Pipilo erythrophthalmus	Spotted towhee
Pipilo crissalis	California towhee
Melospiza melodia	Song sparrow
Agelaius phoeniceus	Red-winged blackbird
Molothrus ater	Brown-headed cowbird
Pheucticus melanocephalus	Black-headed grosbeak
Wilsonia pusilla	Wilson's warbler
Carduelis psaltria	Lesser goldfinch
Carpodacus mexicanus	House finch
Vermivora celata	Orange-crowned warbler
Vermivora ruficapilla	Nashville warbler
Dendroica coronata	Yellow-rumped warbler
Dendroica nigrescens	Black-throated gray warbler
Dendroica townsendii	Townsend's warbler
Dendroica occidentalis	Hermit warbler
Oporornis tolmiei	MacGillivray's warbler

Spizella passerina	Chipping sparrow
Melospiza lincolnii	Lincoln's sparrow
Zonotrichia atricapilla	Golden-crowned sparrow
Zonotrichia albicollis	White-throated sparrow
Zonotrichia leucophrys	White-crowned sparrow
Sturnella neglecta	Western meadowlark
Euphagus cyanocephalus	Brewer's blackbird
Icterus bullockii	Bullock's oriole
Icterus cucullatus	Hooded oriole
Family Hirundidae	
Stelgidopteryx serripennis	Northern rough-winged swallow
Hirundo rustica	Barn swallow
Family Laniidae	
Lanius ludovicianus	Loggerhead shrike
Family Mimidae	
Mimus polyglottos	Northern mockingbird
Toxostoma redivivum	California thrasher
Family Regulidae	
Regulus calendula	Ruby-crowned kinglet
Family Sturnidae	
Sturnus vulgaris	European starling
Family Sylviidae	
Polioptila caerulea	Blue-gray gnatcatcher
Polioptila californica californica	Coastal California gnatcatcher
Family Timaliidae	
Chamaea fasciata	Wrentit
Family Troglodytidae	
Campylorhynchus brunneicapillus cousei	Coastal cactus wren (not observed since early 1990's)
Salpinctes obsoletus	Rock Wren
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	House wren
Family Turdidae	
Catharus guttatus	Hermit thrush
Sialia Mexicana	Western bluebird

Family Tyrannidae

Contopus sordidulus	Western wood peewee
Empidonax hammondii	Hammond's flycatcher
Empidonax difficilis	Pacific-slope flycatcher
Sayornis nigricans	Black pheobe
Sayornis saya	Say's phoebe
Myiarchus cinerascens	Ash-throated flycatcher
Pyrocephalus rubinus	Vermilion flycatcher
Tyrannus vociferans	Cassin's kingbird
Tyrannus verticalis	Western kingbird

Family Vireonidae

Vireo gilvus	Warbling vireo

Order Pelecaniformes **Tropicbirds, Pelicans, Herons and Relatives**

Family Ardeidae

Ardea alba	Great egret
Ardea herodias	Great blue heron
Butorides striatus	Green heron
Egretta thula	Snowy egret

Family Pelecanidae

Pelecanus erythrorhynchos	White pelican
Pelecanus occidentalis	Brown pelican

Family Phalacrocoracidae

Phalacrocorax auritus	Double-crested cormorant
Phalacrocorax pelagicus	Pelagic cormorant
Phalacrocorax penicillatus	Brandt's cormorant

Order Piciformes **Woodpeckers and Relatives**

Family Picidae

Picoides nuttallii	Nuttall's woodpecker
Colaptes auratus	Northern flicker

Order Strigiformes **Owls**

Family Strigidae

Asio flammeus	Short-eared owl
Athene cunicularia	Burrowing owl (on City Preserve)
Bubo Virginianus	Great horned owl

MAMMALS

Order Didelphimorphia	**Common Opossums**
Family Didelphidae	
Didelphis virginiana	Virginia opossum
Order Lagomorpha	**Rabbits, Hares, and Pikas**
Family Leporidae	
Sylvilagus audubonii	Desert cottontail
Sylvilagus bachmani	Brush rabbit
Order Rodentia	**Squirrels, Rats, Mice, and Relatives**
Family Sciuridae	
Spermophilus beecheyi	California ground squirrel
Family Cricetidae	
Microtus californicus	California vole
Peromyscus californicus	California mouse
Family Cricetidae Continued	
Peromyscus maniculatus	Deer mouse
Reithrodontomys megalotis	Western harvest mouse
Neotoma bryanti	Desert woodrat
Family Heteromyidae	
Perognathus longimembris pacificus	Pacific pocket mouse
Family Muridae	
Mus musculus	House mouse
Rattus norvegicus	Norway rat
Order Carnivora	**Carnivores**
Family Canidae	
Canis latrans	Coyote
Urocyon cinereoargenteus	Grey Fox
Family Felidae	
Lynx rufus	Bobcat
Family Mephitidae	
Mephitis mephitis	Striped skunk
Family Mustelidae	
Mustela frenata	Long-tailed weasel

Family Otariidae	
Zalophus californianus	California sea lion (offshore)
Family Phocidae	
Phoca vitulina	Harbor seal (offshore)
Family Procyonidae	
Procyon lotor	Raccoon

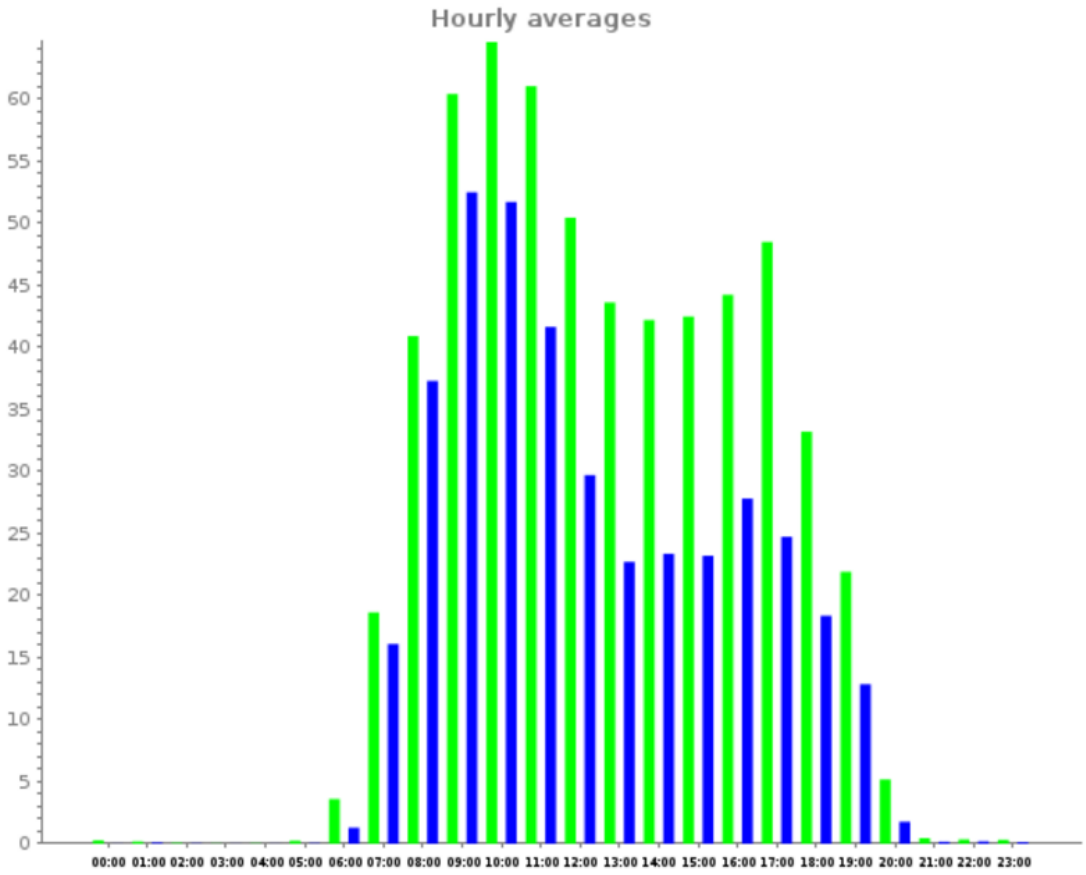
** Amphibian, reptile, bird, and mammal nomenclature follows Laudenslayer et al., 1991.

Appendix F: TRAFx Data Summary

Hours of the day

From 2015-10-01 to 2016-09-30

Report generated on 2017-03-03 by lcarranza@cnlm.org

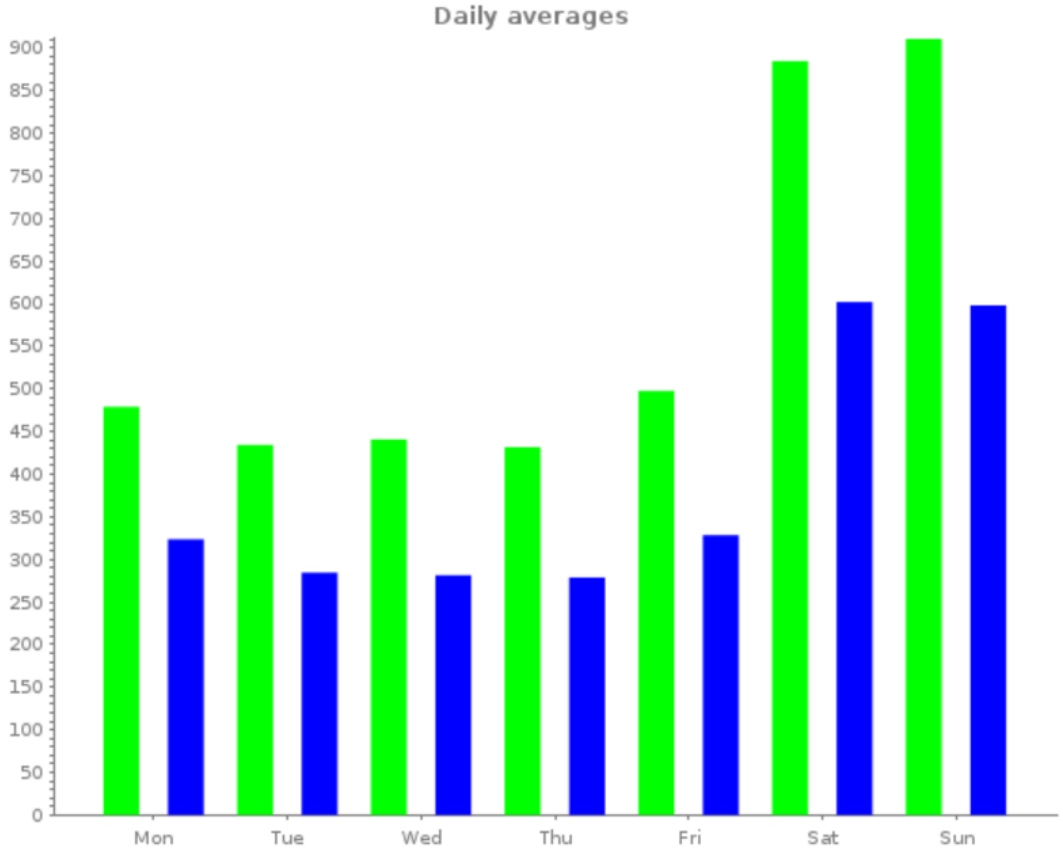


Site Name	Average	Median	STDV (σ_{pop})	Min	Max
Dana Point Preserve	24.3	20.3	23.6	0.0	64.6
Dana Strand Gate	16.1	14.5	17.1	0.0	52.5

