CNLM ANNUAL REPORT OF MANAGEMENT ACTIVITIES FOR THE 2010-2011 FISCAL YEAR ON THE

DANA POINT PRESERVE

(S033)

Prepared for:

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

Prepared by

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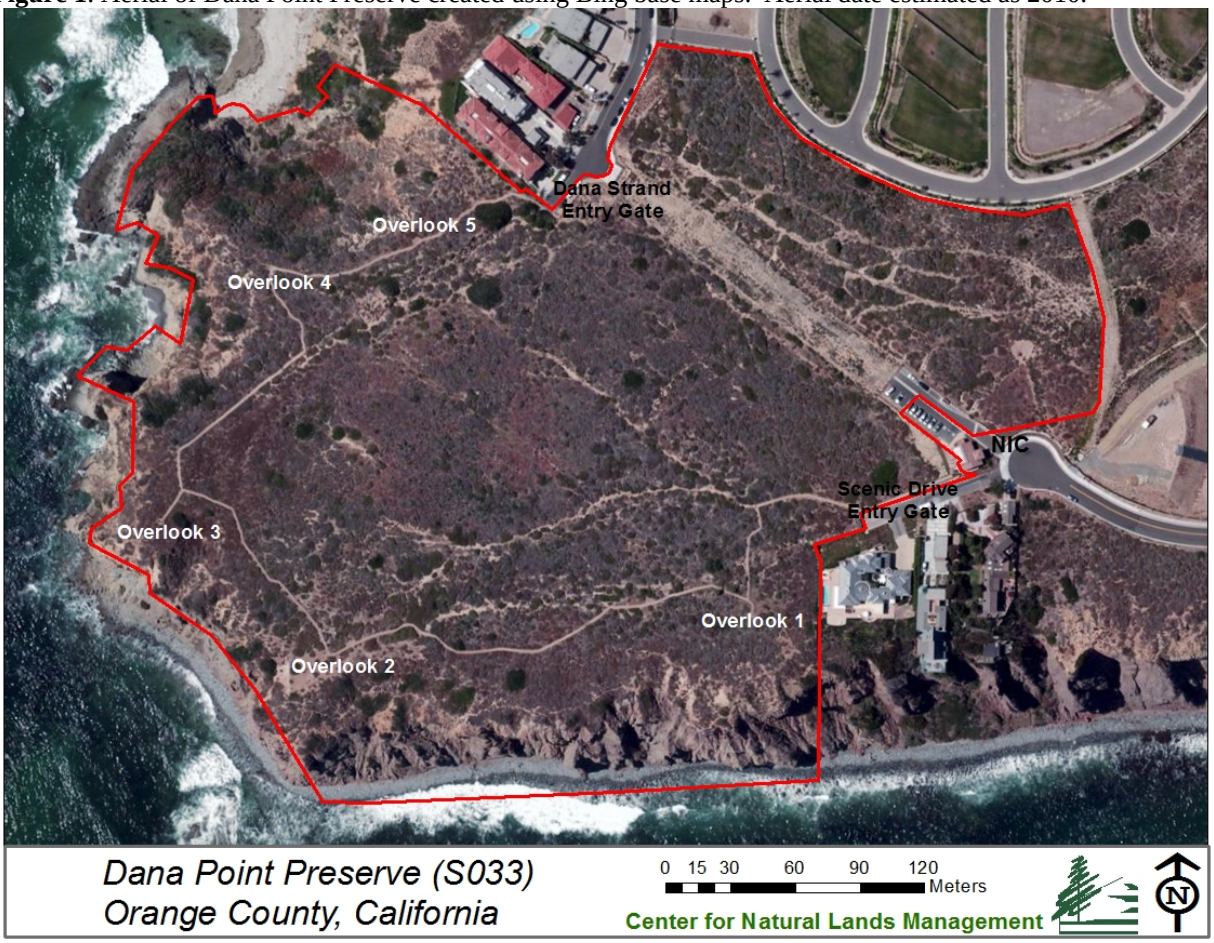
SUMMARY of 2010-11 ACTIVITIES

- Coastal California gnatcatcher surveys were completed. A total of five coastal California gnatcatcher pairs were observed and four of the five pair were confirmed productive with at least one fledgling each.
- Pacific pocket mice were monitored using track tubes.
- Rare plants were monitored.
- Predator use was monitored using remote cameras.
- Invasive plant species were removed.
- An educational brochure, the result of a collaboration between the City of Dana Point and CNLM, was designed and produced by the City of Dana Point to educate the public about the preserves.
- Trail maintenance activities were conducted and a trail design firm was hired to develop a more sustainable trail design.
- A second part-time enforcement ranger was hired to patrol the Preserve.
- Several volunteer work days were held on the Preserve.

Figure 1: Aerial of Dana Point Preserve created using Bing base maps. Aerial date estimated as 2010.



INTRODUCTION

The Dana Point Preserve (Preserve) is 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), by Headlands Reserve, LLC. The Project consists of 125 residential homes, a 65-to-90 room seaside inn, and public open space. The Project is guided by the "Headlands Development and Conservation Plan" (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 habitat. Another 11.5 acres of natural open space preserve, 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 Game, 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 California Department of Fish and Game. 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 California Department of Fish and Game (Wildlife Agencies).

This document details the management activities for the Fiscal Year (FY) 2011 (October 2010 - September 2011) on the Preserve, as required by the HMMP. Four primary management objectives for the Preserve identified in the HMMP direct the management on the Preserve until CNLM revises the management plan with the approval of the Wildlife Agencies:

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 2011 Workplan to be undertaken to serve these objectives were to:

1. Enforce restrictions over general public access, through use of patrols, fences, and signs.
2. Monitor the abundance or density of previously identified rare plants.
3. Monitor native and non-native predator use of the Preserve.
4. Conduct presence-absence monitoring of coastal California gnatcatcher (*Polioptila californica californica*: gnatcatcher) and coastal cactus wren (*Campylorhynchus brunnecapillus sandiegensis*: cactus wren).
5. Monitor the pacific pocket mouse (*Perognathus longimembris pacificus;* pocket mouse) in

coordination with the U.S. Fish and Wildlife Service (USFWS).

6. Update the Habitat Management and Monitoring Plan, as required every five years.
7. Remove non-native plant species along the bluff edges of the Preserve to avoid the need for contract labor to conduct such activities in these sensitive areas.
8. Coordinate with the City of Dana Point regarding adjacent land use activities.
9. Coordinate with Headlands Reserve, LLC, and their contractors, regarding their revegetation/weeding activities.
10. Expand the GIS database as necessary.
11. Continue the public outreach program and educational opportunities within the Preserve, including utilizing the City of Dana Point Nature Interpretive Center and their docents.
12. Provide opportunities for the public to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).
13. Conduct other tasks as necessary to effectively establish the Preserve and the presence of CNLM in the City of Dana Point.

The implementation of these tasks in FY 2011 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, and Endowment.

CAPITAL IMPROVEMENTS

***Objective**: 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. On October 7, 2010 the perimeter fence at the dead end of Dana Strand Road was damaged by a car backing into the fence. It was temporarily repaired on October 8, 2010 with help of volunteers. The City helped to prevent further accidents by changing parking rules to not allow parking within 10 feet of the fence.

To better armor the trail base for winter rain, approximately 75 sand bags and 8 straw wattles were installed along the trail in the most erosive areas. Last year most of the sandbags broke open due to people repeatedly walking on them and the plastic was coming off. To minimize potential for plastic debris on the Preserve, burlap bags were purchased to cover the plastic bags. The straw wattles were not as effective, more costly, and were soon crushed flat by repeated trampling. The most eroded area remained between overlooks 2 and 3. All sandbags were filled with loose native sand that accumulated on the trail.

The CNLM Preserve Manager was concerned about erosion within the active revegetation areas in the old Marguerita Road bed and North of the old road. It was expected that Headlands Reserve, LLC would be responsible for these areas and their contractors would install measures to prevent sand from washing off-site and minimize erosion within the Preserve. However, as of late October, 2010, no measures had been taken in these areas. On October 28, 2010, the Preserve Manager

arranged to meet with Kevin Darnall, Headlands Reserve, LLC, to discuss the need for erosion control measures. As a result, Headlands LLC, had sandbags installed along Selva Road and silt fences installed in the gullies near the NIC parking lot. The Preserve Manager had been told by the contractor that straw wattles would be used; not silt fences. As soon as the silt fences were noticed by the Preserve Manager, she instructed the crew to switch to installing sandbags to eliminate the need to dig in the Preserve.

An unpaid student intern, Erin Duddy, from the University of Queensland, Australia, volunteered for work experience under her Bachelor Degree program in Applied Science, Parks and Wildlife Management. She helped maintain the improvements on the Preserve for two weeks in December 2010 by trimming vegetation along the trails, painting the perimeter fence where rust was forming, and maintaining the trail base after rain events.

After installing a substantial number of sandbags and straw wattles, the October 2010 rain events still caused significant damage to the trail base (as the year before). On December 23, 2010 it took three people nearly four hours to fill in the rutted areas with the native sand that washed down slope. No foreign material was brought in to maintain the trial. As a result, CNLM decided to mirror practices on other public trails in Orange County and close the trail to the public during rain events and for whatever length of time required to repair the trail after such events. As a result, the trail was closed December 22 and 23, 2010, and February 7 and 20, and March 7, 20 and 21, 2011.

Figure 2: Straw wattles & sandbags (11/22/2010)

Figure 3: Erosion along trail (1/3/2011)

The area below the six redwood steps installed on March 15, 2010 became eroded after the winter rain. To help address this problem, an additional redwood step was installed on February 17, 2011 (Figure 4). The trail was closed to the public the entire day and no mechanical equipment was used to complete the installation. Only local material from elsewhere on-site was used to set the steps.

Figure 4: Additional step installed along Preserve Trail near Dana Strand Road Gate on 2/7/2011*

*The camera time was set incorrectly resulting in a misdated photo

The effects of the 2010 winter rain and the limited benefit of so many sandbags and straw wattles on the trail, confirmed the need for a more permanent solution to the trail base. The trail was not designed for durability under current levels of use for low maintenance. Thus, CNLM contracted with Bellfree Contractors Inc. to analyze the current trail configuration and construction and provide recommendations on creating a low maintenance public trail on-site. They were also asked to address the potential for rerouting the entry point of the trail to begin at or near the City Nature Interpretive Center (NIC) and the potential for the trail or areas of the trail to meet American with Disabilities Act (ADA) standards. Unfortunately, in order to address the 100-foot change in grade on-site, the entire slope down from both entry gates would have to be very long switchbacks that would repeatedly enter high quality PPM habitat and create substantial edge for nesting gnatcatchers on-site. Thus, the only option was to reconstruct the trail base to be able to withstand the high use and rain. Bellfree Contractors Inc. recommended raising and crowning the trailbed, using crushed rock to raise the trailbed, armoring the trail edge with rock, adding drainage dips and a total of 13 steps. This would cost an estimated $60,000. They also designed a reroute from the NIC that would eventually (480 linear feet) tie into the existing trail and be able to meet ADA standards for at least that portion. Such a reroute is estimated to cost $19,000 and would require approval among the appropriate agencies, but it would provide a much more manageable entrance, allow educational presentations to be conducted closer to the NIC, and allow the disabled public to experience the Preserve; rather than just viewing the Preserve from the parking lot. Funding for such a project is not available within the Preserve budget, so additional funds would need to be acquired.

Trimming the vegetation off the trail fence is another task that takes many hours of CNLM staff and volunteer time. As a result, a professional grade gas power hedge trimmer was purchased on September 28, 2011 to more thoroughly trim the vegetation and make such maintenance more efficient.

BIOTIC SURVEYS

***Objective 1**: Monitor all rare plant populations.*

The HMMP does not direct the specific monitoring method for each species, however, it states that most of the existing populations of plant species of concern are currently small enough (< 1,000 individuals) that direct counts can be made to determine both population size and density, and all populations can be monitored. It goes on to clarify the following: "For some species it is not feasible to establish transects to census because of the inaccessibility of occupied sites (e.g., cliff faces). In this case, population size and/or density will be assessed by direct counts in sample plots or estimates using binoculars from vantage points or by photodocumentation, as discussed below. Monitoring frequency for plant species of concern will vary according to species' habit (e.g., annual versus perennial). Other considerations in monitoring frequency may include population trends noted over time and budget and personnel available for monitoring. It is recommended 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. This will allow for an unbiased assessment of the population status under comparable weather conditions between monitoring years. However, the monitoring interval should not be allowed to exceed three growing seasons regardless of a series of low precipitation years. Longer-lived shrubs should typically be monitored once every three years."

Rainfall was average in Dana Point for FY 2011. According to the closest weather station at Dana Hills High School that uses Davis Vantage Pro 2 hardware, the annual precipitation for FY 2011 was 15.12 inches (www.weatherunderground.com). If 12.4 inches of rain is a correct average for Dana Point, this exceeds the average by almost 3 inches. This is similar to the amount of rainfall received FY 2010 (14.29 inches). Thus, the Preserve Manager, Lee Ann Carranza, monitored *Aphanisma blitoides*, *Calandrinia maritima*, *Pentagramma triangularis* subsp. *Viscose*, *Euphorbia misera*, and *Quercus dumosa*. The results are provided graphically in Appendix A and numerically in the last column of Table 1. None of the rare plants on-site are State or Federally listed as threatened or endangered.

Aphanisma blitoides, *Calandrinia maritima*, and *Pentagramma triangularis* subsp. *Viscose* were inventoried as in previous years; however, additional attribute data was taken in 2011 for each individual based on the California Native Plant Society Rapid Assessment Method. The data recorded included: phenology (including percent flowering/fruiting/non-productive); form; number of individuals; vegetation type; habitat quality; ground cover; other dominant plant species by percent cover; height; threats (biotic and abiotic); slope exposure; slope exposure; slope steepness; and exotic species present.

Although it was a wet year, most of the *Aphanisma blitoides* individuals were smaller or less developed on March, 9 2011 as compared with to March 25, 2010. This significantly reduced the detectibility of the species. Only half of the twelve species locations were relocated. As a result, the total number of individuals counted in 2011 was significantly lower than previous years. No new threats were observed in the field. In all locations, erosion is the greatest threat to the continued presence of this species with browsing and exotics also a concern.

Table 1: Rare and Sensitive Species monitored on-site from 2008 to 2011

Scientific Name	Common Name	Rank	2008 Populations[3]/ Individuals	2009 Populations[3]/ Individuals	2010 Populations[3]/ Individuals	2011 Populations[3]/ Individuals
Aphanisma blitoides	Aphanisma	CNPS 1B.2	12/935	12/1,059	12/1,535	6/881
Calandrinia maritima	Seaside calandrinia	CNPS 4.2	5/624	4/149	4/378	5/171
Chorizanthe procumbens	Prostrate spineflower	LC	32/21,809	3,691 additional	10,392	Not Monitored
Dichondra occidentalis	Western dichondra	CNPS 4.2	None[1]	None[1]	None[1]	None[1]
Euphorbia misera	Cliff spurge	CNPS 2.2	1/1,500	Not Monitored	Not monitored	1/156*
Lycium californicum	California boxthorn	CNPS 4.2	16/232	16/237	Not monitored	Not monitored
Malacothrix saxatilis var. *saxatilis*	Cliff malacothrix	CNPS 4.2	9/316	9/358	9/1,169	Not monitored
Pentagramma triangularis subsp. *viscosa*	Silverback fern	LC	1/1	1/1	1/1 (mature) 7 (immature)	1/6
Quercus dumosa	Nuttall's scrub oak	CNPS 1B.1	1/1	1/1	1/1 (no new acorns)	1/1 (new acorns)
Suaeda taxifolia	Woolly sea-blite	CNPS 4.2	None[2]	None[2]	None[2]	None[2]

CNPS List 1B: Plants Rare, Threatened or Endangered in California and elsewhere.
CNPS List 2: Plants Rare, Threatened or Endangered in California but more common outside California.
CNPS List 4: Plants of limited distribution, sometimes locally rare.
LC: Local Concern in Orange Co., often more common elsewhere in State.
[1] Reported by Roberts and Allen in Adjarian and Marsh (1983) and observed by author and other individuals prior to 2005.
[2] Reported by GLA (2002).
[3] Populations are defined as discrete groups of individuals
*Not all individual Euphorbia misera were attempted to be counted; only the upper elevational limit

The number of individual *Calandrinia maritima* counted was also significantly less February 25, 2011 as compared with March 18, 2010. Interestingly, all five original locations were located in 2011, but the number of individuals observed at each location were only about half of that observed the year before. Again, no obvious reason was observed for the decline. In all locations, erosion is the greatest threat to the continued presence of this species with browsing and exotics also a concern.

Chorizanthe procumbens and *Malacothrix saxatilis* var. *saxatilis* were not monitored in 2011. However, they were both observed in 2011in at least the same general locations as observed in FY 2010. *Lycium californicum* was also not monitored in 2011because it is to be surveyed every three years and was last surveyed in 2009.

Euphorbia misera was surveyed on September 8, 2011 using the California Native Plant Society Rapid Assessment Method data features as described above. An inventory of each individual *Euphorbia misera* was not conducted as in years past; rather only individuals that represented the upper elevational limits of the species on the bluff top of the Preserve. As a result, only 156 individuals were recorded. However, more information was recorded for these 156 individuals than in previous surveys. When compared to previous *Euphorbia misera* survey data, the current data suggest the species is expanding, at least in the higher-elevation areas, since new individuals were recorded (Appendix B).

***Objective 4**: Conduct presence-absence monitoring of coastal California gnatcatcher and coastal cactus wren.*

A total of five gnatcatcher pairs were observed on the Preserve in 2011 (Appendix C). This may not represent an increase from the four pairs recorded in 2010, since five pairs were recorded early in the 2009 season. The entire Preserve was surveyed by the Preserve Manager, Lee Ann Carranza, under USFWS 10(a)1(A) Recovery Permit (TE-221411-1) using standard USFWS protocol. The HMMP for Dana Point states that gnatcatcher surveys should be conducted every three years and between the months of January and March. However, due to rare plant monitoring, exotic species removal, and pacific pocket mouse monitoring occurring within the Preserve during gnatcatcher breeding season, gnatcatcher surveys were conducted this year as well. The surveys were conducted on eight days between March 2 and June 30, 2011 (Table 2). No audio-taped vocalizations of gnatcatchers were used. All gnatcatcher locations were recorded using a Trimble GPS unit and on field data sheets. The data is summarized in Table 2 below.

Table 2. Coastal California Gnatcatcher 2011 Survey Results

Date (2011)	Time	Weather	Type of Survey
March 2	7:17a.m. - 12:00p.m.	0-95% cloud cover, 4.1-5.5 mph wind, 49.3-65.5°F	CAGN Presence/Absence
March 14	8:30a.m.-12:00 p.m.	0-75% cloud cover, 1.2-3.6 mph wind, 56.8-62.7°F	CAGN Presence/Absence
March 28	9:00a.m.-12:30 p.m.	95-90% cloud cover, 1.8-4.0 mph wind, 60.5-64.7°F	CAGN Presence/Absence
April 11	8:45a.m.- 12:00 p.m.	75-25% cloud cover, 2.7-5.3 mph wind, 62-65.3°F	CAGN Presence/Absence
April 18	1:00p.m. - 2:30 p.m.	100% cloud cover, 1.5-1.8 mph wind, 63-65°F	Nest Monitoring
April 27	9:00a.m. - 12:50p.m.	Clear, 4.0 mph wind, 67°F (no record taken at 12:50pm)	Nest Monitoring
May 9	10:10a.m. - 1:10p.m.	5% - 0% cloud cover, 4.2-2.4 mph wind, 65.5 -70°F	Nest Monitoring
June 30	6:00a.m. - 11:30a.m.	Clear, 2.1-3.5 mph wind, 60.6 - 73°F	Nest Monitoring

Nest monitoring activities were conducted throughout the Preserve during the survey dates identified above (Table 2) because a pair of cowbirds was observed within the Preserve in February and to ensure biologists conducting a pacific pocket mouse study did not disturb any active nests. Four of the five pair had at least one successful brood. The fifth pair (pair 4) may have successfully fledged one chick, but the results could not be confirmed. Detailed results of the nest monitoring are provided in Table 3 below.

Table 3: Coastal California Gnatcatcher 2011 Nest Monitoring Results

CAGN ID	Status	# Nesting Attempts	# Nestlings Observed	# Fledglings
1	Pair	4/11/11= 1st nest	3 nestlings	4/11/11 = 3 confirmed 6/27/11 = feeding fledges
2	Pair	1st nest undetected 5/12/11 = 2nd nest	Not approached	1st nest at least two fledges confirmed 6/27/11 = 3 fledges confirmed
3	Pair	4/18/11: 1st nest	4 nestlings	1st nest at least 3 fledges confirmed
4	Pair	1st nest not approached. 5/9//11 = 2nd nest 4 eggs 6/30/11 = 3rd nest 4 eggs 7/27/11 = 4th attempt same nest 1 egg abandoned	All nests failed. Never observed nestlings.	N/A
5	Pair	1st nest undetected 5/6/11 = 2nd nest	2 nestlings & 1 egg	1st nest at least 2 fledges confirmed. 2nd nest at least 2 fledges confirmed.
6	Juvenile	N/A	N/A	N/A

Figure 5: Coastal California Gnatctcher Pair 1 nestlings (4/18/11)

The Preserve Manager attempted to receive approval to remove the abandoned nest and unviable egg from Pair 4 to be displayed in the NIC for educational purposes. However, it was determined by the USFWS that an amendment to the CNLM permit would be needed to authorize such activity. Thus, the nest and unviable egg were left on-site. The egg was eventually predated and the nest was not reused.

The Dana Point Preserve is likely at or near its carrying capacity for gnatcatcher pairs due to the amount of habitat available and the limits of each existing pairs territory. As a result, additional measures to increase the population are likely not needed. However, potential impacts to the resident pairs include indirect effects from people on the trail, potential increase in predators due to increased human use of the area, and 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.

***Objective 5**: Monitor predator use of the Preserve.*

Predator monitoring activities included scat and print identification and the continued use of one infrared camera (Cuddeback EXpert®). The Cuddeback No Flash® ceased working early in FY 2011 and was not replaced. The species documented by the wildlife camera are provided in Table 4 below.

The bobcat was recorded originally on the wildlife camera in FY 2009. However, it was not recorded again by the wildlife camera until April 2011. It has been observed on-site regularly throughout the remainder of FY2011. The opossum, black rat (*Didelphis virginiana*), grey fox, long-tailed weasel, domestic dog, and domestic cat were not recorded on the wildlife camera in FY 2011. Skunks were the most common predator species recorded on the wildlife cameras. However, the number of skunk photos decreased once the camera began recording the bobcat.

Table 4: Predator species documented on-site 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	10-15-10
4	Grey Fox	*Urocyon cinereoargenteus*	Wildlife Camera and Scat	Last recorded 9-29-09
5	Long-tailed weasel	*Mustela frenata*	Photo by volunteer taken May 2010	Not observed on-site in FY 2011, but observed nearby
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	Wildlife Camera recorded since 4-5-11
8	Burrowing Owl	*Athene cunicularia*	Observed and Wildlife Camera	Wildlife Camera recorded January – March 2011

Figure 6: Bobcat taken by wildlife camera 4/5/11

Objective 6*: Develop a monitoring and management strategy for Pacific pocket mice*

Tracking tubes were used to monitor Pacific Pocket Mouse (*Perognathus longimembris pacificus;* PPM) on the Preserve in Spring 2011. In 2008, a grid methodology was created to monitor the promontory portion(Conservation Park) of the Preserve. In 2009, this effort was repeated with some additional arrays of traps set north of Marguerita Road since the road had been removed. The cost of these two efforts to the Preserve budget was substantial: approximately $32,000 each year. No sampling was conducted in 2010 due to budget constraints and also because the previous two years of sampling was successful in identifying 30 and 82 unique individuals, respectively.

During that time, the United States Geological Society (USGS) was testing alternative sampling methodologies/tools for PPM at Marine Corps Base Camp Pendleton (MCBCP) (the only other property with PPM). One of the alternative tools tested was tracking tubes. USGS used modified versions of Loggins et al (2010) tracking tubes. USGS used two different size tracking tubes (1.5" and 1.0" diameter and 15" length) and both sizes were open at both ends (Loggins et al tubes were closed at one end).

USGS concluded for long term monitoring of PPM, the use of 1.5" tracking tubes best met the criteria of sampling methods evaluated (high probability of detecting PPM, low impact to PPM, and reasonable in cost) (Brehme, et al, 2010). Due to the success of the USGS study and the expectation that such an alternative monitoring tool/methodology could be applied successfully at the Preserve at significantly less cost, CNLM conducted a pilot test using 1.5" x 15" tracking tubes for the 2011 monitoring season.

In coordination with the USFWS, CNLM chose to conduct two separate monitoring efforts on the Preserve in 2011. The goal of the first effort was to determine if track tubes could be used to estimate percent area used by PPM as was determined in 2008 and 2009 with Sherman live traps. To attempt to answer this question, tracking tubes were placed in the same grid cells (64 total) that were trapped in 2008 and 2009. However, only 62 grid cells were fully monitored due to two grid cells having to be removed to avoid active CAGN nests within the grid cell. In addition, only 4 tracking tubes were placed in each grid cell whereas 9 traps were placed per grid cell in 2008 and 2009. To use 9 tubes per grid cell would have doubled the amount of resources required and since this was a pilot study and CNLM had no direct experience with tracking tubes, it was decided to limit the number of tubes to a more manageable number.

The second effort was to follow the first effort and sample the old Marguerita Road bed and north of the road bed. The goal of this effort was to determine if PPM could be detected in this area and the extent of these occurrences. Percent area used was also to be calculated. All previous trapping efforts in this area used a trapping array; not the grid cell approach. Thus, USFWS expanded the grid cell to the entire area owned and managed by CNLM and provided this GIS layer to CNLM. CNLM again used 4 tracking tubes per grid cell and chose to monitor all 34 new grid cells; rather than a subset.

USFWS generously constructed 140 tracking tubes for CNLM, using CNLM supplied materials, and had an intern construct 140 tracking plates. Even though we chose to only deploy 4 tubes per grid cell, it still required 256 tracking tubes. As a result, CNLM borrowed 116 tracking tubes and tracking plates from USGS.

The four tracking tubes were placed evenly from one another in each selected grid cell resulting in each tube being 12 meters apart. On Friday May 13, 2011, 248 tracking tubes were deployed in the field (Figure 7) by USGS (Cheryl Brehme and Tricia Monsuta), USFWS (Will Miller and Mark Pavelka), and CNLM staff (Lee Ann Carranza and Bill Kronland), and an independent small mammal biologist (Shana Dodd). Unfortunately, California towhees (*Melozone crissalis*) were found removing tracking plates from the tracking tubes to get the bait (Figure 8). The tracking tubes were reset on May 20, 2011 and retrofitted with museum putty to secure the tracking plate. The tracking cards were replaced May 27, June 1, and June 6, 2011. On June 10, 2011 the tracking tubes were removed. This resulted in 4 complete sets of data for 62 grid cells.

On June 10, 2011, four tracking tubes were placed in all 34 new grid cells in the old Marguerita Road bed and north of the road. The tracking cards were replaced on June 13, 16, and 19, 2011. On June 22, 2011 the tracking tubes were removed. This resulted in 4 complete sets of data for 34 grid cells.

Figure 7: Tracking tube study orientation 5/13/11*

*The camera time was set incorrectly resulting in a misdated photo

Figure 8: Tracking tube with card removed 5/16/11*

*The camera time was set incorrectly resulting in a misdated photo

Due to circumstances beyond the control of CNLM, all of the tracking cards were not available for analysis until late November 2011. Thus, a complete analysis of the data is not available at this time. However, all the tracking cards have been examined by Lee Ann Carranza to identify species present per tracking card and input into an excel spreadsheet. Lee Ann Carranza received training from USGS staff on March 31, 2011 and used the USGS Guide to the Identification of Small Mammal Prints for San Diego County (Matsuda et al, 2010) to identify species per card. However, some prints were partial and some cards were busy with prints which caused some difficulty in identification. As a result, each identification was given a rating of confidence (high, medium and low confidence). Some tracking cards were also provided to USGS to verify results.

The first effort resulted in a total of 116 tracking cards identified with PPM prints; 49 of which were rated as high confidence. The second effort resulted in a total of 96 tracking cards identified with PPM prints; 42 of which were rated as high confidence. Other species recorded during both efforts were harvest mouse (*Reithrodontomys megalotis*) and deer mouse (*Peromyscus maniculatus*). These results are presented in Table 5 below.

Table 5: Summary of small mammals identified on tracking cards

	Species			
	PPM	**ReMe**	**PMAN**	
Cells				**Total**
Conservation Park	116	913	112	1,141
Old Road and North of Road	96	448	57	601
Total	212	1,361	169	1,742
% of total	12.13	78.13	9.70	

Species names:
PPM, Pacific pocket mouse (*Perognathus longimembris pacificus*)
ReMe, harvest mouse (*Reithrodontomys megalotis*)
PMAN, deer mouse (*Peromyscus maniculatus*)

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 tracking card among the 16 recorded per grid cell had PPM identified (Appendix D and E). A conservative crude estimate of

percent habitat used by PPM would be 35% (22 of 62 grid cells) of the Conservation Park side of the Preserve (Table 6). Although these results cannot truly be compared to the results of the 2008 and 2009 trapping study, it is interesting to consider that if you take the same 62 grid cells trapped in 2008 and 2009 and the results of those surveys, PPM were recorded in 39% (24 of 62) grid cells in 2008 and 71% (44 of 62 grid cells) in 2009. Also, among the 62 grid cells sampled in 2011, four of the PPM occupied cells did not have PPM recorded in 2008 and 2009; they were B10, C5, E14, and G10. All four of these new grid cells were identified with high confidence and three were confirmed by USGS staff.

The results from the second effort of the pilot study in the old Marguerita Road bed and north of the road were interesting with 59% (20 of 34) of the grid cells with PPM presence identified with high confidence (Table 6).

Table 6: Summary of PPM Identified per Grid Cell

	Cells with PPM (At least one High Confidence)	Cells with PPM (Medium Confidence)	Cells with PPM (Only Low Confidence)	
24-m x 24-m cells				**Total**
Conservation Park (62)	22 (35.48%)	1	5	28 (45.16%)
Old Road and North of Road (34)	20 (58.82%)	3	2	25 (73.53%)
Total	**42**	**4**	**7**	**53**

These preliminary results suggest tracking tubes can be a useful tool for monitoring PPM at the Preserve. However, further analysis is necessary. A complete report of the Dana Point Preserve Tracking Tube Pilot Study with detailed methods, analysis, results, discussion, and estimate of cost is under preparation and will be provided once finalized.

***Objective 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 species were added to the Preserve list. The total taxa remains at 164 with 103 native and 61 non-native.

