East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan Annual Report 2017

East Contra Costa County Habitat Conservancy

July 2018

Cover Photograph: Photo of agency partners, stakeholder groups, elected officials (and their representatives), and staff taken at the 10-year anniversary celebration of the East Contra Costa County HCP/NCCP held at the Roddy Home Ranch property.

Photo credit: Scott Hein

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Acronyms and Abbreviations

2013 Fee Report	*East Contra Costa County HCP/NCCP Mitigation Fee Audit and Nexus Study, Final Report*
APWRA	Altamont Pass Wind Resource Area
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CNPS	California Native Plant Society
Conservancy	East Contra Costa County Habitat Conservancy
Corps	U.S. Army Corps of Engineers
County	Contra Costa County
EBRPD	East Bay Regional Park District
GIS	geographic information system
GPS	global positioning system
HCP	Habitat Conservation Plan
HCP/NCCP	*East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan*
ILF	In-Lieu Fee
Mitigation Rule	*Compensatory Mitigation for Losses of Aquatic Resources*
NCCP	Natural Community Conservation Plan
Plan	*East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan*
Regional Water Board	Regional Water Quality Control Board
RGP	Regional General Permit
SMD	Save Mount Diablo
State Water Board	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service

EXECUTIVE SUMMARY

View of Briones Valley from a ridgeline on Roddy Ranch
Photo Credit: Stephen Joseph

This is the ninth Annual Report for the *East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan* (HCP/NCCP or Plan) prepared by the East Contra Costa County Habitat Conservancy (Conservancy). This Annual Report summarizes implementation activities undertaken between January 1, 2017 and December 31, 2017, per the conditions of the Plan and Implementing Agreement.

The HCP/NCCP proactively addresses the region's long-term conservation needs by strengthening local control over land use and providing greater flexibility in meeting other needs such as housing, transportation, and economic growth. It provides a framework for regional conservation and development. The plan provides for the protection of natural resources while streamlining the permitting process for take coverage of state and federally listed species and for mitigating impacts on sensitive habitats and resources. Permits issued by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) in 2007 allow

the Permittees[1] to comply with the federal Endangered Species Act and California's Endangered Species Act. Over the 30-year permit term, impacts from urban development and rural infrastructure projects will be offset by the creation of a Preserve System managed for the benefit of 28 covered species, as well as the natural communities that they—and hundreds of other species—depend on for habitat.

Covered Activities

In 2017, 17 projects received permits through the HCP/NCCP. The projects include transportation, residential development, recreation, and utility infrastructure activities providing a range of benefits for the communities of eastern Contra Costa County. Highlights of these approved covered activities include the following.

Urban Development Area Projects

Residential Development: The City of Oakley permitted the Gilbert Property project which included the development of a 120+/- acre property into a master planned residential community. The project includes 506 single-family residential houses, 17 acres recreation and public safety improvements including trails, a park, levees and a stormwater detention pond.

Recreation: The City of Oakley also permitted the Oakley Recreation Center. The project involved the development of a modern community recreation center, including an approved first phase for a ball field, and a second phase for building facilities, parking, and landscaping.

Rural Infrastructure Operation and Maintenance Projects

Transportation: Contra Costa County Public Works Department implemented the Morgan Territory Slide Repair Project. During the 2016/2017 winter season, heavy rains caused a section of hills to slide, rendering a portion of Morgan Territory Road unsafe for public use. The Project included the installation of a tieback and soldier pile wall to stabilize the hillside above the road and a stitch pile wall on the downhill side to stabilize the road. Once the walls were in place, the roadway was excavated, compacted, and reconstructed. During the construction phase of the slide repair, local traffic was diverted via a temporary bypass road allowing local residents and business owners access to their homes and businesses during road construction.

Utility Infrastructure: Pacific Gas and Electric increased the operational reliability of gas transmission pipelines 131 and 114, and increased the reliability and flexibility of the Bay Area Loop of gas pipelines, by rebuilding the existing undersized Walnut Crossover station near Los Vaqueros Reservoir in the southeastern corner of the permit area. The project included the excavation and modification of the existing facilities at the Walnut Crossover station and construction of new above-ground facilities that replaced the existing undersized facilities.

[1] The Permittees are Contra Costa County; the cities of Brentwood, Clayton, Oakley, and Pittsburg; the East Contra Costa County Habitat Conservancy; the Contra Costa County Flood Control and Water Conservation District; and the East Bay Regional Park District.

Altogether, 17 projects received streamlined permit coverage under the Plan in 2017, including nine urban development area projects, six rural infrastructure operation and maintenance projects, and two Preserve System activities. These activities resulted in 86.1 acres of permanent impacts and 32.1 acres of temporary impacts on terrestrial land cover types; 1.18 acres of permanent impacts and 3.94 acres of temporary impacts on aquatic habitats; and 60 linear feet of temporary impacts on streams.

Land Acquisition and Stay-Ahead Provision

During the first 10 years of implementation, the Conservancy made significant progress toward the Plan's acquisition goals (see Figures ES-1 through ES-4). By the end of the reporting period, 36 properties had been acquired for the Preserve System, totaling over 13,809 acres. All but one of the acquisitions have been completed in partnership with the East Bay Regional Park District (EBRPD). EBRPD owns these properties and, together with the Conservancy, manages the Preserve System lands. In 2017, the Conservancy acquired the Viera North Peak property from Save Mount Diablo.

View of the North Peak of Mount Diablo from the Viera North Peak property
Photo Credit: Scott Hein

Four properties, totaling 599.2 acres, were added to the Preserve System. All four properties are located adjacent to or near Preserve System properties. The Campos and Casey properties are in Zone 5, Subzone 5a, south of the Byron Airport. Subzone 5a is a high-priority acquisition subzone, and is of critical importance to the HCP/NCCP because it supports high quality habitat for several key species, including California tiger salamander, California red-legged frog, golden eagle, tricolored blackbird, and western burrowing owl, and provides suitable habitat for many more including fairy shrimp and alkali-dependent covered plants. The Roddy Home Ranch property, an inholding with the larger Roddy Ranch property in Deer Valley, is located in Zone 2, Subzone 2f, a high-priority acquisition subzone. High-priority Zone 2 acquisitions are of critical importance to the HCP/NCCP because the zone supports a variety of high quality habitats for several key species (including California red-legged frog, California tiger salamander, golden eagle, western burrowing owl, Swainson's hawk, Alameda whipsnake, silvery legless lizard, western pond turtle, and covered fairy shrimp species) and serves a critical connectivity function for San Joaquin kit fox. The Viera North Peak property, contiguous with Mount Diablo State Park, is the first acquisition in Subzone 4a, also a high-priority acquisition subzone. At Plan completion, Subzone 4a acquisitions will include 90% of modeled suitable core habitat for Alameda whipsnake.

Additional highlights of the acquisitions include the following.

- A total of 395.6 acres of annual grassland were acquired during the reporting period, and approximately 7,590.8 acres have been protected to date (46% of the annual grassland preservation requirement).
- 37.8 acres of oak woodland were acquired in the reporting period, and 2,053.2 acres have been protected to date (513% of the oak woodland preservation requirements).
- 27 acres of alkali grassland were acquired in the reporting period, and 276.8 acres have been protected to date (22% of the alkali grassland preservation requirement).
- A total of 100.6 acres of chaparral/scrub were acquired in the reporting period, and 242.8 acres of been protected to date (44% of the chaparral/scrub preservation requirement).

The Conservancy remains in compliance with the Plan's Stay-Ahead Provision. The Conservancy has made substantial progress in the first 10 years of implementation toward many of the Plan's 30-year conservation requirements. Conservation of all land cover types is ahead of impacts incurred (see Figures ES-1 through ES-4). The Stay-Ahead Provision only reflects land cover requirements and does not reflect geographical requirements intended to ensure Preserve System connectivity. The Conservancy is aware of both the qualitative and quantitative goals of the Plan. Figure ES-4 illustrates that the Conservancy is ahead of the average pace necessary to assemble the 30,300-acre Preserve System estimated to be required by Year 30.

Habitat Restoration and Creation

The Plan requires stream, wetland and pond restoration and creation to compensate for impacts by development activities covered by the Plan. Over the 30-year life of the Plan, the Conservancy anticipates restoring or creating up to 500 acres of wetlands and ponds and 6 miles of streams (this figure represents the maximum impact scenario; the ultimate impacts and restoration/creation requirements may be much less). One new restoration project occurred in 2017. The Ang Riparian Restoration Project, which took place on the Ang property, is similar to the 2010 Irish Canyon Project. The goal of the project is to improve riparian woodland habitat for wildlife by filling in gaps in existing vegetation along the banks of Irish Canyon Creek. To date, 10 restoration projects have been constructed. Three of the projects have met success criteria and are no longer monitored annually against their restoration success criteria. The remaining projects continue to be monitored and adaptively managed to ensure success criteria are met.

Coordinated Wetland Permitting

The HCP/NCCP was designed not only to conserve endangered species, but also wetlands and waters that provide habitat for these species and support other natural resource functions and values. This conservation approach was intended, in part, to enable permit streamlining to extend beyond endangered species and to include regional permitting under state and federal laws for impacts on jurisdictional wetlands and waters. The interest in integrating federal and

state wetland permitting into the HCP/NCCP process is the same as the articulated purpose of the Plan—to benefit streams and wetlands by conserving these resources in a more coordinated and comprehensive fashion on a regional scale and to provide an integrated, coordinated approach to permitting in lieu of the often inefficient and costly project-by-project approach.

Discussion with U.S. Army Corps of Engineers (Corps), U.S. Environmental Protection Agency, State Water Resources Control Board (State Water Board), the Regional Water Quality Control Boards (Regional Water Boards), CDFW, and USFWS regarding this parallel approach to compliance with wetlands regulations started in 2002 during the early stages of developing the HCP/NCCP. Coordinating wetlands regulation with HCPs is difficult in part because there is no precedent.

Important milestones reached to date are summarized below.

- On May 4, 2012, the Corps issued a Regional General Permit (RGP) related to the HCP/NCCP. The RGP is designed to streamline wetland permitting in the HCP/NCCP inventory area by coordinating the avoidance, minimization, and mitigation measures in the Plan with the Corps' wetland permitting requirements. Currently, the RGP only relates to Clean Water Act Section 404 permits, but discussions are ongoing with the State Water Board and Regional Water Boards to coordinate their requirements with the RGP and HCP/NCCP.
- On April 30, 2012, USFWS issued a Biological Opinion for the RGP. The Biological Opinion relies on the HCP/NCCP for mitigation measures and eliminates the need for the Corps to consult individually with USFWS for each project covered by the RGP. The term of the Biological Opinion corresponds with the 30-year term of the HCP/NCCP.
- The Conservancy is seeking to establish an In-Lieu Fee (ILF) program to comply with the *Compensatory Mitigation for Losses of Aquatic Resources* (Mitigation Rule; Code of Federal Regulations [CFR], Title 33, Part 332). The proposed ILF program would be implemented in conjunction with requirements of the RGP and HCP/NCCP. The ILF program would sanction payment of HCP/NCCP fees as suitable mitigation under Corps permits. The Conservancy is working with the Corps to develop the ILF program agreement.
- Until the ILF program is in place, the interim approach is *permittee-responsible compensatory mitigation*, an option defined in Mitigation Rule 33 CFR Part 332. Under this approach, until the ILF is approved, the Conservancy will designate a portion of its existing wetland restoration sites as compensatory mitigation for an applicant's project, and this will fulfill the applicant's Section 404 compensatory mitigation requirements under the RGP. The Corps initially approved using this interim strategy for up to 1 year, at which time the interim strategy would be replaced by the ILF program. In 2013, the Corps approved extending the interim strategy while it continues to work on the ILF program.
- The Corps issued the first RGP in 2012 for a 5-year period and an expiration date of May 4, 2017. On June 6, 2017, the Corps re-issued RGP 1 with a new expiration date

of June 6, 2022. There was a 1-month gap in RGP coverage. During that time, there were three pending permit applications: one Conservancy restoration project and two Contra Costa County Public Works projects. The schedules for these projects were not affected by the month-long gap in RGP coverage.

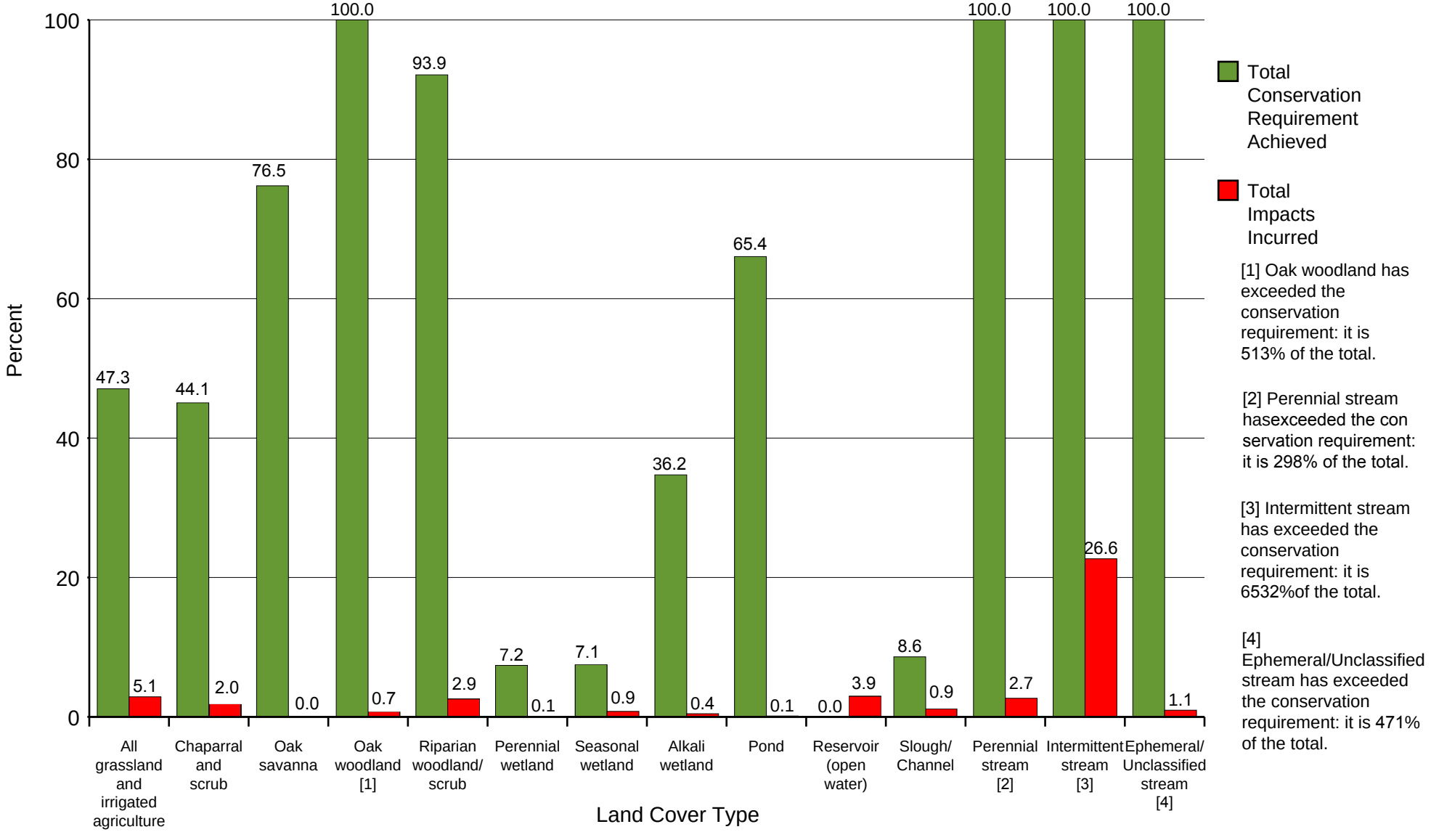
- To date, 16 covered projects and two Conservancy restoration projects have received permit coverage through the RGP.

Funding

The Conservancy spent a total of $6,766,760 on implementation of the ECCC HCP/NCCP in 2017. This includes grant funds that were spent on land acquisitions, restoration projects, and preserve management activities. The Conservancy remained under the approved 2018 Budget. The Conservancy successfully pursued and secured grants during the 2017 reporting period. Various federal and state sources granted $4,881,931 toward land acquisitions, restoration projects and preserve management activities. Mitigation fees and other payments from project proponents of 2017 permitted projects totaled $2,022,170. In total, the Conservancy received $6,928,674 in revenue (interest included). Local matching funds, which include grants awarded to local partners, totaled $848,188.

Figure ES-1. Stay Ahead Compliance

This is a graphical representation of data in Table 14.
The chart compares conservation achieved to impacts incurred according to the specific guidelines set forth in the Stay Ahead Provision.
The green bars display the percent of the land cover acquired as a percent of the conservation required.
The red bars display the percent of land cover impact incurred as a percent of the impact limits.
To comply with the Stay Ahead Provision, for terrestrial land covers the green bars need to be not more that 5% below the red bars.
With the extensive conservation effort to date, progress toward conservation goals have met, exceeded or vastly exceeded Stay Ahead Provision requirements.



[1] Oak woodland has exceeded the conservation requirement: it is 513% of the total.

[2] Perennial stream hasexceeded the con servation requirement: it is 298% of the total.

[3] Intermittent stream has exceeded the conservation requirement: it is 6532%of the total.

[4] Ephemeral/Unclassified stream has exceeded the conservation requirement: it is 471% of the total.

Figure ES-2a. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Terrestrial Land Cover Types

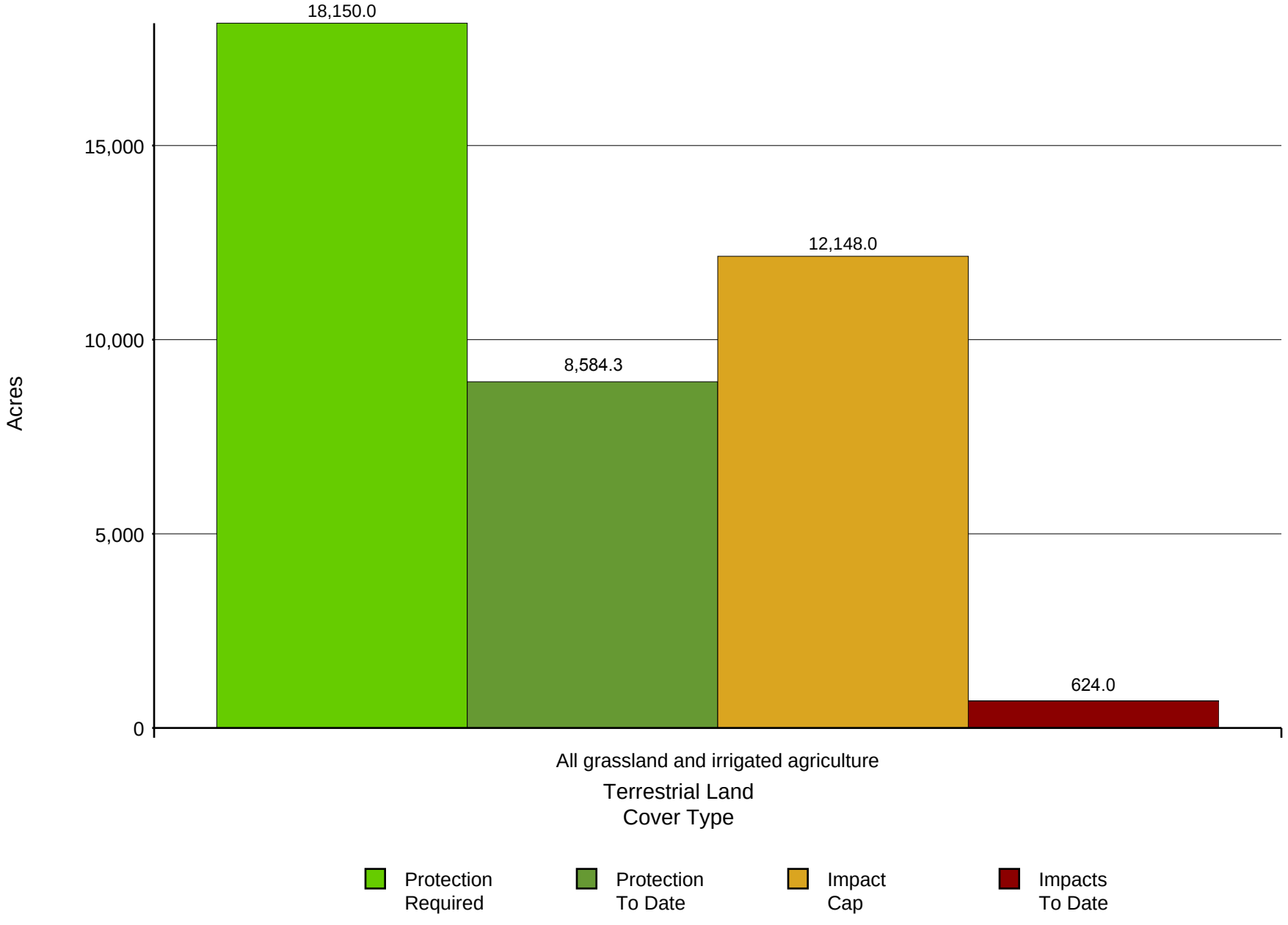


Figure ES-2b. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Terrestrial Land Cover Types

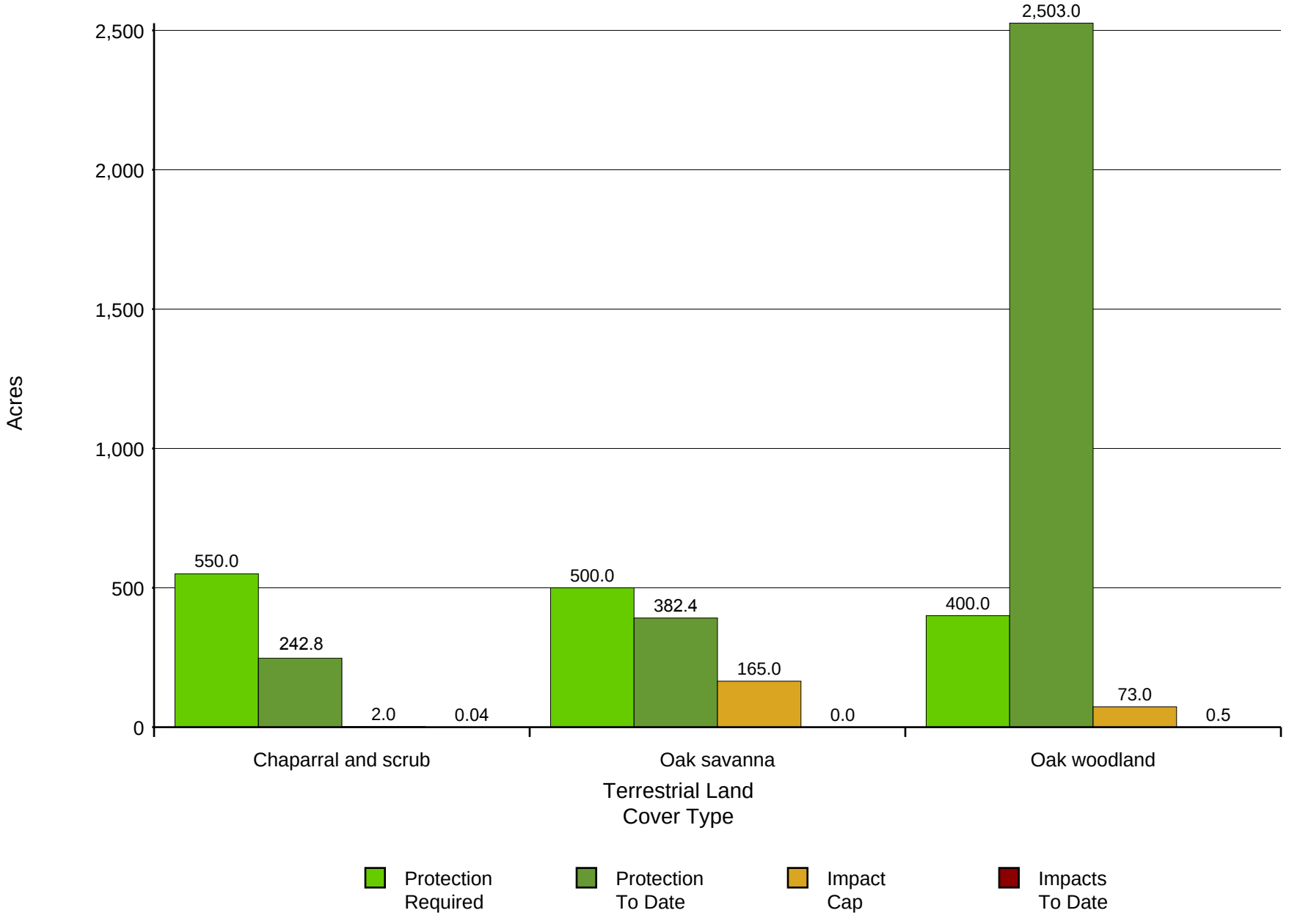


Figure ES-3a. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Aquatic Land Cover Types

Note: Aquatic land cover requirements are linked to mitigation ratios rather than absolute acreage figures.
The caps and requirements shown here are based on the maximum estimated impacts.

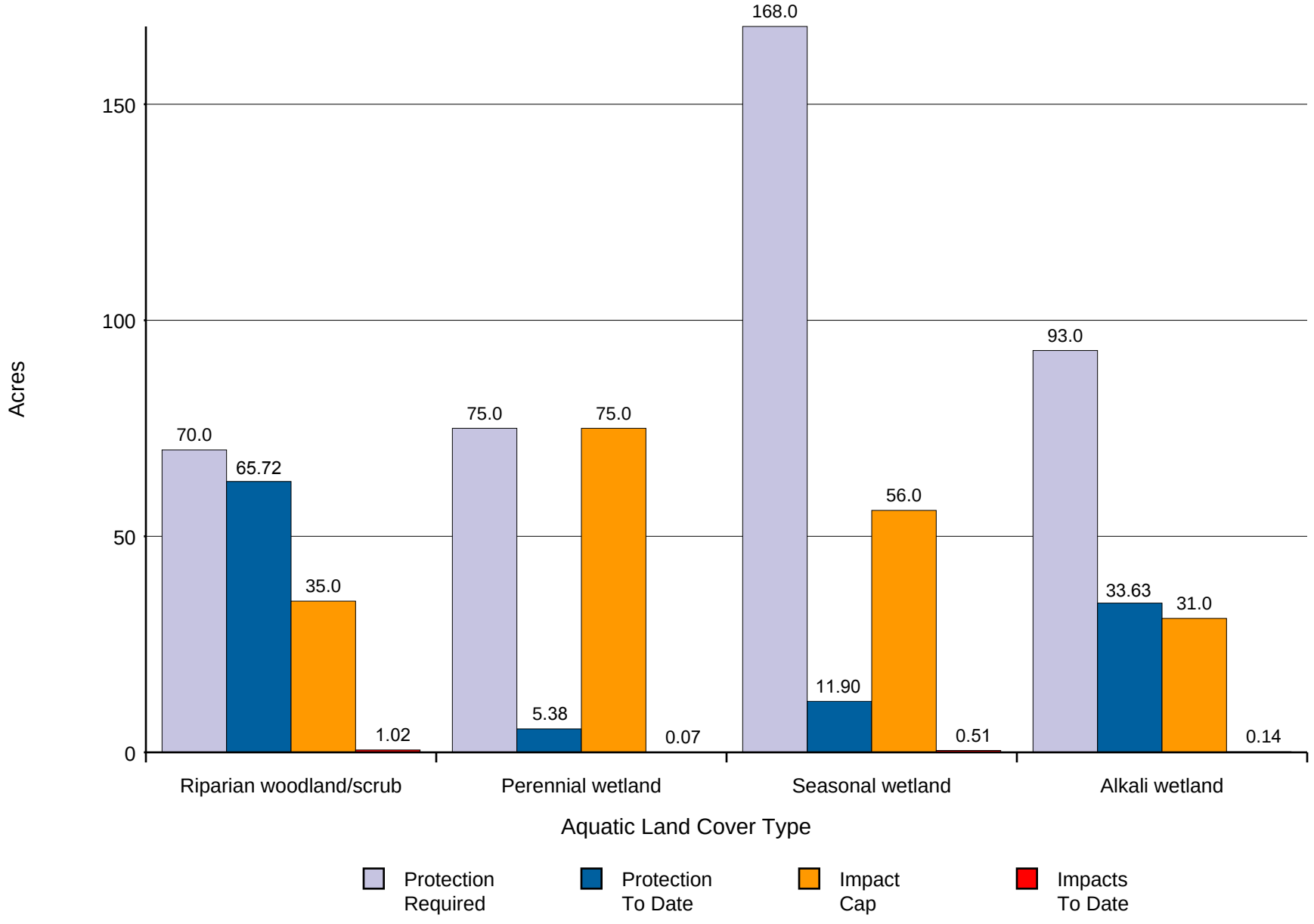


Figure ES-3b. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Aquatic Land Cover Types

Note: Aquatic land cover requirements are linked to mitigation ratios rather than absolute acreage figures.
The caps and requirements shown here are based on the maximum estimated impacts.

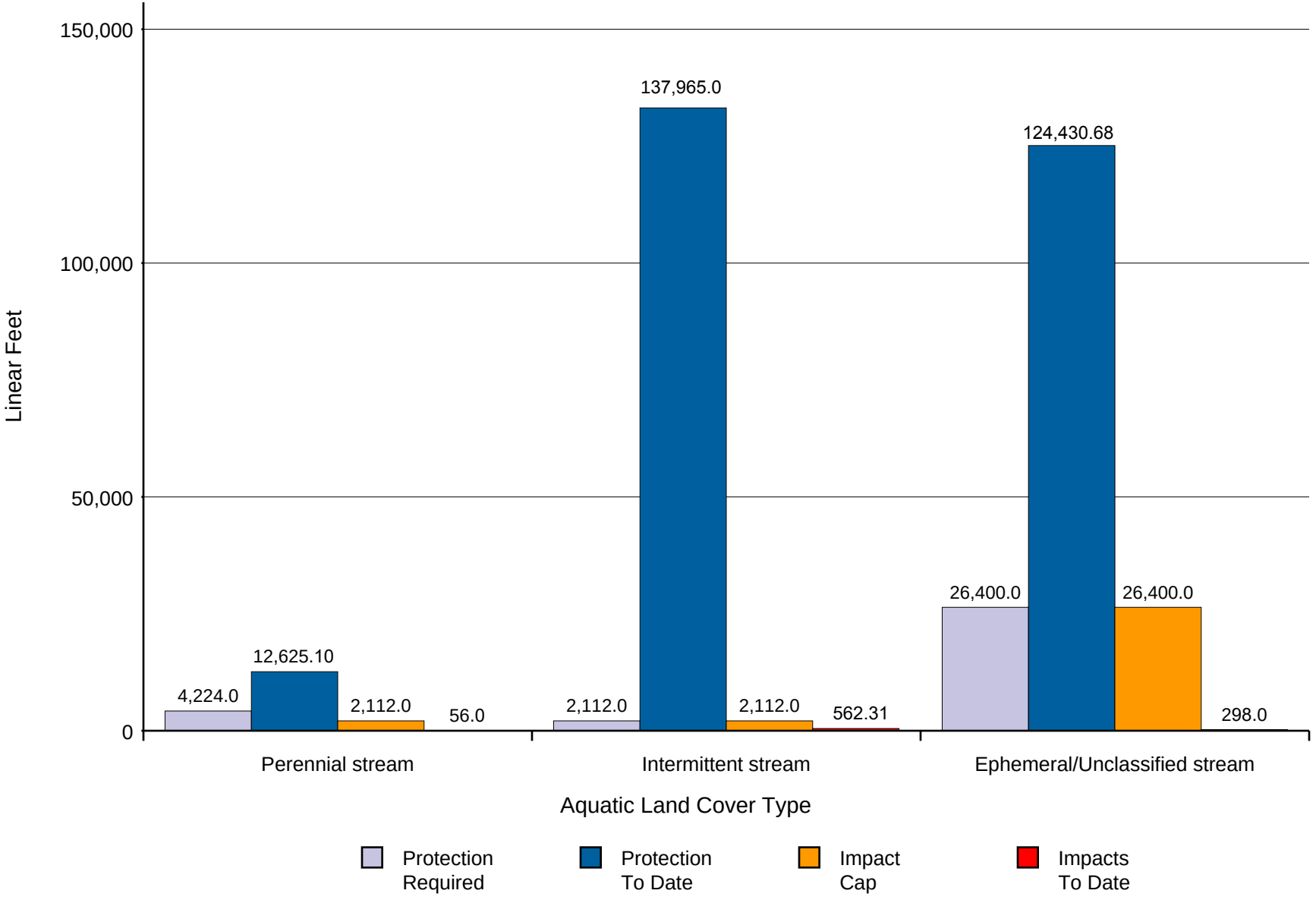
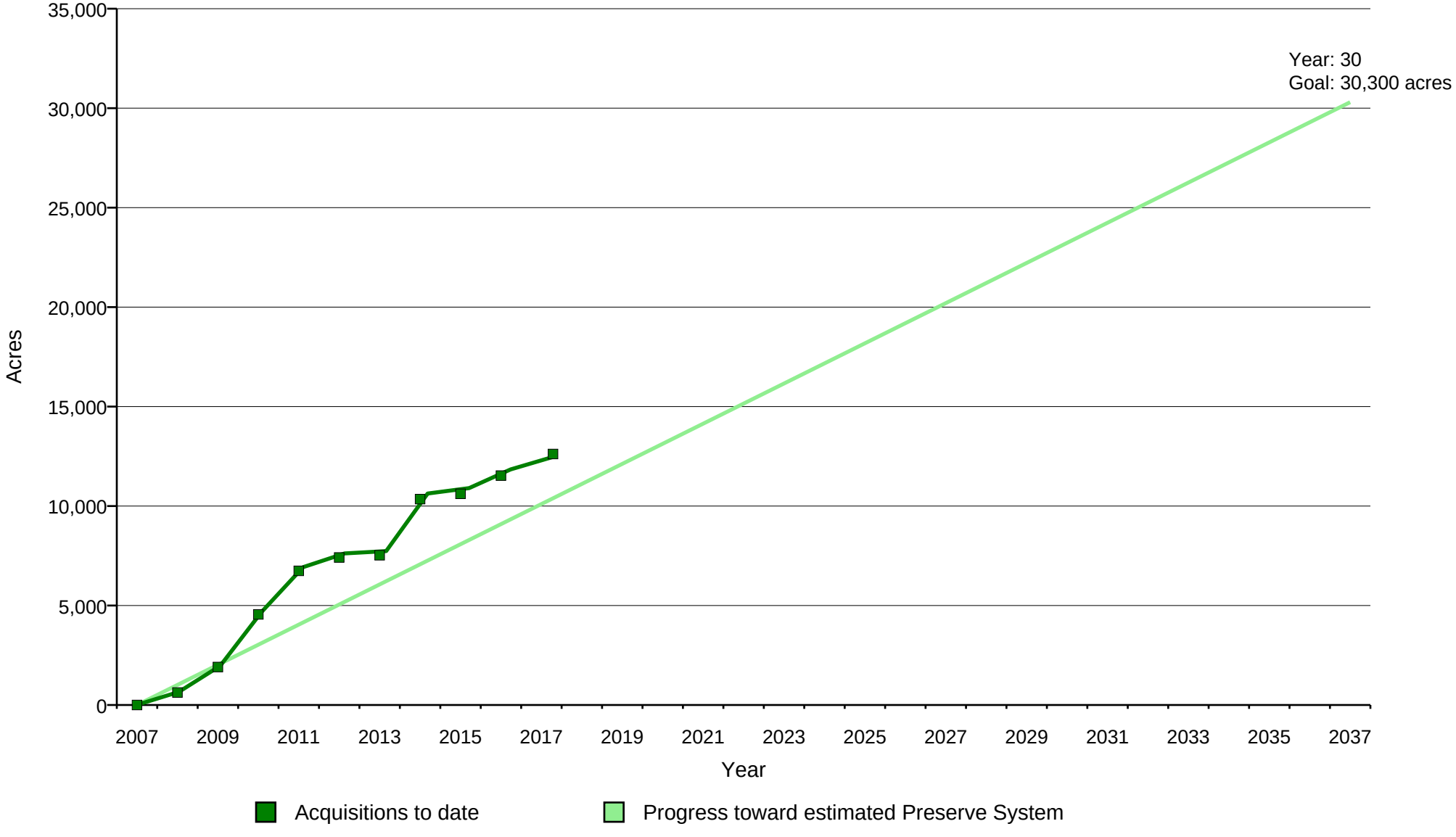


Figure ES-4. Progress Toward Assembling the Preserve System

Note: The HCP/NCCP estimates a maximum of approximately 30,300 acres will be necessary by 2037 (Year 30) to achieve all conservation requirements.



