Palos Verdes Peninsula
Land Conservancy

PALOS VERDES PENINSULA
LAND CONSERVANCY

PO Box 3427
Palos Verdes Peninsula,
California 90274
T 310-541-7613
F 310-541-7623
www.pvplc.org

Annual Report
January 2012-Dec. 2012

For the

Rancho Palos Verdes Draft Natural Communities Conservation Plan and Habitat Conservation Plan

August 15, 2013

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

2012 ANNUAL REPORT SUMMARY

Restoration

In 2012, PVPLC installed plants on 10 acres (Phase 1 and 2) at Portuguese Bend Reserve NCCP site, in accordance with the Portuguese Bend Habitat Restoration Plan. An additional 0.25 acre was planted at Lunada Canyon; 0.8 acre additional acres at Ishibashi and Peppertree by closing spur trails, thanks to additional funding.

Two fires occurred: 12.7 acres were burned at Three Sisters Reserve, and 0.2 acres at Portuguese Bend Reserve.

Monitoring

Monitoring at Alta Vicente Reserve (Phase 1 and Phase 2) took place in spring 2012. For Phase 1, the CNPS Rapid Vegetation Assessment protocol in the coastal sage scrub showed that native plant cover was 49%, but transect data showed only 14% native cover. In the PVB habitat, native cover was 32% with the CNPS protocol, and 8% with the transect survey. The discrepency between the two survey techniques is due to gaps between shrubs created by low seed germination. Plans to fill-in plant in fall 2013 will increase native plant cover in the future. indicated that success criteria for percent cover of native plants at the NCCP restoration sites are being met, and the plants in the restoration area are healthy.

Targeted Exotic Removal Program for Plants (Terpp)

PVPLC treated 15 populations of the highly invasive *Euphorbia terracina.* At San Ramon Reserve, 0.5 acre was mulched to test a new treatment for controlling large areas. *Euphorbia terracina* seeds can persist in the soil for 3 to 5 years, and treatment will need to be repeated to successfully control this species on the Preserve. A population of *Ricinus communis* was removed from Portuguese Bend, along the Rim trail. Five populations of *Acacia cyclops* were controlled: four at Vicente Bluffs, and one in Three Sisters Reserve.

Trail Management and Monitoring

The Preserve Trails Plan approving trail locations and designations in the Preserve was approved by City Council. The City Council recommended quarterly public meetings to discuss trail concerns and inform the public about past and future trail projects.

PVPLC staff continues to maintain trail markers, and provide trail brochures. PVPLC conducted trail monitoring to monitor conditions such as erosion, and track unauthorized trails. In 2012, PVPLC continued to work on closing spur trails along Ishibashi and Peppertree trails. Rangers help enforce trail designations, dogs on leash, and other Preserve rules.

Ability to Accomplish Resource Management Goals

PVPLC has been successful at completing restoration under the NCCP, and meeting the goals for targeted invasive plant removal. However, because *Euphorbia terracina* has been difficult to eradicate, and has required treatment over several years, many of the same areas have been treated since 2009.

Concerns about Preserve management in the future include the ability to successfully close unauthorized trails, and to prevent new trails from being created. Closing these trails is time consuming and expensive because of continuous vandalism. PVPLC has been collaborating with the rangers to help determine which areas need more ranger attention. The Volunteer Trail Watch, set to begin in 2013, is expected to assist in creating a better trail etiquette. Support from the City by ensuring that vandalism is prosecuted.

To minimize the risk of habitat damage during fuel modification and other contractor activities, PVPLC recommends that the City write protocols to ensure that contractors are aware of the Preserve boundaries and Best Management Practices associated with their activities.

Another concern is the potential for wild fires to destroy habitat. The two fires that occurred in 2012 did not destroy all of the native vegetation, making it more likely to recover from the incident.

Funding Needs

PVPLC would benefit from continued funding to control highly invasive species on the Preserve. PVPLC continues to apply for funding to increase the amount of acreage restored for the species listed under the plan.

1.0 INTRODUCTION

The 2012 Palos Verdes Nature Preserve Report for the Rancho Palos Verdes Natural Community Conservation Plan provides annual submittal requirements by the Palos Verdes Peninsula Land Conservancy (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, 2012 through December 31, 2012.

PVPLC serves as the management agency for the Palos Verdes Nature Preserve (Preserve) for the City of Rancho Palos Verdes (RPV). 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, California. 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 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. The Habitat Management Plan will be updated and revised in coordination with the wildlife agencies and requirements of the NCCP. 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 (2012-2014).

PVPLC also facilitates 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.

The Management 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. This report provides annual submittal requirements

on the status of the Preserve for the period of January 1, 2012-December 31, 2012. 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 described in this report.

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 and federal/state permits will be signed in the near future, this annual report is intended function as the framework management and monitoring plan for the upcoming federal/state NCCP and has been provided to satisfy the requirements the Management Agreement between PVPLC and the City. Annual reporting requirements for the Draft NCCP are detailed below and will be updated once the final NCCP is approved. Additionally, once every three years, a Comprehensive Report is required under the NCCP. The most recent Comprehensive Report covered the period 2007 through 2009. The Comprehensive Report for the period from 2010 through 2012 is attached to this report.

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
3. Report on trail maintenance projects.

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 (Figure 1).

Table 1
Reserve Names of the Palos Verdes Nature Preserve. See Figure 1 for locations.

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

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.

2.0 FIRES IN THE PRESERVE

2012 Three Sisters Fire

On January 9, 2012, the Crest Fire burned approximately 12.7 acres of the 99-acre Three Sisters Reserve, as well as some habitat in McCarrell's canyon, outside of the Preserve. The wildfire burned native and non-native vegetation and known habitat of the threatened coastal California gnatcatcher (*Polioptila californica californica*) and the special status cactus wren (*Campylorhynchus brunneicapillus*). The Fire report is in Appendix C1.

2012 Portuguese Bend Narcissa Fire

The May 25, 2012, the Narcissa fire burned approximately 0.2 acres of the 399-acre Portuguese Bend Reserve (Figure 1). The area burned had previously burned during the August 2009 fire. The fire was on a slope along the side of Burma Road. Since the area had previously burned, the vegetation was sparse. Several shrubs were partially burned during this fire. The Fire report is in Appendix C2.

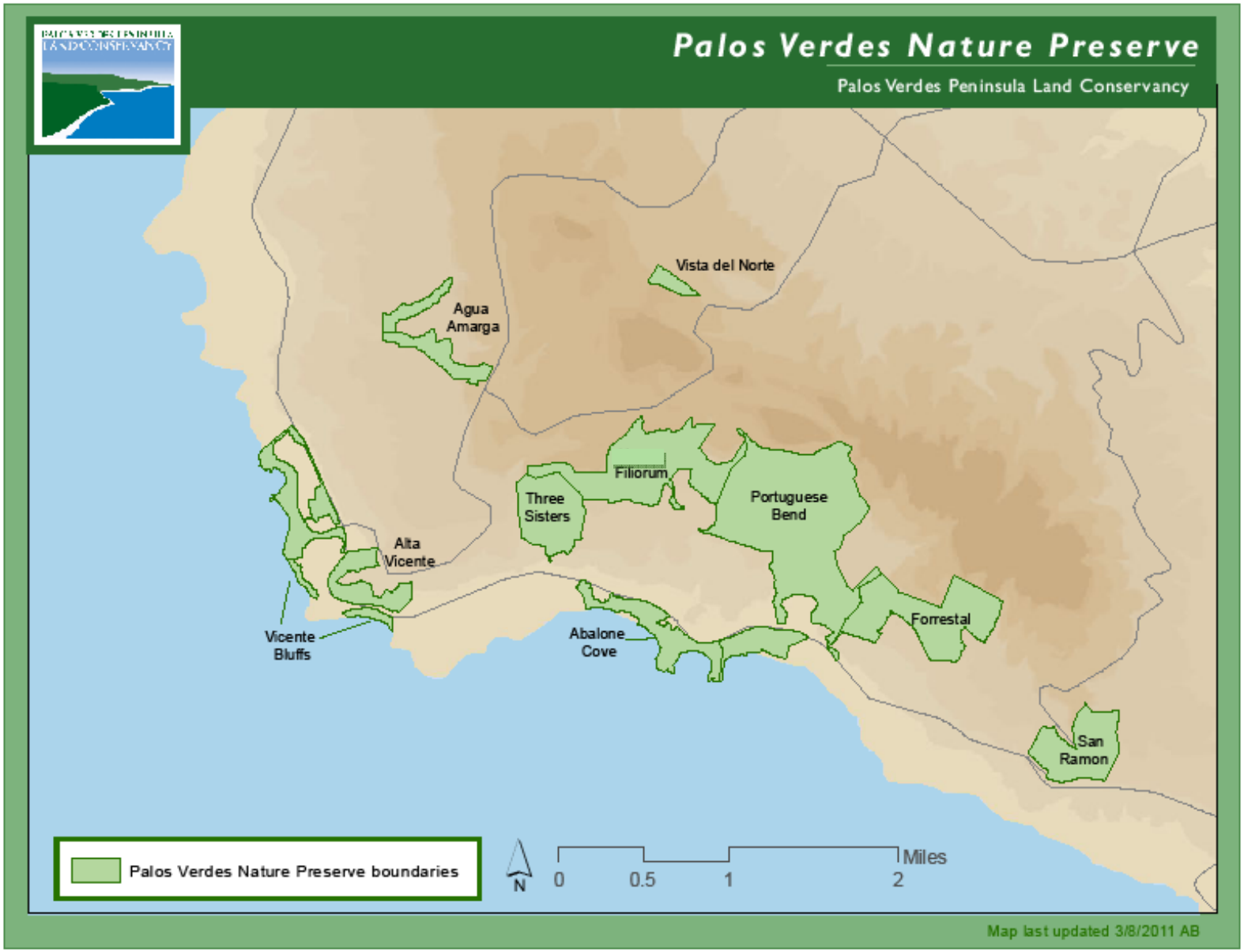
3.0 HABITAT RESTORATION

3.1 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 PVB butterfly habitat on a total of 15 acres during 3 consecutive years at the Alta Vicente Reserve. However, since a 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) were implemented at Alta Vicente.

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



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.

3.2 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 and 2008 to minimize weeds after planting (as per the timeline in the Alta Vicente Restoration Plan, Table 5). 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 cyclops* and completed planting and seeding in the Phase 2 area. Staff weeded and maintained Phase 1 and 2. In spring 2012, additional container plants were installed to fill in areas with low native cover.

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 1 and 2. This table has been modified from its original content in the 2007 Habitat Restoration Plan to reflect activities only in Phase 1 and 2.

	Task	Date
PHASE 1	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	Spring 2010-Spring 2014
	Phase one completion	2014, end of Year 5
PHASE 2	Site clearing and soil preparation	Fall 2008, Fall 2009
	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	Spring 2011-Spring 2015
	Phase two completion	2015, 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.

3.3 PORTUGUESE BEND RESERVE

A restoration plan for Portuguese Bend Reserve was completed July 2010, and can be found in the Comprehensive Management and Monitoring Report 2007-2009. The July 2010 restoration plan subdivided the restoration area into 3 polygons to be completed in 3 phases. The total acreage covered by the Portuguese Bend Restoration Plan is 21 acres, sufficient acreage for four years of restoration at 5 acres per year. Therefore, the agencies approved a revised restoration plan with 4 phases, to be installed in 4 years rather than 3 (Figure 3; Appendix D).

Site preparation at Portuguese Bend began in February 2010. Field staff weeded (hand/herbicide) the burn area, and targeted fennel with herbicide. In February, 2011, goats were deployed in the NCCP area to clear vegetation. Since then, staff has been controlling weeds, with plans for "grow and kill" cycles in 2012 to reduce weed density prior to planting in fall 2012. Due to the high density of weeds, an additional year of weeding was implemented, and 10 acres were installed in fall 2012. In 2012, PVPLC installed container plants on all of the Phase 1 site described in the Restoration Plan (8 acres) and the cactus scrub portion of Phase 2 site described in the Plan (2 acres), totaling 10 acres of restoration.

PVPLC obtained permission to install irrigation on 8 acres to enable "grow and kill" prior to plant installation, and improve seed and plant survival after planting. Two acres of cactus scrub will not be irrigated.

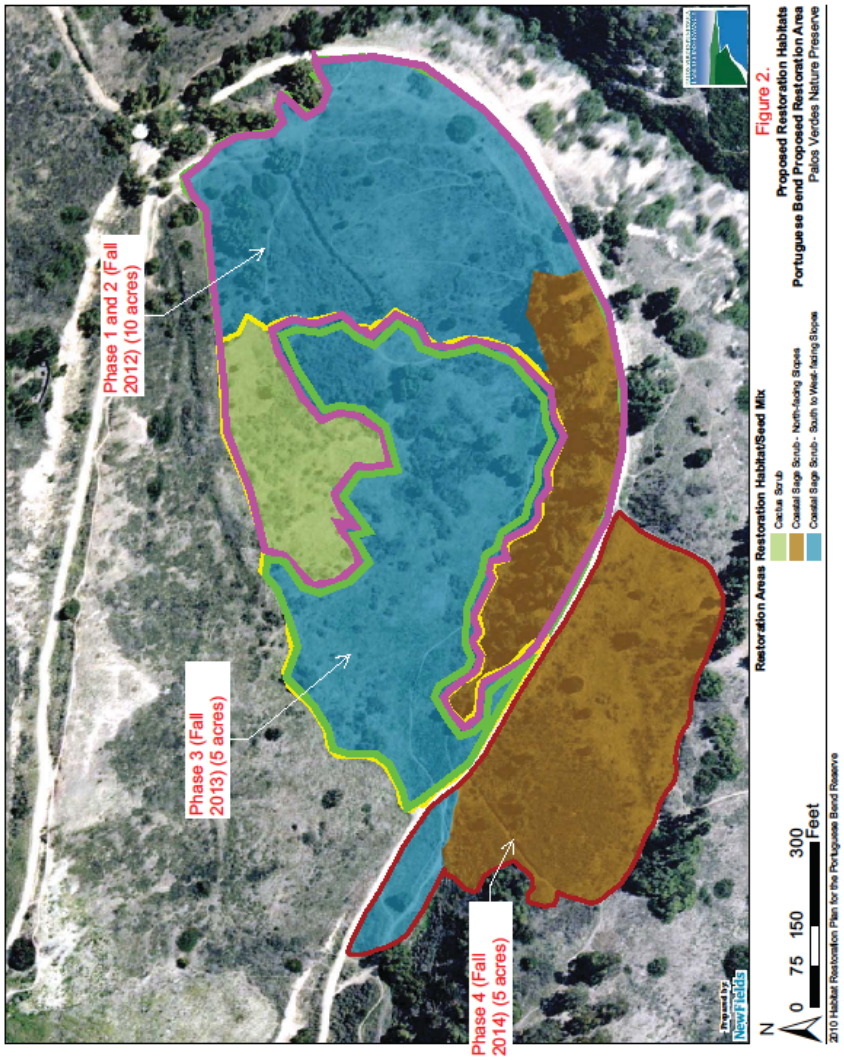
Table 3
Restoration Project Schedule for Portuguese Bend Reserve Phases 1, 2, 3, and 4, based on the Portuguese Bend Reserve Habitat Restoration Plan.

	Task	Date
PHASE1 and PHASE 2	Begin site preparation, weed removal	Fall 2010
	Install irrigation	Winter 2012
	Final site preparation: weed and thatch removal	Fall 2012
	Installation: Seeding and planting	Fall 2012-Early Winter 2013
	Maintenance weeding	Winter 2013-Spring 2014
	Fill-in planting, as needed	Fall 2013-Fall 2014
	5-year biological monitoring and maintenance	Spring 2013-Spring 2017
	Phase one and 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 and planting	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	Spring 2014-Spring 2018
	Phase three completion	2018, end of Year 5

Table 3
Restoration Project Schedule for Portuguese Bend Reserve Phases 1, 2, 3, and 4, based on the Portuguese Bend Reserve Habitat Restoration Plan.

PHASE 4	Site preparation, weed removal	Fall 2013-Fall 2014
	Final site preparation: weed and thatch removal	Fall 2014
	Installation: Seeding and planting	Fall 2014-Early Winter 2015
	Maintenance weeding	Winter 2015-Spring 2016
	Remedial seeding, as needed	Fall 2015-Fall 2016
	5-year biological monitoring and maintenance	Spring 2015-Spring 2019
	Phase three completion	2019, end of Year 5

Figure 3. Map of restoration areas at portuguese bend reserve.



4.0 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 4 shows the timeline for each additional restoration project.

4.1 ABALONE COVE

The National Fish and Wildlife Foundation (NFWF) provided funding in 2012 to restore and enhance 3 acres of coastal sage scrub and coastal bluff scrub at Abalone Cove Reserve.

4.2 AGUA AMARGA

In September 2011, Los Angeles County Sanitation Districts (LACSD) provided funding to conduct 0.25 acre of riparian scrub restoration at the Lunada Canyon portion of the Agua Amarga Reserve as part of mitigation for one of their projects. A restoration plan was completed in 2011. In 2013, the PVPLC began implementation of weed control and the removal of invasive plants (castor bean, ice plant, fennel). In Fall 2013 362 container plants were installed.

4.3 MCCARRELL'S CANYON

In June 2008, a grant agreement was signed with the State Coastal Conservancy to remove invasive species and provide restoration of coastal sage scrub and riparian habitats at McCarrell's Canyon, which is the western boundary of Three Sisters Reserve. In Fall 2011, one acre of riparian habitat and 3 acres of coastal sage scrub were installed. PVPLC continues to maintain this restoration area with as needed weed control.

4.4 PELICAN COVE/FISHING ACCESS

In June 2008, a grant agreement was signed with the State Coastal Conservancy to provide restoration at Vicente Bluffs Reserve. PVPLC restored three acres of coastal bluff scrub and El Segundo blue butterfly habitat by removing acacia, pampas grass and ice plant, and installing container plants with coastal bluff scrub and El Segundo blue butterfly host plants. PVPLC continues to maintain this restoration area, weeding as necessary.

4.5 PORTUGUESE BEND

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).

A Department of Fish and Game Local Assistance Grant funded restoration in the burn area at Portuguese Bend. The grant provided 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 was implemented from Fall 2010 to Fall 2011. A total of three (3) acres of cactus scrub was installed (see map).

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. In Fall 2010, the 9.5 acre-site was seeded with native grasses and coastal sage scrub. In Fall 2011, container plants were installed in 5 foot-wide strips, separated by 10-foot buffers because germination rates were low. In 2012 PVPLC controlled weeds in the buffer zones and maintained container plants.

4.6 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. PVPLC continues to maintain this restoration area with as needed weed control.

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

Figure 4. Site map for all 2012 restoration projects in the Palos Verdes Nature Preserve.

