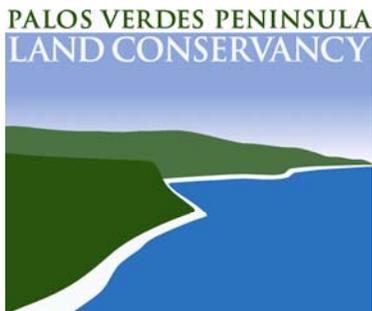


Palos Verdes Peninsula **Land Conservancy**



January -- December 2010 PALOS VERDES NATURE PRESERVE REPORT

FOR THE

RANCHO PALOS VERDES NATURAL COMMUNITY CONSERVATION PLAN

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BACKGROUND INFORMATION

The 2010 Palos Verdes Nature Preserve Report for the Rancho Palos Verdes Natural Community Conservation Plan provides annual submittal requirements by the Palos Verdes Peninsula Land PVPLC (PVPLC) on the status of the Palos Verdes Nature Preserve (Preserve). Additionally this report details stewardship activities, research, funding, and community involvement in the Preserve during the period January 1, 2010 through December 31, 2010.

The Preserve encompasses approximately 1,400 acres and is located on the southern side of the Palos Verdes Peninsula in the City of Rancho Palos Verdes (RPV), California. PVPLC serves as the management agency for RPV. The Preserve was formed under a draft Natural Community Conservation Plan (NCCP) to “maximize benefits to wildlife and vegetation communities while accommodating appropriate economic development within the City of Rancho Palos Verdes and region pursuant to the requirements of the NCCP Act and Section 10(a) of the ESA (URS 2004).”

The primary focus of management for the Preserve is to maintain or restore habitat for the covered plant and animal species listed in the draft NCCP. A Habitat Management Plan was adopted in 2007 that outlines the restoration of 5 acres per year for a total of 15 acres over a 3-year period. This plan also outlined the methodology for removal of exotic plant species, a predator control plan, and the monitoring of covered plant and animal species. PVPLC attempts to seek additional funding when possible, to perform restoration on more than the minimum 5 acres per year required in the NCCP. Several opportunities of this nature occurred during the reporting period that will enable PVPLC to conduct additional restoration over the next 3 years.

PVPLC also conducts scientific research and trail maintenance projects in the Preserve. Volunteers make up a large component of the management strategies for the Preserve. They assist in monitoring the properties, wildlife, and habitat as well as help restore habitat and maintain trails. Partnering with regional high schools and colleges allows for scientific research that expands our understanding of the Preserve. We also seek funding from a variety of sources including private donations, federal and state grants, and foundations.

INTRODUCTION

The Palos Verdes Peninsula Land PVPLC (PVPLC) serves as the management agency for the Palos Verdes Nature Preserve (Preserve), previously referred to as the Portuguese Bend Nature Preserve, for the City of Rancho Palos Verdes (RPV). The Preserve was formed under a Draft Natural Community Conservation Plan (NCCP) to “maximize benefits to wildlife and vegetation communities while accommodating appropriate economic development within the



City of Rancho Palos Verdes and region pursuant to the requirements of the NCCP Act and Section 10(a) of the ESA (URS 2004a).” As a primary component of the NCCP, a Preserve design was proposed to conserve regionally important habitat areas and provide habitat linkages in order to benefit sensitive plants and wildlife. PVPLC manages the Preserve under an operating agreement with RPV.

The operating agreement with RPV requires that PVPLC submit an annual report to the RPV City Council describing management activities with respect to habitat enhancement and restoration, property maintenance and monitoring, vegetation and wildlife monitoring, and efforts on targeted exotic plant removals. The *2010 Palos Verdes Nature Preserve Report for the Rancho Palos Verdes Natural Community Conservation Plan (NCCP) and Habitat Conservation Plan (HCP)* provides annual submittal requirements on the status of the Preserve for the period of January 1, 2010-December 31, 2010. It is accompanied by a status report for the Targeted Exotic Removal Program for Plants (TERPP). Volunteer involvement and support and student-based scientific research are also covered in this report.

As stated above, the NCCP Implementing Agreement has not been signed by the regulatory agencies, and therefore, the NCCP is technically not officially executed. However, because it is anticipated that this agreement will be signed in the near future, this annual report was provided to satisfy the requirements of both the Management Agreement with RPV and the reporting requirements of the Draft NCCP. Annual reporting requirements for the Draft NCCP are detailed below. Additionally, once every three years, a Comprehensive report is required. The most recent Comprehensive Report reported for 2007 through 2009.

Annual submittals (included in this report)

1. A monitoring report on habitat restoration areas using standard monitoring protocol as detailed in the Preserve Habitat Restoration Plan.
2. Report on Targeted Exotic Plant Removal Efforts.

This *2010 Palos Verdes Nature Preserve Report for the Rancho Palos Verdes NCCP and Habitat Conservation Plan* has been divided into 6 main topics, with subtopics embedded into each main topic. Where applicable, subtopics have been further divided by Reserve (Reserves are explained under the heading *Site Description*), to provide easier reference for a particular area within the PVNP.

Site Description

The Preserve is located on the southern side of the Palos Verdes Peninsula in the City of Rancho Palos Verdes, California (Figure 1). The approximately 1,400-acre Preserve has been



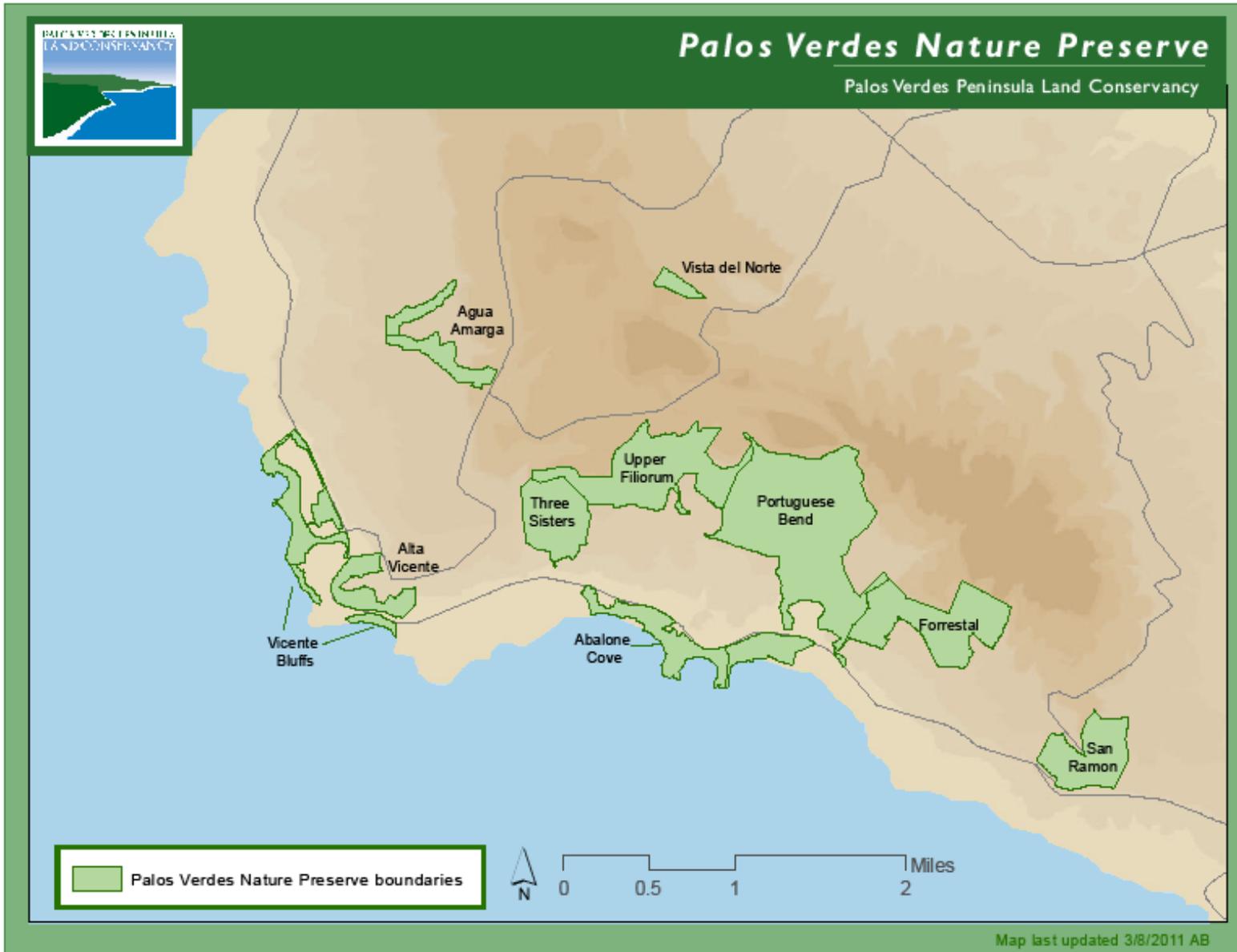
divided into ten areas referred to as Reserves. The Public Use Master Plan Committee (PUMP Committee), described further in the *Community Involvement* section of the report, submitted recommendations for the naming of the Preserve and the 10 Reserve areas at the February 23, 2008 RPV City Council meeting. The committee made its recommendations based on currently used names and names that conveyed the physical characteristics of each area. Table I reflects the Reserve names as approved by the RPV City Council. In addition, the 190-acre Upper Filiorum Reserve, acquired in December 2009, added 190 acres to reserve, resulting in over 900 contiguous acres of protected open space and a wildlife corridor linking Three Sisters and Portuguese Bend Reserves (Figure I).

Table I: Reserve Names of the Palos Verdes Nature Preserve. See Figure I for locations.

Abalone Cove Reserve	San Ramon Reserve
Agua Amarga Reserve	Three Sisters Reserve
Alta Vicente	Upper Filiorum Reserve
Forrestal Reserve	Vicente Bluffs Reserve
Ocean Trails Reserve	Vista del Norte Reserve
Portuguese Bend Reserve	



Figure 1: Map of the Palos Verdes Nature Preserve with associated Reserves locations.





The topography of the Preserve is diverse, ranging from relatively flat lowland areas above steep coastal bluffs in the south, to very steep slopes, ridgelines and gullies on the slopes to the north. Elevations range from approximately sea level along the coastal edges of Vicente Bluffs, Abalone Cove, and Ocean Trails to approximately 1,300 feet above mean sea level at the northern most parcel, vista del Norte. Adjacent land uses include single-family residences on most sides, open space associated with neutral lands on the Peninsula, the Pacific Ocean to the south and west, and the Los Verdes and Trump National golf courses near the western and eastern ends of the Preserve area.

On August 27, 2009, the Palos Verdes Fire burned approximately 165 acres of the Portuguese Bend Reserve, affecting both native and non-native vegetation and known nesting sites of the threatened coastal California gnatcatcher (*Polioptila californica californica*) and the special status cactus wren (*Campylorhynchus brunneicapillus*). To address the impacts of the fire, PVPLC created a Fire Recovery Plan in October 2009 (PVPLC 2009).

Management Plan

The original document dictating management of the Preserve was the Forrestral Management Plan. This management plan was adopted in 2001 when PVPLC became the management agency for the RPV owned Forrestral Nature Preserve. Since that time, more open space properties were purchased by RPV, and in February 2008, City Council adopted to name Forrestral as one of the Reserves within the Palos Verdes Nature Preserve.

Additionally, in 2006, the Public Use Master Plan Committee (PUMP Committee) was formed to provide recommendations for naming of the Preserve, forming a Preserve Trails Plan and reviewing other guidelines for the public use of the Preserve. The Preserve Trails Plan was brought before the RPV City Council over the course of several meetings in early 2008, and was approved by the City Council in April 2008.

The current document dictating management of the PVNP is the draft NCCP/HCP, expected to be finalized by August 2011, pending review by Wildlife Agencies.

HABITAT RESTORATION AND MONITORING

Habitat Restoration

Habitat Management Plan

The initial Preserve Habitat Management Plan (PHMP) for the Draft NCCP was created in 2007. A component of the PHMP was the Habitat Restoration Plan for the restoration of 5 acres per year for a total of 15 acres over the first 3-year period. This plan was completed in April 2007 and concluded that Alta Vicente Reserve in the Preserve ranked the highest in terms of site



suitability for an immediate restoration project. The Habitat Restoration Plan for Alta Vicente Reserve outlines appropriate revegetation locations and methodology to adequately comply with the Preserve Management requirements of the Rancho Palos Verdes NCCP.

The Habitat Restoration Plan for Alta Vicente Reserve provides guidelines for the establishment of coastal sage scrub (CSS), coastal cactus scrub (CCS), and butterfly habitat on a total of 15 acres during 3 consecutive years at the Alta Vicente Reserve. However, since the fire occurred at Portuguese Bend Reserve in August 2009, plans were adapted to focus immediate restoration at Portuguese Bend, and only Phase 1 and 2 (10 acres) will be completed at Alta Vicente.

The following provides a brief description of work done to fulfill the NCCP during the reporting period. Table 2 provides the implementation schedule for Phase 1 and Phase 2 at Alta Vicente and Portuguese Bend.

Alta Vicente Reserve

The habitat restoration at the Alta Vicente Reserve consists of two 5-acre phases, with one phase initiated each year. The first 5 acres of restoration (Phase 1) began with site preparation during the fall of 2007. Phase 1 plants were installed and hydroseeded during the winter of 2009/2010. Site preparation for Phase 2 began in Fall 2008. In December 2010, staff removed *Acacia cyclopsis* and completed planting and seeding in the Phase 2 area.

Draft NCCP annual reporting requirements include a monitoring report on habitat restoration areas using a standard monitoring protocol for years 1, 2, 3 and 5 during the 5-year maintenance and monitoring period that follows plant installation. Monitoring at Alta Vicente began in 2010.



Table 2: Restoration Project Schedule for Alta Vicente Reserve Phases I and 2. This table has been modified from its original content in the 2007 Habitat Restoration Plan to reflect activities only in Phase I and 2.