I. INTRODUCTION

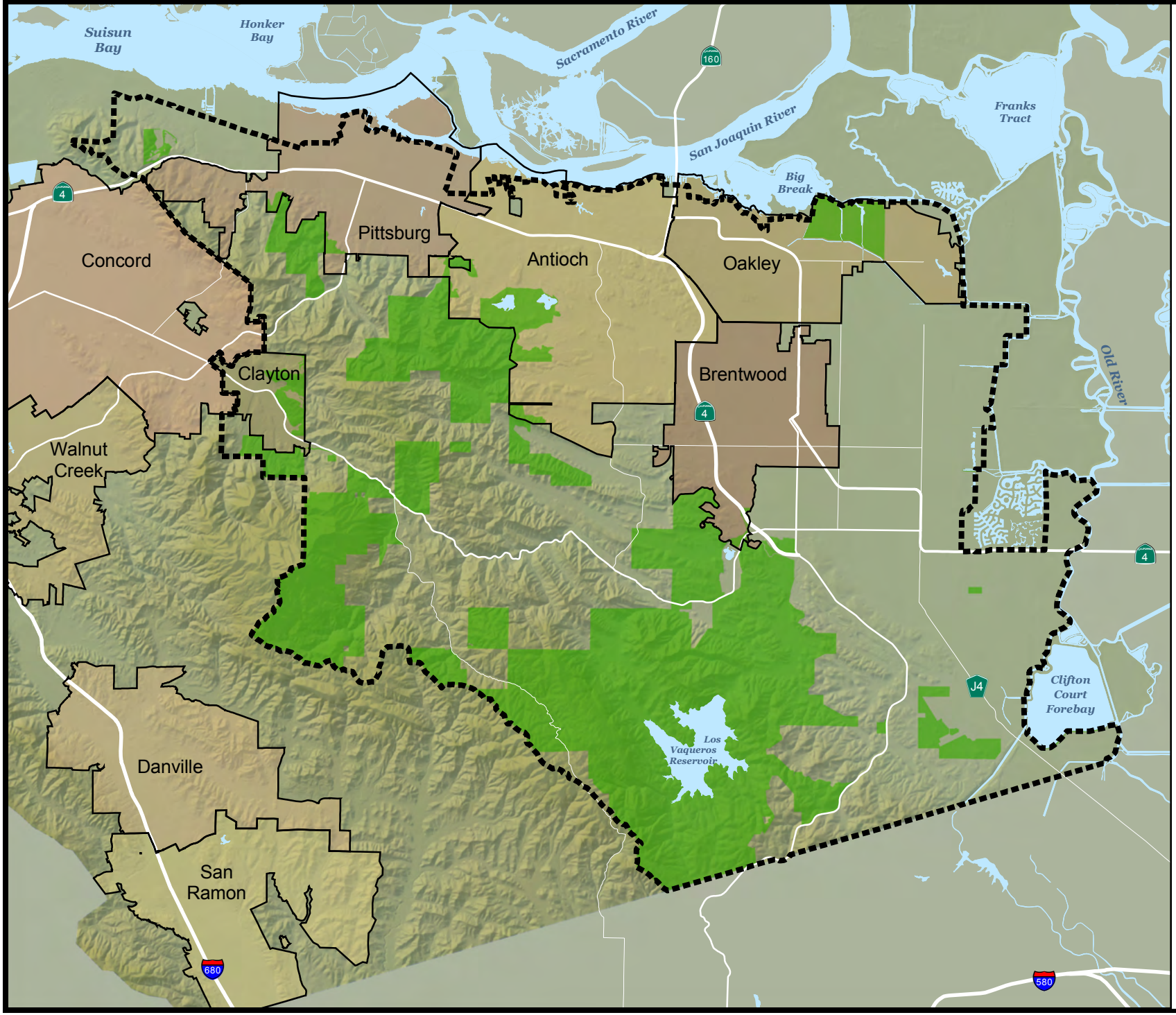
Upper Deer Valley on the Roddy Ranch property
Photo Credit: Stephen Joseph

East Contra Costa County HCP/NCCP Background

Eastern Contra Costa County is a unique region where the San Francisco Bay Area, Sacramento–San Joaquin River Delta, and Central Valley meet (Figure 1). Much of the area retains a rural lifestyle supporting housing, farms, and ranches. It features a rich landscape that is home to a number of rare plants and animals. More than 150 rare species occur in the east Contra Costa County area, including the San Joaquin kit fox (*Vulpes macrotus mutica*), California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), western burrowing owl (*Athene cunicularia hypugea*), vernal pool fairy shrimp (*Brachinecta lynchi*), and Diablo helianthella (*Helianthella castanea*). Located east of San Francisco, the area's convenient location, natural beauty, and mild climate have led to rapid population growth. Contra Costa County's population is predicted to grow by 127,000 people between 2007 and 2025, providing important new housing for the San Francisco Bay Area's growing workforce. A significant portion of this growth will occur in east Contra Costa County in habitat that supports state and federally listed species, resulting in a conflict between conservation and development.

Between 2001 and 2006, the East Contra Costa County Habitat Conservation Plan Association developed the *East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan* (HCP/NCCP or Plan) that provides regional conservation and development guidelines to protect natural resources while improving and streamlining the permit process for

Figure 1. East Contra Costa County Habitat Conservation Plan Inventory Area



Legend

- Inventory Area
- Non-urban Parks, Public Watershed Lands, and Deed Restricted Open Space in the Inventory Area
- City Limits

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East Contra Costa County Habitat Conservancy

state and federally listed species and wetland regulations. The Plan was approved at the local level in 2006 and 2007, and permits were issued by the California Department of Fish and Wildlife (CDFW, formally the California Department of Fish and Game) and the U.S. Fish and Wildlife Service (USFWS) in 2007. The Plan allows Contra Costa County (County); the Contra Costa County Flood Control and Water Conservation District; the East Bay Regional Park District (EBRPD); the Cities of Brentwood, Clayton, Oakley, and Pittsburg; and the East Contra Costa County Habitat Conservancy (Conservancy)—a group collectively referred to as the *Permittees*—to control endangered species permitting for activities and projects in the region, performed or approved by the Permittees, while providing comprehensive species, wetlands, and ecosystem conservation and contributing to the recovery of endangered species in northern California. The Plan helps to avoid project-by-project permitting, which is generally costly and time consuming for applicants and often results in uncoordinated and biologically ineffective mitigation.

The Plan was developed by a team of scientists and planners led by the East Contra Costa County Habitat Conservation Plan Association with input from independent science reviewers, stakeholders, and regulators. Within the 174,018-acre inventory area, the issued permits provide take authorization under the California Natural Community Conservation Planning Act and federal Endangered Species Act for 8,670–11,853 acres of urban development and 1,126 acres of rural infrastructure projects. The primary means to offset these impacts is to conserve and restore lands in a Preserve System. The Preserve System will encompass between 23,800–30,300 acres of land that will be managed to benefit the 28 species covered by the Plan as well as the natural communities that they, and hundreds of other species, depend on for habitat.

The Conservancy is the Entity tasked with the implementation of the HCP/NCCP. The Conservancy is a joint exercise of powers authority formed by the participating cities and the County. The Conservancy Governing Board consists of elected officials from participating city councils and the County Board of Supervisors. The Executive Director and the Conservancy Secretary manage day-to-day activities of the Conservancy under the direction of the Governing Board. The Executive Director, in partnership with dedicated staff members, performs a wide range of tasks necessary to implement the Plan. Responsibilities include coordinating real estate activities; assisting, reviewing, and tracking applications for take authorization; coordinating habitat restoration; overseeing monitoring and adaptive management; maintaining the budget; managing consultants; applying for outside funding and administering approved grants; coordinating with external agencies; compiling annual reports to CDFW and USFWS; and supporting the Governing Board and advisory committees.

EBRPD is expected to be the primary landowner and land manager for the Preserve System, and so far all land acquisitions have been completed by EBRPD. EBRPD has more than 75 years of experience managing public open space lands and now owns more than 114,000 acres. HCP/NCCP Preserve System lands acquired by EBRPD will ultimately be available for public access.

Annual Report

The purpose of this Annual Report is to provide the Governing Board, USFWS, CDFW, and the general public the opportunity to review the Conservancy's actions and progress made toward implementing the Plan. These entities can use the Annual Report to assess the success of the Plan and provide recommendations to the Plan's Governing Board and the Conservancy staff for Plan implementation in subsequent years. The goals of the Annual Report are as follows.

- Providing the information and data necessary for the Permittees to demonstrate to CDFW and USFWS that implementation is proceeding according to the Plan, the Implementing Agreement, and the take permits;
- Disclosing and documenting issues with Plan implementation that require consultation and resolution with CDFW, USFWS, and/or the Permittees; and
- Identifying administrative or minor changes to Plan components implemented in the last calendar year that were adopted to improve the success of the Plan.

The Annual Report is focused on implementation actions taken during the reporting period of January 1, 2017, through December 31, 2017. The Report also summarizes the Plan implementation activities undertaken from the actual start of Plan Implementation on January 18, 2008 (when the last set of local ordinances took effect[2]), to December 31, 2017. The required elements of the Annual Report as defined by the Plan are listed below.

- Covered Activities and Impacts
- Land Acquisition
- Habitat Restoration and Creation
- Preserve Management
- Monitoring, Research, and Adaptive Management
- Stay-Ahead Provision
- Changed Circumstances and Remedial Measures
- Finances
- Program Administration

Covered Activities and Impacts

Section II of this Annual Report describes all projects and activities for which incidental take authorization was approved (covered activities) during the reporting period, including an accounting of the acreage of impact by project, activity type, and land cover type. Conditions on

[2] The HCP/NCCP implementing ordinances for the cities of Brentwood and Clayton and Contra Costa County took effect on January 15, 2008. The ordinances for the cities of Oakley and Pittsburg took effect on January 18, 2008.

covered activities applied to each project are identified, and impacts on riparian and wetland land cover types are reported by watershed.

Land Acquisition

Section III describes the land acquisitions that occurred during the reporting period, including a summary of land acquisition funding from local, state, and federal sources. Each land acquisition property is identified, and a summary of natural communities protected during the reporting period and permit term is provided. In addition, progress toward all acquisition requirements, including land cover types, habitat connectivity, covered plant populations, and wetland and creek protection is assessed.

Habitat Restoration and Creation

Section IV describes natural community creation and restoration conservation measures implemented during the reporting period and summarizes cumulative accomplishments made during the permit term, including riparian and wetland restoration by watershed.

Preserve Management

Section V describes all land management activities undertaken on Preserve System properties and discusses the management issues facing the Conservancy at each preserve unit. Habitat enhancement measures implemented are also identified.

Monitoring, Research, and Adaptive Management

Section VI summarizes the monitoring, research, and adaptive management activities that were conducted by the Conservancy and partners during the reporting period. These actions are summarized at the landscape level, natural community level, and species level.

Stay-Ahead Provision

Section VII assesses compliance with the Stay-Ahead Provision, a set of requirements to ensure that progress toward acquisition of Preserve System lands precedes impacts associated with covered activities. This assessment includes a cumulative summary of impacts and conservation for all land cover types.

Changed Circumstances and Remedial Measures

Section VIII describes actions taken or anticipated regarding changed circumstances, including remedial actions.

Finances

Section IX includes accounting of revenue received by type (e.g., development fees, wetland fees, grants, etc.) and an overview of the Conservancy's budget and expenditures during the reporting period.

Program Administration

Section X summarizes administrative changes, minor modifications, or major amendments proposed or approved during the reporting year. Policy clarifications and early implementation tasks that occurred during the reporting period are described in subsections.

II. COVERED ACTIVITIES AND IMPACTS

This section describes the activities and projects within the inventory area that were approved for take authorization pursuant to the Plan (covered activities) during the reporting period. The Plan requires covered activities to compensate, avoid, and minimize impacts on covered species through a variety of conservation measures. The Plan allows incidental take coverage for the following four activities (Figure 2).

- Urban Development Area Projects: All activities and projects associated with urban growth within the urban development area as defined by the Plan.
- Rural Infrastructure Projects: Transportation projects, flood protection projects, and utility projects occurring outside the urban limit line that support urban development.
- Rural Infrastructure Operation and Maintenance Activities: Road, flood protection facility, and utility line or facility operation and maintenance projects that occur outside the urban development area and urban limit line.
- Preserve System Activities: Management and recreational facilities; habitat enhancement, restoration, and creation; species surveys, monitoring, and research; emergency activities; and utility construction and maintenance that occur within the Preserve System; and neighboring landowner activities.

Covered Activities Receiving Take Coverage

A total of 17 projects received take coverage under the Plan during the reporting period (Table 1 and Figures 3a and 3b). Covered activities include the following.

- Nine urban development area projects
- Six rural infrastructure operation and maintenance projects
- Two Preserve System activities

All covered activities mitigated impacts through the payment of HCP/NCCP fees. In 2017, mitigation fees, contribution to recovery charges, and administrative fees related to covered projects totaled $2,017,170. See Section IX for more details.

Conditions on Covered Activities

The purpose of conditions on covered activities is to meet regulatory standards to avoid and minimize potential impacts on covered species (payment of fees or provision of land in lieu of fees satisfies mitigation requirements). Conditions also reduce and minimize impacts on important natural communities. Conditions on covered activities include completion of preconstruction surveys, minimization of development footprints that are adjacent to preserves,

establishment of stream setbacks and fuel management buffers, management of the urban-wildland interface, maintenance of hydrologic conditions, avoidance of direct impacts on extremely rare plants and fully protected wildlife species and covered migratory birds, best management practices for flood control, and design requirements for roads outside the urban development area. Each condition is described in detail in Chapter 6 of the Plan under Section 6.4, *Specific Conditions on Covered Activities*.

Specific project circumstances determine which conditions apply to each project. For example, Condition 1.12 *Implement Best Management Practices for Rural Road Maintenance* only applies to rural road maintenance projects. Compliance with the conditions on covered activities is an important part of the conservation strategy.

As shown in Tables 2 and 3, landscape, natural community, and species level conditions were applied to all 17 covered activities implemented during the 2017 reporting period.

Impacts on Land Cover Types and Covered Plants

Covered activity impacts are tracked by land cover type (Table 4), covered plant occurrences (Table 5), and aquatic habitat and stream by watershed (Table 6). During the reporting period there were a total of 96.4 acres of permanent impacts and 36 acres of temporary impacts (Table 4). There were 60 linear feet of temporary impacts on streams during the reporting period. No covered plants were removed by covered projects in the reporting period (Table 5). Impacts on aquatic land cover types during the reporting period occurred in four watersheds: Brushy, East County Delta, Lower Marsh, and Upper Marsh (Table 6).

Figure 2. Initial Urban Development Area and Specific Rural Infrastructure Projects that may be Covered

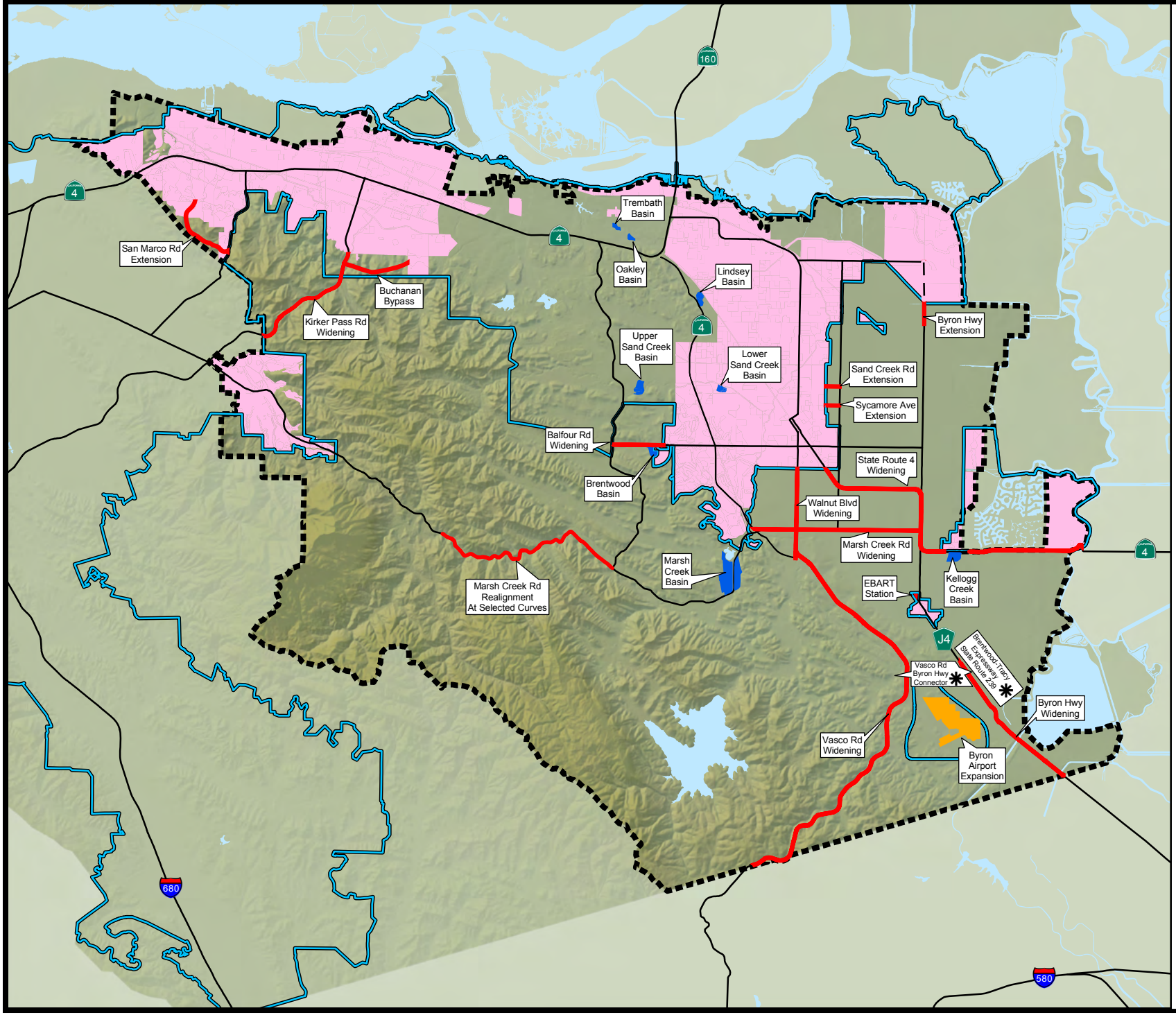


Figure 3a. Location and impact acreage for Projects that Received Coverage in 2017

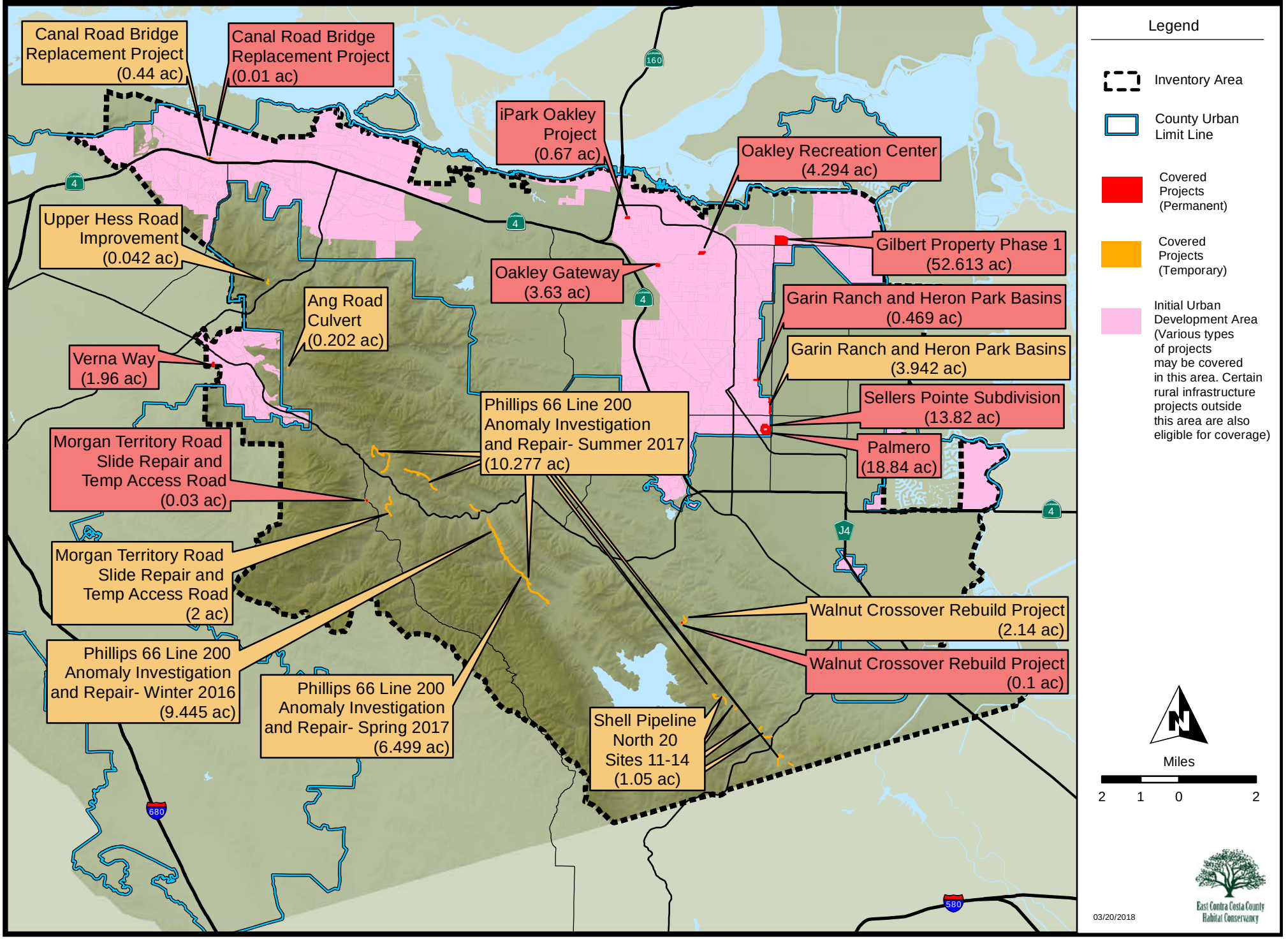
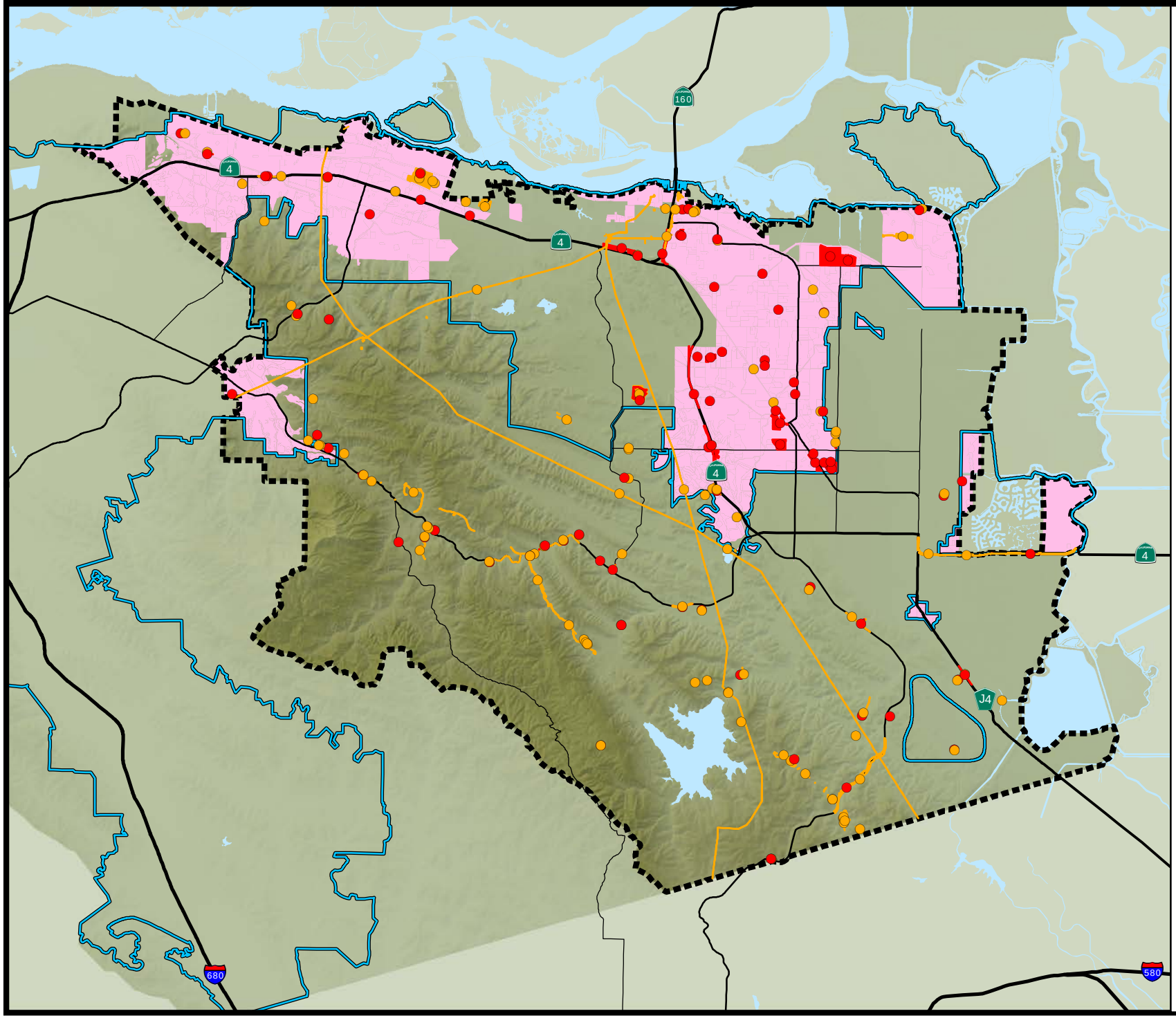


Figure 3b. Location of Covered Projects to-date (2008-2017)



Legend

Inventory Area

County Urban Limit Line

Symbol	Covered Project Type
	Permanent
	Temporary

Initial Urban Development Area (Various types of projects may be covered in this area. Certain rural infrastructure projects outside this area are also eligible for coverage)

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East Contra Costa County Habitat Conservancy

Table 1. Reporting Summary of Covered Activities for 2017

Project Name	Activity Type	Covered By	Location	Description
Activities within the Urban Development Area				
iPark Oakley Phase 2: Executive RV and Boat Storage	Commercial	City of Oakley	5220 Neroly Rd, Oakley, CA	iPark Oakley Project Phase 2 construction includes the development of office buildings and RV and boat storage facilities on the remaining acres of the site.
Oakley Gateway	Residential	City of Oakley	Southwest Corner of Laurel Road and Empire Avenue in Oakley, CA.	The development project rezoned the property from Agricultural to General Commercial and subdivided the existing property in to two separate parcels.
Gilbert Property Phase 1	Residential	City of Oakley	Northeast corner of Sellers Ave and Cypress Rd., Oakley, CA	The Gilbert Property project includes the development of a 120+/- acre property into a master planned residential community. The project includes 506 single-family residential houses, 17-acres of trails, park, levees and a stormwater detention pond, and the infrastructure improvements necessary to support the development of the project.
Oakley Recreation Center	Recreational Facilities	City of Oakley	1250 O'Hara Avenue, Oakley, CA	The project proposes to redevelop the parcel into a modern community recreation center, including an approved first phase for a ball field, and a second phase for building facilities, parking, and landscaping.
Verna Way	Residential	City of Clayton	5675 Pine Hollow Road and 5718 Verna Way, Calyton, CA 94517	The project adjoins 2 parcels that will be further subdivided in to a 6-lot subdivision.
Sellers Pointe Subdivision	Residential	City of Brentwood	1751 Sellers Avenue, Brentwood, CA	The project will include the development of approximately 13.82 acres of vacant land in to 84 single-family detached homes.
Palemro Subdivision	Residential	City of Brentwood	West of Sellers Ave, north of the EDDID Main Canal, south of La Paloma High School, in Brentwood, CA	This project subdivides the parcel into 96 residential lots, each with a new home and ancillary services.
Canal Road Bridge Replacement Project	Transportation	Contra Costa County-Public Works	North of Highway 4, and west of Bailey Road, where Canal Road crosses the Contra Costa Canal and turns into Alves Lane.	Contra Costa County Public Works Department replaced Bridge No. 28C0376, which carries Canal Road over the Contra Costa Canal.

Project Name	Activity Type	Covered By	Location	Description
Garin Ranch Basin and Heron Park Basin Improvements	Flood Control	Contra Costa County-Public Works	Garin Ranch Basin is located west of Sellers Avenue and south of Chestnut Street in the City of Brentwood	This project includes the excavation and establishment of a low-flow area in two storm water basins to reduce mosquito breeding habitat.
Rural Infrastructure O&M Activities				
PG&E Walnut Crossover Rebuild Project	Utility	ECCC Habitat Conservancy	19 Walnut Boulevard, Byron, CA 94514 & 5101 Vasco Road, Byron, CA 94514.	PG&E increased the operational reliability of gas transmission pipelines 131 and 114, and increased the reliability and flexibility of the Bay Area Loop of gas pipelines, by rebuilding the existing undersized Walnut Crossover and installing equipment that allows inspection technologies to transfer between the two pipelines.
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017	Utility	ECCC Habitat Conservancy	Multiple locations.	Phillips 66 Pipeline, LLC conducted anomaly investigations and repairs at twelve distinct locations, and one location where exposed pipeline will be reburied along the existing Line 200 Mainline trunk pipeline in eastern Contra Costa County. The twelve anomaly investigation and repair projects, and one exposed pipe reburying project, will involve temporary impacts to relatively small work areas ranging from approximately 0.034 acres, to approximately 0.093 acres.
Shell Pipeline North 20 EBRPD Repair Site 11-14	Utility	ECCC Habitat Conservancy	34 Vasco Road within the Vasco Caves Preserve	Shell pipeline conducted repair digs on their existing 20-inch crude oil pipeline at four locations on East Bay Regional Park District's Vasco Caves Preserve.
Phillips 66 Line 200 Anomaly Investigation and Repair, Spring 2017	Utility	ECCC Habitat Conservancy	Multiple locations.	Phillips 66 Pipeline, LLC conducted anomaly investigations and repairs at five distinct locations along the existing Line 200 Mainline trunk pipeline in eastern Contra Costa County. The projects will allow Phillips 66 to conduct needed maintenance actions on Line 200 to maintain its structural integrity. The five anomaly investigation and repair projects will involve temporary impacts to approximately 0.034, 0.034, 0.04, 0.064, and 0.035 acres respectively.

Project Name	Activity Type	Covered By	Location	Description
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2016	Utility	ECCC Habitat Conservancy	Multiple locations.	Phillips 66 Pipeline, LLC is proposes to conduct anomaly investigation and repairs at three distinct locations along the existing Line 200 Mainline trunk pipeline in eastern Contra Costa County. The projects will allow Phillips 66 to conduct needed maintenance actions on Line 200 to maintain its structural integrity. The three anomaly investigation and repair projects will involve temporary impacts to approximately 0.044, 0.026 and 0.014 acres respectively.
Morgan Territory Road Slide Repair and Temporary Access Road Alignment	Transportation	Contra Costa County-Public Works	Slide: 1.1 miles west of Morgan Territory Road and Marsh Creek Road intersection. Temporary Access Road: from the Marsh Creek Detention Facility to Leon Drive along an existing dirt fire road.	The project repaired damage to the Morgan Territory Road recieved from a recent landslide during the 2016/2017 winter season. During the construction phase for the slide repair, local traffic was diverted via a temporary bypass road. The road alignment expanded upon an existing dirt fire road. The road was widened from the existing 10-foot wide dirt ranch road to a 16-foot wide gravel road, which required minor grading and graveling.
Activities within the HCP/NCCP Preserve System				
EBRPD Ang Road Culvert Repair	Other	East Bay Regional Parks District	8040 Black Diamond Way, Clayton, CA	A culvert was removed and repaired to stabilize ranch road for safety and emergency vehicle use.
Upper Hess Road Improvement Project	Other	East Bay Regional Parks District	Kirker Pass Road, unincorporated Contra Costa County	The existing roadway was realigned to reduce grade and improve line-of-sight crossing at ridge. The old road was scarified and reseeded to control erosion.

Table 2. Reporting Period Summary of Natural Community and Landscape-level Conditions on Covered Activities by Project

	Natural Community		Landscape								
Project Name	2.11 Enhance Cultivated Agricultural Lands to Benefit Covered Species	2.12 Wetland, Pond, and Stream Avoidance and Minimization Measures	1.6 Minimize Development Footprint Adjacent to Open Space	1.7 Establish Stream Setbacks	1.8 Establish Fuel Management Buffer to Protect Preserves and Property	1.9 Urban-Wildland Interface Design Elements	1.10 Maintain and Improve Hydrologic Conditions and Minimize Erosion	1.11 Avoid Direct Impacts on Extremely Rare Plants or Fully Protected Wildlife Species	1.12 Implement Best Management Practices for Rural Road Maintenance	1.13 Implement Best Management Practices for Flood Control Facility Operations and Maintenance	1.14 Design Requirements for Covered Roads outside UDA
iPark Oakley Phase 2: Executive RV and Boat Storage							✓	✓			
Oakley Gateway							✓	✓			
Gilbert Property Phase 1		✓		✓			✓	✓			
Oakley Recreation Center							✓	✓			
Verna Way							✓	✓			
Sellers Pointe Subdivision							✓	✓			
Palermo Subdivision							✓	✓			
Canal Road Bridge Replacement Project								✓			
Garin Ranch Basin and Heron Park Basin Improvements								✓		✓	
PG&E Walnut Crossover Rebuild Project		✓		✓				✓			
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017		✓					✓	✓			
Shell Pipeline North 20 EBRPD Repair Site 11-14		✓						✓			
Phillips 66 Line 200 Anomaly Investigation and Repair, Spring 2017		✓					✓	✓			
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2016		✓					✓	✓			
Morgan Territory Road Slide Repair and Temporary Access Road Alignment		✓						✓			
EBRPD Ang Road Culvert Repair		✓						✓			
Upper Hess Road Improvement Project								✓			

Table 3. Reporting Period Summary of Species-Level Conditions on Covered Activities by Project

	Species-Level Measures[1]																							
	Townsend's Big-Eared Bat				San Joaquin Kit Fox				Golden Eagle				Western Burrowing Owl				Swainson's Hawk				Giant Garter Snake			
	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring
iPark Oakley Phase 2: Executive RV and Boat Storage													✓	✓										
Oakley Gateway													✓	✓			✓	✓						
Gilbert Property Phase 1									✓	✓			✓	✓			✓	✓			✓	✓		
Oakley Recreation Center									✓	✓			✓	✓			✓	✓						
Verna Way	✓				✓				✓				✓				✓							
Sellers Pointe Subdivision													✓	✓			✓	✓						
Palermo Subdivision									✓	✓			✓	✓			✓	✓						
Canal Road Bridge Replacement Project													✓	✓										
Garin Ranch Basin and Heron Park Basin Improvements													✓	✓										
PG&E Walnut Crossover Rebuild Project					✓	✓			✓	✓			✓	✓			✓	✓						
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017						✓			✓	✓			✓	✓										
Shell Pipeline North 20 EBRPD Repair Site 11-14					✓	✓			✓	✓			✓	✓										
Phillips 66 Line 200 Anomaly Investigation and Repair, Spring 2017					✓	✓			✓	✓			✓	✓										
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2016					✓	✓			✓	✓			✓	✓										
Morgan Territory Road Slide Repair and Temporary Access Road Alignment					✓				✓				✓	✓			✓							
EBRPD Ang Road Culvert Repair					✓	✓			✓	✓			✓	✓			✓							
Upper Hess Road Improvement Project					✓	✓			✓				✓											

[1] The implementation of these conditions and their results can be found in the planning survey reports and are available upon request from the Conservancy.