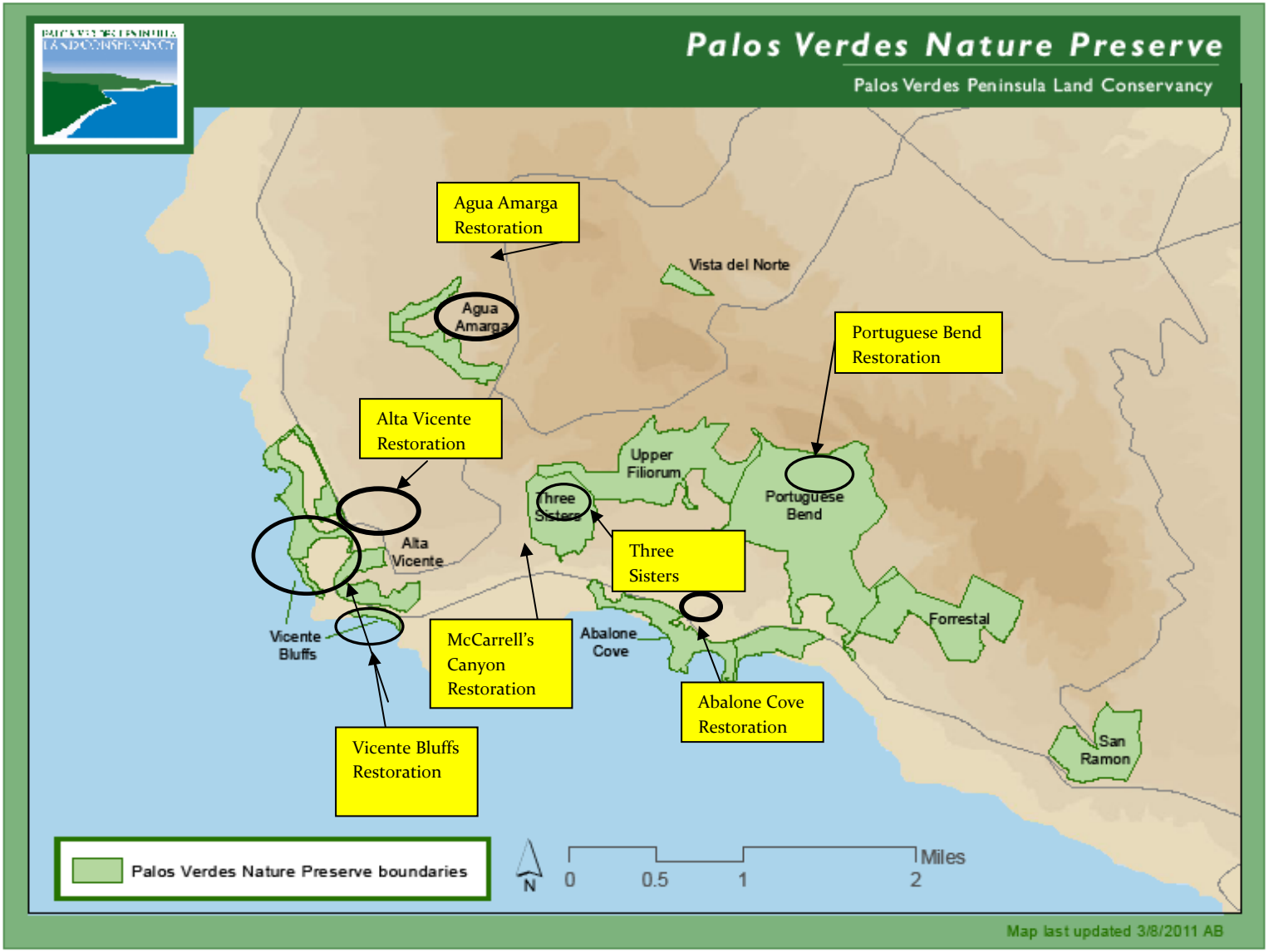


Table 4
Restoration Project Schedule for Additional Restoration in Palos Verdes Nature Preserve.

	Task	Date
Three Sisters Restoration 21 Acres	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.
Portuguese Bend El Segundo Grant 9.5 acres	**Task**	**Date**
	Site preparation and weed control	Spring 2010-Fall 2010
	Seeding	Winter 2010/2011
	Fill-in plant installation	Winter 2013/2014
	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 installation of restoration
Portuguese Bend HCF Grant (0.8 acres)	**Task**	**Date**
	Spur trail restoration: Ishibashi area	Fall 2012-Winter 2013
	Spur trail restoration: Peppertree area	Winter 2013
	Spur trail restoration: Peacock Flats	Fall 2012-Winter 2013

Table 4
Restoration Project Schedule for Additional Restoration in Palos Verdes Nature Preserve.

	Task	Date
Abalone Cove NFWF Grant (3 acres)	Remove invasive plants	Spring 2013-Fall 2013
	Install plants	Fall/Winter 2013
	Weed and maintain site	Winter 2013

5.0 MONITORING

5.1 RESTORATION

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 2012, restoration monitoring as per NCCP requirements were conducted at Alta Vicente Reserve. The plants in the restoration area are healthy, but there are large gaps in native vegetation due to low seed germination. PVPLC will add plants in 2013 to increase native cover. Detailed results are in Appendix A.

5.2 COVERED SPECIES

The NCCP/HCP requires updated surveys for covered plants and animals on the Preserve every three years. Results for the 2010-2012 survey period will be covered in the Comprehensive Management and Monitoring report, in March 2013.

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 March 2011, surveys were conducted for aphanisma and south coast saltscale in the Palos Verdes Nature Preserve.

Surveys were conducted for the El Segundo blue butterfly at Vicente Bluffs and Abalone Cove Reserves in 2011 (see attached report).

Preserve-wide surveys for California gnatcatcher and coastal cactus wren were conducted in 2012 (see attached report).

6.0 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 2012 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 2012 TERPP Report can be found in Appendix B of this report.

7.0 BRUSH CLEARANCE

Brush clearance is the clearing or minimizing of 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. PVPLC recommends that RPV develop clear protocols to ensure that all BMPs associated with fuel modification activities are consistently followed. In 2012, RPV staff successfully collaborated with PVPLC to ensure that bird surveys were completed prior to fuel modification activities. In 2012, goats used for fuel modification at Ocean Trails Reserve escaped, leading to habitat damage. PVPLC recommends that prior to the 2014 fuel modification, RPV write protocols to ensure that contractors are aware of the Preserve boundaries and BMPs associated with their activities.

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 2012. No other fuel modification areas within the Preserve fall under the responsibility of PVPLC.

8.0 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 2012 research is located in Appendix E. Two studies requiring scientific permits took place in the Prserve. Barbara Kus with the USGS Western Ecological Research Station requested a permit to study the genetics of cactus wrens and california gnatcatchers on the Prserve. Gregory Paula from the Natural History Museum of Los Angeles requested permission to survey reptiles in the Preserve.

9.0 TRAIL MANAGEMENT AND MONITORING

9.1 PRESERVE TRAILS PLAN

Preserve trails fall under the City's Public Use Master Plan (PUMP), which is a NCCP-covered activity, and must follow certain avoidance measures and guidelines to protect covered species. City Council approved the updated Preserve Trails Plan in October 2012. The plan included authorized trails and trail user designations for Filiorum Reserve, based on 2010 public workshops and comments. The recommendations for the other Reserves in the PVNP were based on input from the 2011 "State of the Trails" workshop and public comments.

PVPLC has been collaborating with City staff on the Public Use Master Plan, to present to City Council in 2013.

9.2 TRAIL MANAGEMENT

PVPLC created new trail maps based on the Preserve Trails Plan, and continues to place maps at major trailheads, and post them on PVPLC's website. PVPLC has placed QR codes at major trailheads for people to access maps via smart phones. In 2012, PVPLC collaborated with the City to develop standardized signage, including a Preserve Rules sign, which will be finalized and installed in 2013.

9.3 UNAUTHORIZED TRAIL CLOSURES

Implementing the Preserve Trails Plan involves closing many trails that were previously in use and no longer authorized. PVPLC focused its attention on these at Portuguese Bend Reserve in 2012, primarily thanks to an HCF grant that provided funding to assist with these. With the approval of the Preserve Trails Plan for Filiorum, PVPLC's plan in 2013 and 2014 is to install initial signage on closed trails and placing brush to make them less noticeable.

PVPLC's primary focus is on closing newly created unauthorized trails, before they become established and damage habitat. This is very intensive work, that requires continuously closing down the trail as signage, branches, and plants are removed. Problem areas include the Peppertree trail area and Fire Station Trail areas of Portuguese Bend. At Peppertree trail, new trails are created to bypass newly closed trails. PVPLC continues to close these trails on an ongoing basis. In 2012, a loop on private property between Fire Station and Rim Trail was closed by the landowner, and since then people have been vandalizing signs and destroying habitat trying to create a new connection through a very steep canyon. PVPLC has discussed the possibility of a new connector with contractors but the canyon is too steep to create a sustainable trail. Support from the City of RPV will be crucial to the success of trail closure activities, because of its ability to enforce regulations. Citations by rangers, and prosecution of acts of vandalism will be important components.

9.4 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 D). Monitoring was typically limited to overall trail conditions such as erosion, hazards, and vegetation overgrowth.

9.5 TRAIL MARKERS AND DECALS

In 2012, staff installed 245 decals and 20 carsonite sign posts in the Filiorum Reserve, based on the newly approved Preserve Trails Plan for the Reserve. In addition, staff replaced 168 decals that were vandalized in the Preserve. Staff also removed graffiti on signs throughout the Preserve.

9.6 TRAIL REPAIR

A PVPLC volunteer trail crew assists in much of the trail work on the Preserve. A complete summary of the PVPLC Volunteer Trail Crew Program can be found in the Community Involvement section of the report (Appendix D). PVPLC staff or RPV Public Works department were also involved in trail enhancements.

Two grants have permitted additional trail work on the Preserve. A grant from the Coastal Conservancy is funding development of the California Coastal Trail through the City of Rancho Palos Verdes, including a section through the Preserve. A grant from the California Trails and Greenways Foundation will fund native plants along the Coastal Trail at Abalone Cove to help better delineate the trail. A Habitat Conservation Fund grant provided funding for trail restoration, spur trail closure, and improved signage at Portuguese Bend Reserve.

The following lists the trail projects that were conducted in 2012.

Abalone Cove

- The Volunteer Trail Crew helped define the Coastal Trail at Portuguese Point
- The Volunteer Trail Crew did rock work on the Sea Dahlia Trail

Alta Vicente

- Eagle Scouts closed a network of spur trails in the eastern portion of the Reserve.

Forrestal

- Eagle Scouts installed post-and-rope trail closures
- The Volunteer Trail Crew repaired posts and grade dips on Flying Mane Trail

- The Volunteer Trail Crew closed spurs at Flying Mane Trail
- The Volunteer Trail Crew installed wire cable on Flying Mane and Mariposa Trails
- The Volunteer Trail Crew removed old fencing on the Mariposa Trail

Portuguese Bend

- PVPLC staff closed 3,200 feet of unauthorized trails near Ishibashi Trail with HCF funding
- PVPLC staff closed 1,200 feet of unauthorized trails near Peppertree Trail with HCF funding
- PVPLC staff closed 1,200 feet of unauthorized trails at Rim Trail with HCF funding
- PVPLC staff closed 3,500 feet of unauthorized trails at Peacock Flats with HCF funding
- PVPLC realigned the Rim trail and installed a bridge with HCF funding
- The Volunteer Trail Crew weed whacked Ailor, Rim, Grapevine, Ishibashi, and Peacock Flats Trails
- The Volunteer Trail Crew closed spur trails in Peppertree Trail area
- The Volunteer Trail Crew created drainage dips on the Rim Trail
- The Volunteer Trail Crew realigned Archery and Bow and Arrow Trails
- The Volunteer Trail Crew removed berm on upper Ishibashi Trail
- The Volunteer Trail Crew removed trail barrier and fallen tree on Ishibashi Trail

Future Trail Projects

Future trail projects are listed in Appendix G.

Ranger Program

The PVPLC coordinated with the City of RPV on focal areas for Mountains Recreation and Conservation Authority (MRCA) rangers on the Preserve.

Volunteer Trail Watch

The PVPLC has been collaborating with the City of RPV to create a Volunteer Trail Watch. The mission of the Palos Verdes Nature Preserve Volunteer Trail Watch Program is to serve as eyes and ears of the City of Rancho Palos Verdes and the Palos Verdes Peninsula Land Conservancy with a view to 1) protect the natural resources of the Palos Verdes Nature Preserve, including the flora and fauna as well as the geology, topography and scenic landscape, and 2) enhance the safety of, and promote an enjoyable experience for all Preserve visitors.

10.0 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, 2012 through December 31, 2012 is located in Appendix F.

2012 Officers

Bruce Biesman-Simons, President
Joe Platnick, Exec. Vice President
Pam Westoff, Secretary
Marc Crawford, Treasurer

2012 Board of Directors

Bill Ailor, President Emeritus
Bob Ford
Allen Franz
Cassie Jones
Henry Jurgens
Elizabeth Kennedy
Mike Kilroy
Susan McKenna
John Spielman
William Swank
Ken Swenson
Grace Wallace

2012 Staff

Executive Director

Andrea Vona

Office Administration

Jill Wittman, Administrative Assistant

Sue Cody, Accountant

Land Stewardship

Danielle LeFer, Conservation Director

Cristian Sarabia, Stewardship Manager

Adrienne Mohan, Stewardship Associate

Ann Dalkey, Stewardship Associate (Research)

Damian Morando, Stewardship Technician

Hugo Moralez, Stewardship Technician

Humberto Calderon, Stewardship Technician

Ruben Villagomez, Stewardship Technician

Trent Houston, Stewardship Technician

Johnny Perez, Stewardship Technician

Ray Vought, Stewardship Technician

Neli Gonzalez, Nursery Technician

Education Program

Siegrun Storer, Education Director

John Nieto, Education Manager

Development

Nancy Young, Development Director

Louise Olfarnes, Communications Manager

Mary Lopes, Donor Relations

George F. Canyon Nature Center

Loretta Rose, Manager/Naturalist

Laurie Morgan, Assistant Naturalist

White Point Nature Education Center

Roxanne Roberts, Naturalist

Jessy Melowicz, Naturalist

APPENDIX A

2012 RESTORATION MONITORING REPORT

Monitoring at restoration sites took place at Alta Vicente on May 31, 2012. Transects were conducted at Phase 1 restoration sites, and photo point monitoring was completed at Phase 2 sites. Locations of transects and photo points are on Figure 1. Results of the Alta Vicente surveys are provided below.

1.0 SURVEY RESULTS

1.1 PHASE 1TRANSECT SURVEY RESULTS (YEAR 3)

Coastal Sage Scrub (CSS)

The number of individual native plants counted in the CSS in 2012 was 7 (Table 1). Native plant cover in the CSS site was 14%, and consisted of an even mix of *Eriogonum cinereum*, *Eriogonum parvifolium*, and *Leymus condensatus* , but no *Artemisia* (Table 2, Table 3). Percent non-native cover was 80%, and bare ground/litter 8% (Table 2). Shrub height ranged from 1.4 feet to 1.6 feet (Table 4). Overall native cover in the CSS based on the CNPS Rapid Vegetation Assessment protocol was 49% (Table 6). The discrepancy between the CNPS assessment and transect data is due gaps in vegetation created by low seed germination, which increased the likelihood of hitting non-native vegetation or bare soil along transects.

Photo points indicate that many plants have grown and are healthy (Appendix I, AV1). Gaps in vegetation and high numbers of weeds are present due to low seed germination.

Based on the CNPS protocol, Phase 1 meets the CSS success goals of 40% or greater native cover after 3 years. Weed control over time will reduce non-native cover and allow seedling recruitment. However, to decrease the amount of bare ground in Phase 1, PVPLC will fill-in plant and seed focal areas in fall 2013.

PVB Butterfly Habitat

In the butterfly habitat, the number of native plants counted in the transect was 4. Native cover was 8%, evenly distributed among *Artemisia californica, Eriogonum cinereum*, and *Eriogonum parvifolium* (Table 2, Table 3). Percent non-native cover was 28%, and bare ground/litter 27% (Table 2). Shrub height ranged from 0.3 feet to 3.2 feet (Table 4). Percent cover in the butterfly habitat based on the CNPS Rapid Vegetation Assessment protocol was 32% (Table 6). Both survey techniques indicate low PVB host plant cover.

Photo points show that native plants are healthy, but recruitment from seed was very low (Appendix I, AV2). The second PVB host plant, deerweed, included in the seed mix, did not germinate at the site.

Based on the CNPS protocol, the site meets the PVB success goals for native plant cover (30%-70%) after 3 years. The transect data shows that some areas still need attention. The percent bare ground with the transect method (54%) is higher than the 30% success criteria, but the amount of bare ground in the CNPS survey (32%) meets the success goal. In fall 2012, PVPLC added *Astragalus* to the restoration site to increase host plant numbers. Weed control over time will reduce non-native cover and allow seedling recruitment.

1.2 PHASE 2 (YEAR 2)

Cactus Scrub

Native plant cover in the cactus scrub site (AV3) in 2012 was approximately 15% (Appendix 1). The container plants were healthy, and cactus pads were increasing in size. Recruitment from seed was observed. Weed control over time will reduce non-native cover and allow seedling recruitment.

Palos Verdes Blue Butterfly Habitat (PVB)

Native plant cover in the PVB habitat (AV5) in 2012 was approximately 40% (Appendix I). The container plants were healthy. Ocean locoweed seedlings were present, but no deerweed recruitment was observed. Weed control over time will reduce non-native cover and allow seedling recruitment.

Coastal Sage Scrub (CSS)

Native plant cover in the CSS site (AV6) in 2012 was approximately 20% (Appendix I). The container plants were healthy. Recruitment from seed was observed. Weed control over time will reduce non-native cover and allow seedling recruitment.

1.3 PLANT INVENTORY

A plant inventory conducted in Phase I and Phase 2 during the 2012 surveys identified 18 native species (Table 5). Plants were identified on either side (within one meter) of a 50 meter transect in Phase 1 and Phase 2.

1.4 CONCLUSIONS AND RECOMMENDATIONS

Container plants in the Phase 1 restoration area are growing. However, recruitment from seed has been low. In fall 2013 PVPLC will fill-in plant in areas of CSS and PVB habitat to increase native plant cover.

The Phase 2 restoration is meeting success criteria for year 1, and native plant cover will continue to increase as container plants mature, and seedlings germinating from seed increase in size.

2.0 2012 ALTA VICENTE TRANSECT MONITORING, MAY 31, 2012

Table 1
Number of plants per 50 m transect with line intercept method, 1 m intervals.

Species	CSS: AV1	PVB: AV2
Artemisia californica		2
Eriogonum cinereum	2	1
Eriogonum parvifolium	3	1
Leymus condensatus	2	
Total Native Cover	7	4
Non-native annual grasses	11	7
Non-native plants	29	21
Total Non-Native Cover	40	28
Bare and Litter	4	27

Table 2
Percent cover along 50 m line transects with line intercept method, 1 m intervals.