	Task	Date
PHASE I	Site clearing and soil preparation	Fall 2007, Fall 2008
	Installation of temporary irrigation system	Fall 2008
	Weed/exotic removal and grow-kill cycles	Fall 2008-Spring 2009
	Planting container stock	Early Winter 2009/2010
	Hydroseed application	Winter 2009/2010 (following planting)
	Completion of installation/assessment of site installation	Following completion of installation and seeding and 120 day maintenance period
	5-year biological monitoring and maintenance	To begin upon successful installation of restoration work
	Phase one completion	2015, end of Year 5
	PHASE 2	Site clearing and soil preparation
Installation of temporary irrigation system		Fall 2008, Fall 2009
Weed/exotic removal and grow-kill cycles		Fall 2008, Fall 2009,-Spring 2010
Planting container stock		Winter 2010/2011
Seed application		Winter 2010/2011 (following planting)
Completion of installation/assessment of site installation		Following completion of installation and seeding and 120 day maintenance period
5-year biological monitoring and maintenance		To begin upon successful installation of restoration work
Phase two completion		2016, end of Year 5

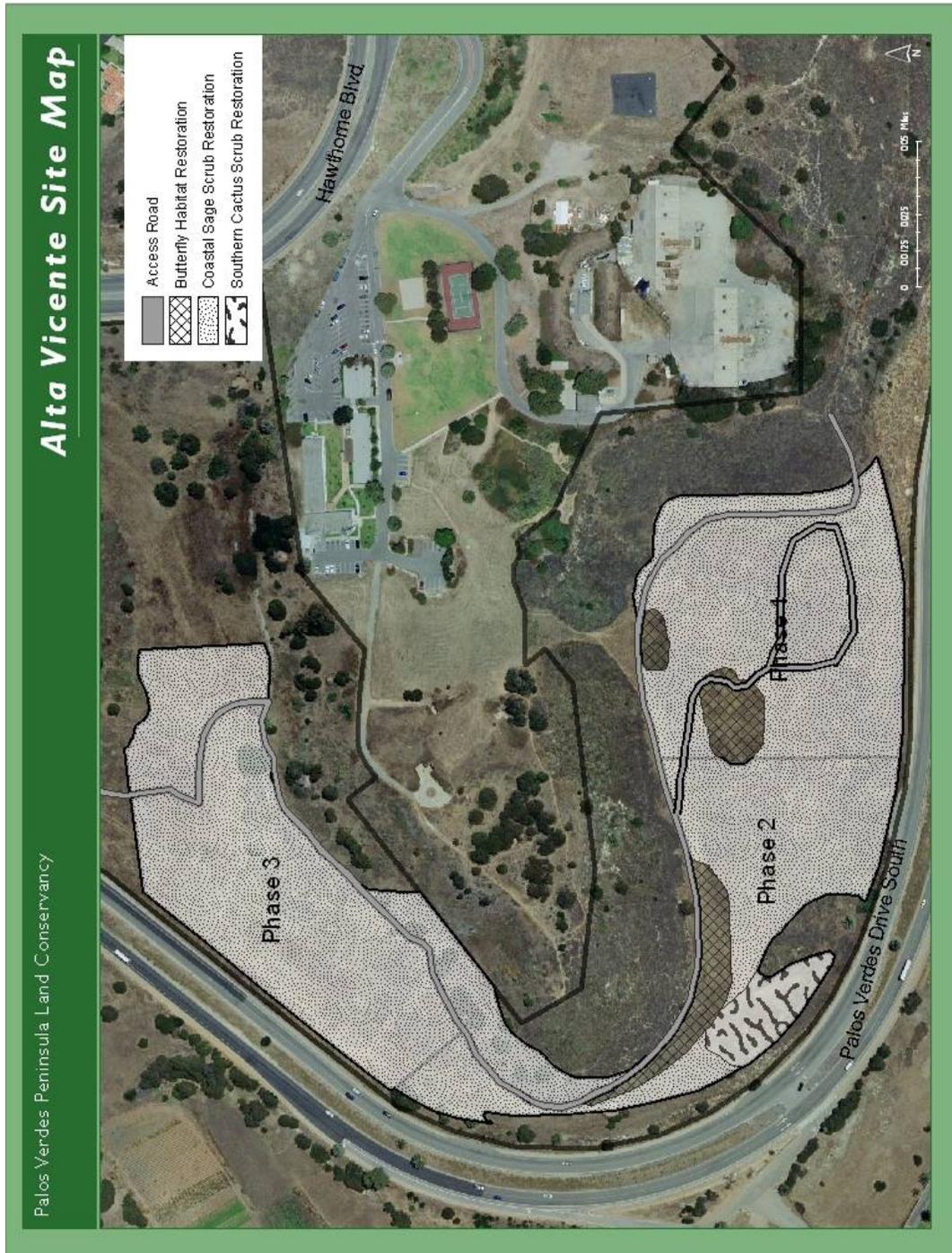


Figure 2: Map of Restoration Areas at Alta Vicente Reserve. Phase 3 has been postponed to implement burn recovery at Portuguese Bend.



Portuguese Bend Reserve

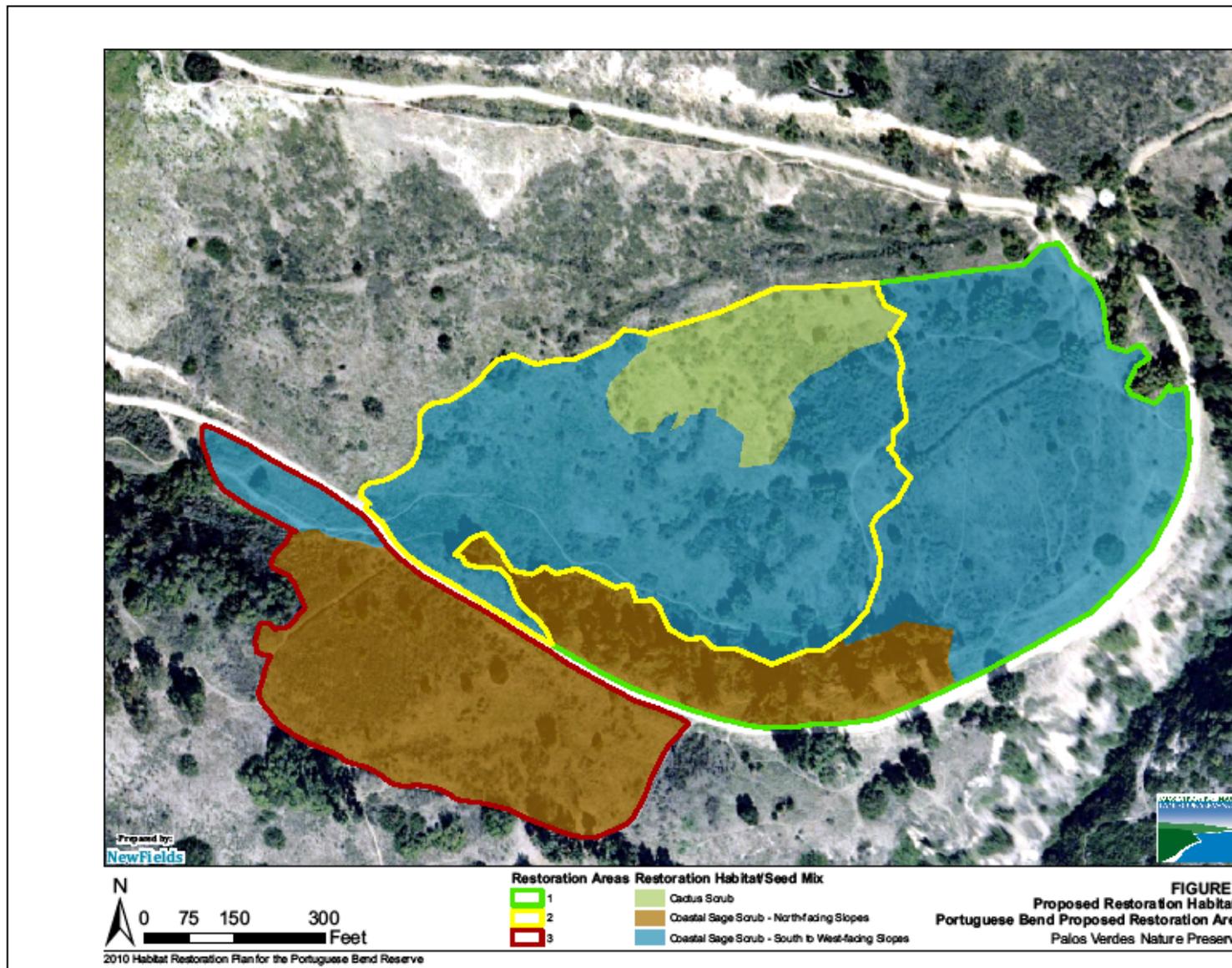
A restoration plan for 15 acres at Portuguese Bend Reserve was completed July 2010, and can be found in the 2007-2009 Cumulative Report. Site preparation at Portuguese Bend began in February 2010. Field staff weeded (hand/herbicide) the burn area, removed castor bean along Rolling Hills and targeted fennel with herbicide.

Table 3: Restoration Project Schedule for Portuguese Bend Reserve Phases 1, 2 and 3, based on the Portuguese Bend Reserve Habitat Restoration Plan.

	Task	Date
PHASE 1	Site preparation, weed removal	Fall 2010-Fall 2011
	Final site preparation: weed and thatch removal	Fall 2011
	Installation: Seeding	Fall 2011-Early Winter 2012
	Maintenance weeding	Winter 2012-Spring 2013
	Remedial seeding, as needed	Fall 2012-Fall 2013
	5-year biological monitoring and maintenance	To begin upon successful installation of restoration work
	Phase one completion	2016, end of Year 5
	PHASE 2	Site preparation, weed removal
Final site preparation: weed and thatch removal		Fall 2012
Installation: Seeding		Fall 2012-Early Winter 2013
Maintenance weeding		Winter 2013-Spring 2014
Remedial seeding, as needed		Fall 2013-Fall 2014
5-year biological monitoring and maintenance		To begin upon successful installation of restoration work
Phase two completion		2017, end of Year 5
PHASE 3	Site preparation, weed removal	Fall 2012-Fall 2013
	Final site preparation: weed and thatch removal	Fall 2013
	Installation: Seeding	Fall 2013-Early Winter 2014
	Maintenance weeding	Winter 2014-Spring 2015
	Remedial seeding, as needed	Fall 2014-Fall 2015
	5-year biological monitoring and maintenance	To begin upon successful installation of restoration work
	Phase three completion	2018, end of Year 5



Figure 3. Map of Restoration areas at Portuguese Bend Reserve.





Additional Restoration

PVPLC attempts to seek additional funding when possible, to perform restoration on more than the minimum 5 acres per year required in the NCCP. Several opportunities of this nature occurred during the reporting period. Table 3 shows the timeline for each additional restoration project.

Three Sisters

In January 2007, Los Angeles World Airports (LAWA) provided funding to conduct twenty-one acres of coastal sage scrub and perennial grassland restoration in the Three Sisters Reserve as part of mitigation for the Southwest Airfield at Los Angeles International Airport. A restoration plan was completed in 2008. In January 2009, the PVPLC began implementation of the first season of weed control, including the use of 250 goats for grazing. Acacia trees (300) were treated with a glyphosate herbicide, using the “drill and kill” method, and removed from the site. Staff systematically removed weeds such as fennel, mustard and non-native annual grasses through mechanical, hand removal, and herbicide application. An irrigation system was installed in September 2009. In December 2009, 7,930 container plants of coastal sage scrub species were planted, and the site was seeded with coastal sage scrub and native grass seeds from local sources. Restoration site installation was completed in January 2010. Staff is maintaining the restoration site through active weeding, herbicide application and scheduled irrigation.

McCarrell’s Canyon

In June 2008, a grant agreement was signed with the State Coastal Conservancy to provide restoration to seven acres of coastal sage scrub and riparian habitats at McCarrell’s Canyon, which is the western boundary of Three Sisters Reserve. Due to a funding freeze, restoration was delayed until 2010. A final restoration plan was submitted by Newfields for all activities performed under the grant. To implement the restoration plan, staff contracted with Nakae & Associates to remove 5 acres of non-native acacia trees. The project began in March. In Nov, Crew weeded the restoration site, including *Euphorbia*, and hauled out debris. Staff weeded nonnative annual grasses to prepare the site for planting in Fall 2010.

Fishing Access

In June 2008, a grant agreement was signed with the State Coastal Conservancy to provide restoration to three acres at the Fishing Access area of Vicente Bluffs Reserve. Due to a funding freeze, restoration was delayed until 2010. An updated habitat restoration plan for Fishing Access was completed by restoration ecologist, Margot Griswold. Site preparation and planting began in December 2009. Staff is maintaining and weeding the area in preparation for additional planting and seeding, in Fall 2011.

Portuguese Bend

A Department of Fish and Game Local Assistance Grant (LAG) funds restoration in the burn area at Portuguese Bend. The grant provides funding to restore native habitat through non-native plant control and removal, provide supplemental native planting in areas of historic cactus scrub, and perform post-fire monitoring for California gnatcatchers and cactus wrens. Invasive species removal and planting began Fall 2010, and is ongoing.



In March 2010, the City of El Segundo provided funding to conduct 9.5 acres of coastal sage scrub and perennial grassland restoration at Portuguese Bend as part of mitigation for the Plaza El Segundo Development. The restoration site is on the upper portion of the Ishibashi Trail. Staff worked with the California Conservation Corps Weed Strike Team to clear approximately 5 acres of mustard and fennel in the burn area. In Fall 2010, the 9.5 acre-site was seeded with native grasses and coastal sage scrub. Staff continues to maintain and control weeds at the site.

Figure 4 provides a site map for each restoration project, including the restoration at Alta Vicente Reserve that fulfills the requirements of the NCCP Habitat Restoration Plan

Table 4: Restoration project schedule for additional restoration in Palos Verdes Nature Preserve.

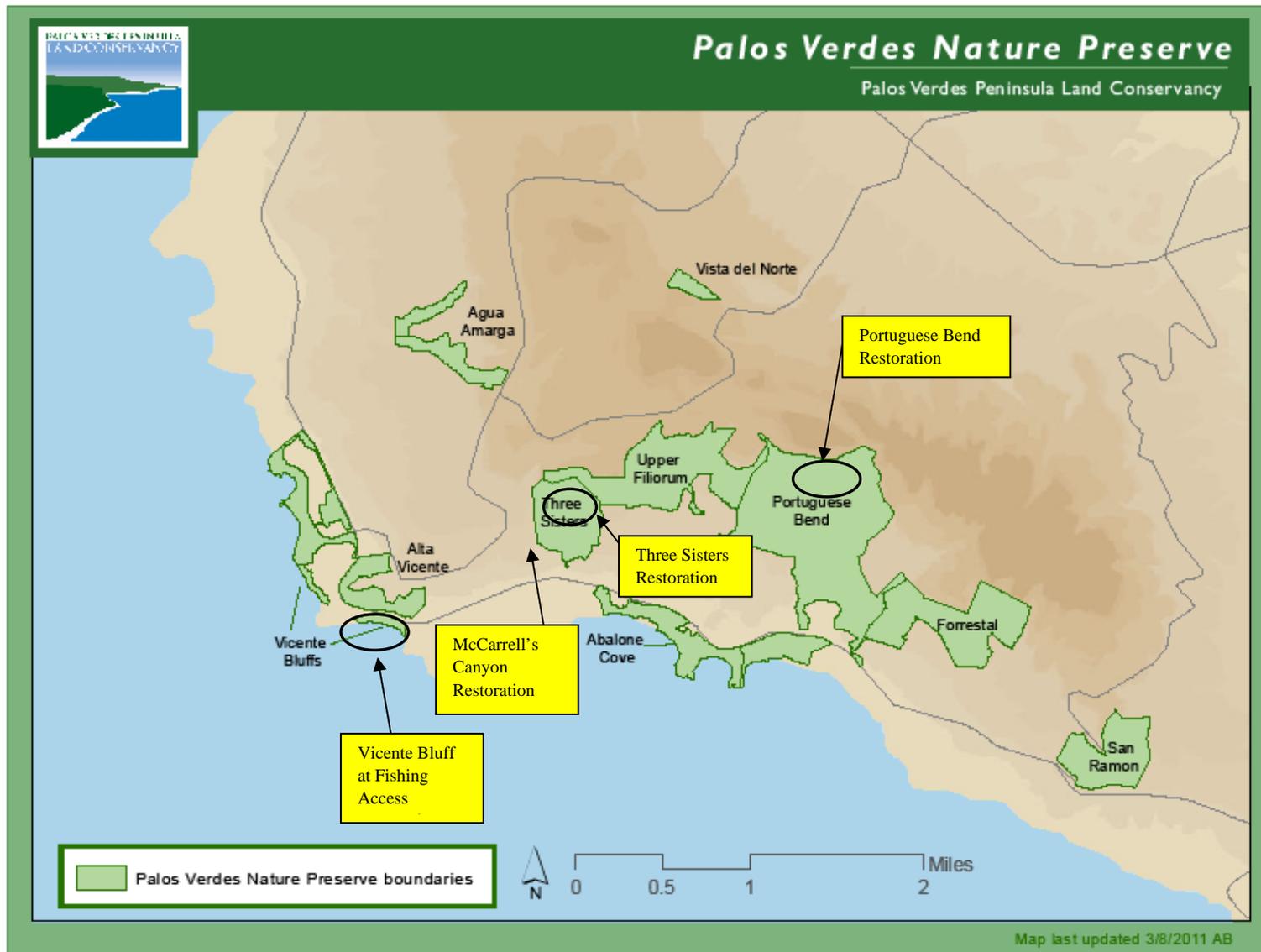
Three Sisters Restoration 21 Acres	Task	Date
	Seed collection	Winter 2008-Spring 2009 (again in second year if necessary)
	Initial site preparation/weeding	Winter 2008-Spring 2009, Fall 2009
	Final site preparation(mowing/thatch removal)	Fall 2009
	Seeding and container planting	Fall 2009
	Irrigation installation	Summer 2009
	Maintenance	Winter 2009-Spring 2010
	Remedial seeding	Fall 2010 (if needed)
	3-year monitoring (horticultural and performance)	Winter 2008-Spring 2011
McCarrell's Canyon Restoration 4 Acres	Task	Date
	Site clearing and soil preparation	Winter 2008/2009-Fall 2009
	Planting container stock	Winter 2009/2010
	Seeding application	Winter 2009/2010 (following planting)
	Completion of installation/assessment of site installation	Following completion of installation and seeding and 120 day maintenance period.
	3-year monitoring and maintenance	To begin upon successful installation of restoration work