Table 3. Reporting Period Summary of Species-Level Conditions on Covered Activities by Project

	Species-Level Measures[1]																							
	CA Tiger Salamander				CA Red-Legged Frog				Covered Shrimp				Alkali milkvetch				Big Tarplant				Brewers dwarf flax			
	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring
iPark Oakley Phase 2: Executive RV and Boat Storage																								
Oakley Gateway																								
Gilbert Property Phase 1									✓	✓														
Oakley Recreation Center													✓	✓			✓	✓			✓	✓		
Verna Way																								
Sellers Pointe Subdivision																								
Palermo Subdivision																								
Canal Road Bridge Replacement Project																								
Garin Ranch Basin and Heron Park Basin Improvements																								
PG&E Walnut Crossover Rebuild Project	✓				✓												✓	✓						
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017	✓				✓												✓	✓			✓	✓		
Shell Pipeline North 20 EBRPD Repair Site 11-14	✓				✓												✓	✓						
Phillips 66 Line 200 Anomaly Investigation and Repair, Spring 2017	✓				✓												✓	✓			✓	✓		
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2016	✓				✓												✓	✓			✓	✓		
Morgan Territory Road Slide Repair and Temporary Access Road Alignment	✓				✓				✓				✓	✓			✓	✓			✓	✓		
EBRPD Ang Road Culvert Repair	✓				✓																			
Upper Hess Road Improvement Project													✓								✓			

[1] The implementation of these conditions and their results ca n be found in the planning survey reports and area available upon request from the Conservancy.

Table 3. Reporting Period Summary of Species-Level Conditions on Covered Activities by Project

	Species-Level Measures[1]																							
	Contra Costa goldfields				Diamond-petaled poppy				Large-flowered fiddleneck				Mount Diablo buckwheat				Mount Diablo fairy-lantern				Round-leaved filaree			
	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring
iPark Oakley Phase 2: Executive RV and Boat Storage																								
Oakley Gateway																								
Gilbert Property Phase 1																								
Oakley Recreation Center	✓	✓			✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Verna Way																								
Sellers Pointe Subdivision																								
Palermo Subdivision																								
Canal Road Bridge Replacement Project																								
Garin Ranch Basin and Heron Park Basin Improvements																								
PG&E Walnut Crossover Rebuild Project																	✓	✓						
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017					✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Shell Pipeline North 20 EBRPD Repair Site 11-14					✓	✓			✓	✓							✓	✓						
Phillips 66 Line 200 Anomaly Investigation and Repair, Spring 2017					✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2016					✓	✓			✓	✓			✓	✓			✓	✓			✓	✓		
Morgan Territory Road Slide Repair and Temporary Access Road Alignment	✓	✓							✓	✓			✓	✓			✓	✓			✓	✓		
EBRPD Ang Road Culvert Repair																								
Upper Hess Road Improvement Project	✓				✓				✓				✓				✓							

[1] The implementation of these conditions and their results ca n be found in the planning survey reports and area available upon request from the Conservancy.

Table 3. Reporting Period Summary of Species-Level Conditions on Covered Activities by Project

	Species-Level Measures[1]																			
	Showy madia				Adobe navarretia				Brittlescale				San Joaquin Spearscale				Diablo Helianthella			
	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring
iPark Oakley Phase 2: Executive RV and Boat Storage																				
Oakley Gateway																				
Gilbert Property Phase 1																				
Oakley Recreation Center	✓	✓																		
Verna Way																				
Sellers Pointe Subdivision																				
Palermo Subdivision																				
Canal Road Bridge Replacement Project																				
Garin Ranch Basin and Heron Park Basin Improvements																				
PG&E Walnut Crossover Rebuild Project																				
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017	✓	✓											✓	✓						
Shell Pipeline North 20 EBRPD Repair Site 11-14																	✓	✓		
Phillips 66 Line 200 Anomaly Investigation and Repair, Spring 2017	✓	✓											✓	✓						
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2016													✓	✓						
Morgan Territory Road Slide Repair and Temporary Access Road Alignment	✓	✓											✓	✓						
EBRPD Ang Road Culvert Repair																				
Upper Hess Road Improvement Project	✓																			

[1] The implementation of these conditions and their results ca n be found in the planning survey reports and area available upon request from the Conservancy.

Table 3. Reporting Period Summary of Species-Level Conditions on Covered Activities by Project

	Species-Level Measures[1]															
	Caper Fruited Tropidocarpum				Mount Diablo Fairy-Lantern				Mount Diablo Manzanita				Recurved larkspur			
	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring	Planning Surveys	Pre-Construction Surveys	AMM	Construction Monitoring
iPark Oakley Phase 2: Executive RV and Boat Storage																
Oakley Gateway																
Gilbert Property Phase 1																
Oakley Recreation Center	✓	✓														
Verna Way																
Sellers Pointe Subdivision																
Palermo Subdivision																
Canal Road Bridge Replacement Project																
Garin Ranch Basin and Heron Park Basin Improvements																
PG&E Walnut Crossover Rebuild Project																
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017	✓	✓			✓	✓										
Shell Pipeline North 20 EBRPD Repair Site 11-14																
Phillips 66 Line 200 Anomaly Investigation and Repair, Spring 2017	✓	✓														
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2016	✓	✓														
Morgan Territory Road Slide Repair and Temporary Access Road Alignment	✓	✓														
EBRPD Ang Road Culvert Repair																
Upper Hess Road Improvement Project	✓															

[1] The implementation of these conditions and their results ca n be found in the planning survey reports and area available upon request from the Conservancy.

Table 4. Reporting Period and Cumulative Impacts on Land Cover Types from Covered Activities and Conservation Measure Implementation

	Reporting Period		Cumulative[3]	
	Impacts (acres, unless otherwise noted)		Impacts (acres, unless otherwise noted)	
Land Cover Type	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Terrestrial				
Annual grassland	3.4	3.2	101.0	127.4
Alkali grassland	0.0	0.0	0.8	1.6
Ruderal	82.7	26.9	359.4	277.1
Chaparral and scrub	0.0	0.0	0.0	0.0
Oak savanna	0.0	0.7	0.0	1.4
Oak woodland	0.0	1.3	0.5	1.8
Subtotal terrestrial	86.1	32.1	461.9	409.3
Aquatic				
Riparian woodland/scrub	0.00	0.00	1.02	1.60
Perennial wetland[1]	0.00	0.00	0.07	0.59
Seasonal wetland	0.13	0.00	0.51	2.22
Alkali wetland	0.00	0.00	0.14	0.84
Pond	0.00	0.00	0.01	0.04
Reservoir (open water)[2]	0.47	3.94	0.47	4.14
Slough/Channel (includes stream)	0.58	0.00	0.65	0.15
Subtotal aquatic	1.17	3.94	2.86	9.59
Stream (length in linear feet)				
Total stream length	0.00	60.00	916.31	4,555.70
Stream length by width category				
≤ 25 feet wide	0.00	60.00	677.00	4,028.50
> 25 feet wide	0.00	0.00	239.31	527.20
Stream length by type and order				
Perennial	0.00	0.00	56.00	387.50
Intermittent	0.00	0.00	562.31	3,997.20
Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
Ephemeral, 1st or 2nd order	0.00	60.00	298.00	171.00
Subtotal stream length	*0.00*	*60.00*	*916.31*	*4,555.70*
Irrigated agriculture				
Cropland	0.0	0.0	128.1	32.4
Pasture	0.0	0.0	0.2	1.8
Orchard	8.5	0.0	10.3	0.2
Vineyard	0.7	0.0	24.1	7.4
Subtotal irrigated agricultural	9.2	0.0	162.6	41.7
Other				
Nonnative woodland	0.0	0.0	0.3	1.8
Wind turbines	0.0	0.0	0.0	0.6
Subtotal other	0.0	0.0	0.3	2.4

Table 4. Reporting Period and Cumulative Impacts on Land Cover Types from Covered Activities and Conservation Measure Implementation

	Reporting Period		Cumulative[3]	
	Impacts (acres, unless otherwise noted)		Impacts (acres, unless otherwise noted)	
Land Cover Type	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Uncommon Vegetation Types (subtypes of above land cover types)				
Purple needlegrass grassland	0.0	0.2	0.0	0.4
Wildrye grassland	0.0	0.0	0.0	0.0
Wildflower fields	0.0	0.0	0.0	0.0
Squirreltail grassland	0.0	0.0	0.0	0.0
One-sided bluegrass grassland	0.0	0.0	0.0	0.0
Serpentine grassland	0.0	0.0	0.0	0.0
Saltgrass grassland (alkali grassland)	0.0	0.0	0.2	0.4
Alkali sacaton bunchgrass grassland	0.0	0.0	0.0	0.0
Other uncommon vegetation types	0.0	0.0	0.1	0.0
Subtotal uncommon vegetation types	0.0	0.2	0.3	0.8
Uncommon Landscape Features or Habitat Elements				
Rock outcrop	0.0	0.0	0.2	0.1
Cave	0.0	0.0	0.0	0.0
Springs/seeps	0.0	0.0	0.0	0.0
Scalds	0.0	0.0	0.0	0.0
Sand deposits	0.0	0.0	0.0	0.0
Turf	0.5	5.7	5.8	6.2
Buildings - Bat Roosts (number)	0.0	0.0	0.0	1
Mines (number)	0.0	0.0	0.0	0.0
Buildings (number)	0.0	0.0	0.0	0.0
Potential nest sites (number)	0.0	0.0	0.0	0.0
Subtotal uncommon landscape features (acres)	0.5	5.7	6.0	6.3
Subtotal uncommon landscape features (number)	0	0	0	1
Totals (excludes subtypes)				
Acres	96.4	36.0	627.6	463.1
Linear feet	0.0	60.0	916.3	4,555.7

[1] Perennial wetlands are equivalent permanent wetlands.

[2] Reservoir (open water) is equivalent to aquatic.

[3] Cumulative impact acreages may differ slightly from previous years as refinements to the data tracking system have occurred.

Table 5. Reporting Period and Cumulative Impacts on Covered Plants

Common Name	Scientific Name	Known Occurrences that May Be Removed by Covered Activities[1]	Impacts (occurrences)	
			Reporting Period	Cumulative
Mount Diablo manzanita	*Arctostaphylos auriculata*	0	--	0
Brittlescale	*Atriplex depressa*	1	--	0
San Joaquin spearscale	*Atriplex joanquiniana*	0	--	[see note[2]]
Big tarplant	*Blepharizonia plumosa*	1	--	0
Mount Diablo fairy lantern	*Calochortus pulchellus*	0	--	0
Recurved larkspur	*Delphinium recurvatum*	1	--	0
Round-leaved filaree	*Erodium macrophyllum*	2	--	[see note[3]]
Diablo helianthella	*Helianthella castanea*	0	--	0
Brewer's dwarf flax	*Hesperolinon breweri*	0	--	0
Showy madia	*Madia radiata*	0	--	0
Adobe navarretia	*Navarretia nigelliformis* ssp. *nigelliformis*	1	--	0
Total		**6**	**0**	**0**

[1] This column provides the limit of impacts, by number of occurrences, on plant species allowable under the HCP/NCCP per HCP/NCCP Table 5-5.

[2] Vasco Project population translocated and impact avoided (2011).

[3] Temporary impacts occurred to round-leaved filaree as part of the PG&E Contra Costa Las Positas Project (2009). The soil was protected from disturbance, the site was returned to pre-project connections, seeds collected on site were propagated, and monitoring reports document that round-leaved filaree persists on site and is as abundant as before the project.

Table 6. Impacts to Aquatic and Stream Land Cover Types by Watershed: Reporting Period and Cumulative

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	**Land Cover Type**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Brushy	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.00	0.01	0.12
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.01	0.60
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.01
	Subtotal aquatic	*0.00*	*0.00*	*0.01*	*0.74*
	Stream (linear feet)				
	Total stream length	0.00	20.00	132.00	368.50
	Stream length by width category				
	≤ 25 feet wide	0.00	20.00	110.00	250.50
	> 25 feet wide	0.00	0.00	22.00	118.00
	Stream length by type and order				
	Perennial	0.00	0.00	56.00	282.50
	Intermittent	0.00	0.00	0.00	0.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	20.00	76.00	86.00
	Subtotal stream length	*0.00*	*20.00*	*132.00*	*368.50*
Clifton Court Forebay	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.00*	*0.00*
	Stream (linear feet)				
	Total stream length	0.00	0.00	47.00	112.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	0.00
	> 25 feet wide	0.00	0.00	47.00	112.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	47.00	112.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*47.00*	*112.00*

Table 6. Impacts to Aquatic and Stream Land Cover Types by Watershed: Reporting Period and Cumulative

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	**Land Cover Type**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Deer	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.00*	*0.00*
	Stream (linear feet)				
	Total stream length	0.00	0.00	12.00	43.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	15.00
	> 25 feet wide	0.00	0.00	12.00	28.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	12.00	43.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*12.00*	*43.00*
East County Delta	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.42	0.20
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.13	0.00	0.13	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.34	3.15	0.34	3.35
	Slough/Channel[3] (includes stream)	0.58	0.00	0.58	0.00
	Subtotal aquatic	*1.04*	*3.15*	*1.46*	*3.55*
	Stream (linear feet)				
	Total stream length	0.00	0.00	0.00	0.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	0.00
	> 25 feet wide	0.00	0.00	0.00	0.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	0.00	0.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*0.00*	*0.00*

Table 6. Impacts to Aquatic and Stream Land Cover Types by Watershed: Reporting Period and Cumulative

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	**Land Cover Type**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Kellogg	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.05	0.31
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.29	0.01
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.07	0.14
	Subtotal aquatic	*0.00*	*0.00*	*0.41*	*0.46*
	Stream (linear feet)				
	Total stream length	0.00	0.00	6.00	0.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	0.00
	> 25 feet wide	0.00	0.00	6.00	0.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	6.00	0.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*6.00*	*0.00*
Kirker	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.05
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.00*	*0.05*
	Stream (linear feet)				
	Total stream length	0.00	0.00	0.00	0.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	0.00
	> 25 feet wide	0.00	0.00	0.00	0.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	0.00	0.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*0.00*	*0.00*

Table 6. Impacts to Aquatic and Stream Land Cover Types by Watershed: Reporting Period and Cumulative

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	**Land Cover Type**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Lower Marsh	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.04
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.13	0.24
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.13	0.79	0.13	0.79
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.13*	*0.79*	*0.26*	*1.07*
	Stream (linear feet)				
	Total stream length	0.00	0.00	33.31	73.70
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	0.00
	> 25 feet wide	0.00	0.00	33.31	73.70
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	33.31	73.70
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*33.31*	*73.70*
Lower Mt. Diablo	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.00*	*0.00*
	Stream (linear feet)				
	Total stream length	0.00	0.00	193.00	0.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	193.00	0.00
	> 25 feet wide	0.00	0.00	0.00	0.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	0.00	0.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	193.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*193.00*	*0.00*

Table 6. Impacts to Aquatic and Stream Land Cover Types by Watershed: Reporting Period and Cumulative

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	**Land Cover Type**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
	Aquatic (acres)				
	Riparian woodland/scrub	0.00	0.00	0.30	0.73
	Perennial wetland[1]	0.00	0.00	0.04	0.47
	Seasonal wetland	0.00	0.00	0.02	2.18
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.36*	*3.38*
	Stream (linear feet)				
	Total stream length	0.00	0.00	295.00	3,639.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	295.00	3,639.00
	> 25 feet wide	0.00	0.00	0.00	0.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	295.00	3,639.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*295.00*	*3,639.00*
Upper Marsh	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.17	0.26
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.06	0.03
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.01	0.04
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.25*	*0.32*
	Stream (linear feet)				
	Total stream length	0.00	20.00	141.00	239.50
	Stream length by width category				
	≤ 25 feet wide	0.00	20.00	58.00	77.00
	> 25 feet wide	0.00	0.00	83.00	162.50
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	105.00
	Intermittent	0.00	0.00	112.00	90.50
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	20.00	29.00	44.00
	Subtotal stream length	*0.00*	*20.00*	*141.00*	*239.50*

Table 6. Impacts to Aquatic and Stream Land Cover Types by Watershed: Reporting Period and Cumulative

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	**Land Cover Type**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Upper Mt. Diablo	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.00*	*0.00*
	Stream (linear feet)				
	Total stream length	0.00	20.00	0.00	41.00
	Stream length by width category				
	≤ 25 feet wide	0.00	20.00	0.00	41.00
	> 25 feet wide	0.00	0.00	0.00	0.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	0.00	0.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	20.00	0.00	41.00
	Subtotal stream length	*0.00*	*20.00*	*0.00*	*41.00*
Willow	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.08	0.02
	Perennial wetland[1]	0.00	0.00	0.02	0.00
	Seasonal wetland	0.00	0.00	0.01	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.10*	*0.02*
	Stream (linear feet)				
	Total stream length	0.00	0.00	57.00	39.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	21.00	6.00
	> 25 feet wide	0.00	0.00	36.00	33.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	57.00	39.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*57.00*	*39.00*

Table 6. Impacts to Aquatic and Stream Land Cover Types by Watershed: Reporting Period and Cumulative

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	**Land Cover Type**	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Total	**Aquatic (acres)**				
	Riparian woodland/scrub	0.000	0.00	1.02	1.60
	Perennial wetland[1]	0.000	0.00	0.07	0.59
	Seasonal wetland	0.126	0.00	0.51	2.22
	Alkali wetland	0.000	0.00	0.14	0.84
	Pond	0.000	0.00	0.01	0.04
	Reservoir (open water)[2]	0.469	3.94	0.47	4.14
	Slough/Channel[3] (includes stream)	0.577	0.00	0.65	0.15
	Total aquatic	1.172	3.94	2.86	9.59
	Stream (linear feet)				
	Total stream length	0.00	60.00	916.31	4,555.70
	Stream length by width category				
	≤ 25 feet wide	0.00	60.00	677.00	4,028.50
	> 25 feet wide	0.00	0.00	239.31	527.20
	Stream length by type and order				
	Perennial	0.00	0.00	56.00	387.50
	Intermittent	0.00	0.00	562.31	3,997.20
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	60.00	298.00	171.00
	Total stream length	0.00	60.00	916.31	4,555.70

[1] Perennial wetlands are equivalent permanent wetlands.

[2] Reservoir (open water) is equivalent to aquatic.

[3] Cumulative impact acreages and linear feet may differ slightly from previous years as refinements to the data tracking system have occurred.

III. LAND ACQUISITION

Preserve System

The Conservancy is required to establish a Preserve System through acquisition of land in fee title, conservation easement, mitigation banking, or land dedication. Land acquired as part of the Preserve System will be for the benefit of covered species, natural communities, biological diversity, and overall ecosystem function. The following principles guide the development of the Preserve System.

- Maximize Size
- Preserve the Highest-Quality Natural Communities
- Link Acquisitions
- Buffer Urban Impacts
- Minimize Edge
- Fully Represent Environmental Gradients
- Consider Watersheds
- Consider Full Ecological Diversity within Communities
- Consider Management Needs

Reporting year and cumulative Preserve System acquisitions demonstrate implementation of Conservation Measure 1.1, *Acquire Lands for Preserve System.*

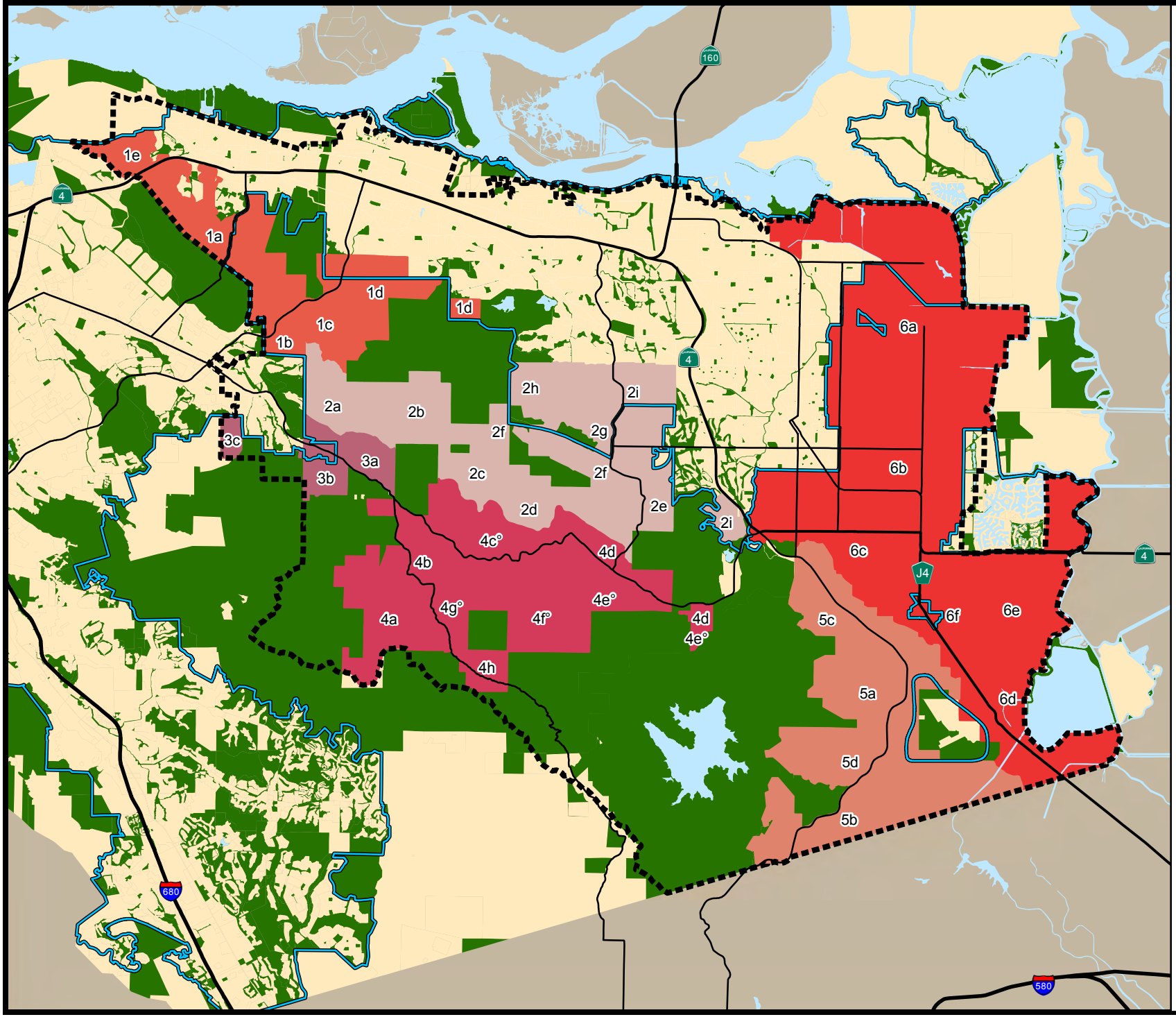
Acquisition Analysis Zones

To develop priorities and identify potential locations for acquisition, the inventory area was subdivided geographically into six Acquisition Analysis Zones (Zones; Figure 4). These Zones were further divided into Subzones to distinguish between important landscape features. Acquisition priorities for each Zone were developed primarily on the basis of the ecological opportunities and constraints for collectively achieving the biological goals and objectives for covered species, natural communities, and landscapes.

Land Acquisition Requirements by Acquisition Zone

To ensure that acquisition occurs in locations that will maximize the benefits to natural communities and covered species, acquisition requirements are defined by Zone and, in some cases, by Subzone. The priorities for land acquisition within the Zones under the Initial Urban Development area are shown in Figure 5. Land acquisition priorities under the Maximum Urban Development Area are shown in Figure 6. The differences between the acquisition priorities for the two urban development areas are in Zones 4, 5, and 6. There are no differences between the acquisition priorities for the two urban development scenarios in Zones 1, 2, and 3.

Figure 4. Acquisition Analysis Zones and Sub-Zones



Legend

Inventory Area

County Urban Limit Line

Parks, Urban Parks, Public Watershed Lands and Open Space (includes deed restricted open space and open space from General Plans.)

Acquisition Analysis Zones

1
2
3
4
5
6

N

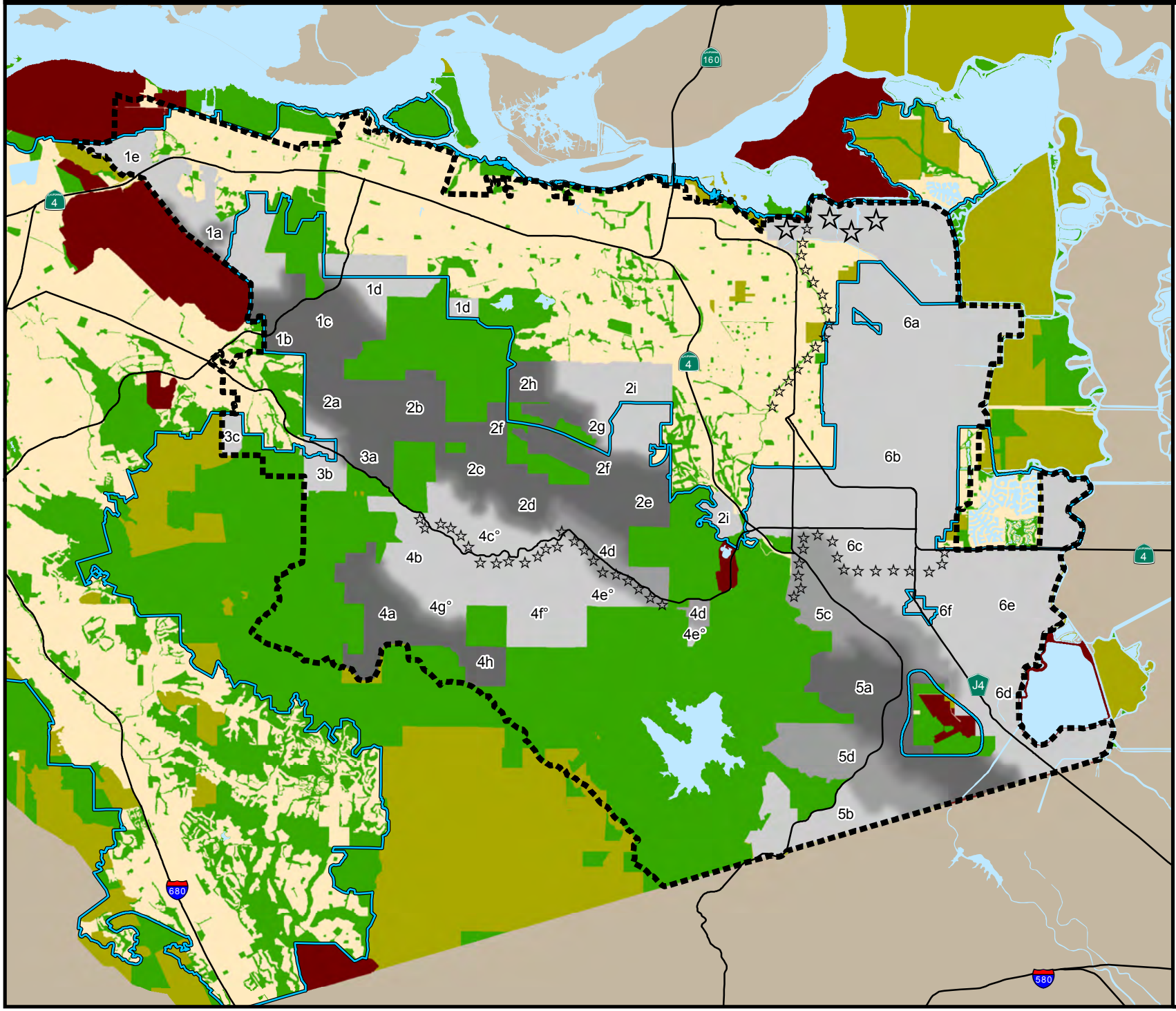
Miles

2 1 0 2

03/13/2018

East Contra Costa County Habitat Conservancy

Figure 5. Acquisition Priorities Under Initial Urban Development Area Scenario



Legend

Inventory Area

County Urban Limit Line

Level of Acquisition Effort

Lower

Medium (1a — Sub-Zone)

Higher

Please see Chapter 5 of the NCCP/HCP for additional information on the purpose of this map.

Land Use Designations Outside Acquisition Analysis Zones

Parks, Urban Parks, Open Space, and Public Watershed

Public Facilities with Undeveloped Land

Agricultural Land Uses

Development Land Uses

Additional key restoration priorities

Extensive restoration is also planned within areas also emphasized for acquisition

Some acquisitions in subzones 4c, 4e, 4f, 4g are interchangable

N

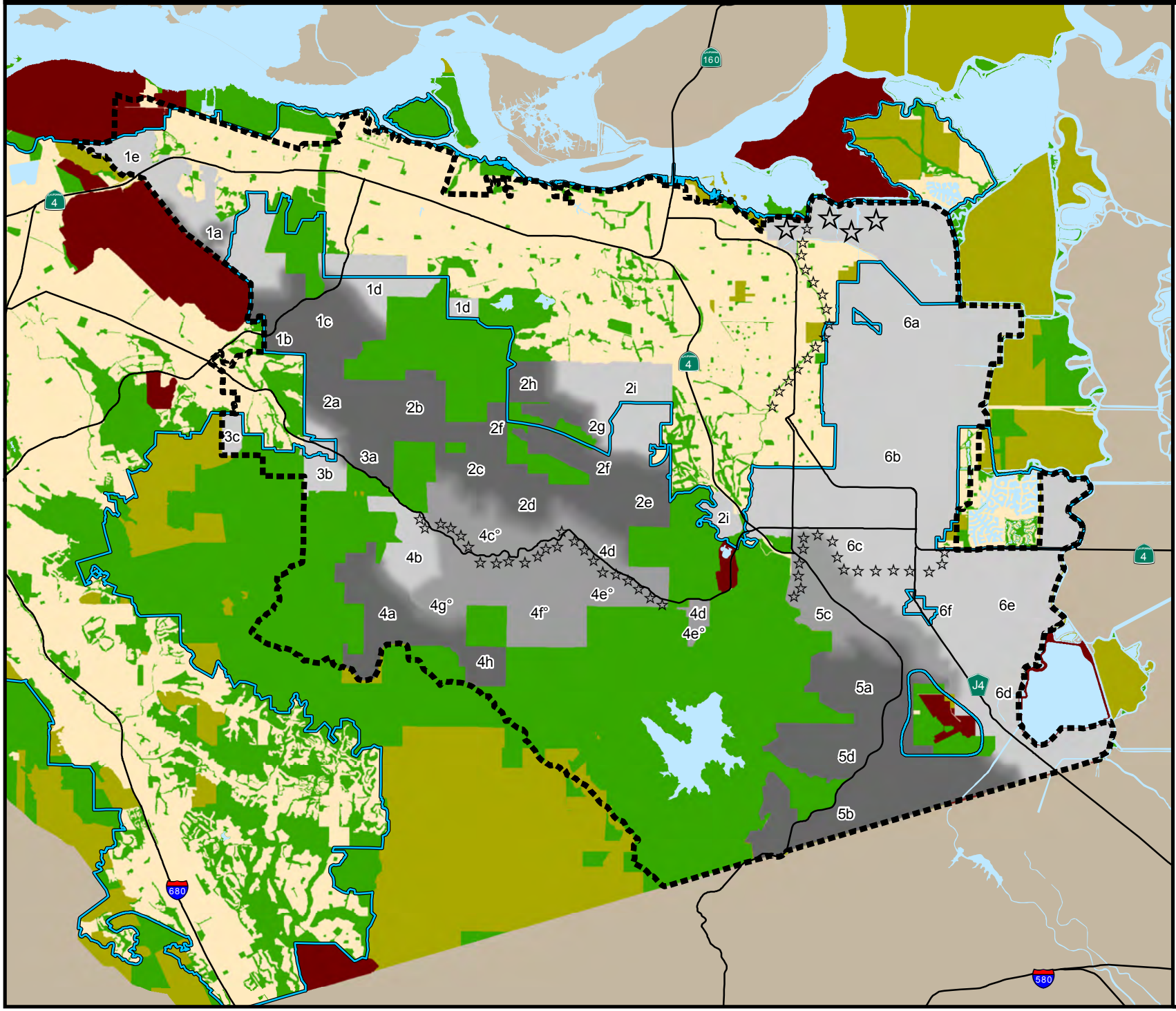
Miles

2 1 0 2

East Contra Costa County Habitat Conservancy

03/13/2018

Figure 6. Acquisition Priorities Under Maximum Urban Development Area Scenario



Legend

Inventory Area

County Urban Limit Line

Level of Acquisition Effort

Lower

Medium (1a — Sub-Zone)

Higher

Please see Chapter 5 of the NCCP/HCP for additional information on the purpose of this map.