Species	CSS: AV1	PVB: AV2
Artemisia californica		4
Eriogonum cinereum	4	2
Eriogonum parvifolium	6	2
Leymus condensatus	4	
Total Native Cover	14	8
Non-native annual grasses	22	14
Non-native plants	58	34
Total Non-native cover	80	56
Bare and Litter	8	54

Table 3
Relative percent cover along 50 m line transects with line intercept method, 1 m intervals.

Species	CSS: AV1	PVB: AV2
Artemisia californica		3
Eriogonum cinereum	4	2
Eriogonum parvifolium	6	2
Leymus condensatus	4	
Total Native Cover	14	7
Non-native annual grasses	22	12
Non-native plants	57	36
Total Non-native cover	78	47
Bare and Litter	8	46

Table 4
Average plant height (ft) at each transect.

Species	CSS: AV1	PVB: AV2
Artemisia californica		3.2
Eriogonum cinereum	1.6	1.1
Eriogonum parvifolium	1.5	0.3
Leymus condensatus	1.4	

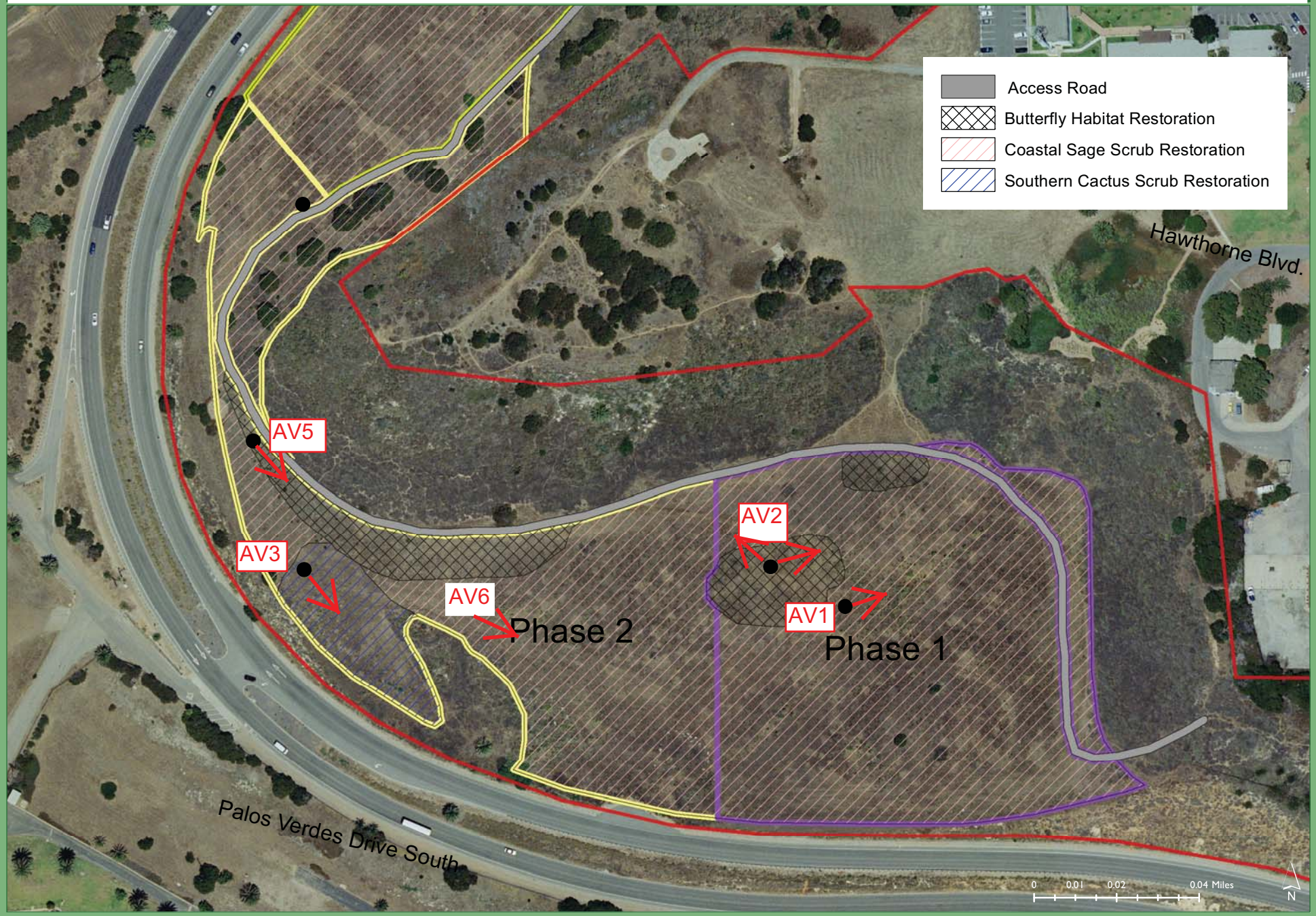
Table 5
Plant inventory at restoration site.

Native Species
Artemisia californica
Astragalus trichopodus
Baccharis salicifolia
Cylindropuntia prolifera
Dudleya lanceolata
Eriogonum cinereum
Eriogonum parvifolium
Eriophyllum confertiflorum
Galium angustifolium
Heteromeles arbutifolia
Isomeris arborea
Leymus condensatus
Malosma laurina
Opuntia littoralis
Phacelia ramosissima
Rhus integrifolia
Salvia leucophylla
Salvia mellifera

Table 6
Vegetation percent cover based on CNPS Rapid Vegetation Assessment protocol.

Species	CSS: AV1	PVB: AV2
Artemisia californica	12	13
Astragalus trichopodus		2
Baccharis salicifolia	1	
Cylindropuntia prolifera	1	
Dudleya lanceolata		1
Eriogonum cinereum	7	3
Eriogonum parvifolium	5	2
Eriophyllum confertiflorum		1
Galium angustifolium	1	
Heteromeles arbutifolia	2	
Isomeris arborea	1	1
Leymus condensatus	2	1
Malosma laurina	2	
Opuntia littoralis	3	2
Phacelia ramosissima		1
Rhus integrifolia	7	1
Salvia leucophylla	1	3
Salvia mellifera	4	1
Total Native Cover	49	32
Non-native annual grasses	2	3
Non-native plants	27	41
Total Non-native Cover	29	44
Bare	23	27

Figure 1. Alta Vicente Restoration Monitoring Map.



Phase I (YR 3) CSS: AV1 Start

Phase I (YR 3) CSS: AV1 End

Phase I PVB (YR 3): AV2 Start

Phase I PVB (YR 3): AV2 Mid

Phase I PVB (YR 3): AV2 End

Phase II (YR 2) Cactus Scrub: AV3

Phase II (YR 2) PVB: AV5

Phase II (YR 2) CSS: AV6

APPENDIX B

ANNUAL REPORT FOR THE TARGETED EXOTIC REMOVAL PROGRAM FOR PLANTS (TERPP)

1.0 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 2012 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.

2.0 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.

To more effectively collect baseline data and track invasive species within the Preserve, PVPLC is currently developing a new methodology for collecting TERPP information. A new TERPP form is in Appendix A. 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 GIS, a tool that aids planning and monitoring efforts. Since 2006, PVPLC has treated 88 TERPP sites, and the program is ongoing. Every year, tracking, documenting and planning for the following year becomes more complex 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. In 2012, staff began developing a TERPP mapping system to map all TERPP sites over time, with plans to implement for the 2013 report. In 2012, interns started mapping invasive species locations in the Preserve. These maps will assist in selecting sites for invasive species eradication. 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.

3.0 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;
- 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.

4.0 2012 TERPP

In 2012, PVPLC treated 15 populations of *Euphorbia terracina* (Geraldton spurge, Euphorbia), in addition to treating approximately 0.5 acre of Euphorbia at the San Ramon Reserve (Table 1). 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.

PVPLC treated a population of *Ricinus communis* (castor bean) along the Rim Trail in Portuguese Bend, by cutting the plant and applying herbicide to the stump. This population has been spreading downward throughout the canyon, which is otherwise healthy. This will prevent its continued spread through Portuguese Bend.

PVPLC removed 4 populations of *Acacia cyclops* (acacia) at Vicente Bluffs (Pelican Cove, northern Vicente Bluffs (bluff top and lower bluffs), and the restoration site within Ocean Front Estates.

PVPLC treated with herbicide (drill and kill) but did not remove the snags of one population of 12 *Acacia cyclops* (acacia) at Three Sisters Reserve, in the area burned by the 2012 fire.

Site #	Species	Date	Location	Population size/acres	Method	Outcome
1	*E. terracina*	4/4/2012	Abalone Cove and PV Drive south	10	pull and herbicide	ongoing
2	*E. terracina*	4/4/2012	Abalone Cove Canyon	1000	pull and herbicide	ongoing
3	*E. terracina*	4/4/2012	Abalone Cove Olmstead trail	150	pull and herbicide	ongoing
4	*E. terracina*	5/12/2012	Forrestal at Forrestal Drive	25	pull and herbicide	ongoing
5	*E. terracina*	5/12/2012	Forrestal at Quarry Trail	30	pull and herbicide	ongoing
6	*E. terracina*	5/12/2012	Forrestal Pirate trailhead	15	pull and herbicide	ongoing
7	*E. terracina*	8/15/2012	Portuguese Bend at Ishibashi trail	40	pull and herbicide	ongoing
8	*E. terracina*	8/15/2012	Portuguese Bend NCCP site	100	pull and herbicide	ongoing
9	*E. terracina*	8/15/2012	Portuguese Bend, Kubota	20	pull and herbicide	ongoing
10	*E. terracina*	8/15/2012	Portuguese Bend Peppertree trail	170	pull and herbicide	ongoing
11	*E. terracina*	8/15/2012	Portuguese Bend at PV Drive south	100	pull and herbicide	ongoing
12	*E. terracina*	8/15/2012	Portuguese Bend Ishibashi Farm Trail	500	pull and herbicide	ongoing
13	*E. terracina*	8/15/2012	Portuguese Bend Sandbox 1	200	pull and herbicide	ongoing
14	*E. terracina*	8/15/2012	Portuguese Bend Sandbox2	200	pull and herbicide	ongoing
15	*E. terracina*	Aug.-Dec. 2012	San Ramon	0.5 acre	mulch	ongoing
16	*Ricinus communis*	Mar-12	Portuguese Bend along Rim Trail	20 plants/ 0.5 acre	cut and herbicide	successful
17	*Acacia cyclops*	Jan-12	Northern Vicente Bluffs*	8	cut and salt	successful
18	*Acacia cyclops*	Jan-12	Pelican Cove*	20	cut and salt	successful
19	*Acacia cyclops*	Jan-12	Ocean Front Estates*	6	cut and salt	successful
20	*Acacia cyclops*	Jan. 2012	Northern Vicente, base of bluffs*	5	cut and salt	successful
21	*Acacia cyclops*	May 2012	Three Sisters Reserve	12	Cut and herbicide	successful
1	*E. terracina*	8/15/2012	Abalone Cove and PV Drive south	10	pull and herbicide	ongoing
2	*E. terracina*	8/15/2012	Abalone Cove Canyon	1000	pull and herbicide	ongoing
3	*E. terracina*	8/15/2012	Abalone Cove Olmstead trail	150	pull and herbicide	ongoing
*Do not count toward NCCP permit obligations.						

5.0 REFERENCES

California Invasive Plant Council 2006. California Invasive Plant Inventory. February. California Invasive Plant Council: Berkley, CA.

Palos Verdes Peninsula Land Conservancy 2007a. 2007 Targeted Exotic Removal Plan for Plants for the Portuguese Bend Nature Preserve For the Rancho Palos Verdes Draft Natural Community Conservation Plan and Habitat Conservation Plan. April.

Palos Verdes Peninsula Land Conservancy 2008. 2008 Annual Report for the Targeted Exotic Removal Program for Plants for the Portuguese Bend Nature Preserve For the Rancho Palos Verdes Draft Natural Community Conservation Plan and Habitat Conservation Plan. September.

State of California 2007. Department of Food and Agriculture Division of Plant Health & Prevention Services Noxious Weed Ratings. Retrieved September 2007, from: <http://www.cdfa.ca.gov/phpps/ipc/encycloweedia/pdfs/noxiousweed_ratings.pdf>.

URS 2006. City of Rancho Palos Verdes Draft Natural Community Conservation Plan and Habitat Conservation Plan. June 9.

INTENTIONALLY LEFT BLANK

APPENDIX A: SAMPLE TERPP FORM

Invasive Weed Mapping Field Datasheet

Survey Type New Infestation Assesment Treatment	**Surveyor's Name**
Date	**Location Description:**
Species	
Preserve	
Stand ID	**Surrounding Vegetation Type:** cactus scrub coastal sage scrub riparian bluff grassland non-native plants trail non-native annual grass (NNAG) Other
Stand Size 1 ft^2 - 10 ft^2 10 ft^2 - 100 ft^2 100 ft^2 -300ft^2 300 ft^2 - 600 ft^2 600 ft^2 - 1000 ft^2 > 1000 ft^2	
No. Individuals 1-10 10-50 50-100 100-200 200-500 500-1000 >1000	**Stand Comments:**
Percent Canopy Cover 1-5% 5-10% 10-25% 25-50% 50-75% +75%	
Plant Phenology Flowering Non-Flowering Fruiting	
Plant Age Seedling Juvenile Mature Dead	
Treatment Type Hand pull Herbicide Hand-pull/Herbicide Weed-whip Mulch Tree removal Other	**Treatment Comments:**
Area Treated 1 ft^2 - 10 ft^2 10 ft^2 - 100 ft^2 100 ft^2 - 300 ft^2 300 ft^2 - 600 ft^2 600 ft^2 - 1000 ft^2 > 1000 ft^2	
Percent of Infestation Treated 0-25% 25-50% 50-75% 75-100%	
Photo Image Numbers:	**Additional Comments:**

Stand ID Example: AC_EuTe_01_yyyy.mm.dd.jpg

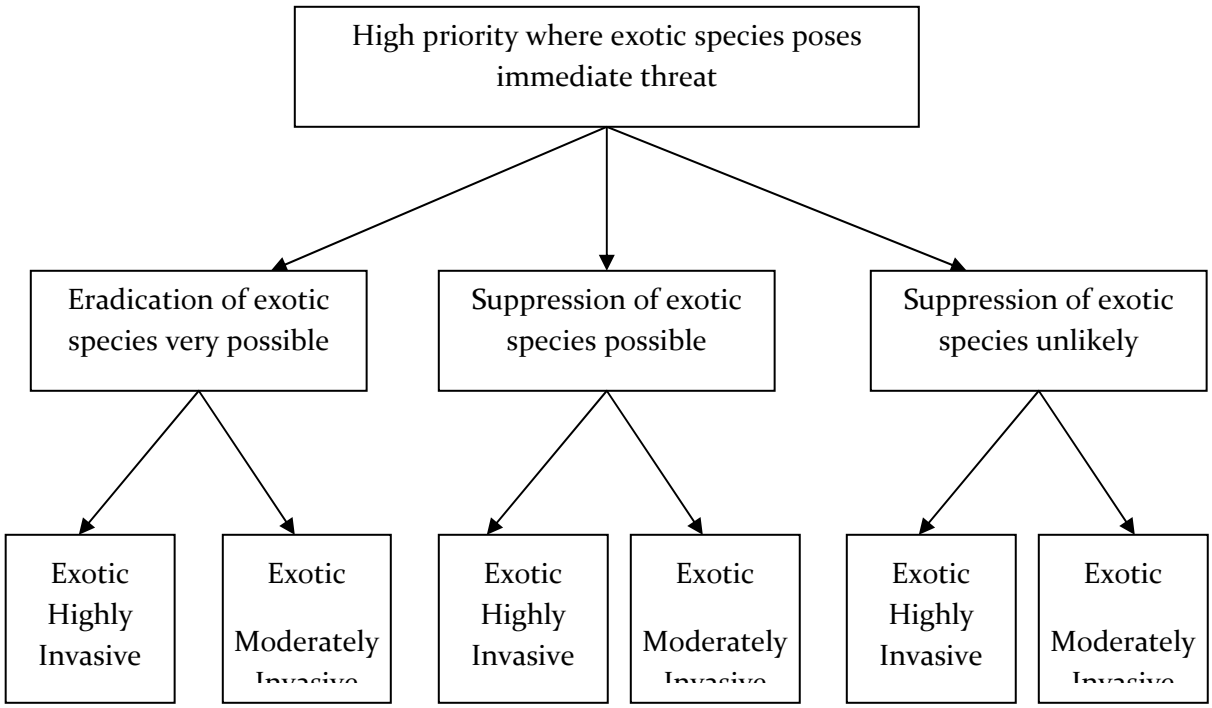
Preserve abbreviations:

AA - Agua Amarga	AC - Abalone Cove	AV - Alta Vicente	CP - Chandler Preserve	DF - DFSP	GF - George F
FI - Filiorum	FO - Forrestal	OT - Ocean Trails	PB - Portugeuese Bend	SR - San Ramon	
TS - Three Sisters	VB - Vicente Bluffs	VN - Vista del Norte	WP - White Point	OR - Other	