Appendix G presents a list of all animal species known to occur or have occurred on the Preserve to date. Four bird species were added to the list, including the burrowing owl. It was flushed from the Preserve and recorded on the wildlife camera from January through March 2011. The list of animals on the Preserve now identifies 23 invertebrates, 105 birds, 10 amphibians and reptiles, and 19 mammals on-site.

The pair of peregrine falcons previously documented using the Preserve were observed again during nesting season. Dr. Joel Pagel, raptor ecologist with the Carlsbad Fish and Wildlife Office, monitored the pair during the 2011 nesting season.

No cactus wrens (*Campylorhynchus brunneicapillus cousei*) were heard or seen. The Preserve Manager attended the Cactus Wren Symposium on June 3, 2011 sponsored by the Nature Reserve of Orange County and The Nature Conservancy.

HABITAT MAINTENANCE AND RESTORATION

***Objective 1**: Coordinate with Headlands Reserve, LLC, and their contractors, regarding their construction activities, revegetation/weeding activities on and adjacent to the Preserve.*

Headlands Reserve, LLC has 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.

Nature's Image remained under contract to Headlands Reserve, LLC to maintain the creation and enhancement areas. After several requests for Nature's Image staff to remove non-native plant species on the Preserve, a crew arrived on-site on May 3, 2011. They removed mostly short-pod mustard (*Brassica geniculata*) and scarlet pimpernel (*Anagallis arvensis*). However, CNLM staff removed short-pod mustard and other non-native plant species from these same areas previously to reduce the chance of seed dispersal.

The growth of native vegetation in the old Marguerita Avenue road bed remained high as can be observed in Figures 9 and 10.

Figure 9: Marguerita Avenue (11/15/10)

Figure 10: Marguerita Avenue (10/24/11)

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 (Figure 11). 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 12.

Figure 11: Impact Area (3/10/10)

Figure 12: Impact area post remediation (10/24/11)

Objective 2*: Control exotic plant species on the Preserve.*

CNLM staff regularly pulled resprouting and newly germinating non-native plants encountered during patrols and removed all Sahara mustard (*Brassica tournfortii*) encountered on-site.

Natures Image conducted significantly less weed removal activities on the Preserve south of the old Marguerita Roadbed than in previous years even though substantial areas of exotic invasive plants were present. Consequently, CNLM staff spent significantly more time hand pulling exotic plant species in FY 2011. The most common species removed included: short-pod mustard, scarlet pimpernel, Bermuda butter-cup (*Oxalis pes-caprae*), and non-native grasses.

All non-native plant removal on the slopes was conducted by CNLM staff, including the student intern, Erin Duddy, in order to provide the professional care needed to avoid potential adverse affects to rare plant species. Non-native species removed on the bluff edge included: Perez's sea lavender (*Limonium perezii*), Scarlet pimpernel, Short-fruited filaree (*Erodium brachycarpum*), Red-stemmed filaree (*Erodium cicutariu*), Russian thistle (*Salsola tragus*), Hottentot fig (*Carpobrotus edulis*), Croceum iceplant (*Malephora crocea*), Crystal iceplant (*Mesembryanthemum crystallinum*), and Small-flowered iceplant (*Mesembryanthemum nodiflorum*).

Bridal Creeper (*Asparagus asparagoides*) was observed as a problem on-site in late FY 2010. Apparently, Natures Image had been hand pulling the plant and so not until their activities were reduced was the extent of this species known. It cannot be treated by hand pulling because it spreads rhizominously with tubers. Treatment methods were investigated and it was determined that the most effective method was to cut the plant at the base and chemically treat with glyphosate. On February 20, 2011, the Preserve Manager and two experienced volunteers (Celia Kutcher; CNPS and Keith Haworth; formally CNLM) treated all known bridal creeper individuals with a mixture of 50% water and 50% glyphosate (47% active ingredient). We chose not to dig the tubers out of the ground because of potential impacts to PPM habitat. Approximately four large areas were treated and remained effective through FY 2011.

PUBLIC SERVICE AND GENERAL MAINTENANCE

***Objective 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 the following dates due to rain and/or trail maintenance as described earlier (December 22 and 23, 2010, and March 7, 20 and 21, and February 7, and 20, 2011).

Public use remained high throughout the year. Trail counters were installed on April 12, 2011. They were purchased through Nature Reserve of Orange County funds by the direction of the USFWS. From April 12 – Sep 27, 2011, 165 days of data was recorded, with 125,894 passes total with an average of 344 passes per day at the Scenic Drive Gate and 116,285 passes total with an average of 318 passes per day at the Dana Strand Gate. The amount of use recorded remained similar throughout the 5.5 month period with the most notable increase of use in July. These results are summarized by the TrafX program and graphically displayed in Appendix H.

CNLM continued to contract with Rock Maintenance to walk the trail and lock the gates every evening at sunset. Contractors to the City unlock the gates every morning at 7:00am. For most of FY 2011 the City contracted with TruGreen for such services; however, the City changed contractors around late May 2011 to Soto Company. There was a problem for a while with Soto staff opening the gates too early; often before 6:00am. However, after coordination with the City, the problem was rectified. The trail counter data was instrumental in documenting when and if the trail gates are locked and unlocked. This helped the Preserve Manager better oversee the contractors and ensure the Preserve is open to the public at the appropriate times.

In March 2011, a second part-time ranger, Bruce Buchman, was hired by CNLM to share responsibilities with CNLM Ranger Tom Maloney. Mr. Buchman is also a retired Orange County Park Ranger with 33 years experience. Mr. Maloney and Mr. Buchman were scheduled to work the late afternoon/evening hours before closing on school holidays and weekends. They worked 4 days a week during the two week spring break and every night of the week during summer break.

Public use issues within the Preserve include off-trail use, bike riding (and bike walking), smoking, people with dogs (pets), littering, and walking off-trail. The problem with people bringing their dogs on the trail was significantly reduced in FY 2011 likely due to more frequent patrol of the trail entrance and education to the public via CNLM staff, City staff and City docents. However, off-trail activities persisted with at least one person going off-trail nearly every day. The most common location the public went off-trail was at the second overlook, followed by the third and then the fourth. There were fewer than four occasions where someone (or evidence) was observed 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 and limit the expansion of the rare plant populations and possibly increase risk to the Preserve from fire. Off-trail use is an even greater threat during the bird nesting season where at least two pair of gnatcatchers seem to bring their fledges to the bluff edge to forage. It can also be disruptive to the pair of peregrine on-site, not to mention other nesting bird species.

In early April 2011, CNLM Rangers suspected transient activity near overlook 3. CNLM staff and volunteers went to the site where the damage by the transients occurred to restore the area. Unfortunately, two more holes were dug and two tools (1 long handle shovel and 1 short shovel) were found shoved in the holes. As a result, CNLM advertised a volunteer work day on-site for Earth Day 2011. A total of three CNLM staff and five volunteers worked from 8:30 a.m. until 11:30 a.m. on April 22, 2011. The 3 CNLM staff worked an additional 1.5 hours to set up and clean up the effort. The activities included filling the holes with the sand that was removed and removing any items that were uncovered by the transients. In order not to harm any historical items, we sorted through all the items and transported them with a wheel barrel to be either saved or put in the trash dumpster. We then planted cactus pads provided by a neighbor from their yard and placed dead shrubs/branches in the disturbed areas for erosion control and as a deterrent to foot traffic.

Figure 13: Damage caused by transients (4/5/11)*

*The camera time was set incorrectly resulting in a misdated photo

Figure 14: Volunteers fixing transient damage (4/22/11)*

*The camera time was set incorrectly resulting in a misdated photo

Some youth created a makeshift memorial off trail on the bluff edge beyond overlook 3 for a Dana Point High School sophomore who died on March 26, 2011. They continued to return to the area and leave items on-site through August 2011. All non-organic items were removed when found.

Even with the Ranger present on-site, some people continued to violate the rules. An example of active violations observed and recorded by the Ranger for a one-month period is provided in Table 7 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 either the Preserve Manager or Ranger were not on-site. The police were contacted on a few occasions by the Preserve Manager and Rangers; however, no citations were known to be issued by the police to trespassers on-site in FY 2011.

The time period presented below is the same as that provided in the FY 2010 report which had 26 violations recorded by the Ranger. This suggests the increased resources CNLM has dedicated to patrol and enforcement has been beneficial.

In an attempt to reduce the number of bikes on the Preserve, additional signs were installed at both entry gates with the symbol for no bikes. It seems to have helped reduce the number of violations.

Table 7: Ranger Enforcement Log (June 16 – July 16, 2011)

	Date & Time	Violation	Location
1	6-19-11	Off-trail	Overlook 2
2	6-24-11	Off-trail	Overlook 3
3	6-25-11 @ closing	Off-trail	Overlook 2
4	6-26-11	Dog	Overlook 5
5	6-26-11	Off-trail	Overlook 3
6	6-27-11	Off-trail	Overlook 2
8	7-8-11	Smoking	Overlook 1
9	7-9-11	Dog on leash	Not recorded
10	7-11-11 @ 7:00pm	Bike	Overlook 4
11	7-14-11	Off-trail	Overlook 2
12	7-15-11	Smoking	On trail near overlook 3

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

CNLM created GIS coverages for data collected in FY 2011 and USFWS provided an updated 16x16 meter grid overlay for PPM to accommodate monitoring in the former Marguerita Road bed and north of the road bed.

Table 8: GIS Coverages on File

Coverage	Source	Source Year
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

***Objective 3**: Continue public outreach and educational opportunities associated with the Preserve, including working with the homeowners adjacent to the Preserve and the City of Dana Point.*

The NIC was open throughout FY 2011 from 10:00 a.m. to 4:00 p.m. Tuesday through Sunday. Some historic items found on the Preserve while conducting weed removal and trash removal included pottery shards, old bottles, bullet casings, etc. Some of these items are on display in the NIC display cases. The others are held in the office space within the NIC. The Preserve Manager was available to interact with the public and answer questions while at the NIC about two days a week.

The City funded the design and production of a professional brochure to use at the NIC. It provides information on both the City and CNLM Preserves and the associated biota which CNLM staff provided input (Appendix I). This now replaces previous educational materials produced and used by CNLM.

Several nature walks along the public trail were provided to interested organizations upon request, such as Amigos de Bolsa Chica, local cub scout group, Sea and Sage Audubon Society, Laguna Canyon Wilderness Park employees, a first grade school field trip, and representatives for the St. Regis Hotel walking group. The Preserve Manager also led training walks for the City NIC docents to educate them on the details of the CNLM Preserve.

The following volunteer work days were scheduled and advertised through the NIC: October 23, 2010, November 21, 2010, February 12, 2011, and April 22, 2011. On November 21, 2010, the volunteers were from the Jane Goodall Institute and included 100 high school kids. They were first provided a tour of all the Preserves and then worked on the City Preserves and CNLM Preserve filling sand bags, removed exotic plants, trash and woody debris, and trimming vegetation off the trail fence. In addition, on March 27, 2011, two Irvine high-school students requested to volunteer for the morning and trimmed vegetation off the trail fence.

In May 2011, the Maddie James Foundation contacted CNLM to request permission to include the 0.5 mile CNLM trail within their 1.2 mile walk in memory of five-year old Maddie James to raise funds to help build a new learning center at the Ocean Institute. Over 200 people participated in the event on May 14, 2011. The Foundation had volunteers stationed at each gate to ensure people did not enter with bikes, strollers, or dogs. They also maintained a trash can at each gate. City staff, City docents, and a CNLM Ranger were on-site as well to ensure all the rules of the Preserve were followed.

An educational walk was also arranged by Orange County Park Ranger, Candice Hubert, on June 19, 2011. It was titled “Birds and Butterfly Walk” and was led by Mr. Gary Meridith.

The Preserve received national and local press in FY 2011, including a small section in the November 2010 issue of Sunset Magazine. CNLM was not contacted in advance of the article and was made aware of it by people visiting the Preserve. The San Diego Union Tribune contacted CNLM to request information for a travel story on the entire City and CNLM Preserve System in

February 2011. The reporter was provided information and requested to make it clear pets were not allowed on any of the trails. There was also a one page spread in the San Clemente Journal Magazine in March 2011 on the entire Preserve system. CNLM was not contacted in advance.

REPORTING

Objective: 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 gnatcatchers and pocket mice from future management actions. The process was not completed and will continue in FY 2012. As stated in previous work plans, CNLM intends to prepare a new habitat management plan that addresses only the portion of land that CNLM owns and manages, utilizes the results of the rare plant and small mammal surveys completed in 2008 and 2009, 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 2012.

A work plan for the 2012 fiscal year (October 2011 through September 2012) was completed and provided to the USFWS, CDFG, and City on November 28, 2011 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 FY 2012.

ENDOWMENT

The original endowment provided to CNLM was in the amount of $1,747,844.00. The endowment balance as of September 30, 2011 was $1,735,506.00.

INCOME

CNLM received income in FY 2011 due to the presence of a CNLM donation box within the City NIC. A total of $428 was collected in FY 2011.

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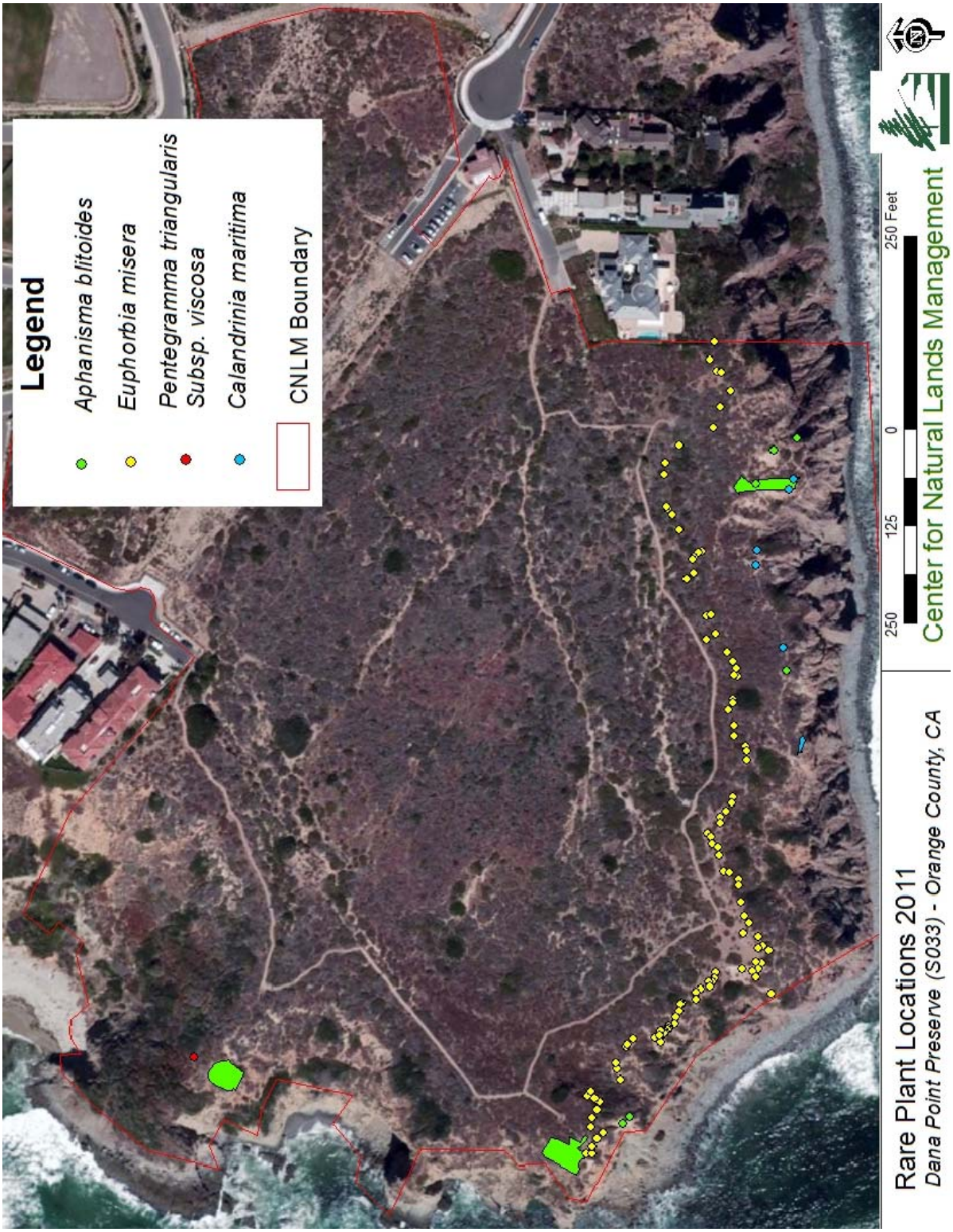
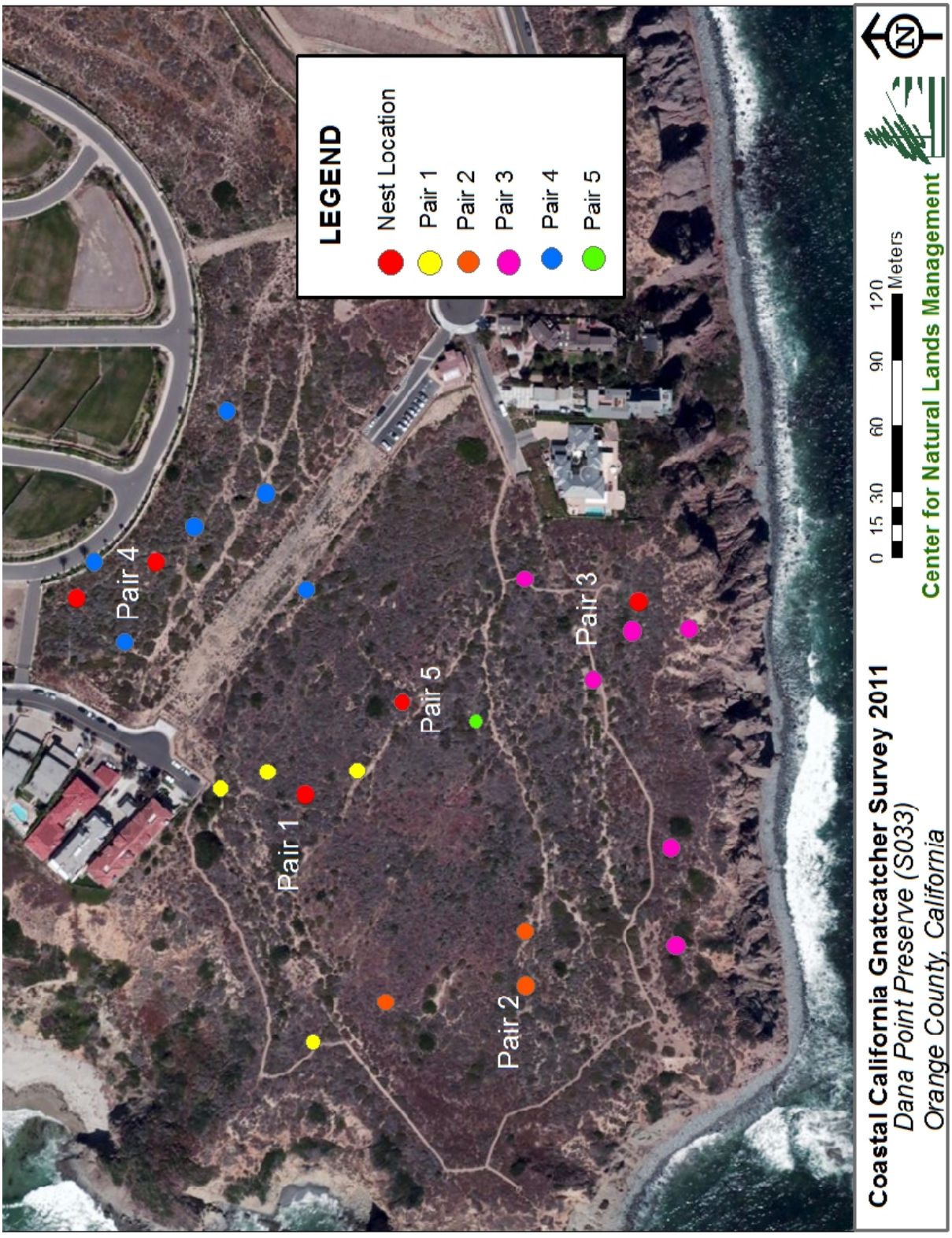
Appendix A


Legend
Aphanisma blitoides
Eriophyllum misera
Pentegramma triangularis
Subsp. viscosa
Calandrinia maritima
CNLM Boundary
250 Feet
250
125
0
Rare Plant Locations 2011
Dana Point Preserve (S033) - Orange County, CA
Center for Natural Lands Management

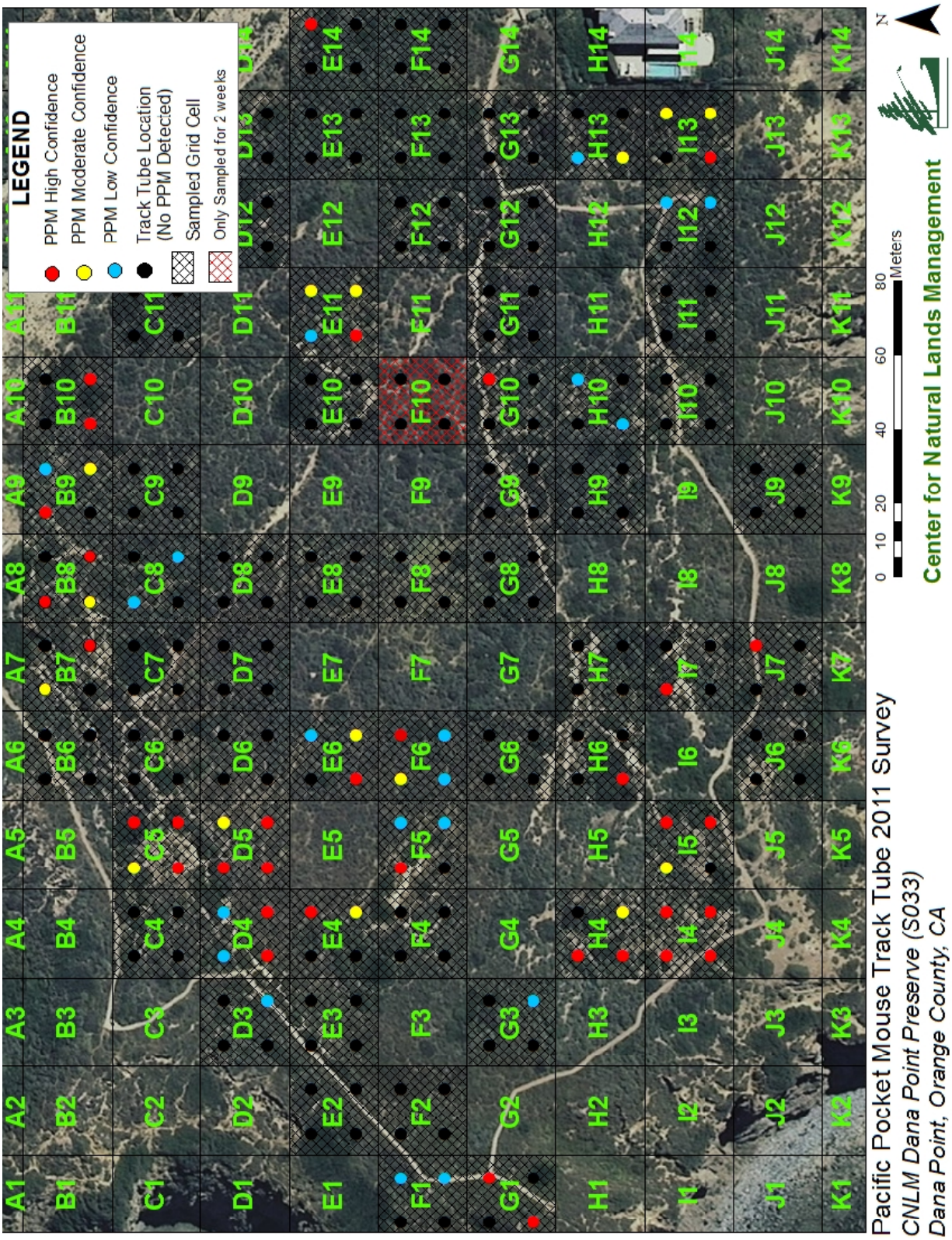
Appendix B


Legend
Euphorbia misera 2007
Euphorbia misera 2011
CNLM Boundary
175
87.5
0
175 Feet
Cliff Spurge Locations 2007 and 2011
Dana Point Preserve (S033) - Orange County, CA
Center for Natural Lands Management

Appendix C

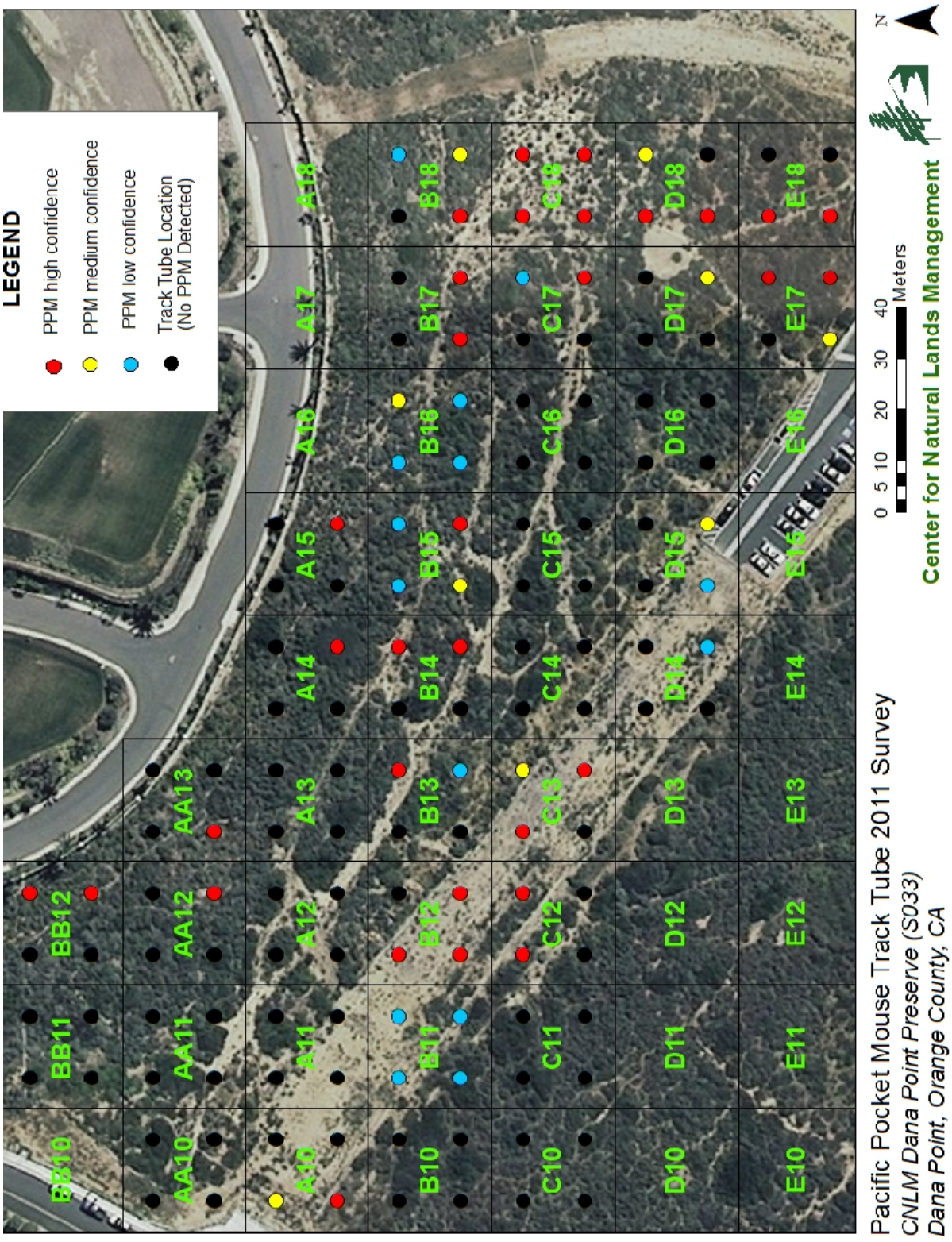

LEGEND
Nest Location
Pair 1
Pair 2
Pair 3
Pair 4
Pair 5
Pair 1
Pair 2
Pair 3
Pair 4
Pair 5
Coastal California Gnatcatcher Survey 2011
Dana Point Preserve (S033)
Orange County, California
0 15 30 60 90 120
Meters
Center for Natural Lands Management

Appendix D



Pacific Pocket Mouse Track Tube 2011 Survey
CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA

Appendix E


LEGEND
PPM high confidence
PPM medium confidence
PPM low confidence
Track Tube Location (No PPM Detected)
BB10
BB11
BB12
AA10
AA11
AA12
AA13
A10
A11
A12
A13
A14
A15
A16
A17
A18
B10
B11
B12
B13
B14
B15
B16
B17
B18
C10
C11
C12
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D10
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D12
D13
D14
D15
D16
D17
D18
E10
E11
E12
E13
E14
E15
E16
E17
E18
0 5 10 20 30 40
Meters
N
Center for Natural Lands Management
Pacific Pocket Mouse Track Tube 2011 Survey
CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA

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

refers to species newly observed in 2011

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

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	
Camponotus sp.	Unidentified carpenter 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 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

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 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

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 Ciconiiformes

Egretta thula	Snowy egret

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 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	
Pheucticus melanocephalus	Black-headed grosbeak
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 and Relatives**

Family Ardeidae

Ardea herodias	Great blue heron
Butorides striatus	Green heron

Family Pelecanidae

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

MAMMALS

Order Didelphimorphia **Common Opossums**

Family Didelphidae

Didelphis virginiana	Virginia opossum

Order Lagomorpha **Rabbits, Hares, and Pikas**

Family Leporidae

Sylvilagus audubonii	Desert cottontail

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 2011

Appendix H

Daily/Weekly/Monthly totals report

From 2011-04-01 to 2011-09-30

Report generated on 2011-12-07 12:31:52 (UTC -07:00) by lcarranza@cnlm.org

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

* Weekly and Monthly totals are based on Average Daily Traffic (ADT)

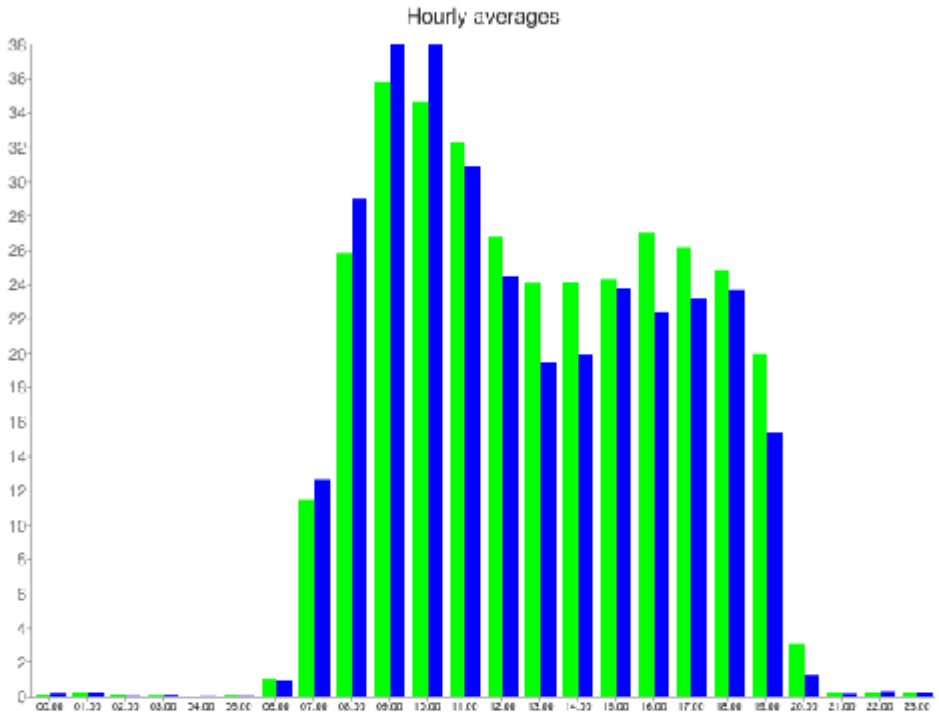
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Hours of the day

From 2011-04-10 to 2011-09-27

Report generated on 2011-12-07 12:30:49 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	14.9	20.0	13.4	0.1	35.8
Dana Strand Gate	13.5	14.0	13.3	0.0	38.0

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

Appendix I

BIOLOGICAL OPEN SPACE PARKS AND TRAIL SYSTEM

Photo: CNLM

The Dana Point Headlands

City of Dana Point

NATURE INTERPRETIVE CENTER

The Nature Interpretive Center is an educational, management and operational facility run by the City of Dana Point. It provides information about the local habitat—terrestrial and marine—and the history of Dana Point, in an informal visitor center setting.