Land Use Designations Outside Acquisition Analysis Zones

Parks, Urban Parks, Open Space, and Public Watershed

Public Facilities with Undeveloped Land

Agricultural Land Uses

Development Land Uses

Additional key restoration priorities

Extensive restoration is also planned within areas also emphasized for acquisition

Some acquisitions in subzones 4c, 4e, 4f, 4g are interchangable

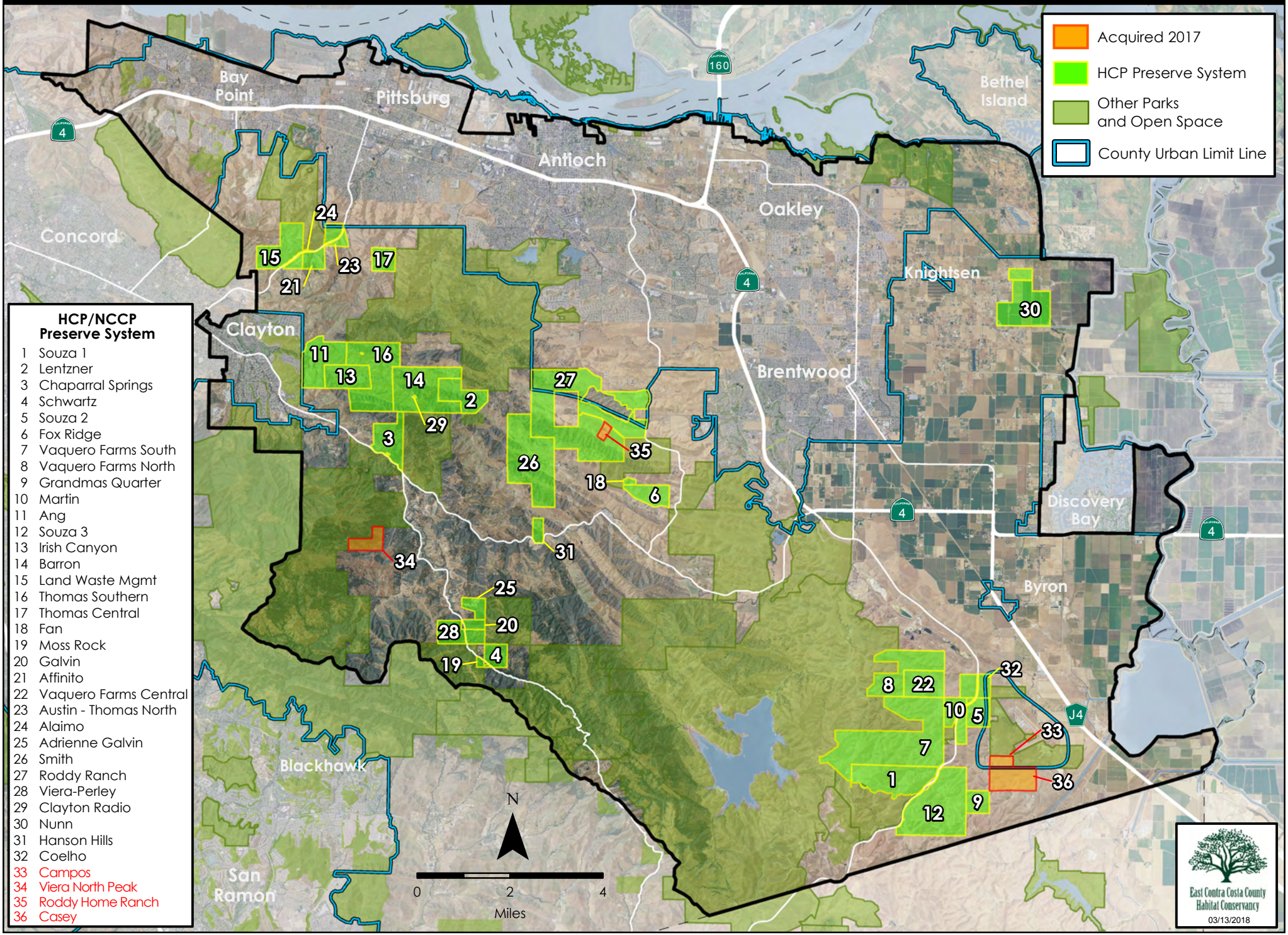
Miles

2 1 0 2

East Contra Costa County Habitat Conservancy

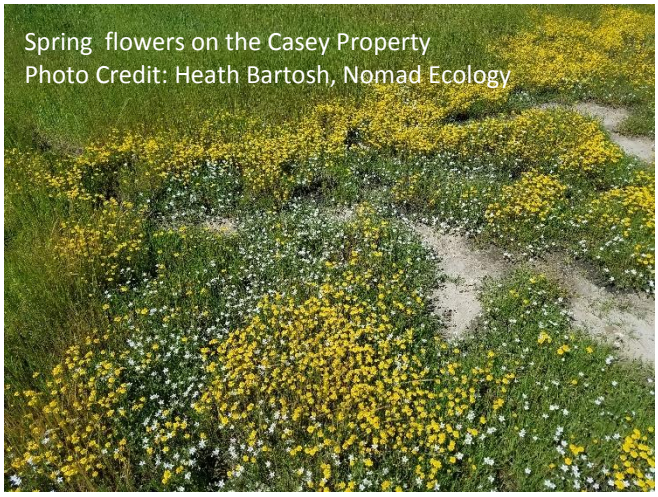
03/13/2018

Figure 7. Acquisitions Completed under HCP/NCCP as of December 31. 2017



In addition to quantitative land acquisition requirements by land cover type and Zone, qualitative land acquisition requirements are also provided for some Zones. For instance, connection to existing public lands or preservation of a certain number of ponds or covered plant populations are required.

2017 Land Acquisition


Spring flowers on the Casey Property
Photo Credit: Heath Bartosh, Nomad Ecology

The Conservancy acquired four properties in 2017 for the Preserve System, totaling 599.2 acres: Campos (80.3 acres), Casey (318.9 acres), Roddy Home Ranch (40 acres), and Viera North Peak (160 acres). The four properties are shown in Figure 7, and details of the properties are shown in Figures 8 through 15. Table 7 shows the cumulative summary of acquired properties and their funding sources.

These four properties represent important contributions to the Stay-Ahead Provision requirements, wildlife corridors, and recreational opportunities in high-priority conservation areas—Zones 2, 4, and 5. The Viera North Peak property is the first acquisition in the 4a subzone.

The Campos and Casey properties are located in Zone 5, Subzone 5a. Subzone 5a is a high-priority acquisition subzone, and is of critical importance to the HCP/NCCP because it supports high quality habitat for several key species. Land acquisition in Zone 5 is focused mostly in Subzone 5a to maximize the acquisition of the largest blocks of alkali grassland and alkali wetland and to meet conservation goals for San Joaquin kit fox (*Vulpes macrotis mutica*), covered invertebrates, and covered amphibians. Subzone 5a is a high-priority acquisition subzone, and is of critical importance to the HCP/NCCP because it supports high quality habitat for several key species. Grasslands in this acquisition zone support several of the HCP/NCCP's covered species including California tiger salamander, California red-legged frog, golden eagle (*Aquila chrysaetos*), tricolored blackbird, and western burrowing owl, and provide suitable habitat for fairy shrimp and alkali-dependent covered plants.

The Roddy Home Ranch property is located in Zone 2, Subzone 2f, a high-priority acquisition subzone. Zone 2 acquisitions are of critical importance to the HCP/NCCP because the area supports a variety of high quality habitat for several key species and serves a critical connectivity function for San Joaquin kit fox. The Roddy Home Ranch property is unique because it has significant improvements in relation to the amount of open space habitat. Because of the importance of this site to achieve the HCP/NCCP biological goals and objectives—namely, protection of an inholding within the greater Roddy Ranch property—USFWS and CDFW provided their support for the acquisition. The property also offers recreational benefits and will support

a key goal of EBRPD's Master Plan of creating a park in Deer Valley. The Roddy Home Ranch property could potentially house an interpretive center for the Deer Valley Preserve.

The Viera Peak North property is located in Zone 4 and is the first acquisition in the 4a subzone. Subzone 4a is designated as high priority for acquisition for the Preserve System. High-priority Zone 4 acquisitions are of critical importance to the HCP/NCCP because the area supports a variety of high quality habitat for several key species and serves a critical connectivity function. Subzone 4a acquisitions must include 90% of modeled suitable core habitat for Alameda whipsnake. Approximately 95% of Viera North Peak is modeled as Alameda whipsnake suitable core habitat. The property provides suitable habitat for a variety of other covered wildlife species including golden eagle, Alameda whipsnake, western pond turtle (*Actinemys marmorata*), California tiger salamander, California red-legged frog, and foothill yellow-legged frog (*Rana boylii*). Suitable habitat is present for several covered plant species including Mount Diablo fairy lantern (*Calochortus pulchellus*), Diablo helianthella, Diablo manzanita (*Arctostaphylos auriculata*), and Brewer's dwarf flax (*Hesperolinon breweri*).

Tables 8a, 8b, and 9 show the land cover types protected by the four acquisitions in 2017.

Table 10 summarizes progress toward preservation requirements of covered plant populations.[3] To date, 48 known occurrences of covered plant populations have been protected in the Preserve System. During the reporting period, all new acquisition properties were surveyed for covered plants. During plant surveys in 2017, two covered species were observed: brittlescale (*Atriplex depressa*) and round-leaved filaree (*California macrophylla*).

The 2017 acquisitions are known to support or have a strong potential to support several covered species, including the following.

- Alameda whipsnake
- California tiger salamander
- California red-legged frog
- Foothill yellow-legged frog
- Silvery legless lizard (*Anniella pulchra pulchra*)
- Western pond turtle
- Golden eagle
- Swainson's hawk (*Buteo swainsoni*)
- Western burrowing owl
- San Joaquin kit fox

[3] The reported covered plant populations include only those occurrences confirmed in annual inventories. As such, plant populations acquired in the current reporting year may not be included if an inventory has not yet been conducted.

- Big tarplant (*Blepharizonia plumosa*)
- Mount Diablo fairy lantern
- Diablo manzanita
- Diablo helianthella
- Brewer's dwarf flax
- Brittlescale
- Round-leaved filaree
- Vernal pool fairy shrimp
- Midvalley fiary shrimp (*Branchinecta mesovallensis*)

Table 11 describes land acquisition, species habitat, and covered plant preservation requirements by Zone and/or Subzone. The table shows progress toward land acquisition requirements within all six Zones and their Subzones. Key highlights include the following acquisition achievements to date.

- 51% of Zone 2 requirement to protect annual grasslands was met.
- 50% of Zone 4 requirement to protect chaparral/scrub was met.
- 20% of Zone 5 requirement to protect alkali grassland was met.
- 20% of Zone 5 requirement to protect alkali wetland was met.
- 44% of the estimated minimum overall land acquisition requirement and 33% of the estimated maximum requirement were met.

Campos Property

The Campos property is an 80-acre rectangular parcel located in the southeastern region of the HCP/NCCP inventory area along Armstrong Road (Figures 7, 8, and 9). The Campos property's topography is rolling with several areas that are level.

Campos Property
Photo Credit: East Contra Costa County Habitat Conservancy

The property is located in Zone 5, Subzone 5a. Subzone 5a is a high-priority acquisition subzone, and is of critical importance to the HCP/NCCP because it supports high quality habitat for several key species. Zone 5 (13,156 acres in the Byron Hills) comprises all the unprotected lands dominated by annual grassland and alkali

grassland between the Los Vaqueros Watershed lands and the Alameda/Contra Costa County line. Grasslands in this acquisition zone support several of the HCP/NCCP's covered species including California tiger salamander, California red-legged frog, golden eagle, and western burrowing owl, and provide suitable habitat for many more including fairy shrimp and alkali-dependent covered plants. The goal of acquisition in Zone 5 is to create a continuous habitat connection at least 1 mile wide linking the conservation areas surrounding the Byron Airport with the Los Vaqueros Watershed lands. This goal is targeted at conserving movement routes between known breeding sites and core breeding habitat for San Joaquin kit fox.

The primary land cover across the property is annual grassland which contributes to land cover acquisition target for Zone 5 and Preserve-wide acquisition targets. The Conservancy has not conducted plant surveys on the property; as with most past acquisition properties, the Conservancy will conduct these surveys after the property has been acquired.

Acquisition of the property contributes to the natural land cover requirements in Subzone 5a (80.3 acres). The presence of grassland (78.8 acres) would also contribute to Preserve System-wide acquisition requirements. The Campos property provides suitable habitat for a variety of covered wildlife species including San Joaquin kit fox, golden eagle, western burrowing owl, Swainson's hawk, tricolored blackbird, California tiger salamander, California red-legged frog, and vernal pool fairy shrimp. Suitable habitat is present for covered plant species including big tarplant and round-leaved filaree.

Casey Property

The Casey property is located in a rural/agricultural neighborhood in the southeastern region of the HCP/NCCP inventory area (Figures 7, 10, and 11). The property is located along and west of Byron Hot Springs Road, just south of the Byron Airport, in an unincorporated area of Contra Costa County. Access to the property is on Byron Hot Springs Road. The property is located 3 miles south of the community of Byron.

The property comprises one parcel and totals 318.8 acres. The parcel is rectangular in shape and is approximately 5,280 feet wide along its northern and southern boundaries, and approximately 2,640 feet wide along its west and eastern boundaries. The topography is moderate rolling hills ranging in elevation from 100 feet to 600 feet.

The Casey property, acquired for the Preserve System in October 2017, lies adjacent and south of the Campos property, while the Grandma's Quarter property, incorporated into the Preserve System in 2010, is kitty-corner to the property to the southwest. Other surrounding properties are predominately hilly agricultural land used for grazing. The area is lightly developed with modest traditional agricultural family/worker dwellings. Some of the surrounding lands are part of the Buena Vista Wind Farm.

The Casey property is located in the HCP/NCCP's acquisition Zone 5, Subzone 5a. Zone 5 (13,156 acres in the Byron Hills) comprises all the unprotected lands dominated by annual grassland and alkali grassland between the Los Vaqueros Watershed lands and the Alameda/Contra Costa

County line. Grasslands in this acquisition zone support several of the HCP/NCCP's covered species including California tiger salamander, California red-legged frog, golden eagle, tricolored blackbird, and western burrowing owl, vernal pool fairy shrimp, midvalley fairy shrimp and provides suitable habitat for alkali-dependent covered plants. The goal of acquisition in Zone 5 is to create a continuous habitat connection at least 1 mile wide linking the conservation areas surrounding the Byron Airport with the Los Vaqueros Watershed lands. This goal is targeted at conserving movement routes between known breeding sites and core breeding habitat for San Joaquin kit fox. Land acquisition in Zone 5 is focused mostly in Subzone 5a to maximize the acquisition of the largest blocks of alkali grassland and alkali wetland and to meet conservation goals for San Joaquin kit fox, covered invertebrates, and covered amphibians.

Roddy Home Ranch Property

The Roddy Home Ranch property is located in a rural/agricultural neighborhood in the central region of the HCP/NCCP inventory area (Figures 7, 12, and 13). The property is surrounded by the 1,885-acre Roddy Ranch property that was acquired for the Preserve System in 2014. The acquisition protects an inholding within the critical land of the wildlife corridor connecting Black Diamond Mines Regional Preserve to Marsh Creek State Park, Round Valley Regional Preserve, and Los Vaqueros Reservoir watershed lands.

Roddy Home Ranch
Photo Credit: The East Contra Costa County Habitat Conservancy

Comprised of two 20-acre parcels, the property totals 40 acres. The property is fairly rectangular in shape and has approximately 1,100 feet of frontage along Chadbourne Road. The property is slightly sloping from southwest to northeast.

The Roddy Ranch Home property is located in Zone 2 and Subzone 2f, a high acquisition subzone. High-priority Zone 2 acquisitions are of critical importance to the HCP/NCCP because the area supports a variety of high quality habitat for several key species and serves a critical connectivity function for San Joaquin kit fox.

The property is unique because it has significant on-site improvements relative to habitat. Because of the importance of this site to achieve the HCP/NCCP biological goals and objectives, namely protection of an inholding within the greater Roddy Ranch property, the USFWS and CDFW have provided their support for the acquisition.

The property offers both conservation and recreation benefits. Acquisition of the property supports a key goal of EBRPD's Master Plan: creating a park in Deer Valley. The property could potentially house an interpretative center for the Deer Valley preserve.

Viera North Peak Property

The Viera North Peak Property is located in the southwestern region of the inventory area (Figure 7, 14, and 15). The property supports a unique variety of habitat types including chaparral, oak woodland, oak savanna, and creek. The property is located approximately 3 miles southeast of the Town of Clayton and bordered by Mount Diablo State Park to the north and west. Acquisition of the property provides key support in expanding the landscape linkage along the southwest border of the inventory area.

The Viera North Peak property is located on steeply sloping terrain with elevations that range from 1,300 to 2,250 feet. The majority of the site is characterized by very steep slopes. Three seasonal creeks cross the property including Perkins Creek in the northeast. Just east of the Viera North Peak property is a confluence of several tributaries that flow into Marsh Creek.

The Viera North Peak property supports a rich diversity of plant species and vegetation communities. The bulk of the property has tree and shrub cover (approximately 95%); the balance comprises dry grasses. There are no wetlands on the property, although natural intermittent creek drainages traverse the eastern part of the property.

Acquisition of the property contributes to the natural land cover requirements in Subzone 4a (160.0 acres). The presence of chaparral/scrub (98.8 acres), oak savanna (1.2 acres), and oak woodland (600 acres) contributes to Preserve-wide acquisition requirements. The property provides suitable habitat for a variety of covered wildlife species including Townsend's big-eared bat, golden eagle, Alameda whipsnake, western pond turtle, California tiger salamander, California red-legged frog, and foothill yellow-legged frog. Suitable habitat is present for several covered plant species including Mount Diablo fairy lantern, Diablo helianthella, Diablo manzanita, and Brewer's dwarf flax.

A Note on Property Acreages

All acreage figures provided in this section were derived from the Conservancy's geographic information system (GIS). GIS measurements typically do not match the acreage stated in deeds and legal descriptions. Because the existing parcel data is not necessarily accurate in rural areas, the Conservancy uses a variety of techniques to better map the boundaries of the acquired properties. These techniques include aerial photography and descriptions of metes and bounds. Following these refinements, GIS acreage calculations and those reported in deeds may differ. Any remaining discrepancies are probably related to discrepancies in assessor parcel maps, inaccurate fence line placement, and errors made in original and sometimes very old surveys. GIS acreages are used in this section because GIS is the only practical means of reliably measuring the amount of land cover and the other features within each property.

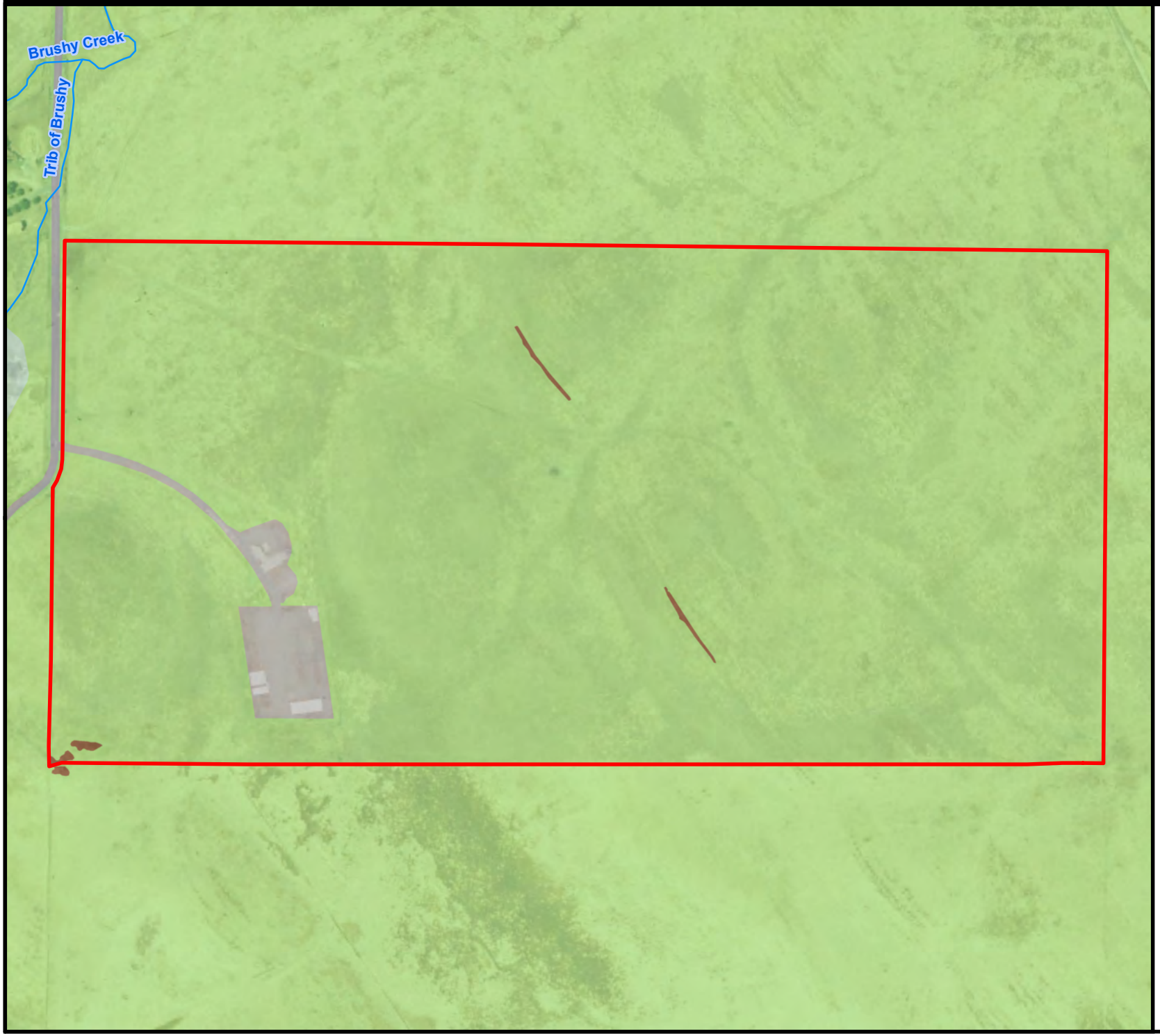
A Note on Land Cover Mapping Refinements and Cumulative Acreages

The Conservancy revises its GIS land cover mapping in the Preserve System as survey and inventory of these lands progress. These revisions can result in changes to cumulative acreages from year to year.

Pre-Existing Conservation Easements

The Plan provides the Conservancy the choice of counting or not counting the areas within conservation easements toward conservation requirements. If they are counted, the impacts associated with the development projects mitigated by these conservation easements must be counted toward impact allocations. Acreages of acquired lands that are not counted as preserved due to existing conservation easements or development restrictions are shown in Table 8a. Additionally, the acreage as mapped in GIS by the Conservancy once a site is acquired is often different from the acreage recorded by the County Assessor. As such, this accounts for differences between deeded acres as presented in Table 7 and GIS acres presented in tables 8a, 8b, 9, 11, and 12.

Figure 8. Campos Property - Landcover Map



Legend

Property Boundary

Landcover

Grassland
- grassland (78.15 acres)
- alkali grassland
- ruderal

Wetland
- permanent wetland
- seasonal wetland
- alkali wetland

Aquatic
- stream
- aquatic/open water
- pond
- slough/channel
- riparian
- chaparral
- oak savanna
- oak woodland
- rock outcrops (0.16 acres)

Irrigated Agriculture
- pasture
- cropland
- vineyard

Developed
- urban (2.01 acres)
- aqueduct
- wind turbines

N

03/14/2018

East Contra Costa County Habitat Conservancy

Feet

0 300 600

Figure 9. Campos: Representative Photographs

Photo 1: Looking North along property boundary

Photo 2: Ridgeline along hilltop on property

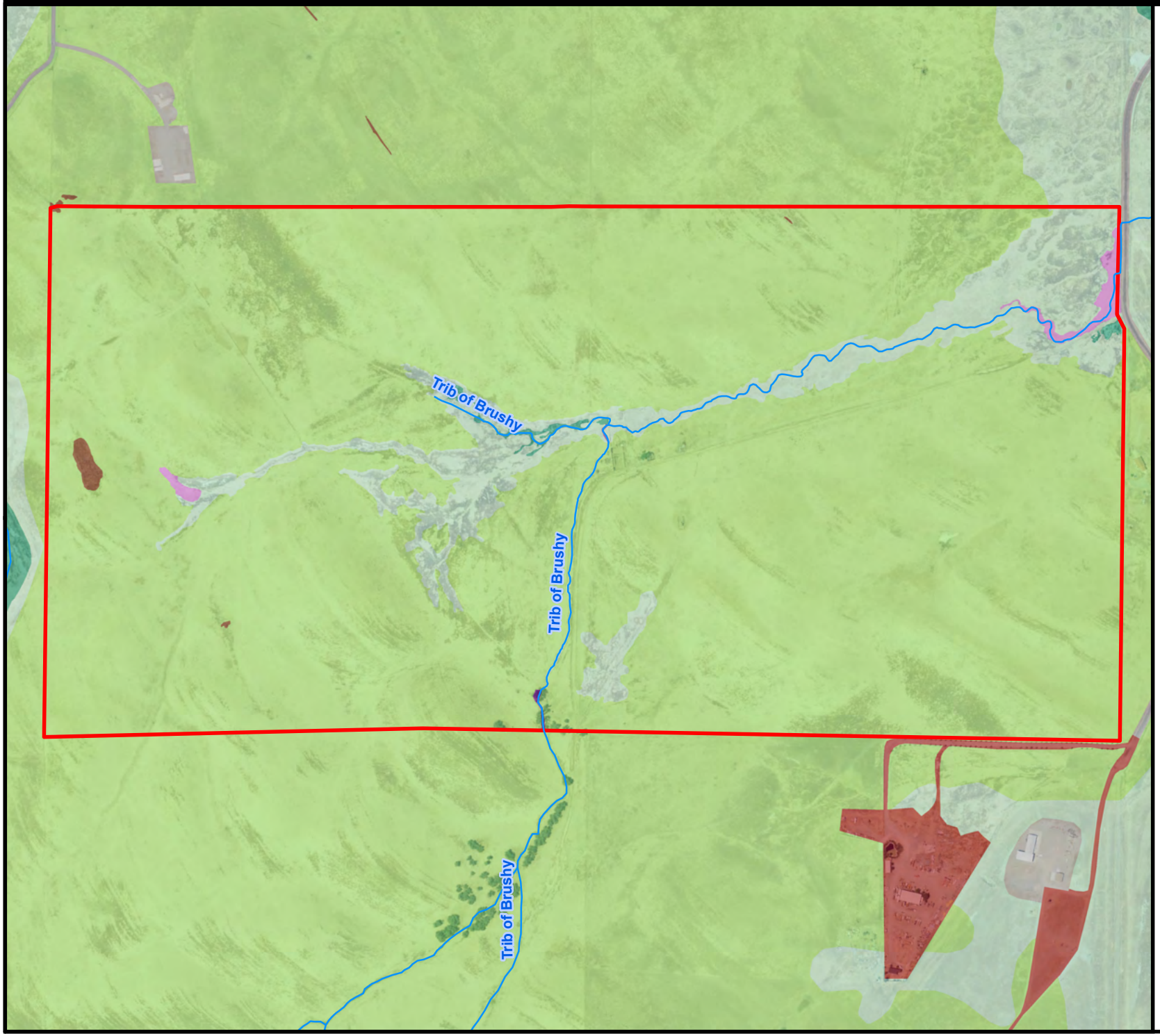
Photo 3: Looking east towards Byron Airport

Photo 4: View towards Souza III

Photo 5: Tricolored blackbird on property

Photo 6: Annual grasslands

Figure 10. Casey Property - Landcover Map



Legend

Property Boundary

Landcover

Grassland

- grassland (289.05 acres)
- alkali grassland (27.01 ac)
- ruderal

Wetland

- permanent wetland (0.12 ac)
- seasonal wetland (1.43 ac)
- alkali wetland (0.78 acres)

Aquatic

- stream (6005.91 feet)
- aquatic/open water
- pond
- slough/channel
- riparian
- chaparral
- oak savanna
- oak woodland
- rock outcrops (0.55 acres)

Irrigated Agriculture

- pasture
- cropland
- vineyard

Developed

- urban
- aqueduct
- wind turbines

N

03/14/2018

East Contra Costa County Habitat Conservancy

Feet

0 500 1,000

Figure 11. Casey: Representative Photographs

Photo 1: Ranch structures along tributary

Photo 2: Unnamed tributary

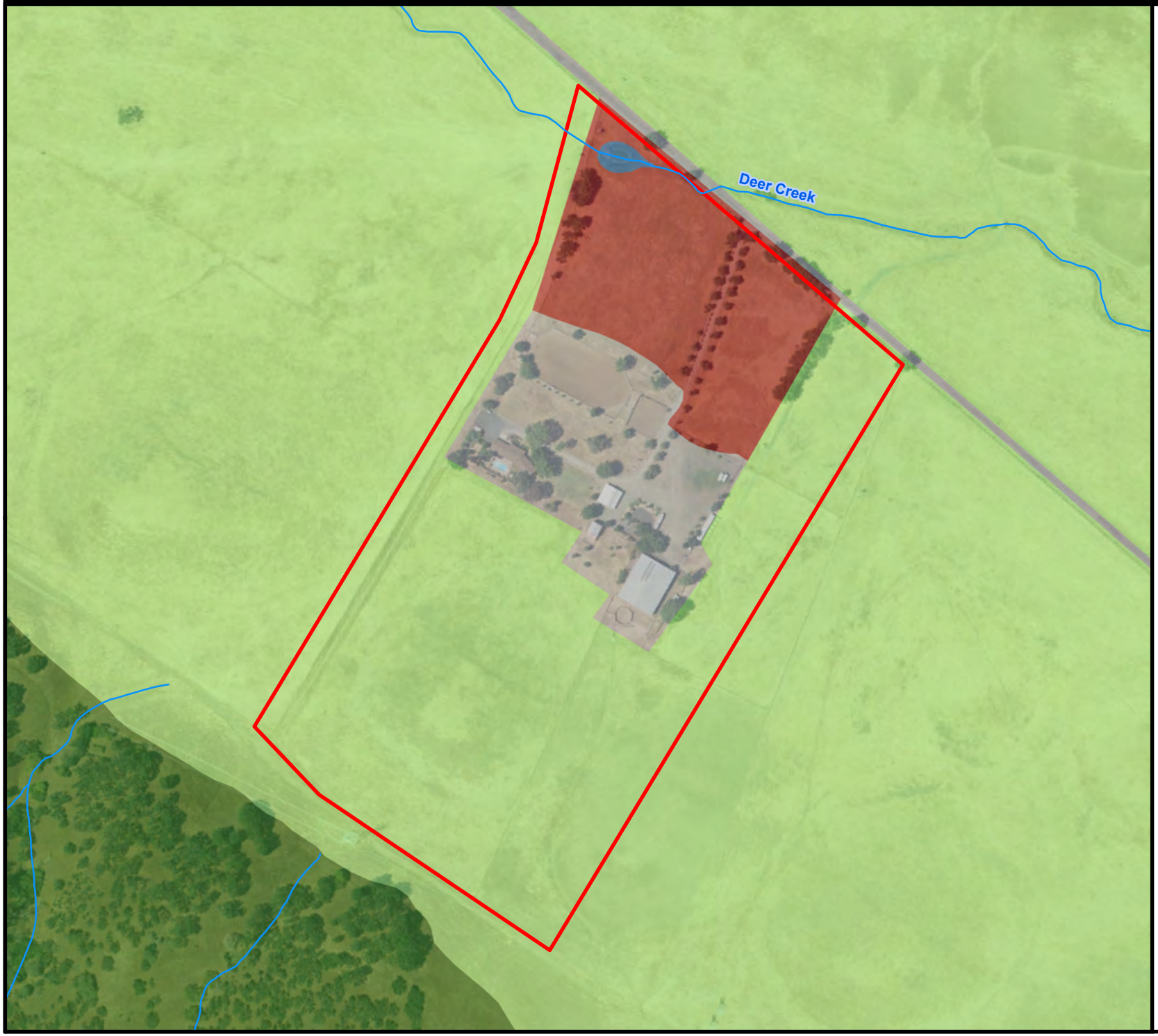
Photo 3: Looking north towards main valley

Photo 4: View southwest towards Souza III

Photo 5: Surveying for covered shrimp

Photo 6: Ranch Road

Figure 12. Roddy Home Ranch Property - Landcover Map



Legend

Property Boundary

Landcover

Grassland

- grassland (24.3 acres)
- alkali grassland
- ruderal (7.78 acres)

Wetland

- permanent wetland
- seasonal wetland
- alkali wetland

Aquatic

- stream (248.86 feet)
- aquatic/open water
- pond (0.18 acres)
- slough/channel

- riparian
- chaparral
- oak savanna
- oak woodland
- rock outcrops

Irrigated Agriculture

- pasture
- cropland
- vineyard

Developed

- urban (7.74 acres)
- aqueduct
- wind turbines

N

03/14/2018

East Contra Costa County Habitat Conservancy

Feet

0 300 600

Figure 13. Roddy Home Ranch: Representative Photographs

Photo 1: Overview of ranch

Photo 2: Entrance to residential estate

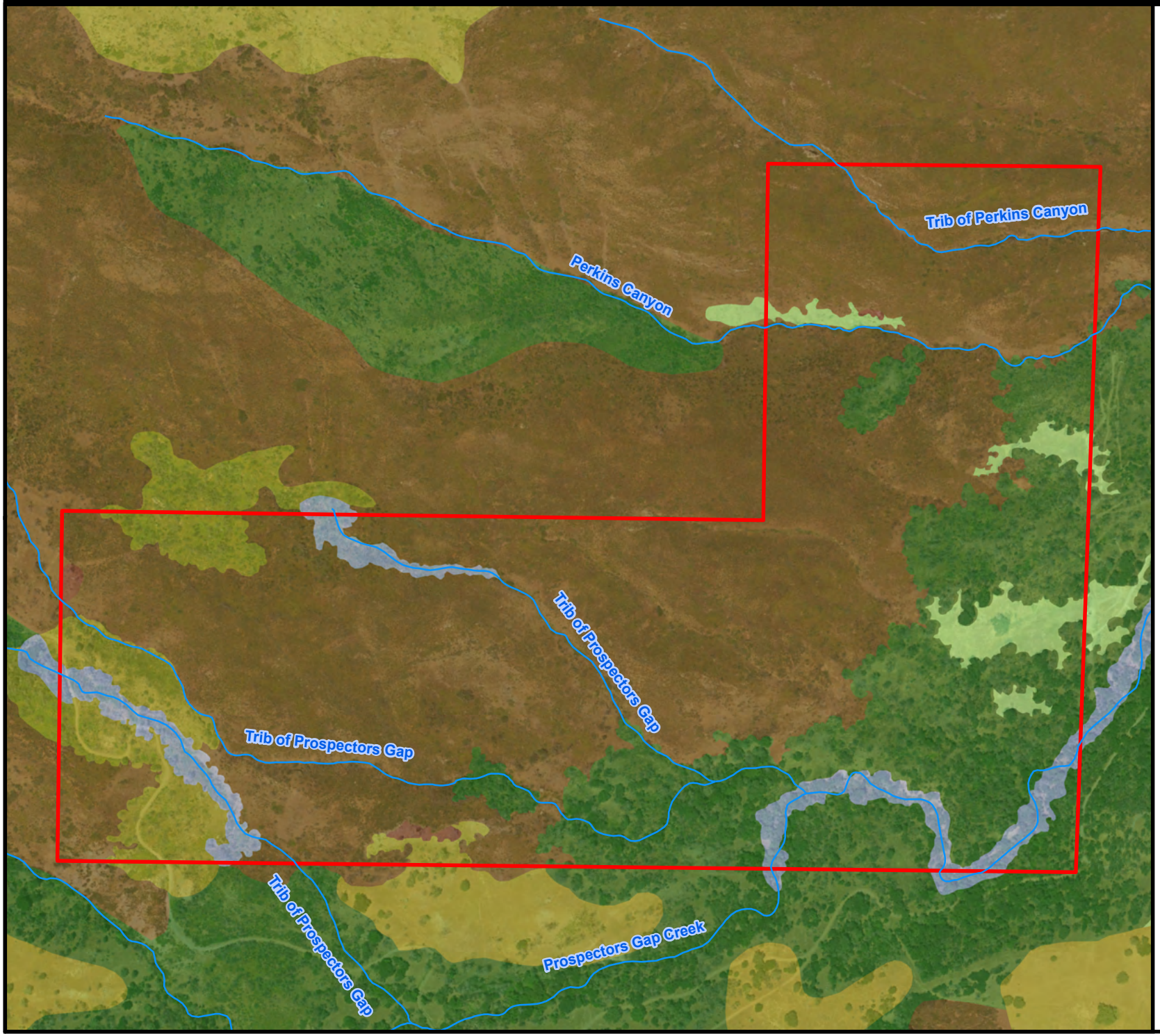
Photo 3: Main home

Photo 4: View south along property's border

Photo 5: View towards southern boundary

Photo 6: Ranch Road

Figure 14. Viera North Peak Property - Landcover Map



Legend

Property Boundary

Landcover

Grassland

- grassland (4.04 acres)
- alkali grassland
- ruderal

Wetland

- permanent wetland
- seasonal wetland
- alkali wetland

Aquatic

- stream (12,001.13 feet)
- aquatic/open water
- pond
- slough/channel

- riparian (7.26 acres)
- chaparral (100.56 acres)
- oak savanna (9.77 acres)
- oak woodland (37.76 acres)
- rock outcrops (0.56 acres)