Rev 3/13

INTENTIONALLY LEFT BLANK

APPENDIX B: FLOWCHART FOR HIGH PRIORITY THREAT TO NATIVE VEGETATION

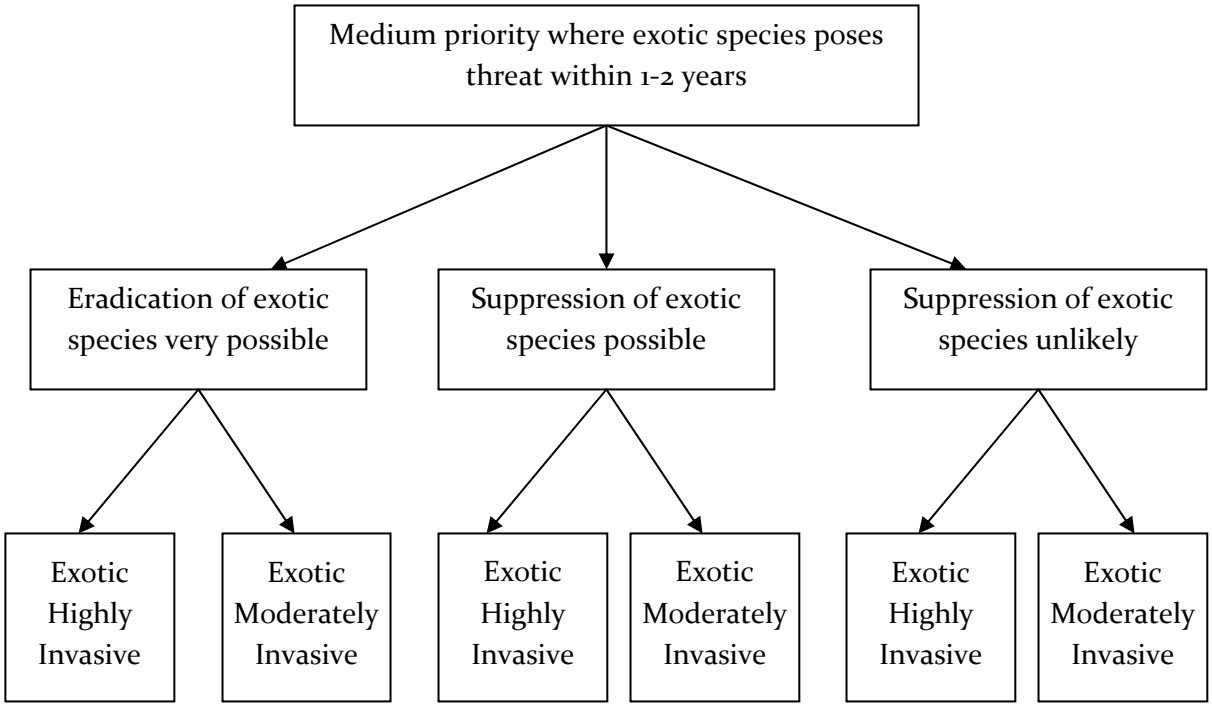


Priority Ranking For Control of Exotic Species

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

INTENTIONALLY LEFT BLANK

APPENDIX C: FLOWCHART FOR MEDIUM PRIORITY DEGREE OF THREAT TO NATIVE VEGETATION

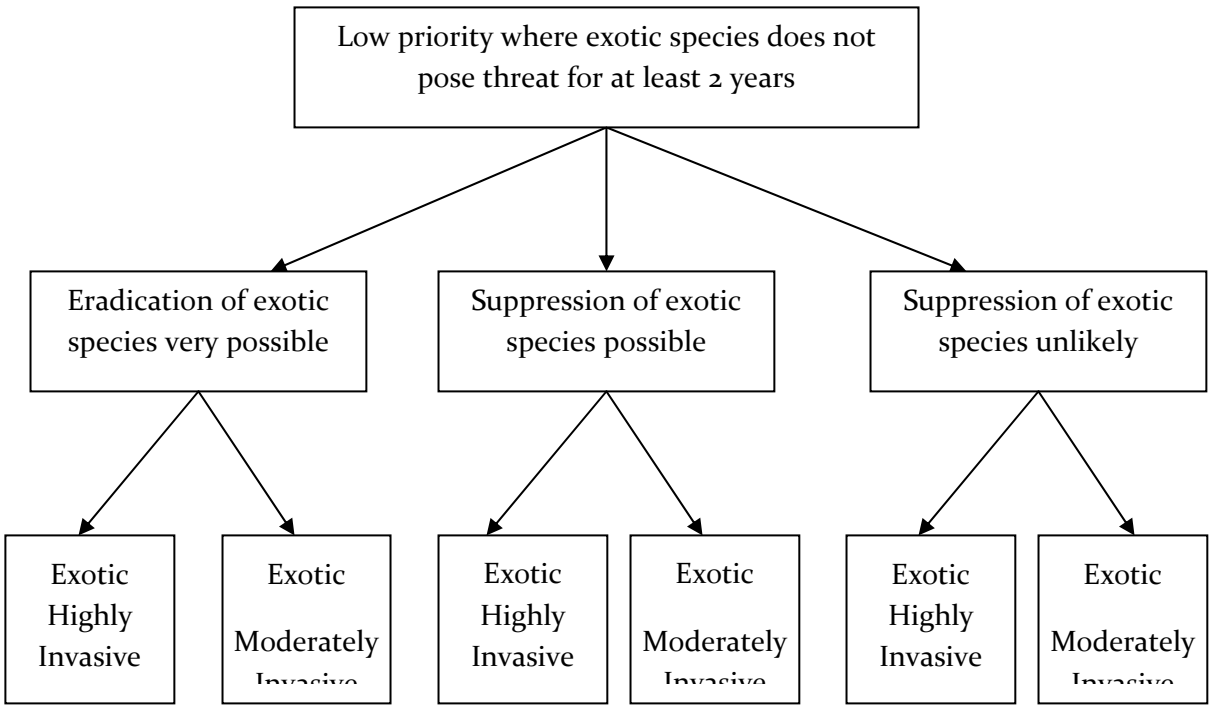


Priority Ranking For Control of Exotic Species

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

INTENTIONALLY LEFT BLANK

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

INTENTIONALLY LEFT BLANK

APPENDIX E: HIGHLY INVASIVE SPECIES

Genus species	Common name
Arundo donax	Giant reed
Asparagus asparaagoides	Bridal creeper
Avena barbata	Slender oat
Avena fatua	Wild oat
Brachypodium distachyon	False brome
Brassica nigra	Black mustard
Bromus diandrus	Ripgut grass
Bromus madritensis ssp. rubens	Red brome
Carpobrotus edulis	Hottentot fig
Caesalpinia spinosa	Spiny holdback
Centaurea melitensis	Tocalote
Chrysanthemum coronarium	Garland chrysanthemum
Cortaderia selloana	Pampas grass
Cynodon dactylon	Bermuda grass
Euphorbia terracina	Spurge
Foeniculum vulgare	Fennel
Malva nicaeensis	Bull mallow
Malva parviflora	Cheeseweed
Malva sylvestris	Mallow
Mesembryanthemum crystallinum	Annual iceplant
Nicotiana glauca	Tree tobacco
Pennisetum clandestinum	Kikuyu grass
Pennisetum setaceum	Fountain grass
Picris echioides	Bristly ox-tongue
Pistacia atlantica	Pistachio

Pittosporum undulatum	Pittosporum
Raphanus sativus	Wild radish
Ricinus communis	Castor bean
Salsola tragus	Russian thistle
Silybum marianum	Milk thistle
Sonchus asper	Prickly sow thistle
Sonchus oleraceus	Sow thistle
Spartium junceum	Spanish broom
Tamarix species	Tamarisk
Tropaeolum majus	Garden nasturtium

APPENDIX F: MODERATELY INVASIVE SPECIES

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

Schinus molle	Mexican pepper	*Washington robusta*	Mexican fan palm
Schinus terebinthifolius	Brasilian pepper	*Vicia sativa*	Spring vetch
Sisymbrium irio	London rocket	*Vulpia myuros varhirsuta*	Annual fescue
Trifolium hirtum	Rose clover	*Vulpia myuros var myuros*	Rattail fescue

APPENDIX G: EXOTIC, NON-INVASIVE SPECIES

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

Veronica anagallis-aquatica speedwell	Water	*Yucca species*	Spanish bayonet

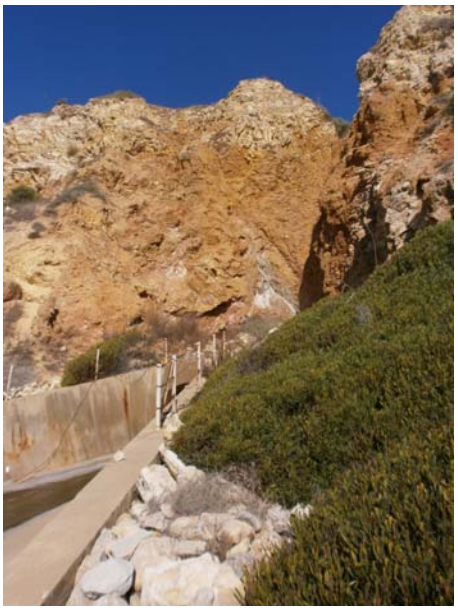
LACC removed invasive Acacia from Vicente Bluff
Pre-acacia removal

Acacia were removed from Vicente Bluff
pre-Acacia removal

Vicente Bluffs pre-clearing

Vicente Bluffs post-clearing

Lower bluff with invasive acacia choking existing El Segundo blue butterfly host plants



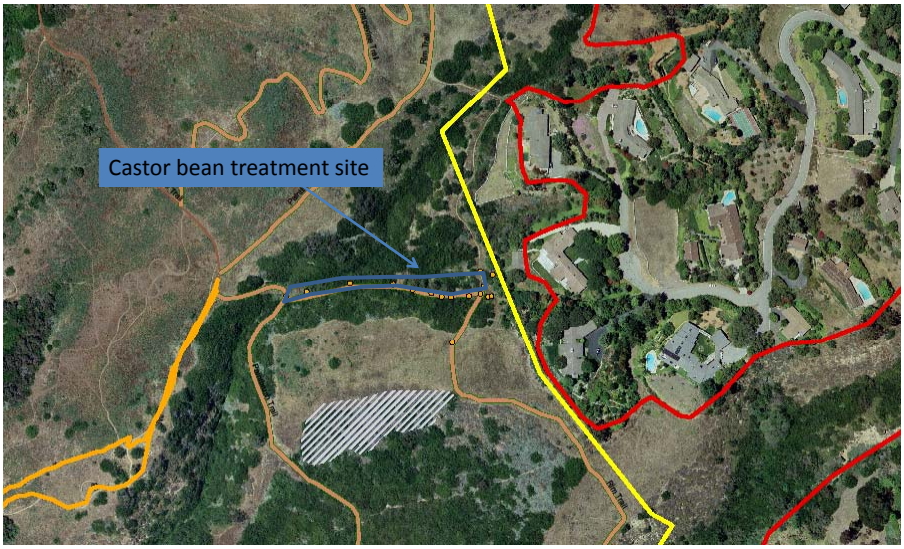
Lower bluff after clearing by LACC

San Ramon Euphorbia Control with Mulch

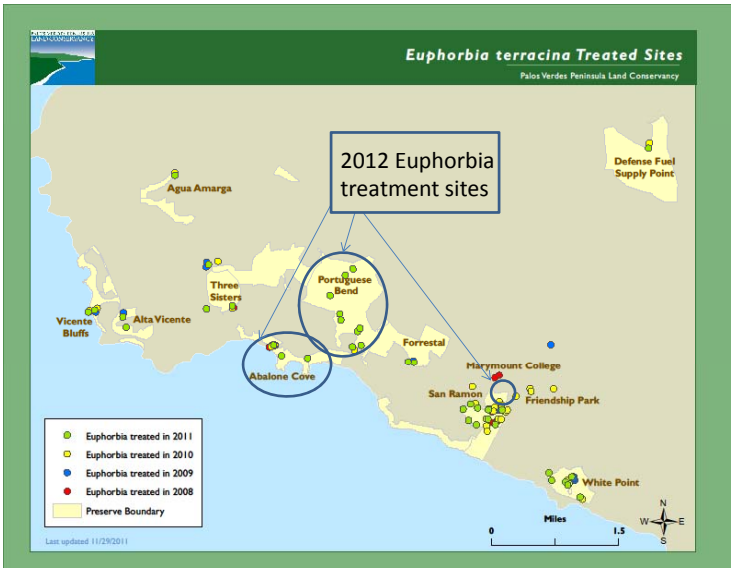
Three Sisters *Acacia cyclops* pre-treatment

Three Sisters *Acacia cyclops* post-treatment

Castor Bean Treatment Sites along Rim Trail at Portuguese Bend



Euphorbia Treatment Sites 2012



THREE SISTERS RESERVE FIRE RECOVERY PLAN

Prepared by:
Palos Verdes Peninsula Land Conservancy
Danielle LeFer

JULY 2012

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1. INTRODUCTION

The January 9, 2012, Crest Fire burned approximately 12.7 acres of the 99-acre Three Sisters Reserve, as well as some habitat in McCarrell's canyon, outside of the Preserve. The wildfire burned native and non-native vegetation and known habitat of the threatened coastal California gnatcatcher (*Polioptila californica californica*) and the special status cactus wren (*Campylorhynchus brunneicapillus*).

This report addresses the management and recovery of habitat and trails in the fire-affected area of the Three Sisters Reserve. The recommendations in the report are based on the management of the PVNP under a draft Natural Community Conservation Plan to "maximize benefits to wildlife and vegetation communities while accommodating appropriate economic development within the City of Rancho Palos Verdes." Under the plan, the Palos Verdes Peninsula Land Conservancy (PVPLC) serves as the habitat management agency for the PVNP, for the land owners (the City of Rancho Palos Verdes). This report does not offer post-fire recommendations for public safety, enforcement or other responsibilities outside of the scope of habitat management.

Section 2 of the fire recovery plan documents existing, pre-fire conditions and management of the Reserve. Section 3 provides restoration and monitoring recommendations, based on available funding for expected burns, as outlined in the draft NCCP. Section 4 is a Summary of Recommended Actions.

2. PRE-FIRE CONDITIONS

In Spring 2009, vegetation mapping using California Native Plant Society's Rapid Vegetation Assessment Protocol was completed. This information describes the Reserve's pre-fire habitat types with both native and introduced vegetation stands (*Figure 1*). In addition, cactus scrub, cactus wrens and California gnatcatchers mapped during surveys in 2009 are shown in *Figure 2*.

Of the 12.7 acres that burned at Three Sisters Reserve, California sunflower (*Encelia californica*) and lemonadeberry (*Rhus integrifolia*) were the dominant native vegetation types (*Table 1, Figure 1*). Other native vegetation found in the burn area pre-fire were large patches of cactus scrub habitat dominated by prickly pear cactus (*Opuntia littoralis*) (*Figure 2*). The dominant introduced vegetation type pre-fire was Russian thistle (*Salsola tragus*).

TABLE 1: Pre-fire vegetation types and associated acreages

Vegetation Type	Acres	Native
S. tragus	2.0	N
R. integrifolia	0.2	Y
E. californica	10.5	Y
Total	***12.7***	

Figure 1. Three Sisters 2012 Fire Boundary and Pre-Fire Vegetation.

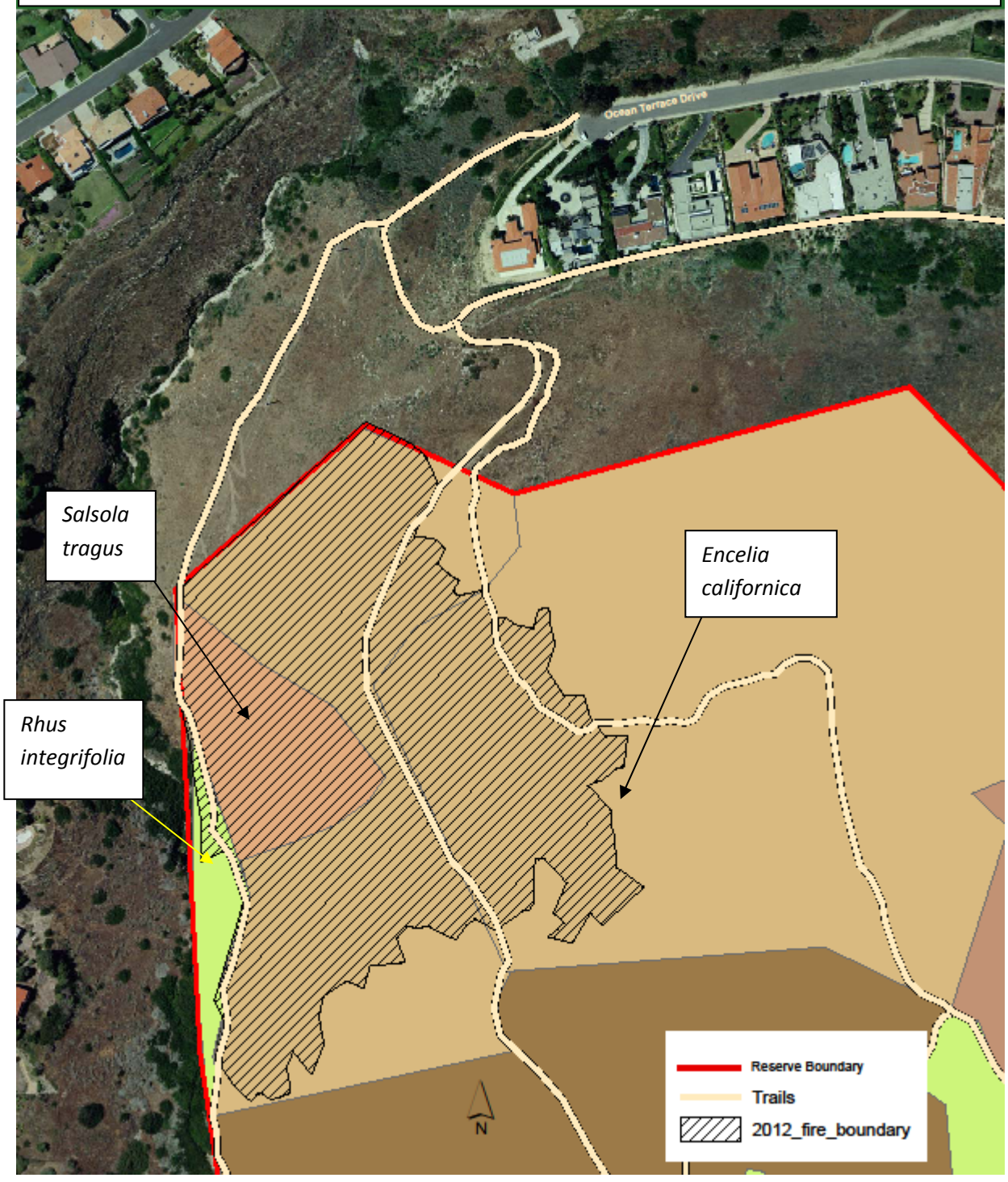
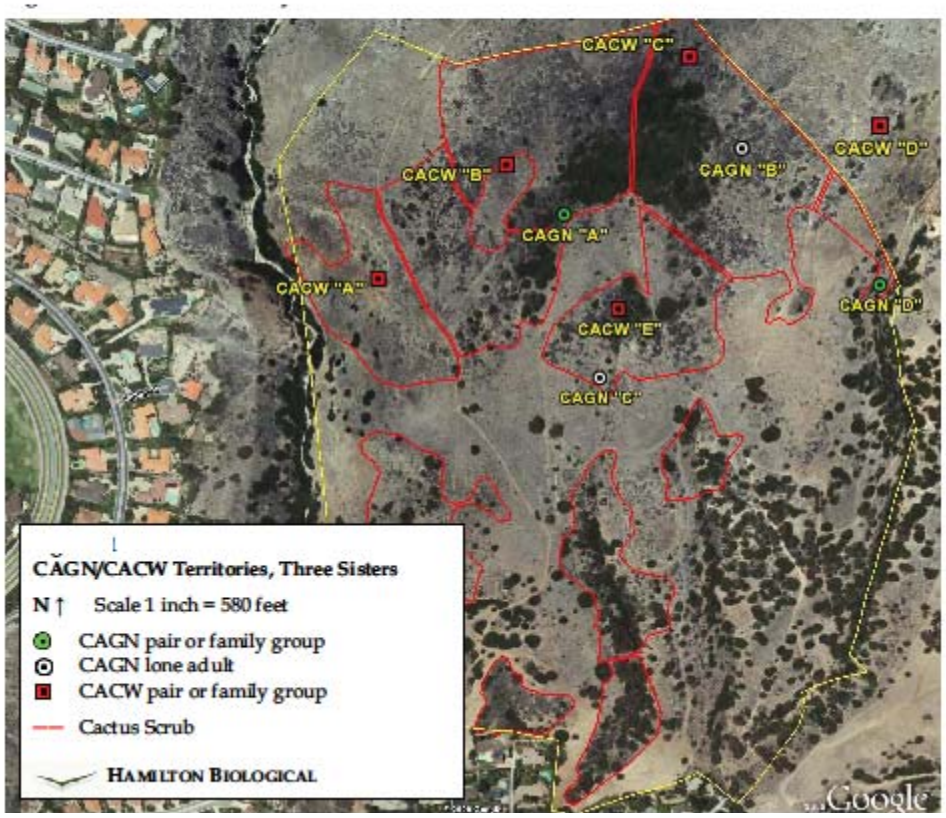


Figure 2. Cactus Scrub, Cactus Wrens and California Gnatcatchers Identified in 2009 Surveys.



