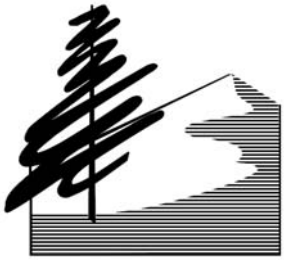
Carlsbad Oaks North
Habitat Conservation Area

(S034)

Annual Report
October 2007 - September 2008

Prepared for:
U.S. Fish and Wildlife Service
California Department of Fish and Game
City of Carlsbad

Prepared by:



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I. Introduction

This report summarizes the management activities performed or overseen by the Center for Natural Lands Management (Center, CNLM) at the Carlsbad Oaks North Habitat Conservation Area (HCA) during the management year beginning on October 1, 2007, and ending on September 30, 2008. The management items discussed below have been developed from the guidelines for goals and objectives set forth in Carlsbad Oaks North Annual Work Plan (CNLM 2006) and the Carlsbad Oaks North Habitat Conservation Area Preserve Management Plan (PMP) dated January 2005 (Tierra Data 2005).

The HCA is comprised of four non-contiguous units separated north-south by Faraday Avenue and east-west by El Fuerte Avenue which ties into Faraday Avenue near the center of the HCA. The HCA is located in the east central portion of Carlsbad, northeast of the intersection of El Camino Real and Palomar Airport Roads (Figures 1 and 2).

The HCA covers 326 acres, of which 108.4 acres are located within a conservation easement (CE) on lands owned by the County of San Diego. The CE was transferred to the Center in November of 2005. The Center received funds to manage the CE portion in May of 2006 at which time management activities commenced. The Center received fee title for the remaining 219.6 acres from the previous owner, Techbilt Construction Corporation (Techbilt), the developer of the Carlsbad Oaks North Business Park, in March of 2007. This HCA is managed for the purpose of preserving sensitive biological resources and to meet the City's obligation to their Habitat Management Plan (HMP), and north San Diego County's Multiple Habitat Conservation Program (MHCP).

This represents the second annual report for this HCA. Management at the HCA includes installing and maintaining fences and gates (capital improvements), biological surveys, habitat maintenance and restoration, public services, and reporting. Each of these activities and their fiscal year results are summarized below and fully described within this report.

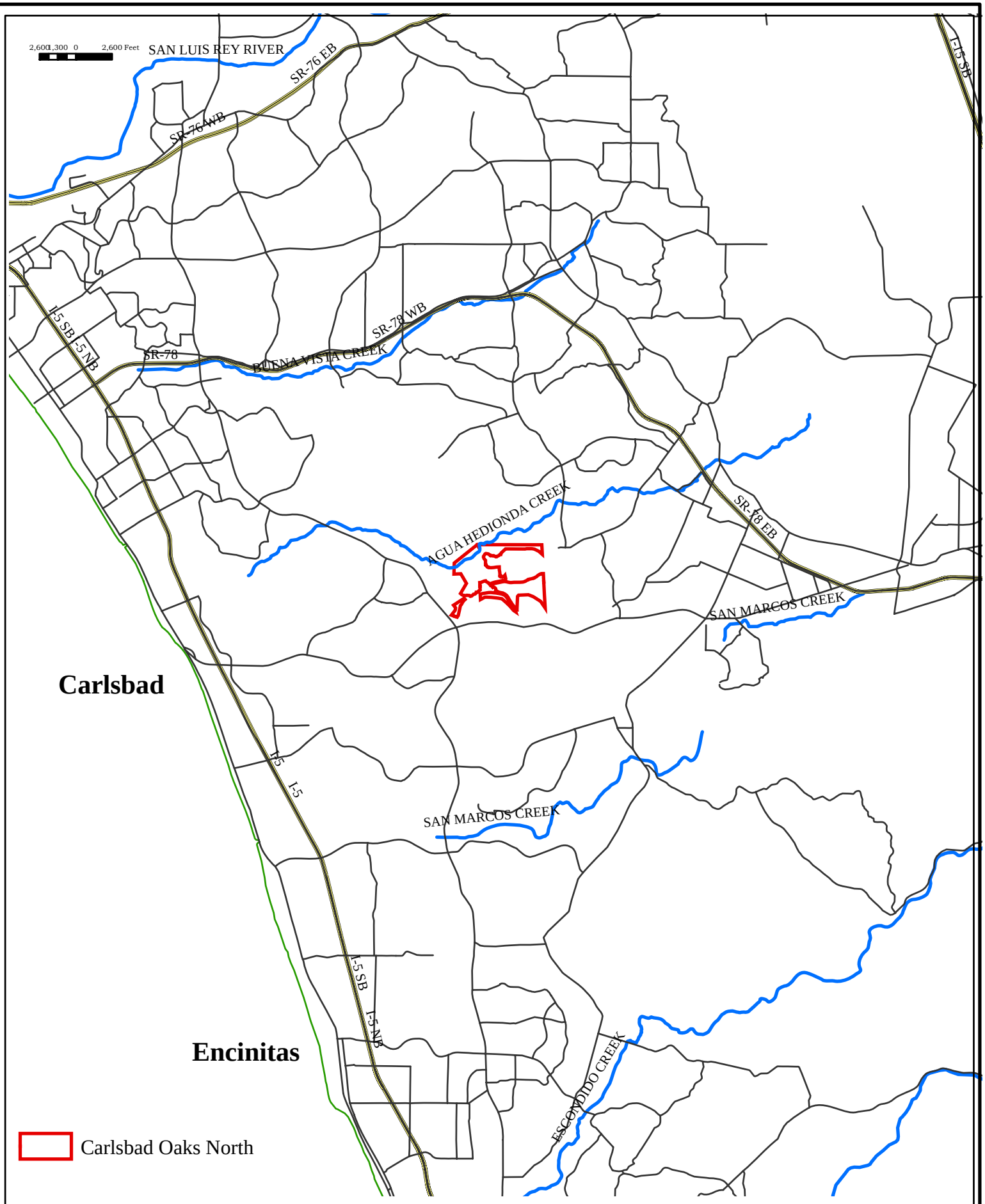

Figure 1
Preserve Vicinity
Carlsbad Oaks North Habitat Conservation Area - Carlsbad, CA