School programs and docent guided tours are available upon request.

The Nature Center is open to the public Tuesday – Sunday 10 am – 4 pm. (closed on Monday)

If you are interested in docent or volunteer work please contact the Center.

Trail Rules of Use

- No hiking off designated trails
- No dogs or pets because their presence can harm endangered species on-site
- No bicycles or skateboards
- No littering
- No alcohol or glass
- No removal or collecting of natural materials
- No camping or fires
- No smoking

Trail Hours

All trails are open daily from 7 am – sunset.
Parking and restrooms are available at the Nature Interpretive Center from 7 am – sunset.

Dana Point Nature Interpretive Center
34558 Scenic Drive, Dana Point, California 92629
(949) 542-4755

Center for Natural Lands Management
215 West Ash Street, Fallbrook, CA 92028
760.731.7790 / info@cnlm.org / www.cnlm.org

Please Recycle this brochure when no longer using it.

Plant Identification Walk

AT HARBOR POINT PARK

(Plants images are inside foldout)

1. Coastal Sagebrush *(Artemisia californica)*
2. Toyon *(Heteromeles arbutifolia)*
3. Coastal Prickly Pear *(Opuntia littoralis)*
4. Coyote Bush *(Baccharis pilularis)*
5. Chalk Dudleya *(Dudleya pulverulenta)*
6. Lemonade Betty *(Rhus integrifolia)*
7. Bush Sunflower *(Encelia californica)*
8. Flat-Topped Buckwheat *(Eriogonum fasciculatum)*
9. Lance-leaf Dudleya *(Dudleya lanceolata)*
10. Box Thorn *(Lycium californicum)*

HARBOR POINT TRAIL

The Dana Point Headlands

The Dana Point Headlands is a coastal promontory rising from the Pacific Ocean, with Dana Point Harbor to the south and Strand Beach to the north. The combination of the mild southern California climate, ocean influence, unique geology, and coastal sage scrub plant community creates a unique habitat that is home to rare, and endangered flora and fauna.

The Dana Point Headlands open space areas encompass approximately 60 acres and are comprised of various parks and recreational areas:

- Harbor Point Park, with a trail that overlooks the Dana Point Harbor and includes the Nature Interpretive Center
- Hilltop Park, south of Pacific Coast Highway, providing trails with scenic panoramas of the City of Dana Point
- Switchback Trail, considered part of Strand Vista Park and Strand Beach Park, winding down the hillside overlooking the Pacific Ocean
- Dana Point Preserve, 29.4 acres of preserved native habitat owned and managed by the Center for Natural Lands Management for the protection of rare and endangered species

Dana Point Headlands

CNLM Dana Point Preserve

Photo: Judy Mitrani

Harbor Point Park

Hilltop Park Trail

Protecting What Remains

The plant communities at the Dana Point Headlands provide examples of native southern California wilderness. The coastal sage scrub plant community is sometimes referred to as soft chaparral because the plants are mostly low growing, flexible, and have soft leaves. Coastal sage scrub plants are adapted to cool wet winters and warm dry summers, thrive on the ocean influence (fog/humidity) and support a diverse number of organisms. Dominant plants of this community are the Coastal Sagebrush and Flat Topped Buckwheat.

A second plant community found on-site is referred to as coastal bluff scrub. This community is located along the unstable slopes of the cliffs, often found on vertical substrate taking advantage of the rich marine influence. Dominant plants of this community are Cliff Spurge and California Box Thorn.

To date the habitat has been identified to support:

- Approximately 105 native plants species
  - Eight plant species are on the California Native Plant Society rare plant inventory
- Approximately 109 animals species
  - Two animal species are on the U.S. Fish and Wildlife Service Threatened and Endangered Species List

Photo: USFWS

Photo: Julie C. Asher

Center for Natural Lands Management

The Center for Natural Lands Management (CNLM) is a non-profit 501(c)(3) organization that manages more than 60 natural areas in California. It owns the 29.4 acre CNLM Dana Point Preserve thanks to a generous donation by the Harry and Grace Steele Foundation, which also provided an endowment to manage the property in perpetuity. CNLM manages these funds and gratefully accepts tax deductible donations.

The Center for Natural Lands Management:

- Conducts biological monitoring and maintenance activities
- Ensures the conservation values of the 29.4 acre CNLM Dana Point Preserve are not degraded
- Works with the City of Dana Point to ensure that the public enjoys the trails while understanding the importance of conserving rare habitat

Photo: Joel Weintraub

Timeline:

1542 | 1769 | 1776 | 1822 | 1824 | 1834 | 1836 | 1848 | 1864 | 1870s | 1884 | 1924 | 1925 | 1926 | 1939 | 1940 | 1967 | 1993 | 1998 | 2004 | 2006 | 2010

CNLM

LeeAnn Carranza <lcarranza@cnlm.org>

CNLM Annual Report for the Dana Point Preserve

1 message

LeeAnn Carranza <lcarranza@cnlm.org> **Fri, Dec 30, 2011 at 4:25 PM**
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The Center for Natural Lands Management Fiscal Year 2011 (Oct 1, 2010 - September 30, 2011) Annual Report for the Dana Point Preserve (S033) is attached in pdf format. Please forward to anyone else within your respective organization that should receive a copy.

If you have any problems downloading the attached document or if you prefer to receive a hard copy of the report, please contact me.

Thank you,

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CNLM ANNUAL REPORT OF MANAGEMENT ACTIVITIES FOR THE 2011-2012 FISCAL YEAR ON THE

DANA POINT PRESERVE

Owned and Managed by CNLM (S033)

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

Prepared by

Center for Natural Lands Management

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SUMMARY of 2011-12 ACTIVITIES

- Trail maintenance activities were conducted.
- Vegetation communities were monitored.
- Coastal California gnatcatcher surveys were completed. A total of seven coastal California gnatcatcher pairs were observed and all were confirmed productive with at least one fledgling each.
- Potential predators to the pacific pocket mouse were monitored using a remote camera.
- Pacific pocket mice were monitored using traps and track tubes.
- Ten Pacific pocket mice were captured by the San Diego Zoo for a captive breeding program.
- Invasive plant species were removed.
- Erosion control measures were installed along the trail and at overlooks 2 and 3.
- A third part-time enforcement ranger was hired to patrol the Preserve.
- Volunteer work days were held monthly on the Preserve.

Figure 1: Aerial of Dana Point Preserve created using Bing base maps. Aerial date estimated as 2010.

INTRODUCTION

The Dana Point Preserve (Preserve) is 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), by Headlands Reserve, LLC. The Project consists of 125 residential homes, a 65-to-90 room seaside inn, and public open space. The Project is 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 preserve, 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 Game (CDFG), 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 California Department of Fish and Game. 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 California Department of Fish and Wildlife (Wildlife Agencies). On January 4, 2012, CDFG 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 for the Fiscal Year (FY) 2012 (October 2011 - September 2012) on the Preserve, as required by the HMMP. Four primary management objectives for the Preserve identified in the HMMP direct the management on the Preserve until CNLM revises the management plan with the approval of the Wildlife Agencies:

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 2012 Workplan (CNLM 2011) to be undertaken to serve these objectives were to:

1. Enforce restrictions over general public access, through use of patrols, fences, and signs.
2. Monitor the abundance or density of previously identified rare plants.
3. Monitor native and non-native predator use of the Preserve.
4. Conduct presence-absence monitoring of coastal California gnatcatcher (*Polioptila californica californica*: CAGN) and coastal cactus wren (*Campylorhynchus brunnecapillus sandiegensis*: cactus wren).

5. Coordinate with the U.S. Fish and Wildlife Service (USFWS) regarding future monitoring activities for the pacific pocket mice (*Perognathus longimembris pacificus;* PPM).
6. Finalize the updated Habitat Management and Monitoring Plan.
7. Remove non-native plant species along the bluff edges of the Preserve to avoid the need for contract labor to conduct such activities in these sensitive areas.
8. Coordinate with the City of Dana Point regarding adjacent land use activities.
9. Coordinate with Headlands Reserve, LLC, and their contractors, regarding their revegetation/weeding activities.
10. Expand the GIS database as necessary.
11. Continue the public outreach program and educational opportunities within the Preserve, including utilizing the City of Dana Point Nature Interpretive Center and their docents.
12. Provide opportunities for the public to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).
13. Conduct other tasks as necessary to effectively establish the Preserve and the presence of the Center for Natural Lands Management in the City of Dana Point.

The implementation of these tasks in FY 2012 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, and Endowment.

CAPITAL IMPROVEMENTS

***Objective**:* *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.

To better armor the trail base for winter rain, approximately 100 sand bags (75 of which were double bagged in burlap) were again installed along the trail in the most erosive areas. The most eroded area was between overlooks 1 and 2. All sandbags were filled with loose native sand that accumulated on the trail or above grade adjacent to the trail. Straw wattles were not used this fiscal year due to their poor performance along the trail in FY 2011.

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

All the trail fencing was painted by contractors to Headlands Reserve, LLC before the trail was opened to the public. However, the public trail fence was painted on two separate occasions within 12 months of each other. Those that were painted first now have a matte finish and the post caps are corroding. Those areas painted on the second occasion remain looking and performing like new. Unfortunately, nearly all of the trail fence was painted on the first occasion and could benefit from being repainted. Such activities are difficult to perform since the trail is open daily during nearly all daylight hours. The overlooks can be taped off to public use, so the trail fencing at overlooks 1, 2 and 3 were repainted by volunteers.

For the first time, no significant damage occurred to the perimeter fence surrounding the Preserve. CNLM again closed the trail to the public during rain events and for whatever length of time required to repair the trail after such events. Although few rain events occurred in winter 2012, damage did occur to the trail base and the trail was closed on January 15, 2012 (7am to 10am) and January 23, 2012 (2pm on) and February 27 and February 28, 2012 (all day).

The area below the seven redwood steps became eroded after the winter rain. To help address this problem, an additional redwood step was installed on Saturday, August 25, 2012. The trail was closed to the public from 7:00 am to 11:00 am. No mechanical equipment was used to complete the installation. Local material from elsewhere on-site along with pea gravel was used to set the steps.

Additional funding was sought to fund the trail base reconstruction designed by Bellfree Contractors Inc. in 2011. This entails raising and crowning the trailbed, using crushed rock to raise the trailbed, armoring the trail edge with rock, adding drainage dips and a total of 13 steps. This would cost an estimated $60,000 in contract labor and materials alone. Unfortunately, no grant money was available this fiscal year. The Preserve Manager will continue to look for grant or other outside funding sources to complete this work.

Trimming the vegetation off the trail fence is another task that takes many hours of CNLM staff and volunteer time. On September 28, 2011, a professional grade gas power hedge trimmer was purchased. This has made trail maintenance significantly more efficient. During the monthly volunteer events, a CNLM Ranger trims the vegetation off the trail fence and/or perimeter fence and volunteers remove the cut brush and either haul it off-site or strategically place it in open areas around overlooks to act as a visual barrier to unofficial trails used by trespassers.

BIOTIC SURVEYS

***Objective 1**: Monitor all rare plant populations.*

No rare plant monitoring occurred this fiscal year. 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 below average in Dana Point for FY 2012. According to the closest weather station at Dana Strands Beach (www.weatherunderground.com), the annual precipitation for FY 2012 was 4.64 inches. This is 7.76 inches below average, assuming 12.4 inches of rain is average for Dana Point. This is the least amount of rainfall recorded since CNLM began management of the site. As a result, rare plants were not monitored in FY2012.

Objective 2*:Conduct long-term coastal sage scrub vegetation surveys.*

The Preserve Manager repeated coastal sage scrub vegetation surveys as was conducted in 2006 and 2009 by Eliza Hasselquist (former CNLM Preserve Manager and botanist). The purpose of this long-term monitoring effort is to examine how changes in coastal sage scrub habitat at the Preserve over time may affect changes in the populations of sensitive species on the Preserve, such as PPM or CAGN. In 2006 only shrub cover was measured with the rational being that the dominant characteristic of coastal sage scrub habitat is cover of shrubs. In 2009 measurement of herbaceous plant and ground cover (defined as either "litter" or "bare") were added, providing a more holistic assessment of the plant community.

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. 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. To not arbitrarily choose a number of additional transects, a power analysis was conducted using the 2006 and 2009 results. Fifteen additional transects were added as a result with the following methodology: Sample the same 5 transects as in 2006 and 2009 every three years as before; randomly select 15 new transects; conduct vegetation sampling at 5 of the new transects annually. This will require sampling 10 transects every three years because of retaining the original 5 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 any annual variation. The original 5 transects along with 5 additional transects were monitored in 2012. The new transects were randomly selected among the 24x24 meter grid cells in the former Marguerita Roadbed and north (Appendix A).

The same twenty-five 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 m, for a total of 50 points) were recorded, giving a total of 50 points per transect. 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. 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) to record any species observed that was not recorded on the transect points. Ground cover was also noted. For simplicity, only "litter" or "bare" were options for ground cover.

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 2012c).

Functional Groups of Shrubs: comparison between years. Shrub cover was shown to have changed significantly among 2006, 2009 and 2012 for comparison among the same transects all three years ($p=0.47$). In 2006, shrub cover had a mean percent cover of 77.2%, whereas in 2009

percent cover of shrubs was significantly lower, with a mean of 41%, but higher again in 2012 with 69%. The mean percent cover of subshrubs did not change much from 2006 (9.2%) to 2009 (10%) and 2012 (8.0%). Dead shrubs changed from 13.6% of the cover at the Preserve in 2006 and 24.8% in 2009 ($p=0.09$), but decreased in 2012 close to the same value as in 2006 at 13% ($p=0.097$ for comparison of all three years). However, the mean percent of "Live" cover (includes "shrubs" and "subshrubs") decreased from 86.4% in 2006 to 51% in 2009 and increased again to 77% in 2012 ($p=0.036$ for comparison of all three years). When comparing 2012 data to only 2009 data, no changes were statistically significant ($p<0.05$). Among the 5 new transects (AA11, B11, B15, C18, and D14), the mean percent cover of shrubs was 62.8% and subshrubs was 13.2%. Cover of live shrubs was 76% and dead shrubs was only 1.6% cover.

Species of Shrubs: comparison between years. There was a general trend of increasing percent cover of most species of shrubs from 2009 to 2012, whereas there was a general trend of decreasing percent cover of most species of shrubs from 2006 to 2012. Although no changes from 2009 to 2012 or among all three years were statistically significant. The most abundant shrub species encountered on transects was *Artemisia californica* (mean=25%) and *Eriogonum fasciculatum* ssp. *fasciculatum* (mean=24%). The next most common species was *Encelia californica* (mean=18%). *Artemisia californica* was the only shrub or subshrub species found on all five transects. Half of the shrub and subshrub species were found on just one of the five transects.

Among the 5 new transects (AA11, B11, B15, C18, and D14), the results were nearly identical to the original 5 transects where the most abundant shrub species encountered was *Artemisia californica* (mean=30.8%) and *Eriogonum fasciculatum* ssp. *fasciculatum* (mean=16.4%). However, the next most common species was *Lotus scoparius* (mean=13.2%). *Artemisia californica* was again the only shrub or subshrub species found on all five transects, but more than half of the shrub and subshrub species were found on more than three transects.

Functional Groups of Herbaceous Plants. April 2009 was the first time herbaceous plants were measured on these transects; thus, the 2012 results can only be compared to 2009. In 2012, of the natives, broad-leaved forbs were the dominant component with a mean percent cover of 7.2%, as was the case in 2009 (74.0%). But, this was a significant decrease of 66.8% ($p=0.004$). Cover of native herbaceous cover decreased by 71.2% from 2009 to 2012 ($p=0.003$). Native grasses were 3.6% cover in 2012. Average non-native plant cover was 27.6% on the transects. Grasses were the most common non-natives, with a mean percent cover of 26.4%. In contrast, non-native forbs (e.g. *Anagallis arvensis*) were not as prevalent as the non-native grasses, with a mean percent cover of 1.2%. Among the 5 new transects (AA11, B11, B15, C18, and D14), the mean percent cover of native herbaceous cover was 27.2%. There were no non-native forbs encountered on the transects, thus the mean percent cover of non-native grasses and herbaceous cover were both 18%. The percent native grasses were 3.2%.

Species of Herbaceous Plants. The most abundant species encountered on the transects was *Bromus madritensis* subsp. *rubens* (mean=18.4%). The other species closest in abundance were *Vulpia myuros* (mean=8.0%) and *Vulpia microstachys* var. *pauciflora* (mean=3.6%) (there is some chance that *V. microstachys* was confused with *V. myuros*). No one herbaceous plant species was found on all five transects. Most species were found on just one of the five transects. Only the non-

native grasses occurred on four of the five transects. Among the 5 new transects (AA11, B11, B15, C18, and D14), the results were different from the original 5 transects where the most abundant species encountered was *Sysyrinchium bellum* (mean=8.8%) and *Bromus madritensis* subsp. *rubens* (mean=7.6%). *Gnaphalium californicum* and *Bromus madritensis* subsp. *rubens* were the only species found on all five transects. Half of the 10 herbaceous species were found on one transect.

Ground Cover. In 2009, litter and bare ground were recorded at each 0.5 location on the transect with litter recorded on 72.0% of the transect locations, while bare ground made up an average of 27.2% of the cover. However, in 2012 it was thought that only litter and bare ground were recorded where there was no vegetation recorded. As a result in 2012, litter was recorded on 6% of the transects and bare ground was recorded on 10.8% of the transects. If the 2009 data were treated as the 2012 data (where only bare ground or litter were recorded where no vegetation was recorded) the results would have been litter recorded on 4.4% of the transects and bare ground on 6.8% of the transects. This represents a statistically insignificant increase in litter and bare ground which is likely a byproduct of the lack of annual forbs in 2012 due to the reduced rainfall and the late season monitoring which reduced the opportunity to encounter vegetation on the transect point. Among the 5 new transects (AA11, B11, B15, C18, and D14), litter was recorded on 2.4% of the transects and bare ground was recorded on 22% of the transects.

Species Diversity. In 2009 the mean number of species recorded on the original 5 transects was 11.4. In 2012, the mean number of specie recorded on the transects was 8.6 on the same 5 transects. In addition, in 2012, a 2 meter belt transect was used to record any species that were not captured on the transect. If these species are included, the mean number of species recorded on transects 1 – 5 in 2012 was 15. In 2012 a total of 41 species were recorded among all 10 transects. In 2009 a total of 30 different plant species were recorded on all 5 transects. In 2012, a total of 20 plant species were recorded on these same 5 transects. There were a total of 6 species that were not recorded on the original five transects and within the 2 meter belt in 2012 that were recorded in 2009. The total number of species recorded on the transects decreased insignificantly by 2.8% (p=0.098). Among the 5 new transects (AA11, B11, B15, C18, and D14), the mean number of species recorded on the transects were 9.4. If you include the 2 meter belt transect species recorded, the mean number of species increases to 14. A total of 19 different species were recorded on these transects.

The monitoring results suggest the Preserve is in relatively good condition regarding shrub cover and species diversity. The abundance and distribution of non-native plants was predominantly non-native grasses with an average percent cover of 26.4%. In 2009, it was a concern that there was an apparent die-off of many of the shrubs (the majority of those being *A. californica* and *L. scoparius*). However, this was not observed in 2012.

***Objective 4**: Conduct presence-absence monitoring of coastal California gnatcatcher and coastal cactus wren.*

No coastal cactus wren occur on the Preserve and as a result were not monitored.

A total of seven gnatcatcher pairs were observed on the Preserve in 2012 (Appendix B). This represents an increase of two pair from 2011 and the highest number recorded since CNLM has

been monitoring CAGN on the Preserve. The entire Preserve was surveyed by the Preserve Manager, Lee Ann Carranza, under USFWS 10(a)1(A) Recovery Permit (TE-221411-1) using standard USFWS protocol. The HMMP for Dana Point states that gnatcatcher surveys should be conducted every three years and between the months of January and March. However, due to exotic species removal and PPM monitoring occurring within the Preserve during gnatcatcher breeding season, gnatcatcher surveys were conducted this year as well. The surveys were conducted on sixteen days between February 23 and July 3, 2012 (Table 1). No audio-taped vocalizations of gnatcatchers were used. All gnatcatcher locations were recorded using a Trimble GPS unit and in a field notebook. The data is summarized in Table 1 below.

Table 1. Coastal California Gnatcatcher 2012 Survey Results

Table 1. Dana Point Preserve Survey Information			
Date (2012)	**Time**	**Weather**	**Type of Survey**
Feb 23	9:03am – 12:00pm	0% cloud cover, 1.8 – 2.3 mph wind, 64.7-68°F	Presence/Absence
March 7	8:55 am – 11:15 am	0% cloud cover, 1.7-4.1 mph wind, 55.5-60.8°F	Presence/Absence
March 14	8:50 am – 12:42 pm	10-100% cloud cover, 4.5 mph wind, 54.5-62°F	Presence/Absence
March 21	8:50 am – 12:53 pm	0-5% cloud cover, 3.1-4.0 mph wind, 59.7-65.5°F	Presence/Absence and nest monitoring
March 27	8:40 am – 11:14 am	0% cloud cover, 1.2-3.4 mph wind, 58.0-62. 5°F	Presence/Absence and nest monitoring
April 3	8:50 am – 12:42 pm	5% cloud cover, 1.0-3.2 mph wind, 63.3-68°F	Presence/Absence and nest monitoring
April 10	8:30 am – 12:30 pm	95-0% cloud cover, 2.3-3.1 mph wind, 57.1-64.9°F	Presence/Absence and nest monitoring
April 17	8:35 am – 1:00 pm	0-5% cloud cover, 3.5-5.2 mph wind, 61.7-67°F	Nest Monitoring
April 23	10:25 am – 2:30 pm Started late because wet drizzle in am	100% cloud cover, 2.5-2.7 mph wind, 60.6-64.7°F	Nest Monitoring
May 21	8:45 am – 11:45 am	100% cloud cover, 2.2-4.0 mph wind, 62.1-66.4°F	Nest Monitoring
May 29	10:40 am – 1:00 pm	40-20% cloud cover, 1.3-3.1 mph wind, 68.0-71.6°F	Nest Monitoring
May 30	10:35 am – 1:00 pm	5-0% cloud cover, 2.4-3.9 mph wind, 65-71.4°F	Nest Monitoring
June 4	10:25 am – 2:00 pm	100% cloud cover, 1.0 mph wind, 60°F	Nest Monitoring
June 12	8:50 am – 1:30 pm	100% cloud cover, 3.4-4.0 mph wind, 67.1-70.3°F	Nest Monitoring
June 25	8:50 am – 10:45 am	0% cloud cover, 1.2-2.1 mph wind, 65-68°F	Nest Monitoring
July 3	9:45 am – 11:45 am	100% cloud cover, 2.5-3.0 mph wind, 65.6-67.4°F	Nest Monitoring

Nest monitoring activities were conducted throughout the Preserve during the survey dates identified above to ensure biologists conducting a Pacific pocket mouse study did not disturb any active nests. All seven pair had at least one successful brood. Detailed results of the nest monitoring are provided in Table 2 below.

Table 2: Coastal California Gnatcatcher 2012 Nest Monitoring Results

CAGN ID	Status	# Nesting Attempts	# Nestlings Observed	# Fledglings
1	Pair	3/7/12= 1st nest 4/17/12=2nd nest	1st nest=abandoned	2 fledges confirmed
2	Pair	3/14/12=1st nest 5/12/11 = 2nd nest	1st nest= fate unknown 2nd nest= 3 nestlings	3 fledges confirmed
3	Pair	3/14/12:=1st nest 4/17/12=2nd nest	1st nest=abandoned 2nd nest=4 nestlings	4 fledges confirmed
4	Pair	3/27/12=1st nest 4/17/12= 2nd nest	1st nest = not checked 2nd nest = 4 nestlings	2 fledges confirmed
5	Pair	3/21/12=1st nest	1st nest= 3 nestlings	3 fledges confirmed
6	Pair	3/14/12 = 1st nest 5/23/12= 2nd nest 6/12/12=3rd nest	1st nest = not checked 2nd nest = abandoned 3rd nest= 3 nestlings	3 fledges confirmed
7	Pair	1st nest not discovered	Unknown	1 fledge confirmed

Figure 2: Coastal California Gnatcatcher Pair 4 nestlings (5/30/12)

The Preserve Manager again attempted to receive approval to remove an abandoned nest and unviable eggs to be displayed in the City Nature Interpretive Center (NIC) for educational purposes. However, last fiscal year it was determined by the USFWS that an amendment to the CNLM permit would be needed to authorize such activity. CNLM submitted such a permit amendment request in December 2011 but the amendment was not received until after the CAGN breeding season.

The 2011 Dana Point Preserve Gnatcatcher Survey Results report estimated that the Dana Point Preserve was likely at or near its carrying capacity for gnatcatcher pairs. However, two new pair

were able to claim territory in the Preserve resulting in a less than 4 acre average territory size. It would be surprising if an additional pair could claim territory south of the now revegetated Margarita Road bed, but it may be possible as the old road habitat cover increases and north of the old road. Regardless, additional measures to increase the population are not needed. However, potential impacts to the resident pairs include indirect effects from people on the trail, potential increase in predators due to increased human use of the area, and 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.

***Objective 5**: Monitor predator use of the Preserve.*

Predator monitoring activities included scat and print identification and the continued use of one infrared camera. The Cuddeback EXpert® ceased working late in FY 2011 and was replaced by the Bushnell Scout® in November 2011. The new camera works just as well and cost as much as it would to merely fix the Cuddeback. The species documented by the wildlife camera are provided in Table 4 below.

A new species for the Preserve was documented by the wildlife camera; a common poorwill (*Phalaenoptilus nattallii*) (Figure 3). The bobcat remained detected by the wildlife camera from April 2011 to November 2011. However, no bobcat or coyote activity was recorded in December, January and mid-February. During this time, skunks were regularly detected by the camera. Beginning in mid-February the bobcat and coyote were again detected and skunk activity dropped substantially. The bobcat was observed with a cub in June 2012 (Figure 4). The black rat (*Didelphis virginiana*), grey fox, long-tailed weasel, domestic dog, and domestic cat were not recorded on the wildlife camera in FY 2012.

Table 3: Predator species documented on-site 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 9-29-09
5	Long-tailed weasel	*Mustela frenata*	Photo by volunteer taken May 2010	Not observed on-site in FY 2012, but observed nearby
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	Wildlife Camera recorded since 4-5-11
8	Burrowing Owl	*Athene cunicularia*	Observed	December 2012
9	Common Poorwill	*Phalaenoptilus nattallii*	Wildlife Camera	11-26-12
10	Opossum	*Didelphis virginiana*	Wildlife Camera	11-30-12

Figure 3: Common Poorwill (wildlife camera 11/26/11)

Figure 4: Bobcat and cub (wildlife camera 11/26/12)

Objective 6*: Coordinate with USFWS on monitoring activities for Pacific pocket mice*

In 2011, CNLM conducted a pilot test using 1.5" tracking tubes for the 2011 monitoring season (CNLM 2012b). In coordination with USFWS, CNLM chose to conduct two separate monitoring efforts on the Preserve in 2011. The goal of the first effort was to determine if tracking tubes could be used to estimate percent area used by PPM. To attempt to answer this question, track tubes were placed in the same grid cells (64 total) that were trapped in 2008 and 2009. This effort resulted in a total of 116 track cards identified with PPM prints; 49 of which were of high confidence. The naïve occupancy estimate was 33% (22 of 64 grid cells) for the first effort (south of old Marguerita Road). If you take the same 64 grid cells trapped in 2008 and 2009 and the results of those surveys, PPM were recorded in 39% (24 of 64) grid cells in 2008 and 71% (44 of 64 grid cells) in 2009. PPM prints were identified at least once within 25 grid cells during the second effort of the pilot study in the old Marguerita Road bed and north of the road. The naïve occupancy estimate for the second effort was 59% (20 of the 34 grid cells with high confidence PPM). Other species recorded during both efforts were harvest mouse (*Reithrodontomys megalotis*) and deer mouse (*Peromyscus maniculatus*).

The track tube methodology was found to be successful at detecting PPM and estimating percent area used by PPM within the Preserve. As a result, CNLM planned to only employ track tubes in 2012 to confirm continued use and estimate percent area used by PPM. However, a captive breeding program for PPM was being pursued by the USFWS to support recovery of PPM with the intention of collecting individual PPM from the Preserve in support of that program. In order to better estimate the abundance and health of animals on the Preserve trapping would be necessary. CNLM received funding under the Local Assistant Grant (LAG) program administered by CDFG to accommodate such a trapping study. The objective of the study was to apply the same general methodology applied in 2009 to assess distribution and abundance of PPM within the Dana Point Preserve. The LAG funded study also expanded the survey frame to include the entirety of available habitat in the Preserve, including the former roadbed and adjoining degraded areas that are being restored.