3 RESTORATION AND MONITORING RECOMMENDATIONS

3.1 EROSION AND TRAILS

Increased surface erosion of hillsides, canyons and trails may occur in the burn area until the area stabilizes, especially during storm events. Stabilization of the area will come over time but permanent native vegetation is the best long-term solution for soil stabilization and erosion control. Some targeted replanting of mature native vegetation in combination with native seeding is a possible method to counteract erosion and mudflow. However, it is important to understand that soil movement and erosion are natural occurrences in a post-fire environment.

PVPLC recommends that erosion control efforts in the Reserve be focused on the re-vegetation of native plants. These erosion control strategies may be implemented on an as needed basis, depending on storm frequency and rain events.

The trail system was not affected by the fire. Water run-off from fire response exacerbated some pre-existing ruts along McCarrell's Canyon Trail. In addition, measures should be put in place to reduce the likelihood of use of the fire-fighter's perimeter boundary as a trail, and the creation of new trails in the fire area. Off-trail and unauthorized trail usage results in trampling of native seedlings and soil disturbance which encourages fast growing non-native plants. PVPLC will monitor to determine if unauthorized trails are being created and need to be closed. Along with Reserve rule enforcement, techniques to minimize off-trail use include: trail signs designating official trails, areas closed for restoration, and directional signs pointing away from unauthorized and closed trails.

3.2 INVASIVE SPECIES CONTROL

Successful recovery of the Reserve burn area is dependent on the establishment of native plants. For this to occur, an invasive species control program must be implemented within the burn area. Pre-fire vegetation data suggests 16% cover of non-native species in the burn area (Table 1). Similarly, pre-fire native vegetation stands may be exposed to post-fire invasion in the Reserve from adjacent patches of invasive plants (Figure 1). PVPLC recommends closely monitoring the fire area during the first year after the fire, to determine whether native vegetation is recovering, and control weeds as necessary.

Invasive species should be targeted in areas that were previously composed of native vegetation. Based on limited funding, priority areas for weed control are known stands of pre-fire dominant native vegetation (Figure 1). Species priority will be based on PVPLC's Targeted Exotic Removal Plant Program guidelines, which use a synthesized rating system drawn from plant invasiveness rankings from both the California Invasive Plant Council and the California Department of Food and Agriculture. Removal methodologies will include, but are not limited to: herbicide, hand removal, mechanical weeding.

3.3 HABITAT RESTORATION AND ENHANCEMENT

The purpose of this habitat restoration plan is to establish ecologically appropriate native habitats in areas disturbed by fire. The following general goals were determined for the habitat restoration after evaluating the post-fire conditions of the Reserve:

Primary Goal
Increase successful native plant species diversity and structural diversity of the site by restoring native cactus scrub.

Additional Goals
Establish native habitats that will be self-sustaining in the long-term by encouraging conditions that will allow natural processes to proceed, including soil development, nutrient cycling, plant succession, natural regeneration, and resistance to perturbation.

Figure 3 references the recommended areas and methodologies for habitat restoration in the burn site. As previously described, the goals of restoration are to increase the success of native plant establishment by limiting competition from non-native weeds and ensuring natural regeneration. This approach to restoration would be two-fold, through: 1) weed control throughout the site; 2) supplemental mature species planting.

In pre-fire stands of cactus scrub (Figure 2) historically occupied by covered species under the NCCP, it is recommended that mature container plants be planted to speed up the recovery and increase potential cactus wren habitat. Container plants should be grown from locally collected seed and cutting sources. Planting should be implemented in the early fall to take advantage of the entire rainy season.

The following cactus scrub species are recommended for planting based on pre-fire vegetation maps: *Cylindropuntia prolifera, Opuntia littoralis.*

3.4 MONITORING

Monitoring should be limited to visual inspections on a quarterly basis, to document invasive weed growth and weed control needs. Planted areas should be visited monthly for the first 6 months, then quarterly, to determine the success of the restoration, and management needs. Annual vegetation assessments (the California Native Plant Society's Rapid Vegetation Assessment protocol), will be conducted in the first three years following the fire, to assess fire recovery. The success criteria listed below for the two pre-fire habitat types will indicate successful fire recovery. Other sources of funding may be sought if vegetation recovery is not approaching minimum success criteria.

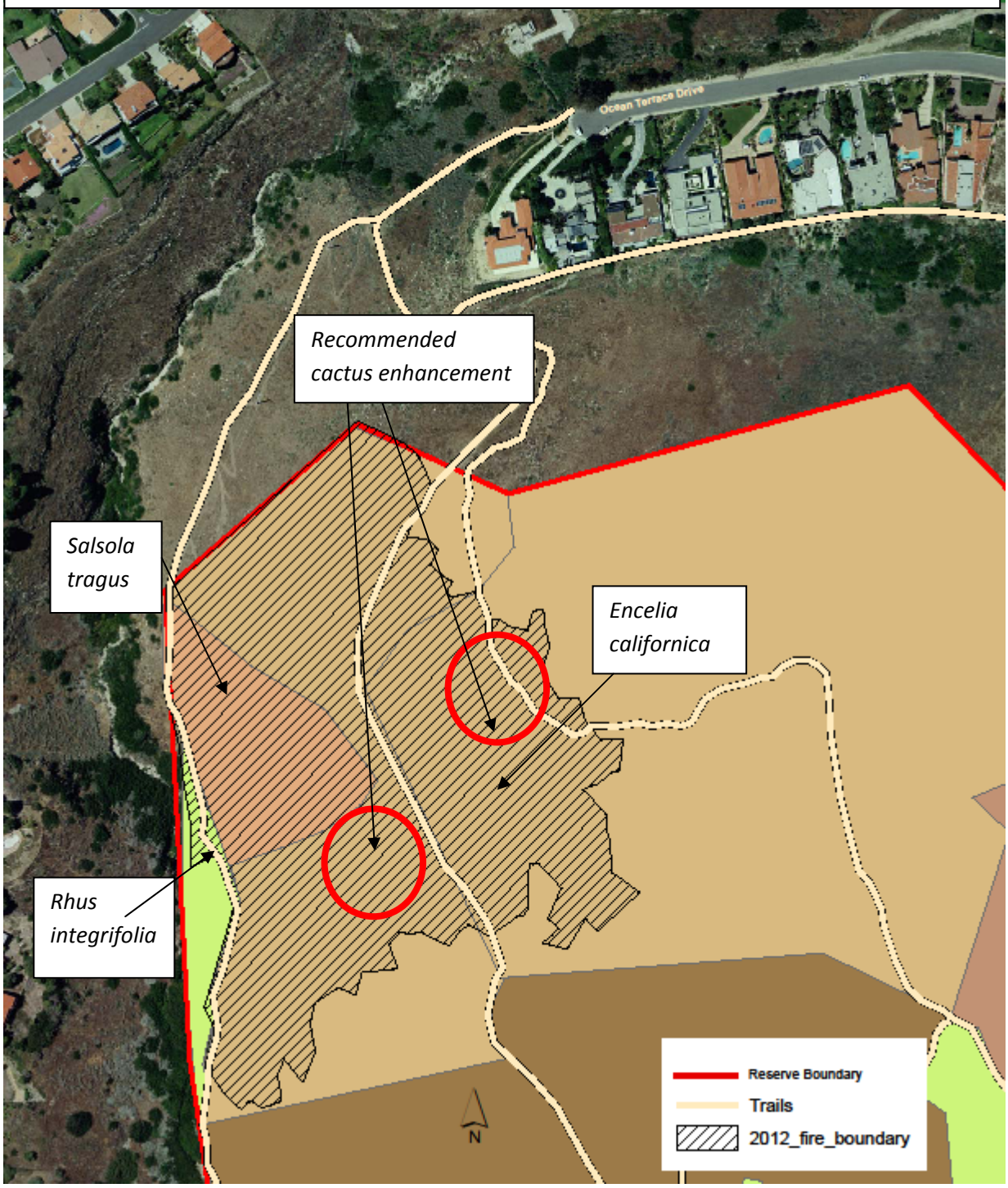
Coastal Sage Scrub

- After the third year, non-native plant cover less than 30%
- Native plant cover after the third year in the CSS community greater than 40%

Cactus Scrub

- After the third year, non-native plant cover less than 30%
- Native plant cover after three years in the cactus scrub community greater than 30%.

Figure 3. Three Sisters Recommended Recovery Actions.



4 SUMMARY OF RECOVERY ACTIONS

The following actions are a summary of the recommendations outlined in the above Section 3 of this report:

Task 1: Targeted Invasive Species Removal

Implement invasive plant species removal within the burn area as needed. Priority will be based on PVPLC's NCCP Targeted Exotic Removal Plant Program guidelines, which use a synthesized rating system drawn from plant invasiveness rankings from both the California Invasive Plant Council and the California Department of Food and Agriculture. Removal methodologies will include, but are not limited to: herbicide, hand removal, mechanical weeding.

Task 2: Supplemental Native Planting

Mature cactus scrub container plants, grown from local seed stock, will be planted in areas historically occupied by cactus wrens, a covered species under the NCCP. In other areas, passive recovery will be monitored.

Based on NCCP, for repetitive fires (less than 56 acres in size): Available funds, shared by the City of RPV and PVPLC, are $1,300 per acre. Therefore, total funds available for fire response are $16,510.

Table 2. Recommended Actions.

		Cost	Timeline
Task 1	Monitor and weed as necessary	$8,510	Summer 2012-Spring 2015
Task 2	Enhance cactus scrub (2 acres)	$8,000	Fall 2012
Total		**$16,510**	

APPENDIX I: PHOTOGRAPHS OF THREE SISTERS BURN.

Photo 1: Overview of Burned Area.

Photo 2: Burned Cactus Patch (1).

Photo 3: Burned Cactus Patch (2).

Photo 4. Burned cactus patch (3). Photo by Linda Wedemeyer.

NARCISSA FIRE (MAY 25, 2012) AT PORTUGUESE BEND RESERVE: FIRE RECOVERY PLAN

Prepared by:

PALOS VERDES PENINSULA LAND CONSERVANCY

Danielle LeFer

1. INTRODUCTION

The May 25, 2012, the Narcissa fire burned approximately 0.2 acres of the 399-acre Portuguese Bend Reserve (Figure 1). The area burned had previously burned during the August 2009 fire. The fire was on a slope along the side of Burma Road. Since the area had previously burned, the vegetation was sparse. Several shrubs were partially burned during this fire.

The recommendations in this report are based on the management of the PVNP under a draft Natural Community Conservation Plan to "maximize benefits to wildlife and vegetation communities while accommodating appropriate economic development within the City of Rancho Palos Verdes." Under the plan, the Palos Verdes Peninsula Land Conservancy (PVPLC) serves as the habitat management agency for the PVNP, for the land owners (the City of Rancho Palos Verdes). This report does not offer post-fire recommendations for public safety, enforcement or other responsibilities outside of the scope of habitat management.

2. RESTORATION AND MONITORING RECOMMENDATIONS

2.1 EROSION CONTROL

Although the fire occurred on a slope, the slope is rocky, and was already exposed. No additional erosion is expected to occur due to exposed soil. PVPLC will monitor the site and implement erosion control strategies if they become necessary.

2.2 INVASIVE SPECIES CONTROL

PVPLC will monitor the site during the first year after the fire, and control invasive species that may appear.

2.3 HABITAT RESTORATION AND ENHANCEMENT

The native plants at the site were partially burned, and are expected to recover and stump sprout, therefore no additional planting is necessary.

2.4 MONITORING

Monitoring should be limited to visual inspections on a quarterly basis, to document invasive weed growth and weed control needs.

2.5 COSTS

Based on NCCP, for repetitive fires (less than 56 acres in size): Available funds, shared by the City of RPV and PVPLC, are $1,300 per acre. Therefore, total funds available for fire response are $260.

Table 1. Recommended Actions.

		Cost	Timeline
Task 1	Monitor and weed as necessary	$260	Fall 2012-Fall 2013
Total		**$260**	

Figure 1. Extent of Narcissa Burn (May 25, 2012) on Portuguese Bend Reserve.

APPENDIX I: PHOTOGRAPHS of May 25, 2012 Portuguese Bend Burn

PALOS VERDES PENINSULA LAND CONSERVANCY

PRESERVING LAND AND RESTORING HABITAT FOR THE EDUCATION AND ENJOYMENT OF ALL

Subject: Request for Approval of Revised 2010 Habitat Restoration Plan for the Portuguese Bend Reserve in the Palos Verdes Nature Preserve

PVPLC previously requested additional year of weed control, and Phase I and II will be planted in Fall 2012 (Figure 1).

Since the 2010 Restoration Plan was written, the City of RPV has approved a request for irrigation at the restoration site. Irrigation will allow PVPLC to plant container plants rather than only seeding the site. This will help to more quickly achieve habitat criteria. Enclosed is the proposed revised Restoration Plan.

In addition, the total acreage covered by the Portuguese Bend Restoration Plan is 21 acres, sufficient acreage for four years of restoration at 5 acres per year. Therefore, we have included a map indicating the proposed restoration in four phases (4 years) (Figure 2). We propose therefore to create a new Restoration Plan for a future site in 2013, for implementation in 2015.

Please feel free to contact me with questions regarding this request.

Sincerely,

Danielle LeFer, Ph.D.
Conservation Director
Palos Verdes Peninsula Land Conservancy
916 Silver Spur Road, Rolling Hills Estates, CA 90274
dlefer@pvplc.org
310-541-7613 X 203

Portuguese Bend NCCP Site Proposed Revised Restoration Plan April 25, 2012

3.5 SEEDING AND PLANTING SPECIFICATIONS

The following methods will be used to seed and plant during the restoration of coastal sage scrub and cactus scrub habitats within the Portuguese Bend Reserve. Seeding and planting should be implemented in October 2012 to take advantage of the entire rain season.

3.5.1 Seeding

Seed shall be applied by hand with a belly grinder in the areas between container plant groupings as well as in between the plants among the container plant groups in all restoration areas. The seed will be mixed together as specified for the seed mix. Specified VAM will be spread by hand with a belly grinder over the seeding area prior to seeding. The seed shall be broadcast and raked, where practical, into the ground to no more than a quarter of an inch to incorporate the seed into the soil to increase germination success. The seed palettes are the same as in the 2010 Restoration Plan (see Table 2, 4, 6).

3.5.2 Planting

Container plant palettes were based on the seed palette in the 2010 Restoration plan (Tables 1, 3, 5).

Container plants consist of dominant shrubs and 40 to 60 plants will be planted in groups of mixed species throughout the restoration area. However, cactus species will be planted in the 2 acre restoration area with no other species planted within the group. The layout for container plants will be determined for each area based on micro topographic features and planting sites will be marked on the site using different colored pin flags under the supervision of the restoration ecologist or PVPLC biologist. Spacing of plants within the groups will follow the specifications presented in the tables for container plant palettes. Groups of container plants will be spaced in a natural looking mosaic in each area.

All container plants are to be planted to the following specifications:

- Planting holes shall be made with the minimum disturbance to accommodate the containers.
- Prior to planting, the planting hole shall be filled with water, and allowed to drain.
- Plants shall be set in the planting hole so that the crown of the root ball is approximately 0.25 inch above finish grade. Under no circumstance should the plant crown be buried.
- A watering basin shall be provided around each plant from 18 – 24 inches in diameter.
- Watering basins shall be filled with water after planting, at least twice.
- The irrigation system should be tested to ensure that all emitters are functioning.

3.6 IRRIGATION SYSTEM

A temporary above ground irrigation system is specified for the groups of container plants within the coastal sage scrub restoration areas. The irrigation system will be used, as necessary to supplement the annual rainfall during the establishment period. The temporary irrigation system will be installed in Spring prior to planting to permit “grow and kill” weed treatments.

The temporary above ground irrigation system will be used in the early fall and late spring seasons. The irrigation system will slightly lengthen the growing season to maximize the development of the habitat. Depending on rainfall, irrigation likely will be required for the first two growing seasons for establishment.

3.7 SITE MAINTENANCE

One of the goals for the restoration is to provide self-sustaining habitats. However, initially, maintenance of the restoration area will be necessary to establish the newly planted and seeded areas. Maintenance will include any activities required to meet the performance standards set forth in this plan, in the estimation of the restoration specialist or PVPLC biologist. For the Three Sisters Reserve, these include the following:

- Weed control, at a minimum for fennel, acacia, mustards, wild oats and purple false brome;
- Irrigation for the container plants;
- Replacement hand seeding in areas of more than 200 sq. ft where target seed germination failed after one good season of rainfall;
- Replacement of container plants in areas with less than 80 percent survival in years two and three, based on visual observations of substantial mortality; and
- Pest and disease control, if necessary.

The establishment maintenance period is generally three years duration with the most intense maintenance in the first and second year, and only seasonal weeding activities in the third year. The amount of maintenance each year will depend on weather conditions and how well the site develops. The following specifications for maintenance may require adjustments as determined by the restoration specialist or PVPLC biologist over the three-year maintenance period.

3.7.1 Weed Control

During the active maintenance period, the target cover from exotic weed species will be generally 10 percent or less. Control of the wild oats and purple false brome is especially important because annual grasses have been shown to compete with shrub species in restoration (Eliason and Allen 1997; Corbin and D’Antonio 2004). Purple false brome is a relatively recent invader to southern California, and the habitat of this species is relative dense growth.

Weeds will be controlled during late winter through early summer, as necessary, before they set seed and/or before they reach approximately 12 inches in height. Three weeding events should be estimated for a normal rainfall season, with more or less as dictated by rainfall. Weeds, such

as purple false brome will be removed from the site if seeds have set prior to weeding. Since removal of weeded material is expensive, weeded material may be left on site as organic mulch material if seeds have not yet set. Removal of herbicide treated material is not an issue.

Weed control will mainly employ hand pulling, mechanical methods, and spot spraying of herbicides for certain species such as fennel and acacia as described in Section 3.2.1.

3.7.2 Irrigation of Container Plants

Temporary irrigation will only be used in the areas where groups of container plants are to be planted. Irrigation will be used in the first two seasons from planting to extend the rainy season and establish the shrubs, as necessary. The timing of irrigation events will depend on evapotranspiration between irrigation events and soil moisture. The following management scheme is anticipated as a guideline for water management of native trees and shrubs:

- Irrigate soil to full field capacity to the desired depth (approximately 18 inches after planting; and 18–24 inches during plant establishment).
- Allow soil to dry down to approximately 50-60 percent of field capacity in the top 6-12 inches before the next irrigation cycle. Depth of soil dry down between irrigation events will depend on development of container plants.