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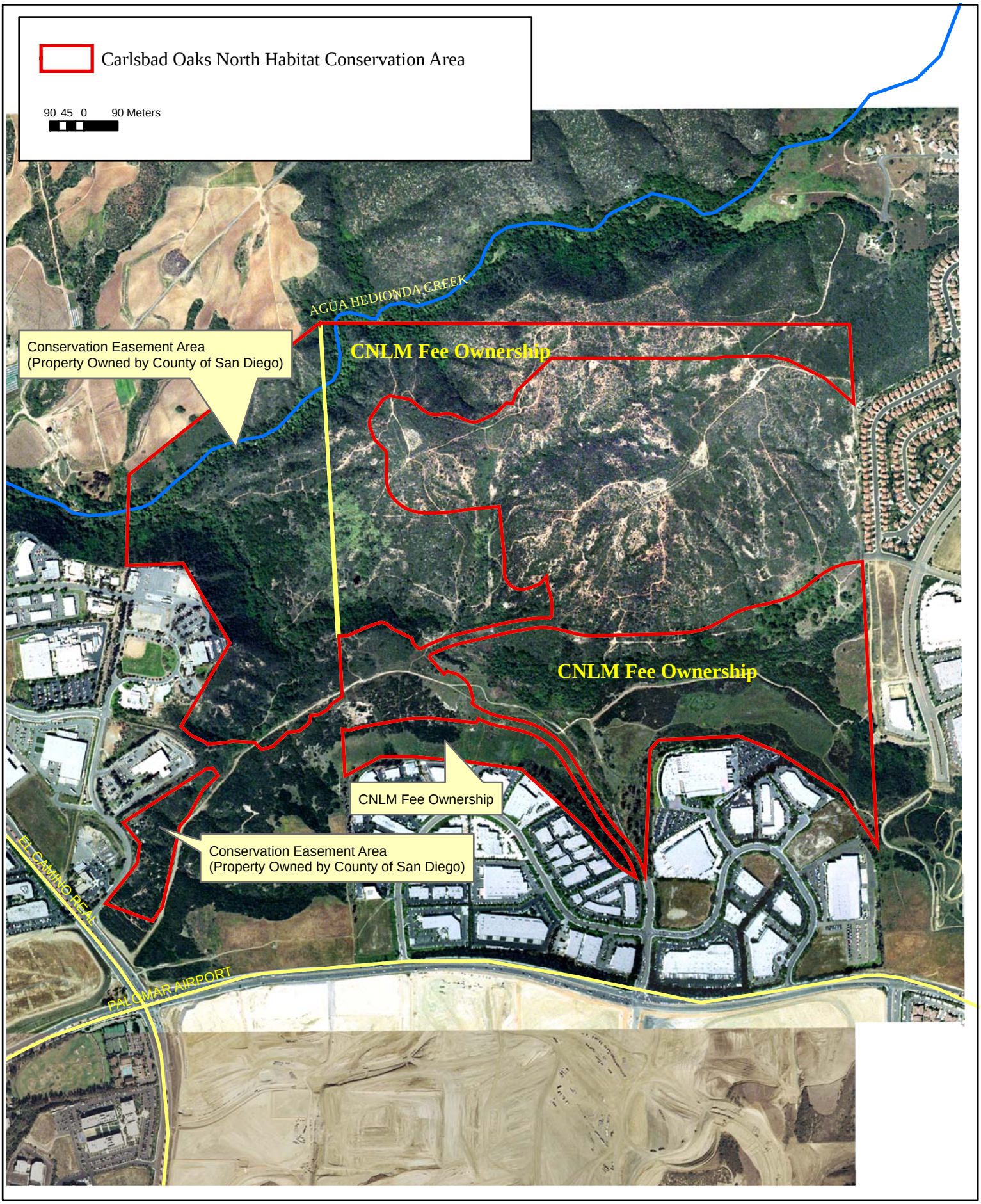

Figure 2
Preserve Location
Carlsbad Oaks North Habitat Conservation Area - Carlsbad, CA

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2006-2007 CNLM Activity Summary

- We continued to block sections of the illegally constructed "flightline" trail with vegetation, and maintained fencing
- We photographed mule deer (*Odocoileus hemionus*) and coyote (*Canis latrans*) using the HCA along La Mirada and Agua Hedionda Creeks, and noted sign of deer usage in numerous areas throughout the HCA
- We incidentally noted bird species while conducting other activities, including a nesting pair of northern harriers (*Circus cyaneus*), a red shouldered hawk (*Buteo lineatus*)
- We mapped one pair of coastal California gnatcatcher (*Polioptila californica californica*)
- We censused the San Diego thornmint (*Acanthomintha ilicifolia*) population and assessed the vegetative cover by species within this population
- We mapped and censused three previously unknown populations of thread-leaved brodiaea (*Brodiaea filifolia*), and censused a previously known location
- We mapped and censused several previously unknown populations of CNPS rare plants such as Palmer's grapplinghook (*Harpagonella palmeri*), Douglas' micromeris (*Microseris douglasii* var. *platycarpha*), and golden rayed pentachaeta (*Pentachaeta aurea*)
- We performed two CNPS rapid assessments on the CE portion of the HCA
- We twice applied erosion control, and revegetated a severely eroded section of trail which was destroyed by vandals both times
- We supervised the chemical control of several nonnative plant populations including pampas grass (*Cortaderia selloana*), artichoke thistle (*Cynara cardunculus*), castor bean (*Ricinus communis*), black mustard (*Brassica nigra*), poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), Perez's marsh rosemary (*Limonium perezii*), fountain grass (*Pennisetum setaceum*), and onion weed (*Asphodelus fistulosus*)
- We mechanically and chemically treated several populations of weeds throughout the HCA, including artichoke thistle, castor bean, pampas, fennel, saltcedar (*Tamarix ramosissima*), bristly ox-tongue (*Pichris echioides*)
- We kept homeless encampments from forming by conducting routine patrols in problem areas
- We patrolled the HCA regularly, picking up trash, removing weeds, and looking for other potential problems
- We conducted a CE compliance visit and report to ensure that the County was not violoating the terms of the CE

II. Capital Improvements

The entire area has been used illegally for many years by mountain bikers, who not only created jumps, bridges, and many miles of trails, but also posted the site on web pages, and even conducted training exercises on the property (bikers called this area "Flightline"). The bikers were disappointed when the Carlsbad Oaks North development commenced, which resulted in a loss of much of their biking routes. As a result, some

bikers started to create new biking routes late in 2005 to early 2006 that started at the Safety Center and went down hill to the main valley. All new trail activity was within the County-owned portions of the HCA. Prohibitive fencing had been placed at the entry from uphill, and at the downhill portion of this trail. As of fall 2007, most biking activity had ceased, and this remains the case. During patrols, only once was a mountain biker seen using the trails. Early in the management year, runners were commonly encountered, but this too has ceased to be an issue. Signs of dog walking, hiking and/or running, and mountain biking continue to be noticed, but with the exception of the lone mountain biker, and two instances of runners during December 2007, no other encounters have taken place.

No fencing construction took place during this management year. Negotiations did take place between the Center and Techbilt regarding the existing construction fencing. The Center wishes to keep most sections of construction fencing along Faraday Ave, and El Fuerte, as well as around many of the developed lots, and the margins of the main trail. We have agreement by Techbilt to leave many sections in-place so that we can use existing t-posts, and thereby save materials and manpower in our attempt to fence the HCA. We expect to install roughly a half-mile of three-strand fencing during the winter of 2008-2009.