Trapping Study. The LAG funded trapping study was conducted from May 1 through May 11, 2012. The study was separated into two sessions with the first session (May 1- 6, 2012) consisting of 37 grid cells within the northern half of the Preserve: AA10, AA12, BB11, A11, A13, B6, B7, B8, B10, B12, B14, B16, B18, C3, C5, C7, C9, C11, C13, C15, C16, C17, C18, D4, D6, D8, D10, D11, D12, D14, D16, D18, E9, E11, E13, E17 and E18. The second session (May 6 – 11, 2012) consisted of 37 different grid cells within the southern half of the Preserve.

The results are summarized below and the full report is available upon request (Dodd et al. 2012).

The 2012 survey yielded 57 unique PPM broadly distributed across the CNLM Preserve, including presence in many of the cells surveyed north of the former Marguerita Roadbed (Appendix C, D, and E). Although PPM were at lower numbers than was observed in 2009, when 82 unique PPM were captured, it remains the second highest number recorded on the Preserve.

The survey yielded 700 captures of six rodent species (Table 4). All PPM were released immediately at the site of capture unharmed. There was mortality of eight desert woodrat and one California vole capture (the animals were caught in the partially closed entrance door to the trap). **Such a high mortality of desert woodrat was unexpected and should be considered in future trapping efforts**.

Table 4. Summary of Small Mammal Captures

2012 Summary of Small Mammal Captures							
	Species*						
	PPM	**REME**	**NEBR**	**MICA**	**PEMA**	**PEFR**	
							Total
Session 1	110	193	35	29	0	1	368
% session 1	30	52	10	8	0	0	100
Session 2	58	104	148	21	1	0	332
% session 2	17	31	45	6	0	0	100
Totals	168	297	183	50	1	1	700
% of total	24	42	26	7	0	0	100

*PPM, Pacific pocket mouse (*Perognathus longimembris pacificus*);
REME, western harvest mouse (*Reithrodontomys megalotis*),
NEBR, desert woodrat (*Neotoma bryanti*),
MICA, California vole (*Microtis californicus*),
PEFR, cactus mouse (*Peromyscus fraterculus*),
PEMA , deer mouse (*Peromyscus maniculatus*)

Four noteworthy results with respect to PPM were: (1) the number of unique PPM captures decreased from 82 (in 2009) to 57 individuals (in 2012) despite a similar trap effort (3,362 trap-nights in 2009 vs. 3,330 trap-nights in 2012, (2) PPM were captured in their highest numbers ever in the habitat north of the former Marguerita Road, (3) South of the former Marguerita Road, PPM were captured in 11 new cells in 2012 where they had not been recorded in the past, and (4) PPM were not captured in 14 cells in 2012 where they had been captured in 2009.

Track Tube Study. The track tube study was only conducted on the northern half of the Preserve. No track tubes were constructed for the 2012 monitoring effort. However, new track plates were constructed for all track tubes. The main purpose of this was to create track plates that use magnets to secure the track plates into the track tubes rather than the museum putty that was used last year. One neodymium rare earth disc magnet (N45 ½ inch x 1/8 inch) was glued to the bottom of each end of the track card using Liquid Fusion clear urethane glue.

The same sized grid cells previously chosen as the basis for population and habitat use monitoring (24 meters x 24 meters) in 2008, 2009, and 2011 were used; however, this effort utilized the new expanded sample frame provided by USFWS to include the former Marguerita Roadbed and restored habitat to the north. This resulted in the addition of 33 grid cells to the sample frame. However, in order to take advantage of the potential for evaluation of results with the LAGfunded trapping study, the sample frame for the track tube study was limited to the 37 grid cells trapped in session 1.

Initially CNLM chose to place track tubes in the same locations as traps in 16 randomly selected grid cells from the 37 grid cells that were trapped in session one. As a result, the following 16 grid cells were randomly selected for placement of 9 track tubes at the same location as a trap was set the previous week: B6, B7, B8, B10, B12, B16, B18, C3, C5, C9, C13, C15, D8, D11, E11, and E18. This effort began on May 6, 2012 and ran for 5 nights.

It was later decided by CNLM, in coordination with USFWS, that the approach change to employ only 4 track tubes per grid cell (rather than 9) in all the grid cells trapped in session one, excluding E13. E13 was excluded to accommodate the number of track tubes available and reduce the sampling effort. Each track tube would be placed evenly from one another in each grid cell sampled (12-meter spacing) beginning on May 11, 2012 and concluding on May 23, 2012. The track cards were reset every 3 nights for a total of 4 data sets.

Few challenges were encountered in 2012. No theft or tampering occurred to the track tubes. Very few track cards were damaged by carpenter ants (*Camponotus* sp.) and brown garden snails (*Cornu aspersum*). However, one grid cell location C3 was repeatedly moved and damaged by an unknown mammal.

The first effort resulted in a total of 50 track cards identified with PPM prints; 41 of which were of high confidence (Appendix F). The second effort resulted in a total of 235 track cards identified with PPM prints; 222 of which were of high confidence (Appendix G). Other species recorded during both efforts were harvest mouse (*Reithrodontomys megalotis*) and deer mouse (*Peromyscus maniculatus*). These results are presented in Table 5 below.

PPM prints were identified at least once within 15 of the 16 grid cells during the first effort of 9 track tubes over 5 nights. This includes low, medium and high confidence records. 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 track card among all the track cards recorded per grid cell had PPM identified. Only one of the 15 grid cells (D11) did not have at least

one high confidence PPM record, however, this grid cell was confirmed to have presence of PPM during the 2012 trapping effort. A naïve occupancy estimate would be 94% (15 of 16 grid cells) for the first effort (Table 6).

Table 5: Summary of Small Mammals Identified on Track Cards

	Species			
	PPM	**ReMe**	**PMAN**	
				Total
9 track tubes in 16 grid cells (5 nights)	50 (9 were medium to low confidence)	124	14	188
4 track tubes in 34 grid cells (12 nights)	235 (13 were medium to low confidence)	Recorded, but not counted	Recorded, but not counted	N/A

Species names:
PPM, Pacific pocket mouse (*Perognathus longimembris pacificus*)
ReMe, harvest mouse (*Reithrodontomys megalotis*)
PMAN, deer mouse (*Peromyscus maniculatus*)

PPM prints were identified at least once within 34 of the 36 grid cells during the second effort of 4 track tubes over 12 nights. Only three of the 34 grid cells (D10, D11, and E9) did not have at least one high confidence PPM record, however, all three grid cells were confirmed to have presence of PPM during the 2012 trapping effort. A naïve occupancy estimate for the second effort would be 94% (Table 6).

Table 6: Summary of PPM Identified per Grid Cell

	Cells with PPM (At least one High Confidence)	Cells with PPM (Medium Confidence)	Cells with PPM (Only Low Confidence)	
24-m x 24-m cells				**Total**
9 track tubes in 16 grid cells (5 nights)	14 (88%)	1	0	15 (94%)
4 track tubes in 34 grid cells (12 nights)	31 (86%)	1	2	34 (94%)

During the 2011 track tube sampling effort, the following four grid cells were identified as occupied by PPM, but which PPM were not recorded during the 2008 and 2009 trapping effort: B10, C5, E14, and G10. Grid cells B10 and C5 were again found to have PPM prints on the track cards in 2012. Grid cells E14 and G10 were not sampled with track tubes in 2012. Three of the four grid cells were trapped in 2012 (B10, C5, and G10) and grid cells B10 and G10 were found to be occupied by PPM.

It is impossible to estimate abundance from track tube studies. However, it turned out to also not be possible to estimate abundance or proportion area occupied due to the violation of the assumption of closure during both the 2008 and 2009 trapping study. Thus, to estimate habitat use, we used the

Occupancy Estimation function in Program MARK and applied the single season, single species model (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 single season model formulations that modeled a constant capture probability among survey occasions. The 2012 model averaged habitat use estimate for the second effort of 4 track tubes within 34 grid cells as 94.59 percent (95% C.I. 80-99%).

The first track tube effort where a track tube was placed for 5 nights in the same location a trap had previously been placed in 16 randomly selected grid cells resulted in the following: 1) 15 of 30 PPM occupied traps also had PPM tracks; 2) 30 of 147 trap locations were occupied by PPM; and 3) 50 of 147 track tube locations had PPM tracks. Grid cell C3 was the only grid cell without a PPM detected using track cards; whereas PPM were not detected in B8, B16, C3, C5, and C13 using traps.

The second track tube effort, where 4 track tubes were placed for 12 nights in 36 of the 37 grid cells trapped, found 34 of the 36 grid cells occupied. Whereas, the LAG funded trapping study found only 24 of the same 37 grid cells occupied over a 5 night period.

The Program MARK results from the session 1 trapping study calculated the use estimate for the northern portion (37 grid cells) of the Preserve over 5 nights to be approximately 64 percent (95% C.I. 44-79 %). The Program MARK results suggest a significantly higher use estimate for track tubes over 12 nights.

Although the results of the track tube and trapping efforts on the Preserve in 2012 cannot be compared, it served as a valuable opportunity to again confirm the usefulness of track tubes in documenting presence of PPM and use distribution on the Preserve. The second track tube effort also confirmed the ability for 4 track tubes per grid cell to be sufficient for detection and suggests the potential to reduce the number of track tubes per grid cell even further.

It is recommended that track tubes continue to be employed for monitoring PPM on the Preserve. It is also recommended that serious consideration be given to using track tubes to monitor PPM activity over a longer period of time which can increase detectability and determine if PPM are using a particular area at any point in time during the active season. The full report is available upon request (CNLM 2013).

Captive Breeding Program. Due to the results achieved under the trapping and track tube program summarized above, and after a review of their rationale and protocol for the captive breeding program, CNLM granted access to the San Diego Zoo Institute for Conservation Research (Zoo) to trap and collect ten PPM (five of each sex) for a PPM captive breeding program (CNLM and Zoo 2012). As a result, Debra Shier and two assistants set traps on June 21, 2012 for one evening of trapping where 15 female PPM (8 adult and 7 young of year) and 11 male PPM (9 adult and 2 young of year) were captured. Among the captures, the following PPM were removed for the captive breeding program while all others were released at their trap location: 2 adult female, 4 female young of year, 3 adult male, and 1 male young of year. One of the female young of year

taken was thought to be a male young of year, but when confirmed to be female had to be returned and another male captured. As a result, Zoo biologists returned and conducted limited trapping on June 22, 2012 where two adult male PPM were captured and one was taken into captivity (the other was released at the trap location on-site).

While trapping for the captive breeding program, several PPM were observed to have substantial hair loss on the top of their head and/or their hind leg (Figure 5). It is suspected the cause was the unique marking given to PPM during the trapping effort using different colored Sharpie brand markers. The Zoo took one adult female PPM with hair loss and later reported the problem did not persist.

Figure 5: PPM with hair loss

Objective 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 H. One mushroom species, *Calvatia pachyderma*, was added to the Preserve list. The total taxa is now 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 I. Only one new animal species was added in FY2012; a common poorwill. The list of animals on the Preserve is now 23 invertebrates, 106 birds, 10 amphibians and reptiles, and 19 mammals recorded on-site. The Preserve Manager maintained a checklist of birds observed on the Preserve beginning January 1, 2012 to confirm continued presence of birds documented on-site and document seasonality of some bird species. Forty-three different bird species were documented as identified on the list of bird species in Appendix I.

The pair of peregrine falcons previously documented using the Preserve were observed again during nesting season. Dr. Joel Pagel, raptor ecologist with the Carlsbad Fish and Wildlife Office, monitored the pair during the 2012 nesting season.

No cactus wrens (*Campylorhynchus brunneicapillus cousei*) were heard or seen.

HABITAT MAINTENANCE AND RESTORATION

Objective 1: *Coordinate with Headlands Reserve, LLC, and their contractors, regarding their construction activities, revegetation/weeding activities on and adjacent to the Preserve.*

Headlands Reserve, LLC has 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.

Nature's Image remained under contract to Headlands Reserve, LLC to maintain the creation and enhancement areas. Due to the difficulty encountered last year in trying to get Nature's Image staff to remove non-native plant species on the Preserve and due to the limited growth of non-native plant species because of the limited rainfall, CNLM did not request Natures Image treat any areas within the Preserve south of the former Marguerita Roadbed. However, requests were made for Natures Image to treat the former Marguerita Roadbed and north of the roadbed. At least one weeding event occurred north of the former Marguerita Roadbed on March 30, 2012, by a Natures Image crew. They removed mostly short-pod mustard (*Brassica geniculata*). CNLM staff removed short-pod mustard and other non-native plant species from these same areas previously to reduce the chance of seed dispersal.

The growth of native vegetation in the former Marguerita Roadbed remained high as can be observed in Figures 6 and 7.

Figure 6: Vegetation on Former Marguerita Roadbed (10/24/11)

Figure 7: Vegation on Former Marguerita Roadbed (09/26/12)

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 Figures 8 and 9.

Figure 8: Impact area post remediation (10/24/11)

Figure 9: Impact area post remediation (09/26/12)

Objective 2*: Control exotic plant species on the Preserve.*

Natures Image did not conduct any weed removal activities on the Preserve south of the former Marguerita Roadbed. Consequently, CNLM staff and volunteers spent a substantial amount of time treating or removing exotic plant species in FY 2012. The most common species removed on the bluff top included: short-pod mustard, bridal creeper (*Asparagus asparagoides*), and scarlet pimpernel. Little to no Bermuda butter-cup (*Oxalis pes-caprae*) occurred due to the limited rainfall. In fact, substantially less exotic plants were observed likely due to the limited rainfall.

Non-native species removed on the bluff edge included: Perez's sea lavender (*Limonium perezii*), Scarlet pimpernel, Short-fruited filaree (*Erodium brachycarpum*), Red-stemmed filaree (*Erodium cicutariu*), Russian thistle (*Salsola tragus*), Hottentot fig (*Carpobrotus edulis*), Croceum iceplant (*Malephora crocea*), Crystal iceplant (*Mesembryanthemum crystallinum*), Sahara mustard (*Brassica tournefortii*), and Small-flowered iceplant (*Mesembryanthemum nodiflorum*).

As noted above, bridal creeper was again observed on-site in FY 2012. The same treatment method used in 2011 was repeated in 2012. 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 65 locations were treated and remained effective through FY 2012 (Appendix J). Among the 65 locations treated, 21 were large and nested within native vegetation. This represents 32 percent of the locations. This is a significant increase from the 4 locations treated in FY 2011. This is of great concern since rainfall was substantially lower than average in FY 2011.

Lee Ann Carranza met with neighbors and the nearby Chart House Restaurant since bridal creeper was observed growing on their properties. They were educated on the plant, its threat to the nearby Preserve and asked to remove the plant or at least trim the plant before the red berries appear. The neighbors have complied with the request. That status of the Chart House Restaurant is unknown.

***Objective 3**: Control erosion on the Preserve.*

The 2011 winter rain caused substantial movement of sand along the bluff edges where trespassers continue to walk and prevent vegetation from growing. Erosion control measures were installed in the large areas of open sand that persists off overlooks 2 and 3.

In late October 2011, straw wattles were strategically placed in areas to prevent water from flowing at high speed downhill in open paths. More cactus, of the same source as described above, were strategically planted as well to prevent trespassers and to slow or divert overland water flow (Figure 10).

In late September 2012, straw wattles were again placed where the previous straw wattles were installed, but this time the wattles were burlap and not plastic mesh (Figure 11). Burlap straw wattles were chosen because the treatment area is expected to remain a long-term erosion problem and do not want to have to remove them in the future. However, CNLM will remove the previously installed plastic mesh straw wattles before the plastic begins to break down.

Figure 10: Erosion Control at Overlook 3 (10/31/11)

Figure 11: Erosion Control at Overlook 3 (9/22/12)

PUBLIC SERVICE AND GENERAL MAINTENANCE

***Objective 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 the following dates due to rain and/or trail maintenance as described earlier (January 15, 2012 (7am to 10am) and January 23, 2012 (2pm on) and February 27 and February 28, 2012 (all day).

Public use remained high throughout the year. Trail counters were installed on April 12, 2011. They were purchased through Nature Reserve of Orange County funds by the direction of the USFWS. Thus, this is the first fiscal year where an entire year's worth of data is available. From October 1 through September 30, 2011, there were 9 months of data recorded at the Scenic Drive Gate with 96,453 passes total and an average of 277 passes per day. Only 9 months of data was recorded because the trail counter was moved to an area off-trail at overlook 3 to monitor off-trail activity. There was also a period of time when the counter wasn't working properly.

There were 12 months of data recorded at the Dana Strand Gate with 139,165 passes total and an average of 394 passes per day. There were four days of unusually high use recorded on the Dana Strand gate trail counter. There was no obvious reason for the high number of passes recorded. It could have resulted from an insect affecting the sensor or a group of people loitering in the vicinity of the sensor and being repeatedly recounted.

The amount of combined use recorded remained similar throughout the year with the most notable increase of use in April and July. The daily use was highest on Saturday and Sunday and the hours of use were highest between 8:00 and 11:00 a.m. These results are summarized by the TrafX program and graphically displayed in Appendix K.

CNLM continued to contract with Rock Maintenance to walk the trail and lock the gates every evening at sunset. Contractors to the City unlock the gates every morning at 7:00 a.m. The trail counter data was instrumental in documenting when and if the trail gates are locked and unlocked. This helped the Preserve Manager better oversee the contractors and ensure the Preserve is open to the public at the appropriate times.

Public use issues within the Preserve include off-trail use, bike riding (and bike walking), smoking, people with dogs (pets), littering, and walking off-trail. The number of people bringing their dogs on the trail again remained low in FY 2012 likely due to more frequent patrol of the trail entrance and education to the public via CNLM staff, City staff and City docents. However, off-trail activities persisted. The most common location the public went off-trail was at the second and third overlooks. There were only two occasions where someone (or evidence) was observed 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 and limit the expansion of the rare plant populations and possibly increase risk to the Preserve from fire. Off-trail use is an even greater threat during the bird nesting season where at least two pair of gnatcatchers seem to bring their fledges to the bluff edge to forage. It can also be disruptive to the pair of peregrine on-site, not to mention other nesting bird species.

In late October 2011, cactus (*Opuntia* sp.) pads provided from an adjacent property owner's land were planted just off overlooks 2 and 3 to help deter people from going off-trail at the overlooks.

On November 1, 2011, the Preserve Manager was contacted by the public regarding items strewn in the Preserve near overlook 3. While on-site the Preserve Manager discovered they were stolen items and the Dana Point Sheriff's Department was contacted and all items were removed.

In March 2012, a third part-time ranger, Parker Hancock, was hired by CNLM to share responsibilities with CNLM Rangers Tom Maloney and Bruce Buchman. Mr. Hancock is also a retired Orange County Park Ranger with 35 years experience. The rangers were scheduled to work the late afternoon/evening hours before closing on school holidays and weekends. They worked 4 days a week during the two week spring break and every night of the week during summer break.

In April 2012, a sensor was installed off-trail at overlook 3 to alert CNLM staff when someone is off-trail in the area. The sensor is motion triggered and sends a message to a handheld radio. Sensitivity was an issue, but after a month of adjustments, it became an additional effective tool to ensure the public remains on the public trail.

In early July 2012, CNLM Rangers again observed a shovel and 3 pits recently excavated in the previous area of transient activity near overlook 3. CNLM staff increased patrol, contacted the police, and rectified any damage to the area.

Even with the Ranger present on-site, some people continued to violate the rules. An example of active violations observed and recorded by the Rangers for a one-month period is provided in Table 7 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 either the Preserve Manager or Rangers were not on-site. No citations were known to be issued by the police to trespassers on-site in FY 2012.

The time period presented below is the same as that provided in the FY 2010 and FY 2011 (CNLM 2012a) report which had 26 and 12 violations, respectively, recorded by the Rangers. Although the same number of violations were reported during this time period of FY 2012, the number of off-trail records was lower with 4 (6 off-trail records in 2011). This suggests that at least maintaining the resources CNLM dedicated to patrol and enforcement has kept the number of incidents from increasing.

Table 7: Ranger Enforcement Log (June 16 – July 16, 2012)

	Date & Time	**Violation**	**Location**
1	6-21-12	Off-trail	Overlook 3
2	6-22-12	Bike	Not recorded
3	6-23-12 @ 9:00am	Smoking	Overlook 5
4	6-23-12	Dog	Not recorded
5	6-24-12 @ 6:05 and 7:55pm	Off-trail	Overlook 3
6	6-25-12 @ 8:00pm	Off-trail	Overlook 2
7	6-25-12 @ 8:10pm	Smoking	Overlook 3
8	6-26-12 @ 5:45pm	Dog	Scenic Drive Entry
9	6-29-12	Dog	Selva Entry
10	7-13-12	Bikes on Trail	Not recorded
11	7-15-12 @ 4:45pm	Smoking	Overlook 2
12	7-15-12 @ 7:45pm	Off-trail	Overlook 2

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

CNLM created GIS coverages for data collected in FY 2012 and USFWS provided an updated 24x24 meter grid overlay for PPM to accommodate monitoring in the former Marguerita Road bed and north of the road bed.

Table 8: GIS Coverages on File

Coverage	**Source**	**Source Year**
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

***Objective 3**: Continue public outreach and educational opportunities associated with the Preserve, including working with the homeowners adjacent to the Preserve and the City of Dana Point.*

The NIC was open throughout FY 2012 from 10:00 a.m. to 4:00 p.m. Tuesday through Sunday. Some historic items found on the Preserve while conducting weed removal and trash removal included pottery shards, old bottles, bullet casings, etc. Some of these items are on display in the NIC display cases. The others are held in the office space within the NIC. The Preserve Manager was available to interact with the public and answer questions while at the NIC on average two days a week.

Several nature walks along the public trail were provided to interested organizations upon request, such as Sea and Sage Audubon, a first grade school field trip, and representatives for the Saint Regis Hotel walking group. The Preserve Manager also led training walks for the City NIC docents to educate them on the details of the CNLM Preserve and provided a formal educational presentation on CAGN on March 29, 2012.

The following volunteer work days were scheduled and advertised through the NIC, website and Orange County Register list of volunteer opportunities: October 22 and November 26, 2011, January 28, February 25, March 24, April 28, May 26, July 28, August 25, and September 22, 2012. On average, seven people volunteered each work day. In addition, an additional volunteer work day was created on February 10, 2012, in response to a request from staff at the Ritz Carlton Hotel located in the City of Dana Point. They were interested in offering volunteer opportunities to hotel guests and wanted to practice such an event.

In addition, a volunteer requested permission to perform his Eagle Scout project on the Preserve by addressing erosion issues on the Preserve. The Preserve Manager worked with the individual to design an erosion control project that would benefit the Preserve and not adversely affect sensitive species on-site. The project remained ongoing at the end of FY 2012.

REPORTING

Objective: 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 gnatcatchers and pocket mice from future management actions. The process was not completed and will continue in FY 2013. As stated in previous work plans, CNLM intends to prepare a new habitat management plan that addresses only the portion of land that CNLM owns and manages, utilizes the results of the rare plant and small mammal surveys completed in 2008 and 2009, 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 2013.

A work plan for FY 2013 (October 2012 through September 2013) was completed and provided to the USFWS, CDFW, and City on December 10, 2012 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. However, no declining trends in habitat or species populations have been detected on-site. Thus, no separate report will be provided. The next comprehensive management and monitoring report will be produced in FY 2015.

ENDOWMENT

The original endowment provided to CNLM was in the amount of $1,747,844. The endowment balance as of September 30, 2012 was $1,953,054.

INCOME

CNLM received income in FY 2012 due to the presence of a CNLM donation box within the City NIC. In order to help fund the trail base reconstruction, all funds collected in FY 2012 are earmarked for such work. A total of $804.50 was collected in FY 2012.

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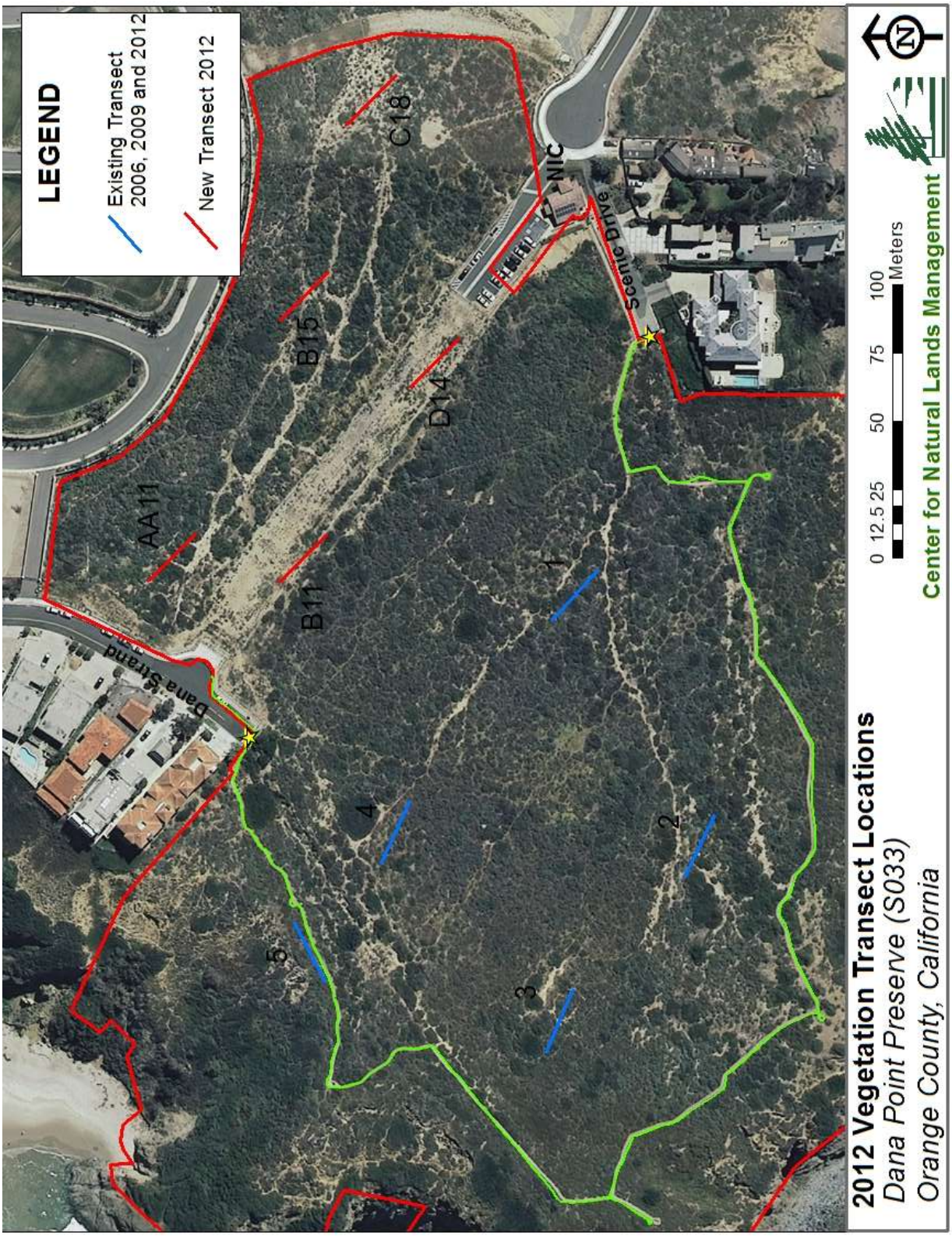
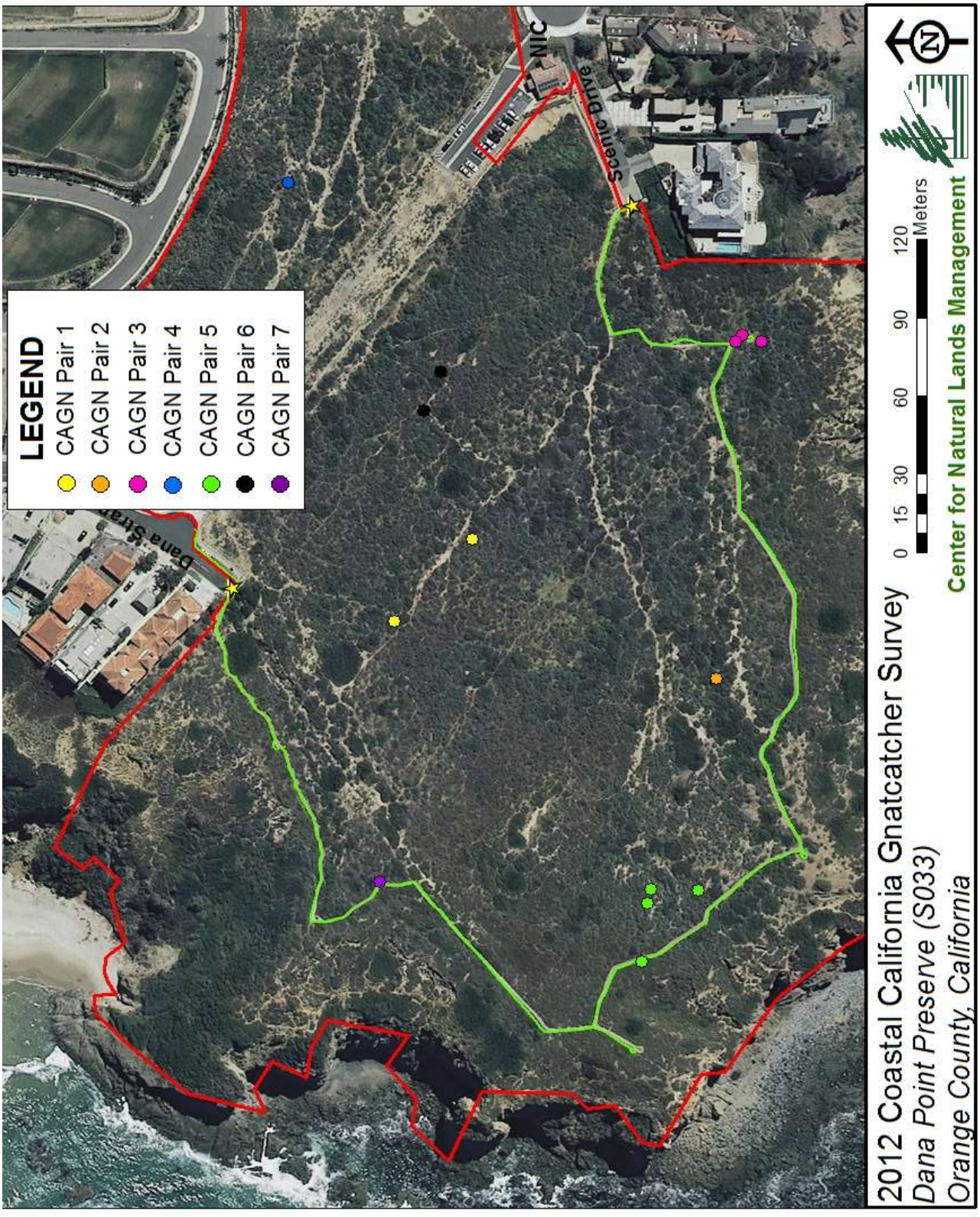
Appendix A


LEGEND
Existing Transect 2006, 2009 and 2012
New Transect 2012
AA11
B11
B15
C18
D14
1
2
3
4
5
Dana Strand
Scenic Drive
0 12.5 25 50 75 100 Meters
2012 Vegetation Transect Locations
Dana Point Preserve (S033)
Orange County, California
Center for Natural Lands Management

Appendix B


LEGEND
CAGN Pair 1
CAGN Pair 2
CAGN Pair 3
CAGN Pair 4
CAGN Pair 5
CAGN Pair 6
CAGN Pair 7
Scenic Drive
PCH
2012 Coastal California Gnatcatcher Survey
Dana Point Preserve (S033)
Orange County, California
0 15 30 60 90 120
Meters
Center for Natural Lands Management
N

Appendix C.