Wetting of the full root zone and drying of the soil between irrigation events is essential to the maintenance of the plants and the promotion of a deep root zone that will support the vegetation in the years after establishment. A soil probe or shovel should be used to examine soil moisture and rooting depth directly.

3.7.3 Seeding and Plant Replacement

Target values for relative cover of the native vegetation, including nurse and erosion control species, will be as follows with at least 20 percent cover in Year 1, 30 percent in Year 2, and 40 percent in Year 3. Actual cover values will depend mainly on weather conditions (seasonal rainfall and temperature) during the establishment period.

Areas of significant erosion shall be repaired and re-seeded in the first fall season after damage. Re-seeding will occur in areas if coverage is less than 20 percent of native species over any contiguous area of 200 sq ft.

Survival of the container plants within the first growing season should be 80 percent. Plants shall be replaced if survivorship falls below 80 percent in the first season. Replacements will be planted as previously specified and maintained for one growing season, as necessary. As sites develop, it is impractical to implement direct counts of all the container plants. Replacement planting after the first season shall only be specified if the visual estimate indicates substantial mortality and the function of these species has not been replaced by seeded material and natural recruitment.

Table 1. Northerly Facing Slope Coastal Sage Scrub Container Plant Palette.

Species	Spacing	# of plants per acre
Artemisia californica	5’	148
Encelia californica	4’	111
Eriogonum cinereum	4’	148
Eriogonum fasciculatum	4’	222
Hazardia squarrosa	4’	37
Heteromeles arbutifolia	5’	7
Leymus condensatus	5’	74
Isocoma menziessi	5’	111
Lotus scoparius	4’	74
Malosma laurina	15’	7
Melica imperfecta	4’	148
Rhus integrifolia	15’	7
Salvia leucophylla	5’	111

Table 2. Northerly Facing Slope Coastal Sage Scrub Seed Mix.

Species	Lbs. Per Acre
Artemisia californica	2
Castilleja exserta	0.5
Deinandra fasciculata	1.5
Encelia californica	1.5
Eriogonum cinereum	2
Eriogonum fasciculatum	3
Eschscholzia californica var. maritima	1.5
Hazardia squarrosa	0.5
Gnaphalium californicum	0.5
Heteromeles arbutifolia	0.1
Leymus condensatus	1
Isocoma menziessi	1.5
Lotus strigosus	1
Lotus scoparius	1
Lupinus succulentus	1
Lupinus bicolor	1

Malosma laurina	0.1
Melica imperfecta	2
Nassella lepida	1
N. pulchra	1
Phacelia cicutaria	0.4
Plantago insularis	20
Rhus integrifolia	0.1
Salvia leucophylla	1.5
Vulpia microstachys	1
Bloomeria crocea	as available
Dichelostemma capitatum	as available
Calochortus catalinae	as available
Total Lbs./Grams per Acre	**46.7**

Table 3. Southerly and Westerly Facing Slope Coastal Sage Scrub Plant Palette.

Species	**Spacing**	**# of plants per acre**
Artemisia californica	5’	125
Encelia californica	4’	125
Eriogonum cinereum	4’	125
Eriogonum fasciculata	4’	375
Heteromeles arbutifolia	5’	19
Isocoma menziessi	5’	94
Lotus scoparius	4’	94
Malosma laurina	15’	6
Melica imperfecta	5’	63
Rhus integrifolia	15’	6
Salvia mellifera	5’	94

Table 4. Southerly and Westerly Facing Slope Coastal Sage Scrub Seed Mix.

Species	**Lbs. Per Acre**
Artemisia californica	2

Castilleja exserta	0.5
Deinandra fasciculata	1.5
Encelia californica	2
Eriogonum cinereum	2
Eriogonum fasciculata	6
Eschscholzia californica var. maritima	1.5
Gnaphalium californicum	0.5
Heteromeles arbutifolia	0.3
Isocoma menziessi	1.5
Lotus strigosus	1.5
Lotus scoparius	1.5
Lupinus succulentus	1
Lupinus bicolor	1.5
Malosma laurina	0.1
Melica imperfecta	1
Nassella lepida	3.5
N. pulchra	1.5
Phacelia cicutaria	0.4
Plantago insularis	20
Rhus integrifolia	0.1
Salvia mellifera	1.5
Sisyrinchium bellum	0.5
Vulpia microstachys	2
Bloomeria crocea	as available
Dichelostemma capitatum	as available
Calochortus catalinae	as available
Total Lbs./Grams per Acre	**53.9**

Table 5. Cactus Scrub Container Plant Palette.

Scientific Name	Common Name	Container Size[1]	Container Plant Spacing[2]	Plants per Acre[3]
Cylindropuntia prolifera	coastal cholla	1-gallon	3’	40
Opuntia littoralis	coast prickly pear	1-gallon	3’	120
			TOTAL	160

[1] A combination of pads, 1-gallon, and 5-gallon cactus can be used.
[2] Spacing = feet on-center distance from other cactus within planting groups. Spacing of 5-gallon cactus should be 6’ from next closest cactus.
[3] Cactus should be planted in groups of 30. Planting groups can consist of a combination of cactus pads, 1-gallon, and 5-gallon plants at the specified number of plants per acre.

Table 6. Cactus scrub seed mix.

Scientific Name	Common Name	Pounds of bulk seed per acre
Artemisia californica	California sagebrush	2.0
Deinandra fasciculata	fascicled tarweed	1.5
Encelia californica	California encelia	1.5
Eriogonum cinereum	ashyleaf buckwheat	2.0
Eriogonum fasciculatum	California buckwheat	6.0
Gnaphalium californicum	California everlasting	0.5
Isocoma menziesii	coast goldenbush	1.5
Lotus scoparius	deerweed	6.0
Lotus strigosus	strigose lotus	1.5
Lupinus bicolor	miniature lupine	3.0
Lupinus succulentus	arroyo lupine	1.0
Melica imperfecta	melic grass	2.0
Nassella lepida[3]	foothill needlegrass	2.5
Phacelia ramosissima	branching phacelia	0.4
Plantago insularis[4]	wooly plantain	20.0
Rhus integrifolia	lemonadeberry	0.1
Salvia mellifera	black sage	0.5
Sambucus Mexicana	Mexican elderberry	0.5
Sisyrinchium bellum	blue-eyed grass	0.5
Vulpia microstachys[4]	small fescue	6.0

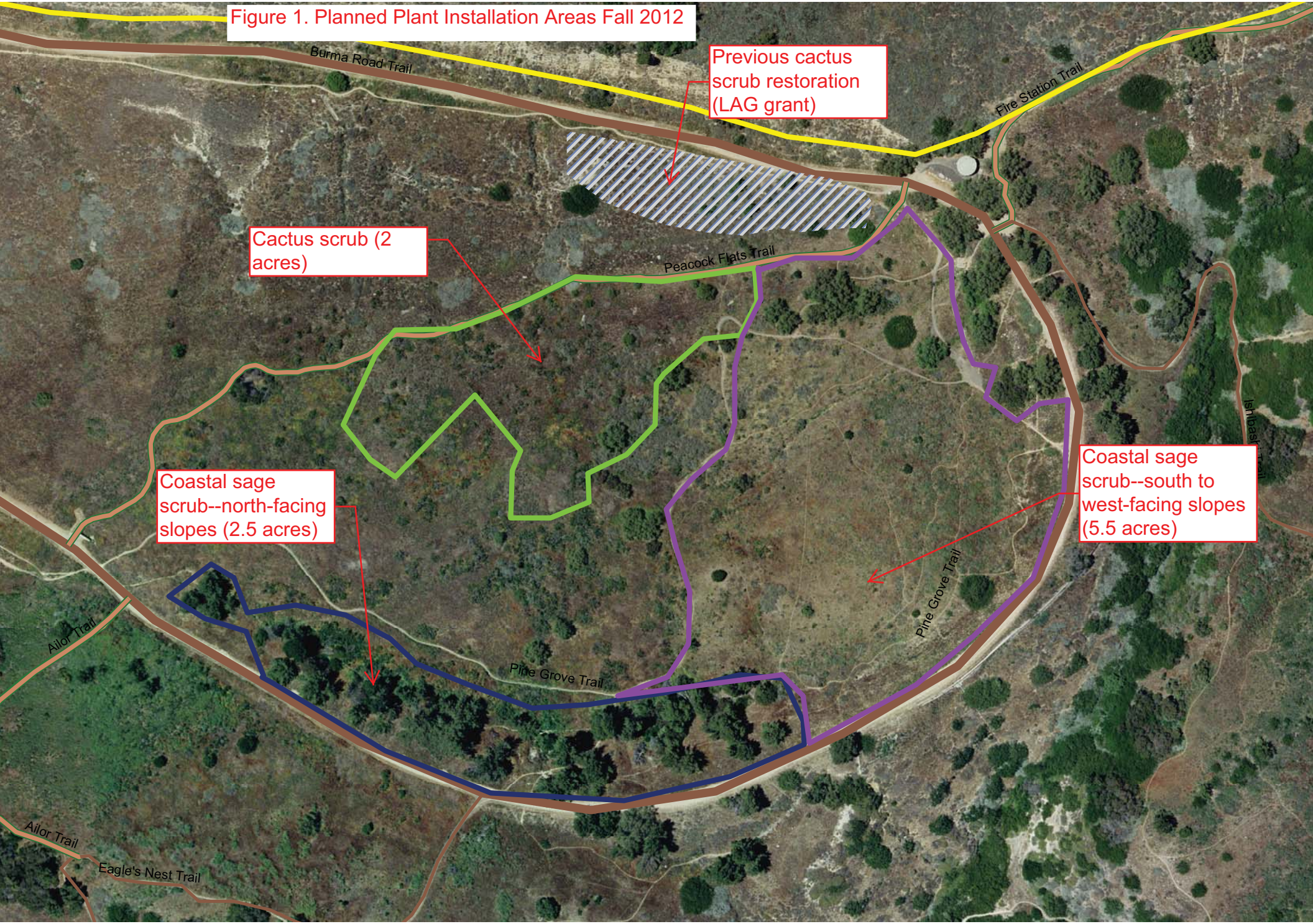


Figure 1. Planned Plant Installation Areas Fall 2012
Burma Road Trail
Previous cactus scrub restoration (LAG grant)
Fire Station Trail
Cactus scrub (2 acres)
Peacock Flats Trail
Coastal sage scrub--north-facing slopes (2.5 acres)
Coastal sage scrub--south to west-facing slopes (5.5 acres)
Pine Grove Trail
Ailor Trail
Pine Grove Trail
Ailor Trail
Eagle's Nest Trail

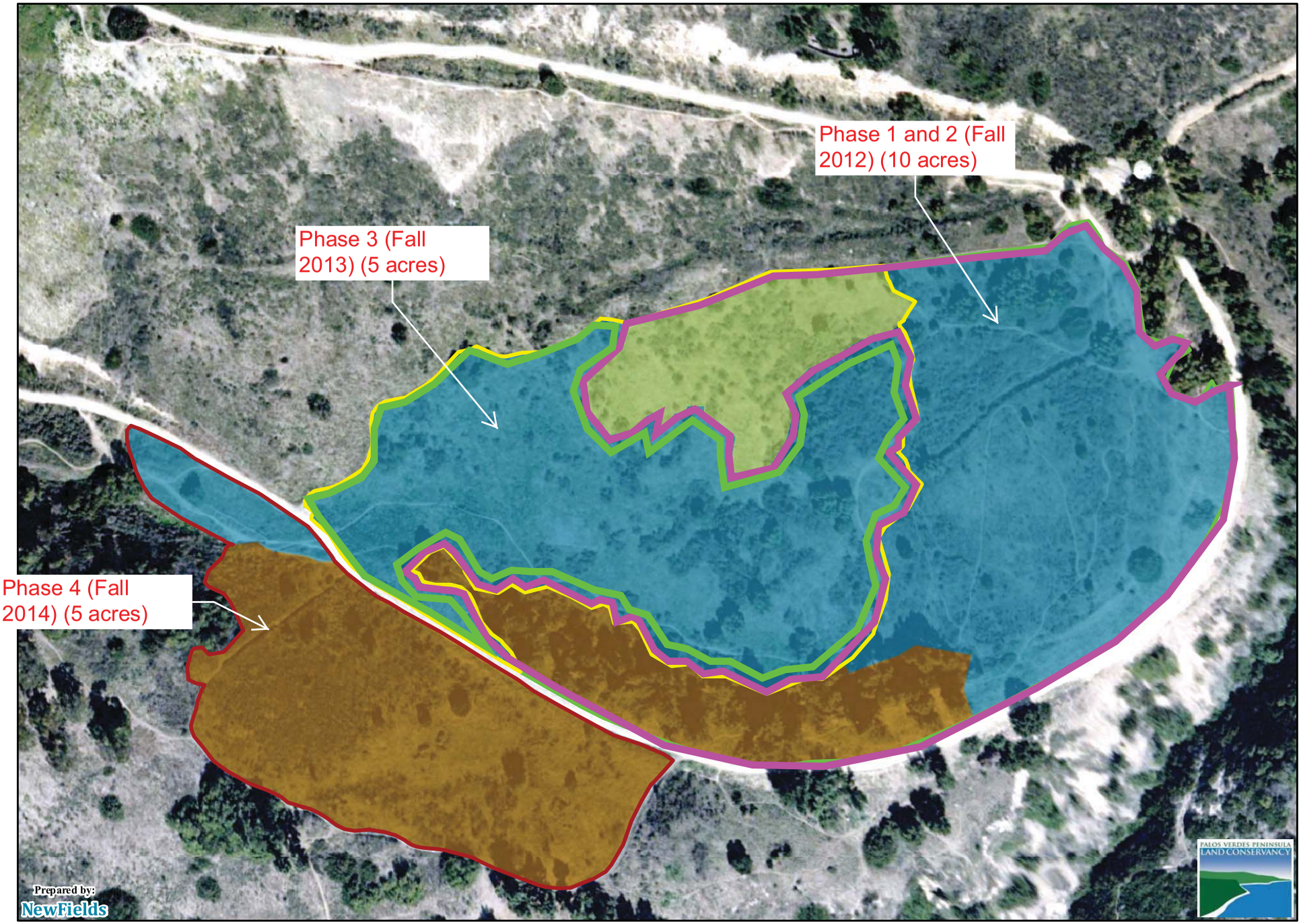


Figure 2.
Proposed Restoration Habitats
Portuguese Bend Proposed Restoration Area
Palos Verdes Nature Preserve

APPENDIX E

RESEARCH AND EDUCATION PROGRAM

1.0 INTRODUCTION

The Research and Education Program at the Palos Verdes Peninsula Land Conservancy (PVPLC) began in 2006 with a generous two-year grant from Alcoa Foundation and Alcoa Fastening Systems. The grant funded the Research, Education, and Community Involvement Program for the Environment (RECIPE), was renewed for two more 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.

Since the conclusion of the Alcoa Grant, PVPLC has worked toward insuring continuity of the program. Identified needs include 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. In 2012, the Long Family Foundation Conservation Research Scholarship provided funds for a CSULB student to conduct field research on coastal cactus wrens.

University professors are crucial for the success of research, because they provide expertise and technical guidance, including managing several research projects. Land 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. The Science Advisory Panel meets annually to offer feedback on restoration projects and covered plant and animal questions in the Preserve.

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

- High School Research
- University Research, and
- Community Researchers.

1. List of ongoing research projects in the Preserve.

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.

Wild Animal Surveys – 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 Encelia californica, Eriogonum cinereum, and Salvia leucophylla – The fourth 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.

Multi-Agency Rocky Intertidal Network (MARINe) – A long-term monitoring site was added to the nationally-run MARINe program, managed by a CSU Long Beach marine biology professor and his students.

Microclimate on the Preserves – The fourth and final year of this program involving high school and college students for monitoring habitat temperature and humidity trends for different plant species.

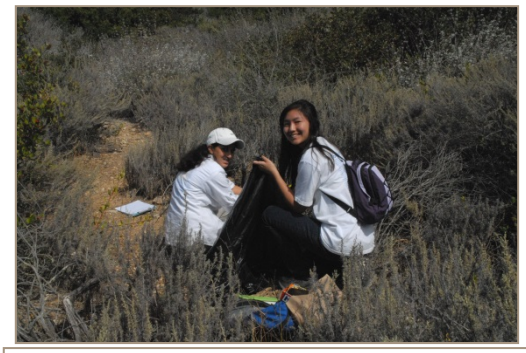
2. 2012 Science Fair Results

PVPLC High School Researchers

Student	Award	Project Title
Christine Chen	Third Place at PV Science Fair, Third Place California State Fair	Assessing Polioptila californica population in differing Artemisia californica habitats
Rachel Dokko Shreya Ramayya	First Place at PV Science Fair, Second Place California State Fair	Biomass analysis of Encelia californica and Salvia leucophylla for carbon sequestration
Dawool Huh	Second Place	Water sources for the Kelvin Canyon Spring
Ashley Yin	First Place	Correlation between Kelvin Canyon Spring water flow and well groundwater level
Albert Liu	Honorable Mention	Effectiveness of volunteer restoration for the Palos Verdes blue butterfly

2.0 HIGH SCHOOL RESEARCH

High school and college students are important elements in PVPLC's field research. By participating in PVPLC's research program with professionals and university researchers, students obtain field and analytical skills in the natural science fields. Additionally, students increase their appreciation of nature while expanding their awareness of opportunities that the natural science fields have to offer. As a result, PVPLC students often win top honors in science fairs and are able to leverage their experience for gaining entrance into top universities, satisfying course credits, or obtaining paid internships (Boxes 2 and 3).



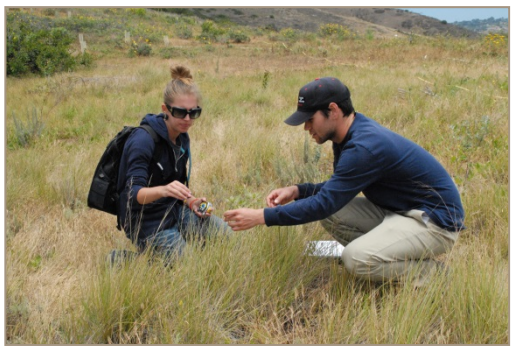
3. High school research
High school researcher Shreya Ramayya and Rachel Dokko collect plant samples for their research project investigating biomass within the habitat on the preserves under the direction of UCLA Research Dr. Rasoul Sharifi.

3.0 UNIVERSITY STUDENTS

College students from local universities participate in research under the umbrella of the Conservancy's Intern program. They participate in programs that are integral with habitat restoration, which provides the students valuable hands-on experience.

PVPLC's stewardship staff conducts a variety of surveys throughout the preserves for assessing habitat quality as well as documenting the progress of our restoration efforts *(Box 4)*. The Conservancy's Interns participated in all the vegetation assessment surveys as well as entered the resulting data into the database. They also developed data tables for reports and conducted the initial stages of the report writing.

In addition to gaining work experience, many students leverage their internships for entrance into a professional job or graduate school. While the Conservancy benefits from their work, the students benefit from experience and training that will benefit them in future careers.