III. Biological Surveys

The Center performed the first set of biological surveys in spring 2006. The HMP (Tierra Data, 2005) outlines the goals of biological monitoring at the HCA. The general goals of the monitoring activities at the HCA are to: 1) collect baseline data and 2) begin to develop population trend data on individual species within the HCA for certain taxonomic groups and the vegetation community. Some items planned for this year did not take place due to medical leave among two of the three Center employees during the height of spring.

Biological surveys are described below by the following categories: reptiles and amphibians, mammal, birds, insects, plants and vegetation communities. A discussion of the biological surveys completed during the 2007-2008 fiscal year are described below under each appropriate category.

1. Reptiles and Amphibians Reptiles and amphibians were noted anecdotally during surveys for other taxa, and during regular patrols and maintenance activities. No species were detected this year.

2. Mammals Mammal monitoring activities were first undertaken for this HCA in March of 2007 using wildlife cameras (Figure 3). Our goal is to understand and study trends in wildlife movement at “pinch point” locations and potential movement corridor

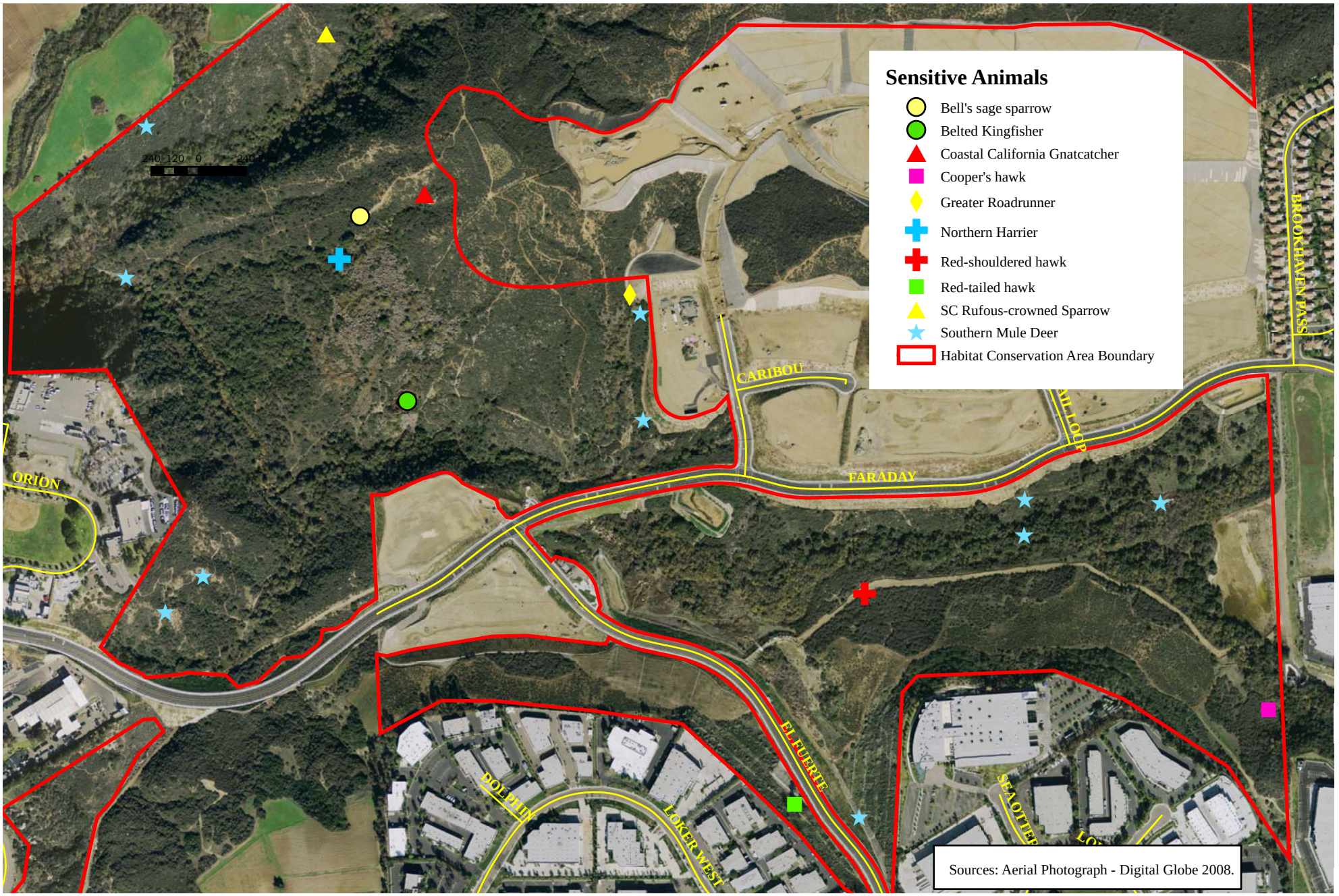

Figure 3
Sensitive Animal Locations (2008)
Carlsbad Oaks North Habitat Conservation Area - Carlsbad, California

Center for Natural Lands Management

locations within the HCA. The Center wishes to understand general trends in species movement throughout the HCA, and wants to know whether corridors (such as the wildlife crossing under Faraday Avenue) are being used. With further information about animal usage patterns, we will be more able to focus our efforts on discouraging public usage in these animal movement and foraging areas, as per the PMP (Tierra Data, 2005). Additionally, The MHCP Management and Monitoring Plan (MHCP, 2003) identifies several areas outside this HCA which are important in maintaining animal linkage, and the hope is that by identifying potential corridors along the HCA edges, these data can be of use to public agencies in future planning and monitoring outside of the HCA.

We used a Cuddeback® Digital Scouting Camera, which utilizes a motion sensor device, and a flash for nighttime photos. The Cuddeback cameras record date and time of the movement taken by a picture, allowing us to understand animal usage in any given month. Four locations yielded wildlife photos this management year. Among these were three coyote (*Canis latrans*) photos (LM7, LM2, AH3), and two mule deer (LM 6) photos. See Figure 4 in the 2006-7 Annual Report for the specific locations of these photo-points. Signs of usage (pellets and tracks) are abundant along the middle section of La Miranda Creek, nearby El Fuerte and Faraday intersection, and along the eastern margin of the HCA north of Faraday Ave., along freshwater marsh habitat (Figure 3).

The following list details the locations, dates, and surrounding habitat of each wildlife camera site.

- CNLM Reference # LM2 (July 31 – August 17 2007, February 13 – March 13 2008) La Miranda Creek nearby Melrose Road culvert, along the Eastern edge of HCA that connects the former Carlsbad Raceway property with this HCA. The camera was placed within a mix of willow (*Salix* sp.) and coast live oak woodland facing downstream during 2007, and uphill in non-native grassland, facing the riparian corridor during spring 2008. The spring 2008 position yielded one coyote.