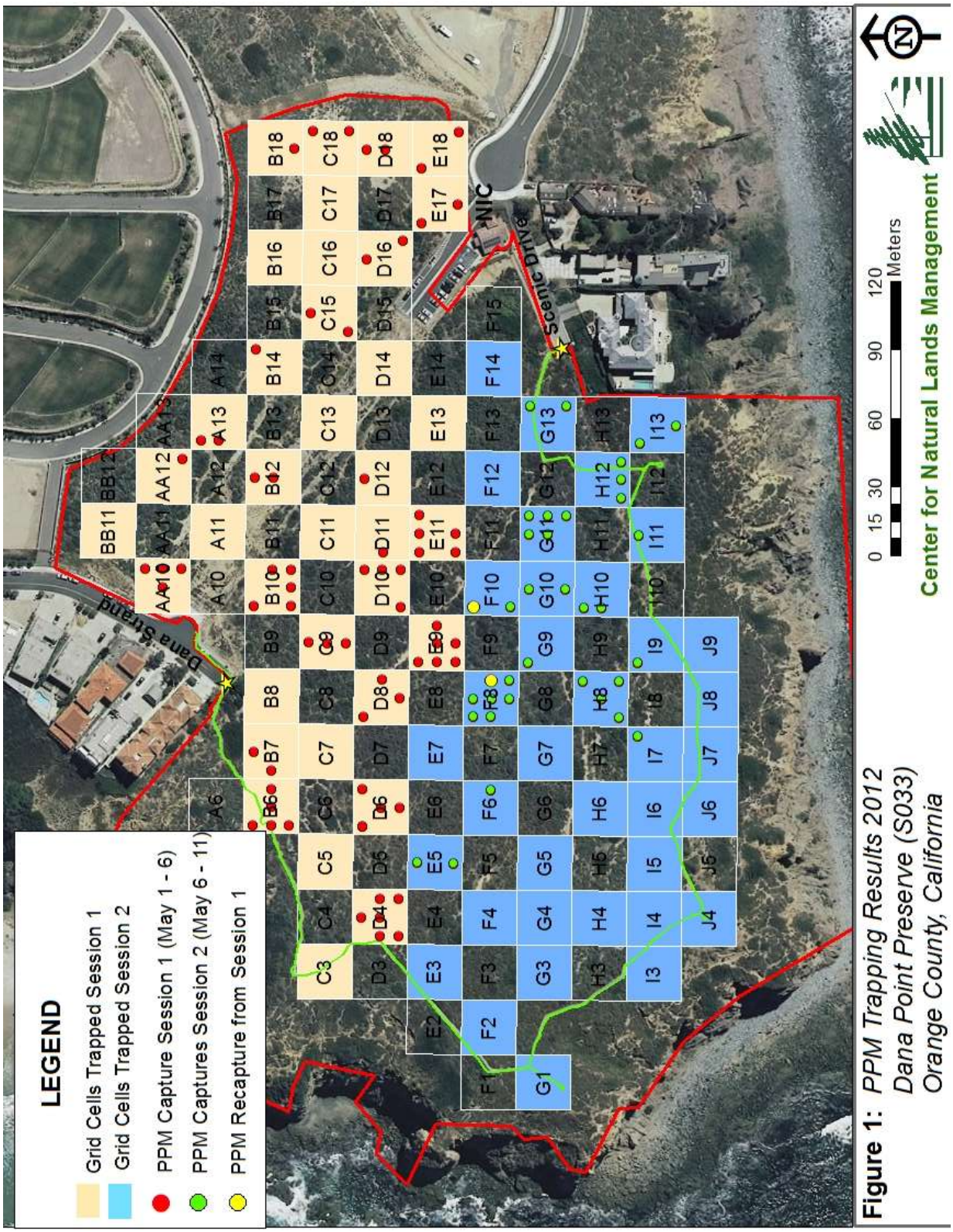


Figure 1: *PPM Trapping Results 2012*
Dana Point Preserve (S033)
Orange County, California

Appendix D.

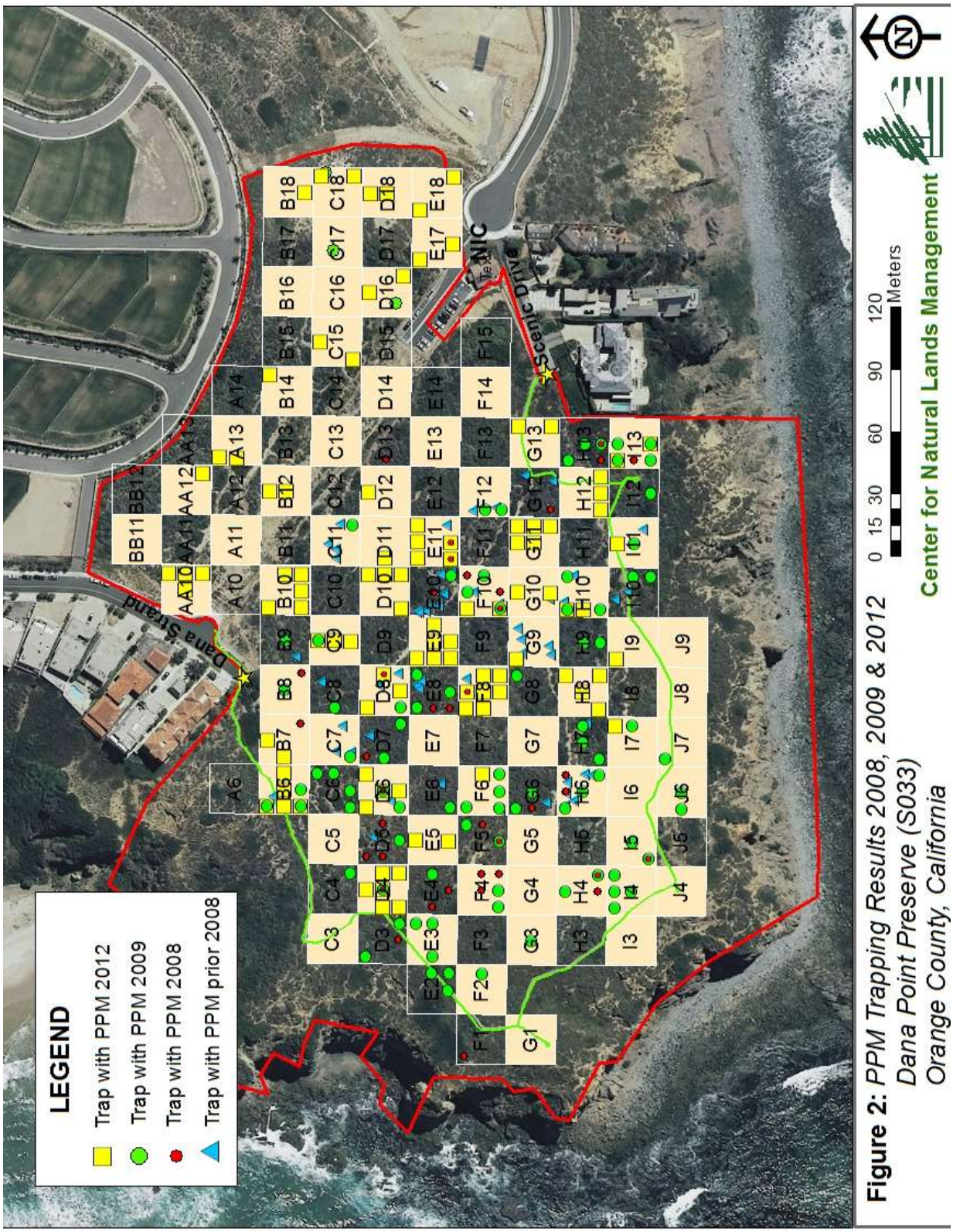


Figure 2: *PPM Trapping Results 2008, 2009 & 2012*
Dana Point Preserve (S033)
Orange County, California

Appendix E.

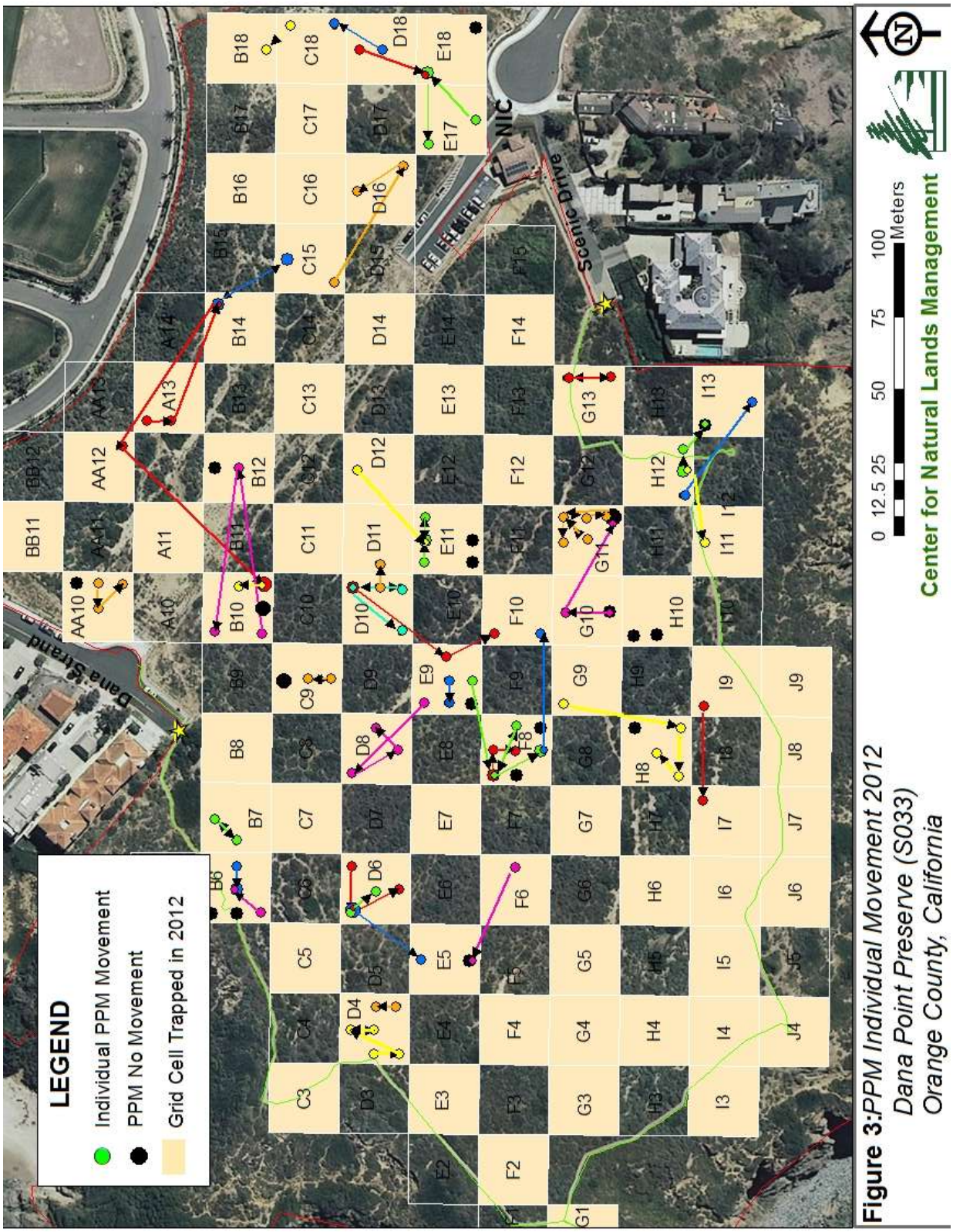
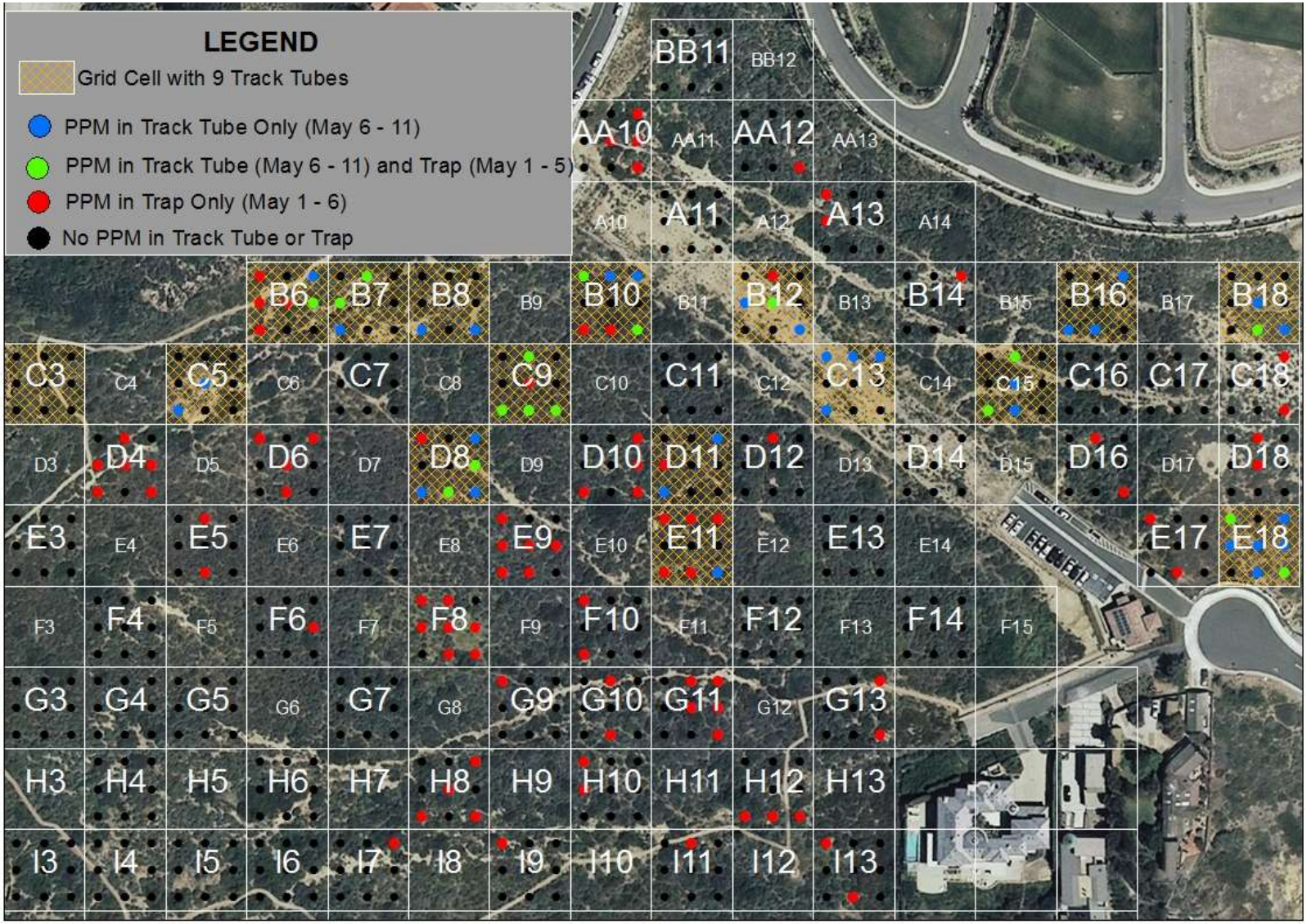


Figure 3: *PPM Individual Movement 2012*
Dana Point Preserve (S033)
Orange County, California



Pacific Pocket MouseTrack Tube Results May 11, 2012 (5 nights)

CNLM Dana Point Preserve (S033)

Dana Point, Orange County, CA

50 25 0 50 Meters

N

Center for Natural Lands Management

2012 Pacific Pocket MouseTrack Tube Results (May 14 - 23)

CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA

Center for Natural Lands Management

Appendix H: 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 2012

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

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	
Camponotus sp.	Unidentified carpenter 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 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

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

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 Ciconiiformes

Egretta thula	Snowy egret

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 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

Pheucticus melanocephalus	Black-headed grosbeak

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 and Relatives**

Family Ardeidae

Ardea herodias	Great blue heron
Butorides striatus	Green heron

Family Pelecanidae

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

MAMMALS

Order Didelphimorphia	**Common Opossums**
Family Didelphidae	
Didelphis virginiana	Virginia opossum
Order Lagomorpha	**Rabbits, Hares, and Pikas**
Family Leporidae	
Sylvilagus audubonii	Desert cottontail
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)

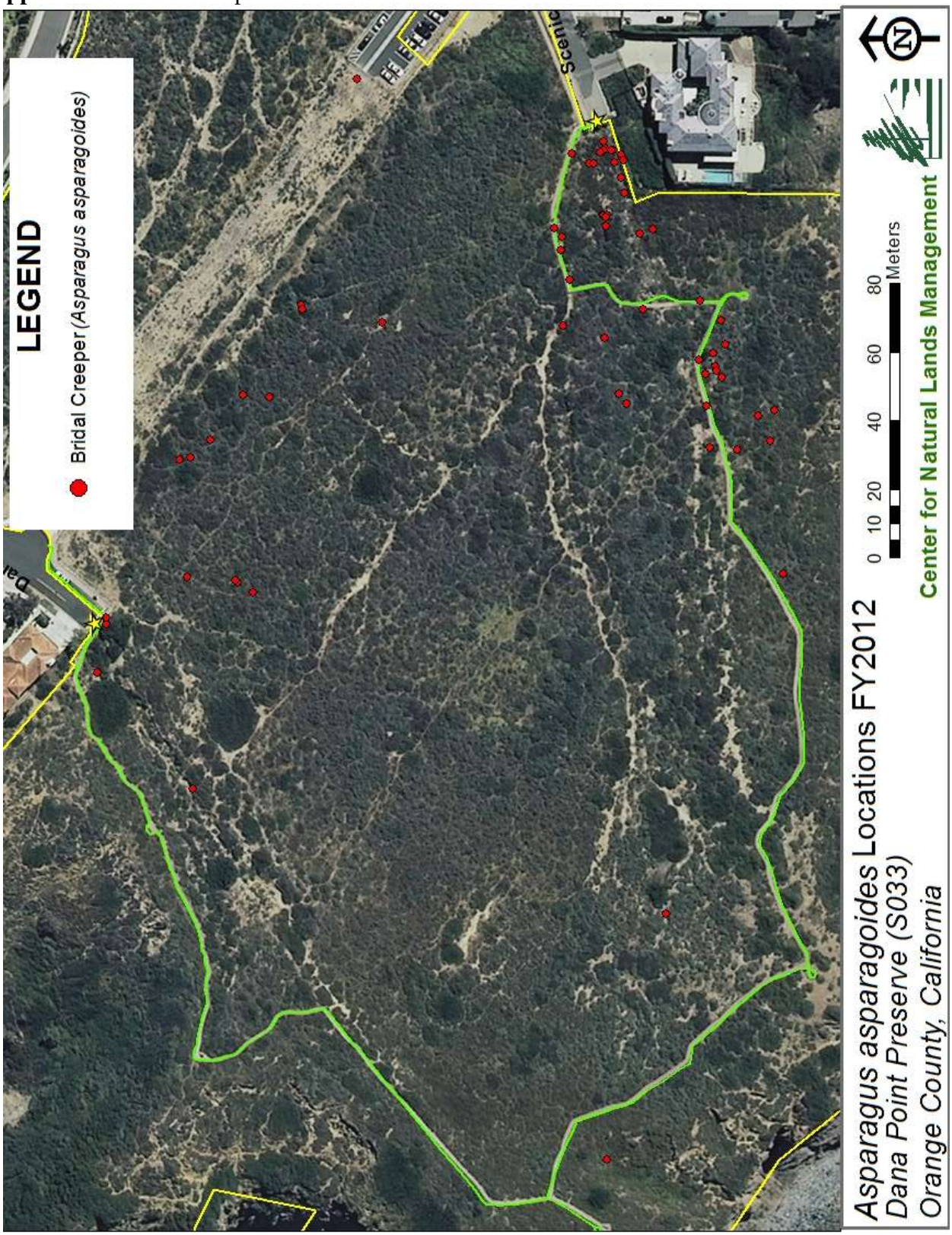
Family Procyonidae
Procyon lotor Raccoon

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

___ Species added to the list in FY 2012

___ Bird species observed in FY 2012

Appendix J: Bridal Creeper Locations Treated in Fiscal Year 2012



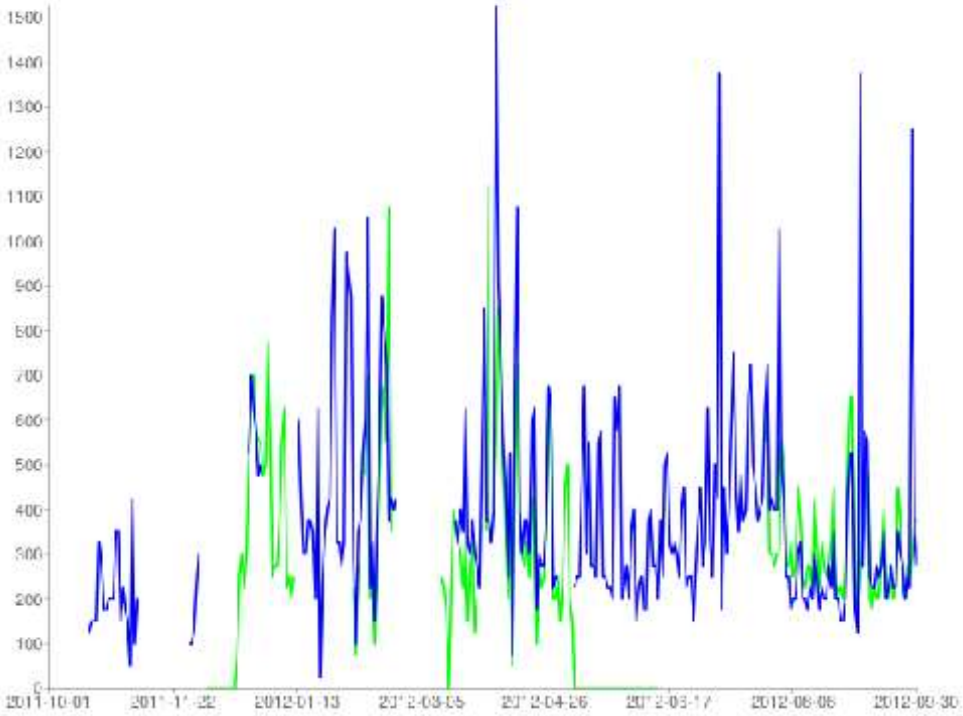
Appendix K: TRAFx Data Summary

Daily totals report

Covering 366 days from 2011-10-01 to 2012-09-30

Report generated on 2012-12-20 12:19:18 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Min	Max
Dana Point Preserve	277.3	0.0	1,137.0
Dana Strand Gate	394.1	33.0	1,527.0

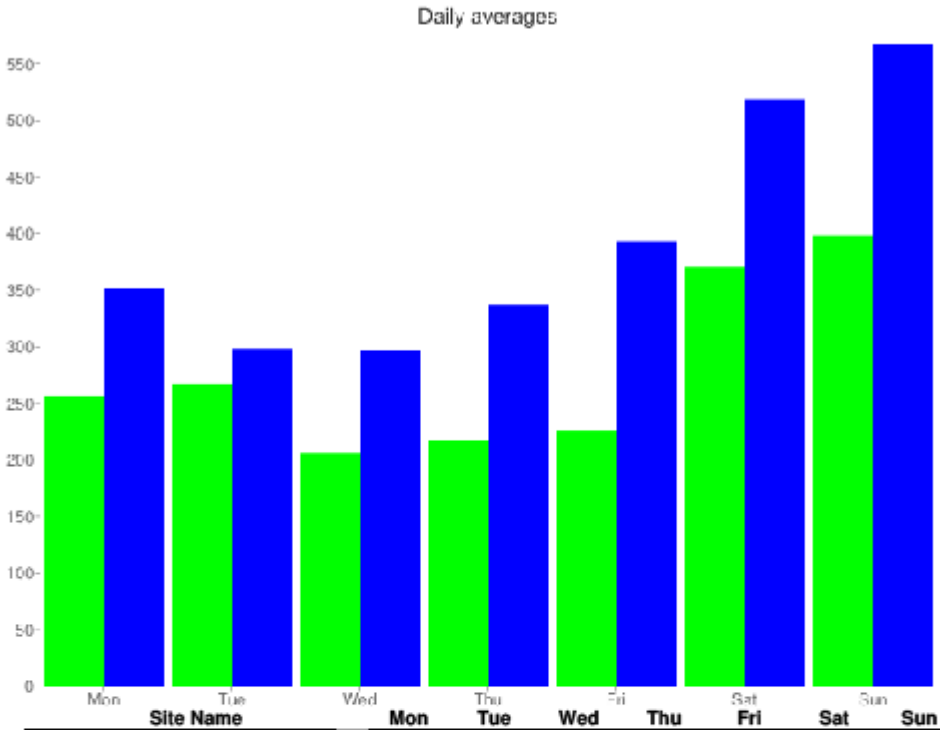
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Days of the week

From 2011-10-01 to 2012-09-30

Report generated on 2012-12-20 12:26:12 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dana Point Preserve	255.9	266.6	206.2	216.1	225.1	370.1	397.6
Dana Strand Gate	351.5	298.2	295.9	336.9	392.3	517.6	567.7
Daily Averages	304	282	251	276	309	444	483

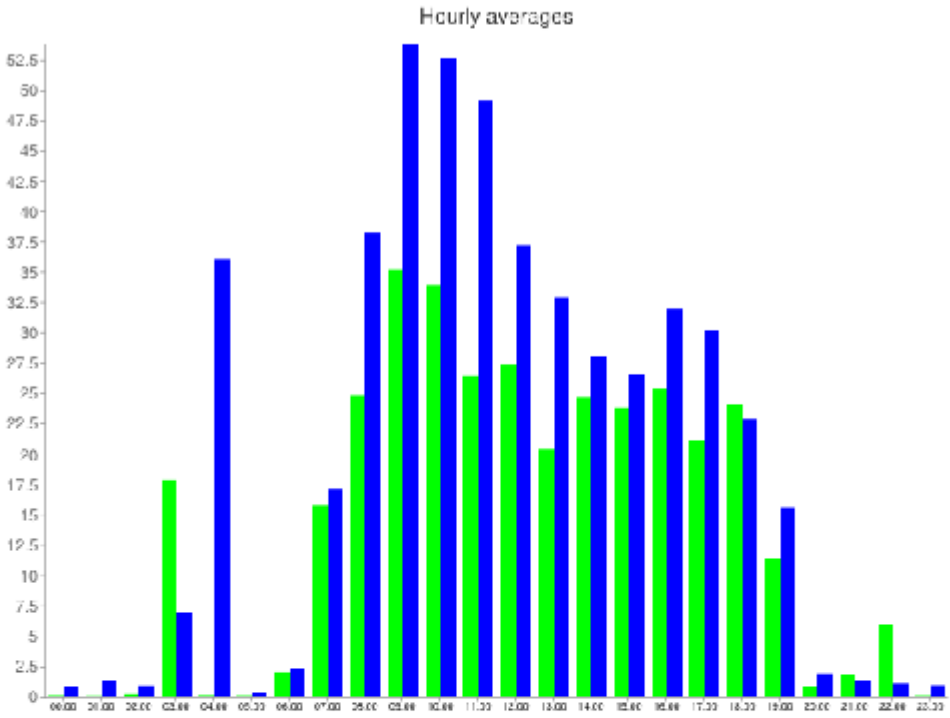
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Hours of the day

From 2011-10-01 to 2012-09-30

Report generated on 2012-12-20 12:22:45 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	14.3	16.8	12.2	0.0	35.2
Dana Strand Gate	20.4	20.0	18.1	0.3	53.8

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

Monthly* totals report

Covering 12 months from 2011-10-01 to 2012-09-30

Report generated on 2012-12-20 12:21:21 (UTC -07:00) by lcarranza@cnlm.org

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

Site Name	Average	Min	Max
Dana Point Preserve	8,874.2	0.0	14,151.5
Dana Strand Gate	11,597.1	5,573.3	15,370.0

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

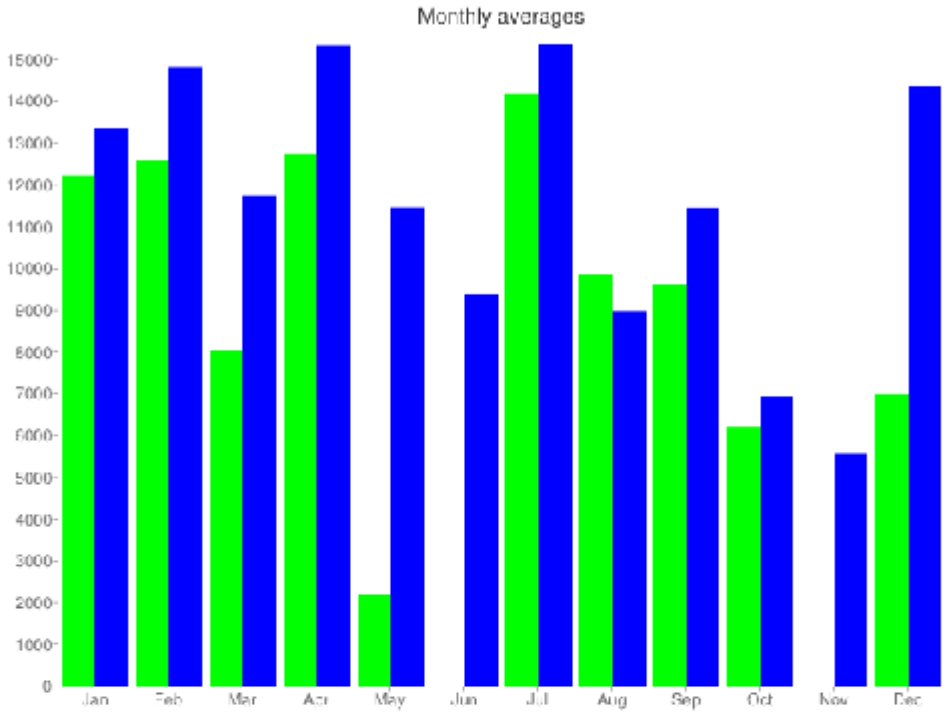
* Based on Average Daily Traffic (ADT)