Vicente Bluffs Restoration 4 Acres	Task	Date
	Site clearing and soil preparation	Winter 2009/2010
	Planting container stock	Winter 2010/2011
	Seeding application	Winter 2010/2011 (following planting)
	Completion of installation/assessment of site installation	Following completion of installation and seeding and 120 day maintenance period.
	3-year monitoring and maintenance	To begin upon successful installation of restoration work
Portuguese Bend Segundo Grant 9.5 acres	Task	Date
	Site preparation and weed control	Spring 2010-Fall 2010
	Seeding	Winter 2010/2011
	Completion of installation/assessment of site installation	Following completion of installation and seeding and 120 day maintenance period.
	3-year monitoring and maintenance	To begin upon successful installation of restoration work
Portuguese Bend Local Assistance Grant (LAG)	Task	Date
	Invasive species removal	Fall 2010-Mar 2011
	Native planting	Fall 2010-Mar 2011



Figure 4. Site map for all 2010 restoration projects in the Palos Verdes Nature Preserve.





HABITAT MONITORING

PVPLC staff performed annual photo point monitoring. The photo point records now document several years of changing site conditions, and public use. PVPLC's stewardship staff conducted a variety of surveys at the restoration sites throughout the preserves. Vegetation transect surveys were conducted using standardized methods that provide data on the cover of native and non-native plants in the habitat. In 2010, monitoring transects were completed at Alta Vicente Reserve and Three Sisters Reserve.

Covered Species

The draft NCCP/HCP includes a total of six covered plant species. They are aphanisma (*Aphanisma blitoides*), south coast saltscale (*Atriplex pacifica*), Catalina crossosoma (*Crossosoma californicum*), island green dudleya (*Dudleya virens ssp. insularis*), Santa Catalina Island desertthorn (*Lycium brevipes var. hassei*) and woolly seablite (*Sueda taxifolia*). In 2010, surveys were conducted for special status plants in the Palos Verdes Nature Preserve. Surveys were conducted for the El Segundo blue butterfly at Vicente Bluffs and Abalone Cove Reserves. Surveys for California gnatcatcher and coastal cactus wren were conducted at Portuguese Bend Reserve.

Vegetation Mapping

The Stewardship team completed the vegetation mapping project for the Preserve-wide Dept. of Fish and Game Local Assistance Grant.

Targeted Exotic Removal Program for Plants

The Targeted Exotic Removal Program for Plants (TERPP) is an element of the Preserve Habitat Management Plan for the Draft NCCP that requires the annual removal of exotic plant species of twenty individual populations or five acres found in the Preserve. The TERPP provides protocol for ranking the degree of threat to native vegetation, the feasibility of eradication, and the invasiveness of each exotic species found in the Preserve. Populations of exotic plant species are then targeted for removal based on the results of the ranking outcome. The 2010 TERPP Report documents PVPLC's effort during the reporting period to fulfill the requirements of the TERPP plan. It details the methods of assessing the threat of individual exotic species to native vegetation, field methods for removal, and provides site-specific documentation related to every completed removal. The complete 2010 TERPP Report can be found in Appendix I of this report.



Brush Clearance

Brush clearance is the clearing or minimizing of flammable vegetation in areas that occur immediately adjacent to residential structures and roads. RPV is responsible for ongoing maintenance of brush clearance within the Preserve, to provide an appropriate level of fire protection, emphasizing the protection of life, public safety, and property values in the urban-wildlife interface areas while minimizing environmental impacts of fire suppression and control. A portion of the Agua Amarga Reserve is owned by PVPLC and falls under their responsibilities to maintain brush clearance requirements. All of these requirements were met in May and June 2010. No other fuel modification areas within the Preserve fall under the responsibility of PVPLC.

SCIENTIFIC RESEARCH AND WILDLIFE MONITORING

The Preserve is an ideal setting for an outdoor laboratory, because it provides scientists and students with access to a variety of habitat. A report of 2010 research is located in Appendix III.

TRAIL MANAGEMENT, IMPROVEMENTS AND MONITORING

Trail Management

One of the directives of the draft NCCP was to minimize the number of trails within the Preserve, to ensure the conservation of habitat, while continuing to provide public access. In 2006, the Public Use Master Plan Committee was formed to provide recommendations for naming of the Preserve, forming a Preserve Trails Plan and reviewing other guidelines for public use of the Preserve. The Preserve Trails Plan was brought before the RPV City Council over the course of several meetings during early 2008.

Prior to this, only the Forrestal Reserve had a designated trails plan. Most other Reserves within the Preserve had a series of informal trails that had not been formally designated. In November 2007, RPV City Council decided to restrict public access solely to fire roads in the Portuguese Bend Reserve. The drought in 2007 had a severe impact on vegetation in all of areas of the Preserves, and the Portuguese Bend Reserve is the most heavily used of the Reserves. The drought, combined with an unofficial trail network and limited signage, was sufficient cause for concern to restrict access until the Preserve Trails Plan was approved. The Preserve Trails Plan for the Portuguese Bend Reserve was approved in February 2008 and City Council directed the PVPLC to initiate several management tools. Among these were the development of educational materials to alert the public to the new approved trail system and the sensitivity of the habitat and to install signage throughout the Reserve indicating trail names and uses.



In 2010, PVPLC finalized trail maps for the whole PVNP, placed them at major trailheads, and posted them on PVPLC's website.

As of the writing of this report, PVPLC staff continues to maintain trail markers, close unauthorized trails, and provide trail brochures.

Trail monitoring

PVPLC stewardship staff or volunteers from the Keeping an Extra Eye on the Preserve for Environmental Review and Stewardship (Keepers) Program conducted all trail monitoring during the reporting period. The Keepers program is described in detail in the Volunteer Involvement section of the report (Appendix II). Monitoring was typically limited to overall trail conditions such as erosion, hazards, and vegetation overgrowth.

Trail Markers and Decals

In March, the wildfire affected area at Portuguese Bend Reserve was re-opened by the City of RPV. Staff spent four days replacing a total of 37 trail markers and 222 decals throughout the Reserve. In addition, staff replaced trail signage (48 decals, 12 signs) and removed graffiti on signs throughout the Preserve.

Trail Repair

The majority of trail work done in the Preserve corresponds to the outdoor volunteer workdays. PVPLC staff or RPV Public Works department were also involved in trail enhancement. A complete summary of the PVPLC Volunteer Trail Crew Program can be found in the Community Involvement section of the report (Appendix II).

Abalone Cove

- Staff worked with over 30 volunteers assisted Eagle Scout Ryland Miller on May 22 and 23 install a foot path and maintain storm-damaged trails on Abalone Cove Trail.

Forrestal

- The Volunteer Trail Crew assessed and worked on many trails that were severely damaged by rains.

Portuguese Bend

- The volunteer trail crew rehabilitated the Sandbox Trail, as it was damaged by recent rains.
- The Toyon Trail was realigned by Bellfree Construction as a part of the fire recovery plan. The newly aligned trail was moved to the west, avoiding the landslide. Trail volunteers also helped improve the Toyon Trail. Several spur trails and bike jumps were closed and 250 plants were installed.
- PVPLC partnered with REI and CORBA on National Trails Day, to conduct trail maintenance on the Ishibashi Trail with 75 volunteers.



- PVPLC contracted with Bellfree Contractors to reroute the upper portion of the Rim Trail. In August, Rolling Hills Community Association notified both the PVPLC and City of RPV of their approval to the Nakamura family to build a fence on the property line of Portuguese Bend. The fence planned fence bisects the Rim Trail, closing the section that navigated users through the previously “permit only” section of the Reserve. In October, staff placed temporary Rim trail closure/reroute signs at Portuguese Bend. In December, PVPLC and City staff conducted a site visit to determine the location of the trail reroute, planned for early 2011.

Upper Filiorum

- Staff collaborated with NPS and RPV to host two trails planning workshops to develop the public use trail plan for the Reserve; the workshops were held September 8 and 29. Staff is compiling and responding to comments from the workshops, and prepare trail maps for City Council review. An additional workshop is scheduled for April 2011 to review any trail changes for the PVNP. This public meeting is required to be hosted on an annual basis. The final task to be completed under this grant is a PVNP trail signage assessment and recommendation on signage.

Vicente Bluffs

- Fishing Access entrance signs were designed, and installed in March. Bellfree Contractors completed trail closure fencing along the bluff trail.

Ocean Front Estates

- In April, Bellfree Contractors repaired decomposed granite trails in Ocean Front Estates.

Future Trail Projects

Table 5 lists future trail projects.

Table 5. Future Trails Project List (current as of April 2011)			
Reserve Name	Trail Name	Project Type	Completed
Forrestal			
	Flying Mane	Fence Removal Project	Y
	Mariposa	Bridge and trail repair	
	Vista	Spur trail closure	
	Cristo	Spur trail closure	
Portuguese Bend			
	Burma at Panorama	Grade trail to decrease water flow onto Panorama	
	North Sandbox	Trail Repair	
	Ishibashi	Spur trail closure and trail delineation	



	Rim trail north of Burma Road	End-point delineation	
	Peppertree Trail	Trail erosion repair	Y
	Barn owl trail	Trail erosion repair	
	Rim trail near Paintbrush	redirect away from private property	
	Toyon Trail	Trail repair	Y
Three Sisters			
	Sunshine	Trail Repair	Y
	Barkentine Spur Trails	Spur trail closure	
	Connector between Three sisters and Upper Filiorum	Erosion Repair	
	Three Sisters trail at McCarrell's Canyon	Trail Repair	Y
Fishing Access			
	Pescadero trail	Trail Repair	Y
Abalone Cove			
	Cave and Sacred Cove connection	Erosion repair	
	Sacred Cove (to beach)	Erosion repair	
	Bow and Arrow	Erosion repair on eastern portion	
Alta Vicente			
	North Spur trail	Trail delineation	
	Prickly Pear trail	Erosion repair and delineation	
Agua Amarga			
	Lunada Canyon trail	Delineation	
Vista del Norte			
	Indian peak loop trail	Delineation	

Ranger Program

The City Council approved funding for a Ranger Program in June 2009. The City contracted with the Mountains Recreation and Conservation Authority (MRCA) to provide rangers at the Preserve.

VOLUNTEER INVOLVEMENT

PVPLC is a non-profit organization that relies heavily on the support of community involvement to perform many of the tasks necessary to manage the Preserve. The Volunteer Annual Report for January 1, 2010 through December 31, 2010 is located in Appendix II.



GRANTS AND FUNDING

Funding to support PVPLC activities on the Preserve, such as restoration, education, and monitoring is obtained through many sources including government agencies, foundations, donors, and grantors. The PVPLC maintains a program-based budget and accounting system, allowing it to allocate revenues and costs to specific projects. A list of ongoing funding awarded to PVPLC specific to the Preserve is found below.

- The City of RPV provided \$157,138 toward management of the Preserve, as specified in the NCCP.
- Private donors and PVPLC members, including The Legacy Circle members, who committed to a \$5000 per year donation for three years, and Mariposa Circle members, who commit to \$1000 per year are a large component of funding sources.
- The Alcoa Foundation funded the RECIPE program, which includes science-related intern projects and science programming in the Preserve.
- A \$22,944 grant from Los Angeles County Weed Management Area (WMA) ARRA, to map and control populations of non-native carnation spurge (*Euphorbia terracina*) on the Peninsula. This funding is available through December 2011.
- A California Department of Fish and Game NCCP Local Assistance Grant awarded in 2009, provided funding (\$30,000) to restore coastal sage scrub and cactus scrub habitat in the burned area of Portuguese Bend Reserve, through June 2011.
- A California Department of Fish and Game agreement reached in 2009 provided funding (\$40,000) to restore 9.5 acres of coastal sage scrub and grassland habitat at Portuguese Bend Reserve.
- PVPLC received a \$25,000 weed management area federal stimulus grant, through September 2011.
- REI awarded PVPLC \$20,000 from a \$15,000 grant request submitted in May for volunteer outreach.
- In September, 2010, PVPLC and RPV received a \$495,000 grant from the CA Coastal Conservancy to develop the Palos Verdes section of the CA Coastal Trail.
- PVPLC and the City received a \$190,500 Habitat Conservation Fund grant for trail work and associated restoration at Portuguese Bend Reserve.
- Staff is collaborating with RPV and USFWS on two Section 6 land acquisition grants.



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2010 ANNUAL REPORT

FOR THE

TARGETED EXOTIC REMOVAL

PROGRAM FOR PLANTS (TERPP)

Prepared by:

Palos Verdes Peninsula Land Conservancy
Contact: Danielle LeFer

May 2011

INTRODUCTION

The Palos Verdes Peninsula Land Conservancy (PVPLC), as manager of the Palos Verdes Nature Preserve (PVNP), conducts strategic weed control activities throughout the year as part of the Targeted Exotic Plant Removal Plan for Plants (TERPP). As directed in the draft Rancho Palos Verdes Natural Communities Conservation Plan (NCCP), PVPLC selects five acres or 20 small sites of exotic plants for removal each year. The overall goal of this program is to systematically target invasive species throughout the PVNP to increase the success of native plant growth and create greater habitat opportunities for wildlife.

The TERPP is an element of the NCCP that includes a specific protocol for ranking exotic species populations and strategically removing those species over time (Appendix B-G). The 2010 TERPP Report documents PVPLC's effort over the past year to remove exotic plant species that threaten native vegetation in the PVNP. It details the methods of assessing the threat of individual exotic species to native vegetation, field methods for removal and provides site-specific documentation related to every completed removal site.