- CNLM Reference # LM3 (August 17 – August 31) La Miranda Creek approximately 300 meters southeast of the Faraday Avenue wildlife crossing tunnel. The camera was placed within a mix of willow and coast live oak woodland facing downstream. This is the location where pictures were taken of mule deer on two sequential days in August 2007.

- CNLM Reference # LM 4 (November 8 – December 10 2007) La Mirada Creek, entry into live oak forest canopy immediately south of wildlife undercrossing at Faraday Ave. Signs of recent mule deer occupancy were present, though no pictures were taken.

- CNLM Reference # LM 5 (June 13 – July 18 2008) La Mirada Creek, Live oak forest nearby trail where mule deer tracks were present. No wildlife were observed.

- CNLM Reference # LM 6 (July 18 – August 20 2008) La Mirada Creek, disturbed native grassland adjacent to freshwater marsh. Two pictures of mule deer taken on two separate days on July 20, and August 11, respectively.

- CNLM Reference # LM 7 (August 20 – September 17 2008) north side of wildlife crossing at Faraday Ave., mostly adjacent to riparian transition vegetation nearby La Mirada Creek. Location yielded one photo of a coyote using the undercrossing.

- CNLM Reference # AH1 (March 14 – April 14 2007 & December 21 – January 18 2008) Agua Hedionda Creek along the northern edge of the HCA, where the creek enters from the north. The camera was set to face the stream in 2007, and set to face away from the stream in 2008. This site is located in a dense over-story of coast live oak and sycamore (*Platinus racemosa*). Site has yielded no pictures to date.

- CNLM Reference # AH3 (September 28 – October 25 2007) Agua Hedionda Creek, several hundred yards upstream from the confluence of La Mirada and Agua Hedionda Creeks. Habitat is live oak and sycamore woodland. Site was baited with dog food, and resulted in one photo of a coyote.

Thus far in conducting two years of photo monitoring, it may be assumed that animals tend not to use dense streamside habitat, or stream channels for through travel or foraging. With the exception of one riparian monitoring of mule deer in summer 2007, all photos have been taken in fairly open areas. It may be too early to make such assumptions, however. More photo monitoring will continue, and more clear usage patterns will likely arise from this work.

Other mammals observed during patrols included cottontail rabbit (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), raccoon (*Procyon lotor*) and a deer mouse (*Peromyscus maniculatus*).

3. Birds Two raptor species were observed and mapped. These include the a Cooper's hawk (*Accipter cooperi*) (A MHCP covered species), and the more common red tailed hawk (*Buteo jamaicensi*). A red-tailed hawk pair was observed nesting in a Eucalyptus tree on the west side of El Fuerte. This tree was saved (rather than removed with all the other Eucalyptus trees in the area) by CNLM to protect this nest.

Other notable bird species observed include a belted kingfisher (*Ceryl alcyon*), Bell's sage sparrow (*Amphispiza belli belli*), rufous crowned sparrow (*Aimophila ruficeps canescens*) and the nonnative brown-headed cowbird (*Molothrus ater*). Cowbirds were heard along the southwestern boundary of the HCA near the agricultural fields.

USFWS protocol surveys for coastal California gnatcatchers were conducted during the month April on two separate days (Table 1). Survey procedure followed the USFWS accepted protocol for conducting gnatcatcher surveys. Table 1 outlines survey dates, times, and weather conditions. Surveys were conducted by Markus Spiegelberg who

holds an independent USFWS Section 10a "take" permit (USFWS PRT-787-924, Scientific Collectors Permit # 801106-05) authorizing for such surveys. One pair of gnatcatcher was observed during these surveys (Figure 3).

Table 1. Survey dates, times and weather conditions.

Date	Time	Weather	Type of Survey
April 9, 2007	6:20 -12:00 am	54-62 F; wind 1-5 mph; overcast to partly cloudy	CAGN
April 23, 2007	7:00 -12:00 am	68-68 F; wind 1-5 mph; overcast to clear	CAGN

4. Insects

Incidental noting of butterflies takes place during patrol and surveys for other taxa. This will eventually lead to a better understanding of total butterfly diversity and use patterns on the HCA. This year mormon metalmarks (*Apodemia mormo*), sarah orangetip (*Anthocharis sara*), acmon blues (*Plebejus acmon*), western painted ladies (*Vanessa carye*), ringlets (*Coenonympha tullia*), mourning cloak (*Nymphalis antiopa*), and monarchs (*Danaus plexippus*) were observed. Large numbers of larval monarchs had been observed feeding on narrow-leafed milkweed (*Asclepius fascicularis*) in two locations of the HCA during the fall of 2007.

5. Plants and Vegetation Communities

San Diego Thornmint On April 3, 2008 the San Diego thornmint population was quantified and assessed. 505 plants were counted, in varying stages of growth. The fact that most plants were either flowering or done flowering suggested that the date of visit was optimal for carrying out direct counts. Cover estimates were also taken of all species present. No height values were measured, but plants were generally taller and more branched than in 2007.

In 2007 and 2008, a comprehensive cover estimation procedure was devised and carried out that involved the use of ½ by 1 meter subplots. A rectangular boundary was permanently marked outside of the entire population by placing 4 pieces of rebar. Three subplots (five in 2007) were placed in stratified random locations along meter tape that was set up running lengthwise from one to ten meters. The plot locations were stratified to ensure random placement in at least one of each area of the rectangle. A random number table was used to determine which quadrant of the short axis to sample from, and which distance along the long axis to sample from in each case. The side of the transect tape to place the subplot was determined using the flip of a coin. Subplots were constructed of pvc and thin wire at 1 dm intervals wound through either side of the subplot. This accounted for 36 readings per subplot, for a total of 108 point-intercept readings. Care was taken to avoid standing or kneeling in areas immediately adjacent to San Diego thornmint. Standing cover was estimated as any plant alive during the current

season being directly under where the two wire segments crossed. Ground cover (edaphic) was estimated in the same manner, but consisted of either dead matter that was lying on the ground, or bare ground.

Table 2 (below) only includes those species which were present below the cross-wires. No species presence/absence data were collected as in 2007.

Table 2. Percent cover of native and exotic plant species in the San Diego thornmint population

	Native					
	Acanthomintha ilicifolia	*Apiastrum angustifolium*	*Convolvulus simulans*	*Deinandra fasciculata*	*Harpagonella palmeri*	*Plantago erecta*
2007	0.6%	1.7%	0.0%	1.1%	0.0%	0.0%
2008	2.8%	9.3%	2.8%	20.4%	1.9%	4.6%
	Exotic				Edaphic	
	Avena sp.	*Bromus madritensis*	*Centaurea melitensis*	*Sonchus oleraceus*	bare ground	litter
2007	0.0%	0.0%	2.8%	0.0%	73.3%	26.7%
2008	1.9%	8.3%	3.7%	1.9%	89.8%	11.1%

Table 7 broadly reflects the counts from 2007 and 2008 in thornmint cover. In 2007, thornmint counts resulted in 210 total, and 2008 resulted in 505 individuals counted. Total vegetative cover was up in 2008 to over 57 percent, while 2007 (the second driest year on record for San Diego County) resulted in a total plant cover estimate of only 6.1 percent. Among non-natives, cover increased 5-fold from 2007 to 2008, from 2.8 percent to 15.6 percent. Among natives, cover increased 12-fold from 2007 to 2008, from 3.3 percent to 41.7 percent. Ground cover indicates a lag feature of drought and plenty, with litter reflecting a good rain year previous (2007 followed a plentiful rain year), and a poor rain year previous to 2008. Perhaps the most interesting pattern revealed in cover estimates is that the non-native grasses went from virtually non-existent during a drought year to being the dominant during a near-average rain year. The ubiquitous forb tocalote (*Centaurea melitensis*) only increased a small amount from 2007.