Irrigated Agriculture

- pasture
- cropland
- vineyard

Developed

- urban
- aqueduct
- wind turbines

N

03/14/2018

East Contra Costa County Habitat Conservancy

Feet

0 450 900

Figure 15. Viera North Peak: Representative Photographs

Photo 1: View west towards Mount Diablo

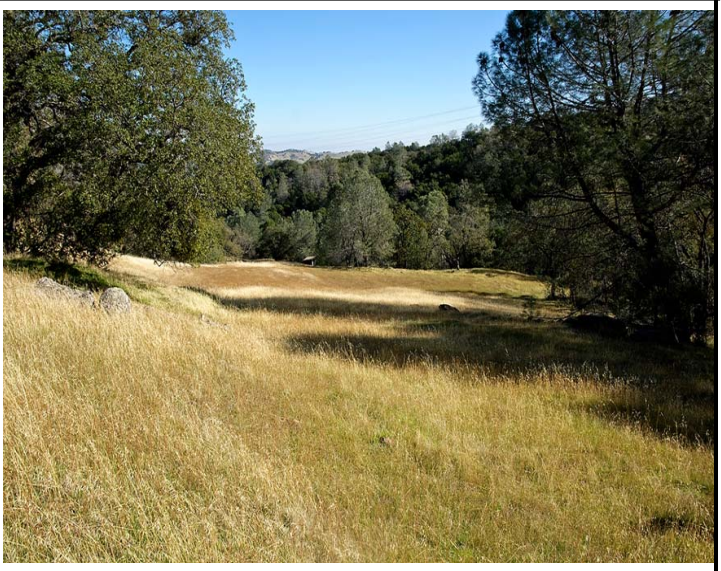


Photo 2: Grasslands and oak woodlands

Photo 3: View NW towards Deer and Briones Valley

Photo 4: Perkins Canyon Creek

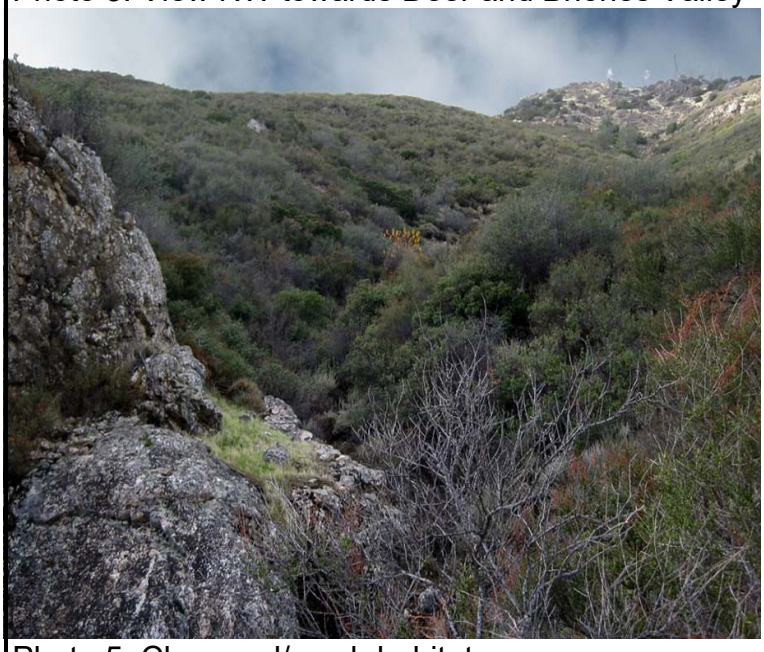


Photo 5: Chaparral/scrub habitat

Photo 6: Post burn view towards Mount Diablo

Table 7. Cumulative Summary of Acquired Properties, Funding Sources, and Calculation for Non-Federal Match for Section 6 Grants

Souza 1

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 12/23/2004
Acres (deed): 616.92
Key land cover: Annual grassland, alkali grassland, seasonal wetland, alkali wetland, pond
Land Cost: $2,961,600

Funding Source	Funding Amount	2009 FMV	Section 6 Match
EBRPD (tax revenues)	$361,600	$339,427	no
Moore Foundation grant	$1,500,000	$1,408,023	yes
EBRPD REP Program	$1,461,600	$1,371,977	no
TOTAL	$2,961,600	$2,780,000	

Section 6 Match: $1,408,023

Lentzner

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 3/4/2005
Key land cover: Annual grassland, oak savanna, oak woodland, chaparral, alkali grassland, seasonal wetland, alkali wetland, pond
Acres (deed): 320
Land Cost: $960,000

Funding Source	Funding Amount	2009 FMV	Section 6 Match
EBRPD	$270,402	$377,436	yes
Prop 40 Per capita	$273,000	$381,063	yes
EBRPD REP Program	$416,598	$581,501	no
TOTAL	$960,000	$1,340,000	

Section 6 Match from this acq: $758,499
Cumulative Remaining Match: $2,166,521

Chaparral Spring

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 12/23/2008
Key land cover: Annual grassland, oak savanna, oak woodland, chaparral, seasonal wetland, pond
Acres (deed): 333
Land Cost: $1,400,000

Funding Source	Funding Amount	2009 FMV	Section 6 Match
California Coastal Conservancy	$1,400,000	$1,400,000	yes
TOTAL	$1,400,000	$1,400,000	

Section 6 Match from this acq: $1,400,000
Cumulative Remaining Match: $3,566,521

Schwartz

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 6/9/2009
Acres (deed): 152.24
Key land cover: Oak woodland, chaparral, annual grassland, streams and oak savanna
Appraised Value: $803,880
Purchase Price: $803,880

Funding Source	Funding Amount	Percent	Section 6 Match
EBRPD	$127,249	16%	no
US Bur Rec CVPCP Grant	$676,631	84%	no
TOTAL	$803,880	100%	

Cumulative Remaining Match: $3,566,521

Souza 2

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 7/30/2009
Acres (deed): 190.56
Key land cover: Annual grassland, alkali grassland, seasonal wetland
Land Cost: $1,692,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$200,000	12%	yes
Conservancy (mitigation fees)	$730,600	43%	no
US Bur Rec CVPCP Grant	$550,000	33%	no
SWRCB Grant	$211,400	12%	yes
TOTAL	$1,692,000	100%	

Section 6 Match from this acq: $411,400
Cumulative Remaining Match: $3,977,921

Fox Ridge

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 12/30/2009
Acres (deed): 221.13
Key land cover: Annual grassland, seasonal wetland, oak savanna
Appraised Value: $1,960,000
Purchase Price: $1,760,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$250,000	14%	yes
Conservancy (mitigation fees)	$75,000	4%	no
Moore Foundation	$880,000	50%	yes
Section 6 Grant (FY07)	$555,000	32%	no
TOTAL	$1,760,000	100%	

Non-Federal Match Needed: $678,333 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$250,000
Moore Foundation	$880,000
Bargain sale (seller donation)	$200,000
TOTAL	$1,330,000

Excess match from this acq: $651,667

Cumulative Remaining Match: $4,629,588

Vaquero Farms South

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 12/31/2009
Acres (deed): 1,644.21
Key land cover: Annual grassland, alkali grassland, seasonal wetland, alkali wetland, pond
Appraised value: $3,160,000
Purchase price: $2,924,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$500,000	17%	yes
Conservancy (mitigation fees)	$250,000	9%	no
Section 6 Grant (FY06)	$2,174,000	74%	no
TOTAL	$2,924,000	100%	

Non-Federal Match Needed: $2,657,111 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*	
EBRPD	$500,000	
Bargain sale (seller donation)	$236,000	
Match from prior acquisitions	$1,921,111	(Souza 1 and Lentzner)
TOTAL	$2,657,111	

Cumulative Remaining Match: $2,708,477

Vaquero Farms North

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 6/29/2010
Acres (deed): 577
Key land cover: Annual grassland, alkali grassland, seasonal wetland, alkali wetland, pond
Appraised value: $2,786,000
Land Cost: $2,770,000

Funding Source	Funding amount	Percent
Section 6 Grant (FY06)	$2,770,000	100%
TOTAL	$2,770,000	100%

Non-Federal Match Needed: $3,385,556 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*	
Bargain sale (seller donation)	$16,000	
SWRCB grant for restoration	$150,000	
DFG Grants for restoration	$150,000	
In-kind match	$361,079	(due diligence and habitat enhancement on Souza 1, Souza 2, Lentzner)
Match from prior acquisitions	$2,708,477	(Souza 1, Souza 2, Chaparral Spring, Fox Ridge)
TOTAL	$3,385,556	

Cumulative Remaining Match: $0

Martin

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 7/16/2010
Acres (deed): 232.41
Key land cover: Annual grassland, seasonal wetland, permanent wetland, creek
Appraised Value: $2,745,395
Purchase Price: $2,745,395

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$1,629,816	59%	yes
Section 6 Grant (FY06)	$1,115,579	41%	no
TOTAL	$2,745,395	100%	

Non-Federal Match Needed: $1,363,485 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$1,629,816
TOTAL	$1,629,816

Excess match from this acq: $266,331

Grandma's Quarter

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 7/16/2010
Acres deed): 157
Key land cover: Annual grassland, alkali grassland, pond, seasonal wetland, creek
Appraised Value: $1,036,200
Purchase Price: $1,036,200

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$564,725	54%	yes
Section 6 Grant (FY06)	$471,475	46%	no
TOTAL	$1,036,200	100%	

Non-Federal Match Needed: $576,247 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
Match from prior acquisitions	$11,522
EBRPD	$564,725
TOTAL	$576,247

Cumulative Remaining Match: $254,808

Table 7. Cumulative Summary of Acquired Properties, Funding Sources and Calculation of Non-Federal match for Section 6 Grants

Ang

Acquired by: EBRPD in partnership with Conservancy
Date Acquired: 8/9/2010
Acres: 460.64
Key land cover: Annual grassland, oak savanna, oak woodland, pond, riparian, creek
Appraised Value: $2,856,000
Purchase Price: $2,763,840

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$1,520,115	55%	yes
Section 6 Grant (FY07)	$1,243,725	45%	no
TOTAL	$2,763,840	100%	

Non-Federal Match Needed: $1,520,108 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$1,520,115
Bargain sale (seller donation)	$92,160
TOTAL	$1,612,275

Excess match from this acq: $92,167
Cumulative Remaining Match: $346,975

Souza 3

Acquired by: EBRPD in partnership with Conservancy (EBRPD purchased CE area solely)
Date acquired: 10/22/2010
Acres: 1,021.34
Non-CE Acres: 910.84
CE Acres: 110.50
Key land cover: Annual grassland, seasonal wetland, permanent wetland, creek
Appraised Value: $5,300,400
Non-CE value: $5,224,425
CE area value: $75,975
Purchase Price: $5,300,400

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$915,220	18%	yes
Moore Foundation	$2,000,000	38%	yes
Section 6 Grant (FY07)	$2,385,180	46%	no
TOTAL	$5,300,400	101%	

Non-Federal Match Needed: $2,915,220 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
Moore Foundation	$2,000,000
EBRPD	$915,220
TOTAL	$2,915,220

Non-Easement

Funding Source	Funding amount
EBRPD	$839,245
Moore Foundation	$2,000,000
Section 6 Grant (FY07)	$2,385,180
TOTAL	$5,224,425

Souza 3 Conservation Easement Area

Funding Source	Funding amount
EBRPD	$75,975

Cumulative Remaining Match: $346,975

Irish Canyon - Chopra

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 11/24/2010
Acres: 320
Key land cover: Annual grassland, oak savanna, oak woodland, pond, riparian, creek
Appraised Value: $1,760,000
Purchase Price: $842,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$50,000	3%	yes
Section 6 Grant (FY07)	$792,000	45%	no
TOTAL	$842,000	100%	

Non-Federal Match Needed: $968,000 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
Bargain sale (seller donation)	$918,000
EBRPD	$50,000
TOTAL	$968,000

Cumulative Remaining Match: $346,975

Barron

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 3/30/2011
Acres: 798
Key land cover: Annual grassland, oak woodlands, oak savanna, chaparral/scrub, ponds, seasonal wetlands and streams
Appraised Value: $2,952,600
Purchase Price: $2,952,600

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$650,000	22%	yes
WCB Proposition 84	$973,930	33%	yes
Section 6 Grant (FY07)	$1,328,670	45%	no
TOTAL	$2,952,600	100%	

Non-Federal Match Needed: $1,623,930 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 84	$973,930
EBRPD	$650,000
TOTAL	$1,623,930

Cumulative Remaining Match: $346,975

Land Waste Management

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 4/26/2011
Acres (deed): 469.41
Key land cover: Annual grassland, alkali grassland, oak savanna, oak woodland, alkali wetland, permanent and seasonal wetland, ponds, riparian areas, and streams
Appraised Value: $3,050,000
Purchase Price: $3,050,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$1,177,500	39%	yes
IRWMP Grant from SWRCB	$500,000	16%	yes
Section 6 Grant (FY08)	$1,372,500	45%	no
TOTAL	$3,050,000	110%	

Non-Federal Match Needed: $1,677,500 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$1,177,500
IRWMP Grant from SWRCB	$500,000
TOTAL	$1,677,500

Cumulative Remaining Match: $346,975

Thomas Southern/Austin 1

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 9/27/2011; lease 3/31/10
Acres (deed): 852.33
Key land cover: Annual grassland, oak woodland, chaparral, oak savanna, ponds, and streams
Appraised Value: $3,240,000
Purchase Price: $3,240,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$324,000	10%	yes
WCB Proposition 84	$1,562,166	48%	yes
Section 6 Grant (FY07)	$695,425	21%	no
Section 6 Grant (FY08)	$658,409	20%	no
TOTAL	$3,240,000	100%	

Non-Federal Match Needed: $1,654,686 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$324,000
WCB Proposition 84	$1,562,166
TOTAL	$1,886,166

Excess match from this acq: $231,480
Cumulative Remaining Match: $578,455

Thomas Southern/Austin 1 - PG&E lease revenue

Appraised Value: $530,000
Purchase Price: $530,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$53,000	10%	yes
Section 6 Grant (FY08)	$477,000	90%	no
TOTAL	$530,000	100%	

Non-Federal Match Needed: $583,000 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*	
EBRPD (tax revenues)	$53,000	
Match from prior acquisitions	$530,000	(Thomas Southern/Austin 1, Ang, Martin)
TOTAL	$583,000	

Thomas Central/Austin 2

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 9/27/2011; lease 3/31/10
Acres (deed): 160
Key land cover: Annual grassland, ponds, wetlands, and streams
Appraised Value: $624,000
Purchase Price: $624,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$62,400	10%	yes
WCB Proposition 84	$280,800	45%	yes
Section 6 Grant (FY08)	$280,800	45%	no
TOTAL	$624,000	100%	

Non-Federal Match Needed: $343,200 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$62,400
WCB Proposition 84	$280,800
TOTAL	$343,200

Affinito

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 2/24/2012
Acres (deed): 116.49
Key land cover: Annual grassland, oak savanna, oak woodland, chaparral, pond, creek
Appraised Value: $2,235,000
Purchase Price: $2,235,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$223,500	10%	yes
WCB Proposition 84	$1,005,750	45%	yes
Section 6 Grant (FY08)	$1,005,750	45%	no
TOTAL	$2,235,000	100%	

Non-Federal Match Needed: $1,229,250 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$223,500
WCB Proposition 84	$1,005,750
TOTAL	$1,229,250

Vaquero Farms Central

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 3/5/2012
Acres (deed): 319.93
Key land cover: Annual grassland, alkali grassland, alkali wetland, pond
Appraised Value: $2,464,000
Purchase Price: $2,400,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$240,000	10%	yes
G&B Moore Foundation	$850,000	35%	yes
WCB Proposition 84	$230,000	9%	yes
Section 6 Grant (FY10)	$1,080,000	45%	no
TOTAL	$2,400,000	100%	

Non-Federal Match Needed: $1,320,000 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$240,000
G&B Moore Foundation	$850,000
WCB Proposition 84	$230,000
TOTAL	$1,320,000

Galvin

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 1/30/2012
Acres (deed): 61.68
Key land cover: Annual grassland, chaparral/scrub, oak savanna, oak woodland, creek
Appraised Value: $370,000
Purchase Price: $370,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$37,000	10%	yes
G&B Moore Foundation	$166,500	45%	yes
Section 6 Grant (FY08)	$166,500	45%	no
TOTAL	$370,000	100%	

Non-Federal Match Needed: $203,500 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$37,000
G&B Moore Foundation	$166,500
TOTAL	$203,500

Moss Rock

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 1/30/2012
Acres (deed): 20.49
Key land cover: Oak woodland, creek
Appraised Value: $410,000
Purchase Price: $410,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$41,000	10%	yes
G&B Moore Foundation	$184,500	45%	yes
Section 6 Grant (FY08)	$184,500	45%	no
TOTAL	$410,000	100%	

Non-Federal Match Needed: $225,500 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$41,000
G&B Moore Foundation	$184,500
TOTAL	$225,500

Fan

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 1/31/2012
Acres (deed): 21
Key land cover: Oak woodland, creek
Appraised Value: $220,000
Purchase Price: $220,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$22,000	10%	yes
G&B Moore Foundation	$99,000	45%	yes
Section 6 Grant (FY08)	$99,000	45%	no
TOTAL	$220,000	100%	

Non-Federal Match Needed: $121,000 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$22,000
G&B Moore Foundation	$99,000
TOTAL	$121,000

Thomas North

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 11/2/2012
Acres (deed): 134.98
Key land cover: Grassland, stream, wetland
Appraised Value: $863,900
Purchase Price: $863,900

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$86,390	10%	yes
WCB Proposition 84	$388,755	45%	yes
Section 6 Grant (FY08)	$388,755	45%	no
TOTAL	$863,900	100%	

Non-Federal Match Needed: $475,145 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*	
WCB Proposition 84	$388,755	
EBRPD	$86,390	
TOTAL	$475,145	

Alaimo

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 4/15/2013
Acres (deed): 2.31
Key land cover: Stream, Urban (with restoration potential)
Appraised Value: $185,000
Purchase Price: $185,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$18,500	10%	yes
Section 6 Grant (FY08)	$166,500	90%	no
TOTAL	$185,000	100%	

Non-Federal Match Needed: $203,500 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*	
EBRPD	$18,500	
In-kind match	$185,500	(prior due diligence and habitat enhancement)
TOTAL	$204,000	

Adrienne Galvin

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 4/30/2013
Acres (deed): 111.95
Key land cover: Oak Woodland, grassland
Appraised Value: $1,134,400
Purchase Price: $1,134,400

Proposed Funding Source	Funding amount	Percent	Section 6 Match
Section 6 Grant (FY08)	$1,134,400	100%	no
TOTAL	$1,134,400	100%	

Non-Federal Match Needed: $1,386,489 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*	
In-kind match	$1,386,489	(prior due diligence and habitat enhancement)
TOTAL	$1,386,489	

Table 7. Cumulative Summary of Acquired Properties, Funding Sources and Calculation of Non-Federal match for Section 6 Grants

Smith

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 7/15/2014
Acres (deed): 960
Key land cover: Oak Woodland, grassland
Appraised Value: $5,376,000
Purchase Price: $5,376,000

Source	Funding amount	Percent	Section 6 Match
WCB Proposition 84	$2,260,275	42%	yes
EBRPD	$537,600	10%	yes
Section 6 Grant (FY10)	$2,578,125	48%	no
TOTAL	$5,376,000	100%	

Non-Federal Match Needed: $3,151,042 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 84	$2,260,275
EBRPD	$537,600
Match from Roddy Ranch	$353,167
TOTAL	$3,151,042

Roddy Ranch

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 7/24/2014
Acres (deed): 1,885.20
Key land cover: Oak Woodland, grassland
Appraised Value: $14,245,000
Purchase Price: $14,245,000

Source	Funding amount	Percent	Section 6 Match
WCB Proposition 84	$4,841,875	34%	yes
EBRPD	$3,561,250	25%	yes
G&B Moore Foundation Grant	$1,000,000	7%	yes
Section 6 Grant (FY09)	$2,500,000	17.5%	no
Section 6 Grant (FY10)	$2,341,875	16.5%	no
TOTAL	$14,245,000	100%	

Non-Federal Match Needed: $5,917,847 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 84	$4,841,875
EBRPD	$3,561,250
G&B Moore Foundation Grant	$1,000,000
TOTAL	$9,403,125

Viera/Perley

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 4/30/2015
Acres (deed): 260.00
Key land cover: Oak woodland, oak savannah
Appraised Value: $1,950,000
Purchase Price: $1,950,000

Source	Funding amount	Percent	Section 6 Match
EBRPD	$195,000	10%	yes
Section 6 Grant (FY11)	$877,500	45%	no
WCB Prop. 84	$877,500	45%	yes
TOTAL	$1,950,000	100%	

Non-Federal Match Needed: $1,072,500 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 84	$877,500
EBRPD	$195,000
TOTAL	$1,072,500

Clayton Radio LLC

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 4/30/2015
Acres (deed): 2.02
Key land cover: Grassland, oak woodland
Appraised Value: $117,000
Purchase Price: $117,000

Source	Funding amount	Percent
EBRPD	$29,250	25%
Conservancy (mitigation fees)	$87,750	75%
TOTAL	$117,000	100%

Nunn

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 1/29/2016
Acres (deed): 645.95
Key land cover: Cropland/pasture, wetlands
Appraised Value: $6,072,000
Purchase Price: $6,072,000

Source	Funding amount	Percent	Section 6 Match
EBRPD	$607,200	10%	yes
Section 6 Grant (FY11)	$2,732,400	45%	no
WCB Prop. 84	$2,732,400	45%	yes
TOTAL	$6,072,000	100%	

Non-Federal Match Needed: $3,339,600 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 84	$2,732,400
EBRPD	$607,200
TOTAL	$3,339,600

Hanson Hills

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 8/2/2016
Acres (deed): 76.46
Key land cover: Oak woodland, oak savannah
Appraised Value: $730,000
Purchase Price: $730,000

Funding Source	Funding amount	Percent	Section 6 Match
EBRPD	$182,500	25%	yes
Section 6 Grant (FY11)	$547,500	75%	no
TOTAL	$730,000	100%	

Non-Federal Match Needed: $669,167 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD (tax revenues)	$182,500
Due diligence and closing costs	$147,211
Start-up Management	$339,456
TOTAL	$669,167

Coelho

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 12/20/2016
Acres (deed): 200.20
Key land cover: Annual grassland, alkali grassland
Appraised Value: $1,495,750
Purchase Price: $1,495,750

Source	Funding amount	Percent	Section 6 Match
EBRPD	$147,575	10%	yes
Section 6 Grant (FY11)	$306,536	20%	no
Section 6 Grant (FY12)	$567,400	38%	no
WCB Prop. 84	$454,239	30%	yes
Other	$20,000	1%	no
	$1,495,750	100%	

Non-Federal Match Needed: $752,922 (amount necessary to achieve 55:45 ratio of match (FY11); FY12 is 40:60)

Source	*Amount*
WCB Proposition 84	$454,239
EBRPD (tax revenues)	$147,575
Due diligence and closing costs	$29,633
Start-up Management	$121,475
TOTAL	$752,922

Campos

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 5/12/2017
Acres (deed): 80.00
Key land cover: Annual Grassland
Appraised Value: $560,000
Purchase Price: $520,000

Source	Funding amount	Percent	Section 6 Match
EBRPD	$52,000	10%	yes
Section 6 Grant (FY14)	$241,800	46.5%	no
WCB Prop. 117	$226,200	43.5%	yes
TOTAL	$520,000	100%	

Non-Federal Match Needed: $295,533 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 117	$52,000
EBRPD	$226,200
Due diligence	$42,574
TOTAL	$320,774

Viera North Peak

Acquired by: Conservancy
Date acquired: 7/24/2017
Acres (deed): 165
Key land cover: Chaparral/scrub, oak woodland
Appraised Value: $1,080,000
Purchase Price: $1,080,000

Source	Funding amount	Percent	Section 6 Match
Section 6 Grant (FY12)	$432,600	40%	no
Section 6 Grant (FY15)	$220,400	20%	no
WCB Prop. 84	$427,000	40%	yes
TOTAL	$1,080,000	100%	

Non-Federal Match Needed: $557,778 (amount necessary to achieve 55:45 ratio of match (FY15); FY12 is 40:60)

Source	*Amount*
WCB Proposition 84	$427,000
Due diligence and pre-acq work	$42,557
Start-up mgmt and restoration	$88,221
TOTAL	$557,778

Roddy Home Ranch

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 10/20/2017
Acres (deed): 40
Key land cover: Annual Grassland
Appraised Value: $1,536,000
Purchase Price: $1,536,000

Source	Funding amount	Percent	Section 6 Match
EBRPD	$537,600	35%	yes
Section 6 Grant (FY14)	$680,600	44%	no
Section 6 Grant (FY15)	$10,600	1%	no
WCB Prop. 84	$307,200	20%	yes
TOTAL	$1,536,000	100%	

Non-Federal Match Needed: $844,800 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 84	$307,200
EBRPD	$537,600
TOTAL	$844,800

Casey

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 10/26/2017
Acres: 320.00
Key land cover: Annual Grassland, Alkali Grassland
Appraised Value: $2,480,000
Purchase Price: $2,400,000

Source	Funding amount	Percent	Section 6 Match
EBRPD (Tres Vaqueros)	$240,000	10%	no
Section 6 Grant (FY14)	$1,077,600	45%	no
WCB Prop. 84	$1,055,800	44%	yes
Contra Costa Avian Fund	$26,600	1%	
TOTAL	$2,400,000	100%	

Non-Federal Match Needed: $1,317,067 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
WCB Proposition 84	$1,055,800
Due diligence and closing	$57,760
Start-up mgmt and restoration	$203,507
TOTAL	$1,317,067

Table 8a. Summary of Natural Community Protection, Restoration, and Creation by Land-Cover Type

	Land Cover Requirements[3] (acres)			Reporting Period (acres)				Cumulative (acres)				Percent Complete (%)		
Land Cover Type	Protection	Creation	Restoration	Protection	Existing Easement (no credit)	Creation	Restoration	Protection	Existing Easement (no credit)	Creation	Restoration	Protection	Creation	Restoration
Terrestrial														
Annual grassland	16,500	--	--	395.6	--	--	--	7,590.8	1,465.0	--	0.04	46%	--	--
Alkali grassland	1,250	--	--	27.0	--	--	--	276.8	17.5	--	0.02	22%	--	--
Ruderal	--	--	--	7.8	--	--	--	86.3	24.5	--	--	--	--	--
Chaparral and scrub	550	--	--	100.6	--	--	--	242.8	0.0	--	--	44%	--	--
Oak savanna	500	--	165	9.8	--	--	--	382.4	23.9	--	--	76%	--	--
Oak woodland	400	--	--	37.8	--	--	--	2,053.2	130.8	--	--	513%	--	--
Subtotal terrestrial	*19,200*	--	*165*	*578.5*	--	--	--	*10,632.2*	*1,661.7*	--	*0.06*	*55%*	--	--
Aquatic														
Riparian woodland/scrub	70	--	55	7.26	--	--	1.40	65.72	0.21	--	5.39	94%	--	10%
Perennial wetland[1]	75	--	85	0.11	--	--	--	5.38	5.78	--	0.16	7%	--	0%
Seasonal wetland	168	--	163	1.43	--	--	--	11.90	1.41	--	9.66	7%	--	6%
Alkali wetland	93	--	67	0.78	--	--	--	33.63	4.30	--	2.45	36%	--	4%
Pond	16	16	--	0.18	--	--	--	10.47	2.73	0.60	--	65%	4%	--
Reservoir (open water)[2]	12	6	--	--	--	--	--	--	--	--	--	0%	0%	--
Slough/Channel	36	--	72	--	--	--	--	3.10	0.00	--	--	9%	--	0%
Subtotal aquatic	*470*	*22*	*442*	*9.76*	--	--	*1.40*	*130.20*	*14.43*	*0.60*	*17.66*	*28%*	*3%*	*4%*
Stream (length in linear feet)														
Perennial	4,224	--	2,112	--	--	--	--	12,625.10	889.10	--	--	299%	--	0%
Intermittent	2,112	--	2,112	9,391.90	--	--	--	137,965.00	24,414.50	--	4,328.10	6532%	--	205%
Ephemeral[4]	26,400	--	26,400	1,910.30	--	--	--	41,076.87	877.80	--	--	156%	--	0%
Classification pending[4]	--	--	--	6,005.90	--	--	--	83,353.81	16,445.34	646.54	1,620.63	--	--	--
Subtotal stream length	*32,736*	--	*30,624*	*17,308.10*	--	--	--	*275,020.78*	*42,626.74*	*646.54*	*5,948.73*	*840%*	--	*19%*
Irrigated agriculture														
Cropland	400	--	--	--	--	--	--	541.4	--	--	--	--	--	--
Pasture	--	--	--	--	--	--	--	71.3	--	--	--	--	--	--
Orchard	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--
Vineyard	--	--	--	--	--	--	--	0.0	--	--	--	--	--	--
Subtotal irrigated agricultural	*400*	--	--	--	--	--	--	*612.8*	--	--	--	--	--	--
Other														
Nonnative woodland	--	--	--	--	--	--	--	0.7	--	--	--	--	--	--
Wind turbines	--	--	--	--	--	--	--	20.0	--	--	--	--	--	--
Subtotal other	--	--	--	--	--	--	--	*20.7*	--	--	--	--	--	--
Developed														
Urban	--	--	--	9.8	--	--	--	42.4	0.8	--	--	--	--	--
Aqueduct	--	--	--	--	--	--	--	0.0	0.0	--	--	--	--	--
Turf	--	--	--	--	--	--	--	0.0	0.0	--	--	--	--	--
Landfill	--	--	--	--	--	--	--	0.0	0.0	--	--	--	--	--
Subtotal developed	--	--	--	9.8	--	--	--	*42.4*	*0.8*	--	--	--	--	--

Table 8a. Summary of Natural Community Protection, Restoration, and Creation by Land-Cover Type

	Land Cover Requirements[3] (acres)			Reporting Period (acres)				Cumulative (acres)				Percent Complete (%)		
Land Cover Type	Protection	Creation	Restoration	Protection	Existing Easement (no credit)	Creation	Restoration	Protection	Existing Easement (no credit)	Creation	Restoration	Protection	Creation	Restoration
Uncommon Vegetation Types (subtypes of above land cover types)														
Purple needlegrass grassland	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wildrye grassland	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Wildflower fields	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Squirreltail grassland	--	--	--	--	--	--	--	--	--	--	--	--	--	--
One-sided bluegrass grassland	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Serpentine grassland	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Saltgrass grassland (alkali grassland)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Alkali sacaton bunchgrass grassland	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other uncommon vegetation types	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal uncommon vegetation types				--	--	--	--	--	--	--	--	--	--	--
Uncommon Landscape Features or Habitat Elements														
Rock outcrop	--	--	--	1.3	--	--	--	17.7	4.5	--	--	--	--	--
Cave	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Springs/seeps	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Scalds	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand deposits	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mines (number)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Buildings (number)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potential nest sites (number)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal uncommon landscape features	--	--	--	*1.3*	--	--	--	*17.7*	*4.5*	--	--	--	--	--
Totals (excludes subtypes)														
Acres	--	--	--	599.3	0.0	0.0	1.4	11,456.0	1,681.4	0.6	17.7	--	--	--
Linear feet (Streams)	--	--	--	17,308.10	0.00	0.00	0.00	275,020.78	42,626.74	646.54	5,948.73	--	--	--

[1] Perennial wetlands are equivalent permanent wetlands.

[2] Reservoir (open water) is equivalent to aquatic.

[3] All land cover requirements assume the Maximum Urban Development Area scenario. The requirements for restoration and creation are dependent upon amount of impact. The requirements provided are based on the conservative estimates of wetland impacts provided in the Plan.

[4] Many of the streams identified as "classification pending" will ultimately be classified as ephemeral.

Table 8b. Reporting Period Summary of Natural Community Protection

	Campos		Casey		Roddy Home Ranch		Viera North Peak		Reporting Period Totals	
Land Cover Type	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)
Terrestrial										
Annual grassland	78.2	0.0	289.1	0.0	24.3	0.0	4.1	0.0	395.6	0.0
Alkali grassland	0.0	0.0	27.0	0.0	0.0	0.0	0.0	0.0	27.0	0.0
Ruderal	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	7.8	0.0
Chaparral and scrub	0.0	0.0	0.0	0.0	0.0	0.0	100.6	0.0	100.6	0.0
Oak savanna	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	9.8	0.0
Oak woodland	0.0	0.0	0.0	0.0	0.0	0.0	37.8	0.0	37.8	0.0
Subtotal terrestrial	*78.2*	*0.0*	*316.1*	*0.0*	*32.1*	*0.0*	*152.1*	*0.0*	*578.4*	*0.0*
Aquatic										
Riparian woodland/scrub	0.00	0.00	0.00	0.00	0.00	0.00	7.26	0.00	7.26	0.00
Perennial wetland[1]	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.11	0.00
Seasonal wetland	0.00	0.00	1.43	0.00	0.00	0.00	0.00	0.00	1.43	0.00
Alkali wetland	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.78	0.00
Pond	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.18	0.00
Reservoir (open water)[2]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Slough/Channel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Subtotal aquatic	*0.00*	*0.00*	*2.32*	*0.00*	*0.18*	*0.00*	*7.26*	*0.00*	*9.76*	*0.00*
Stream (length in linear feet)										
Total stream length	0.00	0.00	6,005.91	0.00	248.86	0.00	11,053.30	0.00	17,308.07	0.00
Stream length by width category							0.00	0.00	0.00	0.00
≤ 25 feet wide	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
> 25 feet wide	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stream length by type and order							0.00	0.00	0.00	0.00
Perennial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Intermittent	0.00	0.00	0.00	0.00	248.86	0.00	9,143.02	0.00	9,391.88	0.00
Ephemeral	0.00	0.00	0.00	0.00	0.00	0.00	1,910.29	0.00	1,910.29	0.00
Classification pending	0.00	0.00	6,005.91	0.00	0.00	0.00	0.0	0.00	6,005.90	0.00
Subtotal stream length	*0.00*	*0.00*	*6,005.91*	*0.00*	*248.86*	*0.00*	*11,053.30*	*0.00*	*17,308.07*	*0.00*

Land Cover Type	Campos		Casey		Roddy Home Ranch		Viera North Peak		Reporting Period Totals	
	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)
Irrigated agriculture										
Cropland	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0
Pasture	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0
Orchard	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0
Vineyard	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0	0.0
Subtotal irrigated agricultural	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.00*	*0.00*	*0.0*	*0.0*
Other										
Nonnative woodland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wind turbines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal other	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Developed										
Urban	2.0	0.0	0.0	0.0	7.7	0.0	0.0	0.0	9.8	0.0
Aqueduct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Landfill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal developed	*2.0*	*0.0*	*0.0*	*0.0*	*7.7*	*0.0*	*0.0*	*0.0*	*9.8*	*0.0*
Uncommon Vegetation Types (subtypes of above land cover types)										
Purple needlegrass grassland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wildrye grassland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wildflower fields	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Squirreltail grassland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
One-sided bluegrass grassland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serpentine grassland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saltgrass grassland (alkali grassland)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alkali sacaton bunchgrass grassland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other uncommon vegetation types	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal uncommon vegetation types	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*

Land Cover Type	Campos		Casey		Roddy Home Ranch		Viera North Peak		Reporting Period Totals	
	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)
Uncommon Landscape Features or										
Rock outcrop	0.2	0.0	0.6	0.0	0.0	0.0	0.6	0.0	1.3	0.0
Cave	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Springs/seeps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Scalds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sand deposits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mines (number)	0	0	0	0	0	0	0	0	0	0
Buildings (number)	0	0	0	0	0	0	0	0	0	0
Potential nest sites (number)	0	0	0	0	0	0	0	0	0	0
Subtotal uncommon landscape features	*0.2*	*0.0*	*0.6*	*0.0*	*0.0*	*0.0*	*0.6*	*0.0*	*1.3*	*0.0*
Subtotal uncommon habitat elements	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Totals (excludes subtypes)										
Acres	80.3	0.0	318.9	0.0	40.0	0.0	160.0	0.0	599.2	0.0
Linear feet	0.00	0.00	6,005.91	0.00	248.86	0.00	11,053.30	0.00	17,308.07	0.00

[1] Perennial wetlands are equivalent permanent wetlands.

[2] Reservoir (open water) is equivalent to aquatic.

[3] All land cover requirements assume the Maximum Urban Development Area scenario. The requirements for restoration and creation are dependent upon amount of impact. The requirements provided are based on the maximum estimates of wetland impacts provided in the Plan.