As of the writing of this report, the NCCP is still in draft format and the regulatory agencies have not yet signed the final plan. However, the City of Rancho Palos Verdes and PVPLC currently perform the responsibilities outlined in the draft NCCP, including fulfillment of the TERPP requirements.

SITE ASSESSMENT

Invasive species control is included in PVPLC's annual conservation planning strategy where Stewardship staff prioritize potential TERPP sites and assess best practice methods for removal. Guided by the NCCP, which ranks known PVNP exotic species based on State and Federal guidelines, PVPLC staff locate TERPP sites to target for the calendar year, assess the best method for eradication, photo document and map the population/s, and conduct weed removal accordingly.

The PVPLC weighs potential areas for exotic species control based on several criteria:

1. Threat to native vegetation, particularly populations of NCCP-covered species;
2. Feasibility of eradication, which includes limiting disturbance to native habitat and ease of access, and;

3. Invasiveness of exotic species, using a synthesized rating system drawn from plant invasiveness rankings from both the California Invasive Plant Council (Cal-IPC) and the California Department of Food and Agriculture (CDFA).

Through regular property reviews and viewing fine scale imagery through the Geographic Information System (GIS), ArcGIS, PVPLC plans for exotic species control across the entire NCCP area.

Staff primarily documents completed TERPP sites on the TERPP field form. Appendix A contains a sample TERPP form. The forms provide basic information about the species targeted, including site identification number and property, approximate location, removal methods used, and general comments related to the removal activities. PVPLC also includes photo documentation: staff photographs the sites before work takes place and after the removal of the individual or population of exotic species. Photo documentation not only confirms completion of the work, but also provides a snapshot of the surrounding environment at the time of the TERPP-related activities. This record helps to create a historical record of the presence of non-native plant species on the sites, which may inform future restoration efforts.

Each TERPP site is tracked via a GIS, a tool that aids planning and monitoring efforts. Since 2006, PVPLC has treated 68 TERPP sites, and the program is ongoing. Every year, tracking, documenting and planning for the following year becomes more complicated as more sites are added. Use of GIS allows staff not only to look at the land within the NCCP boundaries, but to view the Palos Verdes Peninsula at a landscape level. While the most common approach to managing invasions of exotic species may be to target individual species, a more comprehensive approach is to identify major pathways for invasion that will influence more efficient and economic management of the exotic species.

FIELD METHODS

PVPLC staff uses best practice, the most effective and least intrusive, methods at all times when conducting TERPP-related activities. High priority areas may occur near rare or endangered biological populations. Care is taken to minimize soil erosion, fire risk, disturbance to surrounding native vegetation and further dispersal of the exotic species. PVPLC utilizes a combination of methods to conduct exotic species removal, generally limited to the following:

- Mechanical removal - staff may use tools with motorized blades to fell larger species;
- Hand removal - staff conduct most removals by hand pulling and/or with small hand tools for pruning and cutting;
- Chemical control - trained staff applies herbicides at the appropriate phase of vegetative
- Growth and seed maturation, and;

- Disposal - City of Rancho Palos Verdes staff coordinate with waste companies to supply green waste and trash containers.

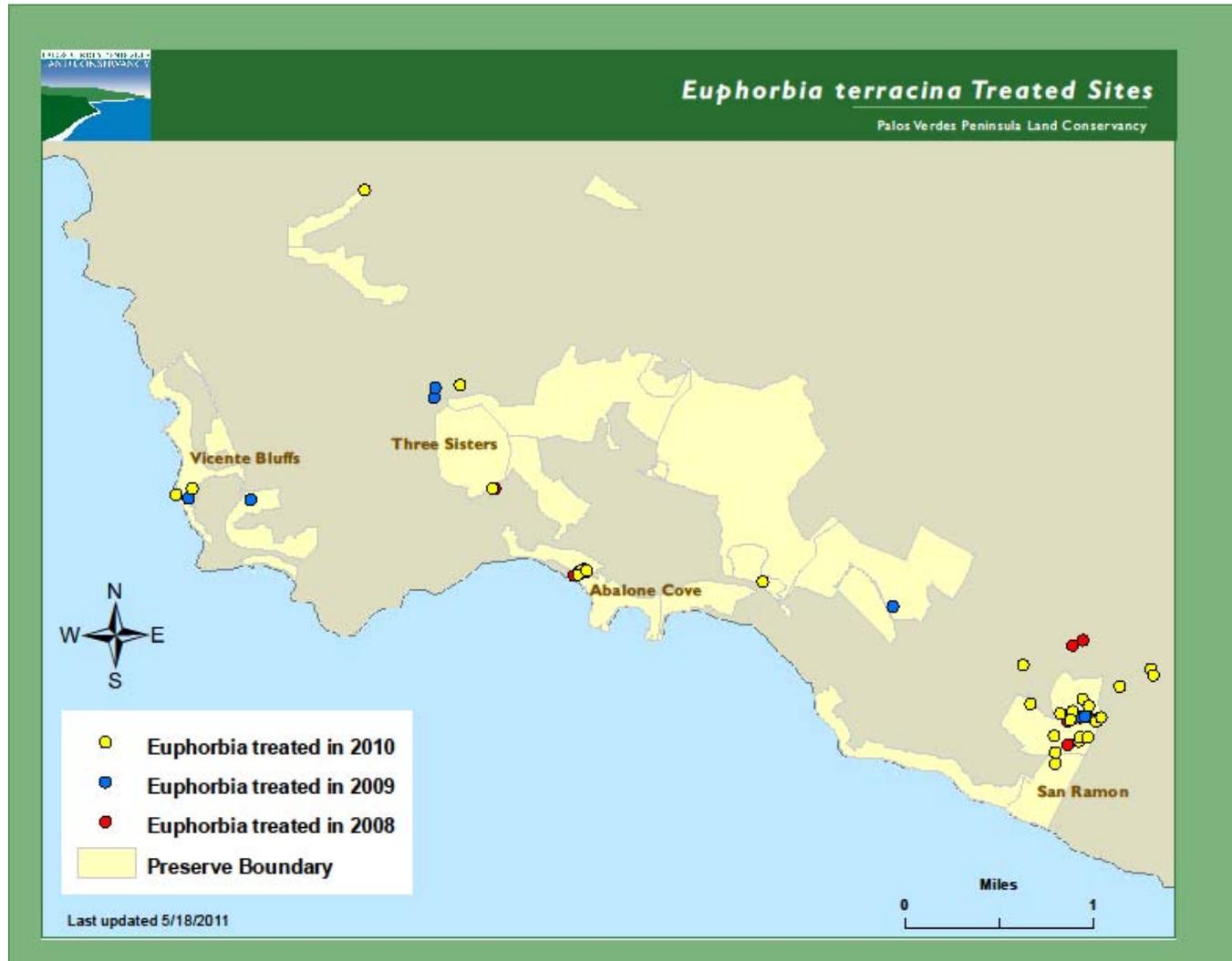
Qualified Licensed Applicator(s) develop all recommendations for chemical pest control and senior staff supervises field staff and contractors in sensitive areas. Additionally, field staff has an integral role in the TERPP and often have crucial, site-specific knowledge related to the sites.

2010 TERPP

In 2010, we treated 7 populations of *Euphorbia terracina* (Geraldton spurge, Euphorbia) in addition to treating the Euphorbia at the 95-acre San Ramon Reserve (Figure 1). Information on each treated site is in Appendix H. Euphorbia grows rapidly in disturbed areas, is a prolific seeder and is rapidly expanding its distribution in southern California. Invaded areas show reduced ecological quality and inferior habitat quality compared to un-invaded areas. Continued spread of this species throughout California seems possible and even likely if action is not taken immediately. Euphorbia shows a broad habitat tolerance in southern California, invading both cool coastal areas and hot, dry, interior areas.

This particular population of Euphorbia was included in the 2008 TERPP Report (PVPLC 2008) and has been part of the twice funded (2008, 2010) Los Angeles County Weed Management Area (WMA) Euphorbia Grant. The project will control populations of Euphorbia occurring throughout the Peninsula, with a combination of herbicide treatment and mechanical removal. Populations will be targeted based on the proximity to open space and sensitive habitat, including areas under the management of the PVPLC as well as private property.

Figure 1: *Euphorbia terracina* treatment sites 2008 to 2010.



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Appendix A: SAMPLE TERPP FORM

Property:

Year selected:

Exotic vegetation type:

Access:

Reason for removal:

Method of removal:

Method of disposal:

Surrounding native vegetation type:

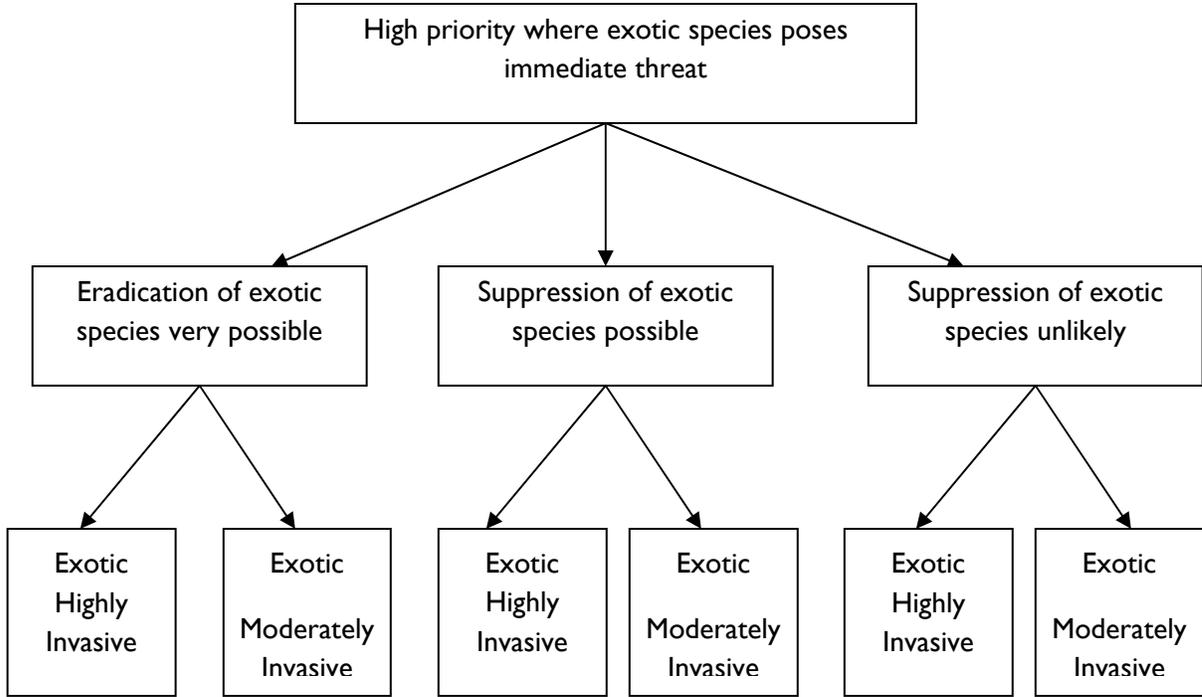
Results:

Before Photo Date:

After Photo Date:



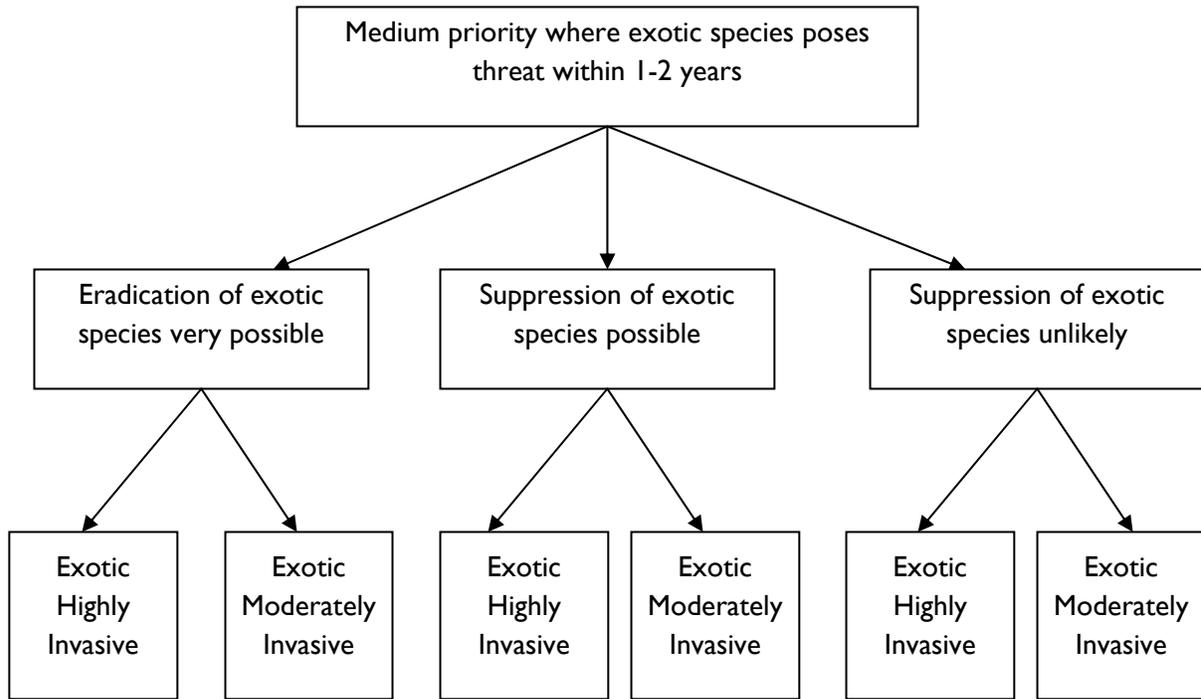
Appendix B: Flowchart for High Priority Threat to Native Vegetation



Priority Ranking For Control of Exotic Species

1-3= Low priority 4-7= Medium priority 8-10= High priority

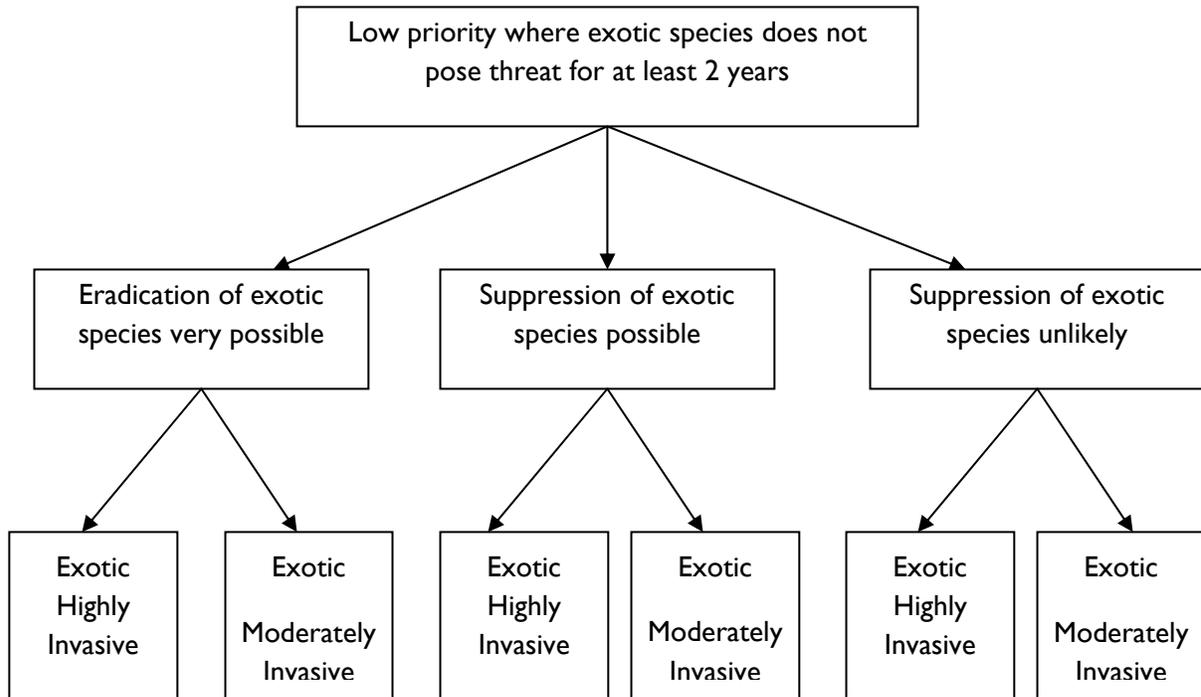
Appendix C: Flowchart for Medium Priority Degree of Threat to Native Vegetation