The purpose of the yearly assessments is to inform management decisions, such as potentially trimming tocalote heads prior to maturation. While this may appear to be a universally accepted population maintenance step, the Center will first investigate the yearly variations in thornmint counts and cover, and compare these parameters with non-native cover. It may be advisable to weed whip seed heads as they occur above the thornmint inflorescences, since this may not directly effect the success of seed-set, but this should only occur following habitat assessments.

Thread-leaved brodiaea Surveys for thread-leaved brodiaea (*Brodiaea filifolia*) occured this year for vegetative as well as flowering counts. An estimated 400 rosettes

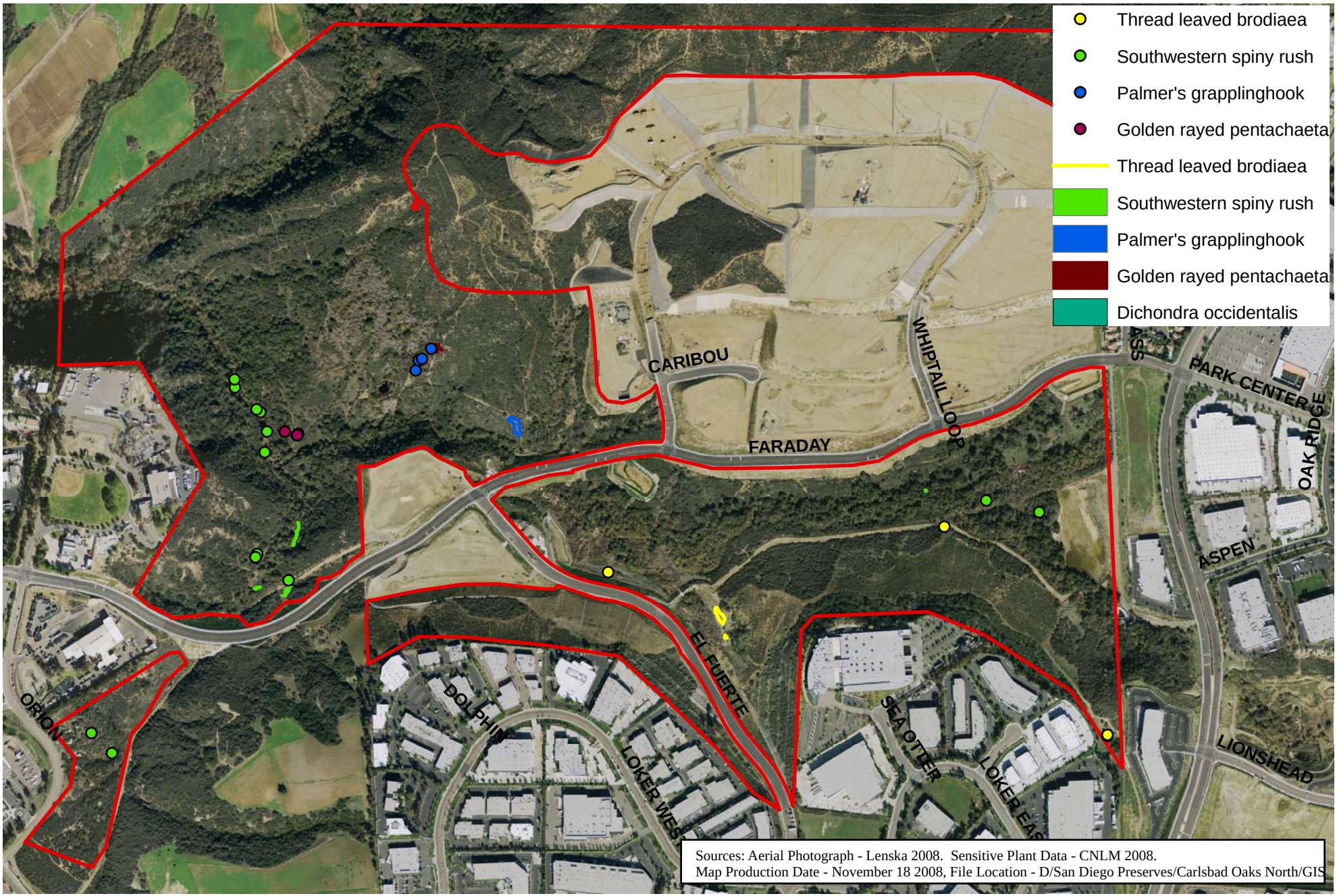

Figure 4. Sensitive Plant Locations Spring 2008

Carlsbad Oaks North Habitat Conservation Area, Carlsbad California

600 300 0 600 Feet

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were estimated where previously mapped by Merkel and Associates, in 2001. Later during the early summer/late spring 104 flowering individuals were counted at this site. Population was flagged for later mapping. This mapping has not yet taken place, nor was a habitat assessment done inside the extant population. Three other locations were found that were not previously known to exist (Figure 4). These only accounted for an additional 6 plants, with two flowering plants found at each of the three additional locations.

Other Sensitive Plant Species During the previous management year (2006-2007) over 190 summer holly, and 161 scrub oak were censused and mapped. This mapping and censusing effort is only partially completed, however. The remainder will be completed during the 2008-2009 management year.

Several CNPS list 4.2 (limited distribution, fairly endangered in California) species that are not covered under the MHCP were found and mapped. Three populations of Palmer's grapplinghook were censused, and mapped. In the same general area of the thornmint population, several small flowered microseris were observed, as were many small flowered morning glory (*Convolvulus simulans*). Golden rayed pentachaeta (CNPS list 4.2) was present in fairly large numbers in two locations.

IV. Habitat Maintenance and Restoration

Habitat restoration and maintenance goals for the HCA include erosion control and removing nonnative plants from the HCA. For the most part, the HCA is in great condition and has good native coverage.

Seep area along Orion Ave Perennially moist soils have been damaging previously established chaparral vegetation for at least two years. This vegetation was composed of a mixture of coast scrub oak (*Quercus dumosa*), summer holly (*Comarostaphylis diversifolia* var. *diversifolia*), chamise (*Adenostoma fasciculatum*), and Eastwood Manzanita (*Arctostaphylos glandulosa* ssp. *glandulosa*). The perimeter has been mapped, the boundary being a line walked with submeter accuracy GPS, where all standing perennial vegetation has been killed.