Table 9. Cumulative Summary of Progress towards Fulfilling Preservation Requirements for Jurisdictional Wetlands and Waters

Jurisdictional Wetlands and Waters Requirement	Total Requirement[1]	Reporting Period Area Acquired	Cumulative Area Acquired	Percentage of Requirement Met by Acquisition
Preserve-wide Riparian woodland/scrub (acres)	70	7.26	65.72	94%
Preserve-wide Perennial wetland (acres)	75	0.11	5.38	7%
Preserve-wide Seasonal wetland (acres)	168	1.43	11.90	7%
Preserve-wide Alkali wetland (acres)	93	0.78	33.63	36%
Preserve-wide Pond (acres)	16	0.18	10.47	65%
Preserve-wide Reservoir (open water) (acres)	12	0.00	0.00	0%
Preserve-wide Slough/Channel (acres)	36	0.00	3.10	9%
Preserve-wide stream length (feet)	32,736	17,308.10	275,020.78	840%
Stream length by type				
Perennial (feet)	4,224	0.00	12,625.10	299%
Intermittent (feet)	2,112	9,391.90	137,965.00	6532%
Ephemeral[2] (feet)	26,400	1,910.30	41,076.87	156%
Classification Pending[2] (feet)	--	6,005.90	83,353.81	--

[1] Requirements are dependent on the amount of impacts. The requirements provided are based on the conservative estimates of wetland impacts provided in the Plan.

[2] Many of the streams identified as "classification pending" will ultimately be classified as ephemeral.

Table 10. Reporting Period and Cumulative Conservation of Covered Plants

		Number of Occurrences Protected by HCP/NCCP[1]			
Common Name	***Scientific Name***	**Required**	**Reporting Period**	**Cumulative**	**% Complete**
Mount Diablo manzanita	*Arctostaphylos auriculata*	2	0	0	0%
Brittlescale	*Atriplex depressa*	2 (4)[2]	1	3	150%
San Joaquin spearscale	*Atriplex joaquiniana*	0	0	10	--
Big tarplant	*Blepharizonia plumosa*	3	0	12	400%
Mount Diablo fairy lantern	*Calochortus pulchellus*	1	0	5	500%
Recurved larkspur	*Delphinium recurvatum*	2	0	0	0%
Round-leaved filaree	*Erodium macrophyllum*	2	1	3	150%
Diablo helianthella	*Helianthella castanea*	2	0	12	600%
Brewer's dwarf flax	*Hesperolinon breweri*	3	0	3	100%
Showy madia	*Madia radiata*	0	0	0	--
Adobe navarretia[3]	*Navarretia nigelliformis subsp. Nigelliformis*	1	0	0	0%
Shining navarretia	*Navarretia nigelliformis subsp. Radians*	0	0	(7)	--
Total		18 (20)	2	48	

[1] For the 2017 Annual Report, we are recording sightings confirmed in 2017. Surveys will continue as part of the inventory phase.

[2] With the initial urban development area, at least two occurrences of brittlescale will be preserved. As soon as permitted urban development exceeds this, four occurrences of brittlescale must be preserved.

[3] The species *Navarretia nigelliformis subsp. nigelliformis* is no longer believed to occur within Contra Costa County based on specimen annotations at the University and Jepson Herbaria at the University of California Berkeley, as well as the opinions of experts in the genus. This taxon is now recognized as *Navarretia nigelliformis subsp. radians*. Pending further policy clarification, the Conservancy is continuing to track occurrences of shining navarretia (*Navarretia nigelliformis* subsp. *radians*).

Table 11. Achievement of Zone-Specific Land Acquisition Requirements: Reporting Period and Cumulative Summary

Zone/ Subzone	Requirements[1]	Acres	Min. Acres Required (MUDA)	Acquired Reporting Period	Acquired Cumulative To date	Percent Achieved
Zone 1						
1a	Annual grassland	85	85	--	--	0%
1b	Annual grassland (1,450 acres combined w/ 1c)	TBD	1,450	--	49.5	37%
1c	Annual grassland (1,450 acres combined w/ 1b)	TBD	--	--	486.4	--
1d	25% of total area	476	476	--	201.4	42%
1e	No specific requirements	--	--	--	--	--
All	Estimated minimum requirement	2,100	2,250	--	858.9	38%
All	Estimated maximum requirement	2,850	3,150	--	858.9	27%
Zone 2						
2a	At least 60% of subzone	1,108	1,108	--	1,414.3	128%
2a	Annual grassland (850 acres)	--	850	--	943.8	111%
2a	90% of chaparral in 2a, 2b, and 2c (112 acres total)	--	see below	--	0.5	0%
2a	Land to protect Mount Diablo manzanita	--	--	--	--	--
2b	Annual grassland (450 acres)	450	450	--	401.6	89%
2b	Connection between Black Diamond R.P. and Clayton Ranch (w/ 2c)		see below	--	--	--
2b	90% of chaparral in 2a, 2b, and 2c (112 acres total)		see below	--	--	--
2c	Annual grassland (400 acres)	400	400	--	147.4	37%
2c	0.5-mile wide connect b/w Black Diamond and Clayton Ranch (w/ 2b)			--	--	--
2c	90% of chaparral in 2a, 2b, and 2c (112 acres total)		see below	--	3.8	--
2c	Seven (7) of thirteen (13) ponds for TRBL, CTS, WPT, or CRLF		7	--	--	0%
2d	Annual grassland (800 acres)	800	800	--	386.4	48%
2d	Known occurrence of round-leaved filaree (#)	1	1	1	1	100%
2e	Annual grassland (800 acres)	800	800	--	420.7	53%
2e	See 2e/2f/2h below		see below	--	--	--
2f	Annual grassland (1,000 acres)	1,000	1,000	24.30	454.3	45%
2f	San Joaquin kit fox movement corridor	--	--	32.26	523.4	--
2f	Land for SJKF Movement must include 2 occurrence of big tarplant	--	--	--	--	--
2f	Land for SJKF Movement must include 1 occurrence of round-leaved filaree	--	--	--	--	--
2f	Where possible, land for SJKF and plants, should include alkali soils	--	--	--	--	--
2f	See 2e/2f/2h below	--	see below	--	--	--
2g	No specific requirements	--	--	--	--	--
2h	Annual grassland (600 acres)	600	600	--	278.1	46%
2h	Two occ. of big tarplant (number)	2	2	--	1.0	50%
2h	Known occ. of Mt. Diablo manzanita and Brewer's dwarf flax (number)	2	2	--	3.0	150%
2h	San Joaquin kit fox (75%)			--	301.6	--
2h	Silvery legless habitat, if present			--	33.0	--
2h	See 2e/2f/2h below		see below	--	--	--

Zone/ Subzone	Requirements[1]	Acres	Min. Acres Required (MUDA)	Acquired Reporting Period	Acquired Cumulative To date	Percent Achieved
2i	No specific requirements	--	--	--	--	--
2b/2c	0.5-mile wide connect between Black Diamond and Clayton Ranch	--	--	--	--	--
2a/2b/2c	Chaparral habitat (90%)	113	113	--	9.3	8%
2e/2f/2h	Annual grassland, combined	2,400	2,400	24.3	1,153.1	48%
All	Vernal pool invertebrate suitable habitat, wherever possible	--	--	--	0.0	Yes (not quantified)
All	Estimated minimum requirement	7,500	7,500	--	4,824.1	64%
All	Estimated maximum requirement	9,550	9,550	40.0	4,824.1	51%
All	Alternative Stay Ahead Measurement for Zone 2	--	4,900	0.0	3,031.2	62%
Zone 3						
3a	90% of modeled AWS suitable core habitat	159	159	--	94.9	60%
3a	Land to increase linkage from chaparral in zone to Mt. Diablo chaparral	--	--	--	--	--
3b	No specific requirements	--	--	--	--	--
3c	No specific requirements	--	--	--	--	--
All	Estimated minimum requirement	400	400	--	292.7	73%
All	Estimated maximum requirement	750	750	--	292.7	39%
Zone 4						
4a	75% of natural land cover types	1,684	1,684	160.0	160.0	9%
4a	Known occ. of Diablo helianthella and Brewer's dwarf flax	--	--	--	--	--
4a	See 4a/4h below	--	see below	--	--	--
4b	Known occ. for Mt. Diablo fairy lantern if extant	--	--	--	--	--
4c	See 4c/4e/4f/4g below	--	see below	--	--	--
4d	60% of natural land cover types	849	849	--	--	0%
4e	See 4c/4e/4f/4g below	--	see below	--	--	--
4f	Known occ. for Brewer's dwarf flax (number)	TBD	TBD	--	--	--
4f	See 4c/4e/4f/4g below	--	see below	--	--	--
4g	See 4c/4e/4f/4g below	--	see below	--	--	--
4h	75% of natural land cover types	789	789	--	503.0	64%
4h	Linkage between Morgan Territory Ranch, Morgan Territory RP and Mt. Diablo	--	--	--	--	--
4h	See 4a/4h below	--	see below	--	--	--
4a/4h	90% of modeled AWS suitable core habitat	198	198	100.5	133.8	67%
4c/4e/4f/4g	18%/IDA or 39%MDA of natural land cover types in 4c, 4e, 4f, 4g	1,400	3,000	--	--	0%
All	Chaparral/Scrub	270	270	100.6	133.8	50%
All	Estimated minimum requirement	4,900	6,050	160.0	884.6	15%
All	Estimated maximum requirement	6,150	8,350	160.0	884.6	11%

Zone/ Subzone	Requirements[1]	Acres	Min. Acres Required (MUDA)	Acquired Reporting Period	Acquired Cumulative To date	Percent Achieved
Zone 5						
5a	See 5a/5d and 5a/5b/5d below	--	see below	--	--	--
5b	See 5a/5b/5d below	--	see below	--	--	--
5c	Annual Grassland/Suitable foraging habitat for Swainson's hawk/ SJKF core and movement habitat	1,000	1,000	--	--	0%
5c	Modeled silvery legless lizard habitat, if feasible (for MUDA)	--	--	--	--	--
5d	See 5a/5d and 5a/5b/5d below	--	see below	--	--	--
5a/5d	2 (IUDA) or 4 (MUDA) of the occ. of brittlescale			--	2.0	--
5a/5d	At least 2 occurrences of recurved larkspur	--	2	--	1.0	50%
5a/5d	170 acres connected to Byron Airport preserved areas	--	170	399.26	587.8	346%
5a/5b/5d	Annual grassland	--	7,100	367.2	3,642.7	51%
All	Grassland	5,300	8,100	367.2	3,642.7	45%
All	Alkali grassland	750	900	27.0	176.6	20%
All	Alkali wetland	40	40	0.8	20.40	51%
All	Vernal pool invertebrate suitable habitat, wherever possible	--	--	--	0.00	--
All	Estimated minimum requirement	6,100	9,050	--	3,956.42	44%
All	Estimated maximum requirement	7,200	11,450	399.3	3,956.42	35%
Zone 6						
6a	See 6a/6b/6c/6f below	--	see below	--	--	--
6b	See 6a/6b/6c/6f below	--	see below	--	--	--
6c	See 6a/6b/6c/6f below	--	see below	--	--	--
6d	See 6d/6e below	--	see below	--	--	--
6e	See 6d/6e below	--	see below	--	--	--
6f	See 6a/6b/6c/6f below	--	see below	--	--	--
6d/6e	Alkali grassland	100	300	--	--	0%
6d/6e	Alkali wetland	20	40	--	--	0%
6a/6b/6c/6f	Cropland or Pasture	250	400	--	612.7	153%
All	Estimated minimum requirement	450	800	--	639.3	80%
All	Estimated maximum requirement	550	1,100	--	639.3	58%
All Zones						
All	Estimated minimum requirement	21,450	26,050	599.2	11,456.0	44%
All	Estimated maximum requirement	27,050	34,350	599.2	11,456.0	33%

[1] The requirements in this table are a summary of the land acquisition requirements in Chapter 5 of the HCP/NCCP; consult that chapter for a complete description of all land acquisition requirements.

TRBL = Tricolored blackbird
CTS = California tiger salamander
SJKF = San Joaquin kit fox
WPT = western pond turtle
CRLF = California red-legged frog
AWS = Alameda whipsnake

IV. HABITAT RESTORATION AND CREATION

Habitat restoration and creation is an integral component of the Plan's conservation strategy. Restoration and creation of specific habitats and land cover types is required in addition to protection of land within the Preserve System. Together, land preservation and restoration/creation provide benefits to covered species, natural communities, biological diversity, hydrologic function, and ecosystem function to compensate for impacts and to contribute to recovery of covered species. Habitat restoration and creation includes several focus areas, as summarized below.

Wetlands and Streams

Wetlands and streams exhibit a high degree of biological, physical, and hydrologic diversity in the inventory area. Consequently, it is important to preserve, enhance, restore, or create the full range of diversity of these land cover types. Restoration of wetlands ensures no net loss of wetlands in the inventory area and replacement of the ecosystem functions lost to covered activities.

Alkali Wetlands

Alkali wetlands are particularly rare in the inventory area, mainly occurring on a 380-acre wetland complex in the southeastern portion of the inventory area south and east of Byron. Land cover mapping indicates that less than 1% of the Plan inventory area contains alkali wetlands (see page 3-18 of the Plan).

Mitigation and Contribution to Recovery

Conservation Measure 2.1 *Enhance, Restore, and Create Land Cover Types and Species Habitat* and Conservation Measure 2.3 *Restore Wetlands and Create Ponds* of the Plan require wetland restoration and pond creation to compensate for future impacts on these land cover types caused by development activities. Additionally, the Plan requires wetland restoration and creation actions over and above mitigation requirements in order to contribute to recovery of covered species. Restoration or creation activities must stay ahead of impacts.

Over the 30-year life of the Plan, the Conservancy may be required to restore or create a large number of acres of various types of wetlands and waters. If impacts on wetlands and waters are substantial during those 30 years, the cumulative total restoration/creation acreage could be as large as 500 acres.

Three restoration projects—Souza I, Lentzner, and Souza II—completed monitoring requirements, met success criteria, and were deemed complete in 2016 but are still tracked in Tables 13a and 13b. The Conservancy will continue to monitor these sites to track ongoing ecological functions. There was one new restoration project installed in 2017. The Ang Riparian

Restoration Project is similar to the Irish Canyon restoration project and involves the planting of trees to improve riparian woodland habitat for wildlife by filling in gaps in existing vegetation along the banks of Irish Canyon Creek.

The Conservancy currently monitors the following seven restoration projects (Figure 16).

- Ang Riparian Restoration Project (constructed 2017)
- Vaquero Farms Seasonal Wetland 3 (constructed 2015)
- Hess Creek Channel Restoration Project (constructed 2014).
- Souza II Corral Vernal Pool Restoration (constructed 2012).
- Vaquero Farms South Vernal Pool Restoration (constructed 2012).
- Upper Hess Creek Watershed Habitat Restoration Project (constructed 2011).
- Irish Canyon Riparian Restoration Project (constructed 2010).

Project summaries and discussions of management actions, if applicable, are included in the section below. Table 8a summarizes restoration and creation to date by land cover type. Table 12 provides restoration and creation information by watershed.[4] Table 13c through Table 13g contain a summary of the performance criteria for restoration projects.

Monitoring in 2017 demonstrated advancement toward achievement of site-specific restoration objectives. However, drought conditions—despite a wet 2016/2017 winter—influenced plant survival and wetland feature performance at most of the restoration project sites. The overall functionality of the sites indicates success criteria during the establishment period could be met with a wet rainy season.

[4] The restoration summary provided in Table 12 is based on GIS data. It differs slightly from the numbers provided in the text of the Annual Report.

Ang Riparian Restoration Project (2017)

In late September 2017, Save Mount Diablo (SMD) started a new riparian planting project downstream of the 2010 Irish Canyon restoration project. The objective of this new project, taking place on the 462-acre Ang property, is similar to that of the Irish Canyon Riparian Restoration Project: improve riparian woodland habitat for wildlife by filling in gaps in existing vegetation along the banks of Irish Canyon Creek. The plan called for a mix of valley oak, buckeye, and red willow across five Riparian Planting Areas totaling 192 individuals. Because a large cattle exclosure fence was installed on the property earlier in the year, the Riparian Planting Areas themselves were not fenced. Instead, each planting across the five Riparian Planting Areas was protected by a large tree cage with a smaller rodent cage and tubex nested inside. Due to the high prevalence of ground squirrels on the property, the finer construction mesh rodent cages were installed to deter burrowing action to acorns and buckeye seeds. The Conservancy avoided using a basket-style rodent cage to encourage robust root growth. The tubex installed with rebar support will promote vertical growth and protect from girdling once seedlings have established.

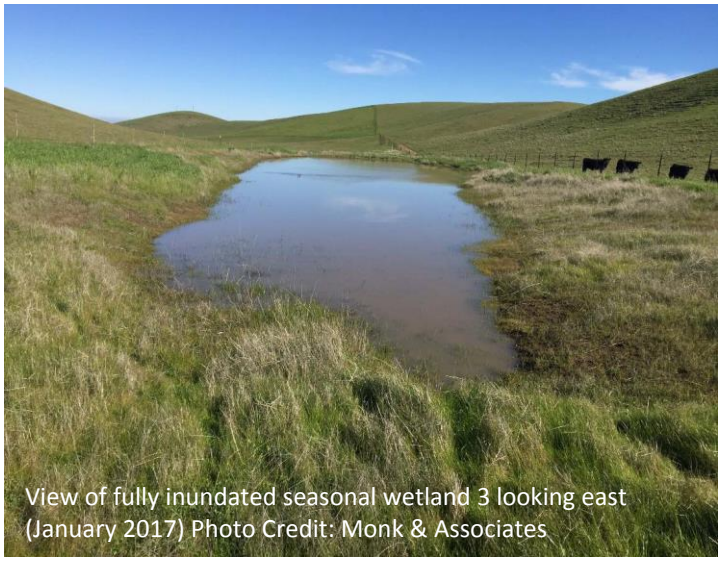
Ang Riparian Restoration
Photo Credit: Save Mount Diablo

Vaquero Farms Seasonal Wetland 3 Creation (2013)

Project Overview

The third wetland at Vaquero Farms was constructed in October of 2015. The pool was constructed between two other pools (constructed in 2013). The wetland was designed to create habitat for vernal pool fairy shrimp. Presence of vernal pool fairy shrimp in the two pools immediately upstream positioned this pool to also support listed shrimp.

Monitoring and Adaptive Management



View of fully inundated seasonal wetland 3 looking east (January 2017) Photo Credit: Monk & Associates

Year 2 monitoring was conducted in November and December 2016, and January, February, March, April, and May 2017. Rainfall in the project area was 110% of normal during the 2016–2017 wet season. Although approximately 1.5 inches of rain fell in October 2016, Wetland 3 was dry (as was the control wetland) in November 2016. However, by December Wetland 3 was inundated with 1 inch of water and by February of 2017, Wetland 3 was inundated to a depth of 11 to 12 inches. The control wetland was inundated with 6 inches of water. Both wetlands were dry by May 2017. Seasonal Wetland 3 met the hydrologic performance criterion for Year 2 by remaining inundated for greater than 30 days. As was found during Year 1 monitoring, created Seasonal Wetland 3 was inundated equal to or slightly longer than the control wetland (Monk & Associates 2017a).

Because Seasonal Wetland 3 is still establishing its flora and fauna, it is not expected that within the first 2 monitoring years there would be a high diversity of plant species, especially since 4 months of continuous inundation suppressed much of the vegetation. As such, during the second monitoring year this pond exhibited only 5% vegetative cover, meeting success criteria (2%) for Year 2. Non-native Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), native doveweed (*Croton setiger*), nonnative curly dock (*Rumex crispus*), rabbit's foot grass (*Polypogon monspeliensis*) and Italian ryegrass (*Festuca perennis*) were all observed in Wetland 3.

During the Year 2 monitoring season, eight bird species, three mammal species, and multiple invertebrate species were observed in the vicinity of Seasonal Wetland 3. Federally listed vernal pool fairy shrimp was observed in the pool in December 2016. California tiger salamander was also observed in Seasonal Wetland 3 from January through March, though this wetland did not stay inundated long enough for the larvae to reach metamorphosis (there were only shallow puddles in this wetland in April). Though not designated as a criterion, the objective of creating seasonal wetland capable of supporting the federally listed vernal pool fairy shrimp was satisfied.

Recommendations

Although no invasive plant species were observed during Year 2, it is recommended that some of the widespread, non-native plant species are manually removed from the wetland bottom to facilitate growth of native, hydrophytic species (for example, remove the Italian rye grass clumps). In October a few native hydrophytic species (salt grass (*Distichlis spicata*), meadow

barley (*Hordeum brachyantherum* var. salt), and spike rush (*Eleocharis macrostachya*)) were hand-seeded along the edge of the pool to facilitate colonization by native species. The entire perimeter of Seasonal Wetland 3 was hand-raked just below the edge of the wetland to expose the top half inch of soil. The seed was then evenly dispersed around the perimeter. Soil was then spread over the seed to cover it and hide it from graniverous birds and effectively sow the seeds.

No other remedial actions are recommended at this time.

Hess Creek Channel Restoration Project (2014)

Project Overview

The Hess Creek Channel Restoration Project is located in the western portion of the inventory area and was completed in the fall of 2014 (H.T. Harvey & Associates 2013). This restoration project included a series of components along the main stem of Hess Creek. A 930-foot portion of Hess Creek was re-routed, stabilized, and enhanced. In addition, 0.30 acre of seasonal wetlands, 0.08 acre of other waters, and 2.57 acres of riparian woodland were restored. The net increase of restored habitats totaled 0.25 acre of wetlands, 0.06 acre of other waters, 2.39 acres of riparian woodland, and 730 linear feet of stream.

Monitoring and Adaptive Management

Monitoring occurred eight times through 2017 (Nomad Ecology 2017a). Data for the percent cover and species composition of native emergent wetland vegetation, non-native invasive plants, and upland vegetation were recorded at each wetland location. All seasonal wetlands (both existing and re-established) are hydrologically connected to the creek channels. Water was observed flowing into portions of all of the existing and re-established seasonal wetlands during the January, February, March, and April 2017 site visits. Percent cover was sampled in five existing wetlands and three re-established wetlands. All but two exceeded the performance criteria of 20% cover for Year 3 monitoring. The total absolute cover of transects in the existing wetlands ranged from 38% to 87% while absolute cover of transects in the re-established wetlands ranged from 27% to 71%. This shows similar total vegetation cover between existing and re-established wetlands. The absolute cover of wetland plants along transects in the existing wetlands ranged from 10% to 82% while absolute cover of transects in the re-established


Hess Creek Channel Restoration
Photo Credit: Erin McDermott, Nomad Ecology

wetlands ranged from 11% to 65%. The relative cover of wetland plants ranged from 17% to 100% in transects in the existing wetlands and 15% to 98% in transects in the re-established wetlands.

For the stream and riparian woodland assessment, observations of riparian and non-native invasive plants were recorded. Overall, the channel was dominated by Italian ryegrass. Existing riparian trees comprise primarily Fremont cottonwood, valley oak, black walnut, and red willow. The planted riparian species comprise extremely low cover, usually too low to be estimated visually, but appear vigorous and healthy. Overall, the site had 71% survival of container plantings which does not meet the performance criteria of 80% survival but is close. Blue elderberry and valley oak had the highest percent survival (195% and 143% respectively). California rose and coast live oak had the lowest percent survival (39% and 30% respectively). The surviving plants are healthy and vigorous, particularly California sagebrush.

The 2017-mapped riparian canopy totaled as 0.66 acre. The baseline (2012/2014) mapped riparian canopy cover totaled as 0.62 acre. This is an increase of 0.04 acre, which meets performance criteria. The increase in riparian cover is due to trees growing and understory branches expanding since the site is no longer grazed. In winter 2016/2017, two mature cottonwood trees on site dropped large branches, likely during one of the several large storm events, which reduced riparian canopy cover in these locations.

The success criteria for riparian woodland cover is ≥6% in Year 3 of monitoring. The same 18 transects established in Year 1 were assessed for riparian woodland/streamside percent cover in Year 3. Of the 18 transects, 9 met the success criteria. Overall the average percent cover of woody species along all transects was 8% which exceeds the minimum for success criteria.

During the October 2017 monitoring visit, dead plantings were observed. In late 2016, 25 California hop tree individuals were planted on site and many did not survive, likely due to high water levels in winter 2016/2017 which resulted in upland areas being saturated. Coast live oak also had low survivorship with only 32 plants remaining of the original 105 planted during restoration. These plantings showed signs of being damaged and ultimately killed by small mammals that gnawed on the roots and crowns of the plantings.

In January 2017, the site was visited following a storm event to record channel stability and function. The depth gauge at the pond located at the western end of the project site measured pond depth of 1.5 feet. Water was observed flowing steadily onsite from the pond (through the berm culvert) and from the channel located north of the pond. Visible scour and flattened vegetation was present which indicated high flows were present prior. There was no erosion noted.

During the October site visit, the site was surveyed for naturally recruiting tree and shrub species. Fremont cottonwood root sprouts and valley oak seedlings were observed at the project site. Many of the planted California rose plants are spreading from the original planting locations to form thickets. Six mugwort (*Artemisia douglasiana*) plants were counted throughout the restoration area. Other native perennial species observed scattered throughout the site include

several individuals of common gumplant (*Grindelia camporum*) which was seeded, and one patch of heliotrope (*Heliotropium curavassicum*).

Invasive weeds were mapped in February, March, May, July, and August. Eleven invasive weed species were observed in the restoration area. These weed species varied in distribution from widespread to limited to populations of just a few or one. The performance criteria specify that total percent cover of non-native invasive plant species is no more than 10% cover in wetlands. Based on the transect sampling data collected in 2017, all seasonal wetlands have invasive weed cover of 1% or less which meets the performance criteria. The performance criteria specify that total percent cover of non-native invasive plant species is no more than 10% cover in riparian woodland habitat. Overall, invasive weeds comprised 1 to 5% cover (estimated visually) in riparian woodland habitat which also meets the performance criteria.

Recommendations

Additional Plantings

Overall, survival was 71% which does not meet the 80% survival performance criteria. Plantings on site are dense. However, it is recommended to wait until Year 4 to monitor, assess survival, and determine if additional planting is needed.

Invasive Weed Control

Invasive weeds should continue to be controlled on site. Species that are limited in distribution on site are high priority for control since they can be controlled before they become well established. These species include artichoke thistle, Harding grass, periwinkle, and oblong spurge. Recently eradicated species, including stinkwort, purple starthistle, and perennial pepperweed, should also be surveyed for in case they reoccur on site.

Souza II Corral Vernal Pool Restoration

Project Overview

The Souza II Corral Vernal Pool Restoration Project is located on the 191-acre Souza II property in the Brushy Creek Watershed. It was constructed in October of 2012. An existing corral was cleared of debris and excavated to restore a 0.3-acre wetland feature. The wetland feature is intended to function as a vernal pool and was inoculated with soil from a wetland with a vernal pool fairy shrimp population. The source wetland was impacted by the Deer Valley Road Widening Project. The new wetland is designed to have the appropriate inundation, water depth, and hydroperiod to provide habitat for vernal pool fairy shrimp and other vernal pool species.

Monitoring and Adaptive Management

Hydrologic monitoring in Year 5 was conducted in December of 2016 and January, February, March, April, and May of 2017. Vegetation monitoring was also conducted in May 2017. Between October 1, 2016, and June 1, 2017, 14.25 inches of rain fell. By late January 2017, the created wetland was inundated to a depth ranging from 12 and 14 inches within the main wetland area while the "dimple" exceeded 14 inches. The created wetland remained inundated through March 2017 and by April 20, 2017, the created wetland was dry again. In Year 5, the Souza II Corral Seasonal Wetland met and exceeded the annual performance criterion for hydrology (Monk & Associates 2017b).

Souza II, January 2017
Photo Credit: Monk & Associates

During Year 5 monitoring the created wetland exhibited a total herbaceous cover of approximately 60%. However, due to the longer inundation period in Year 5, the native gum plant thrived, outcompeting the drier Italian rye grass and resulting in the created wetland reaching approximately 51% of the total cover of hydrophytic plant species. Thus, the total cover of hydrophytic plant species and the relative cover of native, hydrophytic species within the wetland met the Year 5 annual performance criterion and final success criteria for wetland vegetation.

Wildlife observations were made during each monthly hydrology visit and during the vegetation survey. Dip-netting in the created wetland resulted in fairy shrimp for the first time in 5 years of monitoring. Several individuals of the versatile fairy shrimp (*Branchinecta lindahli*), a common (not listed) fairy shrimp species was identified in January. California tiger salamander (larvae, approximately 1 inch in total length), were identified in March 2017 at the seasonal wetland; this is its first occurrence at this location. Unfortunately, due to hot, dry weather lasting for several weeks in late-March/early April, the pool was dry by mid-April, not persisting long enough for the larvae to reach metamorphosis.

Recommendations

The wetland functioned as intended during a normal rainfall year. No remedial actions are recommended.

Vaquero Farms Seasonal Wetlands Creation Project (Seasonal Wetlands 1 and 2)

Project Overview

The Vaquero Farms South Vernal Pool Creation Project is located on the 1,644-acre Vaquero Farms South property in the Brushy Creek watershed. Two wetland features—0.07 acre and 0.15 acre—were created in what is suspected to be an abandoned road bed, down slope of an existing vernal pool occupied by vernal pool fairy shrimp. Similar to the Souza II Corral Vernal Pool Restoration Project, the wetland features are intended to function as vernal pools and provide habitat for vernal pool fairy shrimp and other vernal pool species.

Monitoring and Adaptive Management

Hydrologic monitoring was conducted in November and December 2016, and January, February, March, April, and May 2017. Rainfall exceeded normal amounts for the reporting period and by the end of December 2016, Seasonal Wetland 2 was inundated with 2 to 4 inches of standing water while Seasonal Wetland 1 and the control wetland were moist (Monk & Associates 2017c). By the end of January, the heavy rainfall filled Seasonal Wetlands 1 and 2 to a depth of 10 to 12 inches and inundated the control wetland to a depth of 4 to 5 inches on average with a maximum of 7 inches. In April 2017, the control wetland was no longer inundated except approximately 1 inch of standing water in hoofprints; Seasonal Wetland 1 was dry, but Seasonal Wetland 2 was full, inundated with 7 inches of water. Seasonal Wetlands 1 and 2 surpassed the hydrologic performance criterion (minimum of 30 days of inundation) by remaining inundated an average of 4 months (Seasonal Wetland 1 was inundated for 2 months and Seasonal Wetland 2 for 6 months).

Seasonal Wetland 2, January 2017
Photo Credit: Monk & Associates

Vegetative cover monitoring took place in May during Year 5 monitoring because Seasonal Wetland 1 was inundated through February 2017 and largely vegetated with Italian ryegrass. Once the wetland dried completely down by March 2, there was 68.6% vegetation cover consisting of a mix of upland and wetland plant species. Plants observed during vegetation monitoring include native coyote thistle (*Eryngium vaseyi* var. *vaseyi*), non-native Italian ryegrass, rabbit's foot grass, rough pigweed (*Amaranthus retroflexus*), and native meadow barley (*Hordeum brachyantherum*). Seasonal Wetland 2 experienced long-term inundation and vegetation suppression which resulted in 25.5% vegetative cover of the non-native species rabbit's foot grass and Italian ryegrass. The

remaining 74.5% surface area was barren. Both Seasonal Wetland 1 and Seasonal Wetland 2 met the hydrophytic plant criteria by supporting greater than 5% hydrophytic cover.

Recommendations

On October 27, 2016, a few native, hydrophytic plant species (salt grass [*Distichlis spicata*], meadow barley [*Hordeum brachyantherum* var. *salt*], and spike rush [*Eleocharis macrostachya*]) were hand seeded along the edge of the pools to facilitate the pools' colonization by native species. The entire perimeter of Seasonal Wetlands 1 and 2 were hand raked just below the edge of the wetland to expose the top half inch of soil. The seed was then evenly dispersed around the perimeter. Soil was then spread over the seed to cover it and hide it from graniverous birds and effectively sow the seeds. Rain fell immediately after seed dispersal and the seed was observed to germinate and grow during spring 2017. Since an electric fence encircles all three constructed wetlands (fence installation occurred in late 2015) the germinating seed was protected from unwanted cattle grazing.

No other remedial measures are recommended at this time.

Upper Hess Watershed Habitat Restoration Project

Project Overview

The Upper Hess Restoration Project is located on the 448-acre Land Waste Management property in the Hess Creek subbasin of the Kirker Creek watershed. The project was constructed in 2011. The project included a series of features all along the main stem of Upper Hess Creek. Within the project area, work occurred on approximately 7.4 acres across five restoration sites (H.T. Harvey & Associates 2011).

Four habitat types were restored or created across the five restoration sites using existing site features. The five restoration sites are identified as California tiger salamander breeding pond, upper stock pond, channel restoration, main stock ponds, and alluvial valley. All sites were seeded with a native seed mix. Ranch debris including tires, concrete rubble, and metal barrels was removed from the sites. A California tiger salamander breeding pond was created in the western portion of the project area in an upper reach of the central ephemeral drainage (0.06 acre). Wetland (0.005 acre) and channel (109 linear feet) restoration also occurred at this site.

At the channel restoration site, a failing ranch road crossing was removed and the channel restored (117 linear feet). A small alkali wetland was also restored at this site (0.05 acre). Alkali wetlands (0.08 acre) and wetlands (0.002 acre) were restored at the main stock pond. This included removal of debris and fill around the pond, creation of wetland terraces around the edges of the pond, placement of rock perches and coarse woody debris to improve California red-legged frog habitat, and enhancement/stabilization of an existing outlet spillway/swale at a slightly lower elevation than the existing outlet pipe. The largest restoration area was the alluvial valley where 2.16 acres of alkali wetlands were restored. A total of 2.29 acres of alkali wetlands,

0.007 acre of wetlands, 0.06 acres of California tiger salamander breeding pond, and 226 linear feet of channel were restored or created as part of this project.

Monitoring and Adaptive Management

Monitoring at Upper Hess took place between November 2016 and June 2017. During Year 6 monitoring, not all components of the Upper Hess Watershed Habitat Restoration project met their success criteria. In the fall of 2017, the Conservancy completed remedial measures to improve the success of the alluvial valley wetlands. Success will be determined during the 2017–2018 monitoring effort (Monk & Associates 2017d).

The 2017 reporting period was the first year of normal rainfall after 5 consecutive years of drought. While the increased rainfall recharged the ground water and filled the ponds, after years of drought conditions the parched soils, now burdened with water weight, collapsed in some locations under the pressure and weight of the water and the upper stock pond berm failed. The berm failure resulted in upstream water flowing into the lower restoration features, the main stock pond and the alluvial valley, and inundating these areas with water well into the summer months.

During June monitoring, the alluvial wetlands, main stock pond, and California tiger salamander pond did not meet vegetative success criteria due to the increased water levels and berm failure. At the alluvial wetlands site and main stock pond, vegetative monitoring conducted in November 2017 revealed that that hydrophytic vegetation was abundant along portions of the two sites as the water had dried down. Portions of the alluvial wetlands contained native hydrophytic vegetation, however several areas still contained non-native grass such as Italian rye grass and rabbit's foot grass. Because these areas still contained non-native grasses, performance criterion was not met throughout the alluvial valley and monitoring will need to be continued into Year 7. At the main stock pond, estimates of native hydrophytic vegetation cover in and around the stock pond this past year was approximately 50%. Emergent, native vegetation growing in the water

consists of Olney's three square (*Schoenoplectus americanus*), broad-leaved and narrow-leaved cattail (*Typha latifolia* and *T. angustifolia*), and seacoast bulrush (*Bolboschoenus robustus*).


Created California tiger salamander pond, January 2017
Photo Credit: Monk & Associates

The California tiger salamander pond has experienced 2 consecutive years of inundation lasting for greater than 75 days during the growing season. The long-term inundation has resulted in complete vegetation suppression. However, since longer-term inundation is a goal of this wetland feature so that this pond is suitable for California tiger salamander breeding, this absence of hydrophytic vegetation should not be viewed as negative.

Vegetative success criteria was met at the channel restoration site in 2017. Although this area was inundated through the month of June, hydrophytic vegetation flourished in this wetland. Monitoring on June 2, 2017, showed 82% relative cover of native hydrophytic plant species. Dominant species was narrow-leaved cattail (*Typha angustifolia*) which comprised 52% of the relative cover. Other natives in the wetland include squirrel tail (*Elymus elymoides*), Mexican rush, seacoast bulrush, common reed (*Phragmites australis*), and meadow barley (*Hordeum brachyantherum*).