4. University Students
Simone Boudreau (left) and Harrison Kirner identify grass species along a vegetation transect at Three Sisters. Both Interns directly benefitted from their experience: Simone was accepted to graduate school and Harrison is now working for a consulting firm.

4.0 COMMUNITY RESEARCHER

Volunteers are 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.

The 5-year Three Sisters Bird Survey, conducted in conjunction with the Palos Verdes/South Bay Audubon Chapter, has been a highly successful effort. Starting in July 2008, volunteers have participated in bimonthly surveys designed to monitor the bird community's response to the Land Conservancy's 21-acre restoration effort at the site *(Box 6)*. During the summer in 2012, following three years of restoration work, we found that the diversity and abundance of birds increased within the restoration area. Also, California gnatcatchers were more regularly seen in the new habitat, and western meadowlarks were seen in the open, grassland areas.

5. List of monitoring programs in 2012.

Vegetation Surveys

Alta Vicente Reserve – On-going surveys on 10 acres of habitat restoration
Defense Fuel Supply Point – Palos Verdes blue butterfly habitat surveys
Three Sisters Reserve – Habitat surveys on a 21-acre habitat restoration
Three Sisters and Alta Vicente Reserves – Study of habitat use by coastal cactus wren funded by the Long Family Foundation Conservation Research Scholarship

Endangered Butterfly Survey

Linden H. Chandler Preserve – Surveys were conducted for the Palos Verdes blue butterfly where progeny from the 2009 - 2011 releases were observed.

6. Community research

Volunteers for the bimonthly Three Sisters Bird Survey hike to an observation site in the restoration area. Although the plants have been in the ground for only two years, many birds are using the new habitat, including California gnatcatchers.

APPENDIX F

Volunteer Program

1.0 INTRODUCTION AND SUMMARY

1.1 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, 2012 to December 31, 2012. 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. 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 four sections which are detailed within the report:

Board of Directors
Committees and Advisory Boards
Special Events and Office Assistance
Education Docents and Nature Walk Leaders

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 six 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 2012, volunteers provided a grand total of **13,569** hours of service (Table 1). According to the Independent Sector, volunteer time in California is valued at $24.18 per hour (based on Dollar Value of a Volunteer Hour, by State: 2010, Independent Sector), thus generating a total of **$328,108** 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.

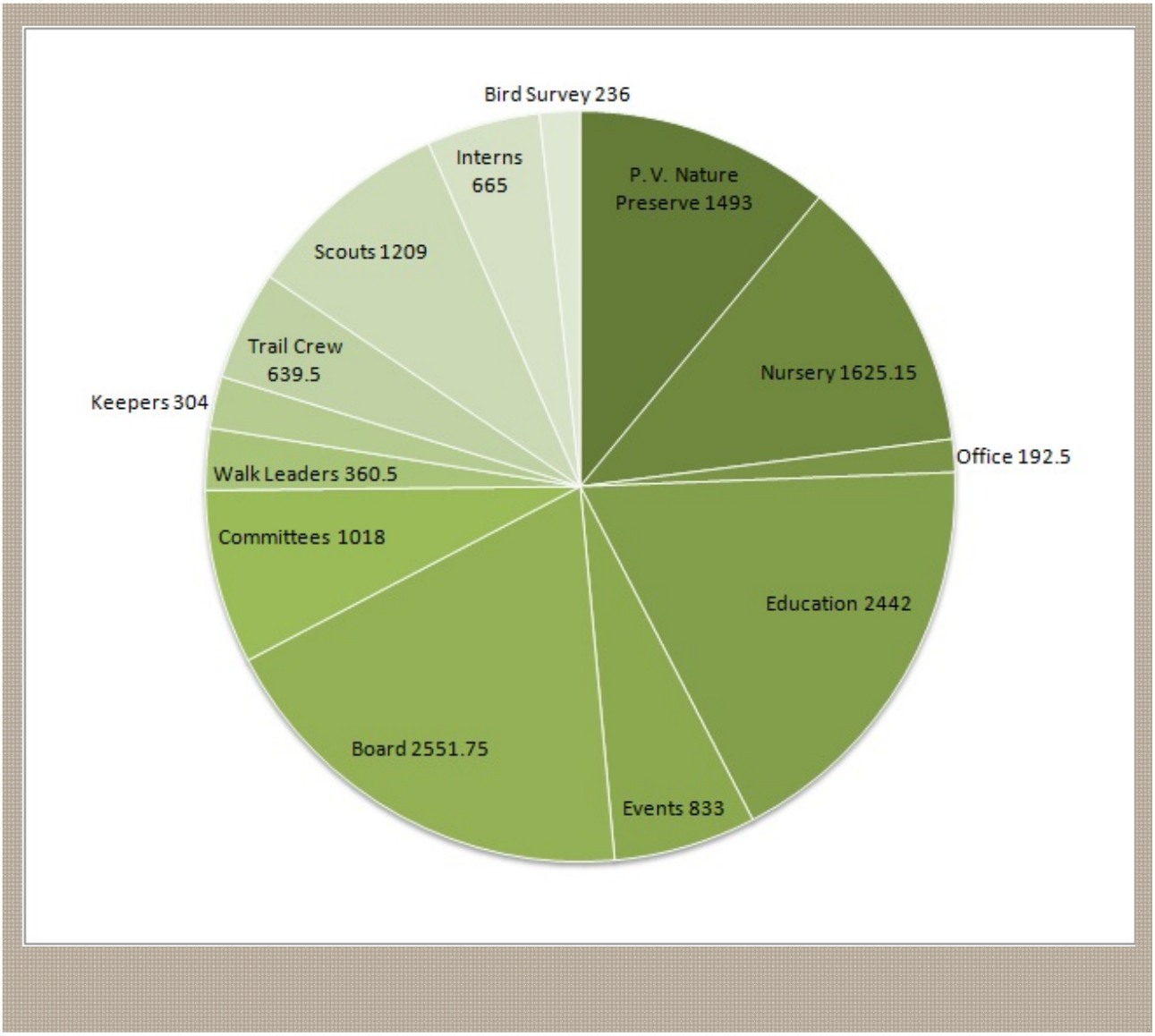


Figure 1. Number of Volunteer Hours Completed by Volunteers for PVNP Support in 2012.

2.0 COMMUNITY INVOLVEMENT

2.1 BOARD OF DIRECTORS

PVPLC is driven and supported by a seventeen-member volunteer board, which meets on a regular basis to strategize and direct the organization's mission. This year, the board contributed about 2370 hours in serving the Land Conservancy's mission.

2.2 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

Committee volunteers donated a total of 1018 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
- Fundraising Committee
- Investment Committee
- Science Advisory Panel
- Personnel/Human Resources Committee
- Special Events Committee(s)

2.3 SPECIAL EVENTS AND OFFICE ASSISTANCE VOLUNTEERS

The PVPLC relies on individual volunteers and organized groups, such as the National Charity League (NCL), Los Hermanos, and Assisteens, to assist PVPLC staff 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.

One of the largest special events is the annual White Point Home Tour, 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. Other special events supported by committees and volunteers this year included the Edge of LA, PV Pastoral, Trump Wine and Beer Festival, and more.

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 2012 reporting year, office volunteers and special event volunteers, donated 1026 hours of assistance.

2.4 EDUCATIONAL PROGRAMS

Volunteers assist with 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 and monthly Nature Walks.

Third Grade Docents

The Third Grade Docents volunteered a total of 738 hours in 2012. Since the start of the program, the docents have served nearly 25,000 students. The docent group is comprised of a diverse group of retired professionals and active volunteers from all over the Peninsula with 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. 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.

Nature Walks

Nature Walk Leaders donated a total of 307 hours in 2012. Former 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 (in Appendix).

2.5 STEWARDSHIP VOLUNTEERS

Stewardship volunteers play an integral part in helping PVPLC staff exceed our goals for restoring all managed open spaces. Outdoor volunteer workdays provide an opportunity for public volunteers to contribute to habitat and trail restoration efforts lead by Team Leaders, the Trail Crew class builds skills for volunteers to maintain the trail system, and KEEPERS help "keep an eye" on the Reserves on a monthly basis. Scout projects, local HERO Club chapters and nursery volunteers are also Stewardship volunteers that support Conservancy restoration efforts. These restoration efforts take place within the Palos Verdes Nature Preserve, Chandler Reserve, George F Canyon, White Point Nature Preserve and Navy Fuel Defense Support Point.

Stewardship volunteer highlights in 2012:

- 7064 hours of outdoor stewardship volunteer time
- $15,000 REI grant to support volunteer programs and trails development
- Reinforced a patch-habitat restoration effort for the Palos Verdes blue butterfly with 3 groups: CSU Domiguez Hills, Audubon YES! Club and the HERO Club
- Facilitated the volunteering effort of several organizations and corporate give-back events

2.6 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.

Figure A

Above: Lunada Canyon full of fennel before current restoration efforts. Yellow circle indicates the work area of photo below (August 2011).

Below: Volunteers removing fennel and clean the slate for new shrubs to be planted (March 2012).

Palos Verdes Nature Preserve (PVNP)

Abalone Cove Reserve

- *September 15* – 230 volunteers removed marine debris and invasive iceplant as a part of the annual Coastal Cleanup Day in partnership with the Los Serenos and City of Rancho Palos Verdes.

Agua Amarga Reserve

- *February 25* – 32 volunteers used loppers to cut fennel from the canyon.
- *March 3* – 23 volunteers removed fennel with loppers.
- *March 24* – 42 volunteers removed fennel with loppers.
- *April 28* – 17 volunteers removed iceplant.
- *June 26* – Five volunteers removed fennel with loppers.
- *October 27* – 21 volunteers planted 30 shrubs in the newly-cleared area to replace fennel.

Alta Vicente Reserve

- *May 12* – Nineteen volunteers weeded non-native plants around establishing native species in the Phase 1 restoration area.

Portuguese Bend Reserve

- *February 18* – Nineteen volunteers continued to remove fennel in the "fennel forest" project initiated in 2011 along Ailor Trail.
- *March 10* – Twelve volunteers removed fennel with loppers.
- *March 31* – 22 volunteers continued to remove fennel with loppers.
- *May 19* – 44 volunteers removed fennel with loppers.
- *June 2 (National Trails Day)* – 43 volunteers from the Trail Crew and public repaired tread and removed weeds on the upper Ishibashi Trail and Ailor Trail.
- *October 6* – Eight volunteers lopped fennel.
- *October 13* – Seven volunteers planted 30 shrubs and cared for other shrubs planted in Peacock Flats area.
- *October 20* – 20 volunteers planted cholla and watered other shrubs.
- *November 10* – Ten volunteers installed t-bars and strung nylon rope to fence off the restoration area.

- *November 17* – 30 volunteers including the AmeriCorps roped off the Peacock Flats restoration area and continued to lop fennel.
- *December 8* – Fifteen volunteers planted 50 native shrubs in the Peacock Flats restoration area.

Three Sisters Reserve

- *January 28* – 50 volunteers planted 80 shrubs and removed weeds from around natives previously planted.
- *February 4* – 23 volunteers planted 50 native shrubs.

Native Plant Nursery

Activities in the Native Plant Nursery include transplanting seedlings from flats into individual containers, removing weeds from the containers. On rare occasion, groups help maintain the shade structure, build plant benches and repair the weed barrier cloth. The following dates detail the nursery's volunteer effort this year:

- *February 11* – Fourteen volunteers transplanted 365 *Encelia californica* seedlings and weeded containers.
- *March 17* – Eight volunteers made seeds balls on a rainy day.
- *April 7* – Seventeen volunteers transplanted *Rhus integrifolia* seedlings and weeded plant containers.
- *May 5* – Twelve transplanted 475 bunchgrasses into containers.
- *May 26* – Seventeen volunteers transplanted seedlings and weeded plant containers.
- *September 8* – Seven volunteers transplanted 250 *Lotus scoparius* seedlings into 1-gallon containers.
- *October 27* – Thirteen HERO Club volunteers transplanted seedlings and weeded containers.
- *December 15* – Eleven volunteers from the HERO Club transplanted 400 seedlings and weeded containers.

2.7 TEAM LEADER PROGRAM

The Team Leader program was started in 2007 in response to the growing number of volunteers that were attending the 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.

The program requires that interested volunteers go through an application and interview process. Candidates then attend a half-day weekend workshop where they learn the skills necessary to motivate and supervise volunteers during Saturday Outdoor Volunteer Days. Training involves practicing leadership skills and communicating restoration techniques. 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 and train a minimum of six new Team Leaders at each one. In 2012, two workshops took place at White Point Nature Preserve – ten volunteers were trained on March 31 and fourteen were trained on September 22.

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.

2.8 HABITAT AND ECOLOGICAL RESTORATION ORGANIZATION (HERO) CLUB

In years past, the HERO Club participated in about eight Outdoor Volunteer Day events a year, striving to host one event every month. This year, the HERO Clubs at Peninsula High School and Palos Verdes High School joined efforts to adopt a plot at Chandler Reserve to restore habitat for the Palos Verdes Blue Butterfly with funding support from a one-year Toyota/Audubon TogetherGreen Fellowship.

HERO Club coordinators also participate in the Team Leader training 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.

2.9 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. In 2011, scout projects have accumulated over 700 hours of volunteer service and are detailed below:

- Joseph Ong – Joseph installed post-and-rope trail closures at Forrestal Reserve.
- Michael Nakahara – Michael and his troop constructed plant tables at the native plant nursery.
- Alex de Loza – Alex lead his troop in closing spur trails with post-and-rope as well as cactus plantings.
- Justin Unno – Justin worked with his troop to close a network of spur trails in east Alta Vicente Reserve.
- Matthew Goodney – Matthew worked with his troop to construct nursery benches to hold native plants.

Figure C. PVPLC partnered with the PV/South Bay Audubon on a Toyota/Audubon TogetherGreen Innovation grant with the purpose of enhancing the Team Leader training experience and develop workshop materials.

2.10 TRAIL CREW VOLUNTEER PROGRAM

This year, the volunteer Trail Crew contributed a total of 640 hours to maintaining the Preserve's trail system. These hours include the second-Saturday monthly class trainings as described below (480 hours), as well as additional trail work, such as weed whacking or spur trail closures, executed by Trail Crew members outside of the classes (160 hours).

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 Los 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.

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.

To date, twelve volunteers have completed the training program and about a dozen other participants are close to completing their 50 hours of required training and could be expected to take the yearly indoctrination sometime in 2013.

Figure E. Left: Independent Trail Crew members held a work day to close spur trails off Flying Mane Trail at Forrestal Reserve. Right: Trail Crew members we trained in how to operate weed "whackers" and helped clear trails in spring 2012.

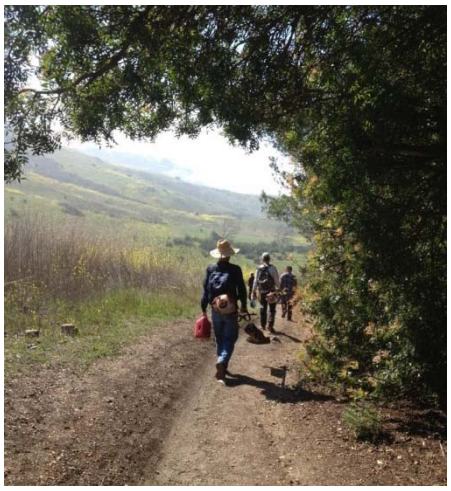


Table 2
Trail Crew Training Classes

Date	# Volunteer Hours	Location	Project/Skill Learned
January 14	35	Abalone Cove	Rock work
February 11	30	White Point	Introductory Class
March 10	30	Portuguese Bend	Water control and grade dips
April 14	0	*None*	*Cancelled due to rain*
May 12	24	Abalone Cove	Trail assessment and realignment
June 2	39	Portuguese Bend	NTD: tread repair and brushing
June 9	36	Portuguese Bend	Tread skills – Grapevine Trail
July 14	33	White Point	Introductory Class
August 10	51	Forrestal	Pruning and fence removal
September 8	51	Portuguese Bend	Survey and assessment
October 13	45	Three Sisters	Tread repair and water diversion
November 10	55.5	Abalone Cove	Trail assessment and construction
December 8	51	Portuguese Bend	Trail clearing

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

2.11 KEEPING AN EXTRA EYE ON THE PRESERVES STEWARDSHIP (KEEPERS) PROGRAM

In 2012, The KEEPERS program contributed 304 hours to monitoring the Preserves. The 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. Some of the properties managed by the PVPLC are large enough to require more than one Keeper to monitor them. 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.

Table 3
Number of KEEPERS in Each Reserve

Reserve	# of Keepers
Abalone Cove Reserve	4
Agua Amarga Reserve	3
Alta Vicente Reserve	1
Filiorum Reserve	3
Forrestal Reserve	2
Portuguese Bend Reserve	5
San Ramon Reserve	1
Three Sisters Reserve	1
Vicente Bluffs Reserve	1

2.12 GRANTS

In August 2012, REI awarded the PVPLC with a $15,000 grant to improve volunteer tracking methods through a database, offer event signups through the PVPLC website, to develop volunteer program recruitment materials (ie. Rack card), and to support stewardship volunteers events with supplies and tools.

PVPLC partnered with PV/South Bay Audubon for a TogetherGreen Innovation Grant to enhance the YES (Youth Environmental Service) program through development of a Team Leader program in which the Land Conservancy will act as the pilot organization. There were two Team Leader workshops facilitated by YES Club coordinator, Marcos Trinidad, which were supported by newly developed training materials.

2.13 FUTURE PLANS

Further improvements can be made in retaining, focusing and motivating Team Leaders of all ages and future recruitment may be focused toward environmentally-minded college students and active community residents, perhaps through internship opportunities. Additionally, the same goals can be applied towards the Trail Crew program's ability to motivate graduated volunteers to develop and execute trail projects independently. Leaders from the crew could be supported into leadership roles through one-on-one coaching and/or workshops.