We met with a GeoSoils Inc. Engineer Brian Voss in May 2008 to inquire into possible testing of soils, and remediation techniques commonly applied to situations such as this. We also met with Pete Trotta of Habitat Restoration Sciences, Inc., to discuss testing and remediation techniques. Engineering a French Drain solution would be very costly, and thus would remove budget for other important tasks on the HCA. Through meeting with Pete, it was decided that more study is needed. We will continue mapping this kill area yearly, to inquire whether it is growing. We will likely budget for soil testing in the following management year (2009-2010). The hope is that soil testing can elucidate a particular salt content that can suit a particular planting palate for replacement.

Trail rehabilitation During the winter of 2007, one section of badly eroded illegal trail was re-vegetated with 86 native plants. This was accomplished with the help of

contractors, who also placed approximately 80 sandbags across the trail. Within two weeks, most of these plantings were removed by vandals, and many of the sandbags were displaced. Center personnel replaced many of the missing plants and sandbags within a few weeks of the vandalism, and these too were destroyed within weeks. A few plants remain, but the effort was abandoned after the second round of destruction.

Weed treatments CNLM has an agreement with Techbilt that requires them to treat pampas and other weeds throughout the HCA until February of 2009. The Center tracks the presence and location of weeds throughout the HCA, and has been directing the treatment efforts through Techbilt's weed treatment contractor RECON Environmental, Inc. Many acres of areas infested with pampas grass have already been treated four times, and further treatments of these and other weeds have continued into the new management year. Techbilt is also maintaining its permit-required restoration areas.

The HCA Manager treated an area on the Southwest corner of the County CE portion of the property that was infested with approximately 200 artichoke thistle, 15 clumps of fountain grass (*Pennisetum setaceum*), 10 castor bean, four pampas, and 75 fennel. Tree tobacco (*Nicotiana glauca*) was cut and stump-sprayed wherever found, and an estimated 60 individuals were treated in this manner.

Table 3 summarizes the primary threats to the integrity of the HCA.

V. Public Service

Public service activities have included patrolling the HCA in an attempt to control dumping and associated vandalism, homeless encampments, and illegal access. In addition, public services include trash pick up and talking with neighboring businesses regarding trash along the HCA edges. The HCA was patrolled at least 3-4 times per month. During each visit the HCA was surveyed for illegal activities, trash was picked up, and nonnative, invasive plants were killed.

Homeless Encampments One homeless encampments was discovered during August 2008, posted and cleaned out. Our sweeps have resulted in little new encampment activity compared to our initial condition, which included at least 20 encampments.

Adjacent Business Outreach HCA Manager met with Julie Shaeffer, Executive Aministrative Supervisor of Facilities at Upper Deck LLC to discuss onion weed treatments on the edges of their property. She agreed to allow us to access our property from her property. The Center attempted to get approval to kill pampas grass and saltcedar on Upper Deck property, but she was unclear about whether she'd need to discuss this with the owner of the company. The Center will re-initiate correspondence with Julie, or her successor to inquire into getting permission to kill these weeds outside of HCA boundaries.

Table 3. Threats to HCA habitat integrity

Threat	Locations	Size or Severity	Actions 2007-2008 Management Year	Planned Actions
Weeds				
Pampas grass H (R)	South slopes, neighboring Upper Deck property is a source, recruits continually from airborne seed, presently throughout HCA wetland areas.	Estimated at several hundred individuals	Agua Hedionda Cr swept by RECON crews, July 2008, La Mirada Cr. swept with RECON crews March 2008, freshwater marsh north of Faraday Ave., swept by RECON crews March and July 2008.	Inflorescence removal by HCA Manager during late summer 2009 Continue chemical treatment and negation with Upper Deck property management, homeowner outreach where necessary
Saltcedar H (R)	Drainage along El Fuerte, south of intersection Faraday and El Fuerte • Source just off property along Faraday Ave, on private property, as well as Upper Deck property	25 plants total	Recon treated about 5 plants March and July 2008.	Will continue working with Techbilt to eradicate Will contact homeowners and Upper deck to get permission to remove from HCA edge
Castor bean L (R)	La Mirada Cr.	Hundreds	Treated throughout drainage March 2008	More treatments planned for winter 2008
Fennel H (G, CSS, R, F)	South of Faraday, disturbed areas, grassland	Largely contained, though hundreds remain	Treated March 2008	Continue removing inflorescences prior to seed-set, continue contract spraying emergent leaves
Onion weed M (G, CSS)	Fill slopes above El Fuerte	Thousands	Most killed during Recon treatments winter 2008	Will continue contracting crews to eliminate plant from HCA
Artichoke thistle M (G, CSS)	Southwestern 18 acre parcel along Orion Ave.	Persistent population, estimated at 250	Mechanical treatment, spring 2008	Continue mechanical treatment
Tree tobacco M (CSS, R)	Southwestern 18 acre parcel along Orion Ave. Many in disturbed slopes along Faraday Ave.	Hundreds	None treated.	The drainage (See below) is the source of the problem
Bermuda buttercup M (G, R)	Benches above La Mirada Cr.	Hundreds	Several hundred sprayed by RECON crews March 2008	Continue treating in winter, attempt to eradicate
Florist's smilax (*Asparagus asparagoides*) M (R)	La Mirada Cr.	One plant mapped	Recently noted	Will eradicate winter 2008-2009
Drainage/Seep	Southwestern 18 acre parcel along Orion Ave.,	½ acre estimate kill area	Mapped perimeter, set up photo monitoring points	Will continue mapping kill zone
Itinerants	Southwestern 18 acre parcel along Orion Ave.	One	Only one itinerant was found and removed before stay was visibly destructive to habitat	Frequent patrol, posting, and removal. Work with Carlsbad Police in arresting returning itinerants
Other Unwanted activities	•Marijuana growth along Agua Hedionda Cr. and La Mirada confluence •Clubhouse/party spot middle Agua Hedionda Cr.	10 plants	•Plants removed • Clubhouse removed	•Frequent patrol •Prompt removal

H, M, L refer to California Invasive Plant Council rankings, and potential severity of plants, if present. H=high, M=moderate, L=limited

- **High** – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Table 3 continued

- **Moderate** – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

- **Limited** – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Letters in parentheses represent what habitats these invasive plants threaten: G=native grassland, R=riparian, CSS=coastal sage scrub, F=native forb vegetation associations

VI. Reporting

Reporting includes all data analysis, GIS and remote sensing, regional coordination, photo documentation activities, budget and financial status. Data that have been entered by CNLM include plant and animal survey data. CNLM has received and digitized (GIS) all CE and fee boundaries, and vegetation communities and sensitive species from previous biotechnical reports of the properties.