Days of the week

From 2015-10-01 to 2016-09-30

Report generated on 2017-03-03 by lcarranza@cnlm.org

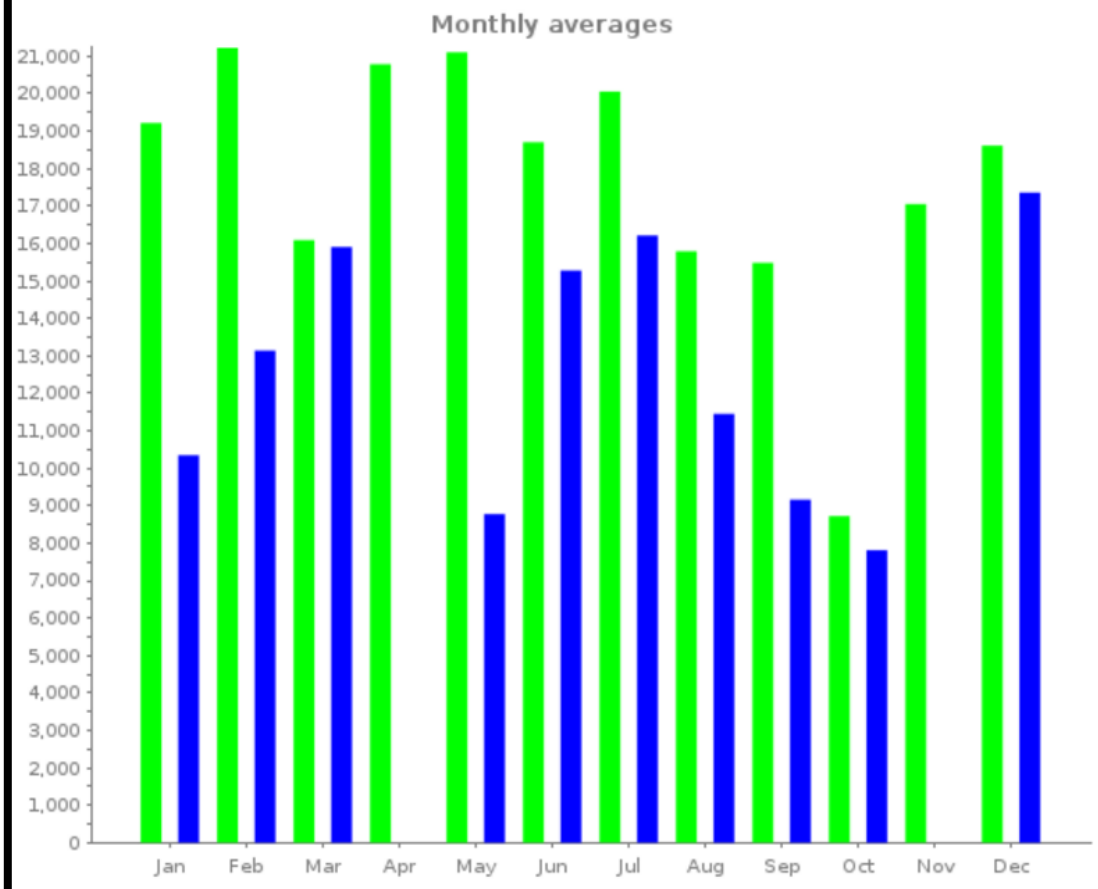


Site Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dana Point Preserve	479.0	434.3	440.6	431.5	497.7	884.6	910.7
Dana Strand Gate	323.5	284.3	281.3	278.7	328.3	601.9	598.0
Daily averages	401.2	359.3	361.0	355.1	413.0	743.2	754.3

Months of the year

From 2015-10-01 to 2016-09-30

Report generated on 2017-03-03 by lcarranza@cnlm.org



Site Name	Average	Median	STDV (σpop)	Min	Max
Dana Point Preserve	17,737.3	18,658.5	3,359.1	8,720.7	21,224.0
Dana Strand Gate	12,544.2	12,296.3	3,314.7	7,809.9	17,360.0

CNLM

Dave Erickson <derickson@cnlm.org>

CNLM Dana Point Preserve Annual Report

1 message

Dave Erickson <derickson@cnlm.org> Sun, Apr 23, 2017 at 4:37 PM
To: Jonathan Snyder <jonathan_d_snyder@fws.gov>, "Beck, Christine@Wildlife" <Christine.beck@wildlife.ca.gov>, JEFF ROSALER <JROSALER@danapoint.org>
Cc: Deborah Rogers <drogers@cnlm.org>

Good afternoon

Attached is the annual report for the CNLM Dana Point Preserve for FY 2015-2016. Please let me know if you have any questions.

Thank you
Dave

Dave Erickson
Preserve Manager
Center for Natural Lands Management
Phone 760-731-7790 ext. 204
Cell Ph 949-218-1145

S033_AR_2015-16_Final.pdf
2516K

CNLM ANNUAL REPORT OF MANAGEMENT ACTIVITIES FOR THE 2016-2017 FISCAL YEAR

(October 1, 2016 – September 30, 2017)

DANA POINT PRESERVE

Owned and Managed by CNLM (CNLM No. S033)

Provided to:
U.S. Fish and Wildlife Service
Jonathan Snyder, jonathan_d_snyder@fws.gov,
California Department of Fish and Wildlife
Kyle Rice, Kyle.rice@wildlife.ca.gov
&
City of Dana Point
Jeff Rosaler, JRosaler@danapoint.org

Prepared by: Korie C. Merrill, M.S.; Preserve Manager, kmerrill@cnlm.org
With input from: Dave Erickson, M.S.; (former Preserve Manager)
Reviewed by: Cathy Little, M.S.; Regional Preserve Manager
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9 May 2018

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SUMMARY of 2016-17 ACTIVITIES

- Trail base and trail fencing maintenance activities were conducted
- Coastal California gnatcatcher (*Polioptila californica californica*) surveys were conducted
- Pacific pocket mice (*Perognathus longimembris pacificus*) were monitored using traps
- Argentine ant (*Linepithema humile*) surveys were conducted
- Invasive plant species removal was conducted
- Erosion control measures were implemented along the bluff edge
- Vegetation was thinned selectively
- CNLM rangers patrolled the Preserve
- Visitors were provided with information about the Preserve
- A rare plant survey was conducted
- A new Preserve Manager was hired
- Communications and coordination with the City of Dana Point continued

I. INTRODUCTION

The Dana Point Preserve (Preserve) is located in the City of Dana Point (City), Orange County, California. The Preserve has been owned and managed by the Center for Natural Lands Management (CNLM) since December 2005. The Preserve was part of the Headlands Development Project (Project), which was led by the Headlands Reserve, LLC. The Project is planned for 125 residential homes, a 65-to-90 room seaside inn, and public open space. The Project was guided by the "Headlands Development and Conservation Plan" (City of Dana Point, 2002; HDCP), which was approved through the California Coastal Commission's certification of the 2004 amendments to the City's Local Coastal Program.

The Preserve consists of 29.4 acres of native coastal sage and coastal bluff scrub habitat. Another 11.5 acres of natural open space owned and managed by the City, known as the Hilltop Park, are adjacent to the Preserve. URS Corporation prepared the Habitat Management and Monitoring Plan (HMMP) for Dana Point Headlands Biological Open Space for all preserve lands associated with the Project, including the CNLM-owned and -managed Preserve (URS 2005). The HMMP was reviewed by the California Coastal Commission, United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the City. However, we have no record that the final HMMP, dated April 18, 2005, was approved. Despite this uncertainty, CNLM has been managing the Dana Point Preserve according to the HMMP and will continue to do so until CNLM revises the management plan in consultation with the USFWS and CDFW (Wildlife Agencies) and other information sources. On January 4, 2012, CDFW responded via electronic mail message to CNLM that they are in agreement with CNLM managing the Preserve according to the HMMP until an updated Habitat Management and Monitoring Plan is prepared.

This document details the management activities which occurred during the 2017 Fiscal Year (FY) (October 1, 2016 - September 30, 2017). Four primary management objectives are identified in the HMMP:

1. Maintain the Preserve to permit ecological processes to function.
2. Contribute to the preservation and restoration of the endangered or threatened species and their habitats that are present on the Preserve.
3. Contribute to the preservation and restoration of non-listed sensitive species that contribute to biodiversity.
4. Develop a public awareness program that informs local residents and visitors of the sensitivity and ecological importance of the Preserve.

The tasks identified in the FY 2017 Annual Work Plan (CNLM 2017a) to serve these objectives were to:

- Enforce restrictions over general public access, through use of patrols and maintenance of trails, fences and signs.
- Initiate updates to the HMMP.
- Monitor rare plants.
- Monitor a subset of vegetation transects for plant community monitoring.
- Track native and non-native predator use of the Preserve.
- Conduct presence-absence monitoring of coastal California gnatcatcher (.
- Monitor pacific pocket mice using track tubes or trapping.
- Conduct habitat maintenance activities to benefit PPM and CAGN.
- Install erosion control measures on the trail and bluff edge.
- Remove non-native plant species opportunistically throughout the Preserve.
- Continue the public outreach program, installation of interpretive signs, and educational opportunities within the Preserve, including collaborating with the City of Dana Point Natural Resources Protection Officer, Nature Interpretive Center (NIC) facilities, the City docents at the NIC, and the non-profit Friends of the Headlands.
- Provide opportunities for the public, as appropriate, to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).
- Coordinate with the City regarding adjacent land use activities.
- Expand the GIS database as necessary and maintain all data.
- Record Preserve management and monitoring activities in an annual report and distribute to the Wildlife Agencies and City.
- Seek additional funding through grants and donations to fund reconstruction of the public trail.
- Participate in professional events and communities that aim to increase and share science-based knowledge regarding PPM and CAGN, in particular.

II. CAPITAL IMPROVEMENTS

Enforce restrictions over general public access through use of patrols and maintenance of trails, fences and signs

Dana Point Preserve continues to be a regional attraction in Southern California, with high daily visitation rates for recreational use by both local residents and tourists. Although the exact number of visitors is unknown, the trail is used relentlessly throughout the year. Thus, the public trail, trail fencing, and perimeter fencing continued to require a substantial amount of CNLM staff time for maintenance throughout the year, such as replacing post caps, tightening fence cable slack, and installing new cable.

Cable fence repairs were conducted throughout the year as needed by CNLM staff. At the City of Dana Point Nature Interpretive Center (NIC) parking lot, 50 rusted picket extensions of the existing fence were repaired and painted. Along the trail, four damaged pipe rail caps were replaced.

To better shield the trail base for winter rain, sand bags were again installed along the trail in the most erosive areas. CNLM continued to use the same filled monofilament sandbags used last year, in addition to newly purchased bags. Sandbags were all filled with loose native sand that accumulated on the trail or above grade adjacent to the trail. CNLM continued a policy of closing the trail to the public during rain events and for whatever length of time was required to repair the trail after such events. This year, two significant rain events required closure of the trail for three consecutive days per rain event, totaling six days when the trail was closed to the public.

Seek additional funding through grants and donations to fund reconstruction of the public trail

CNLM continued to receive donations via a donation box within the City of Dana Point's Nature Interpretive Center (NIC) for a trail reconstruction project. In late August, 2017, the donation box temporarily was removed, at the request of the City of Dana Point, pending provision of information regarding CNLM's protocols for donation management and also because of concern of the donation box being removed or stolen since it was not securely stationed in the NIC. It was intended that the box would be reinstated in the NIC once these matters were addressed. CNLM provided information to the City regarding the purpose, protocols, and financial management practices for donations received at the NIC (September 6, 2017; September 18, 2017). CNLM staff appreciated the City's due diligence and professionalism in ensuring that public donations were managed properly and that such donations were reasonably secure from theft.

III. BIOTIC SURVEYS

Monitor rare plants

The HMMP recommends that rare or sensitive annuals and herbaceous perennial plants be monitored during the spring season after the area experiences an annual rainy season that exceeds 75% of the long-term average annual precipitation (URS 2005). This will allow for an unbiased assessment of the population status under comparable weather conditions between monitoring years. Substantially low rainfall in 2013-2016 precluded surveying for rare plants on the Preserve. During the 2017 rain season the Dana Point area received 16.63 inches of rain (Aliso Laguna Weather Station, Western Regional Climate Center), 133% of the 88-year average (12.5 inches; Laguna Beach Weather Station, Western Regional Climate Center); therefore a rare plant survey was conducted on the Preserve following the rainy season. Rare plant monitoring was previously conducted on the Preserve in 1993, 1999, 2001, 2003, 2008, 2010, and 2011.