Months of the year

From 2011-10-01 to 2012-09-30

Report generated on 2012-12-20 12:28:14 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	8,590.3	9,596.0	4,296.5	2,193.0	14,151.5
Dana Strand Gate	11,552.4	11,592.5	3,146.9	5,573.3	15,370.0

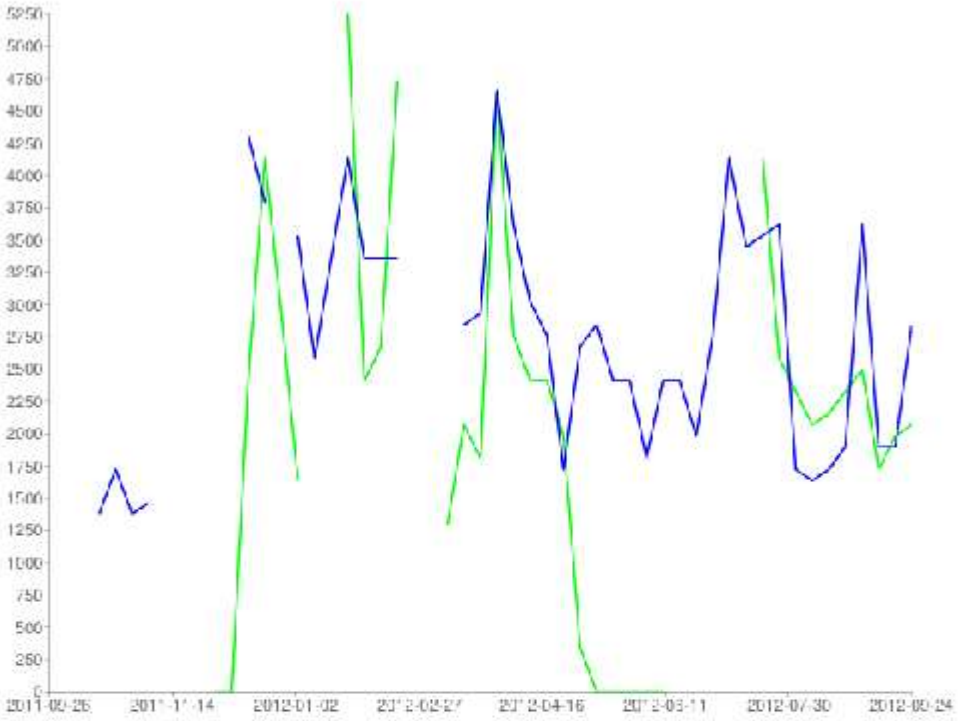
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Weekly* totals report

Covering 53 weeks from 2011-09-26 to 2012-09-30

Report generated on 2012-12-20 12:20:09 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Min	Max
Dana Point Preserve	2,065.1	0.0	5,257.0
Dana Strand Gate	2,728.9	1,281.0	4,726.0

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

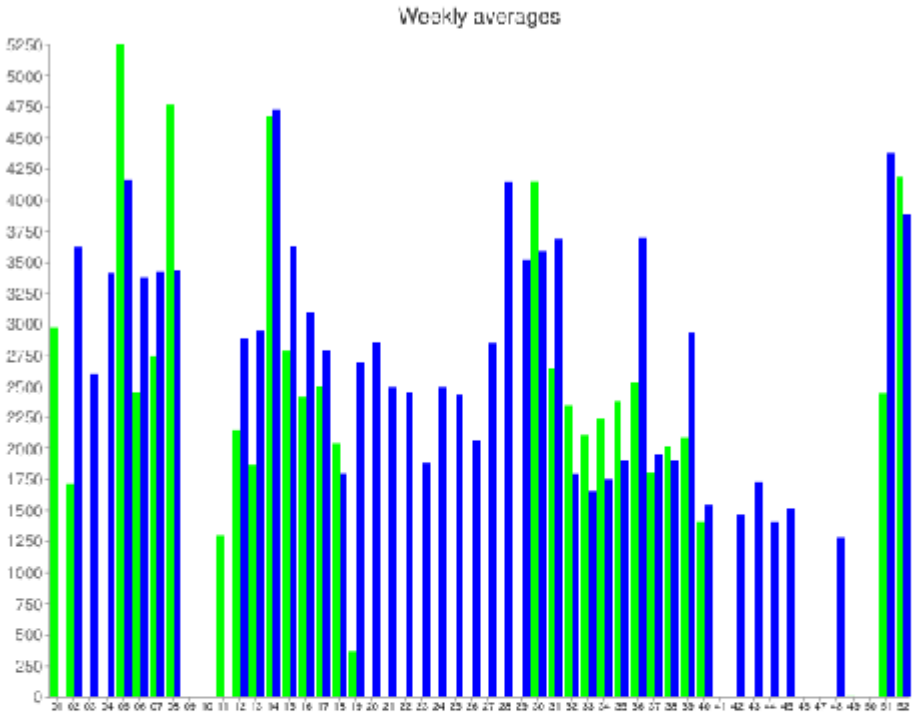
* Based on Average Daily Traffic (ADT)

Weeks of the year

From 2011-10-01 to 2012-09-30

Report generated on 2012-12-20 12:27:31 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	2,062.7	2,138.0	1,416.1	1.2	5,257.0
Dana Strand Gate	2,734.8	2,784.0	911.1	1,281.0	4,726.0

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

CNLM ANNUAL REPORT OF MANAGEMENT ACTIVITIES FOR THE 2012-2013 FISCAL YEAR ON THE

DANA POINT PRESERVE

Owned and Managed by CNLM (S033)

Calandrinia maritima photo by Lee Ann Carranza

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

Prepared by

Center for Natural Lands Management

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January 10, 2014

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SUMMARY of 2012-13 ACTIVITIES

- Trail base and trail fencing maintenance activities were conducted.
- Vegetation communities were monitored.
- Coastal California gnatcatcher surveys were completed. A total of seven coastal California gnatcatcher pairs were observed and six of the seven pair were confirmed productive with at least two fledglings each.
- Potential predators to the pacific pocket mouse were monitored using a remote camera.
- Pacific pocket mice were monitored using track tubes.
- An adult female pacific pocket mouse was taken into captivity by the San Diego Zoo.
- Invasive plant species were removed and/or treated.
- Erosion control measures were installed along the trail and above rare plant populations on the bluff edge.
- A new gate lock system was installed at the Dana Strand Gate.
- Three part-time enforcement rangers patrolled the Preserve.
- Volunteer work days were held monthly on the Preserve.

INTRODUCTION

The Dana Point Preserve (Preserve) is 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), by Headlands Reserve, LLC. The Project consists of 125 residential homes, a 65-to-90 room seaside inn, and public open space. The Project is 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 Game (CDFG), 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 California Department of Fish and Game. 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 California Department of Fish and Wildlife (Wildlife Agencies). On January 4, 2012, CDFG 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 for the Fiscal Year (FY) 2013 (October 2012 - September 2013) on the Preserve, as required by the HMMP. Four primary management objectives

for the Preserve identified in the HMMP direct the management on the Preserve until CNLM revises the management plan with the approval of the Wildlife Agencies:

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 2013 Workplan (CNLM 2012b) to be undertaken 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*: gnatcatcher).
6. Monitor pacific pocket mice (*Perognathus longimembris pacificus;* PPM) using track tubes.
7. Begin to draft an updated Habitat Management and Monitoring Plan.
8. Remove non-native plant species opportunistically throughout the Preserve.
9. Coordinate with the City of Dana Point regarding adjacent land use activities.
10. Coordinate with Headlands Reserve, LLC, and their contractors, regarding their revegetation/weeding activities.
11. Expand the GIS database as necessary.
12. Record Preserve management and monitoring activities in an annual report for the Wildlife Agencies and City.
13. Seek additional funding through grants and donations to fund reconstruction of the public trail base.
14. Continue the public outreach program and educational opportunities within the Preserve, including collaborating with the City of Dana Point Natural Resource Officer, Nature Interpretive Center (NIC) facilities, and City docents at the NIC.
15. Provide opportunities for the public to help in maintenance of the Preserve (trash removal, trail maintenance, non-native plant removal, etc.).
16. Work with CNLM Director of Conservation Science and Stewardship and other PPM managers and biologists to establish an electronic location for posting and sharing PPM-related literature and documents, to develop a description of information needs for PPM management, and to contribute to a risk analysis of cumulative impacts on PPM from research, public use, and monitoring.
17. Conduct other tasks as necessary to effectively establish the Preserve and the presence of CNLM in the City of Dana Point.

The implementation of these tasks in FY 2013 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, and Endowment.

CAPITAL IMPROVEMENTS

Objective: *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. For the second year, no significant damage occurred to the perimeter fence surrounding the Preserve.

To better armor the trail base for winter rain, approximately 75 sand bags were again installed along the trail in the most erosive areas. The most eroded area was between overlooks 1 and 2. All sandbags were filled with loose native sand that accumulated on the trail or above grade adjacent to the trail. Burlap sandbags were not used this fiscal year due to their poor performance along the trail in FY 2012. New monofilament sandbags were donated to CNLM by SoCal Sandbags to be used on the trail. These sandbags are constructed with materials that do not break down and can withstand human (and vehicle) traffic. The sandbags held up so well that when they were removed from the trail in March 2013, we stockpiled them (still full of sand) in the City Nature Interpretive Center parking lot to be used the following year.

Figure 1: Monofilament Sandbags and Trail Base Erosion

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

All the trail fencing was painted by contractors to Headlands Reserve, LLC before the trail was opened to the public. As stated in last year's annual report (CNLM 2012a), the public trail fence

paint finish has lost its protective finish and the post caps are corroding. Approximately 40 students from Pamona College volunteered to paint the trail fence. Due to circumstances beyond everyone's control, only a portion of the trail fence was painted and all of the paint cans remained unusable after the event. However, CNLM staff and City volunteers helped paint the remaining portion of the trail fence to the second overlook. As a result, the trail was closed all day Tuesday, August 27, 2013 and Wednesday, September 11, 2013.

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, the trail was closed only one day in FY 2013, October 11, 2012. Other rain events occurred in FY 2012, but only the October 11, 2012 rain event resulted in damage to the trail base.

As stated in last year's annual report, additional funding was sought to fund the trail base reconstruction designed by Bellfree Contractors Inc. in 2011. The trail reconstruction entails raising and crowning the trailbed, using crushed rock to raise the trailbed, armoring the trail edge with rock, adding drainage dips and a total of 13 steps. This would cost an estimated $60,000 in contract labor and materials alone. CNLM submitted a grant application to California Department of Parks and Recreation in January 2013 requesting $72,089, but unfortunately was notified on October 30, 2013 that CNLM was not awarded the grant. CNLM staff will continue to pursue grant opportunities or other outside funding sources to complete this work.

Trimming the vegetation off the trail fence is another task that takes many hours of CNLM staff and volunteer time. On February 19, 2013, Moosa Creek Nursery staff trimmed all the vegetation off the trail fence and removed the material from the Preserve. They were allowed to take with them California buckwheat trimmings for use as nursery stock. No additional trimming of vegetation along the trail was needed in FY 2013, likely due to the lack of rain.

BIOTIC SURVEYS

Objective 1: *Monitor all rare plant populations.*

Rare plant monitoring on the Preserve has been conducted in the past by counting individuals of the following sensitive plant species: aphanisma (*Aphanisma blitoides*), seaside calandrinia (*Calandrinia maritima*), prostrate spineflower (*Chorizanthe procumbens*), cliff malacothrix (*Malacothrix saxatilis* var. *saxatilis*), silverback fern (*Pentagramma triangularis* ssp. *viscosa*), and Nuttall's scrub oak (*Quercus dumosa*). However, resources are limited for plant monitoring. Complete counts, in addition to being inefficient, may track nothing more than expected or random annual variation in these rare species, providing little informative feedback for management. As described in the FY2013 Workplan, the goal of the rare plant monitoring program on the Preserve is to conserve all extant rare plant localities, ensuring that threats are identified and tracked, and meaningful declines in population status or other critical life-history stages are documented and addressed. Specific objectives will be developed for cliff spurge and California boxthorn using index plots. Specific objectives for seaside calandrinia and aphanisma will be developed using quadrats. The objective of monitoring prostrate spineflower will be to determine if

occurrences and distribution of prostrate spineflower are stable using randomly selected visitation points within the 24 x 24 meter PPM grid system.

Formal rare plant monitoring methods were developed and initiated in March 2013 by the Preserve Manager, but changes were needed due to accessibility to the rare shrubs and lack of expression by the rare annuals. A test index plot for cliff spurge (*Euphorbia misera*) was monitored in FY2013. A random point within the area of cliff spurge occurrences was chosen and a 2 foot metal rebar stake was driven into this location. The test index plot had a 15 meter radius and 54 cliff spurge were identified and mapped with a Trimble GeoXT GPS unit. Various data parameters were measured. However, numerous changes were identified in this process as being needed to allow more repeatability and efficiency. Problems with accessibility and applicability of quadrats for also occurred with Seaside calandrinia (*Calandrinia maritime*) and aphanisma (*Aphanisma blitoides*), so only census data was recorded. The main challenge was lack of access to a sufficient number of individuals to set up a quadrat due to steep and highly erodible slopes. The census results are provided in Table 1 below. Prostrate spineflower (*Chorizanthe procumbuns*) was accessible, but was no longer visible two weeks after emergence when surveys were going to be conducted. These challenges will be addressed in FY2014.

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 2013. According to the closest weather station at Dana Strands Beach (www.weatherunderground.com), the annual precipitation for FY 2013 was 4.95 inches. This is 7.45 inches below average, assuming 12.4 inches of rain is average for Dana Point. This is the second lowest amount of rainfall recorded (last year was the least amount) since CNLM began management of the site.

Table 1: Rare Plant Monitoring Results

Scientific Name	**Common Name**	**2008 Populations[3] /Individuals**	**2009 Populations[3] /Individuals**	**2010 Populations[3] / Individuals**	**2011 Populations[3]/ Individuals**	**2013 Populations[3] /Individuals**
Aphanisma blitoides	Aphanisma	12/935	12/1,059	12/1,535	6/881	4/707
Calandrinia maritima	Seaside calandrinia	5/624	4/149	4/378	5/171	3/67
Euphorbia misera	Cliff spurge	1/1,500	Not Monitored	Not monitored	1/156*	1 Test Plot 1/54

Objective 2:*Conduct long-term coastal sage scrub vegetation surveys.*

The Preserve Manager repeated coastal sage scrub vegetation surveys as was conducted in 2006 and 2009 by Eliza Hasselquist (former CNLM Preserve Manager and botanist). The purpose of this long-term monitoring effort is to examine how changes in coastal sage scrub habitat at the Preserve over time may affect changes in the populations of sensitive species on the Preserve, such as PPM or CAGN. In 2006, only shrub cover was measured with the rational being that the dominant characteristic of coastal sage scrub habitat is cover of shrubs. In 2009, measurement of herbaceous

plant and ground cover (defined as either "litter" or "bare") were added, providing a more holistic assessment of the plant community.

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 added 15 transects after conducting a power analysis using the 2006 and 2009 results (SAS Institute, Inc., Version 9.3). The sampling approach entails sampling the same 5 transects as in 2006 and 2009 every three years as before; randomly select 15 new transects; conduct vegetation sampling at 5 of the new transects annually. This will require sampling 10 transects every three years because of retaining the original 5 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 potential annual variation.

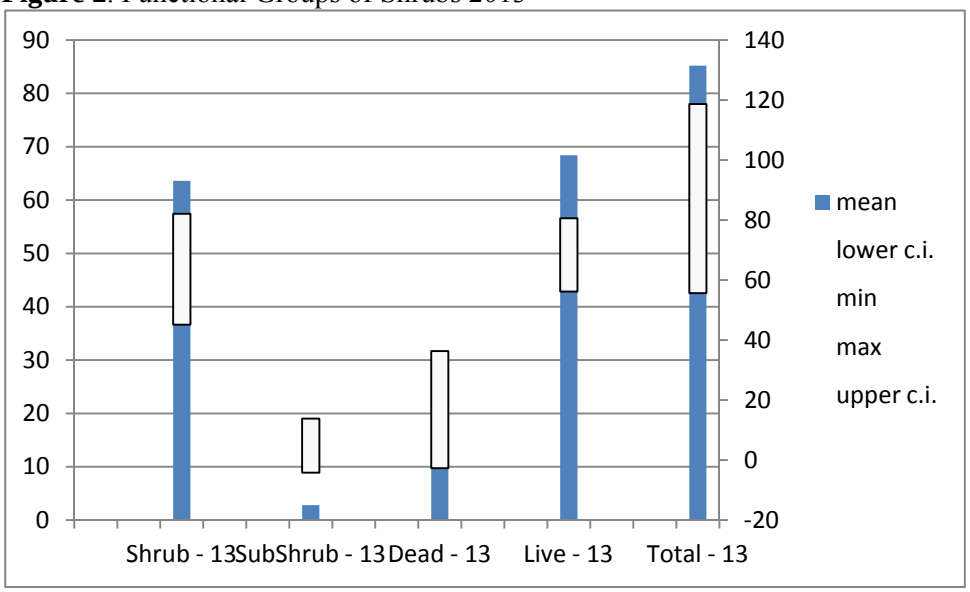
The transects were set from the southeast corner to the northwest corner of each grid cell so that the transect is perpendicular to the slope of the land. The following transects were sampled in 2013 (D5, D9, F13, H11, and J5). An additional 5 new grid cells are to be sampled in 2014 (D11, H13, H3, E7, and J9).

The same twenty-five 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 m, for a total of 50 points) were recorded, giving a total of 50 points per transect. 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. 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) to record any species observed that was not recorded on the transect points. Ground cover was also noted. For simplicity, only "litter" or "bare" were options for ground cover.

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 2013a).

The five transects sampled in 2013 had a 63.6% mean percent cover of shrubs. The range from other transects in previous years has been 41% (2009) to 77.2% (2006). The mean percent cover of subshrubs was only 2.8% whereas the range from previous years on other transects was between 8.0 and 10.0%. Dead shrubs was 16.8% which again is within range from previous years between 13.0% and 24.8%. The mean percent of "Live" cover (includes "shrubs" and "subshrubs") was 68.4% which is again within the previously recorded range of cover for "Live" from other transects (51% and 86.4%).

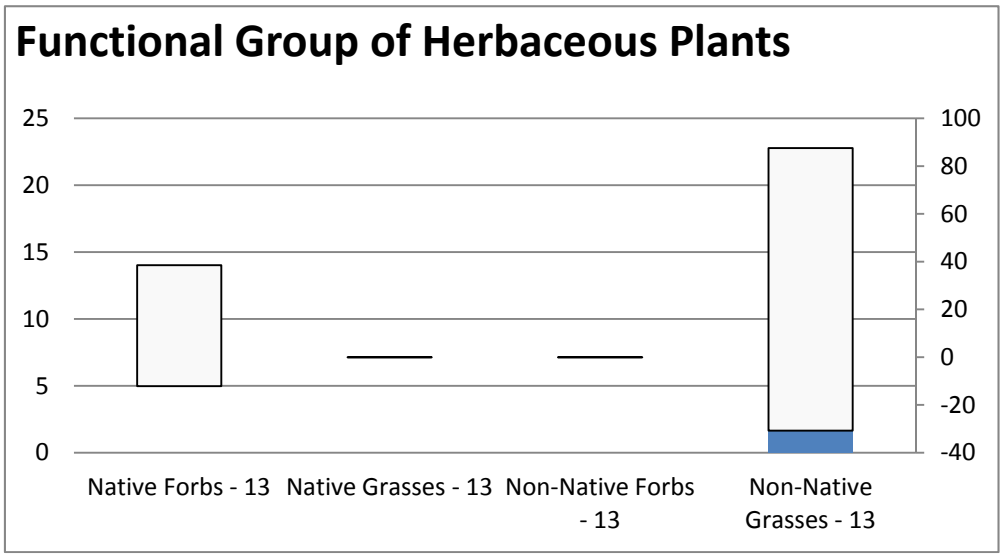
Figure 2. Functional Groups of Shrubs 2013



Species of Shrubs: Eleven different species of shrubs and subshrubs were encountered on the transects and within the 2-meter belt. The most abundant shrub species encountered on transects was *Artemisia californica* (mean=28.4%), *Encelia californica* (mean=15.2%), and *Eriogonum fasciculatum* ssp. *fasciculatum* (mean=13.2%). *Artemisia californica* was 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 was actually non-native grass cover with a mean percent total of 28.4%. Native forbs were the only other functional group of herbaceous plants recorded with a mean percent cover of 13.2%.

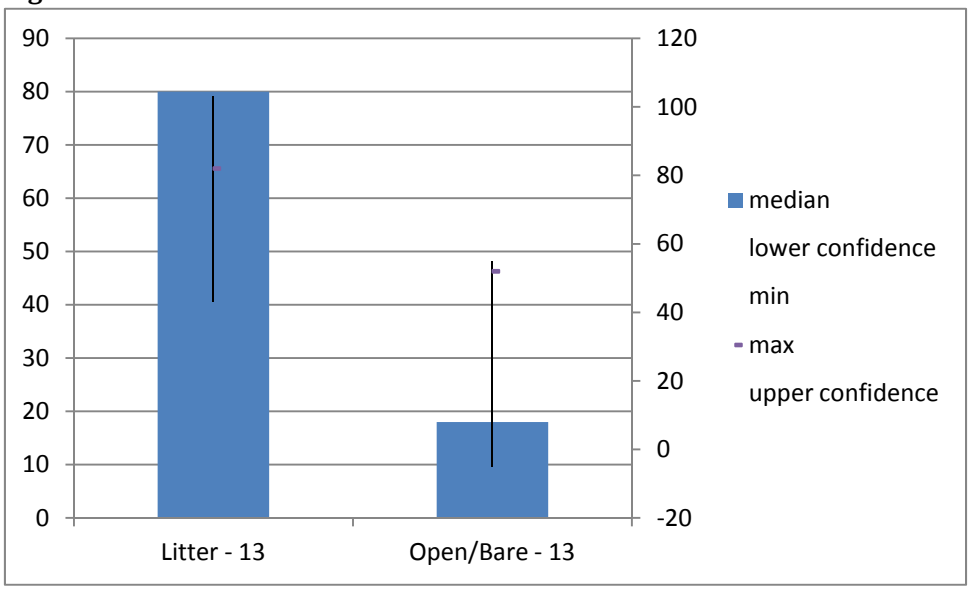
Figure 3. Functional Groups of Herbaceous Plants 2013



Species of Herbaceous Plants. The most abundant species encountered on transects was *Vulpia* (mean=16.0%) and *Bromus madritensis* subsp. *rubens* (mean=12.4%). The other specie closest in abundance was *Pterostegia drymarioides* (mean = 10.2%). There was no attempt to identify *Vulpia* to species (*V. microstachys* or *V. myuros*). No one herbaceous plant species was found on all five transects. Most species were found on just one of the five transects. Only the non-native grasses occurred on four of the five transects.

Ground Cover. Litter and bare ground were recorded at each 0.5 location on the transect with litter recorded on 73.2% of the transect locations, while bare ground made up an average of 24.8% of the cover. Interestingly in 2009 on other transect locations, litter recorded was similarly recorded on 72.0% of the transect locations, while bare ground made up an average of 27.2% of the cover.

Figure 4. Ground Cover 2013



Species Diversity. The mean number of specie recorded on the transects was 6.2. If the species recorded within the 2 meter belt transect are added, the mean number of species recorded increases to 11.

The Preserve is in relatively good condition regarding shrub cover. Species diversity seemed low but this is most likely due to the lack of annuals as a result of low rainfall. No non-native shrubs or forbs were recorded on the transects. The abundance and distribution of non-native plants was solely from non-native grasses with an average percent cover of 28.4%. The mean percent cover of dead shrubs was 16.8%. This does not suggest a reason to be concerned as in 2009 when there was an apparent die-off of many of the shrubs on the five original transects (the majority of those being *A. californica* and *L. scoparius*).

It is 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. However, with two consecutive drought years the number of forbs that emerged was substantially low and many plant

structures were no longer visible by June 2013. For example, *Chrozanthe procumbens* did emerge on the Preserve, but within 14 days there was no sign of its previous presence. It is a continued recommendation that monitoring identify the ground cover at each 0.5 meter transect point as was done in 2009 and 2013 (not just when no vegetation is present as was done in 2012). The species of *Vulpia* (now *Festuca*) was not identified or recorded due to a recommendation by local expert botanist Fred Roberts that *Festuca myuros* is considered "naturalized" and not necessarily non-native, versus the other species of *Festuca* on-site, *Festuca octoflora*, which has always been considered native to southern California. However, the California Invasive Plant Council continues to recognize *Festuca myuros* as an invasive non-native grass of moderate threat. This issue should be pursued further.

Objective 3: *Conduct presence-absence monitoring of coastal California gnatcatcher and coastal cactus wren.*

No coastal cactus wren occur on the Preserve and as a result were not monitored.

The United States Geological Service (USGS) was studying the degree of genetic diversity among CAGN in southern California by collecting blood samples from a variety of sites throughout the species range in southern California. USGS entered into a Site Access for Research Agreement with CNLM to sample CAGN from various CNLM managed preserves. The Dana Point Preserve was one of such preserves. USGS staff, Lisa Allen and Kimberly Ferree, sampled the Preserve on October 19, 2013 by targeting adult CAGN by using song playbacks to attract birds to mist nets. Three male CAGN were caught, pin feathers taken, and banded. The following individuals were banded with metal silver FWS bands: Pair 5 male (right leg at 33.46101, -117.71428), Pair 1 male (left leg at 33.46175, -117.71355), and Pair 4 juvenile (right leg at 33.462358, -117.7120283).

The Preserve Manager conducted presence/absence and nest monitoring of CAGN. The Preserve was surveyed seventeen times in 2013. Surveys were performed from March through mid July (Table 2). Surveys were conducted on March 1, 7, 15, 21, and 28; April 5, 16, and 24; May 7, 24, and 31; June 6, 14, 21 and 27; July 9 and 12, 2013. Seven pair were again recorded on the Preserve in 2013. This is the same number of pair recorded in 2012. However a single male was also observed on the northern side of the Preserve. All gnatcatcher locations were recorded using a Trimble GPS unit and in a field notebook (Appendix B). The data is summarized in Table 2 below.

Nest monitoring activities were conducted throughout the Preserve during the survey dates identified above to minimize impacts to nesting gnatcatchers from a pacific pocket mouse trapping effort north of the former Marguerita Roadbed and a pacific pocket mouse track tube monitoring effort which occurred throughout the Preserve. Six of the seven pair had at least one successful brood. Detailed results of the nest monitoring are provided in Table 3 below.

A few unusual events occurred during this monitoring season. Since the juvenile of pair 4 was banded it was determined that this juvenile replaced its father in defending the same territory and nesting in this territory. The identity of the female mated with this male is unknown. In addition, a single male was observed in the territory of pair 4 and beyond. This adult male had a tattered tail

and was easily recognizable. He was not observed later in the season. However, a severed male CAGN head was observed in the peregrine cache on the City's Hilltop Preserve.

Three of the five nest predation attempts were assumed to be by birds, crows in particular, due to the nesting material being pulled up from above and crows observed frequenting the area. In the past, snakes were assumed to be the predominant predator due to the loss of eggs with no disturbance to the nest, but only one such occurrence was documented this year.

In addition, two nests failed after the chicks hatched and the parents were observed feeding the chicks. This occurred with pair 2 and pair 3, both on the south side of the Preserve. The first nest attempt by gnatcatcher pair 2 was predated at the egg stage. Their second nest attempt was the first recorded within cliff spurge (*Euphorbia misera*); a rare plant on the bluff edge. The nest was successful with 3 nestlings observed on June 13, 2013. When conducting nest monitoring on June 21, 2013 no activity was observed from a distance at the nest. It was later observed that three nestlings were abandoned in the nest with no sign of disturbance. The chicks seemed recently dead with no ants in the nest. The Carlsbad Fish and Wildlife office was notified of the mortality by an electronic mail message. There was one egg in the nest that did not hatch. It is unknown why this nest failed since the nestlings were at least initially being fed by their parents. This particular nest location did receive a lot of wind being down slope on the south facing bluff edge. In addition, it was within the frequently used route of the peregrine falcon on-site.

The first nest attempt by gnatcatcher pair 3 was constructed early, but not used for a couple of weeks. The nest was predated by crows, but the nestlings were approximately 10 days old and survived. Crows were observed following the adult gnatcatchers. Pair 3 renested and laid 4 eggs. The second nest was easily observable from the trail and observed frequently. Only three chicks were observable in the nest from the trail and on June 26, 2013 one of the chicks was observed flailing in the nest. The parents continued to bring food, but the chick looked abnormal. On June 27, 2013 no activity could be observed in the nest from the trail. It was observed that three chicks were dead in the nest; which must have occurred within 24 hours. Some ants were in the nest. One chick was on the ground near the nest but not directly under the nest. The male gnatcatcher fed the chick on the ground and continued to return to the nest with food as well. Will Miller was contacted at the Carlsbad Fish and Wildlife Office. He consulted with others in the Carlsbad Fish and Wildlife Office and suggested we collect the nests for analysis by the USGS National Wildlife Health Center in Madison, Wisconsin. Both failed nests with chicks were collected in plastic sealed bags and stored in the freezer for collection by Will Miller the following day.

The National Wildlife Health Center could not salvage any material for testing on the nest from Pair 2. However, on the nest from pair 3 they found no West Nile Virus and no pathogenic bacteria were cultured.