CE Compliance monitoring A Conservation Easement (CE) compliance report for the County owned portion of the HCA was drafted late in the management year (See Appendix 2). The CE compliance binder contains Carlsbad Oaks North CE baseline documentation (including photo viewpoints) and CE monitoring procedures. If a CE violation occurs, the baseline documentation, and subsequent yearly documentation provide the necessary evidence to prove that violation. The monitoring policy included in the CE binder was designed to standardize the Center's monitoring of CE properties. It ensures that all CE properties are being managed appropriately while ensuring continuity amongst Center staff.

Annual report: This report represents the second annual report for the entire HCA. The next annual report will be produced at the end of the 2008-2009 management year.

Annual work plan: An annual work plan for the 2008-9 fiscal year was provided to the wildlife agencies in October of 2008.

Budget/Financials: The total expenditures for 2007-2008 were $42,821 of a planned budget of $39,996. The extra funds spent represent contingencies funds spent to assist with eradication of several nonnative species that were observed in Agua Hedionda Creek. The total funds available as of October 31, 2008 are $860,416 of which $55,083 is Initial and Capital and $805,378 is Endowment (Table 4). As of just a year ago, the endowment was keeping up with inflation. However, the endowment has declined in the last year as a result of the current financial crisis in the United States. The Center is working at cutting budgets to ensure that there will be sufficient funds for future management.

Table 4. Endowment Status

Project	Inception Date	Original Endowment	Endowment as of 4/30/07	Endowment as of 10/31/08	Initial and Capital (10/31/08)	Total Preserve Funds	Inflation Adjusted Endowment as of 10/31/08
Carlsbad Oaks North	3/2006	$1,020,311	$1,097,092	$805,378	$55,038	$860,416	$1,078,686

VII. Summary and Discussion

Management of the HCA continues to be successful by protecting it from human encroachment, building baseline biological data, and developing a better understanding of the HCA and its regional context. HCA Management in next year will continue in a similar fashion as this year. A detailed work plan for the next fiscal year has been developed for this purpose.

VIII. References

CNLM 2006. Carlsbad Oaks North Habitat Conservation Area (S034) Annual Report. Center for Natural Lands Management. December 2006.

Multiple Habitat Conservation Program (MHCP). 2003. MHCP Biological Monitoring and Management Plan Volume III. California Department of Fish and Game, U.S. Fish and Wildlife Service, and Conservation Biology Institute. March 2003.

Tierra Data Inc. 2005. City of Carlsbad Preserve Management Plan (PMP) for Carlsbad Oaks North Habitat Conservation Area. January, 2005

IX. Appendices

Appendix 1. CNPS Rapid assessments

CALIFORNIA NATIVE PLANT SOCIETY
SIERRA FOOTHILLS VEGETATION RAPID ASSESSMENT FIELD FORM
(Revised March 14, 2006)

For Office Use: | Final database #:

LOCATION / ENVIRONMENTAL DESCRIPTION CARLSBAD - OAK VALLEY

Polygon/Stand #: SDG-053 | Air photo #: | Date: 4/26/08 | Name(s) of surveyors: Alan, Coolige, Kit, James (Clooter)

GPS waypoint #: ________ GPS name: ________ GPS datum: (e.g. NAD 83) ________ Zone: 10S / 10T / 11S (circle one)

UTM field reading: UTME ________ UTMN ________ GPS Error: ± ____ ft / m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance ____ (meters) and bearing ____ (degrees)

Elevation: 410' (ft) / m Photograph #'s:

Geology code: SAND Soil Texture code: MFCL (Upland) / Wetland/Riparian (circle one)

Macro topography: top upper (mid) lower bottom | Micro topography: convex flat (concave) undulating

% Surface cover (sum to 100%): Lg rock: 0 Sm rock: 0 Bare/Fine: 60 Litter: 37 BA Stems: 3 Water: 0

Slope-exposure: Actual °: 97 General: NE NW (SE) SW Flat Variable (circle one)

Slope steepness: Actual °: 16 General: 0° 1-5° (5-25°) > 25° (circle one)

Size of stand: <1 acre / 1-5 acres / (>5 acres) Plot: Yes / No If Yes, denote size: 100m² / (400 m²) / 1000 m² / Other ____

Site history, stand age, and comments: No burn since 1983; only patchs burned before. Natural Stand, No public Access. NW/SE valley with development both sides. Running stream, 150-175' below ridgetops. Dusky-footed wood rat nests - male & female

Type/ Level of disturbance codes: 15 / L ___ / ___ / ___ / ___ "Other":

HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (24-48" dbh), T6 (>48" dbh) (circle one)

If Tree type, list 1-3 dominant overstory spp.:

Shrub: S1 (<3 yr old), S2 (<1% dead), (S3 (1-25% dead)), S4 (>25% dead)

Herb: H1 (<4" height), H2 (4-8" ht), H3 (8-<12" ht), H4 (>12" ht) — % Total vegetation cover 40

% Cover- Overstory Tree Conifer/Hardwood: ___ / ___ Low Tree-Tall Shrub: 9 Lo-Mid Shrub: 33 Herbaceous: 2

Height Class - Overstory Conifer/Hardwood: ___ / ___ Low Tree-Tall Shrub: 04 Lo-Mid Shrub: 03 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and % cover: (Jepson Manual nomenclature please)

Stratum categories: T (>5.0 m), M (0.5-5.0), L (<0.5m); *% cover intervals for reference:* <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
M	Comarostaphylis diversifolia	8	M	Galium aparine (NN)	<1
L	Leymus condensatus	1	L	Adolphia californica	15
M	Quercus dumosa	1	L	Chlorogalum parviflorum	<1
L	Salvia mellifera	12	L	Bromus madritensis	<1
L	Lonicera spicata	<1	L	Eucrypta sp.	<1
M	Opuntia littoralis	1	M	Rhus integrifolia	3
L	Marah macrocarpus	<1	L	Gnaphalium cal.	<1
L	Nassella lepida	1	M	Cercocarpus minutiflorum	<1
L	Eriogonum fasc.	<1	L	Mimulus pilosus	1
L	Artemisia cal.	<2	L	Dichelostemma capitatum	<1

APS

Unusual species: QUDU, Comar. div.