This was the first rare plant survey conducted since 2011, as it has been the first year since annual precipitation exceeded the 75% threshold recommended in the HMMP. Rare plant monitoring was conducted in seven visits, from 17 April through 1 September by qualified botanist Sandy Leatherman. The following rare plant species were reported on the Preserve: aphanisma (*Aphanisma blitoides), prostrate spineflower (Chorizanthe procumbens),* seaside calendrinia *(Cistanthe maritima),* California boxthorn *(Lycium californicum),* cliff malacothrix (*Malacothrix saxatilis* var*. saxatilis*)*,* silverback fern (*Pentagramma viscosa*)*,* Nuttall's scrub oak (*Quercus dumosa*) and cliff spurge (*Euphorbia misera*) (Leatherman 2017; Figure 1). Known locations of each rare plant to be surveyed were visited prior to surveying the Preserve, these visits served as a reference to inform the botanist of the appropriate time to survey for that particular species thus increasing the likelihood of detection during the survey. Survey results from 2008 were used as the primary reference because, even though methods may not have been identical due to a difference in the surveyor, the methods were more consistent to those used in 2017 than in 2011 or other years. In addition to revisiting known populations from the 2008 survey, each species were systematically surveyed across the entirety of the Preserve, documenting occurrences (new and old), and individual counts (Table 1).

A notable record is the number of *Pentagramma viscosa*, which has increased from one individual in 2008 to three individuals in 2017. *Cistanthe maritima* was found on the highly eroded cliffs, part of which appears to have been loss to erosion since 2008, making it difficult to ascertain an accurate individual count. *Euphorbia misera* was located in the same locations as in 2008 and is also in an area with an increased risk of erosion. *Malacothrix saxatilis* var*. saxatilis* were found on the north-facing slopes in the same areas in 2008 but with higher numbers. There is only one *Quercus dumosa* on the Preserve; in 2017 it was covered by *Marah microcarpus* (wild cucumber).

Factors that may have influenced the changes in populations for these sensitive species include: the prolonged drought in Southern California, reduced seed bank, increased

public use of the Preserve, erosion, trespassers (i.e., off-trail foot traffic), or natural fluctuations in above-ground representation of species over time. Four of the species were found predominantly on the south end of the Preserve—*Cistanthe maritima, Lycium californicum, Euphorbia misera* and *Aphanisma blitoides*—all of which had lower numbers than previously recorded. This area is highly eroded with unstable cliffs, and is continuously impacted by public off-trail uses. Future surveys will need to be conducted to determine if these lower numbers are an artifact of weather or of other human-mediated impacts.

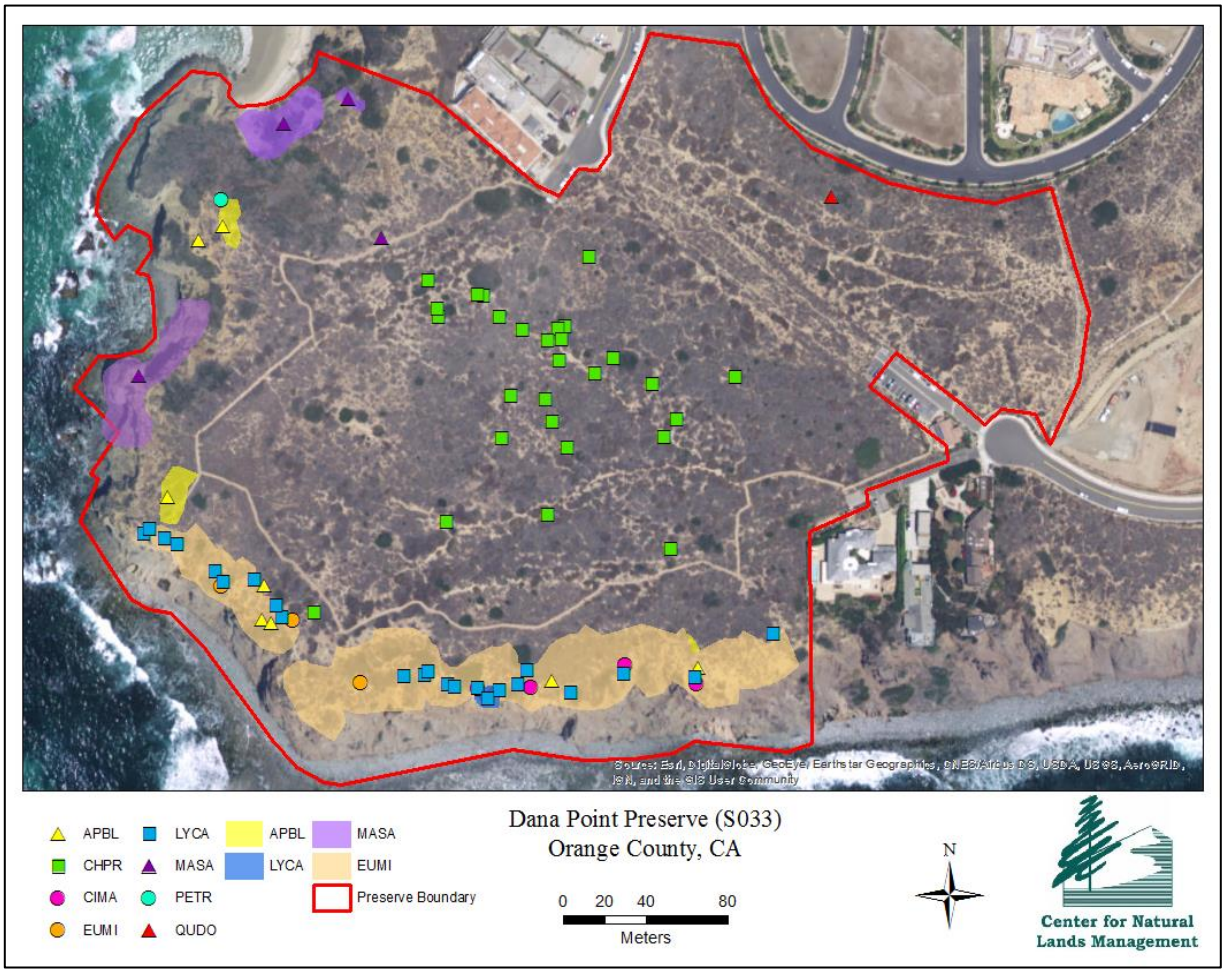

Figure 1. 2017 Rare Plant Map. Locations of eight species of sensitive plant species mapped by S. Leatherman. Plant name codes are the following: APBL, *Aphanisma blitoides*, CHPR, *Chorizanthe procumbens,* CIMA, *Cistanthe maritima,* LYCA, *Lycium californicum,* MASA, *Malacothrix saxatilis* var. *saxatilis,* PETR, *Pentagramma viscosa,* QUDU, *Quercus dumosa and* EUMI, *Euphorbia misera.*

Table 1. Rare Plant Survey Results from 2008 and 2017.

		2008		2017	
Species	**Growth Habit**	**Number of Locations**	**Number of Individuals**	**Number of Locations**	**Number of Individuals**
Aphanisma blitoides	Annual	12	935	7	500
Chorizanthe procumbens	Perennial	32	21,809	28*	105*
Cistanthe maritima	Annual	5	624	4	23
Lycium californicum	Sub-shrub	16	232	23	160
Malacothrix saxatilis var.*saxatilis*	Perennial	9	316	4	419
Pentagramma viscosa	Perennial	1	1	1	3
Quercus dumosa	Shrub	1	1	1	1
Euphorbia misera	Sub-shrub	1	1,500	3	1,114

Data for 2017 location and individual counts taken from Leatherman 2017, and 2008 data was taken from Roberts 2008.
* Species was not fully surveyed, due to CAGN activity.

Conduct presence-absence monitoring of coastal California gnatcatcher

Monitoring for coastal California gnatcatchers (*Polioptila californica californica*; CAGN) typically is conducted annually on the Preserve both to track presence of this threatened species and to be aware of spatio-temporal use of the Preserve so as to ensure management activities do not result in harassment of CAGN particularly during their nesting season, generally 15 February – 30 August. All suitable CAGN habitat was surveyed by the Preserve Manager, Dave Erickson, for presence/absence activity throughout the entire 29.4 acres according to the USFWS protocol and conditions for CNLM's USFWS recovery permit (TE-221411-3.3 and TE-221411-4). Mr. Erickson walked slowly through habitat, stopping at intervals to play recorded CAGN vocalizations for several seconds, and waiting several minutes for response. At least three passes were conducted in areas where gnatcatchers were not documented. Areas where CAGN was identified but not confirmed as a pair were revisited at least three times, at least seven days apart from the previous survey, in an attempt to identify quantity, sex, and breeding status of. All CAGN locations were mapped using a GPS.

The Preserve was surveyed by Mr. Erickson ten times from March through May (Table 2). A total of ten observations were documented during the 2017 CAGN breeding season. All of the CAGN observations were documented as breeding pairs. Based on these surveys, the CAGN breeding population is estimated to be at least five breeding pairs (Figure 2). This is consistent with previous annual monitoring results, with six breeding pairs recorded in 2016.

Table 2. California Gnatcatcher Survey Dates, Times and Weather Conditions.

Date	Time	Weather Conditions
16-February-17	800 – 1130	50-60% cloud cover, wind 1-5 mph, 57-63°F
2-March-17	800 – 1130	10% cloud cover, wind 1-3 mph, 70-72°F
9-March-17	730 – 1215	20% cloud cover, wind 1-4 mph, 70-72°F
16-March-17	815 – 1200	Overcast cloud cover, wind 2-5 mph, 61-65°F
23-March-17	915 – 1230	10% cloud cover, wind 6-15 mph, 59-65°F
30-March-17	745 – 1230	20-40% cloud cover, wind 5-9 mph, 59-65°F
6-April-17	820 – 1200	25-70% cloud cover, wind 1-7 mph, 62-65°F
13-April-16	820 – 1200	10-15% cloud cover, wind 9-12 mph, 65- 72°F
20-April-17	800 – 1130	70-80% cloud cover, wind 5-7 mph, 61- 63°F
27-April-17	830 – 1100	95-100% cloud cover, wind 1-3 mph, 57- 64°F