Priority Ranking For Control of Exotic Species

1-3= Low priority 4-7= Medium priority 8-10= High priority

Appendix D: Flowchart for Low Priority Degree of Threat to Native Vegetation



Priority Ranking For Control of Exotic Species

1-3= Low priority 4-7= Medium priority 8-10= High priority

Appendix E: Highly Invasive Species

<u>Genus species</u>	<u>Common name</u>
<i>Arundo donax</i>	Giant reed
<i>Asparagus asparaagoides</i>	Bridal creeper
<i>Avena barbata</i>	Slender oat
<i>Avena fatua</i>	Wild oat
<i>Brachypodium distachyon</i>	False brome
<i>Brassica nigra</i>	Black mustard
<i>Bromus diandrus</i>	Ripgut grass
<i>Bromus madritensis ssp. rubens</i>	Red brome
<i>Carpobrotus edulis</i>	Hottentot fig
<i>Caesalpinia spinosa</i>	Spiny holdback
<i>Centaurea melitensis</i>	Tocalote
<i>Chrysanthemum coronarium</i>	Garland chrysanthemum
<i>Cortaderia selloana</i>	Pampas grass
<i>Cynodon dactylon</i>	Bermuda grass
<i>Euphorbia terracina</i>	Spurge
<i>Foeniculum vulgare</i>	Fennel
<i>Malva nicaeensis</i>	Bull mallow
<i>Malva parviflora</i>	Cheeseweed
<i>Malva sylvestris</i>	Mallow
<i>Mesembryanthemum crystallinum</i>	Annual iceplant
<i>Nicotiana glauca</i>	Tree tobacco
<i>Pennisetum clandestinum</i>	Kikuyu grass
<i>Pennisetum setaceum</i>	Fountain grass
<i>Picris echioides</i>	Bristly ox-tongue
<i>Pistacia atlantica</i>	Pistachio
<i>Pittosporum undulatum</i>	Pittosporum
<i>Raphanus sativus</i>	Wild radish
<i>Ricinus communis</i>	Castor bean
<i>Salsola tragus</i>	Russian thistle
<i>Silybum marianum</i>	Milk thistle
<i>Sonchus asper</i>	Prickly sow thistle
<i>Sonchus oleraceus</i>	Sow thistle
<i>Spartium junceum</i>	Spanish broom
<i>Tamarix species</i>	Tamarisk
<i>Tropaeolum majus</i>	Garden nasturtium

Appendix F: Moderately Invasive Species

<u>Genus species</u>	<u>Common Name</u>	<u>Genus species</u>	<u>Common Name</u>
<i>Acacia cyclops</i>	Acacia	<i>Lolium perenne</i>	Perennial ryegrass
<i>Acacia species</i>	Acacia	<i>Marrubium vulgare</i>	Horehound
<i>Aegilops cylindrica</i>	Jointed goat grass	<i>Medicago polymorpha</i>	Bur clover
<i>Ageratina adenophorum</i>	Eupatory	<i>Medicago sativa</i>	Alfalfa
<i>Atriplex semibaccata</i>	Australian saltbush	<i>Melilotus albus</i>	White sweet clover
<i>Bassia hyssopifolia</i>	Five-Hook bassia	<i>Melilotus indicus</i>	Yellow sweet clover
<i>Bromus hordeaceus (mollis)</i>	Soft brome	<i>Myoporum laetum</i>	Myoporum
<i>Bromus catharticus</i>	Rescue grass	<i>Olea europea</i>	Olive
<i>Cakiel maritime</i>	Sea rocket	<i>Oxalis pes-caprae</i>	Bermuda buttercup
<i>Carduus pycnocephalus</i>	Italian thistle	<i>Pelargonium zonale</i>	Zonal geranium
<i>Carpobrotus aequilaterus</i>	Sea Fig	<i>Phalaris minor</i>	Phalaris
<i>Carpobrotus chilensis</i>	Fig-Marigold iceplant	<i>Phoenix canariensis</i>	Phoenix palm
<i>Conium maculatum</i>	Poison hemlock	<i>Piptatherum miliacea</i>	Smilo grass
<i>Convolvulus arvensis</i>	Bindweed	<i>Pittosporum undulatum</i>	Pittosporum
<i>Erodium cicutarium</i>	Red stem filaree	<i>Plantago lanceolata</i>	English plantain
<i>Eucalyptus camaldulensis</i>	Red gum tree	<i>Polygonum aviculare</i>	Knotweed
<i>Eucalyptus globulus</i>	Blue gum tree	<i>Polypogon monspessulensis</i>	Rabbitsfoot
<i>Eucalyptus species</i>	Gum tree	<i>Pyracantha sp.</i>	Firethorn
<i>Hirschfeldia incana</i>	Annual mustard	<i>Rumex crispus</i>	Curly dock
<i>Hordeum murinum leporinum</i>	Foxtail barley	<i>Schinus molle</i>	Mexican pepper
<i>Hordeum vulgare</i>	Common barley	<i>Schinus terebinthifolius</i>	Brasilian pepper
<i>Lactuca serriola</i>	Compass plant	<i>Sisymbrium irio</i>	London rocket
<i>Lathyrus tangianus</i>	Tangier pea	<i>Trifolium hirtum</i>	Rose clover
<i>Limonium perezii</i>	Sea lavender	<i>Washington robusta</i>	Mexican fan palm
<i>Limonium sinuatum</i>	Sea lavender	<i>Vicia sativa</i>	Spring vetch
<i>Lobularia maritima</i>	Sweet alyssum	<i>Vulpia myuros varhirsuta</i>	Annual fescue
<i>Lolium multiflorum</i>	Italian rye	<i>Vulpia myuros var myuros</i>	Rattail fescue

Appendix G: Exotic, Non-invasive Species

<u>Scientific Name</u>	<u>Common Name</u>	<u>Genus species</u>	<u>Common Name</u>
<i>Amaranthus albus</i>	Tumbleweed	<i>Geranium carolinianum</i>	Geranium
<i>Anagallis arvensis</i>	Pimpernel	<i>Gnaphalium luteo-album</i>	White cudweed
<i>Apium graveolens</i>	Celery	<i>Koehltreuteria species</i>	Koehltreuteria
<i>Aptenia cordifolia</i>	Baby sun-rose	<i>Lamarckia aurea</i>	Goldentop
<i>Atriplex glauca</i>	Saltbush	<i>Lantana montevidensis</i>	Lantana
<i>Bidnes pilosa</i>	Common beggar-ticks	<i>Lathyrus odoratus</i>	Sweet pea
<i>Capsella bursa-pastoris</i>	Shepherd's purse	<i>Lycium species</i>	Lycium
<i>Centranthus ruber</i>	Red valerian	<i>Lycopersicon esculentum</i>	Garden tomato
<i>Ceratonia siliqua</i>	Locust bean tree	<i>Malephora crocea</i>	Mesemb
<i>Chamaesyce maculata</i>	Spotted spurge	<i>Melaleuca species</i>	Melaleuca
<i>Chenopodium album</i>	Lamb's quarters	<i>Mesembryanthemum nodiflorum</i>	Iceplant
<i>Chenopodium ambrosioides</i>	Mexican tea	<i>Osteoapermu fruticosum</i>	African daisy
<i>Chenopodium murale</i>	Nettleleaf goosefoot	<i>Oxalis corniculata</i>	Woodsorrel
<i>Conyza canariensis</i>	Horseweed	<i>Paspalum dilatatum</i>	Dallis grass
<i>Coronilla valentina</i>	Coronilla	<i>Pinus halepensis</i>	Aleppo pine
<i>Cyperus involucratus</i>	Umbrella plant	<i>Plantago major</i>	Plantain
<i>Digitaria sanguinalis</i>	Hairy crabgrass	<i>Poa annua</i>	Bluegrass
<i>Echium fastuosum</i>	Pride of madeira	<i>Polygonum arenastrum</i>	Knotweed
<i>Erodium botrys</i>	Long-beaked filaree	<i>Senecio vulgaris</i>	Groundsel
<i>Euphorbia lathyris</i>	Gopher plant	<i>Silenle gallica</i>	Common catchfly
<i>Euphorbia peplus</i>	Petty spurge	<i>Triticum aestivum</i>	Cultivated wheat
<i>Filago gallica</i>	Narrow-leaf filago	<i>Urtica urens</i>	Dwarf nettle
<i>Fraxinus uhdei</i>	Shamel ash	<i>Veronica anagallis-aquatica</i>	Water speedwell
<i>Gazania species</i>	Gazania	<i>Yucca species</i>	Spanish bayonet

Appendix H. 2010 TERPP DATA and PHOTOS



Abalone Cove Pre

Abalone Cove Post

Location: Abalone Cove, canyon

Date: 7/6/10

Amount of Plants: 65 Estimated area treated: 500 sq ft

Phenology: flowering

Control method: Sprayed with Roundup Promax 2%



Agua Amarga/Lunada Canyon Pre

Agua Amarga/Lunada Canyon Post

Location: Agua Amarga/Lunada Canyon, near Posey Way

Date: 7/6/10

Amount of Plants: 175 Estimated area treated: 200 sq ft

Phenology: flowering

Control method: Sprayed with Roundup Promax 2%



Portuguese Bend Pre



Portuguese Bend Post

Location: Portuguese Bend, bottom of Klondike Trail

Date: 5/8/10

Amount of Plants: 40 Estimated area treated: 3000 sq ft

Phenology:

Control method: Sprayed with Roundup Promax 2%



San Ramon1 Pre



San Ramon1 Post



San Ramon4 Pre



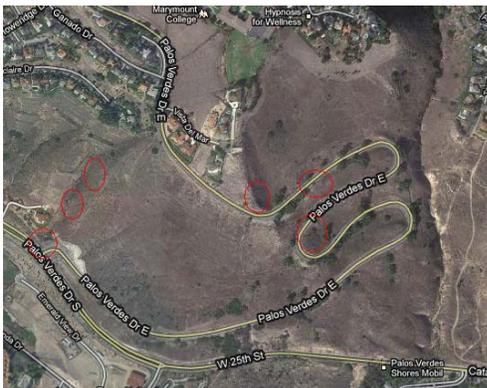
San Ramon4 Post



San Ramon5 Pre



San Ramon5 Post



Treatment areas at San Ramon

Location: San Ramon Reserve

Date: July–October 2010

Amount of Plants: 5000 Estimated area treated: 5 acres

Phenology: flowering

Control method: Sprayed with Roundup Promax 2%



Three Sisters 4a Pre



Three Sisters 4b Post

Location: Three Sisters, at end of Ocean Terrace

Date: 7/6/2010

Amount of Plants: 1000 Estimated area treated: 1.5 acres

Phenology: Flowering

Control method: Sprayed with Roundup Promax 2%



Three Sisters 1a Pre



Three Sisters 1b Post

Location: Three Sisters, Barkentine Trail

Date: 7/6/2010

Amount of Plants: 150 Estimated area treated: 1 acre

Phenology: Flowering

Control method: Sprayed with Roundup Promax 2%



Vicente Bluffs 1aPre



Vicente Bluffs 1bPost

Location: Vicente Bluffs, near drainage outfall at bottom of bluff

Date: 7/6/2010

Amount of Plants: 100 Estimated area treated: 50 sq. ft.

Phenology: Flowering

Control method: Sprayed with Roundup Promax 2%



Vicente Bluffs Pre

Location: Vicente Bluffs near Pacifica del Mar

Date: May 2010 and 7/6/2010

Amount of Plants: 40 Estimated area treated: 1000sq ft

Phenology: flowering/fruitletting

Control method: Pulled by hand in May/Sprayed with Roundup Promax 2%



Vicente Bluffs post

VOLUNTEER PROGRAM ANNUAL REPORT

I INTRODUCTION AND SUMMARY

I.1 Volunteer Programs

This Annual Report describes each of the individual programs included within the larger Volunteer Program as well as plans for the future. Specific activities are detailed for the reporting period January 1, 2010 to December 31, 2010. The PVPLC continues to work to implement grants geared toward improving this program.

Since 1988, volunteers have played an essential role in fulfilling the Palos Verdes Peninsula Land Conservancy's (PVPLC) mission to preserve land and restore habitat for the education and enjoyment of all. PVPLC is a non-profit organization that relies heavily on the support of community involvement to perform many of the tasks necessary to manage the Nature Preserves (Figure 1). Volunteers donate thousands of hours each year to help with office assistance, event planning, community education, habitat restoration, trail maintenance, and much more. This report divides the various volunteer programs into two categories: Community Involvement Volunteers and Stewardship Volunteers.