Table 2. Coastal California Gnatcatcher 2013 Survey Information

Date (2013)	Time	Weather	Type of Survey	Additional Observers
March 1	8:00am – 1:30pm	0% cloud cover, 1.3 – 4.5 mph wind, 72.5-75.5°F	CAGN Presence/Absence	
March 7	9:50 am – 1:03 pm	0% cloud cover, 2.6-2.1 mph wind, 56.9-57.6°F	CAGN Presence/Absence and nest monitoring	
March 15	9:07 am – 1:06 pm	100% cloud cover, 1.6 mph wind, 55.6°F	CAGN Presence/Absence and nest monitoring	
March 21	8:50 am – 2:20 pm	35-40% cloud cover, 2.6-3.3 mph wind, 60.4-66.5°F	CAGN Presence/Absence and nest monitoring	
March 28	8:51 am – 1:20 pm	95 - 50% cloud cover, 2.2-3.5 mph wind, 58.6-69.1°F	CAGN Presence/Absence and nest monitoring	
April 5	8:30 am – 12:15 pm	100% cloud cover, 1.8-3.0 mph wind, 57.5-67.5°F	CAGN Presence/Absence and nest monitoring	
April 16	9:00 am – 12:00 pm	40-5% cloud cover, 1.6-5.5 mph wind, 57.1-61°F	CAGN Presence/Absence and nest monitoring	
April 24	9:00 am – 2:35 pm	0-5% cloud cover, 2.0-4.4 mph wind, 59-62.5°F	Nest Monitoring	
May 7	10:45 am – 11:17am	Not Recorded	Nest Monitoring	
May 24	8:14 am – 12:00 pm	50-5% cloud cover, 1.8-2.2 mph wind, 64.1-69°F	Nest Monitoring	Joanna Kipper and Sean Vogt
May 31	8:40 am – 12:15 pm	100-5% cloud cover, 2.0-3.5 mph wind, 66-75°F	Nest Monitoring	Sean Vogt
June 6	8:45 am – 12:00 pm	100% cloud cover, 1.9 - 4.7 mph wind, 63- 65.3°F	Nest Monitoring	Sean Vogt
June 14	8:45 am – 11:50 am	100% cloud cover, 1.0 – 5.0 mph wind, 63.7- 69°F	Nest Monitoring	Joanna Kipper
June 21	7:10 am – 11:00 am	95 - 0% cloud cover, 1.2-2.4 mph wind, 65-72°F	Nest Monitoring	
June 27	2:16pm – 2:30pm	100% cloud cover, 2.0 mph wind, 73°F	Collection of Nests	Sean Vogt
July 9	11:40 am – 12:40pm	40% cloud cover, 1.0 mph wind, 72°F	Nest Monitoring	
July 12	10:30 am – 11:00am	75% cloud cover, 1.0 mph wind, 70.5°F	Nest Monitoring	

Table 3: Coastal California Gnatcatcher 2013 Nest Monitoring Results

CAGN ID	Status	# Nesting Attempts	# Nestlings Observed	# Fledglings
1	Pair	3/28/13 = 1st nest 6/1/13 =2nd nest	1st nest = predated 2nd nest = 3 nestlings	3 fledges confirmed
2	Pair	3/28/13=1st nest 6/6/13 = 2nd nest	1st nest = predated 2nd nest = 3 nestlings abandoned	N/A
3	Pair	3/1/13 =1st nest 5/23/13=2nd nest	1st nest = 3 nestlings 2nd nest = 3 dead nestlings	3 fledges confirmed and 1 fledge confirmed
4	Pair	3/28/13=1st nest 5/23/13= 2nd nest 6/14/13= 3rd nest	1st nest = predated 2nd nest = predated 3rd nest = 3 nestlings	3 fledges confirmed
5	Pair	3/28/13= 1st nest	1st nest = not observed	2 fledges confirmed
6	Pair	3/38/13 = 1st nest	1st nest = 3 nestlings	3 fledges confirmed
7	Pair	4/5/13 = 1st nest	1st nest = 3 nestlings	3 fledges confirmed

Objective 4: *Monitor 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. The species documented by the wildlife camera are provided in Table 4 below.

The bobcat and coyote remained detected by the wildlife camera throughout the year. The black rat (*Didelphis virginiana*), grey fox, long-tailed weasel, domestic dog, and domestic cat were not recorded on the wildlife camera in FY 2013.

Table 4: 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 9-29-09
5	Long-tailed weasel	*Mustela frenata*	Photo by volunteer taken May 2010	Not observed on-site in FY 2012 or FY2013
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	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

Figure 5: Coyote (wildlife camera 11/08/12)

Figure 6: Bobcat (wildlife camera 2/09/13)

***Objective 5**: Coordinate with USFWS on monitoring activities for Pacific pocket mice*

Meetings. The Preserve Manager participated in two meetings organized by the USFWS to discuss PPM management, research and recovery. The November 14, 2012 meeting was held at the San Diego Zoo Safari Park and included a tour the captive breeding facility. The meeting on January 29, 2013 was held at the USFWS office to discuss the following: research proposal on interspecific competition; argentine ants, reintroduction sites, and upcoming 2013 field work.

Captive Breeding Program. Unfortunately one of the male pacific pocket mice from the Dana Point Preserve that was taken into captivity by the San Diego Zoo died. In addition, one of the juvenile animals taken into captivity that was thought to be a female was a male. Thus, in order to have 5 female and 5 male PPM from Dana Point, the San Diego Zoo needed another female. CNLM entered into a Site Access for Research Agreement with the San Diego Zoo to allow Dr. Debra Shier to trap and take one more female from the Preserve into captivity. Traps were used to estimate population abundance to ensure taking one adult female PPM would not represent more than 10 percent of the adult population. CNLM limited the trapping area geographically to the former Marguerita Roadbed and north of the former roadbed. The Preserve Manager met with Dr. Shier at the Preserve on April 2, 2013 to select trap locations. Two traps were set at each of the 50 locations (100 traps total) and baited at dusk on April 3, 2013. All traps were checked at midnight by Dr. Shier and Thea Wang, with the Preserve Manager Present. On April 4, 2013, a total of 8 PPM were captured (4 female and 4 male) (Appendix C). All male PPM were scrotal, two female were reproductively active, and all PPM captures looked in great condition with healthy shiny coats and no sign of hair loss or coloration. Eleven harvest mice (*Reithrodontomys megalotis*) were also captured and released. Dr. Shier took one adult female from grid cell C18NE into captivity (2114908.29N, 6116168.25E). She weighed 7.0g upon arrival at the quarantine facility at the Zoo. Thus, the effort was completed with only one trap check. All traps and flagging were removed from the Preserve.

Seasonal Survey. CNLM again employed only track tubes in 2013. To sample emergence, extent of above ground activity and absence throughout the site with limited effort, three pairs of grid cells were selected to be monitored. Each pair was located as far away as possible from the other pairs of

grid cells to be monitored. Each pair was selected based on maximizing previous PPM detections. Thus, the following grid cells were monitored throughout the Spring, Summer and Fall 2013: 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 March 22, 2013, 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 left in place until the conclusion of the study on October 26, 2013. The track cards were not reset at identical intervals throughout the season. It began with 3 nights of deployment before being reset, then moved to 5 nights before being reset. On April 4, 2013 it was changed to reset the track cards after 7 nights of deployment until they were removed on May 1, 2103 to allow the site-wide survey (described below) to be implemented without interference. The seasonal survey was reinitiated on June 7, 2013. The track cards were reset every three to four nights until they were removed on June 17, 2013. They were removed on June 17, 2013 due to concern of habituating animals to the track tubes for food. Some of the track tubes were consistently occupied and due to the 12-meter spacing it was possible that it was the same individual PPM each time. As a result, it was decided, in coordination with USFWS, to leave the track tubes out for approximately 10 days a month. The dates selected for July were chosen in attempt to maximize detection by deployment close to a new moon cycle. Due to lack of activity in late August and September, only one grid cell per pair was surveyed in October 2013.

The track cards were removed from each track tube and labeled on the back with the date and the unique grid cell location. They were not analyzed in the field.

A total of 21sets of occurrence data was taken between March 22 and October 26, 2013. PPM were detected beginning March 26, 2013 within all six grid cells monitored under the seasonal survey. The number of track tubes with PPM detections fluctuated between 0 and 21 track tubes on any given sampling period. PPM remained active until September 16, 2013 with only one occurrence among the 24 track tubes. After that date, no PPM were detected in any of the track tubes. Activity was fairly similar in all three areas, except that PPM detections in the H13/I13 ceased on August 11, 2013; approximately one month earlier than the other two locations. Additionally, it seems PPM were more active in the D4/D5 area than the H13/I13 area.

Table 5: Grid Cell Occupancy Throughout 2013 Seasonal Survey

	3/25	3/30	4/4	4/11	4/18	4/25	5/1	6/10	6/13	6/17	7/12	7/16	7/19	8/8	8/11	8/14	9/16	9/20	9/23	10/21	10/26
D4	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0
D5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
C18	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
D18	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
H13	1	1	1	0	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0
I13	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0

1 = PPM present; 0 = PPM absent

Other species recorded were harvest mouse and deer mouse (*Peromyscus maniculatus*); 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 May 2, 2013, 126 track tubes were deployed in the field by CNLM (Lee Ann Carranza) and USFWS (Will Miller). Each track tube was set in the nearest location to 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 tubes were left in place until the conclusion of the study on May 17, 2013. The track cards were reset every 3 nights for a total of 5 data sets with the help of California Department of Fish and Game (Cara Allen) on May 14, 2013 and removal with the help of Will Miller on May 17, 2013. The track cards were removed from each track tube and labeled on the back with the date and the unique grid cell location. They were not analyzed in the field.

Few challenges were encountered in 2013. 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*).

The weather during the monitoring period was very similar to last year with mild temperatures ranging from a high of 77.1 to a low of 54.4 degrees Fahrenheit (63.3 F average) and average wind speed of 2.1 mph. There was a small rain event on May 6, 2013 with 0.11 inch of precipitation recorded. There were also three other foggy drizzle mornings on May 7, 8 and 13, 2013 that resulted in 0.01 to 0.02 inch of precipitation. The moon phase during the sampling period began with a last quarter moon on May 2, 2013, a new moon on May 8, 2013, and ended with a waxing crescent moon on May 16, 2013.

A total of 184 track cards were identified with PPM prints with a range of 24 to 45 per sampling period. Other species recorded were harvest mouse (REME) and deer mouse (PEMA). These results are presented in Table 6 below.

Table 6: 2013 Summary of Small Mammals Identified on Track Cards (Site-wide Survey)

	PPM	**REME**	**PEMA**
May 2 - 5	24	81	54
May 5 – 8	36	116	8
May 8 – 11	45	113	21
May 11 - 14	41	89	36
May 14 - 17	38	101	37
TOTAL	**184**	**500**	**156**

PPM prints were identified at least once within 65 of the 126 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 five track cards for that grid cell had a medium or high confidence PPM occurrence (Appendix D). Only one of the 65 grid cells (BB11) had only a

low confidence PPM detection. PPM have not been detected in this grid cell in the past, thus it was not considered occupied in the occupancy analysis. A naïve occupancy estimate would be 50.8% (64/126) of the Preserve is occupied by PPM (Table 7).

Table 7: 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 126 grid cells (15 nights)	62 (49.2%)	2	1	65 (51.6%)

Four grid cells where PPM were detected in 2013 represent new locations for PPM. However, 37 grid cells that previously recorded PPM detections using either track tubes and traps (since 2008) did not have PPM detections in 2013. Grid Cell C12 was a new location for PPM which had been sampled only once the year before by track tubes. The following three grid cells represent new locations for PPM that have not been sampled since 2008: 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 model (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 single season model formulations that modeled a constant capture probability among survey occasions. The 2013 model averaged habitat use estimate as 51.5 percent (95% C.I. 43-60%). The Program MARK results suggest a slightly higher use estimate than the naïve estimate of 50.8 percent.

Although the results of this track tube sampling effort cannot be compared directly to previously recorded track tube results, it serves as an indication of PPM presence and distribution throughout the 29.4 acre Preserve. 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 population estimate of anywhere between 24 and 65 individuals. However, each track tube could conversely represent more than one PPM as well.

A full report of the methods and results summarized above are available upon request (CNLM 2013b).

Objective 6: *Collect vegetation data at each PPM grid cell*

USGS has collected vegetation data at their PPM monitoring plots over the past few years. Preliminary results showed that forb cover was a significant determiner of PPM occupancy. USGS vegetation data collection methods were simple enough that the Preserve Manager elected to gather the same data at each of the 126 grid cells within the Preserve.

On May 29, 30 and 31, 2013 the Preserve Manager collected the following data at each grid cell using visual estimates by standing in the center of the plot and moving outward as necessary to allow adequate view of the entire plot: 1) Slope/aspect; 2) Percent vegetative cover among the following categories: open ground; woody leaf litter; forbs; non-native grass; native bunch grass; shrub; tree; inhospitable (road, etc.); 3) Dominant forb species: four dominant species and percent cover of each; 4) Presence of the following PPM food plants: California buckwheat, California croton, deer weed, cryptantha, California aster, and/or brome grass; 5) Presence of roads, trails, cut slopes, sandbags and/or sprinklers; 6) Presence of disturbance: light foot traffic, heavy foot traffic, trash, predator scat, and/or ants; and 7) Presence of PPM size burrows.

On 18 preselected plots, the following additional data was recorded on the dominant shrubs, forbs, and grasses using visual estimates: 1) Phenology was recorded for the top 4 dominant forb species in addition to percent cover; 2) Dominant grass species: 3 dominant species, phenology and percent cover of each; and 3) Dominant shrub species: 3 dominant species, phenology, and percent cover of each. Phenology was described as either dead, desiccated, seed, flower, or vegetated.

The selection of these 18 plots were to provide more in depth information should it prove useful in identifying habitat covariates that correspond with presence of PPM. Six of these plots were selected because they are also the plots being monitored all season for long-term presence/absence data of PPM using track tubes (C18, D4, D5, D18, H13 and I13). The remaining 12 plots were selected because these grid cells are already being monitored for vegetation with a long-term coastal sage scrub 25-meter monitoring transect from the southeast corner to the northwest corner of the grid cell (AA11, B11, B15, D9, D11, D14, E7, F13, H3, H11, J5, and J9).

The data from this effort will be input into an excel file and provided to USGS for combined analysis.

Objective 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 E. No new plant species were added to the Preserve list in FY2013. 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 I. Eight new animal species were added to the Preserve list in FY2013: 1) Legless lizard (*Anniella stebbinsi*), although it was discovered dead north of the former Maguerita Roadbed; 2) Brush rabbit (*Sylvilagus bachmani*); 3) Great egret (*Ardea alba*); 4) Merlin (*Falco columbarius*); 5) Royal tern (*Thalasseus maximus*); 6) White pelican (*Pelecanus erythrorhynchos*); 7) Great horned owl (*Bubo Virginianus*); and 8) Western tanager (*Piranga ludoviciana*). The list of animals on the Preserve is now 23 invertebrates, 112 birds, 11 amphibians and reptiles, and 20 mammals recorded on-site. The Preserve Manager continued to maintain a checklist of birds observed on the Preserve throughout the fiscal year. Fifty-two different bird species were documented as identified on the list of bird species in Appendix F.

The pair of peregrine falcons previously documented using the Preserve were observed again during nesting season. Dr. Joel Pagel, raptor ecologist with the Carlsbad Fish and Wildlife Office, monitored the pair during the 2013 nesting season.

Figure 7: Dead Legless Lizard (4/4/13)

HABITAT MAINTENANCE AND RESTORATION

***Objective 1**: Coordinate with Headlands Reserve, LLC, and their contractors, regarding their construction activities, revegetation/weeding activities on and adjacent to the Preserve.*

Headlands Reserve, LLC has 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.

Nature's Image remained under contract to Headlands Reserve, LLC to maintain the creation and enhancement areas. Although Natures Image may have treated the Preserve area within the former Marguerita Roadbed and north of the roadbed, CNLM did not observe any such activity in 2013 and did not request Headlands Reserve, LLC to have Natures Image treat any areas within the Preserve in 2013.

CNLM did request Headlands Reserve, LLC remove broken sandbags placed along the perimeter of the Preserve along Dana Strand Road and within eroded areas on the Preserve adjacent to the NIC parking lot. Headlands Reserve, LLC had contractors remove the broken sand bags and replaced some sandbags in these areas in October 2012.

Headlands Reserve, LLC had all the temporary irrigation lines within the Preserve removed in September 2013 by contractors. In a few locations, the lines were cut and capped. Headlands Reserve, LLC and their contractors coordinated with CNLM in advance and during removal of the temporary irrigation pipes.

The growth of native vegetation in the former Marguerita Roadbed remained high as can be observed in Figure 9. The increasing cover of coyote brush (*Baccharis pilularis*) is becoming a concern for PPM. This species creates substantial cover and leaf litter.

Figure 8: Vegetation on Former Marguerita Roadbed (10/24/11)

Figure 9: Vegation on Former Marguerita Roadbed (12/19/13)

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.

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

Figure 11: Impact Area Post Remediation (12/19/13)

Objective 2: *Control exotic plant species on the Preserve.*

Natures Image did not conduct any weed removal activities on the Preserve south of the former Marguerita Roadbed. Consequently, CNLM staff and volunteers spent a substantial amount of time treating or removing exotic plant species in FY 2013. The most common species removed on the bluff top included: short-pod mustard, bridal creeper (*Asparagus asparagoides*), tocalote

(*Centaurea melitensis*), and scarlet pimpernel. Little to no Bermuda butter-cup (*Oxalis pes-caprae*) occurred due to the limited rainfall. In fact, substantially less exotic plants were observed likely due to the limited rainfall.

Non-native species removed on the bluff edge included: Perez's sea lavender (*Limonium perezii*), Scarlet pimpernel, Short-fruited filaree (*Erodium brachycarpum*), Red-stemmed filaree (*Erodium cicutariu*), Russian thistle (*Salsola tragus*), Hottentot fig (*Carpobrotus edulis*), Croceum iceplant (*Malephora crocea*), Crystal iceplant (*Mesembryanthemum crystallinum*), Sahara mustard (*Brassica tournefortii*), and Small-flowered iceplant (*Mesembryanthemum nodiflorum*).

As noted above, bridal creeper was again observed on-site in FY 2013. The same treatment method used in 2011 and 2012 was repeated in 2013. 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 72 locations were treated in 2013 (Appendix G). This is an increase from the 65 locations treated in 2012 and nearly all seemed to be new individual plants, however several were within close proximity to areas treated in 2012. In FY2013 the following additional attribute data was taken 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 234 individual stems were treated in 2013. Interestingly, again 32 percent of the locations treated were large plants (over 15 cm tall). This exotic plant species remains a great concern since rainfall was again substantially lower than average in FY2013. The Preserve Manager created a fact sheet on the threat and treatment of bridal creeper for display at the City of Dana Point Nature Interpretive Center. Signs were also posted at the entrance gates on the days that treatment was conducted.

Objective 3: *Control erosion on the Preserve.*

Winter rains continue to cause substantial movement of sand along the bluff edges where trespassers continue to walk and prevent vegetation from growing. In October 2011, straw wattles were strategically placed in areas to prevent water from flowing at high speed downhill in open paths. In late September 2012, straw wattles were again placed where the previous straw wattles were installed, but this time the wattles were burlap and not plastic mesh. In late September 2013, CNLM again installed more burlap straw wattles 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.

Figure 12: Erosion Control at Overlook 3 (10/24/12)

Figure 13: Erosion Control at Overlook 2 (9/28/13)

In addition, a volunteer requested permission to perform his Eagle Scout project on the Preserve by addressing erosion issues on the Preserve. The Preserve Manager worked with the individual to design an erosion control project that would benefit the Preserve and not adversely affect sensitive species on-site. He installed jute matting in the gully and erosive areas and wood barriers to slow water flow at the top of the gully. However, the wood was ineffective and later removed. He also spread seed and planted native shrubs gathered from the trail along with salt grass cuttings from the Preserve. Due to the lack of rain since installation, the effectiveness of the project remains unclear.

Figure 14: Eagle Scout Erosion Control Project (11/26/12)

Figure 15: Eagle Scout Erosion Control Project (10/24/12)

Objective 4: *Enhance Pacific pocket mouse habitat*

One of the hypotheses of PPM distribution on the Preserve is that PPM are associated with areas of lower vegetation cover and exposed soil, and occur less frequently or are absent in areas with high vegetation cover. 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. To test this as part of its adaptive management of the Dana Point Preserve, CNLM initiated a duff removal experiment in fall 2008 to see if removing duff can improve habitat conditions for PPM. Duff was removed from 14 randomly selected grid cells among 28 grid cells where PPM were not captured during the Spring 2008 trapping effort. All work was conducted between November 2008 and February 2009. In May 2009, PPM were captured in a large proportion of both the duff removal (11/14) and control (no duff removal) grid cells (12/14). Thus, no significant difference in PPM habitat use was detectable between the duff removal and non-removal grid cells (X^2=0.043, degrees of freedom=1, non-significant).

Since February 2009, no duff removal has occurred on the Preserve. Although the above described duff removal experiment did not conclude PPM occurrence is associated with areas that were treated for duff removal, it also did not show that duff removal precluded presence of PPM. In the meantime, the vegetation on the Preserve continues to mature and expand and the hypothesis remains that openness (now thought to be due to the association of forb cover) is of benefit to PPM.

As a result, the Preserve Manager was interested in reinitiating duff removal activities on the Preserve but with the inclusion of also removing dead shrubs to create more openness and preclude the woody debris that the dead shrub would eventually become. It has also been observed that a substantial number of non-native plants occur nested within the dead shrubs. Thus, in early February 2013, the Preserve Manager randomly selected a series of grid cells to conduct duff removal treatment along with removal of all dead shrubs. The Preserve Manager initiated the treatment with grid cell E5. It was expected to take only 4 hours to treat the entire grid cell, but it took 23 hours to complete. Grid Cell E5 has a history of PPM only in 2012 in two locations (North and South traps). In 2013, PPM were detected within the center of the grid cell where the only track tube was placed. Although the results were visually impressive and again found to not be harmful to PPM occupancy, the treatment of additional grid cells was suspended in FY2013 to develop a strategy for addressing the labor needed to treat additional grid cells.

PUBLIC SERVICE AND GENERAL MAINTENANCE

Objective 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 the following dates due to rain and/or trail maintenance as described earlier: October 11, 2012; August 27, 2013; and September 11, 2013.

Beginning October 1, 2012, CNLM was no longer able to continue contracting with Rock Maintenance to walk the trail and lock the gates every evening at sunset, due to the City not renewing any contracts with them in the City (it was not cost effective for them to remain in the City for just the CNLM contract). Unfortunately, no other contractors were willing to either walk a trail and/or come at different times throughout the year to lock the gates at sunset for a reasonable price. As a result, CNLM purchased and installed a solar powered magnetic gate lock and gate closer mechanism for the Dana Strand entrance gate. The system has worked as expected since it's installation on November 17, 2012. Although there were no problems with the operation of the automatic gate lock system in FY2013, there are drawbacks to the system, such as the gate needing to be shut for the system to work. We initially had problems with people propping the gates open, but after a month or so, that problem seems to have subsided.

Figure 16: Solar Panel for Gate Lock

Figure 17: Automatic Magnetic Gate Lock at Dana Strand Gate

The City no longer has their contractors lock or unlock any CNLM gates. However, they are responsible for locking and unlocking the NIC parking lot and pedestrian gate every evening at sunset and every morning at 7:00am.

Public use remained high throughout the 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 second fiscal year where an entire year's worth of data is available. From October 1 through September 30, 2011, there was 12 months of data recorded at the Scenic Drive Gate with 125,786 passes total (last year 9 months of data recorded 96,453 passes total) and an average of 347 passes per day (last year with 9 months of data there were an average of 277 passes per day). Only 11 months of data was recorded on the Dana Strand gate counter due to the counter not working properly because of vegetation growth that covered the infrared beam. There were 85,507 passes total (last year 12 months of data recorded 139,165 passes total) and an average of 279 passes per day (last year 12 months of data recorded an average of 394 passes per day).

The amount of combined use recorded remained similar throughout the year with the most notable increase of use again in April, but this year also in May as opposed to last year which was July. The daily use was again 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.

Public use issues within the Preserve include off-trail use, bike riding (and bike walking), smoking, people with dogs (pets), littering, and walking off-trail. The number of people bringing their dogs on the trail again remained low in FY 2013 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 persisted. The most common locations of off-trail activity were again at the second and third overlooks. There were only two occasions where someone (or evidence) was observed 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 and limit the expansion of the rare plant populations and possibly 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 pair, the three pair of CAGN whose territory includes these areas, and other nesting bird species.

As mentioned in last year's annual report, in April 2012, a sensor was installed off-trail at overlook 3 to alert CNLM staff when someone is off-trail in the area. The sensor ultimately could not survive the salt air conditions and was removed.

Three part-time rangers continued to patrol the Preserve in the late afternoon/evening hours before closing on school holidays and weekends. They worked 4 days a week during the two week spring break and six nights of the week during summer break. Even with A CNLM Ranger present on-site, some people continued to violate the rules. An example of active violations observed and recorded by the Rangers 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 either the Preserve Manager or Rangers 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 2013. The names of trespassers approached on the Preserve is being tracked to ensure repeat offenders are identified.

The time period presented below is the same as that provided in the FY 2010, FY 2011, and FY 2012 report which had 26, 12, and 12 violations, respectively, recorded by the Rangers. The total number of violations, 23, in FY2013 was more similar to FY 2010 with three times as many off-trail records as in FY2012. This suggests the need to continue dedicating resources to patrol and enforcement.

Table 8: Ranger Enforcement Log (June 16 – July 16, 2013)

	Date & Time	**Violation**	**Location**
1	6-17-13 @ 1430	Police Activity off-trail looking for suspect	
2	6-17-13 @ 1700	Off-trail	Overlook 5
3	6-17-13 @ 1845	Off-trail	Overlook 2
4	6-24-13 @ 1740	Bike	Dana Strand Entry
5	6-28-13 @ 1915	Dog	Overlook 2
6	6-28-13 @ 1949	Dog and smoking	Overlook 2
7	6-29-13 @1619	Off-trail	Overlook 3
8	6-29-13 @ 1940	Off-trail for marriage Proposal	Overlook 5
9	6-30-13 @ 1735	Off-trail	Overlook 2
10	7-1-13 @ 1945	Off-trail	Overlook 3
11	7-1-13 @ 1955	Off-trail	Overlook 4
12	7-2-13 @ 1905	Off-trail	Dana Strand Entry
13	7-4-13	Off-trail	Overlook 2
14	7-5-13	Human remains deposited	Overlook 1
15	7-5-13	2 Dogs	Scenic Drive Entry
16	7-7-13 @ 1925	Dog	Overlook 4
17	7-8-13 @ 1800	Off-trail	Overlook 4
18	7-8-13 @ 1855	Off-trail and smoking	Overlook 2
19	7-12-13	2 Dogs	Scenic Drive Entry
20	7-13-13 @ 1845	Bike	Overlook 1
21	7-16-13 @ 1625	Large bag of birdseed to feed birds	Overlook 1
22	7-16-13 @ 1720	Bike	Scenic Drive Entry
23	7-16-13 @ 1735	Bike	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 placed along the edge of the fencing at the overlooks. Cactus (*Opuntia* sp.) pads provided from an adjacent property owner's land were again planted around overlooks 2 and 3, but do not seem to survive the trampling. The lack of rainfall in FY2012 and FY2013 is also likely a factor. Unfortunately, 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). Most trail users do not confront others who they observe are not following the rules, however, some do report such incidents to the volunteers at the NIC.

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

CNLM created GIS coverages for data collected in FY 2013.

Table 9: GIS Coverages on File

Coverage	Source	Source Year
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

Objective 3: *Continue public outreach and educational opportunities associated with the Preserve, including working with the homeowners adjacent to the Preserve and the City of Dana Point.*

The City Nature Interpretive Center (NIC) was open throughout FY 2013 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 days a week.

Nature walks along the public trail were provided to interested organizations upon request, such as a first grade school field trip and a prearranged group of six local residents. The Preserve Manager also led training walks for the City NIC docents to educate them on the details of the CNLM Preserve and gave a presentation to a local high school advanced placement environmental science class prior to their volunteering on the Preserve.

Volunteer work days were again continued in FY2013. Only four occasions of volunteers working exclusively on the Dana Point Preserve occurred. These were on January 26, February 23, April 27, 2013 and July 27, 2013. The number of volunteers ranged from 1 to 7 individuals. The fall 2012 volunteer work days were used to complete projects on the City of Dana Point's preserve and NIC. As mentioned earlier, on August 27, 2013, 42 college students from Pamona College volunteered to paint the trail fence.

In March 2013, the Preserve Manager and Ranger Tom Maloney provided a tour for the CNLM Board of Directors and Staff.

REPORTING

Objective: 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 gnatcatchers and pocket mice from future management actions. The process was not completed and will continue in FY 2013. As stated in previous work plans, CNLM intends to prepare 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 2013, 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 2013.

A work plan for FY 2013 (October 2012 through September 2013) was completed and provided to the USFWS, CDFW, and City on December 10, 2012 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.

ENDOWMENT

The original endowment provided to CNLM was in the amount of $1,747,844. The endowment balance as of September 30, 2013 was $2,185,366.00.

INCOME

CNLM continued to receive income in FY 2013 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 2013 are earmarked for such work. A total of $1,434.00 was collected in FY 2013 which brings the account total to $2,271.50.

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City of Dana Point (2002). The Headlands Development and Conservation Plan.