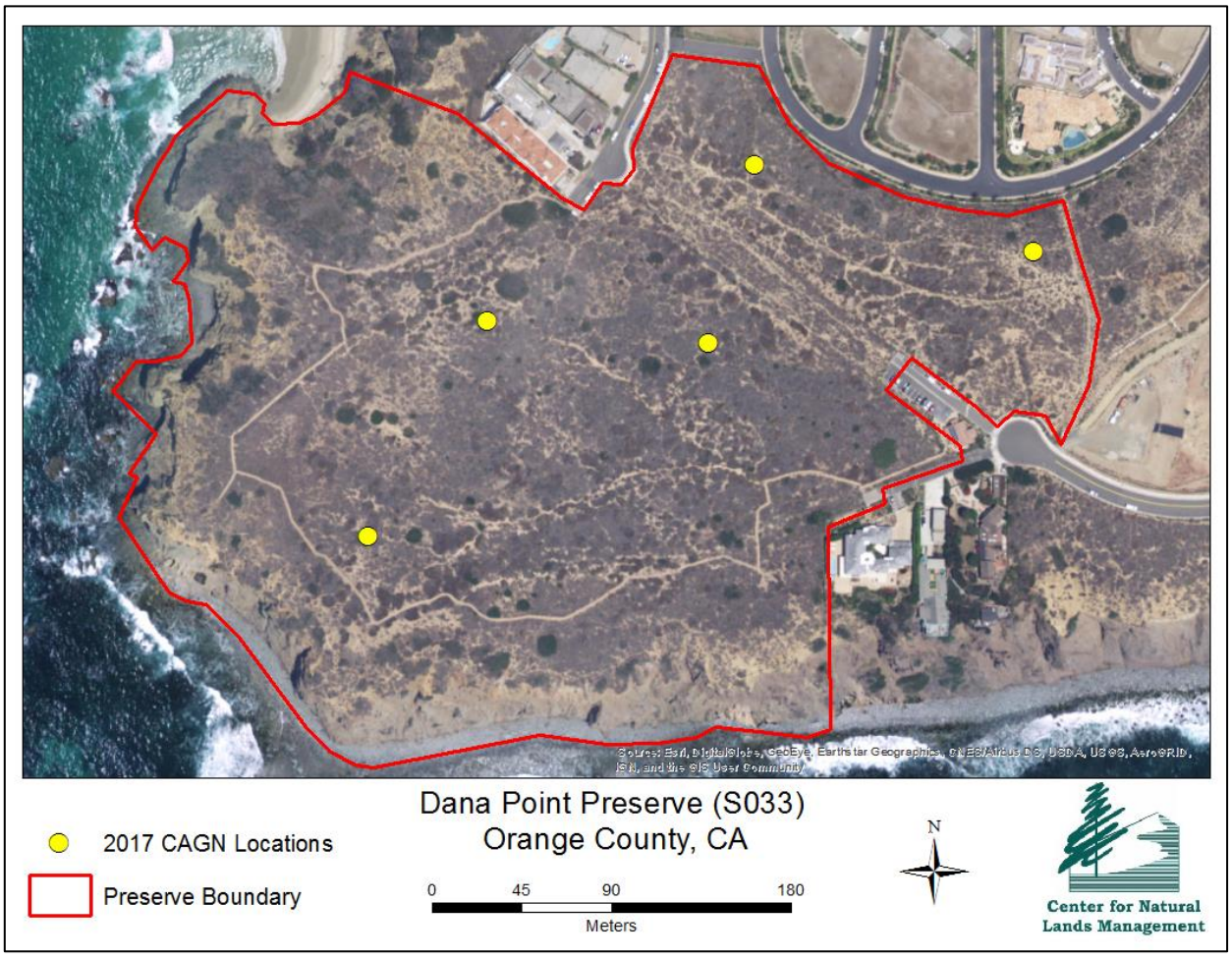

Figure 2. California Gnatcatcher Pair Locations in 2017.

Potential impacts to the resident CAGN pairs continue due to indirect effects from people on the trail, a potential increase in predators due to increased human use of the area, and direct impacts to nesting birds from trail users who do not follow the rules and either go off-

trail on foot or bring their dog(s) on the Preserve. A continued presence by the Preserve Manager, Ranger, and City employees and docents is utilized to ensure people follow the trail rules as much as possible. However, increasing declaration by trail visitors of dogs as being 'companion animals' has complicated CNLM staff's ability to prohibit dogs from being brought onto trails. Staff are investigating laws and provisions for controlling this potential abuse of or extension to the 'service dog' exception to dogs being prohibited onsite.

Monitor Pacific pocket mice

CNLM staff received a request to allow additional trapping and take of Pacific pocket mice (*Perognathus longimembris pacificus*; PPM) from the Preserve from San Diego Zoo Global staff in 2017. The goals were: 1) to obtain a population estimate of PPM on the Preserve; and 2) for the San Diego Zoo (SDZ) Captive Breeding Program (CBP) to take 10% or up to seven animals for their captive breeding program. Due to interest in augmenting the genetic diversity of the captive population, seven PPM were planned to be collected from the Preserve, if possible, using the "pay as you go" technique. This strategy has been used in the past to govern collections and provides assurance that no more than a pre-established percentage of the population would be taken (for example, collecting no more than 1 animal for each 10 unique individuals captured, thus ensuring that no more than 10% of the population was taken).

The proposal was reviewed and a formal agreement (Site Access for Research Agreement) was executed on May 19, 2017 (CNLM and San Diego Zoo Global 2017). The agreement provided additional conditions regarding the trapping and removal activity, such as the role of the CNLM Preserve Manager and the limitation of removing no more than three PPM females. The agreement expired July 31, 2017.

Trapping was conducted using permanent monitoring grid cells previously developed by CNLM to serve as the basis for habitat use monitoring (24 meters x 24 meters) in 2008-2009, 2011-2014 (Carranza 2014), and 2016. This resulted in a total of 127 grid cells within the Preserve available to sample with traps.

To repeat trapping methods used in 2012, the entire Preserve was sampled with three live-traps (a modified 9-inch Sherman trap) placed within 5 to 8 meters of the center of each grid cell. A total of 381 traps were deployed in 2017. Trapping was conducted for three consecutive nights from 21-24 May, 2017 by a multi-entity group of 12 individuals, including then Preserve Manager, Dave Erickson, and others who possessed or were supervised under an appropriate USFWS permit (Miller 2017). This trapping activity was not conducted under CNLM's USFWS recovery permit. CNLM's permit calls for five nights of consecutive trapping effort if conducted for the purposes of population monitoring.

Traps were baited with 100 percent millet (treated in a microwave for two minutes prior to use, which rendered the seed unviable) and checked twice throughout the night for captures. Traps were opened and baited starting at 5:30 pm, then checked at 11:30 pm

and again at 4:30 am. Individuals captured were marked using unique hair clip marks to infer capture history. Bait was removed from traps each morning and left closed on site during the day.

The temperatures during this trapping event ranged from 59-65 degrees Fahrenheit (F). The moon phase during the sampling period was waxing crescent moon, ranging from 29.76-11.53% illumination.

Of the 1143 traps deployed (381 traps x 3 nights); there were 404 captures of seven rodent species, one rabbit, and one bird (Table 3, Miller 2017). Desert woodrats (*Neotoma bryanti*) were captured 339 times, consisting of at least 173 unique individuals, eight of which died in traps. Six individual PPM were captured, two females and four males, in six grids (Figure 3).

Table 3. Summary of Animal Captures.

COMMON NAME	SPECIES	NO. CAPTURES	MINIMUM KNOWN ALIVE
California Towhee	*Melozone crissalis*	1	1
Desert Woodrat	*Neotoma bryanti*	342	173*
Pacific Pocket Mouse	*Perognathus longimembris pacificus*	9	6
California Mouse	*Peromyscus californicus*	2	2
Cactus Mouse	*Peromyscus fraterculus*	7	2
Deer Mouse	*Peromyscus maniculatus*	1	1
Desert Cottontail	*Sylvilagus audubonii*	2	2
Western Harvest Mouse	*Reithrodontomys megalotis*	40	24

Table taken from Miller 2017. *Includes 8 individuals killed in traps.

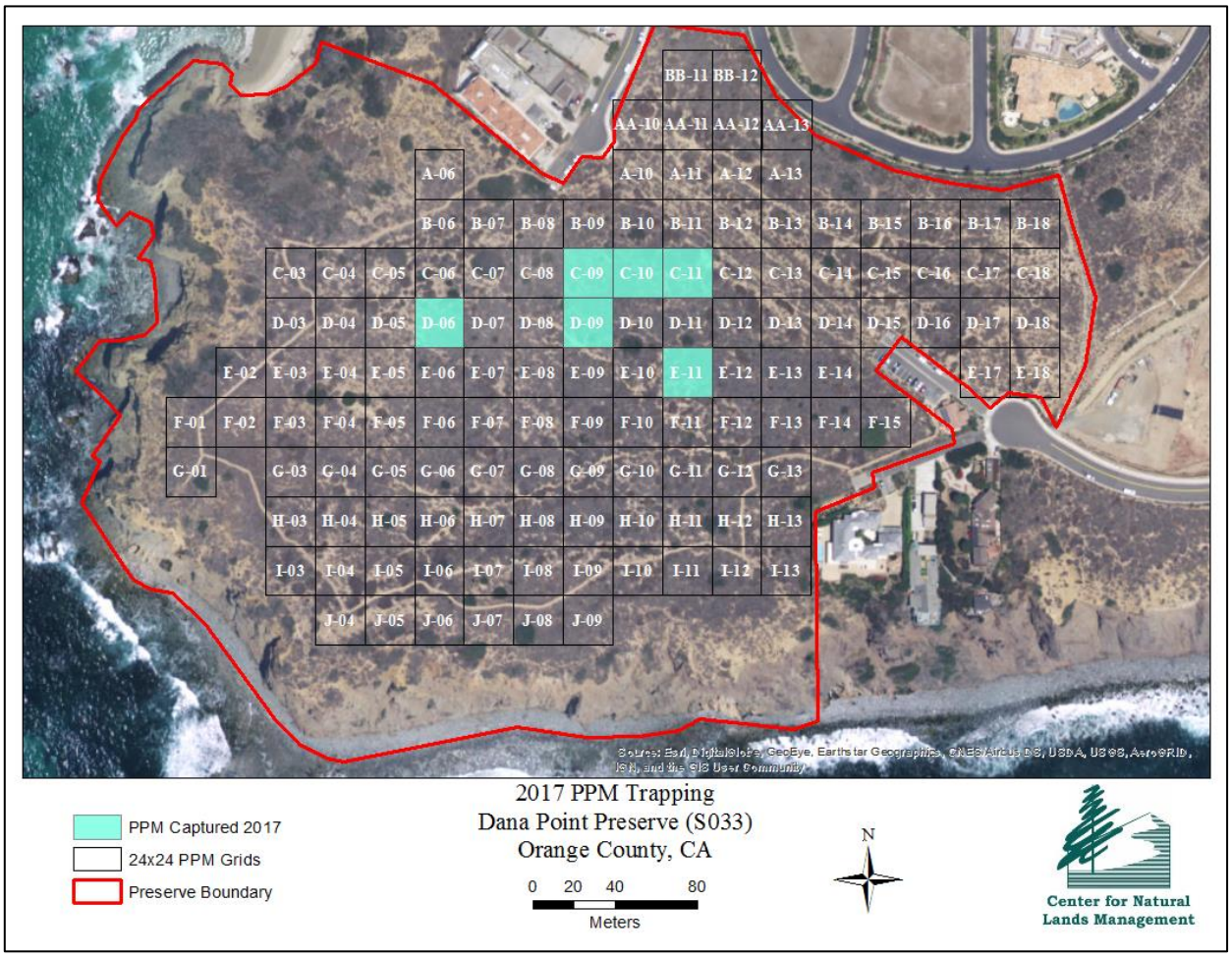

Figure 3. 2017 PPM Locations. Grids cells with PPM captured are highlighted in blue.

Initially trapping was to be conducted for a total of five nights; however, due to the large number of woodrat captures and mortalities, in combination with the low PPM capture rate, trapping was stopped after three nights. No PPM individuals were collected for the captive breeding program.

Small mammal populations often exhibit considerable temporal and spatial variability, perhaps particularly those in arid environments (Thibault et al. 2010). It is likely that PPM populations generally do well in years of drought and low rainfall. However, even this generalization must be interpreted within the context of cumulative drought events (e.g., too many consecutive drought years or extreme drought events may result in insufficient food availability) and vegetation dynamics. Plant species composition and spatial pattern affect PPM in terms of food availability, cover from predators, cover from unnatural light, intraspecific communications, moderators of microclimate, and other direct and indirect effects. Further, optimum vegetation composition, pattern, and coverage relative to bare ground, depends on context (e.g., ability of PPM to move, even occasionally to offsite areas), edge effects, and the relationship between vegetation and competitors, predators, or both. The complicated interactions among vegetation, climate, and PPM response

suggests caution in interpretation of limited studies. Although confounded by differences in methods (track tube versus live traps), trapping effort, and monitoring season, monitoring efforts on the Preserve do show considerable temporal fluctuation since trapping began in 1992 (Table 4), both before and after the property was restricted for conservation purpose. Similar to the complications in detecting trends in PPM presence, the influences on PPM are multiple, cumulative, and mutually interactive.