The first category, Community Involvement Volunteers, supports volunteer activities that focus on friend making, fundraising, and recommendations to staff on a variety of topics. This category is further divided into 3 programs which are detailed within the report:

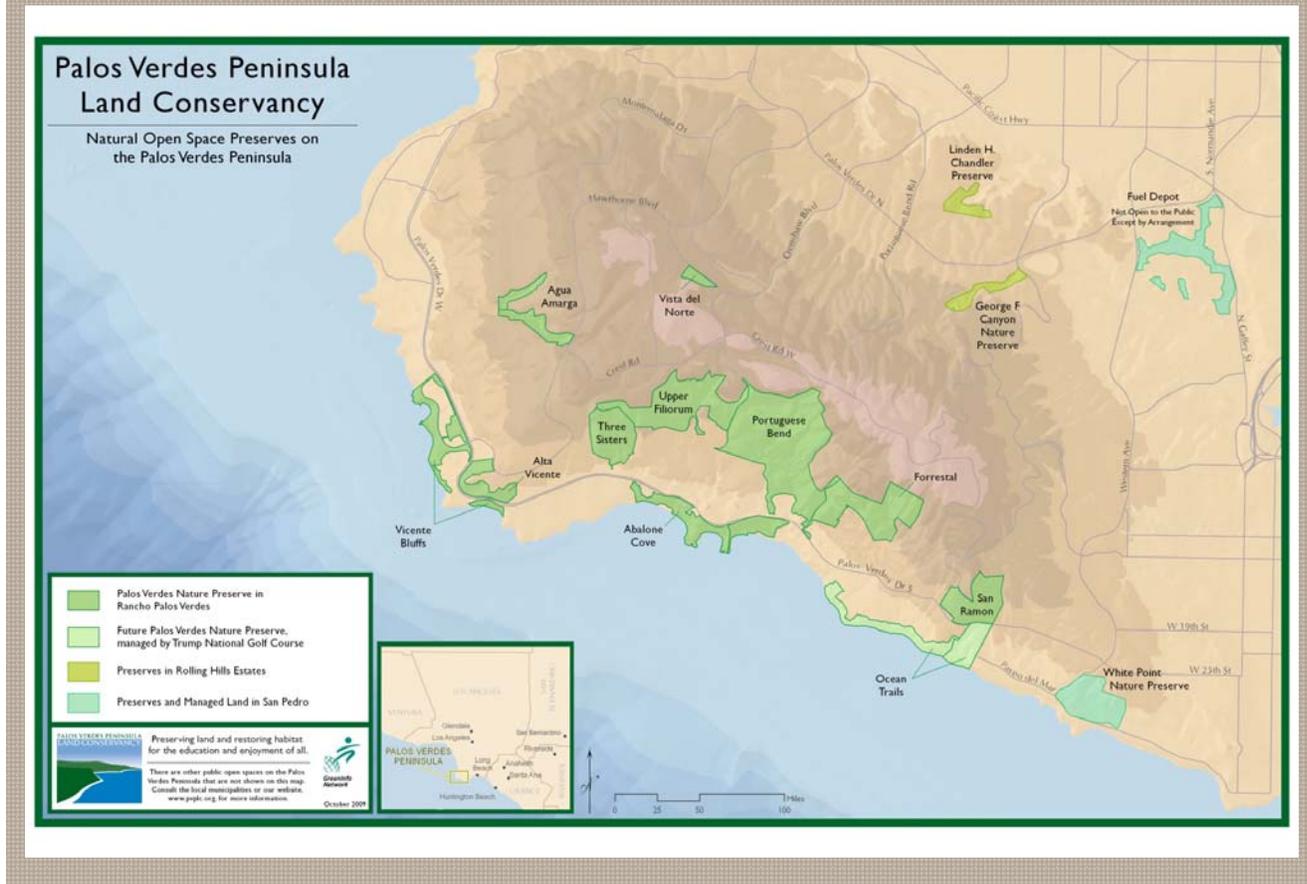
- Special Events and Office Assistance
- Education
- Committees and Advisory Boards

The second category, Stewardship Volunteers, supports activities that are performed on the land to assist with management of the Preserves. In all, there are six programs within this category that are described in more detail in the Stewardship Volunteer section of this report. The backbone of the program is our regularly scheduled Saturday outdoor workdays that are open to participation by all and require no long-term commitment. Periodically, there are also individuals or groups that contact the PVPLC and arrange to complete stewardship projects outside of the normally scheduled outdoor workdays. Boy Scouts and Girls Scouts interested in obtaining their final awards are two such groups. There are also several Stewardship Volunteer opportunities that require long term commitments. The 6 programs are listed below:

- Outdoor Volunteer Workdays
- Team Leaders
- Habitat and Ecological Restoration Organization (HERO) Club
- Scout Awards
- Trail Crew
- Keeping an Extra Eye on the Preserve for Environmental Review and Stewardship (KEEPERS)

In 2010, volunteers provided a grand total of 12,133 hours of service (Table 1). According to the Independent Sector, volunteer time in California is valued at \$23.29 per hour (based on Dollar Value of a Volunteer Hour, by State: 2008, Independent Sector), thus generating a total of \$282,578 of in-kind services. The amount of volunteer hours donated at each Nature Preserve or for a specific volunteer category depends on the size of property or specific projects that transpired during the reporting period.

I. Preserves under PVPLC management open to volunteer programs



2 COMMUNITY INVOLVEMENT

2.1 Special Events and Office Assistance Volunteer Program

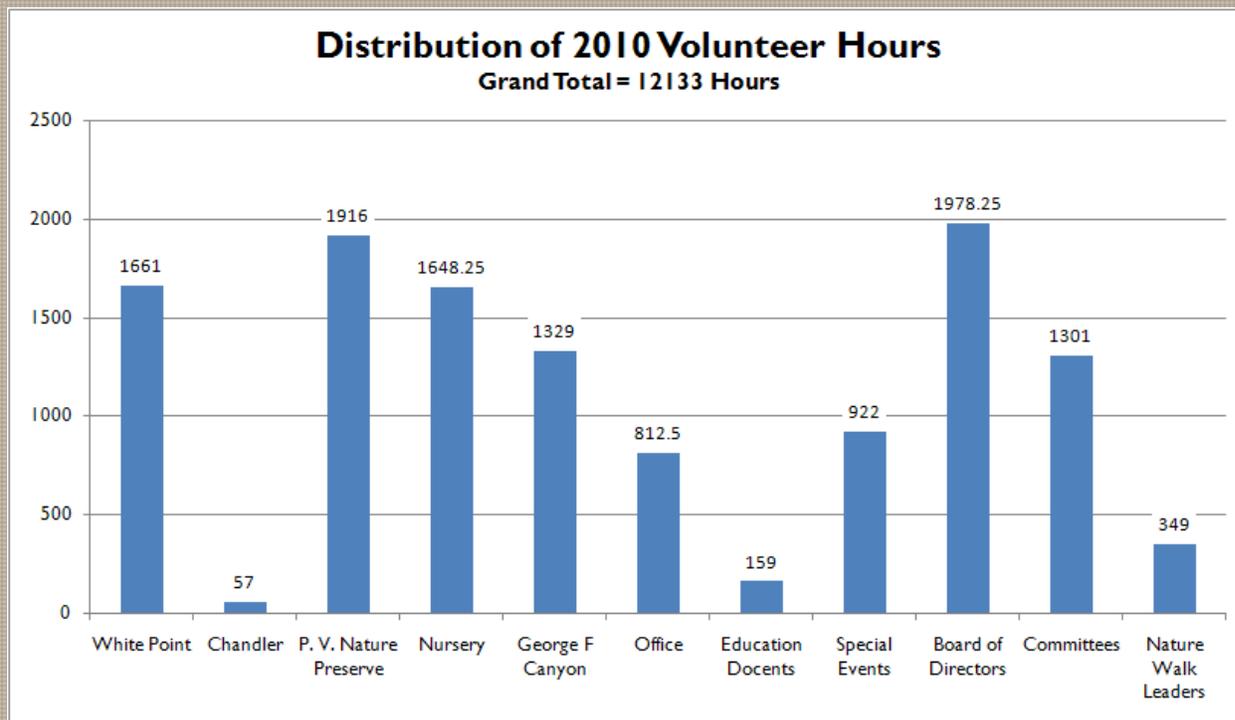
The PVPLC relies on individual volunteers and organized groups, such as the National Charity League (NCL), Los Hermanos, and Assisteens, to assist employees of the PVPLC with all major fundraising and friend-raising events. We have built very strong and fulfilling relationships with these groups and strive to provide an environment that lets volunteers know they are indispensable and an integral part of our organization.

The annual “Spring For White Point” event took place in June, and is organized by members of the White Point Steering Committee and community members. The funds raised make it possible to complete the transformation of the White Point property into a functioning nature preserve. It includes local home tour, an evening reception with great food provided by San Pedro restaurants, live music and silent auction. Volunteer tasks include event planning, soliciting donations for the auctions and food, setup and cleanup, and staffing the event.

In the office, volunteers handle routine tasks such as labeling newsletters, stuffing envelopes, assembling event materials, planning and preparation for special events, and much more. During the 2010 reporting year, office volunteers, many from the Palos Verdes Chapter of NCL, donated 812 hours of assistance.

Table I. Distribution of volunteer hours.

Preserve hours include outdoor volunteers, KEEPERS, and Trail Crew time.



2.2 Educational Programs

Volunteers assist with three education-based programs to inform community members of all ages about natural spaces on the peninsula. Education is provided to the public through Third Grade Docents Program, the George F. Canyon Nature Center and Nature Walks.

2.2.1 Third Grade Docents

Now in the program's fifteenth year, the Third Grade Docents volunteered a total of 159 hours. Since the start of the program, the docents have served over 18,000 students. The docent group is comprised of a diverse group of retired professionals and active volunteers from all over the Peninsula. Their backgrounds range from law and engineering to nursing, chemistry and education. This team of dedicated people is trained by Third Grade Program Manager, John Nieto, who began running the program in 2000. He is directly responsible for the management and coordination of the entire program. While John Nieto and the docents are paid for their time in the classroom, they donate many additional hours to make the program a success.

In addition to learning the academic information required to give lessons in the classroom, docent's also volunteer extra time to developing techniques for the trail by attending various training hikes and observing other docents teaching the program.

Prior to the field trip, each docent visits his or her school's third grade classrooms and conducts four weekly lessons covering such topics as birds, invertebrates, geology, Tongva indigenous culture, reptiles, mammals and plants. Table I shows a list of schools that participated in the program. One of the main goals embedded in this standards-based curriculum is to help students understand the difference between native and non-native

species present in the coastal sage scrub community of the Palos Verdes Peninsula. The docents meet yearly at the end of the semester to discuss accomplishments of the year and possible new activities for the upcoming school year.

2.2.2 George F Canyon Nature Center

The Center is managed by a dedicated staff of two employees and several volunteers. Loretta K. Rose, the Nature Center's Manager and Head Naturalist, and her assistant worked closely with volunteers to provide a number of programs for visitors of all ages at the Center and in the adjacent Nature Preserve. The Center offers three types of hikes, the Canyon Night Hikes, Bird Walks and First Saturday Hikes. Canyon Night Hikes are held on or near full moon evenings and show participants the nocturnal wonders of the canyon. First Saturday Hikes occur in the early afternoon on the first Saturday of every month with a trained guide who will answer questions on the habitat, geology, wildlife, and history of the canyon. There is also a monthly bird walk during the morning of the first Saturday of every month with the Head Naturalist. The Nature Center also arranges private hikes for school groups, scouts, and the public when requested. Birthday Parties have been an integral part of the Nature Center's link to the community. The staff at the Nature Center books Birthday Parties year round which include a craft made by the children, a guided Hike, private use of the Center and goody bags to take home. In addition, the Center's staff and several volunteers are in charge of maintaining and running the small gift shop located inside the Center which provides a unique assortment of nature-themed gifts. Live animals are kept on display with informative signage and the opportunity for a hands-on experience. The animals and their enclosures are maintained by the staff. The Nature Center is open Friday, Saturday, and Sunday to the general public and at other times and dates throughout the year for private groups.

2.2.3 Nature Walks

Nature Walk Leaders donated a total of 349 hours in 2010. PVPLC Board of Directors member Anke Raue coordinates this group of dedicated volunteers and each prospective walk leader must have a high level of knowledge the local ecosystem, particularly the native and non-native plants found on the Peninsula. Leaders must go through extensive training and be willing to research and learn about local history, geology, flora and fauna. Continued research and exploration serves to add to a walk leader's knowledge base, preparing them to give accurate and in-depth presentations to the public.

Walks are held all over the Peninsula, from the edge of the coast to deep within the canyons. Each leader designs his or her presentation to include special attributes and stories particular to a site. Nature walks occur once a month every month throughout the year, featuring a different location every time (Appendix I).

2.3 Committees and Advisory Boards

The PVPLC maintains numerous committees and advisory boards for the following purposes:

- To provide review and recommendations regarding organizational plans and policies
- To provide assistance with the operations of the organization
- To provide community input for PVPLC activities
- To provide a training and evaluation ground for potential members of the Board of Directors

Committees volunteers donated a total of 1301 hours, with many committees meeting on a quarterly basis. Hours for committee-involved board members are compiled with their board volunteer time. The committees that were active during the reporting period are listed below:

- Audit Committee
- Finance Committee
- Forrestal Advisory Board
- Fundraising Committee
- Investment Committee
- Science Advisory Panel
- Personnel/Human Resources Committee
- Special Events Committee(s)

3 STEWARDSHIP VOLUNTEERS

Summary of accomplishments in 2010:

- 6611.22 hours of outdoor stewardship volunteer time
- \$20,000 REI grant to support volunteer programs and trails development
- Facilitated the volunteering effort of several organizations and corporate give-back events
- Continued support from local and regional schools

3.1 Outdoor Volunteer Workdays

The PVPLC holds outdoor volunteer days nearly every Saturday of the year, held from 9am-12pm, excluding holiday weekends and during the month of August. The focus of these events is to restore native habitat, maintain the trail system, and do general clean ups. The intended demographic is focused on individuals of all ages, organized groups such as Boy Scouts and the National Charity League, and employee volunteer days for corporations. All age groups are encouraged to participate. There is a particular focus on getting young people involved as a mechanism to ensure education and stewardship on the Preserves in perpetuity. We work with local schools and colleges to have teachers bring groups of students or give incentives such as extra credit and service-learning hours for students who participate on the Saturday workdays.

A detailed account of workdays found below. Events are listed chronologically by Preserve with the Palos Verdes Nature Preserve (PVNP) further separated by Reserve.

3.1.1 Palos Verdes Nature Preserve (PVNP)

Alta Vicente Reserve

January 30, 2010 – 57 volunteers removed *Brassica* species from the Phase I restoration site.

June 26, 2010 – Nine volunteers installed 27 *Astragalus trichopodus* and removed weeds from the Phase I area.

July 24, 2010 – Three volunteers planted 50 *Astragalus trichopodus* in the Phase I area.

September 25, 2010 – In honor of National Public Lands Day, 167 volunteers removed many invasive plants including iceplant (*Carpobrotus edulis*), mustard (*Brassica* spp.), totalote (*Centaurea melitensis*), *Acacia*, and bristly ox-tounge (*Picris echioides*).

October 23, 2010 – 33 volunteers planted 90 native plants in the Phase I area.

December 4, 2010 – 30 volunteers planted 100 natives and removed weeds around installed plant in the Phase I area.

Forrestal Reserve

September 11, 2010 – Seven volunteers worked to close spur trails and with overgrown vegetation cleared from other trails and collected *Salvia leucophylla* seeds.

Portuguese Bend Reserve

June 5, 2010 – In celebration of National Trails Day, 71 volunteers repaired a .5 mile section of Ishibashi Trail.

October 10, 2010 – 28 volunteers hand-pulled *Acacia* seedlings sprouting near Ishibashi Trail.



Volunteers from the Los Hermanos service group help remove weeds from Three Sisters on June 22, 2010.

Three Sisters Reserve

March 6, 2010 – 22 volunteers removed *Brassica* spp. from the restoration area.

May 8, 2010 – 12 volunteers removed invasive plants from around the installed natives.

June 19, 2010 – Nine volunteers removed weeds from around the installed native plants.

November 13, 2010 – 23 volunteers helped plant 100 natives and removed weeds around the established natives.

December 11, 2010 – 350 native plants were installed with help from volunteers of the HERO Club.

3.1.2 George F Canyon Nature Preserve

February 20, 2010 – 72 volunteers removed *Avena* spp. and *Bromus diandrus* from the demonstration garden and repaired cracks in the decomposed granite trail.

May 15, 2010 – 38 volunteers removed invasive plants from the demonstration garden.

3.1.3 Linden H. Chandler Preserve

January 9, 2010 – Seven volunteers weeded around the restoration site and repaired a wooden stick fence.