INTERPRETATION OF STAND

Field-assessed vegetation alliance name:

Field-assessed association name (optional):

Adj alliances: Rhus int N / Quercus ag SE

Confidence in alliance identification: L M (H) Explain

Other identification problems:

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

PICKERAS

Carlsbad Oaks North SD County

CALIFORNIA NATIVE PLANT SOCIETY
SIERRA FOOTHILLS VEGETATION RAPID ASSESSMENT FIELD FORM
(Revised March 14, 2006)

For Office Use: | Final database #:

LOCATION / ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:
SDG054		4/24/07	Paul Beiley, JR Sundberg, Lexie Schroeder

GPS waypoint #: N/A GPS name: ______ GPS datum: (e.g. NAD 83) ______ Zone: 10S / 10T / (11S) (circle one)

UTM field reading: UTME ______ UTMN ______ GPS Error: ± ______ ft / m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance ______ (meters) and bearing ______ (degrees)

Elevation: ______ ft / m Photograph #'s:

Geology code: SAND Soil Texture code: MFCL (Upland) or Wetland/Riparian (circle one)

Macro topography: top upper mid (lower) bottom | Micro topography: (convex) flat concave undulating

% Surface cover (sum to 100%): Lg rock: 0 Sm rock: 21 Bare/Fine: 49 Litter: 42 BA Stems: 2 Water: 0

Slope exposure: Actual °: 110 General: NE NW (SE) SW Flat Variable (circle one) Roughly N-S E-W

Slope steepness: Actual °: 11 General: 0° 1-5° (5-25°) > 25° (circle one)

Size of stand: <1 acre / 1-5 acres / (>5 acres) ? Plot: Yes / No If Yes, denote size: 100m² / (400 m²) / 1000 m² / Other ______

Site history, stand age, and comments: Preserve managed by Center for Natural Lands Mgmt. Closed to public. No fire in preserve since 1983 - spotty, so our plot may not have burned. Pack rat nests in plot, near bottom of E-W valley w/ development on hilltops. large tree died in middle of plot. California Thrasher? Quail in plot.

Type/ Level of disturbance codes: 05/L ___ / ___ / ___ / ___ "Other":

HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (24-48" dbh), T6 (>48" dbh) (circle one)

If Tree type, list 1-3 dominant overstory spp.: N/A

Shrub: S1 (<3 yr old), S2 (<1% dead), (S3) (1-25% dead), S4 (>25% dead)

Herb: H1 (<4" height), H2 (4-<8" ht), H3 (8-<12" ht), (H4 (≥12" ht)) % Total vegetation cover 51%

% Cover- Overstory Tree Conifer/Hardwood: ___/___ Low Tree-Tall Shrub: 14 Lo-Mid Shrub: 31 Herbaceous: 5

Height Class - Overstory Conifer/Hardwood: ___/___ Low Tree-Tall Shrub: 04 Lo-Mid Shrub: 03 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and % cover (Jepson Manual nomenclature please)

Stratum categories: T (>5.0 m), M (0.5-5.0), L (<0.5m); *% cover intervals for reference:* <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
M-T	Comarostaphylis diversifolia	12	M	Toxicodendron diversilobum	3
M	Heteromeles arbutifolia	2	L	Adolphia californica	<1
M	Baccharis pilularis	1	M	Marah macrocarpus	4
M	Adenostoma fasciculatum	1	L	Nassella lepida	1
M	Rhus integrifolia	17	M	Artemisia cal	1
M	Lonicera subspicata	1	L	Mimulus aurantiacus	1
L	Opuntia littoralis	<1	L	Xylococcus bicolor	1
L	Claytonia perf. perf.	4	L	Gnaphalium (several)	1
M	Quercus dumosa	4	(M	Snags - non veg.	3)
M	" agrifolia	2	L	Pterostegia drymarioides	>1

Unusual species: Comarostaphylis (List 1) Harpagonella palmeri (List 2), Adolphia (2) at edge near road

INTERPRETATION OF STAND

Field-assessed vegetation alliance name: 1E1 Rhus int.

Field-assessed association name (optional): Quercus / Comarostaphylis

Adj alliances: Deinandra fasc. SE ; Quercus ag/dumosa E

Confidence in alliance identification: L M H Explain

Other identification problems: Comarostaphylis - leaves sometimes flat, sometimes curved on same?! maybe other sp.?

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Appendix 2. CE Documentation Report

CONSERVATION EASEMENT
COMPLIANCE MONITORING REPORT

DATE OF SITE VISIT: July 11, 2008

OBSERVER: ____Patrick McConnell
Were Easement Documents read before site visit? Yes

PROPERTY TITLE: Carlsbad Oaks North HCA, APN: 222-651-11-00

County owned parcel CNLM CODE#: S034

Specify which area surveyed (if not entire Preserve): All areas accessible by trail

COMPLIANCE

Requirements and Compliance Checklist	**Compliance (Yes/No/NA)**
Specific Findings (for each Lot):	
• The Property is protected from general access, and active use by Owners or others?	Yes$_1$
• Has access negatively impacted the Conservation Values?	No
• The Property is free of debris, fill materials, lawn clippings, oil, or trash of any kind.	Yes
• The Property fencing is intact and in good condition.	Yes
• No prohibited activities are occurring, including grading or alteration, domestic landscaping, or irrigation, and storage.	No$_1$
• No disallowed improvements are present, including accessory structures, roads, utility lines, benches, equipment storage, swimming pools, dams or ponds, excavation or fill.	Yes
• No trails, picnic areas, or other recreation improvements are present, except as allowed in designated areas.	Yes$_2$
• Any disturbance or biological problems noticed (if yes, see notes)?	No$_3$
• Any prohibited plants on the property (if yes, see notes)?	Yes$_4$

•	Survey for wildlife species and recorded observed species (see notes)?	Yes$_5$

GRAZING USED AS A MANAGEMENT TOOL? NO
CONDITION OF HABITAT AND % VEGETATIVE COVER: Habitat in good condition

PICTURES TAKEN (Minimum once annually) Yes, at all photo stations as in Baseline
Identify photos:
Photo points 7-12, 23-26, 28-31.

NOTES: (e.g. change in invasive species, potential violations, other changes since last visit, etc.) Include explanation of any "No" response in table above

1. Evidence of dog walker(s) present upon patrol, though none have been caught. Runners were regularly using Preserve, but have curtailed as structures have been placed to block, and pictures have been taken. Occasional removal of debris blocking continues to take place. Occasional use of trails by mountain bikers is ongoing, but in a much reduced frequency from when Preserve was under initial management. Removal of vegetation has taken place twice along a restored section of a highly eroded trail near the central-eastern portion of the parcel.

2. Historic illegal rails are gradually growing over with vegetation since a large portion of mountain bikers ceased using Preserve. No further trail building is in evidence.

3. Bullfrogs may be present in La Mirada Creek, as recently observed by Preserve Manager.

4. Invasive plants are being steadily decreased by regular visits by weed workers and Preserve Manager as per the Management and Funding Agreement, and permitting conditions applied to Techbilt by Federal agencies (FWS, ACOE). Pampas grass continues to re-establish, but in decreasing numbers.

5. Several sensitive wildlife species have been censused and mapped (see annual report 2007-2008), sensitive plants continue to be censused and mapped as per Management Plan and Carlsbad HMP.

6.

Follow up needed? No

Assigned to: _____ Date: _____
Initial Action taken: _____ Date: _____
Final Action taken: _____ Date: _____

Monitor Sign.: _____

P. M. Sign.: _____ 09/10/09

A. M. Sign.: _____ 9/9/09