Table 4. Historical PPM results.

Year	PPM Monitoring Type	Trap Effort (trap/tube nights)	PPM (Individual)	PPM (Naïve Occupancy)
1992-93	Sherman traps	648	25-36	na
1995-96	Sherman traps	815	8	na
1996-97	Sherman traps	2782	21	na
1997-98	Sherman traps	3325	19	na
1998-99	Sherman traps	3710	11	na
1999-2000	Sherman traps	3080	6	na
2000-01	Sherman traps	4835	4	na
2005	Preserve created December 2005			
2006-07	Sherman traps	925	1	na
2007-08	Sherman traps	3280	30	na
2008-09	Sherman traps	3362	82	na
2010-11	track tube	7088	na	42.8%
2011-12	Sherman traps	3330	57	na
2011-12	track tube	1776	na	94.0%
2012-13	track tube	1890	na	51.6%
2013-14	track tube	1500	na	80.0%
2015-16	track tube	4030	na	70.7%
2016-17	Sherman traps	2286	6	na

The previous years of drought, 2011-2016, combined with an unusually wet rain year in 2017 (133% of the 88-year average) have cumulated in mature coastal sage scrub within the Preserve. Results from five vegetation transect surveys conducted on the Preserve in 2008 and 2016, show a decline in mean percent live cover from 51% to 21.5%, mean percent ground cover from 72% to 32.4% and mean percent bare ground cover from 27.2% to 22% respectively. While PPM appeared to increase (with the caveat that neither live-traps nor track tubes necessarily reflect linearly the actual population status) from 2008 to at least 2012 (live-trap and track tube results), this is uncertain and lag effects may also play a role. Any relationship between PPM and vegetation based on these survey results is very tentative. Continued habitat maintenance and adaptive management through vegetation thinning, habitat restoration, duff removal, invasive plant species removal, and defensive efforts towards potential impacts from public access since 2005 seem to have maintained suitable PPM habitat; however, future monitoring will be needed to elucidate the temporal response of PPM to these management activities.

In the future, if monitoring objectives require use of live traps, a modified trap design to protect non-target species from entering the traps or from sustaining injuries will be implemented. This is the second trapping effort on the Preserve which has resulted in non-target mortality; in 2012, one California vole and eight desert woodrats were killed (CNLM 2013). In combination with the high number of injuries and mortalities during the 2017 trapping event, **CNLM does not approve the use of 9" modified Sherman traps for trapping small mammals in the future.**

Track native and non-native predator use of the Preserve

Predator monitoring activities included scat and print identification opportunistically by staff and the continued use of infrared cameras (Bushnell Scout®) located in eight grids (AA11, C16, D9, D18, E10, F11, F13, and G8; Figure 3) throughout the Preserve. Bobcat (*Lynx rufus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), and skunk (*Mephitis* mephitis) were detected by the wildlife camera throughout the year, as occurred during previous years (Table 5). Through cameras and field observations, mange, especially in coyotes (Figure 4a) was, and continues to be, a concern on the Preserve. The long-tailed weasel (*Mustela frenata*), domestic dog (*Canis familiaris*), burrowing owl (*Athene cunicularia*), and common poorwill (*Phalaenoptilus nuttallii*) were not recorded on the wildlife camera in FY 2017 as they have been in previous years. Both a domestic cat and trespassers (Figure 4b,c) were captured by the wildlife cameras in FY 2017 and in FY 2016 (CNLM 2017b).

Table 5. Species Documented by Wildlife Cameras in FY 2017.

	Common Name	Latin Name	Grid Location
1	Raccoon	*Procyon lotor*	F11, and D18
2	Skunk	*Mephitis mephitis*	na
3	Desert Cottontail	*Sylvilagus audubonii*	AA11, C16, D9, D18, E10, F11, F13, and G8
4	CA Thrasher	*Toxostoma redivivum*	E10
5	Roadrunner	*Geococcyx californianus*	C16
6	Coyote	*Canis latrans*	F11, D9, and C16
7	Bobcat	*Lynx rufus*	F11
8	Ground Squirrel	*Otospermophilus beecheyi*	F13, G8, andF15
9	Desert Woodrat	*Neotoma lepida*	D9, F13, and D18
10	Opossum	*Didelphis virginiana*	AA11
11	Domestic cat	*Felis catus*	D18
12	Dove	*Streptophelia* sp	D9
13	Human	*Homo sapien sapien*	na
14	Common Raven	*Corvus corax*	G8

Figure 4. Images from Wildlife Cameras. a) coyote, b) domestic cat, and c) humans off trail at a look out.

Conduct ant surveys

Argentine ant (*Linepithema humile*) surveys were conducted on 9 June 2017 in grid cells BB through G10 (Figure 3). Temperature range was 68-75F, with 10-15% cloud cover during the duration of the survey: 0815-1215. To ensure the safety of CAGN, the survey was conducted after the CNLM Preserve Manager actively monitored all CAGN throughout the Preserve and found no active nests.

U.S. Geological Survey (USGS) survey methods for assessing presence of Argentine ants using bait (Matsuda et al. 2014) were used to implement the study. This entailed setting bait cards using tuna, recording the location, and checking the bait cards after 45 minutes. The same size grid cell previously chosen as the basis for habitat use monitoring (24 meters x 24 meters) of PPM on the Preserve was used to identify bait card placement. One bait card was placed in the center of each of the 126 grid cells (the same location previously used to monitor PPM with track tubes) within the Preserve. A photo was taken of each bait card after being set for 45 minutes. These images were then used to count the number of ants on each card. A quantity rank of 0-3 was given to each grid based on the number of ants on the associated card, 0 if no Argentine ants were detected, 1 if less than or equal to 25 individuals were detected, 2 if the count was in the range of 26-100, and 3 if more than 100.

In 2017, Argentine ants were detected in 45 of the 96 (46.9%) grids surveyed on the Preserve (Figure 5). A native ant, *Pogonomyrmex* sp. (harvester ant), was detected in two grids; while 49 grids had no ants detected. It is important to note that the lack of detection along the southern half of Preserve surveyed is not indicative that no Argentine ants were present. It is likely, from reviewing bait card photos, that the attractant was too dry to be an effective lure in these grids. Thus, to increase ant detection probability future monitoring should ensure bait cards are placed in shaded areas, such as at the base of shrubs, rather than in open sunny areas.

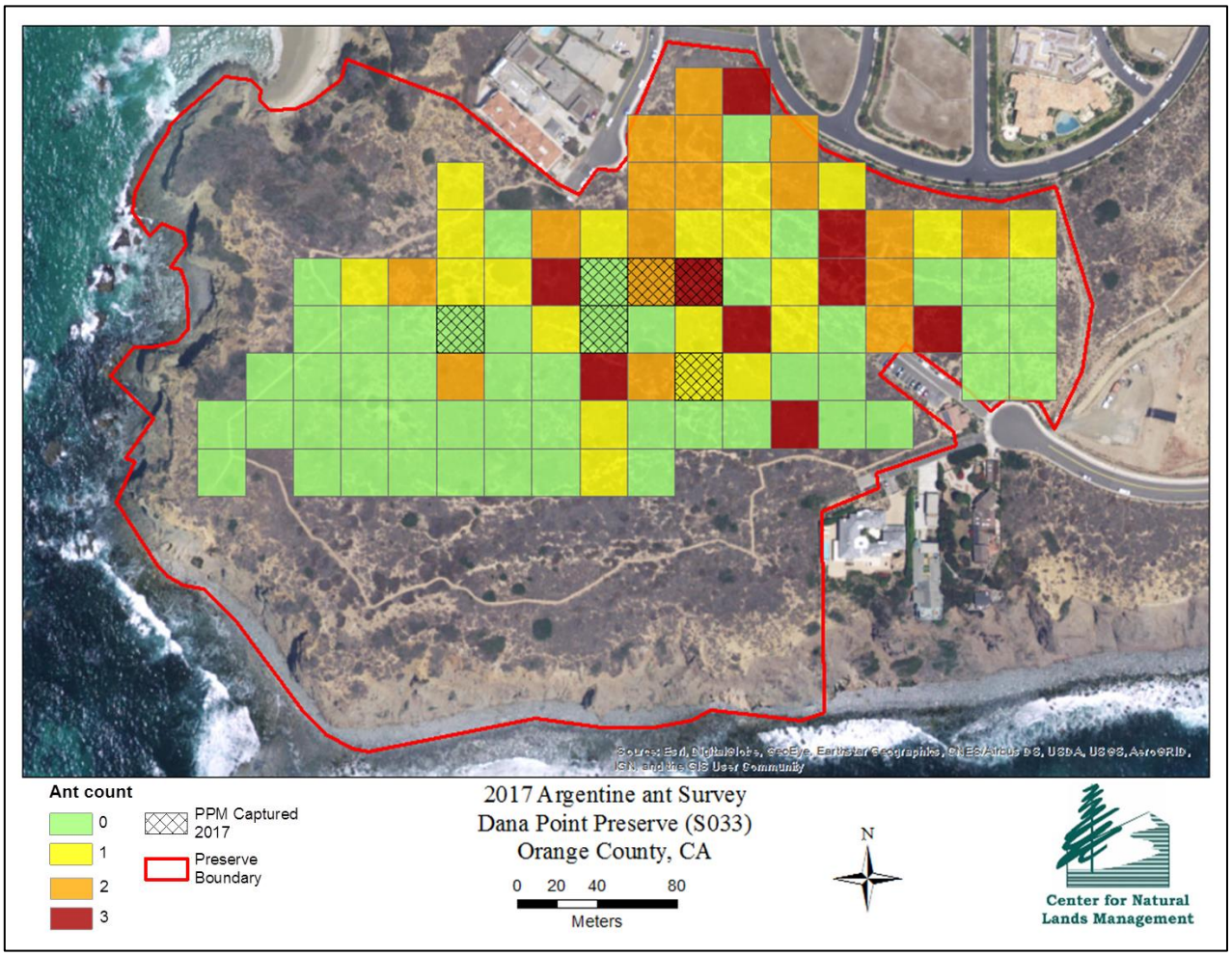

Figure 5. Argentine ant Survey.

Maintain an inventory of flora and fauna

All newly recognized taxa of flora and fauna were recorded during site visits on the Preserve. A list of all vascular plants taxa known to occur or recorded on the Preserve since 2005 is provided in Appendix A. Two new plant species were added to the Preserve list in FY 2017: *Stephanomeria virgate* subsp*. virgata* and *Cuscuta californica*; the total number of plant species having been recorded as occurring on the Preserve is 166, of which 105 are native.

A list of all animal species known to occur or recorded on the Preserve as of September 30, 2017 is provided in Appendix B. The list of animals on the Preserve consists of 26 invertebrate taxa, 113 bird taxa, 11 amphibian and reptile taxa, and 20 mammal taxa excluding service dogs and domestic cats.

Peregrine falcons (*Falco peregrinus*) were observed on the Preserve during the 2017 nesting season. Five chicks hatched during the week of 27 March 2017, at least four chicks successfully fledged, it is unknown if the fifth fledged.

IV. HABITAT MAINTENANCE AND RESTORATION

Remove non-native plant species opportunistically

CNLM staff opportunistically removed individuals of five non-native plant species (Figure 6) during FY17: bridal creeper (*Asparagus asparagoides*), crystalline iceplant (*Mesembryanthemum crystallinum*), tree tobacco (*Nicotiana glauca*), yellow star-thistle (*Centaurea solstitialis*), and black mustard (*Brassica nigra*). All plants were removed by hand without the use of herbicide, bagged and removed off site to prevent further spread of propagules. All activities were conducted with the supervision of the Preserve Manager to minimize any negative affects to PPM and CAGN by avoiding nesting areas, and surveying for and avoiding PPM burrows prior to pulling plants.