November 6, 2010 – Five volunteers planted 15 *Astragalus trichopodus* and 15 *Lotus scoparius* individuals and removed weeds in the area.

3.1.4 White Point Nature Preserve

March 27, 2010 – 67 volunteers removed invasive plant species from the demonstration garden.

April 24, 2010 – In celebration of Earth Day, 52 volunteers removed invasive plants from the demonstration garden.

May 1, 2010 – In celebration of Big Sunday, 26 volunteers removed invasive species from the demonstration garden and surrounding grassland habitat.

July 17, 2010 – With the help of LACC and Toyota, 230 volunteers removed invasive *Carpobrotus edulis*, *Malva parviflora*, and *Brassica* spp., fixed cracks in the demonstration garden's DG trail, and removed milk snails from the garden plants.

October 16, 2010 – Aloca's Month of Service brought out 95 volunteers to plant 200 natives in the demonstration garden, remove bristly ox-tounge (*Picris echioides*), rake mowed thatch in the grasslands, cleaned trail signage, collected milk snails, and enjoyed a bird walk and the nature center kid's activities.

3.1.5 Native Plant Nursery

January 23, 2010 – 37 volunteers (many of them Girl Scouts) transplanted 1,675 *Artemesia californica* seedlings.

February 6, 2010 – 55 volunteers transplanted 700 *Rhus integrifolia* and 700 *Eriogonum parvifolium* seedlings, salvaged soil from plant containers and removed invasive plants from the PV blue butterfly habitat.

May 22, 2010 – 19 volunteers transplanted *Eriogonum fasciculatum* and removed weeds from other plant containers.

July 31, 2010 – 40 volunteers with of the Japanese Business Association helped transplant *Artemesia californica* seedlings, remove weeds from plant containers, and installed 30 *Lotus scoparius* in the PV blue butterfly garden.

September 18, 2010 – Nine volunteers transplanted 500 *Astragalus trichopodus* seedlings and removed weeds from other plant containers.

October 30, 2010 – 12 volunteers transplanted 79 *Encelia californica* and 375 *Artemesia californica* seedlings as well as removed weeds from other plant containers.

December 7, 2010 – 27 volunteers from Luxury Link helped hang new shade cloth and apply weed barrier to the north side of the shade structure, transplanted 500 *Artemesia californica* seedlings, removed weeds from the plant containers and processed *Astragalus trichopodus* seeds.

Volunteer effort is essential in effectively transplanting large amounts of native seedlings.



Luxury Link employees helping at the nursery on December 7, 2010.

3.2 Team Leader Program

The Team Leader program was started in 2007 in response to the growing number of volunteers that were attending the outdoor workdays (see Outdoor Volunteer Workdays). Team Leaders are volunteers, sixteen years or older, who assist in supervising the Saturday outdoor volunteer activities. They ensure that volunteers have adequate instruction and the tools necessary to complete the task. They also assist in educating the public about the PVPLC.

Team Leader workshops

Date	Number of new Team Leaders	Number of Youths (Under the age of 18)
March 13, 2010	7	7
October 2, 2010	12	9

Date and participation of Team Leader workshops.

The program requires that interested volunteers go through an application and interview process. Candidates then attend a one day weekend workshop where they learn the skills necessary to perform the job. Training involves both class room time and field work. Team Leaders commit to working at least four volunteer days within one year. The goal of the PVPLC is to hold two Team Leader workshops each year during the spring and train a minimum of six new Team Leaders at each one.

The Team Leader Program has helped develop leadership skills in participants and has greatly contributed to the success of our Outdoor Volunteer Workdays. The quality of work from regular volunteers has increased with the guidance of Team Leaders. In addition to local adult participants, many of the Team Leaders attend local high schools and universities. During the reporting period, the program has allowed these students to build leadership skills that they will find useful in their future.

Two Team Leader workshops were held during this reporting year – March 13th and October 2nd. Roughly 5 hours of combined classroom and outdoor time took place at the Native Plant Nursery in the Defense Fuel Supply Depot during each workshop.

3.3 Habitat and Ecological Restoration Organization (HERO) Club

The HERO Club has increased their participation from 4 events to 8 events a year since the last reporting period, striving to host an event every month during the year. The HERO Club coordinators also participate in the Team Leader program in an effort to learn more about habitat restoration and leadership to help facilitate the Outdoor Volunteer Days.

The HERO Club started at two local high schools – Peninsula High School and the Palos Verdes High School – in September 2007 when a group of students partnered with the PVPLC to help the environment through volunteering and help the PVPLC in their mission to preserve land and restore habitat. The club coordinates with PVPLC and their Outdoor Volunteer Workday schedule to recruit student volunteers during several Saturday HERO Club workday events a year. Their efforts have received much community support and praise.

3.4 Scout Projects

The PVPLC encourages Boy Scouts and Girl Scouts who are looking for projects to complete their final awards, Eagle Awards for Boy Scouts and Gold Awards for Girl Scouts, by providing them with opportunities to complete their projects on preserves the PVPLC manages. This collaboration is beneficial to the scout groups, the PVPLC, and the public that uses the preserves. Scouts work under the mentorship of one of the PVPLC staff to complete their projects and are steered toward objectives that meet the PVPLC stewardship goals. A brief description of each project completed during the reporting period is listed below.

Alan Williams

On November 27th, 2010, Alan installed post and rope fencing along the pathway through the garden from the parking lot to the White Point Nature Preserve kiosk. He and fellow scouts also installed native plants and repositioned irrigation along the path to further discourage off-trail hiking.

Bree Swenson

Bree developed explorer backpacks to be utilized by children and families on self-guided hikes at the White Point Nature Center. She designed three educational hikes – Pirate Hike, Young Explorer Hike, and Critter Hike – and led tours utilizing these tools in June 2010 in fulfillment of her Gold Award requirements.

Jonathan Kim

Jonathan organized an effort to install post and rope fence at the southern end of Three Sisters Reserve on July 24, 2010. They also worked to improve the trail by removing overgrown vegetation and large rocks.

Ryland Miller

On May 22 and 23, 2010, Ryland worked with his fellow scouts to install a footbridge over a stream at Abalone Cove as well as reconstruct and stabilize a rock wall that leads the trail down to the bottom of the canyon.

3.5 Trail Crew Volunteer Program

This year, the volunteer Trail Crew donated a contributed a total of 245 hours to maintaining the Preserve's trail system. The Volunteer Trail Crew class offered is based on the Basic Trail Maintenance class developed by Frank Padilla, Jr. (retired California State Parks Supervisor), and Kurt Loheit. Originally started in 1992, the class focused on both volunteer and agency skill building. Adopted by the Angeles District of California State Parks and later the Southern California Trails Coalition, it became the first step in advanced classes for crew leader training and design and construction classes, allowing a structured path for participants to build skills associated with trails from basic maintenance to highly advanced techniques. The class is a combination of classroom and hands-on training to familiarize the participants in all aspects of trail maintenance. The course emphasizes safety, assessments, basic maintenance skills, water control, erosion sources, terminology, proper tool use, basic survey skills, resource considerations, and user experience and maintenance value. Volunteers who demonstrate proficiency in each learned skill and fulfill a yearly indoctrination will maintain status as a qualified Trail Crew member. The Trail Crew assists PVPLC in maintaining trails in all of our Preserves.

The Trail Crew Program has helped improve the state of preserve trails and maintains accessibility for the public to enjoy these open spaces.



Successful Trail Crew event on the Dauntless Trail in Forrestal Reserve.

Participants must be at least 18 years old and must first take the introductory course. The 50-hour course can be taken at the participant's own pace and it is estimated to take about a year to complete. There are scheduled Trail Crew Skills Classes that coordinate with the trail instructor's availability and the PVPLC Outdoor Volunteer Workday schedule.

On December 4th, 2010, three participants completed at least 50 hours of training and passed their yearly

Trail Crew training classes

Date	# Volunteer Hours	Location	Project/Skill Learned
January 2010	49	Forrestal	Erosion control and trail repairs
February 2010	24.5	Portuguese Bend	Erosion control and trail repairs
August 2010	48	White Point	Introductory class
September 2010	26	Forrestal	Trail survey
October 2010	40	Portuguese Bend	Trail alignment
November 2010	33	Forrestal	Tread skills
December 2010	24	Abalone Cove	Rock retaining wall

Participation, location and skills learned at each Trail Skills class.

indoctrination. This is the second round of participants to obtain their official Trail Crew member status. To date, six volunteers have completed the training program and up to eleven other participants are close to completing their 50 hours of required training and could be expected to take the yearly indoctrination in 2011.

3.6 Keeping an Extra Eye on the Preserves Stewardship (KEEPERS) Program

The KEEPERS program was developed in April of 2007 to help staff monitor the nearly 1600 acres of land that is managed by the PVPLC. Keepers are volunteers who monitor an area within a preserve and fill out monthly property review forms. These forms are reviewed by staff and consolidated into a monthly report that is sent to all of the current Keepers.

The property review form is a one page form that requires some knowledge of basic trail maintenance and plant identification. The skills needed to fill out these forms are provided in a training session with a PVPLC staff person and are continually developed with an ongoing relationship between the volunteer, the PVPLC staff, and regular visits to the preserve being monitored. This volunteer opportunity is a one year commitment (a total of 12 visits) to the chosen preserve area. The person or group that accepts this responsibility also helps, if necessary, to train the following year's replacement volunteer Keeper. Currently, there is no term limit.

Some of the properties managed by the PVPLC are large enough to require more than one Keeper to monitor them. We will be looking for two to four Keepers to monitor the newly-acquired Upper Filiorum Reserve beginning in spring or fall of 2011.

KEEPERS for each Reserve

Reserve	# of Keepers
Abalone Cove Reserve	4
Agua Amarga Reserve	4
Alta Vicente Reserve	1
Linden H. Chandler	1
Forrestal Reserve	2
Portuguese Bend Reserve	4
Three Sisters Reserve	1
White Point Nature Preserve	2
Vicente Bluffs Reserve	1

Number of Keepers assigned to each property for monthly monitoring.

4 GRANTS

In August 2010, REI awarded the PVPLC with a \$20,000 grant to support the Trail Crew and Outdoor Volunteer Day programming. ALOCA continued their support of our outdoor volunteer program through a \$3000 work grant in conjunction with their employee give-back event.

5 FUTURE PLANS

The past year has focused on improving the existing volunteer programs so they operate smoothly and sustainably. Further improvements can be made in retaining, focusing and motivating Team Leaders of all ages and so future recruitment may be focused toward environmentally-minded college students and active community residents. Additionally, the same goals can be applied towards the Trail Crew program's capacity to recruit new members and motivate graduated volunteers to develop and execute trail projects independently. We will continue to pursue grant opportunities to help develop and sustain all volunteer programs.

We intend to launch a stewardship program at White Point aimed at engaging community members to help maintain the demonstration garden, signage and nature center.

6 APPENDIX, FIGURES AND TABLES

PALOS VERDES PENINSULA LAND CONSERVANCY

2010 Nature Walks

JAN. 9
9 - 11 AM

EAGLE'S NEST

Walk down Burma Rd., to view interesting geology and a variety of plants, all-the-while enjoying the spectacular views. Moderate. RPV.

FEB. 13
9 - 11 AM

MCBRIDETRAIL

Join us for a dedication ceremony to celebrate the December 2009 acquisition of the 191-acre Upper Filiorum property which now connects existing reserves to form the contiguous 950 acre Palos Verdes Nature Preserve. This will be followed by a special walk along the same rim trail that was the site of the Conservancy's very first nature walk 19 years ago and features panoramic views over the newly preserved land out to Catalina and beyond. Easy. RPV.

MAR. 13
9 - 11 AM

PORTUGUESE BEND RESERVE

Follow the Ishibashi Trail after the rainy season to witness the changes in habitat following the August fire with a chance to view rare wildflowers, many not seen in decades. Moderate. RPV.

APR. 10
9 - 11 AM

FORRESTAL RESERVE

Encounter some of the best remaining coastal sage scrub on the Peninsula. Enjoy local wildflowers such as the scarlet paintbrush and mariposa lily and see extraordinary geology in the dramatic cliffs where crystal and fossils are visible. Moderate. RPV.

MAY 8
9 - 11 AM

LINDEN H. CHANDLER PRESERVE

Experience three distinct habitat types - restored riparian vegetation, slopes with coastal sage scrub and grasslands. View the successful habitat restoration by the Conservancy to help reintroduce the endangered PV blue butterfly. Moderate. RHE.

JUN. 12
9 - 11 AM

WHITE POINT NATURE PRESERVE

Admire ocean views, grasslands, and impressive coastal sage scrub. The Conservancy planted over 80,000 native plants on this former military missile site, now the location of a new Nature Education Center and demonstration gardens. Moderate. LA.

JUL. 10
9 - 11 AM

KEN MALLOY REGIONAL PARK

Visit one of LA's largest remaining natural freshwater lakes containing tule marsh and willow riparian forest and boasting over 350 species of migrating birds. Easy. LA.

AUG. 14
4 - 6 PM

OCEAN TRAILS RESERVE

Traverse the bluffs east of the Trump National Golf Course which have mature coastal sage scrub and cactus, prime habitat of the rare songbird, the California gnatcatcher. Discover local history as you pass WWII military bunkers before descending the coastal switchbacks to the beach below. Moderate to strenuous. RPV.

SEP. 11
9 - 11 AM

GEORGE F CANYON PRESERVE

Journey along a willow-filled canyon with excellent restored riparian and coastal sage scrub habitat. Look down on the Peninsula's rare Catalina Schist from one of the few places on the mainland where you can see the exposed rock. Easy to Moderate. RHE.

OCT. 9
3 - 5 PM

ROYAL PALMS STATE BEACH

See unusual geological formations on the coastal bluffs. The area is rich in history dating from the Abalone fishing industry of the late 1800s followed by a resort with pools fed by natural hot springs. Moderate. LA.

NOV. 13
9 - 11 AM

UPPER MALAGA COVE

Walk along a secluded fire road above Malaga Cove Plaza enjoying mature toyon bushes full of brilliant red berries and savor the unobstructed view of the beach cities coastline. Easy. PVE.

DEC. 11
9 - 11 AM

BUTCHER HILL NEW!

Follow the trail to the top of this prominent hill marking the entrance to the Peninsula while taking in breathtaking views of the LA Basin. Return through the majestic Valmonte Canyon Trail. Moderate. RHE.

JAN. 8, 2011
9 - 11 AM
MALAGA COVE NEW!

Take a trail from the bluff below Malaga Cove leading to the wide, sandy beach (Right After Torrance), viewing the spectacular landscape along the way. Moderate. PVE.

Where indicated, walks are co-sponsored by the Cities of Los Angeles (LA), Palos Verdes Estates (PVE), Rancho Palos Verdes (RPV), Rolling Hills Estates and (RHE).

The Land Conservancy is a nonprofit 501(c)3 organization dedicated to open space preservation and habitat restoration throughout the Peninsula.



JOIN US FOR PVPLC OUTDOOR VOLUNTEER DAYS

Reservations appreciated but required for Nursery days.
Call Jill Wittman (310) 541-7613 x201.

Winter '10

**Would you like to help lead activities on volunteer days?
Become a Volunteer Team Leader!**

For more information, email Leslie Buena at Lbuena@pvplc.org.



All events are from 9am-12pm unless otherwise specified. Workdays cancelled in event of rain.