Success criteria to reduce erosion along Hess Creek was not met in Year 6 monitoring. During the course of the monitoring year, the automatic cattle waterer at the main stock pond failed and cattle had to be let into the restoration area to access the pond for water. Cattle were in the restoration area for most of the year and mucked up the upper channel's bed and banks by crossing through the drainage, trampling the vegetation, and causing the bank to slough off. The restored former road crossing along the creek was also badly trampled, and even though this restored area is 100% vegetated now, the cattle trampling pockmarked the soil and caused erosion on the downstream edge. Water was flowing or standing in this area most of the year.

The objective to increase wetland and pond capacity was met during the reporting period. As the drought ended the benefits of previous site restoration were observed at the main stock pond, the Upper Hess Creek channel, the California tiger salamander pond, and even the alluvial valley wetlands, though this feature did not function as well as originally intended.

During the reporting period, the site-specific restoration goal of connecting Upper Hess Creek from the main stock pond to the Hess Creek channel restoration appeared to be successful. While there has always been a hydrologic connection between all these features on site, the high volume of flow this past year may or may not be attributable to the failed berm. Now that the

berm has been repaired, another year of monitoring with sufficient rainfall will be necessary to make this determination.

The restoration objective to maintain 10% or less of non-native invasive plant species cover was met during Year 6 monitoring. In 2016–2017, only a few individual seedlings of fennel were observed near the upper channel (above the main stock pond) and perennial pepperweed was found in sporadic areas around the main stock pond and along the upper channel between the road crossing and main stock pond. Milk thistle (*Silybum marianum*) was also observed in the uplands near the California tiger salamander pond and in the flatter uplands between the upper stock pond and the road crossing wetland. This restoration objective has been met in all 6 years.

During the 2016–2017 year, only 0.42 acre of the proposed 2.16 acres of constructed/restored alluvial valley wetlands exhibited hydrology during the wet season. While this amount does not meet success criteria and is much lower than the 2.16-acre goal, this is the largest area of functioning wetland that has been observed since the wetlands were created in 2012. In monitoring Year 6, the California tiger salamander pond was inundated from January through May 2017. And although this pond experienced 150 days of inundation and stayed inundated to close to the maximum depth for at least 90 days of this 150-day period, it did not achieve the goal of 0.06 acre.

A variety of wildlife was observed during monitoring visits. The restored and constructed wetlands increase the habitat diversity of the area, provide an essential water source for wildlife over the restoration area, and attract and maintain wildlife species in an otherwise dry landscape. The emergent vegetation growing in the main stock pond also provides nesting opportunities for many bird species.

Remedial Actions

The Conservancy completed several remedial actions during the reporting period to improve the functions of the restored wetlands. These actions include the following.

1. Repaired the breached berm at the upper stock pond.
2. Removed 2 to 8 inches of soil from the alluvial valley wetlands.
3. Installed water line on property downstream from channel restoration site to the water tank to improve the watering system for cattle.
4. Sprayed herbicide non-native milk thistle during the dry season.
5. Hand removed invasive perennial pepperweed along the upper channel and around main stock pond.

Recommendations

Several of the required success criteria were not met by the end of monitoring Year 6. As such, monitoring should continue and the project should be adaptively managed until such time that it does meet success criteria. No remedial measures are recommended.

Irish Canyon Riparian Restoration Project

The Irish Canyon Riparian Restoration Project is located on the 320-acre Irish Canyon property in the Mount Diablo Creek watershed. The goal of the restoration project is to fill in gaps in riparian woodland habitat. The restoration was initiated in late 2009 and completed in March 2010. This project was performed by SMD staff and volunteers. The project involved the planting of more than 400 locally collected valley oaks acorns and buckeye nuts in a denuded stream corridor. The project is expected to result in the restoration of 0.91 acre of riparian habitat and 688.5 linear feet of stream.

Monitoring and Adaptive Management

The restoration project continues to demonstrate high seedling recruitment and sapling survival. At the end of 2017, there were 123 established trees across the planted areas, 1 more than the target of 122. Regular watering began in April 2017 and weeding and mowing occurred in April and May. In June, volunteers began using recycled water to irrigate young plantings for the first time. All management was completed by SMD staff and volunteers. Staff and volunteers continued to observe rodent activity in 2017, although they did not cause tree mortality 2017 as they had in previous years. Weeding, watering, and replanting will continue in 2018.

Figure 16. Location of Habitat Restoration and Creation Projects

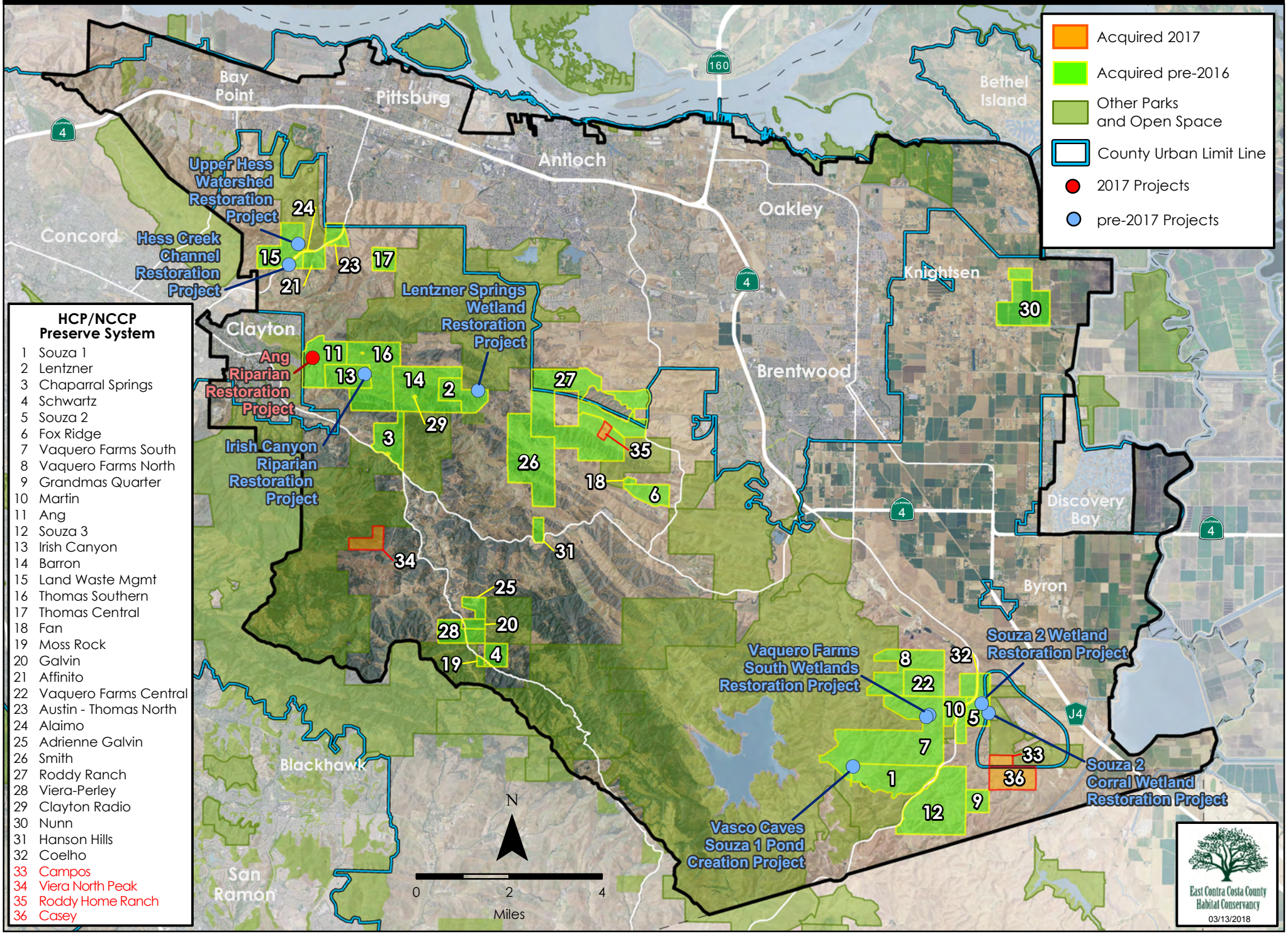


Table 12. Aquatic and Stream Land Cover Restoration and Creation by Watershed

	Aquatic Land Cover (acres)								Stream Land Cover (linear feet)				
Basin/Watershed	**Riparian woodland/ scrub**	**Perennial wetlands[1]**	**Seasonal wetlands**	**Alkali wetlands**	**Ponds**	**Reservoir (open water)[2]**	**Slough/ channel**	**Aquatic Land Cover Total**	**Perennial**	**Intermittent**	**Ephemeral**	**Classification Pending**	**Stream Land Cover Total**
Brushy Creek N Stem Sub Basin													
Restoration	--	0.16	9.09	--	--	--	--	9.25	--	2,074.58	--	507.61	2,582.19
Creation	--	--	--	--	0.48	--	--	0.48	--	--	--	--	0.00
subtotal	*0.00*	*0.16*	*9.09*	*0.00*	*0.48*	*0.00*	*0.00*	*9.73*	*0.00*	*2,074.58*	*0.00*	*507.61*	2,582.19
Frisk Creek Sub Basin													
Restoration	--	--	0.33	--	--	--	--	0.33	--	--	--	--	0.00
Creation	--	--	--	--	--	--	--	0.00	--	--	--	--	0.00
subtotal	*0.00*	*0.00*	*0.33*	*0.00*	*0.00*	*0.00*	*0.00*	*0.33*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Kirker Creek													
Restoration	3.08	--	0.23	2.40	--	--	--	5.71	--	--	--	1,759.56	1,759.56
Creation	--	--	--	--	0.12	--	--	0.12	--	--	--	--	0.00
subtotal	*3.08*	*0.00*	*0.23*	*2.40*	*0.12*	*0.00*	*0.00*	*5.83*	*0.00*	*0.00*	*0.00*	*1,759.56*	*1,759.56*
Sand Creek Sub Basin													
Restoration	--	--	--	0.05	--	--	--	0.05	--	--	--	--	0.00
Creation	--	--	--	--	--	--	--	0.00	--	--	--	--	0.00
subtotal	*0.00*	*0.00*	*0.00*	*0.05*	*0.00*	*0.00*	*0.00*	*0.05*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Upper Mt. Diablo Creek													
Restoration	2.31	--	--	--	--	--	--	2.31	--	2,253.51	--	--	2,253.51
Creation	--	--	--	--	--	--	--	0.00	--	--	--	--	0.00
subtotal	*2.31*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*2.31*	*0.00*	*2,253.51*	*0.00*	*0.00*	*2,253.51*
Total for Inventory Area	**5.39**	**0.16**	**9.65**	**2.45**	**0.60**	**0.00**	**0.00**	**18.25**	**0.00**	**4,328.09**	**0.00**	**2,267.17**	**6,595.26**

[1] *Perennial wetlands* include wetlands of indeterminate hydrology. In Appendix J, perennial wetlands are classified as *wetlands*

[2] The term *aquatic* used in Appendix J refers to reservoirs and open water. *Reservoir (open water)* is used to in place of *aquatic* in this table to remain consistent with the other tables in this report.

Restoration Project Name	Year Constructed	Habitat Type	Required Monitoring	Performance/Success Criteria	2017 Status	HCP Target Species Observed On-Site (Post Restoration)	Notes
Lentzner Spring Wetland Restoration Project	2008	Alkali Wetland	Years 1-5	Years 1-3 survival; Years 4-5 (or more) total relative cover of native wetland vegetation	Completed: Year 7 (2015) Recommended modified success criteria and project completion[1]	N/A[2]	Project extended monitoring beyond 5 years due to not meeting original success criteria related to drought. Recommending new vegetation success criteria and project sign-off for Year 7 (2015).
Vasco Caves Souza I Pond Creation	2008	Seasonal Wetland	Years 1-5	Inundation; Edges and margins dominated by wetland vegetation	Completed: Year 7 (2015)[1]	CTS and CRLF	Project extended monitoring beyond 5 years due to not meeting original success criteria (presence of invasive plant). Year 7 met inundation and wetland vegetation criteria. Did not meet CEPPC criterion due to Italian rye grass, which is a FAC species on the CEPPC list. This species is not going to be eradicated and is expected to decline in abundance with continuous non-drought years and establishment of FACW and OBL species.
Souza II Wetland Restoration Project	2009	Alkali Wetland Seasonal Wetland	Years 1-5	Total relative cover of native wetland vegetation; Total absolute cover of non-native invasive species Inundation; Wetland acreage	Completed: Year 6 (2015)[1]	CTS and CRLF	Project extended monitoring beyond 5 years due to not meeting original success criteria related to drought.

Restoration Project Name	Year Constructed	Habitat Type	Required Monitoring	Performance/Success Criteria	2017 Status	HCP Target Species Observed On-Site (Post Restoration)	Notes
Irish Canyon Riparian Restoration Project	2009-2010	Riparian woodland	N/A	N/A	Year 8 (2017)	CRLF continue to be present in the area	Currently there are 123 live trees. Weeding, watering planned for 2017.
Upper Hess Watershed Restoration Project	2011	Seasonal Wetland Stream Channel CTS Breeding	Years 1-5	Relative cover of wetland vegetation; Wetland acreage Stream channel; CTS breeding pond area	Year 6 (2017)	CRLF	In the fall of 2017, the Conservancy completed remedial measures to improve the success of the alluvial valley wetlands. Success will be determined during the 2017-2018 monitoring effort.
Souza II Corral Seasonal Corral Restoration Project	2012	Seasonal Wetland Vernal Pool	Years 1-5	Inundation; % dominated by wetland vegetation; Relative cover of native wetland vegetation; Wetland acreage	Year 5 (2017)	CTS	In Year 5, the Souza II Corral Seasonal Wetland met and exceeded the annual performance criterion for hydrology. During Year 5 monitoring the created wetland exhibited a total herbaceous cover of approximately 60%.
Vaquero Farms Seasonal Wetlands Creation Project (Pools 1 and 2)	2012	Seasonal Wetland	Years 1-5	Inundation; % dominated by wetland vegetation; Relative cover of native wetland vegetation; Wetland acreage	Year 5 (2017)	CTS and VPFS in pond 1, CTS only in pond 2	Both wetlands met hydrology criteria but not vegetation cover. Expected to meet vegetation criteria in "normal" rainfall years.

Restoration Project Name	Year Constructed	Habitat Type	Required Monitoring	Performance/Success Criteria	2017 Status	HCP Target Species Observed On-Site (Post Restoration)	Notes
Hess Creek Channel Restoration Project	2015	Seasonal Wetland Stream Channel Riparian Woodland Riparian Streamside	Wetland Years 1-5 Riparian Years 1-10	Relative cover of wetland vegetation; Wetland acreage; Stream channel; Riparian vegetation cover; Riparian vegetation survival; Invasive vegetation cover	Year 2 (2017)	Project is movement habitat and not breeding habitat	Wetland exceeded Year 2 cover criteria, riparian survival did not meet criterion, monitoring will continue in Year 3. Invasive vegetation cover met criterion.
Vaquero Farms Seasonal Wetland Creation (Pool 3)	2015	Seasonal Wetland	Years 1-5	Inundation; % dominated by wetland vegetation; Relative cover of native wetland vegetation; Wetland acreage	Year 2 (2017)	VPFS	Seasonal Wetland 3 met the hydrologic performance criterion for Year 2 by remaining inundated for greater than 30 days. During the Year 2 this pond exhibited 5% vegetative cover, meeting success criteria (2%) for Year 2.
Ang Riparian Restoration Project	2017	Riparian woodland	N/A	N/A	Year 1 (2017)	N/A	192 riparian trees were planted in late 2017. Weeding, watering planned for 2018.

TOTAL

[1] Final projects are in preparation for submission to the Corps for final approval.

[2] Due to the remoteness of the location, this site is not accessible during the wet season making species monitoring difficult.

Restoration, Creation, and Enhancement Design Target, if Not Complete or Final (acres unless otherwise noted)													
Restoration Project Name	**Year Constructed**	**Year Completed**	**Permanent Wetland Created**	**Permanent Wetland Restored**	**Seasonal Wetland Created**	**Seasonal Wetland Restored**	**Seasonal Alkali Wetland Created**	**Seasonal Alkali Wetland Restored**	**Pond**	**Riparian**	**Stream Channel Restored (ln ft)**	**Stream Channel Created (ln ft)**	**Enhanced**
Lentzner Spring Restoration Project	2008	2015	0.00	0.00	0.00	0.00	0.08	0.23	0.00	0.00	0.00	0.00	N/A
Vasco Caves Souza I Pond Creation Project	2008	2015	0.00	0.00	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Souza II Wetland Restoration Project	2009	2015	0.00	0.54	0.17	0.00	1.17	0.64	0.00	0.00	2,782	0.00	N/A
Irish Canyon Riparian Restoration Project	2009-2010	2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	688.50	0.00	N/A
Upper Hess Watershed Restoration Project	2011	N/A	0.00	0.00	0.00	2.47	0.00	0.00	0.06	0.00	226	0.00	N/A
Souza II Corral Seasonal Wetland Restoration Project	2012	N/A	0.00	0	0.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.117 acres of wetland enhanced
Vaquero Farms Seaonal Wetlands Creation (Pools 1 and 2)	2012	N/A	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Hess Creek Channel Restoration Project	2015	N/A	0.00	0.00	0.3	0.00	0.00	0.00	0.00	3.13	1,364.00	730	N/A
Vaquero Farms Seasonal Wetland Creation (Pool 3)	2015	N/A	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Ang	2016 (late Fall)	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	N/A
TOTAL			**0.00**	**0.54**	**2.33**	**2.47**	**1.25**	**0.87**	**0.06**	**4.04**	**5,060.50**	**730.00**	**0.00**

Table 13c. Hess Creek Restoration Specific Objectives and Performance Criteria

Restoration Specific Objectives	Performance Criteria
Wetlands (and Other Aquatics)	
SO-1. Maintain or increase native emergent wetland vegetation.	Qualitative assessments, including photo documentation before and after restoration activities in Years 1-3, and 5, determine that native emergent wetland vegetation has been maintained or increased.
SO-2. Reduce sediment deposition and transport along Hess Creek.	Maintenance of a stable channel that conveys flow through the restoration site in Year 1-3, 5, 7 and 10.
SO-3. Maintain or increase wetland capacity.	Wetland acreage onsite has been maintained or increased and is in the range of the targeted 0.3 ac of restored wetlands within 5 years following restoration implementation.
SO-4. Maintain or increase flows to and connectivity among wetlands and wetland complexes.	Qualitative assessment, including photo-documentation before and after restoration activities in Years 1-3, 5, 7 and 10, determines that Hess Creek is hydrologically connected between the restored channel and seasonal wetlands.
SO-5. Eliminate or reduce non-native invasive plant species[1] in the project area wetlands.	Total percent cover of non-native invasive plant species is no more than 10% cover in wetlands.
SO-6. Maintain or enhance upland habitat in close proximity to wetlands to support the life-history requirements of wetland dependent covered species.	Qualitative assessment, including photo-documentation before and after restoration activities in Years 1-3, 5, 7 and 10, determines that upland habitat in close proximity to the restored wetlands has been maintained or enhanced to support the life-history requirements of wetland-dependent covered species.
SO-7. Restore approximately 0.30 ac of seasonal wetlands to compensate for permanent loss of this habitat.	Approximately 0.30 ac seasonal wetlands have been restored (confirmed via wetland delineation in Year 5) and meet the annual performance criteria.
SO-8. Restore approximately 0.3 ac of seasonal wetlands to contribute to the recovery of covered species.	Approximately 0.3 ac seasonal wetlands have been restored (confirmed via wetland delineation in Year 5) and meet the annual performance criteria.

Stream and Riparian Woodland Scrub	
SO-9. Protect a minimum of 0.5 linear mi of Hess Creek.	Qualitative assessment, including photo-documentation before and after restoration activities in Years 1-3, 5, 7 and 10, determines that a minimum of 0.5 linear mi of Hess Creek has been protected.
SO-10. Acquire approximately 2.6 ac of riparian/scrub habitat.	Acquire 2.6 ac of riparian/scrub habitat.
SO-11. Maintain or increase the cover, width, and connectivity of existing riparian vegetation.	Mapping before and after restoration activities in Years 3, 5, 7 and 10, determines that the cover, width, and connectivity of existing riparian vegetation has been maintained or increased.
SO-12. Reduce the biomass, cover, and extent of non-native invasive plant species in riparian woodland habitat.	Total cover of non-native invasive plant species is no more than 10% in riparian woodland habitat.
SO-13. Restore shaded riverine aquatic habitat to reduce water temperature and temperature variation.	Approximately 0.45 ac riparian streamside habitat has been restored and meets the annual performance criteria.
SO-14. Restore shaded riverine aquatic habitat to increase inputs of organic matter into Hess Creek.	Approximately 0.45 ac riparian streamside habitat has been restored and meets the annual performance criteria.
SO-15. Reduce sediment input and downstream sediment transport and deposition in Hess Creek.	Maintenance of a stable channel that conveys flow through the restoration site in Year 1-3, 5, 7 and 10.
SO-16. Maintain and enhance instream structural diversity.	Maintenance of a stable channel that conveys flow through the restoration site in Year 1-3, 5, 7 and 10.
SO-17. Improve stream flow and connectivity along Hess Creek for native aquatic wildlife.	Maintenance of a stable channel that conveys flow through the restoration site in Year 1-3, 5, 7 and 10.
SO-18. Restore riparian woodland in addition to that required above as compensation for habitat loss.	Approximately 2.57 ac of riparian woodland/streamside habitat have been restored and meets the annual performance criteria.
SO-19. Restore native species richness and diversity, vegetative cover, wildlife function and hydrologic function.	Approximately 0.3 ac of seasonal wetland and 2.57 ac of riparian woodland/streamside habitat have been restored and meets the annual performance criteria in Tables 7, 8, and 9; and approximately 930 ln ft of stable channel has been created/maintained that conveys flow through the restoration site in Year 1-3, 5, 7 and 10.

[1] Non-native invasive plant species include those species with high impact rankings by the California Invasive Plant Council (Cal-IPC), and any other species determined to threaten successful restoration of the native plant communities onsite (California Invasive Plant Council 2006).

Table 13d. Souza II Corral Vernal Pool Restoration Specific Objectives and Performance Criteria

Restoration Specific Objectives	Performance Criteria
SO-1. Create Seasonal Wetland	Create new seasonal wetland.
SO-2. Increase wetland capacity and water duration in the project area.	The created wetland area must remain saturated or inundated to the surface for at least 30 days each fall/winter/spring over a five year monitoring period, but should not exceed 4 months of continuous standing water.
SO-3. Establish hydrophytic plant species.	At the end of five years the seasonal wetland shall support at least 51% total cover. At least 51% of hydrophytic species cover shall be composed of native California wetland species.

Table 13e.Vaquero Farms Seasonal Wetlands Creation Project (Pools 1 and 2) Specific Objectives and Performance Criteria

Restoration Specific Objectives	Performance Criteria
SO-1. Create two new seasonal wetlands.	At the end of the five-year monitoring period the maximum wetland acreage for Seasonal Wetland 1 will be 0.07 acre and it will be 0.15 acre for Seasonal Wetland 2.
SO-2. Increase wetland capacity and water duration in the project area.	The created wetland area must remain saturated or inundated to the surface for at least 30 days each fall/winter/spring over a five year monitoring period, but should not exceed 4 months of continuous standing water.
SO-3. Establish hydrophytic plant species.	Total cover must not vary between the natural pool and the created seasonal pools by more than 25 percent. At the end of five years the created seasonal wetlands shall support at least 51% total cover. At least 51% of hydrophytic species cover shall be composed of native California wetland species.

Table 13f. Upper Hess Habitat Restoration Project: Site-specific Restoration Objectives

Wetlands (and other Aquatic)	Performance Criteria
SO-1. Increase the abundance and distribution of native emergent vegetation in the project area.	See annual performance criteria in Table 13d.
SO-2. Reduce erosion along Upper Hess Creek.	Qualitative assessment including photo documentation before and annually for 5 years after restoration activity determines that erosion along the Upper Hess Creek onsite has been reduced.
SO-3. Increase wetland and pond capacity and water duration in the project area.	Wetland and pond acreage onsite has increased and is in the range of the targeted 2.47 acres of restored wetlands and 0.12 acre of restored pond within 5 years following restoration construction.
SO-4. Hydrologically reconnect the Upper Hess Creek from lower stock pond to channel at property boundary.	Qualitative assessment and hydrologic monitoring based on photo-documentation and seasonal shallow groundwater monitoring annually for 5 years after restoration activity shows that Upper Hess Creek is hydrologically connected between the lower stock pond and the restored channel at the property line.
SO-5. Reduce non-native plant species in restored wetlands.	Total absolute cover of non-native invasive plant species[a] no more than 10% relative cover.
SO-6. Restore approximately 2.32 acres of alkali wetlands in the project area.	Approximately 2.32 acres alkali wetlands have been restored and confirmed via wetland delineation.
SO-7. Create an approximately 0.12 acre California tiger salamander breeding pond.	An approximately 0.12 acre pond will have been restored and confirmed via wetland delineation.
SO-8. Restore approximately 2.32 acres of alkali wetlands.	Approximately 2.32 acres alkali wetlands have been restored and met the annual performance criteria in Table 7 and confirmed via wetland delineation.
SO-9. Create an approximately 0.12 acre California tiger salamander breeding pond in upper tributary.	Same as for SO-7
SO-10. Restore 489 linear feet of stream channel and hydrologically connect Upper Hess Creek from the main stock pond to channel at property boundary.	Same as for SO-4
SO-11. Create 0.12 acres California tiger salamander pond, enhance existing main pond, restore 489 linear feet of channel, restore approximately 2.32 acres of alkali wetlands.	Same as for SO-6, SO-7, and SO-8

[a] Non-native invasive plant species include those species with high impact rankings by the California Invasive Plant Council (Cal-IPC), and any other species determined to threaten successful restoration of the native plant communities onsite (California Invasive Plant Council 2006).

Table 13g. Upper Hess Habitat Restoration Project Performance Standards

Year	Criterion	Satisfactory Progress Threshold
1	Average relative percent cover of dominant wetland indicator species	5% Cover
2		10% Cover
3		20% Cover
4		35% Cover
5		50% Cover

V. PRESERVE MANAGEMENT

The Plan requires that preserve management plans be developed for each preserve to identify management actions necessary for maintaining ecosystem characteristics and functions and for maintaining or improving existing habitat conditions for covered species. Preserve management plans also describe allowed uses such as recreation. This approach ensures that preserve lands management is consistent with the Plan's goals and objectives.

Preserve System lands are managed according to the preserve management plan or if a management plan is not yet prepared, the lands are managed consistent with the Plan. The following sections describe the progress to date in developing the first preserve management plan and implementing management actions.

Preserve Management Plans

Preserve management plans were originally expected to be prepared within 1 year of land acquisition; however, they have taken longer. This is due to the decision to cover many adjacent properties under one coordinated management plan, the rapid pace of acquisition, and the complexity of developing plans for larger areas. Preserve management plans are working documents and may be modified based on the evaluation of management methods in achieving objectives as well as on results of other outside research. The Conservancy will formally review and systematically revise preserve management plans at least every 5 years, but management measures may be modified prior to plan updates in cases where adaptive management or new research identifies more effective techniques.

The *Vasco Hills/Byron Vernal Pools Preserve Management Plan* is under development. The Vasco Hills/Byron Vernal Pools Preserve Management Area is the southeastern portion of the inventory area, covering Acquisition Analysis Zone 5. The management area consists of eleven properties that have been acquired for the Preserve System: Vaquero Farms North, Vaquero Farms Central, Vaquero Farms South, Souza I, Souza II, Souza III, Grandma's Quarter, Martin, Coelho, Campos, and Casey.

The Conservancy and EBRPD staff are collaborating closely on developing the *Vasco Hills/Byron Vernal Pools Preserve Management Plan*, assembling and reviewing numerous iterations of draft materials. A complete draft of the preserve management plan was provided to the Wildlife Agencies for review in 2016. The Wildlife Agencies provided comments in 2017, and the Conservancy began responding to the comments. A public draft is anticipated to be released in 2018. This is the first preserve management plan prepared by the Conservancy and can be expanded to include neighboring properties as others in the area are acquired. The *Vasco Hills/Byron Vernal Pools Preserve Management Plan* will become a template for future preserve management plans prepared for other regions of the Preserve System.

While comprehensive management planning is underway, implementation of management activities have commenced throughout the Preserve System and are described below.

Conceptual Ecological Models

A component of preserve management plans is a monitoring plan. The initial "monitoring design phase" of the HCP/NCCP focuses on the development of management-oriented conceptual ecological models, prioritization and implementation of projects, the identification of focal species or groups of species for intensive monitoring, and the selection of biotic and abiotic indicators of ecosystem condition. The HCP/NCCP requires annual reports to describe any conceptual ecological models developed to date and any changes to them that have taken place. To date, two separate conceptual ecological models for the grassland and wetland/pond communities have been developed for the HCP/NCCP.

The grasslands conceptual ecological model includes all the threats and stressors that may affect grasslands over the life of the permit term that can be managed. Based on the Monitoring Program's passive management approach, the focus of management actions will be on grazing and invasive species management and will expand to address the other threats/stressors as needed. The wetlands conceptual ecological model includes all the threats and stressors that may affect wetlands/ponds over the life of the permit term that can be managed. The initial focus is on grazing, invasive species management, and habitat restoration/enhancement, and will expand to address the other threats/stressors as needed.

Natural Community Enhancement

Natural community enhancement has been ongoing since permit issuance. This section describes the HCP/NCCP natural community enhancement conservation measures implemented during the 2017 reporting period, and provides an effort-to-date summary of the extent of land cover types enhanced.

Efforts in 2017

During the reporting period, several management strategies were applied to enhance natural communities within the Preserve System. Management techniques have been implemented in support of Conservation Measure 2.2 *Manage Wetlands and Ponds*, Conservation Measure 2.4 *Manage Grassland*, Conservation Measure 2.9 *Manage Streams and Riparian Woodland/Scrub*, and Conservation Measure 3.9 *Conduct Experimental Management to Enhance Covered Plant Populations*.

Natural Resource Maintenance and Enhancement Projects

In 2017, natural resource maintenance and enhancement projects continued on all properties within the Vasco Hills/Byron Vernal Pools Preserve Management area as well as properties adjacent to Black Diamond Mines Regional Preserve. Projects initiated in previous years continued in 2017.

Invasive Plant Control

There were several invasive plant species sites identified or controlled in 2017 by EBRPD and the Conservancy. Efforts to control invasive plant species continued on all reserve properties during the reporting year and included the following.

- Various invasive weeds were trimmed and grubbed in the Vasco area.
- There was a huge bloom of thistle on the Hess property during 2017. The Conservancy started to aggressively manage thistle in areas where the infestations were moving in on restoration projects or other critical habitat areas. There were multiple treatments on the Upper Hess property.
- On the Nunn property, EBRPD and the Conservancy collaborated on experimental treatments of invasive plants on native dune habitat. The grazing tenant worked with EBRPD to scrape invasive vegetation off a section of dune to see if it created an environment that allowed dune vegetation to return. Monitoring at the scrape site found native plants present. The most abundant seedling in the scrape were filarees (*Erodium* spp.). Also observed were native dune annuals (*Cammissionia*), which was positive sign that the scrape may be successful. There were seedlings of tumbleweed (*Salsola tragus*), an invasive species. However, these early observations seem to indicate that the scrape has had a positive effect.

Grazing Management

Livestock grazing and exclusion was used for general weed control and to reduce thatch growth to implement Conservation Measure 2.2 *Manage Wetlands and Ponds,* Conservation Measure 2.4 *Manage Grassland,* and Conservation Measure 2.9 *Manage Streams and Riparian Woodland/Scrub*.

EBRPD staff oversees the grazing operations on the Preserve. Staff met with grazing tenants to prepare annual work plans, monitor grazing units and prduce stocking reports. The grazing leases are based on the EBRPD template and maximize natural resource management. Under this lease structure, rent is based on stocking rate rather than per acre. The goal is to encourage

the use of sustainable stocking rates that maximize resource values rather than maximizing the number of livestock per acre. Stocking reports were reviewed monthly.


California croton on Nunn property
Photo Credit: East Contra Costa County Habitat Conservancy

To measure the effect of seasonal cattle grazing for native dune vegetation on the Nunn property, the eastern remnant dune area was surveyed for cover of California croton (*Croton californicus*) and tumbleweed (*Salsola tragus*) on November 20, 2017. For the 2016–2017 grazing season, the eastern dune had temporary electric fencing installed to prevent impacts from cattle on native species. The fencing was not effective, however, due to shorting of the electric fence caused by excessive interference from tumbleweed. A decision was made to discontinue the fence for the 2017–2018 grazing season and continue to monitor the cover of native species of interest. While monitoring in 2017 was not ideal for species composition, it was important to measure native cover before the cattle resume grazing for the 2017–2018 grazing season. The survey provides a baseline for fall monitoring of California croton, California Native Plant Society (CNPS) locally rare species, and tumbleweed, non-native invasive species. Results of the survey show that California croton had 16% and 18% cover at the two Nunn observation sites. Tumbleweed had 23% cover at Nunn observation site 1 and 11% cover at site 2.

Grazing tenants on a number of properties received funding from the U.S. Department of Agriculture's Natural Resource Conservation Service, EBRPD, and the Conservancy to develop plans and install livestock infrastructure on the following Preserve System properties: Vaquero Farms South, Galvin, Hess, and Viera-Perley.

Land Management

This section summarizes and management activities undertaken on the HCP/NCCP preserves during the 2017 reporting period and discusses management issues on the preserves.

For the 2017 reporting period, management consisted of the enhancement actions described above, as well as ongoing maintenance and recreation planning. Currently the primary management issue facing the Conservancy is the pervasiveness of non-native invasive plants. The Conservancy and EBRPD will continue their aggressive approach to controlling invasive plants in the Preserve System. Land management activities conducted in 2017 are summarized below.

Management Activities and Maintenance

General inspections: General inspections and site maintenance by EBRPD were conducted on Preserve System properties. HCP/NCCP Preserve System properties were patrolled bi-weekly and wildlife sightings were documented.

A summary of activities follows.

- Security and Safety
    - Continued ongoing/regular patrol and security checks at all properties.
    - Monitor security systems (cameras and alarms) at various properties that have regular trespass/illegal activity.
    - Fence repair and the gate replacements on various properties.
    - Installed approximately 22,000 feet of new fencing on various properties
    - Park District boundary signs were added to new acquisitions.
    - Locks and chains replaced on various properties - for access for EBRPD staff, grazing tenants, fire district.
    - Storm damage review and visits with Federal Emergency Management Agency representatives.
    - Maintenance of residences on various properties.
- Grazing
    - Met individually with grazing tenants to discuss past and future seasons.
    - Reviewed stocking reports monthly.
    - Collected residual dry matter samples and photographed and documented sites.
    - Monitored grasslands weekly acres the Preserve System.
- New Infrastructure
    - Complete the design, custom fabrication, and construction of the 30,000-gallon catchment system that utilizes the horse arena roof was completed at Vaquero Farms Central.
    - In August, the Natural Resource Conservation Service Environmental Quality Incentive Program solar water development and livestock water project was completed at the Galvin, Viera, Affinito and Hess properties.
    - The Natural Resource Conservation Service Environmental Quality Incentive Program solar water development project was completed at Vaquero Farms South.

- The well at the Alaimo property was rehabilitated
- The Natural Resource Conservation Service Environmental Quality Incentive Program solar water development project was initiated at the Ang property. A well was drilled and the layout for grazing infrastructure developed.
- A trail camera was installed and monitored at the Galvin property.
- Rerouted a portion of the access road on the Upper Hess property and re-seeded old alignment to address sightline and safety concerns.