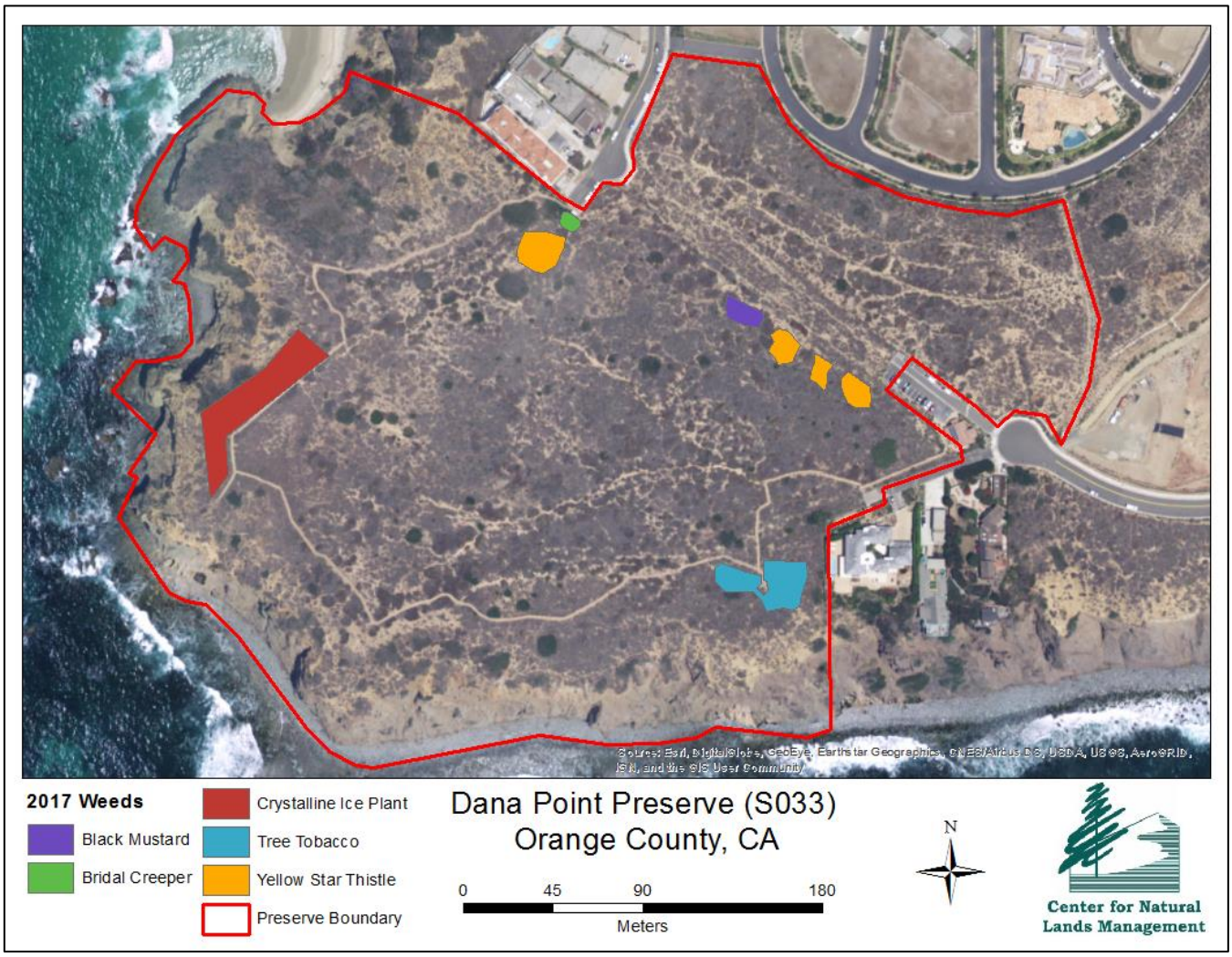

Figure 6. Non-native Plants Removed in 2017.

Install erosion control measures on the bluff edge

Since 2011, CNLM has been using straw wattles to slow water flowing downhill in the exposed areas and gullies on the bluff edges which are above rare plant populations. CNLM has also been using dead vegetation and duff cleared from grid cells as erosion control materials in these same areas. In addition to erosion caused by rain, trespassers walking and sitting on the bluff edges continue to prevent vegetation from growing in these areas. Thus, prickly pear (*Opuntia littoralis*) propagules were planted along the bluff edge to stabilize the edges as well as deter people from walking off-trail.

Conduct habitat maintenance activities to benefit the Pacific pocket mouse

To reduce accumulated duff and increase bare soil for PPM use within the Preserve, CNLM continued to conduct duff and vegetation removal treatment in specifically identified grid cells. Leaf litter, woody debris, and other organic material collectively referred to here

as duff has accumulated under the mature Coastal Sage Scrub vegetation throughout the Preserve. Although a positive statistically significant treatment effect on PPM has not been shown, duff and dead shrub removal have been effective at increasing openness and not shown to be harmful to PPM within certain conditions (Brehme et al. 2014).

It is important to note that vegetation treatment, given the context of habitat for listed species—PPM and CAGN—is not simple and must be done with caution. Not just the activity of picking up duff and dead shrubs, but the location, process, and manner in which the material is hauled off must be considered. Due to the significant number of hours required to complete dead shrub and duff removal of one 24 square meter grid cell (23 hours by one person), volunteers were recruited to complete the task. The workload associated with duff and dead shrub removal is substantial. It also requires careful action. In order to minimize the cost and risk of such activity, CNLM invited the advance placement science students from a local high school to help remove duff and dead shrubs from three grid cells.

These three grid cells were selected based on the following criteria: 1) No grid cells that previously had duff removal treatment; 2) No grid cells on the bluff edge; 3) No grid cells in the former roadbed or north of the roadbed; and 4) No grid cells that had PPM present all years. The grid cells were treated in October 2016 by 35 high school volunteers. Each of the high school teams of 7 to 10 people worked 4 hours on their assigned grid cell. All woody debris was retained on-site as erosion control at overlooks 2, 3, and 4 and along the eroding bluff edge at these overlooks. The duff and dead shrub removal treatment increases the amount of openness for each of these grid cells substantially. Although this has not been further quantified by CCS transect data or inferred from imagery, visual estimates suggest 35 to 60% more openness after treatment.

V. PUBLIC SERVICE AND GENERAL MAINTENANCE

Enforce restrictions over general public access through use of patrols and maintenance of trails, fences, and signs

The trail was open to the public daily from 7:00 a.m. to sunset, except when it was closed due to heavy rain and trail maintenance. The solar-powered magnetic gate lock and gate closer mechanism for the Dana Strand entrance gate was operational the entire year.

The trail counters installed on April 12, 2011, with funding through Nature Reserve of Orange County, remained functional. A substantial amount of variation of use occurred between the two gate entrances and among the months of the year during this fiscal year. These results have not been analyzed. An analysis of trail use data will be provided at some later time, either in a separate report or a subsequent annual report.

Unwanted public use issues continue to include off-trail use, bike riding (and bike walking), smoking, people with dogs (pets), and littering (mainly cigarette butts). The number of people bringing their dogs on the trail again remained low in FY 2017 likely due to

continued frequent patrol of the trail entrance and education to the public via CNLM staff, City staff, and City docents. However, some off-trail activities continued to persist and any such activity is potentially harmful to conservation values on the Preserve. The most common locations of off-trail activity remained at the second and third overlooks. Most prohibited activity is by children and young adults seeking a private ocean view while drinking and/or smoking. They often leave trash, and contribute to erosion, potential crushing of PPM burrows, limiting the expansion of the rare plant populations, and increase risk to the Preserve from fire. Off-trail use is an even greater threat during the bird nesting season where such activity likely disrupts the peregrine falcon, the CAGN whose territories include these areas, and other nesting bird species.

Three part-time CNLM Rangers continued to patrol the Preserve in the late afternoon/evening hours before closing on school holidays and weekends. Among the CNLM and City staff, the Preserve was patrolled and locked at sunset every evening during spring break and six nights of the week during summer break. Even with a CNLM Ranger or staff person present on-site, some people continued to violate the rules. Trespass is evidenced not only by Rangers who catch and educate trespassers, but includes the following: 1) foot tracks observed off-trail; 2) items recovered off-trail which confirm off-trail use; 3) and violations that occurred when CNLM staff were not on-site. Although the Orange County Sherriff's Department was called on some occasions, no citations were known to be issued to trespassers on-site in FY 2017 by the Sheriff's department. However, CNLM worked with local CDFW Game Wardens to cite trespassers. The names of trespassers encountered are documented to ensure repeat offenders are identified.

In attempt to reduce the likelihood of people going off trail at overlooks 2 and 3, dead shrubs removed from duff-treated grid cells, as well as prickly pear cactus pads, were placed along the edge of the fencing at the overlooks. However, the most effective means of keeping people on the trail and dogs off the Preserve is by having onsite presence. In addition to CNLM's own staffing, CNLM works with City staff and docents to expand the enforcement capacity. In 2017, CNLM confirmed with Orange County Sherriff's office that the 2015 letter of authorization was still in effect. With that letter, CNLM authorized the employees of the Orange County Sheriff's Department to take action and arrest those whom are trespassing on CNLM's property. The Sherriff's office confirmed the status of the agreement and confirmed that CNLM contact information was updated and on file.

The trail counter data was downloaded monthly to identify after-hours use of the Preserve. However, no patterns were detected consistently. In the event the after-hours trespass was a reoccurring group of individuals, CNLM partnered with the City and CDFW Warden to patrol the Preserve after closing. It is recommended that such after hour-patrol occur periodically throughout the year.

Expand the GIS database as necessary

CNLM managed and added GIS coverages for data collected in FY 2017 (Appendix C).

Continue public outreach and educational opportunities within the Preserve, including collaborating with the City of Dana Point Natural Resources Protection Officer, Nature Interpretive Center (NIC) facilities, and City docents at the NIC

The NIC was open throughout FY 2017 from 10:00 a.m. to 4:00 p.m. Tuesday through Sunday. The Preserve Manager was available to interact with the public and answer questions while at the NIC on average one day a week. CNLM Rangers were onsite on average two evenings a week to answer questions and provide information to the public. In addition to in-person outreach, the Preserve Manager regularly contributed to the *Nature Newsletter*, a monthly newsletter highlighting events and information on the Dana Point Headlands Conservation Area.

Provide opportunities for the public to help in maintenance of the Preserve

Two volunteer events were organized throughout the fiscal year, one with high school students to manage PPM habitat, as described in a previous section, and the second with City docents providing help throughout the year with trash removal and managing wildlife cameras.

VI. REPORTING

Prepare an updated Habitat Management and Monitoring Plan

A low effect HCP draft permit application was submitted by CNLM to the USFWS in FY 2008 to address the potential for take of CAGN and PPM from future management actions. The process was not completed. CNLM continued the process of creating a new habitat management plan that addresses only the portion of land that CNLM owns and manages and addresses the inadequacies of the April 18, 2005 HMMP prepared by URS Corporation. However, the low effect HCP process and CNLM-prepared management plan may ultimately become one document.

Record Preserve management and monitoring activities in an annual report and provide to the Wildlife Agencies and City

A work plan for FY 2017 (October 1, 2016 through September 30, 2017) was completed and provided to the USFWS, CDFW, and City on 9 January 2017 in electronic format (CNLM 2017a). An annual report describing the management activities conducted during FY 2016 was distributed on 23 April 2017 (CNLM 2017b).

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Appendix A. Dana Point Native Plant List.