Closed toes shoes are required. Long pants are also required for trail work events.

Bottled water is provided but in an effort to reduce plastic waste, we encourage you to bring your own water.

January

- January 9th - Restore PV Blue Butterfly habitat at the Chandler Preserve
- January 18th - (Monday) Celebrate Martin Luther King, Jr. Day of Service with us at White Point!
- January 23rd - Transplant native seedlings at our Nursery
- January 30th - Help with habitat restoration and weeding at the Alta Vicente Reserve

February

- February 6th - Transplant native seedlings at our Nursery
- February 20th - Help with weeding the George F Canyon demonstration garden
- February 27th - Team Leader Training Workshop (9am-3pm)

March

- March 6th - Help with habitat restoration by weeding and planting at the Three Sisters Reserve
- March 13th - Team Leader Training Workshop (9am-3pm)
- March 20th - Transplant native seedlings at our Nursery
- March 27th - Help with weeding and planting the White Point demonstration garden

Schedule is subject to change. Please visit our website at www.pvplc.org for updates.

Thank you to REI for your support with our Stewardship Volunteer Programs



Last updated 01/06/2010

Spring 2010



OUTDOOR VOLUNTEER DAYS

Reservations appreciated but required for Nursery days.
Call Jill Wittman (310) 541-7613 x201

Are you interested in other volunteer opportunities?
Visit our website at www.pvplc.org for more information.



All events are from 9am-12pm unless otherwise specified. Workdays cancelled in event of rain.

Closed toes shoes are required. Long pants are also required for trail work events.

Bottled water is provided but in an effort to reduce plastic waste, we encourage you to bring your own water.

March

- March 6th - Help with habitat restoration by weeding and planting at the Three Sisters Reserve
- March 13th - Team Leader Training Workshop (9am-3pm)
- March 20th - Transplant native seedlings at our Nursery
- March 27th - Help with weeding and planting the White Point demonstration garden

April

- April 3rd - Help with weeding in the George F Canyon demonstration garden
- April 10th - Transplant native seedlings at our Nursery
- April 24th - Celebrate Earth Day with weeding and habitat restoration at White Point

May

- May 1st - Celebrate Big Sunday (on a Saturday) by being a weed warrior at White Point
 - May 8th - Help with weeding and trail maintenance at the Three Sisters Reserve
 - May 15th - Help with weeding in the George F Canyon demonstration garden
 - May 22nd - Transplant native seedlings and help with restoration at our Nursery
-

Schedule subject to change. Please visit our website at www.pvplc.org for updates.

Thank you to REI for your support with our Stewardship Volunteer Programs



Last updated 04/06/2010

Summer 2010



OUTDOOR VOLUNTEER DAYS

Reservations appreciated but required for Nursery days.
Call Jill Wittman (310) 541-7613 x201 to RSVP

An opportunity to earn service-learning hours

Are you interested in other volunteer opportunities?

Visit our website at www.pvplc.org for more information.



All events are from 9am-12pm unless otherwise specified. Workdays cancelled in event of rain.

Closed toes shoes are required. Long pants are also required for trail work events.

Bottled water is provided but in an effort to reduce plastic waste, we encourage you to bring your own water.

June

- June 5th - Celebrate National Trails Day with REI and PVPLC at Portuguese Bend Reserve
- June 19th - Help with habitat restoration by weeding the Three Sisters Reserve
- June 26th - Help with weeding at Alta Vicente Reserve

July

- July 3rd - HOLIDAY WEEKEND (no scheduled event)
- July 10th - Be a weed warrior at the Three Sisters Reserve
- July 17th - Help with weeding at the White Point demonstration garden
- July 24th - The weeds are everywhere! Let's go after them at Alta Vicente Reserve
- July 31st - Transplant native seedlings at our Nursery

August

Due to heat concerns, we are not offering outdoor workdays this month.
Outdoor Volunteer Workdays will resume in September.

Schedule subject to change. Please visit our website at www.pvplc.org for updates.

Thank you to REI for your support with our Stewardship Volunteer Programs



Last updated 05/06/2010

Fall 2010



OUTDOOR VOLUNTEER DAYS

Are you interested in other volunteer opportunities?

Visit our website at www.pvplc.org for more information.



Reservations appreciated but required for Nursery days.

Call Jill Wittman (310) 541-7613 x201

All events are from 9am-12pm unless otherwise specified. Workdays cancelled in event of rain.

Closed toes shoes are required. Long pants are also required for trail work events.

Bottled water is provided but in an effort to reduce plastic waste, we encourage you to bring your own water.

September 4 th	- <i>Holiday Weekend</i>
September 11 th	- Trail work and weeding at Forrestal Reserve
September 18 th	- Transplant seedlings in the Native Plant Nursery.
September 25 th	- Celebrate National Public Lands Day with REI by planting at Alta Vicente

October 2 nd	- <i>Team Leader Training Workshop (9am-3pm at the Nursery – see website to get involved)</i>
October 9 th	- Help improve trails at Portuguese Bend Preserve
October 16 th	- Plant the demonstration garden at White Point
October 23 rd	- Weeding and planting at the Alta Vicente restoration site
October 30 th	- Transplant seedlings and revegetate the Native Plant Nursery

November 6 th	- Install native plants for PV blue butterfly habitat at Linden H. Chandler Preserve
November 13 th	- Help revegetate Three Sisters by planting natives.
November 20 th	- Contribute to habitat restoration by planting at Portuguese Bend
November 27 th	- <i>Thanksgiving weekend</i>

December 4 th	- Planting at the Alta Vicente restoration site
December 11 th	- Help continue restoring Three Sisters by planting natives
December 18 th	- Improve blue butterfly habitat by planting at Linden H. Chandler

Schedule subject to change. Please visit our website at www.pvplc.org for updates.

Thank you to REI for your support with our Stewardship Volunteer Programs



Last updated 07/15/2010

TEAM LEADER

Volunteer Program

TRAINING WORKSHOP on October 2nd from 9am-3pm

Help the Palos Verdes Peninsula Land Conservancy lead groups of volunteers on outdoor workdays.



Learn skills associated with habitat restoration, native plant propagation, and trail maintenance.

- No experience necessary
- You must be at least 16 years old to participate
- You must be committed to help at 4 volunteer days during the year ahead
- Opportunity to earn service-learning hours
- Lunch and tee-shirts will be provided during the workshop

For more information or to register for our Team Leader Training Workshop, contact Adrienne Bosler at abosler@pvplc.org or (310) 541-7613 x213. Directions and other event details will be provided to those who RSVP.

Thank you to REI for your support with our Stewardship Volunteer Program.



Volunteer Trail Crew

Train to become a volunteer Trail Crew member and help the Palos Verdes Peninsula Land Conservancy maintain trails on the Nature Preserves.



Learn skills associated with trail maintenance and design during a 50-hour course taught by a nationally recognized trail expert.

**NEXT INTRODUCTORY COURSE – August 14, 2010
1-5:00 pm at the White Point Education Center**

To RSVP and receive more information contact
Adrienne Bosler at abosler@pvplc.org or (310) 541-7613 x213.



THANK YOU REI FOR YOUR SUPPORT!

ANNUAL REPORT 2010

SECTION: Research and Education Program

NAME: Ann Dalkey

I INTRODUCTION

The Research and Education Program at the Palos Verdes Peninsula Land Conservancy (PVPLC) began in 2006 with a generous grant from Alcoa Foundation and Alcoa Fastening Systems. The grant funded the Research, Education, and Community Involvement Program for the Environment (RECIPE), which was renewed for two years in 2008 and concluded in May 2010. Alcoa's support enabled PVPLC to develop a robust research program centered on improving our conservation efforts while extending learning opportunities within our community.

Research is designed to engage students from elementary through university level to foster sound scientific education for youth, as well as provide research opportunities for academia (Box 1). A tiered approach, accommodating various skill levels, provides the framework for the research program, and includes middle and high school students, university undergraduate students, graduate students, and professors, PVPLC staff, and community volunteers. University professors are crucial to the success of research, because they provide expertise and technical guidance, including managing several research projects. Conservancy staff provides access to the preserves as well as technical support to participants. Over 30 scientists participate in PVPLC's Science Advisory Panel which supports the research by providing their expertise as needed for research projects on the preserves.

With the conclusion of the Alcoa Grant, PVPLC's goal for 2010 was to insure continuity of the program following the grant's conclusion. Identified needs included strengthening collaborative relationships with universities and organizations, and seeking new funding sources. It was equally important to continue integrating young students and researchers to maintain the spirit of RECIPE. As a result, two grants were obtained in 2010, one from the Long Family Foundation for the research program 2010 and one from the State of California's Department of Food and Agriculture that will be funded in 2011.

This report covers the Research and Education Program's activities via the major categories:

- Research on the Preserves
- Research Education
- Community Researchers, and
- Applied Research.

I. University student research



Students from California State University, Dominguez Hills, in a classroom research project to investigate the age of the burned lemonade berry stand following the August 2009 wildfire.

2. List of research projects currently ongoing in the preserves.

Research Managed by PVPLC

- Three Sisters Bird Survey – A bi-monthly survey to study the bird community’s response to a 21-acre restoration effort within the Palos Verdes Nature Preserve.
- Microclimate on the Preserves – High school students participate in monitoring habitat temperature and humidity trends for different plant species.
- Wild Animal Surveys – High school and college students track coyote and fox use of the preserves and their diets.

Managed by University Researchers

- Archeology at Abalone Cove – CSU Fullerton students, under their professor’s guidance, conduct a professional dig at the preserve for Native American artifacts.
- Biomass of the buckwheats *Eriogonum cinereum* and *E. fasciculatum* – The second year for a project to develop a measure of plant material (biomass) contained within an acre of coastal sage scrub utilizing high school and university students.
- Cursorial arthropods at Alta Vicente – A collaborative project with a CSU Long Beach undergraduate, graduate, and high school students to assess response of cursorial arthropods to restoration at the Alta Vicente Reserve.
- Geosciences Diversity Enhancement Program (GDEP) – Led by CSU Long Beach geography and geology professors, this project seeks to increase the diversity of students in the disciplines of geography, anthropology, geology, and biology.
- Study on the effects of the addition of AM fungi (mycorrhizae) on native and non-native species germination in CSS-- UCLA Environmental Science Senior Practicum.
- Grassland and coastal sage scrub soil and seeding – University of Riverside (UCR) doctoral student’s dissertation project, completed and PhD conferred in November 2010.
- Multi-Agency Rocky Intertidal Network (MARINE) – A new long-term monitoring site was added to the nationally-run MARINE program, managed by a CSU Long Beach marine biology professor and his students.

2 RESEARCH ON THE PRESERVES

Most research projects are multi-year endeavors, managed by either PVPLC or university researchers (Box 2). By engaging in longer projects, year-to-year variability in the environmental conditions at the research site can be captured. The longer timeframe allows high school students to work on projects over successive years or a succession of high school students can work on the projects.

3 RESEARCH EDUCATION

The RECIPE program fosters scientific curiosity in young students through programs designed for elementary students. When experiencing natural surroundings supplemented with a scientific foundation, PVPLC aims to engage students in understanding nature. Through these experiences, student appreciation of nature grows while expanding their awareness of outdoor recreational opportunities.

After four years of RECIPE research, tangible benefits students gained from the research are apparent. Students learn about science research while working hard and gaining an appreciation for natural sciences, often winning top honors in science fairs (Box 3). They leverage their experience to gain entrance to top universities, satisfy course credits, or obtain internships.

Also, the Alcoa Grant has enabled PVPLC to develop a program for middle school students. By leveraging the Alcoa Grant, PVPLC received another grant to develop a weather station array. A total of 9 weather stations have been distributed to 6 schools, 2 preserves, and 2 community volunteer locations. The website has been designed and allows students and their teachers to view their data along with other sites. While teachers incorporate the real-time display of weather into California State Content Standards for sixth-graders, students are more engaged in the lessons

4 COMMUNITY RESEARCHERS

Volunteers are an important for PVPLC, not only helping with growing plants, habitat restoration, guiding walks, and special events, but also with science research and education. Our volunteers are terrific and travel from throughout the Peninsula and surrounding areas to help out.

4. List of volunteer research projects currently ongoing in the preserves.

Volunteer Research Projects

- Peninsula Wildflower Book – Community Volunteer
- Small Mammal Survey – Community Volunteer
- Three Sisters Bird Survey – PV/SB Audubon Chapter – 26 volunteers
- White Point Nature Preserve Bird Survey – Alcoa Volunteer Day

5 APPLIED RESEARCH

In addition to research, educational, and volunteerism in our scientific research, PVPLC includes applied research in its program. Activities conducted under the applied research umbrella support our on-going efforts to grow native plants, conduct habitat restoration, and stay on the forefront of restoration science.

3. High school research



High school researcher Nicole Lim: "After hours of hiking, researching, and working with you, I've learned so much about not only wildlife but also about teamwork, improvisation, and optimism. Whenever I continue my research in college, I'll always remember that it all started with you."

Volunteer-based science research surged during the year, ranging from high school students to retirees (Box 4). The types of projects varied and were highlighted by reaching the mid-point of a 5-year bird survey at the Three Sisters Reserve

College students actively participate in PVPLC's applied research through internships. In addition to providing us support while gaining hands-on experience, PVPLC aims to provide opportunities for satisfying college credit. Students are able to embark on projects to meet classroom field requirements or obtain course credit for specific projects.

Work was completed on PVPLC's vegetation mapping project that was initiated in early 2009. With the help of staff and college interns, all mapped data were digitized and summarized in a report. This report provides detailed baseline data of habitat within the Palos Verdes Nature Preserve. Upon the completion of the report, PVPLC staff presented the results to the local California Native Plant Society, California Society for Ecological Restoration (SERCAL), and Southern California Academy of Sciences (SCAS).

5. List of monitoring programs in 2010.

Vegetation Surveys

- Alta Vicente Reserve – Initial surveys on the first 10 acres of a 15-acre habitat restoration
- Defense Fuel Supply Point – Surveying habitat for the Palos Verdes blue butterfly
- Linden H. Chandler Preserve – Vegetation survey in habitat restored for the Palos Verdes blue butterfly
- Palos Verdes Nature Preserve – Monitoring for special status plant species
- Three Sisters Reserve – Surveys on a 21-acre habitat restoration

Endangered Butterfly Surveys

- Linden H. Chandler Preserve – Surveys were conducted for the Palos Verdes blue butterfly where progeny from the 2009 release were observed.
- Vicente Bluffs and Abalone Cove Reserves – Surveys were conducted for the El Segundo blue butterfly, including areas where PVPLC is actively improving the habitat for the butterfly.

Additionally, PVPLC's stewardship staff conducted a variety of surveys at the restoration sites throughout the preserves. Vegetation transect surveys are conducted using standardized methods that provide data on the cover of native and non-native plants in the habitat (Box 5). In 2010, the triennial survey was conducted for special status plants in the Palos Verdes Nature Preserve. These



Stewardship Manager Cris Sarabia conducts a vegetation transect survey at the Linden H. Chandler Preserve to obtain quantitative data on the results of the restoration sites. These data are important for managing the preserve that has seen the release of Palos Verdes blue butterflies following the restoration.

plants include species like the Catalina crossosoma, bright green Dudleya, and south coast salt bush. Also, PVPLC staff conducted surveys of both endangered butterflies present on the Peninsula in 2010, the Palos Verdes blue butterfly and El Segundo blue butterfly.