APPENDIX

Preserving land and restoring habitat for the education and enjoyment of all

Madrona Marsh
January 14, 2012, 9-11 am

Visit an oasis for birds and other wildlife in the City of Torrance. This former oil field is now an easily accessible ecological jewel. Easy. TOR

Cabrillo Beach
February 11, 9-11 am

Visit a restored salt marsh, see a coastal native plant garden and learn about this historic area, Cabrillo Aquarium and the beachfront adjacent to Los Angeles Harbor. Moderate. LA

Abalone Cove
March 10, 3-5 pm

Enjoy this afternoon hike at beach level to see lava intrusions and explore the tidepools at low tide. Rocky terrain - wear shoes with good traction. Moderate. RPV

Chandler Preserve
April 14, 9-11 am

Admire this flourishing 28-acre Preserve featuring restored habitat for endangered Palos Verdes blue butterflies and look for special native wildflowers including golden star lilies. Easy to moderate. RHE

Forrestal Reserve
May 12, 9-11 am

This 155-acre Reserve offers some of the best wildflowers viewing in Spring. See dramatic geological formations on the cliffs at this former basalt quarry where faults, folds, sedimentary bedding and igneous intrusions are visible. Moderate to strenuous. RPV

White Point Ranger Walks

WHITE POINT NATURE EDUCATION CENTER & PRESERVE
1600 W Paseo Del Mar
San Pedro, CA 90731
Tel: (310) 561-0917
Hours: Wed, Sat & Sun 10 am - 4pm

Ranger Walks: Every second Saturday (Free - provided by City of Los Angeles) 10 am–12 noon

Three Sisters Reserve *New!*
June 9, 9-12 noon

Enjoy a challenging 3-hour hike in the Palos Verdes Nature Preserve to view the successful 21-acre habitat restoration work and both common and rare birds that are now using the new habitat. Strenuous. RPV

South Shoreline Park
July 14, 4-6 pm

Join this afternoon walk through impressively restored habitat on top of an ancient slide area with spectacular bluff-top ocean views that are well worth the visit! Moderate. RPV

Altamira Canyon
August 11, 9-11:30 am

This extensive hike will take you from the end of Crenshaw Blvd. along Burma Road and through the Conservancy's habitat restoration work at Peacock Flats, then return uphill on the Rattlesnake Trail through lovely Altamira Canyon. Strenuous. RPV

Ocean Trails Reserve
September 8, 9-11 am

Walk through mature coastal sage scrub and cactus habitat near the Trump Golf Club along the bluffs before continuing down to the rocky beach, and returning to Founders Park. Strenuous. RPV

White Point Nature Preserve
October 13, 9-11 am

Search for creepy crawlers to celebrate Halloween on this informative walk from the Nature Center to the historic military gun emplacements above to view breath-taking ocean vistas. Moderate. LA

Friendship Park
November 10, 3-5 pm

Take in some of the best harbor and Catalina views on the eastern side of the Peninsula. See habitat restored by the Conservancy for the Palos Verdes blue butterfly. Moderate. LA

Oceanfront Estates/Lighthouse
December 8, 9-11 am

Enjoy a family walk along the bluff edge, then tour the open Pt. Vicente Lighthouse and end at the Pt. Vicente Interpretive Center, a premier whale-watching site. Easy. RPV

Peck Park Canyon *New!*
January 12, 2013, 9-11 am

Walk through shaded canyon woodlands, site of the former Hernandez Ranch on the east side of the Peninsula in San Pedro. Moderate. LA

George F Canyon Walks

GEORGE F CANYON NATURE CENTER
27305 Palos Verdes Drive East
Rolling Hills Estates, CA 90274
Tel: (310) 547-0862 Hours: Friday: 1- 4 pm; Sat & Sun 10 am - 4 pm

First Saturday Bird Walks: 9 -11 am (Binoculars provided; slow, easy and quiet walk - Free)
First Saturday Walks: Guided walks through the canyon: 1-3 pm ($5 person)
Full Moon Hike: Friday or Saturdays on or near a full-moon (see back for dates)
Must be age 9 and up ($10 person. Please call for exact dates and times)

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

Where indicated, walks are co-sponsored by Palos Verdes Estates (PVE), Rancho Palos Verdes (RPV), Rolling Hills Estates (RHE), City of Los Angeles (LA), or Torrance (TOR).

PALOS VERDES PENINSULA LAND CONSERVANCY
PO Box 3427, Palos Verdes Peninsula, CA 90274 Tel: (310) 541-7613
Web: WWW.PVPLC.ORG

Printing sponsored by
Wild Birds Unlimited
Nature Shop

Winter 2012

Palos Verdes Peninsula Land Conservancy
VOLUNTEER WORKDAYS

Preserving land and restoring habitat for the education and enjoyment of all

Native Plant Nursery
January 7, 9-12 pm

Remove iceplant to make way for Palos Verdes blue butterfly habitat. Reservations required.

Three Sisters Reserve
January 28, 9-12 pm

Plant natives to improve rare cactus wren and gnatcatcher bird habitat.

Portuguese Bend Reserve
February 18, 9-12 pm

Be a weed warrior and fight the battle against fennel invaders.

Portuguese Bend Reserve
March 10, 9-12 pm

Fennel is everywhere, but not for long! Help remove it from the restoration area.

Portuguese Bend Reserve
March 31, 9-12 pm

Help us win the war on fennel and eradicate it to improve wildlife habitat.

White Point Nature Preserve
January 16, 9-12 pm (Monday)

Celebrate Martin Luther King, Jr. Day of Service planting natives and repairing trails.

Three Sisters Reserve
February 4, 9-12 pm

Finish planting natives and remove competing weeds to improve habitat.

Agua Amarga Reserve
February 25, 9-12 pm

Contribute to the restoration plan by removing fennel.

Native Plant Nursery
March 17, 9-12 pm

Help us transplant seedlings and weed plant containers. Reservations required.

Pelican Cove (Fishing Access)
January 21, 9-12 pm

Beautify the coastline by removing trash and creating seed balls.

Native Plant Nursery
February 11, 9-12 pm

Help us transplant seedlings and weed plant containters. Reservations required.

Agua Amarga Reserve
March 3, 9-12 pm

Help us restore this canyon by battling the fennel.

Agua Amarga Reserve
March 24, 9-12 pm

Fennel doesn't stand a chance. Help us eradicate it from the restoration area.

Trail Crew Introductory Class

WHITE POINT NATURE PRESERVE
1600 W Paseo Del Mar
San Pedro, CA 90731
Tel: (310) 561-0917
Saturday, February 11th, 9 am - 1pm

Join the Trail Crew for monthly field practice in trail assessment and repair techniques. The Intro Class will give an overview to the program. Snacks provided. RSVP to Adrienne Bosler at: ABOSLER@PVPLC.ORG.

Scout Projects

GEORGE F CANYON NATURE CENTER
27305 Palos Verdes Drive East
Rolling Hills Estates, CA 90274
Tel: (310) 547-0862
Hours: Friday: 1- 4 pm; Sat & Sun 10 am - 4 pm

The Conservancy greatly appreciates the contributions Scouts make to our work. There are several options offered to meet badge requirements of Cub Scouts, Brownies and Junior Girl Scouts that can be fulfilled at the George F Canyon Nature Center. Please visit WWW.PVPLC.ORG to find out more.

Schedule is subect to change. Cancelled in event of rain. Closed toe shoes are required. Long pants suggested. Help support our conservation effort by bringing your own water to reduce waste during the event.

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

Volunteer Workdays Sponsor:

REI www.rei.com

PALOS VERDES PENINSULA LAND CONSERVANCY PO Box 3427, Palos Verdes Peninsula, CA 90274 Tel: (310) 541-7613 Web: WWW.PVPLC.ORG

PALOS VERDES PENINSULA LAND CONSERVANCY

Native Plant Nursery
April 7, 9-12 pm

Remove iceplant to make way for Palos Verdes blue butterfly habitat. Reservations required.

Agua Amarga Reserve
April 28, 9-12 pm

Contribute to the restoration plan by removing fennel.

Portuguese Bend Reserve
May 19, 9-12 pm

Be a weed warrior and fight the battle against fennel invaders.

White Point Nature Preserve
June 9, 9-12 pm

Beautify the demontration gardens and trails.

Alta Vicente Reserve
June 30, 9-12 pm

Help the native plants grow by removing the competition.

White Point Nature Preserve
April 14, 9-12 pm

Beautify the demontration gardens and trails.

Native Plant Nursery
May 5, 9-12 pm

Help us transplant seedlings and weed plant containers. Reservations required.

Native Plant Nursery
May 26, 9-12 pm

Help us transplant seedlings and weed plant containers. Reservations required.

Native Plant Nursery
June 16, 9-12 pm

Help us transplant seedlings and weed plant containers. Reservations required.

White Point Nature Preserve
April 21, 9-12 pm - Earth Day

Volunteer, art and educational activities for the whole family.

Alta Vicente Reserve
May 12, 9-12 pm

Help the native plants grow by removing the competition.

Portuguese Bend Reserve
June 2, 9-12 pm - National Trails Day

Help us repair the trails that thousands of people enjoy each year.

Agua Amarga Reserve
June 23, 9-12 pm

Fennel doesn't stand a chance. Help us eradicate it from the restoration area.

Trail Crew Introductory Class

WHITE POINT NATURE PRESERVE
1600 W Paseo Del Mar
San Pedro, CA 90731
Tel: (310) 561-0917
Saturday, July 14th, 9 am - 1pm

Join the Trail Crew for monthly field practice in trail assessment and repair techniques. The Intro Class will give an overview to the program. Snacks provided. RSVP to Adrienne Bosler at: ABOSLER@PVPLC.ORG.

Scout Projects

Palos Verdes Peninsula Land Conservancy
916 Silver Spur Road, #207
Rolling Hills Estates, CA 90274
Tel: (310) 547-0862
Email: info@pvplc.org

The Conservancy greatly appreciates the contributions Scouts make to our work. There are several options offered to meet badge requirements of Cub Scouts, Brownies and Junior Girl Scouts that may be completed on the preserves or at the George F Canyon and White Point nature centers. Please visit www.pvplc.org for a list of available project and badge opportunities.

Schedule is subect to change. Cancelled in event of rain. Closed toe shoes are required. Long pants suggested. Help support our conservation effort by bringing your own water to reduce waste during the event.

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

Volunteer Workdays Sponsor:

REI www.rei.com

PALOS VERDES PENINSULA LAND CONSERVANCY PO Box 3427, Palos Verdes Peninsula, CA 90274 Tel: (310) 541-7613 Web: WWW.PVPLC.ORG

Summer Volunteering

Help the Conservancy maintain the preserves to ensure healthy habitats for local wildlife and safe trails for visitors!

We need help at our nature centers with:

- ***trail maintenance***
- ***seed collection***
- ***planting***
- ***weeding***

White Point Nature Preserve
1600 W. Paseo del Mar in San Pedro
Wednesdays 10-12:00pm and Saturdays 10:30am-12:30pm

George F Canyon Nature Preserve
27305 Palos Verdes Drive East in Rolling Hills Estates
Fridays 2-4pm and Sundays 10:30am-12:30pm

Native Plant Nursery in San Pedro
Fridays 9-12:00pm. Reservations required!

To RSVP for groups over 5 or for more information contact: (310) 541-7613 or email: info@pvplc.org

PALOS VERDES PENINSULA LAND CONSERVANCY

Navy Defense Fuel Supply Point
September 1, 9-12 pm

Help combat invasive iceplant as we remove it from nearby PV blue butterfly habitat. Reservations required.

Team Leader Training Workshop
September 22, 9-12 pm

Applications available on our website: www.pvplc.org are due September 15.

Portuguese Bend Reserve
October 13, 9-12 pm

Help us restore habitat by planting native shrubs and remove invasive plants.

Native Plant Nursery
November 3, 9-12 pm

Help us transplant seedlings and weed plant containters. Reservations required.

White Point Nature Preserve
December 1, 9-12 pm

Plant natives and beautify the demonstration garden surrounding the Nature Education Center.

Due to holidays, there are no volunteer days on November 24th and December 22nd and 29th.

Native Plant Nursery
September 8, 9-12 pm

The Nursery is in need of transplanting seedlings and weed plant containers. Reservations required.

White Point Nature Preserve
September 29, 9-12 pm

NATIONAL PUBLIC LANDS DAY! Sponsors Toyota and REI will host volunteers of all ages to plant native habitat.

Portuguese Bend Reserve
October 20, 9-12 pm

Help us restore habitat by planting native shrubs and remove invasive plants.

Portuguese Bend Reserve
November 10, 9-12 pm

Help us restore habitat by planting native shrubs and remove invasive plants.

Portuguese Bend Reserve
December 8, 9-12 pm

Help us restore habitat by planting native shrubs and remove invasive plants.

Abalone Cove Reserve
September 15, 9-12 pm

COASTAL CLEAN-UP DAY! Collect trash in partnership with the City of RPV and Los Serenos de Pt.Vicente.

Portuguese Bend Reserve
October 6, 9-12 pm

Help us restore habitat by planting native shrubs and remove invasive plants.

Agua Amarga Reserve
October 27, 9-12 pm

Help remove invasive plants and plant native shrubs at the restoration site.

Portuguese Bend Reserve
November 17, 9-12 pm

Help us restore habitat by planting native shrubs and remove invasive plants.

Native Plant Nursery
December 15, 9-12 pm

Help us transplant seedlings and weed plant containters. Reservations required.

Scout Projects

The Conservancy greatly appreciates the contributions Scouts make to our work. There are several options offered to meet badge requirements of Eagle Scout, Cub Scouts, Brownies and Junior Girl Scouts that may be completed on the preserves or at the George F Canyon and White Point nature centers.

PLEASE VISIT WWW.PVPLC.ORG FOR MORE INFO.

Team Leader Training Workshop

WHITE POINT NATURE PRESERVE
1600 W. Paseo del Mar
San Pedro, CA 90731
Tel: (310) 561-0917
Saturday, September 22, 9am - 12pm

Take your volunteering to the next level and become a Team Leader. This workshop will train you how to lead volunteers in the restoration of habitat critical to our local wildlife on volunteer days. Lunch and fun are included! All current Team Leaders are welcome to attend. Applications available on WWW.PVPLC.ORG are due September 15th.

Schedule is subect to change. Cancelled in event of rain. Closed toe shoes are required. Long pants suggested. Help support our conservation effort by bringing your own water to reduce waste during the event.

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

Volunteer Workdays Sponsors:

REI
www.rei.com

PALOS VERDES PENINSULA LAND CONSERVANCY PO Box 3427, Palos Verdes Peninsula, CA 90274 Tel: (310) 541-7613 Web: WWW.PVPLC.ORG

PALOS VERDES PENINSULA LAND CONSERVANCY

A Palos Verdes Peninsula Land Conservancy Volunteer Program

KEEPERS

KEEPING AN EXTRA EYE ON THE PRESERVES FOR ENVIRONMENTAL REVIEW AND STEWARDSHIP

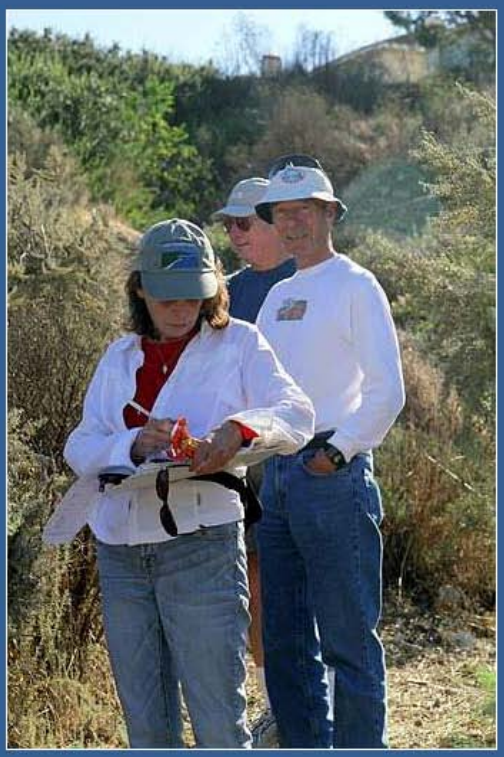
Volunteers are needed to help PVPLC monitor the following areas:

- **Alta Vicente Reserve**
- **George F Canyon**
- **Linden H Chandler Preserve**
- **Vicente Bluffs Reserve**

No experience necessary.

Tasks involve hiking a beautiful area to observe and record the reserve's condition.

A one year commitment of 12 monthly visits to an assigned preserve area is required.



Contact Ann Dalkey to learn more
(310) 541-7613 or adalkey@pvplc.org

For more info go to: www.pvplc.org/volunteers

TEAM LEADER

Volunteer Program

TRAINING WORKSHOP

March 31st from 9am-1pm

White Point Nature Preserve in San Pedro

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.

- Must have attended 2 or more PVPLC Volunteer Events
- 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 will be provided during the workshop

Application available online and must be submitted by **March 21st**

Email: info@pvplc.org Phone: (310) 541-7613 Fax: (310) 541-7623

916 Silver Spur Road #207, Rolling Hills Estates, CA, 90274

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

PALOS VERDES PENINSULA LAND CONSERVANCY

REI www.rei.com

APPENDIX G - 2013 TRAILS PROJECT LIST

The following is a list of trail projects planned for 2014 based on priority and funding opportunities. This list is intended to outline potential projects but may be amended. Projects not completed will carry over to the following year. In addition to the list below, smaller-scale projects may be accomplished by the Volunteer Trail Crew on an as-needed basis.

Reserve Name	Trail Name	Project Type	Priority
Abalone Cove	Cave Trail	Trail delineation and work to reduce erosion; signage at start of trail	Medium
	Smuggler's Cove Trail	Reroute: Create a connector trail between Portuguese Bend Loop trail to Sacred Cove View trail by delineating current foot path to Palos Verdes Drive South	High
	Sacred Cove (to beach)	Erosion repair	Low
	Bow and Arrow	Erosion repair on eastern portion	Low
	Sea Dahlia trail	Erosion control and closure of unauthorized spur trails with signage and fill-in planting	High
Agua Amarga	Lunada Canyon trail	Trail Delineation with vegetation trimming and signage	Low
Forrestal	Conqueror Trail	Erosion Repair	Medium
	Crystal Trail	Delineation and signage	Low
	Quarry	Closure of unauthorized spur trails with signage and fill-in planting	Low
	Cool Overlook	Closure of unauthorized spur trail with post-and-cable and fill-in planting	Medium
	Dauntless	Closure of unauthorized spur trails with signage and fill-in planting	Low
	Mariposa	Bridge and trail repair	Medium
	Vista	Closure of unauthorized spur trails with signage and fill-in planting	Medium
	Intrepid	Closure of unauthorized spur trails with signage and fill	Low
	Exultant	Closure of unauthorized spur trails with signage and fill-in planting	Low
	Cristo	Closure of unauthorized spur trails with signage and fill	Medium
	Packsaddle	Closure of unauthorized spur trails with signage and fill-in planting	Medium
	Flying Mane (west)	Fill sinkholes along trail	High

Reserve Name	Trail Name	Project Type	Priority
Portuguese Bend	Burma at Panorama	Install grades and dips to decrease water flow onto Panorama Trail	High
	North Sandbox	Trail Repair	Medium
	Ishibashi Trail	Closure of unauthorized spur trails with signage and fill-in planting; bicycle jump closure	Ongoing
	Peppertree Trail	Trail erosion repair	Medium
	Barn owl trail	Trail erosion repair	Medium
	Fire Station Trail	Closure or reroute	Medium
San Ramon	Switchback trail	Install bridge over gully	Medium
	Marymount trail	Delineate trail	Medium
	Connector trail to Friendship park	Trail delineation and creation	Low
Three Sisters	Sunshine Trail	Delineation in fuel mod area	Low
	Barkentine Trail	Closure of unauthorized spur trails with signage and fill-in planting	Medium
	Jack's Hat Trail	Trail delineation and erosion control	High
	McCarrell's Trail	Erosion control	Medium
Vista del Norte	Indian peak loop trail	Trail Delineation with vegetation trimming and signage	Low