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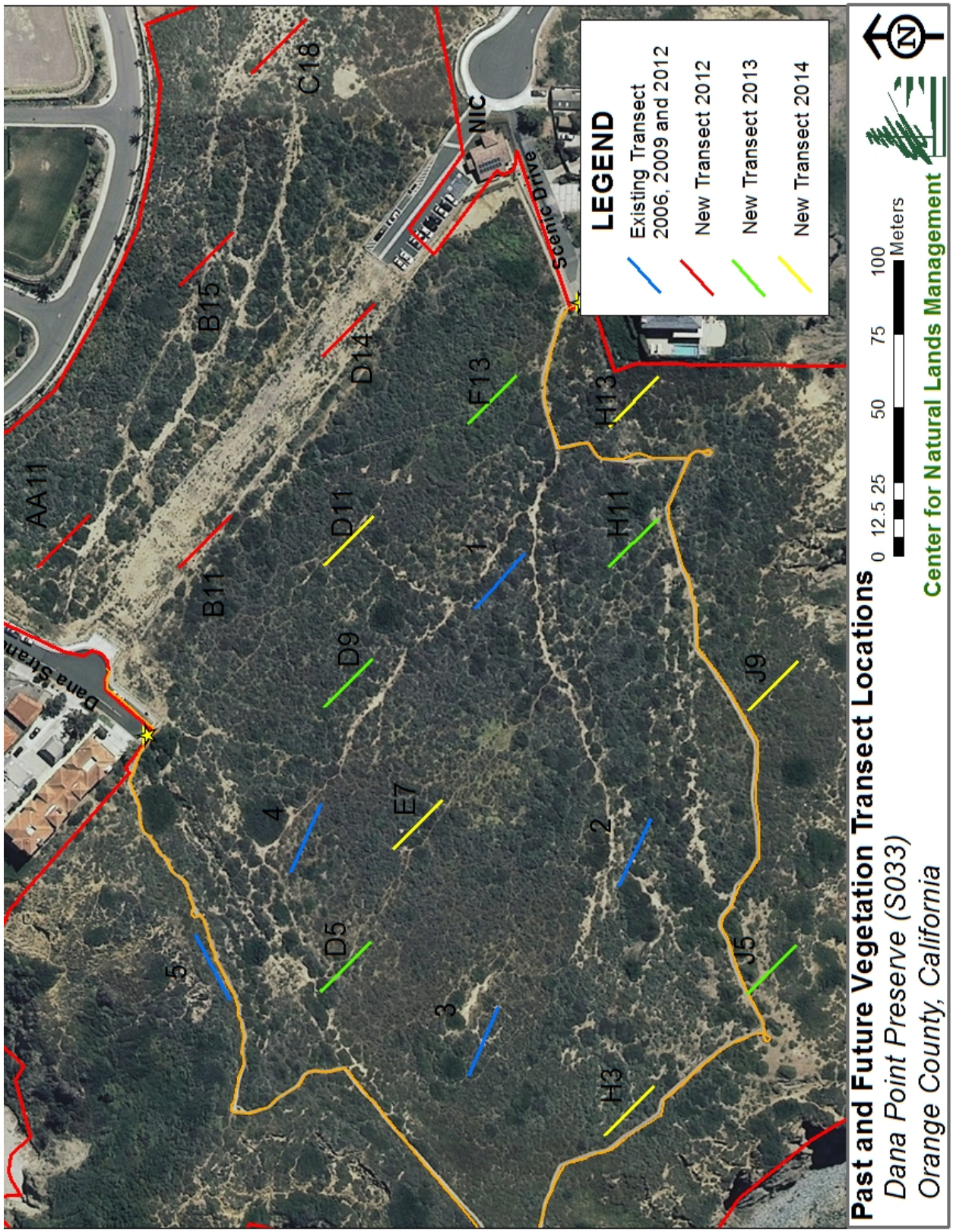
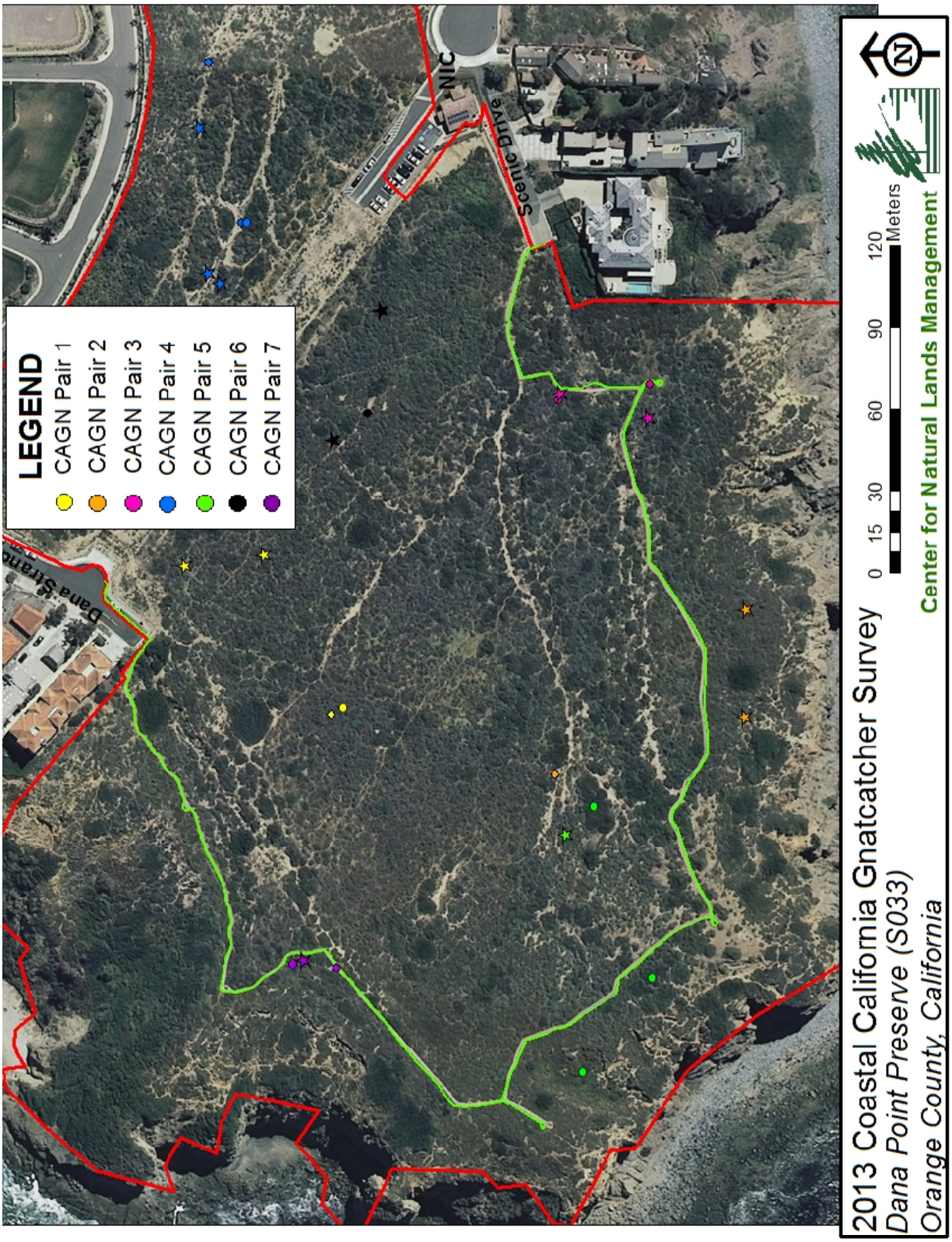
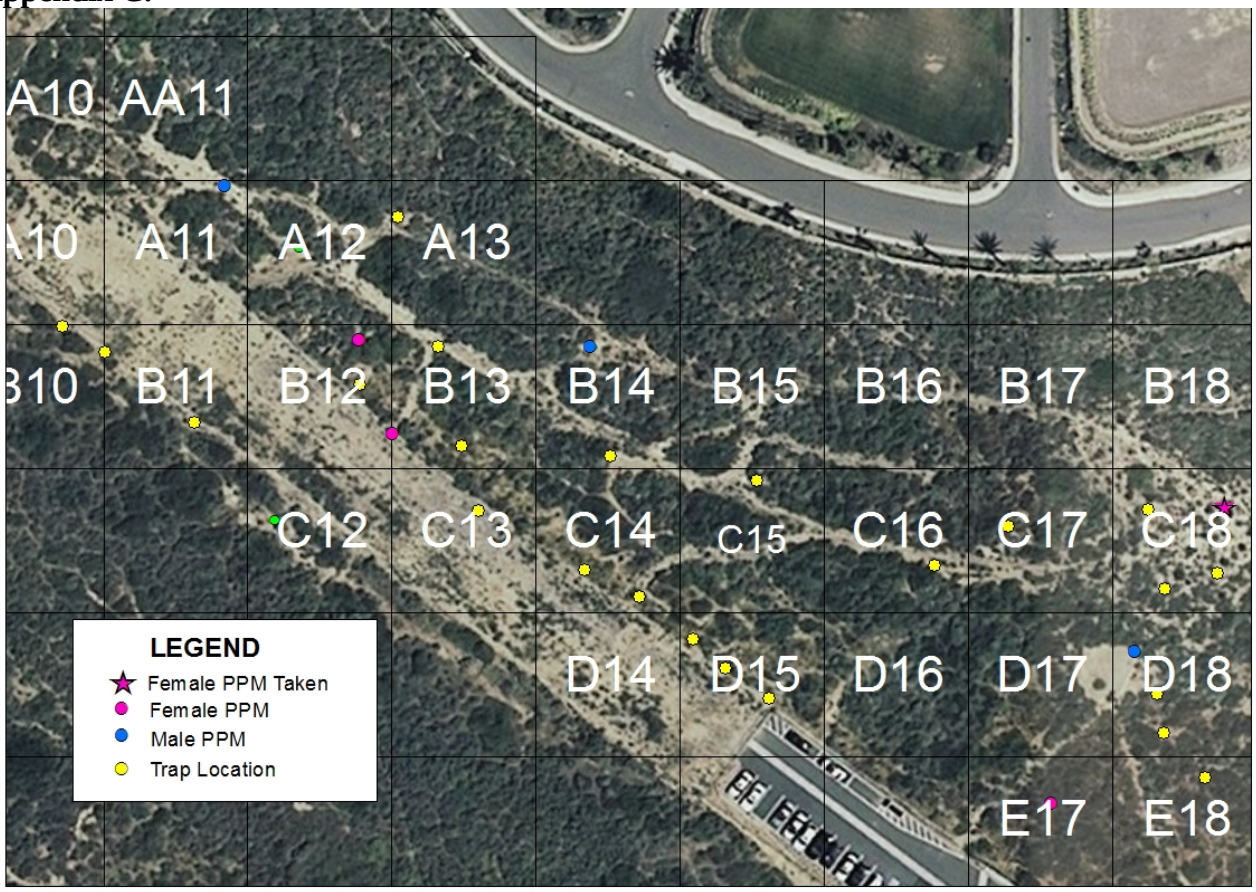
Appendix A


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
N
Scenic Drive
NIC
Dana Strand
AA11
B11
B15
C18
D14
D11
D9
D5
E7
F13
H13
H11
J9
J5
H3
1
2
3
4
5

Appendix B

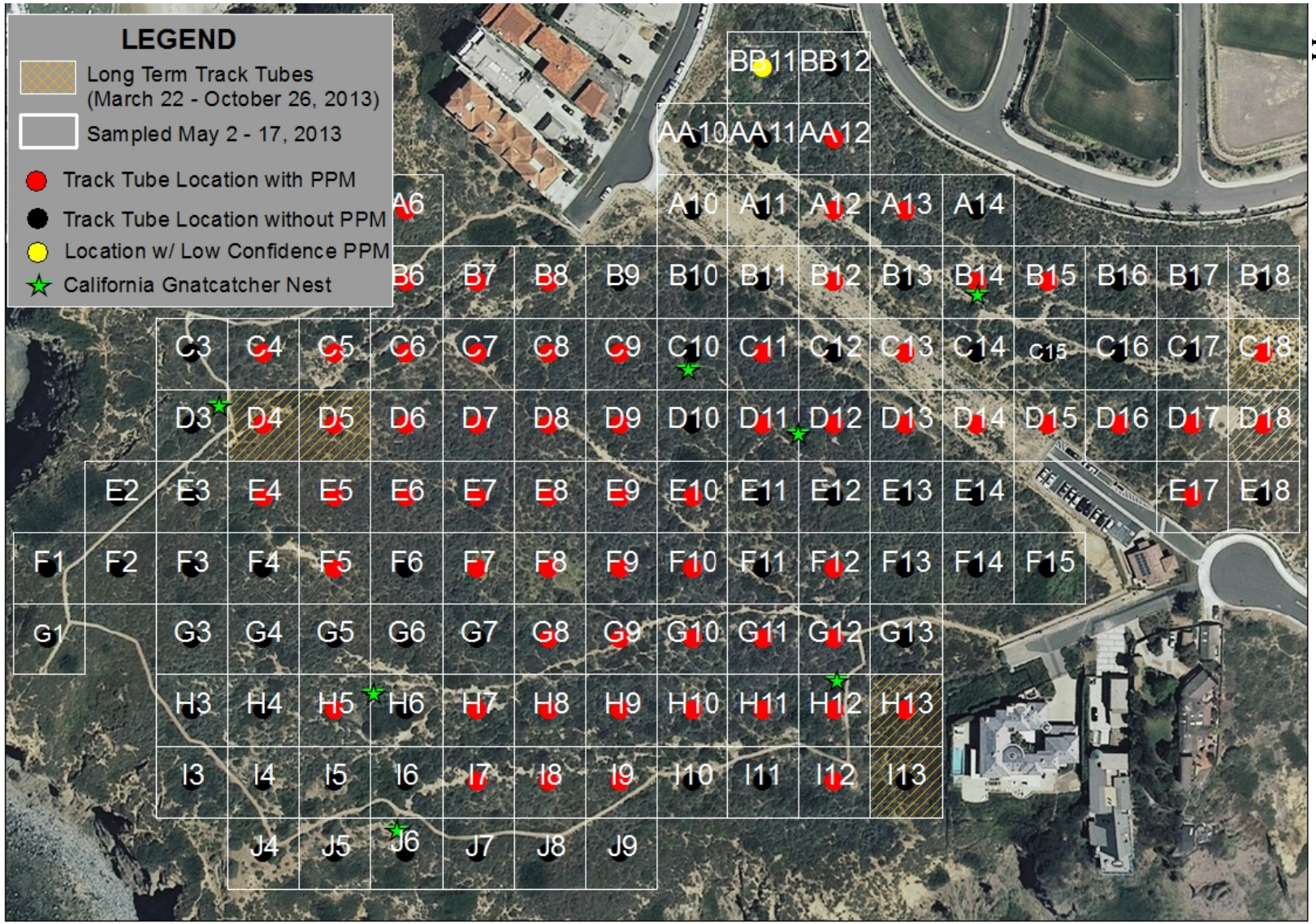

LEGEND
CAGN Pair 1
CAGN Pair 2
CAGN Pair 3
CAGN Pair 4
CAGN Pair 5
CAGN Pair 6
CAGN Pair 7
Scenic Drive
Dana Strand
2013 Coastal California Gnatcatcher Survey
Dana Point Preserve (S033)
Orange County, California
0 15 30 60 90 120
Meters
N
Center for Natural Lands Management

Appendix C.



April 3, 2013 Pacific Pocket MouseTrapping Results
CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA

Center for Natural Lands Management



2013 Pacific Pocket Mouse Track Tube Results
CNLM Dana Point Preserve (S033)
Dana Point, Orange County, CA

Center for Natural Lands Management

Appendix E: 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 2013

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

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	
Camponotus sp.	Unidentified carpenter 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

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

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	

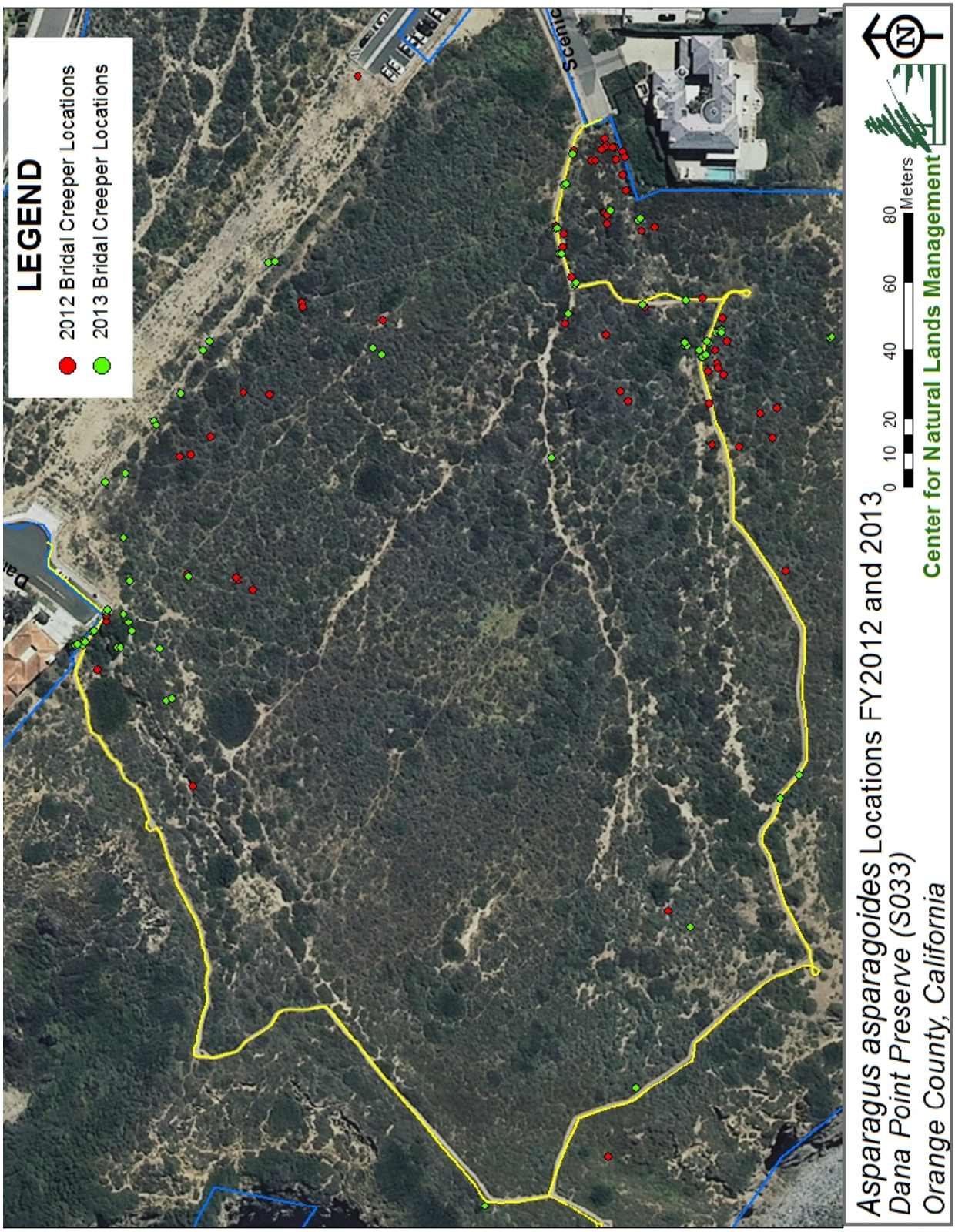
Mustela frenata	Long-tailed weasel
Family Otariidae	
Zalophus californianus	California sea lion (offshore)
Family Phocidae	
Phoca vitulina	Harbor seal (offshore)
Family Procyonidae	
Procyon lotor	Raccoon

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

___ Species added to the list in FY 2013

___ Bird species observed in FY 2013

Appendix G: Bridal Creeper Locations Treated in Fiscal Year 2012 and 2013



Appendix H: Bridal Creeper Fact Sheet

Invasive Plant ALERT from ...

Dana Point Preserve

Winter 2013

Center for Natural Lands Management

Bridal Creeper Facts

- Native to South Africa
- Vine with red berries
- Spread by:
  - Seed;
  - Animals eating the berries and spreading the seed; and
  - Underground rhizomes & tubers.
- Treatment:
  - Herbicide most effective
  - Dig out deep and wide hole to remove rhizomes/tubers
- Other Common Names:
  - African asparagus fern;
  - Bridal veil; &
  - Baby smilax.

Preserve Manager

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More Preserve details may be found on our website:

WWW.CNLM.ORG

Bridal Creeper Invades the Preserve

Bridal Creeper (*Asparagus asparagoides*) is a South African plant introduced in the 19th Century as a garden plant. Bridal Creeper is a climber or creeper that grows from an efficient underground network of rhizomes and tubers which form a dense, almost impenetrable, mat five to ten centimeters below the soil. This root system makes it almost impossible to remove by hand.

In fall, new shoots grow rapidly (up to three meters in length) and entwine native vegetation until everything in its path is smothered.

Bridal Creeper not only threatens California, but also Australia, southern Europe, New Zealand, and Hawaii. In Australia it is considered the most important weed threat to biodiversity.

How does it Spread?

Once the plant is three years old it flowers and produces red berries which contain three to four seeds. The plant can produce up to 1000 seeds per square meter, and these are viable for up to four years within the soil.

The red berries are eaten by birds, rabbits, and foxes who then disperse it great distances from the source in their feces. The underground rhizomes and tubers and seeds are also spread in dumped garden waste and during soil moving activities.

How do you treat it?

Seedlings and small plants can be dug out by removing them in fall-winter when the soil is moist and before seeds form. Start by cutting stems at the base (the foliage can be left to dry in place). Use hand tools to carefully excavate around and then under the rhizome-tuber mass before attempting to lever it out. However, even with small infestations, it is difficult to ensure all underground tubers are removed. Thus, for large infestations and most effective control, herbicide treatment is needed.

The Center for Natural Lands Management (CNLM) does not dig out the tuber mass because such activities may adversely affect the underground borrows of the critically endangered pacific pocket mouse. CNLM uses the following method on the Preserve:

- Cut the above ground stem(s) as close to the ground as possible and remove.
- Drip herbicide on cut stem using hair dye bottle.
- Herbicide used is 41% glyphosate at a 50/50 solution with water.

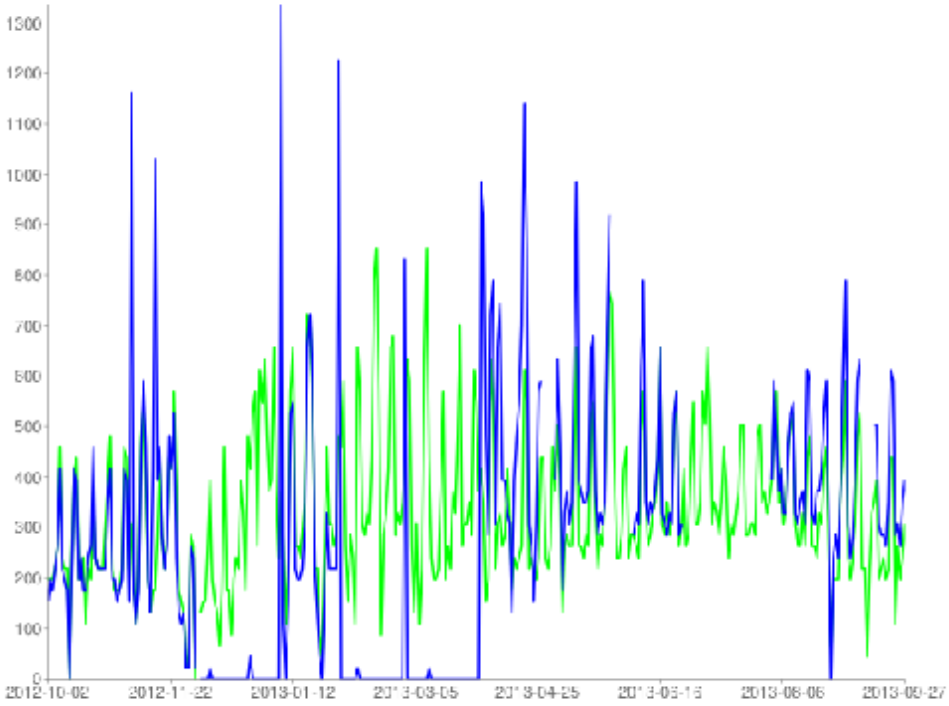
Appendix I: TRAFx Data Summary

Daily totals report

Covering 361 days from 2012-10-02 to 2013-09-27

Report generated on 2013-12-21 11:22:45 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Min	Max
Dana Point Preserve	346.0	7.0	864.0
Dana Strand Gate	276.2	0.0	1,336.0

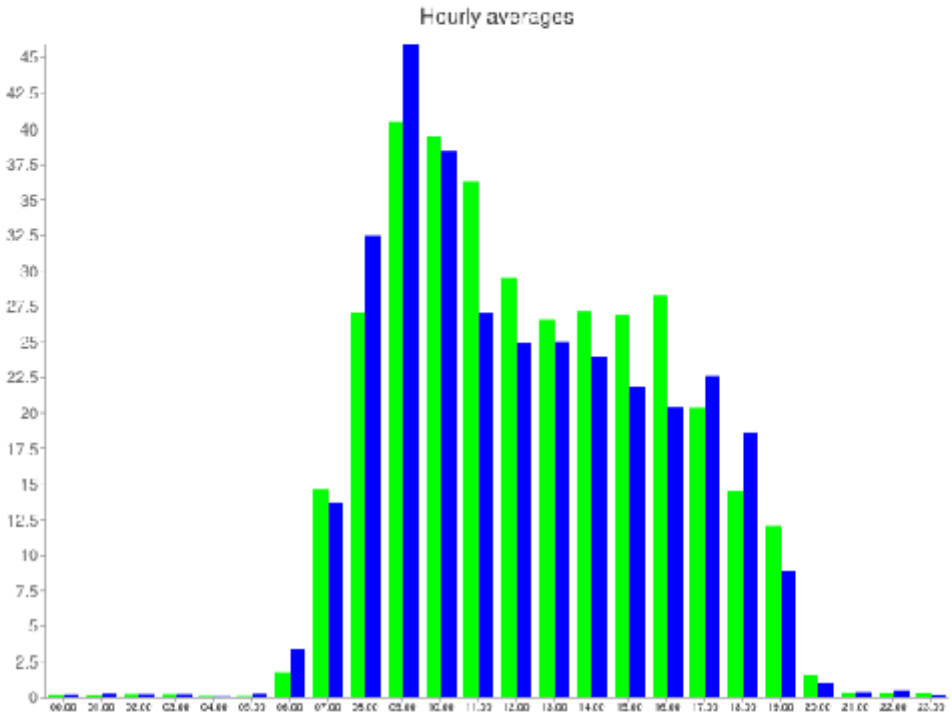
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Hours of the day

From 2012-10-01 to 2013-09-30

Report generated on 2013-12-21 11:01:28 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	14.5	13.3	14.5	0.1	40.5
Dana Strand Gate	13.7	11.3	14.0	0.0	46.0

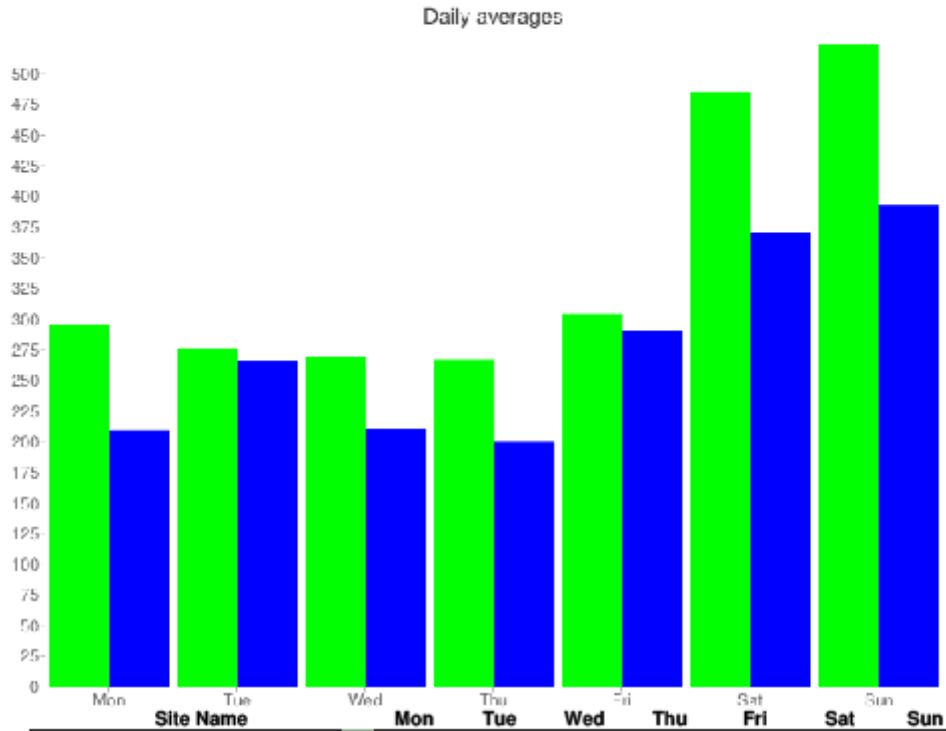
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Days of the week

From 2012-10-01 to 2013-09-30

Report generated on 2013-12-21 11:12:37 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dana Point Preserve	295.3	275.7	268.7	266.4	303.0	484.9	524.1
Dana Strand Gate	208.2	265.7	209.8	198.9	289.2	369.2	392.2
Daily Averages	252	271	239	233	296	427	458

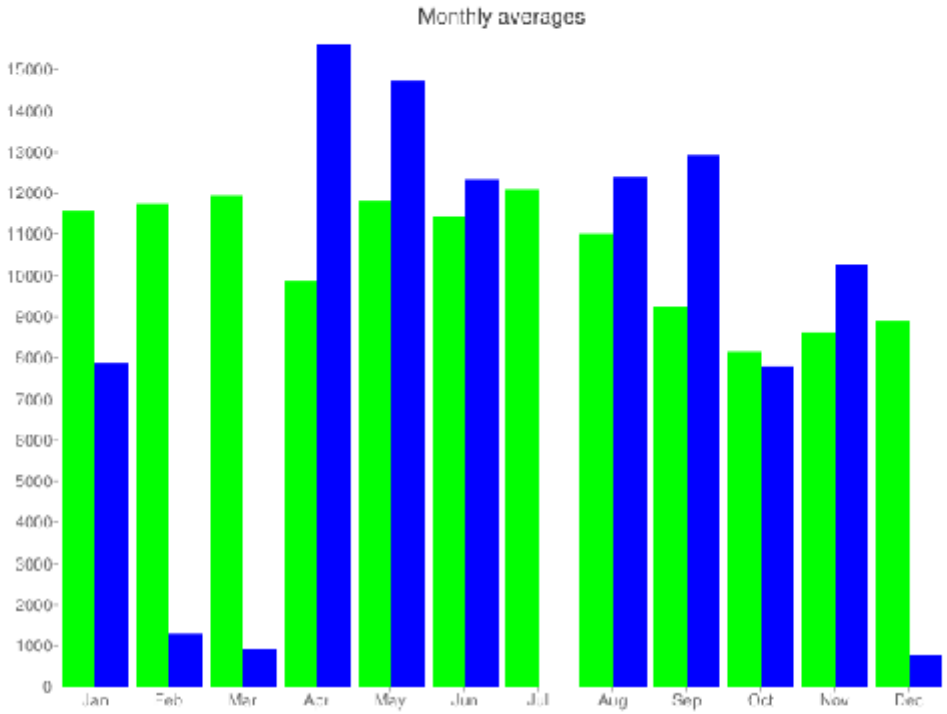
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Months of the year

From 2012-10-02 to 2013-09-27

Report generated on 2013-12-21 11:21:50 (UTC -07:00) by lcarranza@cnlm.org

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



Site Name	Average	Median	STDV	Min	Max
Dana Point Preserve	10,512.8	11,193.0	1,409.9	8,124.1	12,085.0
Dana Strand Gate	8,795.2	10,262.0	5,316.1	767.8	15,622.2

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

CNLM

LeeAnn Carranza <lcarranza@cnlm.org>

CNLM Dana Point Annual Report

1 message

LeeAnn Carranza <lcarranza@cnlm.org> Fri, Jan 10, 2014 at 10:29 AM
To: Will Miller <William_B_Miller@fws.gov>, "Mayer, David@Wildlife" <David.Mayer@wildlife.ca.gov>, Cara Allen <Cara.Allen@wildlife.ca.gov>, SEAN VOGT <SVOGT@danapoint.org>, Brad Fowler <bfowler@danapoint.org>

Please find attached the Center for Natural Lands Management (CNLM) Annual Report for the Dana Point Preserve for the time period October 1, 2012 through September 30, 2013.

If you have any questions, please contact me. I would appreciate a response to this email to ensure that you received the report.

Thank you,

Lee Ann Carranza
Preserve Manager
Center for Natural Lands Management
949-218-1145
cell 949-606-5037

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