	Family	Species	Common Name
		FERNS	
1	POLYPODIACEAE	*Polypodium californicum*	California polypody
2	PTERIDACEAE	*Pellaea andromedifolia*	Coffee fern
3	PTERIDACEAE	*Pentagramma viscosa*	Silver back fern
		MONOCOTS	
4	IRIDACEAE	*Sysyrinchium bellum*	Blue eyed grass
5	POACEAE	*Distichlis spicata*	Salt grass
6	POACEAE	*Elymus condensatus*	Giant wildrye
7	POACEAE	*Melica imperfecta*	Small flowered melic grass
8	POACEAE	*Muhlenbergia microsperma*	Little-seed muhly
9	POACEAE	*Stipa lepida*	Foothill needlegrass
10	POACEAE	*Stipa pulchra*	Purple needlegrass
11	POACEAE	*Festuca octoflora*	Six-weeks fescue
12	THEMIDACEAE	*Dichelostemma capitatum*	Wild hyacinth
		EUDICOTS	
13	ADOXACEAE	*Sambucus nigra* subsp. *caerulea*	Blue elderberry
14	AMARANTHACEAE	*Aphanisma blitoides*	Aphanisma
15	AMARANTHACEAE	*Atriplex californica*	California saltbush
16	AMARANTHACEAE	*Atriplex lentiformis*	Brewer's saltbush
17	AMARANTHACEAE	*Chenopodium californicum*	California goosefoot
18	AMARANTHACEAE	*Suaeda taxifolia*	Woolly sea-blite
19	ANACARDIACEAE	*Rhus integrifolia*	Lemonade berry
20	APIACEAE	*Apiastrum angustifolium*	Mock parsely
21	APIACEAE	*Daucus pusillus*	Rattlesnake weed
22	ASTERACEAE	*Amblyopappus pusillus*	Coastweed
23	ASTERACEAE	*Ambrosia chamissonis*	Beach bur
24	ASTERACEAE	*Ambrosia psilostachya*	Western ragweed
25	ASTERACEAE	*Artemisia californica*	Coastal sagebrush
26	ASTERACEAE	*Baccharis pilularis* subsp. *consanguinea*	Coyote brush
27	ASTERACEAE	*Baccharis salicifolia*	Mule fat

	Family	Species	Common Name
28	ASTERACEAE	*Chaenactis glabriuscula* var. *glabriuscula*	Yellow pincushion
29	ASTERACEAE	*Chaenactis glabriuscula* var. *orcuttiana*	Orcutt's pincushion
30	ASTERACEAE	*Cirsium occidentale*	Cobweb thistle
31	ASTERACEAE	*Conyza canadensis*	Common horseweed
32	ASTERACEAE	*Conyza coulteri*	Coulter's horseweed
33	ASTERACEAE	*Corethrogyne filaginifolia* var. *virgata*	Virgate sand aster
34	ASTERACEAE	*Deinandra fasciculata*	Fascicled tarplant
35	ASTERACEAE	*Encelia californica*	California encelia
36	ASTERACEAE	*Logfia californica*	California filago
37	ASTERACEAE	*Heterotheca grandiflora*	Telegraph weed
38	ASTERACEAE	*Isocoma menziesii* var. *sedoides*	Prostrate goldenbush
39	ASTERACEAE	*Isocoma menziesii* var. *vernonioides*	Coastal goldenbush
40	ASTERACEAE	*Lasthenia gracilis*	Coastal goldfields
41	ASTERACEAE	*Layia platyglossa*	Common tidytips
42	ASTERACEAE	*Malacothrix saxatilis var. saxatilis*	Cliff malacothrix
43	ASTERACEAE	*Microseris lindleyi*	Silver puffs
44	ASTERACEAE	*Osmadenia tenella*	Osmadenia
45	ASTERACEAE	*Pseudognaphalium bioletti*	Bi-colored cudweed
46	ASTERACEAE	*Pseudognaphalium californicum*	California everlasting
47	ASTERACEAE	*Pseudognaphalium stramineum*	Cotton batting plant
48	ASTERACEAE	*Senecio californicus*	California butterweed
49	ASTERACEAE	*Stephanomeria exigua* subsp. *exigua*	Wreath plant
50	ASTERACEAE	*Stephanomeria virgata* subsp. *virgata*	Tall wreath plant
51	ASTERACEAE	*Stylocline gnaphaloides*	Everlasting nest straw
52	BORAGINACEAE	*Cryptantha clevelandii*	Cleveland's cryptantha
53	BORAGINACEAE	*Cryptantha intermedia*	Common cryptantha
54	BORAGINACEAE	*Phacelia distans*	Common phacelia

	Family	Species	Common Name
55	BRASSICACEAE	*Descurainia pinnata*	Western tansy mustard
56	BRASSICACEAE	*Lepidium lasiocarpum* subsp. *lasiocarpum*	Sand pepper grass
57	CACTACEAE	*Cylindropuntia prolifera*	Coastal cholla
58	CACTACEAE	*Opuntia littoralis*	Coastal prickly pear
59	CACTACEAE	*Opuntia* xvaseyi	Mesa prickly pear
60	CACTACEAE	*Opuntia oricola*	Oracle cactus
61	CARYOPHYLLACEAE	*Cardionema ramosissimum*	Sandmat
62	CARYOPHYLLACEAE	*Silene antirrhina*	Snapdragon catchfly
63	CLEOMACEAE	*Cleome isomeris*	Bladderpod
64	CONVOLVULACEAE	*Dichondra occidentalis*	Western dichondra
65	CONVOLVULACEAE	*Cuscuta californica*	Chaparral dodder
66	CRASSULACEAE	*Crassula connata*	Sand pygmy stonecrop
67	CRASSULACEAE	*Dudleya lanceolata*	Liveforever
68	CRASSULACEAE	*Dudleya pulverulenta* subsp. *pulverulenta*	Chalky live-forever
69	CUCURBITACEAE	*Marah macrocarpus*	Wild cucumber
70	EUPHORBIACEAE	*Croton californicus*	California croton
71	EUPHORBIACEAE	*Euphorbia misera*	Cliff spurge
72	FABACEAE	*Astragalus trichopodus* ssp. *lonchus*	Ocean locoweed
73	FABACEAE	*Acmispon scoparius subsp. scoparius*	Coastal deerweed
74	FABACEAE	*Acmispon strigosus var. strigosus*	Strigose Acmispon
75	FABACEAE	*Lupinus truncatus*	Collar lupine
76	FAGACEAE	*Quercus dumosa*	Nuttall's scrub oak
77	LAMIACEAE	*Salvia columbariae*	Chia
78	NYCTAGINACEAE	*Mirabilis laevis* var. *crassifolia*	California wishbone bush
79	ONAGRACEAE	*Camissoniopsis bistorta*	California suncup

	Family	Species	Common Name
80	ONAGRACEAE	*Camissoniopsis cheiranthifolia* subsp. *suffruticosa*	Beach evening primrose
81	ONAGRACEAE	*Camissoniopsis micrantha*	Small flowered evening primrose
82	OROBANCHACEAE	*Castilleja exserta* subsp. *exserta*	Purple owl's clover
83	PAPAVERACEAE	*Eschscholzia californica*	California poppy
84	PAPAVERACEAE	*Platystemon californicus*	Cream cups
85	PHRYMACEAE	*Mimulus aurantiacus* var. *puniceus*	Red bush monkeyflower
86	PLANTAGINACEAE	*Antirrhinum nuttallianum* subsp. *subsessile*	Nuttall's snapdragon
87	PLANTAGINACEAE	*Nuttallanthus texanus*	Larger blue toad flax
88	PLANTAGINACEAE	*Plantago erecta*	California plantain
89	POLYGONACEAE	*Chorizanthe procumbens*	Prostrate spineflower
90	POLYGONACEAE	*Eriogonum fasciculatum* subsp. *fasciculatum*	California buckwheat
91	POLYGONACEAE	*Eriogonum parvifolium*	Bluff buckwheat
92	POLYGONACEAE	*Pterostegia drymarioides*	Granny's hair net
93	PORTULACACEAE	*Calandrinia menziesii*	Red maids
94	PORTULACACEAE	*Cistanthe maritima*	Seaside calandrinia
95	PORTULACACEAE	*Claytonia parviflora* subsp. *utahensis*	Narrow leaved miner's lettuce
96	RANUNCULACEAE	*Clematis pauciflora*	Ropevine
97	RANUNCULACEAE	*Delphinium parryi* subsp. *parryi*	Parry's larkspur
98	ROSACEAE	*Heteromeles arbutifolia*	Toyon
99	SOLANACEAE	*Datura wrightii*	Jimson weed
100	SOLANACEAE	*Lycium californicum*	California boxthorn
101	SOLANACEAE	*Nicotiana clevelandii*	Cleveland's tobacco
102	SOLANACEAE	*Solanum douglasii*	Douglas' nightshade
103	SOLANACEAE	*Solanum umbelliferum* var. *glabrescens*	Bluewitch
104	URTICACEAE	*Hesperocnide tenella*	Western nettle
105	URTICACEAE	*Parietaria hespera* var. *californica*	California Pellitory

Appendix B. Animals Identified on Preserve.

	Scientific Name	Common Name
INVERTEBRATES		
Order Araneae		
Family Araneidae		
	Argiope argentata	Silver Argiope
Family Miturgidae		
	Cheiracanthium sp.	Un-identified sac spider
Order Coleoptera		
Family Curculionidae		
	Scyphophorus yuccae	Yucca weevil
Family Scarabaeidae		
	Cotinus mutabilis	Green fruit beetle
	Paracotalpa puncticollis	Little bear
Family Tenebrionoidea		
	Eleodes acuticauda	Darkling beetle
Order Heminoptera		
Family Apidae		
	Xylocopa sp.	Unidentified carpenter bee
Family Pompilidae		
	Pepsis sp.	Unidentified tarantula hawk
Order Hemiptera		
Family Cercopidae		
	Aphrophora sp.	Unidentified spittle bug
Family Pentatomidae		
	Murgantia histrionic	Harlequin bug
Order Hymenoptera		
Family Apidae		
	Apis mellifera	European honey bee
Family Formicidae		
	Linepithema humile	Argentine ant
	Monomorium ergatogyna	Little black ant
	Pogonomyrmex sp.	Harvester ant
Order Lepidoptera		
Family Hesperiidae		
	Hylephila phyleus	Fiery skipper
Family Lycaenidae		
	Leptotes marina	Marine blue

	Scientific Name	Common Name
	Strymon melinus pudica	Gray hairstreak
Family Lymantriidae		
	Orgyia vetusta	Western tussock moth
Family Papilionidae		
	Papilio zelicaon	Anise swallowtail
Family Pieridae		
	Colias eurytheme	Orange sulphur
Family Riodinidae		
	Apodemia mormo	Mormon metalmark
	Apodemia virgulti	Behr's metalmark
Family Saturniidae		
	Hemileuca electra	Electra buckmoth
Order Orthoptera		
Family Acrididae		
	Schistocerca nitens	Vagrant grasshopper
Order Scorpiones		
Family Scorpionidae		
	Anuroctonus phaiodactylus	Burrowing scorpion
REPTILES AND AMPHIBIANS		
Order Salientia	**Frogs and Toads**	
Family Hylidae		
	Hyla regilla	Pacific treefrog
Order Squamata	**Lizards and Snakes**	
Family Anniellidae		
	Anniella stebbinsi	Legless lizard
Family Anguidae		
	Elgaria multicarinatus	Southern alligator lizard
Family Colubridae		
	Diadophis punctatus	Western ringsnake
	Lampropeltis getula californiae	California kingsnake
	Masticophis flagellum piceus	Red racer, Coachwhip
	Pituophis catenifer annectens	San Diego gopher snake
Family Iguanidae		
	Sceloporus occidentalis	Western fence lizard
	Uta stansburiana	Side-blotched lizard
Family Scincidae		

	Scientific Name	Common Name
	Eumeces skiltonianus	Western skink
Family Teiidae		
	Cnemidophorus hyperythrus	Orange-throated whiptail
Family Viperidae		
	Crotalus oreganus helleri	Southern pacific rattlesnake
BIRDS		
Order Anseriformes	**Ducks, Geese and Swans**	
Framily Anatidae		
	Branta bernicla	Brant
Order Apodiformes	**Swifts and Hummingbird**	
Family Apodidae		
	Aeronautes saxatalis	White-throated swift
	Chaetura vauxi	Vaux's swift
Family Trochilidae		
	Calypte anna	Anna's hummingbird
	Calypte costae	Costa's hummingbird
	Selasphorus sasin	Allen's hummingbird
	Selasphorus rufus	Rufous hummingbird
Order Caprimulgiformes	**Nightjars**	
Family Caprimulgidae		
	Phalaenoptilus nuttallii	Common poorwill
Order Charadriiformes	**Shorebirds, Gulls, and Relatives**	
Family Charadriidae		
	Charadrius vociferus	Killdeer
	Pluvialis squatarola	Black-bellied plover
Family Haematopodidae		
	Haematopus bachmani	Black oystercatcher
Family Laridae		
	Larus heermanni	Heermann's gull
	Larus delawarensis	Ring-billed gull
	Larus californicus	California gull
	Larus occidentalis	Western gull
	Larus glaucescens	Glaucous-winged gull
	Sterna caspia	Caspian tern
	Thalasseus maximus	Royal tern
Family Scolopacidae		

	Scientific Name	Common Name
	Actitis macularius	Spotted sandpiper
	Arenaria melanocephala	Black turnstone
	Aphriza virgata	Surfbird
	Calidris alba	Sanderling
	Catoptrophorus semipalmatus	Willet
	Limosa fedoa	Marbled godwit
	Numenius phaeopus	Whimbrel
Order Columbiformes	**Pigeons and Doves**	
Family Columbidae		
	Columba livia	Rock dove
	Streptopelia decaocto	Eurasian collared dove
	Zenaida asiatica	White-winged dove
	Zenaida macroura	Mourning dove
Order Cuculiformes	**Cuckoos**	
Family Cuculidae		
	Geococcyx californianus	Greater roadrunner
Order Falconiformes	**Vultures, Hawks, and Falcons**	
Family Accipitridae		
	Accipiter striatus	Sharp-shinned hawk
	Accipitridae cooperii	Cooper's hawk
	Buteo jamaicensis	Red-tailed hawk
	Circus cyaneus	Northern harrier
	Elanus leucurus	White-tailed kite
	Pandion haliaetus	Osprey
Family Cathartidae		
	Cathartes aura	Turkey vulture
Family Falconidae		
	Falco columbarius	Merlin
	Falco peregrinus	Peregrine falcon
	Falco sparverius	American kestrel
Order Galliformes	**Megapodes, Curassows, Pheasants, and**	
		Relatives
Family Phasianidae		
	Callipepla californica	California quail
Order Passeriformes	**Perching Birds**	

	Scientific Name	Common Name
Family Aegithalidae		
	Psaltriparus minimus	Bushtit
Family Cardinalidae		
	Cardinalis cardinalis	Northern cardinal
	Pheucticus melanocephalus	Black-headed grosbeak
	Piranga ludoviciana	Western tanager
Family Corvidae		
	Corvus brachyrhynchos	American crow
	Corvus corax	Common raven
Family Emberizidae		
	Geothlypis trichas	Common yellowthroat
	Pipilo erythrophthalmus	Spotted towhee
	Pipilo crissalis	California towhee
	Melospiza melodia	Song sparrow
	Agelaius phoeniceus	Red-winged blackbird
	Molothrus ater	Brown-headed cowbird
	Pheucticus melanocephalus	Black-headed grosbeak
	Wilsonia pusilla	Wilson's warbler
	Carduelis psaltria	Lesser goldfinch
	Carpodacus mexicanus	House finch
	Vermivora celata	Orange-crowned warbler
	Vermivora ruficapilla	Nashville warbler
	Dendroica coronata	Yellow-rumped warbler
	Dendroica nigrescens	Black-throated gray warbler
	Dendroica townsendii	Townsend's warbler
	Dendroica occidentalis	Hermit warbler
	Oporornis tolmiei	MacGillivray's warbler
	Spizella passerina	Chipping sparrow
	Melospiza lincolnii	Lincoln's sparrow
	Zonotrichia atricapilla	Golden-crowned sparrow
	Zonotrichia albicollis	White-throated sparrow
	Zonotrichia leucophrys	White-crowned sparrow
	Sturnella neglecta	Western meadowlark
	Euphagus cyanocephalus	Brewer's blackbird
	Icterus bullockii	Bullock's oriole
	Icterus cucullatus	Hooded oriole
Family Hirundidae		

	Scientific Name	Common Name
	Stelgidopteryx serripennis	Northern rough-winged swallow
	Hirundo rustica	Barn swallow
Family Laniidae		
	Lanius ludovicianus	Loggerhead shrike
Family Mimidae		
	Mimus polyglottos	Northern mockingbird
	Toxostoma redivivum	California thrasher
Family Regulidae		
	Regulus calendula	Ruby-crowned kinglet
Family Sturnidae		
	Sturnus vulgaris	European starling
Family Sylviidae		
	Polioptila caerulea	Blue-gray gnatcatcher
	Polioptila californica californica	Coastal California gnatcatcher
Family Timaliidae		
	Chamaea fasciata	Wrentit
Family Troglodytidae		
	Campylorhynchus brunneicapillus cousei	Coastal cactus wren*
	Salpinctes obsoletus	Rock Wren
	Thryomanes bewickii	Bewick's wren
	Troglodytes aedon	House wren
Family Turdidae		
	Catharus guttatus	Hermit thrush
	Sialia Mexicana	Western bluebird
Family Tyrannidae		
	Contopus sordidulus	Western wood peewee
	Empidonax hammondii	Hammond's flycatcher
	Empidonax difficilis	Pacific-slope flycatcher
	Sayornis nigricans	Black pheobe
	Sayornis saya	Say's phoebe
	Myiarchus cinerascens	Ash-throated flycatcher
	Pyrocephalus rubinus	Vermilion flycatcher
	Tyrannus vociferans	Cassin's kingbird
	Tyrannus verticalis	Western kingbird
Family Vireonidae		

	Scientific Name	Common Name
	Vireo gilvus	Warbling vireo
Order Pelecaniformes	**Tropicbirds, Pelicans, Herons and Relatives**	
Family Ardeidae		
	Ardea alba	Great egret
	Ardea herodias	Great blue heron
	Butorides striatus	Green heron
	Egretta thula	Snowy egret
Family Pelecanidae		
	Pelecanus erythrorhynchos	White pelican
	Pelecanus occidentalis	Brown pelican
Family Phalacrocoracidae		
	Phalacrocorax auritus	Double-crested cormorant
	Phalacrocorax pelagicus	Pelagic cormorant
	Phalacrocorax penicillatus	Brandt's cormorant
Order Piciformes	**Woodpeckers and Relatives**	
Family Picidae		
	Picoides nuttallii	Nuttall's woodpecker
	Colaptes auratus	Northern flicker
Order Strigiformes	**Owls**	
Family Strigidae		
	Asio flammeus	Short-eared owl
	Athene cunicularia	Burrowing owl
	Bubo Virginianus	Great horned owl
MAMMALS		
Order Didelphimorphia	**Common Opossums**	
Family Didelphidae		
	Didelphis virginiana	Virginia opossum
Order Lagomorpha	**Rabbits, Hares, and Pikas**	
Family Leporidae		
	Sylvilagus audubonii	Desert cottontail
	Sylvilagus bachmani	Brush rabbit
Order Rodentia	**Squirrels, Rats, Mice, and Relatives**	
Family Sciuridae		
	Spermophilus beecheyi	California ground squirrel
Family Cricetidae		

	Scientific Name	Common Name
	Microtus californicus	California vole
	Peromyscus californicus	California mouse
Family Cricetidae Continued		
	Peromyscus maniculatus	Deer mouse
	Reithrodontomys megalotis	Western harvest mouse
	Neotoma bryanti	Desert woodrat
Family Heteromyidae		
	Perognathus longimembris pacificus	Pacific pocket mouse
Family Muridae		
	Mus musculus	House mouse
	Rattus norvegicus	Norway rat
Order Carnivora	**Carnivores**	
Family Canidae		
	Canis latrans	Coyote
	Urocyon cinereoargenteus	Grey Fox
Family Felidae		
	Lynx rufus	Bobcat
Family Mephitidae		
	Mephitis mephitis	Striped skunk
Family Mustelidae		
	Mustela frenata	Long-tailed weasel
Family Otariidae		
	Zalophus californianus	California sea lion (offshore)
Family Phocidae		
	Phoca vitulina	Harbor seal (offshore)
Family Procyonidae		
	Procyon lotor	Raccoon

*Species has not been recorded on Preserve since the 1990's.

Appendix C. GIS Coverage.

Coverage	Source	Source Year
Argentine ant locations	CNLM	2017
Non-native plant locations	CNLM	2017
Gnatcatcher (points, use area, nest locations)	CNLM	2017
Pacific Pocket Mouse Points	USFWS	2017
Rare Plant Points	Leatherman BioConsultants	2017
Vegetation Transects	CNLM	2016
Northern boundary Fence line	CNLM	2015
Bridal Creeper Locations	CNLM	2016
Gnatcatcher (points, use area, nest locations)	CNLM	2016
Bridal Creeper Locations	CNLM	2013
Gnatcatcher (points, use area, nest locations)	CNLM	2013
Rare Plant Points	CNLM	2013
PPM Capture Locations for captive breeding collection	San Diego Zoo	2012
PPM 24x24 Grid extended to former Marguerita Road bed and North of the road bed	USFWS	2012
Vegetation Transects	CNLM	2012
Gnatcatcher (points, use area, nests locations)	CNLM	2012
Bridal Creeper Locations	CNLM	2012
PPM 16x16 Grid extended to former Marguerita Road bed and North of the road bed	USFWS	2011
Rare Plant Points	CNLM	2011
Gnatcatcher (points, use area, nests locations)	CNLM	2011
Location of dead PPM	CNLM	2010
Rare Plant Points	CNLM	2010
Gnatcatcher (points, use area, nests locations)	CNLM	2010
Rare Plant Points	CNLM	2009
Gnatcatcher (points, use area, nests locations)	CNLM	2009
Veg Baseline Transect Locations	CNLM	2009
Pacific Pocket Mouse Points	USFWS	2009
Aerial Photo	Eagle Aerial	2008
Final Trail Route	CNLM	2008
Rare Plant Points	Fred Roberts	2008
PPM 16x16 Grid	USFWS	2008
Gnatcatcher (points, use area, nests locations)	CNLM	2008
Bobcat Point	CNLM	2007
Revegetation Areas & Seed mix	URS Corporation	2007
Gnatcatcher (points, use area, nests locations)	CNLM	2007
General Wildlife (whiptail and red racer)	CNLM	2007

Coverage	Source	Source Year
Cliff Spurge Points	CNLM	2006
Veg Baseline Transect Locations	CNLM	2006
Aerial Photos	URS Corporation	2006 and 1991
PPM Habitat Areas	URS Corporation	unknown
Vista Points	URS Corporation	unknown
Pacific Pocket Mouse Points	USFWS	1993-2007
Cliff Spurge Points	URS Corporation	2007
Trail Location Options	URS Corporation	2007
Sensitive Species (Cliff spurge and Boxthorn)	URS Corporation	2006
Vegetation Communities	URS Corporation	unknown
Gnatcatcher Locations	URS Corporation	unknown
Coastal Commission ESHA Boundaries	URS Corporation	unknown
Jurisdictional Channels	URS Corporation	unknown
Open Space	URS Corporation	unknown
Headlands LLC Project Boundaries	URS Corporation	unknown
Headlands LLC Revegetation Areas	URS Corporation	unknown