- General Maintenance
  - The ranch hand quarters, restroom, and shed were demolished at Souza III.
  - Tack trailer was demolished at the Vaquero Farms service yard.
  - Over 20 miles of fire roads were graded at the Vasco properties.
  - Repaired to the electric fence at the Vaquero Farms Central vernal pools were made.
  - Two trees were removed from Viera North Peak that fell across the fence line and two additional trees were removed that were threatening to fall.
  - An unused septic system was removed via contract from the Nunn property.
  - Secured the Star House (at Roddy Ranch) after a large tree fell on the structure.
- Resource Maintenance
  - Site surveys/evaluations of pond failures at Vasco Hills/Byron Vernal Pools
  - Federal Emergency Management Administration staff were escorted to on-site inspections of all damaged ponds at Vasco.
  - Basin Research was escorted on archaeological site surveys of the damaged ponds at Vasco.
  - Reinforcements of two ponds at Vasco were completed in 2017 and permitting was lined up for the remaining ponds so that construction could move forward in 2018.
  - Staked riparian fence line for contractors on the Ang property.
  - Removal of various trees that fell across ranch roads/access roads on preserve properties.
  - Maintained fuel break on Ang property around structures.
  -
- Debris Removal
  - Continued cleanup efforts on all properties.

- Meetings
    - Various meeting with Conservancy staff, EBRPD staff, neighboring landowners, Natural Resource Conservation Service, biologists, and maintenance contractors.

VI. MONITORING, RESEARCH, AND ADAPTIVE MANAGEMENT

The Plan provides a framework, guidelines, and specific suggestions to help the Conservancy develop a detailed monitoring program during the initial years of Plan implementation. The purpose of the monitoring and adaptive management program is to inform and improve conservation actions in the Preserve System and to ensure that the Plan achieves its biological goals and objectives. The scope of the monitoring and adaptive management program is limited to habitat restoration and creation and the assembly, management, and monitoring of the Preserve System.

Monitoring

The Plan requires two broad types of monitoring: effectiveness monitoring and compliance monitoring.

Effectiveness Monitoring

Effectiveness monitoring is the measurement of variables that allow the Conservancy to assess the success of the Plan in meeting its stated biological objectives. The Plan divides the effectiveness monitoring program into three main phases: 1) the *initial monitoring design phase*, to lay the foundation of the overarching monitoring program; 2) the *inventory phase*, which focuses on the collection of basic information as the Preserve System is assembled; and 3) the *long-term monitoring phase*, which will use the framework developed during the planning and inventory phases to carry out effectiveness monitoring. Each of these three phases, as well as progress toward completing each phase, is discussed below.

Restoration monitoring is a type of effectiveness monitoring that is specific to restoration projects. Restoration monitoring is discussed in Section IV, *Habitat Restoration and Creation*.

Monitoring Design Phase

The monitoring design phase occurs during the first 5 years of Plan implementation/preserve management. It involves the development of a comprehensive monitoring strategy that will provide a framework for the inventory and long-term monitoring. This phase includes the development of species conceptual models and monitoring protocols.

In 2015 and 2016, draft protocols were developed for the Vasco Hills/Byron Vernal Pools Management Area for monitoring the effectiveness of management actions and the status and trends of covered species. A complete draft of the protocols were provided to the Wildlife Agencies in 2016, and the Conservancy received comments in 2017. When finalized, the Conservancy anticipates these protocols will be standardized for implementation throughout the Preserve System.

Inventory Phase

The inventory phase is intended to provide baseline data for monitoring the success of habitat restoration, creation, enhancement, and management actions to meet the Plan's biological goals and objectives. The inventory design includes standardized protocols necessary for implementing the inventory phase so that meaningful and consistent baseline data are collected.

The inventory phase was initiated in early- to mid-2008 in the form of pre-acquisition surveys when the first lands were considered for acquisition and incorporation into the Preserve System. Since 2010, Nomad Ecology has been inventorying new acquisitions for special-status plant species and for wetland features. An annual report is produced and Conservancy updates GIS data. The results of these baseline inventory surveys are incorporated into and reflected in the data presented in this Annual Report.

Plants

HCP/NCCP plant species (covered and no-take species) inventories and focused botanical surveys were conducted in February, March, April, May, June, and September 2017 (Nomad Ecology 2017b). The 2017 survey effort was primarily focused on the Casey, Campos, and Coelho preserves since they were the newest acquisitions and that had not been previously surveyed for rare plants during appropriate blooming periods. Fox Ridge was surveyed due to favorable germination of round-leaved filaree in 2017.

Surveys for target species were conducted within suitable habitat by walking transects. Visual surveys are considered adequate for determining the presence or absence of covered plant species that have a potential to occur within preserve acquisitions. All plant species in bloom, or otherwise recognizable, were identified to a level necessary to determine their regulatory status. During these surveys an inventory of plant species observed was recorded. If encountered, other special-status species including state-listed and federally listed species or species included in the CNPS rare plant inventory were also recorded.

Data collected in the field conformed to reporting requirements appearing in Chapter 5, *Incorporating Covered Plant Populations in the Preserve System*, of the HCP/NCCP. Accordingly, five relevant characteristics were recorded (physical condition, age structure, reproductive success, availability of suitable habitat, and diversity of suitable habitat). GIS shapefiles of covered species occurrences were created using global positioning system (GPS) point data collected in the field.


Round-Leaved Filaree
Photo Credit: Nomad Ecology

During plant surveys conducted in March, April, May, June, and September 2017, two covered species, brittlescale and round-leaved filaree, were observed. Overall, a total of three populations of covered plant species were recorded with an estimated number of 557 individuals represented. No-take species were not observed during these surveys. The populations of covered plant species are considered healthy based on observations of physical condition, reproductive success, and abundance and diversity of suitable habitat. However, the two individuals of round-leaved filaree observed at Coelho had not begun to produce buds or flowers, therefore it is unknown if this population survived long enough to reproduce. The physical condition, population size, and abundance may have been affected by an abundance of non-native annual grasses sharing habitat of round-leaved filaree, resulting from weather patterns during the 2016–2017 rainy season.

To date, 21 % of the species-specific biological goals for covered plant populations still need to be met, which includes two populations each of Mount Diablo manzanita and recurved larkspur.

Other special-status plant species observed during surveys include crownscale (*Atriplex coronate*) on Casey; spiny-sepaled button-celery (*Eryngium spinosepalum*) on Campos and Casey; cotula navarretia (*Navarretia cotulifolia*) on Coelho; California alkali grass (*Puccinellia simplex*) on Souza III, Casey, and Coelho; and long-styled sand-spurrey (*Spergularia macrotheca var. longistyla*) on Casey and Coelho. Although not included in the HCP/NCCP as covered or no-take species they are considered rare by the CNPS.

A chart of all HCP/NCCP covered plants that have been identified on the Preserve System is in Table 10.

Wetland Mapping

A wetland assessment and refined mapping was conducted on the Coelho, Hanson Hills, and Nunn properties (Nomad Ecology 2017c). In 2017, a wetland assessment was conducted on the Campos and Casey properties. The total wetland acreage added to the Preserve System was 2.35 acres. Approximately 2.08 acres of alkali wetlands and 0.11 acre of permanent wetland were present on the Casey property.

No riparian land cover was mapped on site. One Fremont cottonwood (*Populus fremontii* subsp. *fremontii*) was present on Casey near the corral. Trees present along the creek on Casey near the blacksmith shop include non-native olive (*Olea europaea*), Peruvian peppertree (*Schinus molle*), and eucalyptus (*Eucalyptus* sp.). Similarly, no seasonal wetlands were mapped on site, as all wetlands observed were either alkali wetlands or permanent wetlands. No native grassland was observed on site except alkali grassland.

Alkali Wetland on Casey property
Photo Credit: Nomad Ecology

Long-term Preserve Monitoring Phase

As of December 2017, long-term preserve monitoring had not yet commenced. The long-term monitoring phase will commence once a comprehensive strategy has been developed (monitoring design phase) and baseline studies are complete (inventory phase), or before then, if appropriate. Long-term monitoring will use the framework developed during the planning and inventory phases to carry out effectiveness monitoring and to implement adaptive management.

Compliance Monitoring

Compliance monitoring is the process of evaluating Plan implementation and documenting that all requirements of the Plan are being met (i.e., permit compliance). This Annual Report, which describes progress toward Plan implementation, is the documentation for Plan compliance.

To support the development of the Annual Report, the Conservancy developed a project-tracking database. This database tracks permitted activities, impacts on land cover types and species habitat, and conditions on covered activities. In addition, a Python-based script was developed to search both the project tracking database and HCP/NCCP GIS database (includes land cover mapping, acquisitions, etc.) and generate information required for the annual report.

Independent Conservation Assessment Team

HCP/NCCP Chapter 8, Plan Implementation calls for the periodic convening of an Independent Conservation Assessment Team. The role of the Independent Conservation Assessment Team is to provide periodic review of overall HCP/NCCP implementation, including the following specific areas.

- Progress toward land acquisition and habitat restoration goals by land-cover type.
- The appropriateness of monitoring and management methods to achieve Plan goals.

- The appropriateness of monitoring data interpretation.
- Changes that may be needed in conservation, management, or monitoring to better achieve Plan goals (see Chapter 7 for additional discussion on the protocols for, and limitations on, the Adaptive Management Program).

In 2017, the Conservancy began planning for the independent conservation assessment team meeting. This included coordinating with USFWS and CDFW in identifying team members, compiling background documents, drafting focused questions and topics for discussion. Due to scheduling conflicts, the team did not convene until early 2018.

Directed Research

Directed research is research that provides new information or direction regarding management actions. The purpose of directed research is to inform management in cases where species and natural community response to management is uncertain. Each year the Conservancy seeks project proposals across all scientific disciplines that advance the Plan's conservation strategy, monitoring and adaptive management program, and/or informs successful compliance with the biological goals and objectives of the HCP/NCCP. The Plan's Table 7-2 contains a list of potential directed research projects. This list is unchanged from the Plan.

The Conservancy, under the Science and Research Grant Program, may fund research that endeavors to illuminate, and where possible to resolve, uncertainties associated with adaptive management of natural communities and covered species found in the HCP/NCCP. Research selected for funding aids in achieving the biological goals and objectives of the HCP/NCCP and informs management actions and/or contributes to the general understanding of a covered species. Such research generally relates to the following.

- Efficacy of natural community enhancement/creation/restoration techniques,
- Refining ecological requirements of covered species,
- Response of covered species and natural communities to implementation of management actions within the Preserve System, or
- Strategies to conduct management or monitoring actions that support and/or lead to better management of natural communities or covered species.

Golden Eagle Research

In 2016, EBRPD completed the initial phase of its research to study golden eagle behavior in the Altamont Pass Wind Resource Area (APWRA) and map collision hazards (East Bay Regional Park District 2017). The initial study included five main tasks.

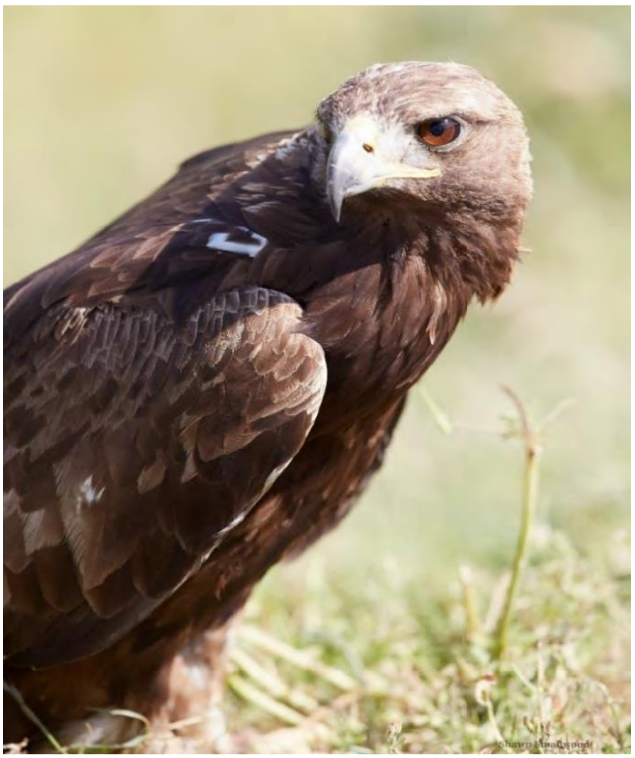
- Trap and attach transmitters on up to six golden eagles.
- Track eagles, including mapping using GIS.

- Validate current collision hazard maps (based on only observational data) by comparing newly collected transmitter data against existing collision hazard maps to determine whether eagles use the landscape as modeled.
- Revise collision hazard maps for Tres Vaqueros using new data and developing new golden eagle collision hazard maps for the remainder of the APWRA.
- Develop one or more peer-reviewed, publication-ready papers discussing the outcomes of this research.

However, the original objectives appeared too narrow. For example, an original objective was to "Validate existing collision hazard maps by comparing newly collected transmitter data against existing collision hazard maps to determine whether eagles use the landscape as modeled." It was discovered that a model based on both transmitter data and newly acquired behavioral data was the more robust model to test against the original collision hazard maps rather than a model based on either transmitter data or behavioral data alone. Therefore the objectives were revised and broadened as follows.

- Refine and expand golden eagle collision hazard maps (or "risk maps") throughout the APWRA based on best available data, including data from tracking golden eagles with GPS satellite transmitters.
- Explore using observational data already collected by a biologist who performed post-construction monitoring at Buena Vista, but using the best available data—whether the onsite observational data or other data—to develop collision hazard maps for golden eagle, red-tailed hawk, and American kestrel.
- Develop collision hazard maps for the Tres Vaqueros repowering project using the best available data for golden eagle, red-tailed hawk, and American kestrel.
- Develop one or more peer-reviewed, publication-ready papers discussing the outcomes of this research towards collision hazard models.

Determine possible effects of the expansion of the Los Vaqueros Reservoir on golden eagle habitat and territory use, based on relating GPS telemetry positions to terrain measurements across the Los Vaqueros Reservoir watershed. The final report was submitted to the Conservancy in June 2017. Map-based collision hazard models went through multiple permutations from their



inception. They were originally based on simple avian use surveys that incorporated on-the minute mapping of observations during visual scans. Later versions incorporated multiple data sources from across the entire APWRA. The result was production of third-generation, map-based, collision hazard models of golden eagle telemetry positions, ridge crossing flights, wind turbine events, and wind turbine fatalities. Also produced were models of red-tailed hawk fatalities and red-tailed hawk and American kestrel hovering and kiting flights in the APWRA. Simple collision hazard models of burrowing owls based on burrow locations and fatalities at wind turbines were all produced. Vasco Winds was the first repowering project to incorporate map-based, collision hazard models in turbine siting decisions. After 3 years of operations at Vasco Winds, and compared to the old-generation wind project that preceded it, Brown et al. (2016) estimated fatality rate reductions of 75% to 82% for golden eagle, 34% to 47% for red-tailed hawk, and 48% to 57% for American kestrel, and 45% to 59% for burrowing owl. Large reductions were also achieved at the Buena Vista project, although repowering of this project was informed by siting guidelines and not collision hazard models.

The fatality reductions achieved at Vasco Winds have yet to be achieved or measured at other wind projects in the APWRA. Other repowering projects could achieve the same levels of fatality reductions, but only if the turbines are micro-sited carefully, according to the collision hazard model predictions and according to recommendations provided by Smallwood. If Tres Vaqueros was to be built as proposed in the 2011, 95% of the turbines would occur within golden eagle collision hazard class 3 or 4, and the fatality rate would like be 3.6 golden eagles per year (90%). It would be sensible to reconsider the layout and to perhaps increase the size of wind turbines to reduce the number of wind turbine locations.

Golden eagles are likely affected by the expansion of the Los Vaqueros Reservoir. Estimating the impacts of the reservoir expansion on golden eagle habitat use is complicated by lack of a before-and-after study design and by the fact that changes in the reservoir surface elevation did not proceed to its maximum “as-built” specifications due to the persistent drought during the study. Reservoir levels increased from a baseline level at the start of the study to several less-than-maximum levels in the middle of the study, and then dropped back down to nearly the same original baseline level at the end of the study. The study concluded that the reservoir expansion resulted in the loss of some golden eagle foraging habitat and that habitat may have been

principally lost as ground squirrel habitat. In addition, habitat in the expansion areas that was used by a female golden eagle occupying the Los Vaqueros Territory was reduced, and that habitat will not be available for golden eagle use in the future. Results from the study indicate that one golden eagle territory, the Windy Valley Territory, has been subsumed by eagles occupying the Los Vaqueros and Windy Valley territories, respectively, but it is unknown if this was a result of the reservoir expansion.

Special-Status and Invasive Plant Management Pilot Project

In 2014 the Conservancy conducted a literature review on medusahead (*Taeniatherum caput-medusa*) and determined that current information on these species does not provide the assurances needed by preserve managers to meet the HCP/NCCP's biological goals and objectives related to protecting and recovering rare plant populations. Additional research into rare plant germination timing and medusahead grass control was continued into 2017.

The study continued to be a high priority for the HCP/NCCP in 2017 as it provides critical information to land managers in controlling medusahead grass and will provide more specificity in timing and methods as they impact special status plant species. The lessons learned will be useful to land managers not only in the HCP/NCCP inventory area, but across California, who are working to control invasive weeds and conserve special status plan populations. The project will be divided into two parts.

1. ***Seed Germination***: Germination timing and morphology of early cotyledons of three HCP/NCCP covered plant species and one non-native grass will be documented. Seeds will be collected from wild populations and germinated in an outdoor setting allowing for ambient temperature and precipitation conditions to dictate and drive germination which may be extrapolated into understanding specific germination triggers. Two years will be dedicated to this study to account for variation in seasonal weather patterns. Weather data will also be analyzed for this period (2015–2016). The Conservancy initiated the first year of germination study in spring of 2015.

2. ***Weed Control Monitoring***: The effectiveness of weed control methods (e.g., grazing, mowing, raking, herbicide application) will be investigated using experimental plots (established in 2015). Experimental weed treatments were conducted during 2016 and 2017. Vegetation data sampling will be conducted before the treatments are implemented and for 2 years after (2015–2018).

The methodology and results of seed germination and weed control and monitoring are the most important aspects of this project as they can help inform rare plant management and weed control for these species within the local distribution but also throughout their range in California. At the close of the study, a report will be included which details the seed germination study, weed control efforts, and post-weed control monitoring. The report, which is due in 2018 will include methods employed, results of the seed germination study related to germination timing and germination rates, results of weed control efforts by control type, and

recommendations for weed treatment timing and control method, and will identify any need for further investigations.

Bat Fatalities in the Altamont Pass Wind Resource Area

This research study began in 2017 and is scheduled to finish in June 2018. Recent research in the APWRA has revealed high fatality rates of bats. Nocturnal surveys accumulated hundreds of near misses and possible collisions with wind turbine blades or with the atmospheric pressure waves and wake turbulence created by the blade sweeps. Bats were often seen to tumble through the air and sometimes disappear around the blade sweeps. Bats were also observed targeting wind turbines, making multiple passes through operating wind turbine rotors, and chasing blades as they swept through their rotations.

There are several pressing needs associated with bat fatalities in the APWRA and elsewhere. The collision mechanisms need to be understood so that effective mitigation measures can be formulated (if possible). A better understanding is needed as to why bats are fatally injured by wind turbines, including the seasons, time periods, wind conditions, behaviors, and terrain and vegetation settings associated with fatalities. An improvement in the accuracy and precision of fatality estimates is also required by improving detection rates of available carcasses and the adjustments for the portion of the fatalities that are never found.

The study will achieve the following objectives.

- Test whether dogs are more cost-effective for finding bat and small bird fatalities than are human searchers, or whether dogs can be effectively integrated into human searches to both improve detection rates and reduce monitoring costs.
- Obtain overall searcher detection rates (*D*) for bats based on search intervals of 1-day, 3-day, and longer intervals.
- Test whether bat fatality rates measured at wind turbines correlate with passage rates measured during nocturnal surveys using a thermal camera.
- Test whether bat behavior rates and numbers of near misses correlate with bat fatality finds from daily searches.
- Identify which species of scavengers are removing bat carcasses, and explore whether the locations of bat fatality finds correlated with nocturnal mammalian and diurnal avian scavenger activity levels.

The analysis and reporting is expected to be available in June 2018.

Longhorn Fairy Shrimp Study

In 2016, the EBRPD, along with the Conservancy and Vollmar Consulting, with funding from the U.S. Bureau of Reclamation and USFWS, began a study on longhorn fairy shrimp. While the sites selected for the study are not on Conservancy Preserve properties, they are adjacent to the

Preserve at Vasco Caves and on Contra Costa Water District property. Longhorn fairy shrimp are a covered species, and the Conservancy will be providing in-kind (staff) assistance for the study. The study will run through December 2019.

Evaluation of Efficacy of Wildlife Undercrossings

This study began in November 2016 and is evaluating the efficacy of wildlife undercrossings as part of the Vasco Road safety improvements. The study will also refine camera trapping strategies targeted at amphibians. The study is being conducted by Sapere Environmental and will run through June 2018.

California red legged frog using a Vasco Road undercrossing
Photo Credit: Sapere Environmental

Invasive Species Weed Mapping

In 2017, Nomad Ecology started a pilot study using remote sensing to map invasive weeds and native bunch grasses on the Preserve System. The project will run through March 2019.

Monitoring Fossorial Mammal Burrows in Vasco Caves and Vasco Hills Preserves

This is the first small research proposal funded through the Conservancy's small grant program. It began in 2017 and will continue through 2018, with final papers completed by June 2019. Shawn Smallwood and Doug Bell (EBRPD) are monitoring the impact of different grazing strategies on ground burrows for prey base for raptors and other focal species.

Adaptive Management

Based on the best scientific information currently available, it is expected that the Plan's conservation measures will effectively achieve the biological goals and objectives. However, there is uncertainty associated with management techniques, conditions within the inventory area and region, and the status of covered species and natural communities. It is also possible that new and different management measures not identified in the Plan will be identified and proven to be more effective in achieving biological goals and objectives than those currently proposed. Alternatively, results of effectiveness monitoring may indicate that some management measures are less effective than anticipated.

Adaptive management is a method for examining current or alternative strategies for meeting measurable biological goals and objectives and, if necessary, adjusting future management actions according to what is learned. Adaptive management follows initial implementation of effectiveness monitoring and research, but it is an ongoing process utilized throughout Plan implementation.

In 2017, implementation of adaptive management was focused primarily on restoration sites. As discussed in Section IV, *Habitat Restoration and Creation*, each site was monitored to measure progress toward achieving success criteria, and management was adjusted based on monitoring results.

VII. STAY-AHEAD PROVISION

Stay-Ahead Provision

The Plan's Stay-Ahead provision requires that the Conservancy "stay ahead" by acquiring land for the Preserve System in advance of impacts. The Plan defines two compliance methods: Stay-Ahead Measurement Method #1 and Stay-Ahead Measurement Method #2. Stay-Ahead Measurement Method #1 states that the amount of each land cover type conserved to date as a proportion of the total requirement for each land cover type must be equal to or greater than the impact to date on the land cover type as a proportion of the total anticipated impact under the Maximum Urban Development Area scenario by all covered activities. This option aggregates the following land cover types: cultivated agriculture, annual grassland, alkali grassland, and ruderal. The sum of the acres of these land cover types actually acquired is measured against the sum of the respective acquisition requirements. Other terrestrial land cover types are not aggregated.

Stay-Ahead Measurement Method #2 states that the amount of annual grassland conserved by the Conservancy in Zone 2 as a proportion of the total requirement for annual grassland acquisition in Zone 2 must be equal to or greater than the impact on annual grassland and all cultivated agriculture land cover types (cropland, irrigated pasture, vineyard, orchard) as a proportion of the total impact expected under the Maximum Urban Development Area scenario on these land cover types by all covered activities. This option provides an incentive for the Conservancy to acquire land in Zone 2 early in Plan implementation as land in this Zone is likely to be more expensive and at higher risk than land in other Zones. The Conservancy must comply with at least one of these methods during the first 10 years. After Year 10, the Conservancy may use only Measurement Method #1.

Stay-Ahead Assessment

Using Stay-Ahead Measurement Method #1, the Conservancy is currently in compliance with the Stay-Ahead Provision (Table 14). The aquatic (open water) category is not ahead (-4%); however, the Plan allows a 5% deviation from the Stay-Ahead Provision requirements without penalty to account for the likely pattern of infrequent land acquisition of large parcels. For all land cover types, the percent ahead ranges from 6% to over 100%. Overall, the Conservancy is 10,441.7 acres ahead across all land cover types and 274,048.47 linear feet ahead in streams. The Conservancy is 7,652 acres ahead of the Stay-Ahead requirement for grassland and irrigated agriculture land cover types (the requirement is 932.3 acres). For plant occurrences, the Conservancy is meeting the Stay-Ahead requirement (Table 15).

Vernal Pool Crustaceans Stay Ahead

The Conservancy's preservation and creation of fairy shrimp habitat is ahead of impacts. Impacts on covered shrimp habitat include disturbances to seasonal wetlands, including vernal pools, and

their adjacent uplands by covered activities both directly through project implementation and indirectly through human intrusion, introduced species, or pollution caused by the project. Applicants who impact vernal pools must determine if the pools provide suitable habitat for covered shrimp. If vernal pools are occupied by covered shrimp then impacts must be compensated. Compensation for loss of occupied habitat is achieved by implementing the following actions for every acre of impact.

- Preserve 2 acres of occupied habitat within the Preserve System or purchase an equivalent amount of vernal pool preservation credits in a USFWS-approved mitigation bank for each acre affected.
- Restore 1 acre of suitable habitat within the Preserve System or purchase an equivalent amount of vernal pool restoration credit in a USFWS-approved mitigation bank for each acre affected.

Table 16 details the cumulative impacts on and compensation for vernal pool shrimp since Plan implementation.

Table 14. Stay-Ahead Assessment: Land Cover

	Conservation			Impact					
Land Cover Type	Protection Required (acres)	Protection, to date (acres)	% of Required	Estimated Impacts (acres)	Impacts to date (acres)	% of Impacts	Acres Required to be Ahead	Acres Ahead	% Ahead[3] (Conservation % - Impacts %)
Terrestrial									
All grassland, cropland, pasture	18,150	8,584.3	47.3%	12,148	624.0	5.1%	932.3	7,652.0	42%
Chaparral and scrub	550	242.8	44.1%	2	0.04	2.0%	11.0	231.8	42%
Oak savanna	500	382.4	76.5%	165	0.0	0.0%	0.1	382.3	76%
Oak woodland	400	2,053.2	513.3%	73	0.5	0.7%	2.9	2,050.3	513%
Subtotal terrestrial	*19,600*	*11,262.6*	*57.5%*	*12,388*	*624.6*	*5%*	*946.3*	*10,316.4*	*52%*
Aquatic									
Riparian woodland/scrub	70	65.72	93.9%	35	1.02	2.9%	2.04	63.68	91%
Perennial wetland[1]	75	5.38	7.2%	75	0.07	0.1%	0.07	5.31	7%
Seasonal wetland	168	11.90	7.1%	56	0.51	0.9%	1.52	10.38	6%
Alkali wetland	93	33.63	36.2%	31	0.14	0.4%	0.41	33.22	36%
Pond	16	10.47	65.4%	8	0.01	0.1%	0.02	10.45	65%
Reservoir (open water)[2]	12	0.00	0.0%	12	0.47	3.9%	0.47	-0.47	-4% [5]
Slough/Channel	36	3.10	8.6%	72	0.65	0.9%	0.32	2.78	8%
Subtotal aquatic	*470*	*130.20*	*27.7%*	*289*	*2.86*	*1%*	*4.85*	*125.35*	*27%*
Stream (length in linear feet)									
Perennial stream	4,224	12,625.10	298.9%	2,112	56.00	2.7%	112.00	12,513.10	296%
Intermittent stream	2,112	137,965.00	6532.4%	2,112	562.31	26.6%	562.31	137,402.69	6506%
Ephemeral stream[4]	26,400	124,430.68	471.3%	26,400	298.00	1.1%	298.00	124,132.68	470%
Subtotal stream length	*32,736*	*275,020.78*	*840.1%*	*30,624*	*916.31*	*3%*	*972.31*	*274,048.47*	*837%*
Totals									
Acres	30,300	11,392.84	38%	12,677	627.5	4.9%	951.1	10,441.7	33%
Linear feet	32,736	275,020.78	840%	30,624	916.31	3.0%	972.31	274,048.47	837%

[1] Perennial wetlands are equivalent to permanent wetlands.

[2] Reservoir (open water) is equivalent to aquatic.

[3] The Plan allows a 5% deviation from Stay-Ahead requirements. For terrestrial land cover, the Plan provides that Stay Ahead be measured against the following categories: chaparral, oak savanna, oak woodland and the sum of all grassland and irrigated agricultural land cover types.

[4] Many of the streams identified as "classification pending" will ultimately be classified as ephemeral. As such, they are tracked as ephemeral streams for the purposes of the Stay-Ahead provision.

[5] The Plan allows a 5% deviation from the Stay-Ahead Provision requirements without penalty to account for the likely pattern of infrequent land acquisition of large parcels.

Table 15. Stay-Ahead Assessment: Plants

Common Name	*Scientific Name*	Conservation	Impacts	Difference	% Ahead
Mount Diablo manzanita	*Arctostaphylos auriculata*	0	0	0	--
Brittlescale	*Atriplex depressa*	3	0	3	100%
San Joaquin spearscale	*Atriplex joaquiniana*	10	[see note[1]]	10	100%
Big tarplant	*Blepharizonia plumosa*	12	0	12	100%
Mount Diablo fairy lantern	*Calochortus pulchellus*	5	0	5	100%
Recurved larkspur	*Delphinium recurvatum*	0	0	0	--
Round-leaved filaree	*Erodium macrophyllum*	3	[see note[2]]	3	100%
Diablo helianthella	*Helianthella castanea*	12	0	12	100%
Brewer's dwarf flax	*Hesperolinon breweri*	3	0	3	100%
Showy madia	*Madia radiata*	0	0	0	--
Adobe navarretia[3]	*Navarretia nigelliformis subsp.*	0	0	0	--
Shining navarretia	*Navarretia nigelliformis subsp. Radians*	(7)	0	(7)	--
Total		**48**	**0**	**48**	

[1] Vasco Project population translocated and impact avoided (2011).

[2] Temporary impacts occurred to round-leaved filaree as part of the PG&E Contra Costa Las Positas Project. The soil was protected from disturbance, the site was returned to pre-project connections, seeds collected on site were propagated, and monitoring reports document that round-leaved filaree persists on site and is as abundant as before the project.

[3] The species *Navarretia nigelliformis* subsp. *nigelliformis* is no longer considered to occur within Contra Costa County based on specimen annotations at the UC and Jepson Herbaria at the University of California Berkeley as well as the opinions of experts in the genus. This taxon is now recognized as *Navarretia nigelliformis* subsp. *radians* . Pending further policy clarification, the Conservancy is continuing to track occurrences of shining navarretia (*Navarretia nigelliformis* subsp. *radians*).

Table 16. Vernal Pool Shrimp Stay-Ahead Summary[1]

Project Name/ Preserve Property Name	Species	Impacts to Date (acres)	Preserved Occupied to Date (acres)	Restored/ Created Occupied to Date (acres)
Deer Valley Road Safety Improvements Project, 2012	VPFS	0.060		
Chevron KLM Site 1357 Maintenance Project, 2013	Covered shrimp	0.007		
Coelho	VPFS		0.980	
Souza I	VPFS		0.001	
Souza II	VPFS		0.180	
Vaquero Farms South	VPFS		0.052	
Souza II-Corral	VPFS			0.400[2]
Vaquero Farms South Pool 1	VPFS			0.070
Vaquero Farms South Pool 3	VPFS			0.150
Casey	Covered shrimp		0.313	
Campos	VPFS		0.055	
Total		**0.067**	**1.581**	**0.620**

[1] The ECCC HCP/NCCP requires preservation and creation of vernal pool fairy shrimp habitat be ahead of impacts at a preservation ratio of 2:1 acres occupied habitat and a restoration ratio of 1:1 acre of occupied habitat. The Conservancy is in compliance with the stay-ahead requirement.

[2] The Souza II Corral wetland was innoculated in 2012 with soil from the Deer Valley Road Widening Project. VPFS have not been found during annual surveys. The Conservancy will continue to survey for 10 years (through 2022) to determine if VPFS are present.

VIII. CHANGED CIRCUMSTANCES AND REMEDIAL MEASURES

The No Surprises Regulation established by USFWS defines changed circumstances as those circumstances affecting a species or geographic area covered by an HCP that can be reasonably anticipated by the applicant or the USFWS and to which the parties preparing the HCP can plan a response. The changed circumstances identified by the Plan include non-covered species in the inventory area becoming listed, wildfires that result in the large-scale loss of natural communities, pond or wetland control structure failure, or destruction of riparian plantings from flooding, prolonged drought, and vandalism of preserves. Occurrence of a changed circumstance requires the Conservancy to notify USFWS and CDFW to determine the necessity for additional conservation or mitigation measures. If the mitigation or conservation measure has already been identified in the Plan, the Conservancy must comply with the measure. However, if the measure is not currently included in the Plan, USFWS and CDFW will not require additional mitigation or conservation measures.

In the event that an anticipated changed circumstance prohibits or damages a conservation action that meets the goals of the HCP, a remedial measure must be undertaken. Remedial measures are funded by the Plan and must be undertaken by the Conservancy.

Changed Circumstances

In the Vasco- Byron area big storms in early 2017 resulted in berm and spillway failures in seven ponds. Reinforcements of two ponds were completed in 2017 and permitting was lined up for the remaining ponds so that construction could move forward in 2018.

IX. FINANCES

Budget

The Conservancy analyzed cost projections from the HCP/NCCP, the previous years' actual costs, and the anticipated 2017 work plan to develop the 2017 Budget (Table 17). The Conservancy stayed within the budgeted amount for each cost category and within the total 2017 Budget. Overall, 2017 expenditures to implement the HCP/NCCP totaled $6,766,760.

During the reporting period, the largest budgeted item was land acquisition followed by program administration, planning and design, monitoring/research/adaptive management, and habitat restoration/creation. This focus reflects the Conservancy's continued efforts to maintain stay-ahead compliance. In addition, the Conservancy continues to make progress toward restoration requirements. Monitoring, research, and adaptive management budget and expenditures demonstrate the Conservancy's efforts to establish baseline inventories for new and existing properties.

Revenue Sources

Three main revenue sources are anticipated in the Plan.

- Fee collection: Development, wetland, rural road (for certain rural road projects), and temporary impact mitigation fees are paid to mitigate impacts on special-status species, natural communities, and open space.
- Local public funding and foundation grants: Acquisition and management of land by local agencies, primarily EBRPD, but could include partnerships with other local agencies. Voters approved several revenue measures for EBRPD in the prior decade, including Measure WW, which provide funding EBRPD may use to partner with the Conservancy. In addition, Foundation grants (e.g., Gordon and Betty Moore Foundation) are anticipated to help the Conservancy fund acquisition, management, restoration, and monitoring.
- State and federal: Funding from the state and federal governments to assemble, manage, and monitor Preserve System lands. These state and federal grants also fund restoration projects on Preserve System lands.

Revenue sources also include Contribution to Recovery charges on certain covered activities. Contribution to Recovery payments are levied on Participating Special Entities to contribute funds over and above fee requirements in order to contribute to the recovery of species in the inventory area. Lease income from Preserve System properties are also a source of revenue but are received and held by the EBRPD and used for Preserve System management activities, land acquisition, and long-term management.

A total of $6,928,674 in revenue were received by the Conservancy in 2017 (Tables 18 and 19). This amount includes development fees from covered activities ($1,510,425), wetland and stream mitigation fees from covered activities ($173,158), temporary impact fees ($252,290), Contributions to Recovery payments from covered activities ($64,640), administrative/staff time fees ($16,657), and other revenues ($29,572), and grants ($4,881,931). Local funding from partners totaled $848,188.

All grants awarded to date are summarized in Table 20. Since it began implementing the HCP/NCCP through the end of 2017, the Conservancy has been awarded $62,859,714 in grants. Of this amount, $60,518,100 has been spent and $2,180,644 remains. These amounts do not include match funding provided by partners. Since Plan implementation, EBRPD has contributed an estimated $16 million of its own funds or its grant funds.

Funding in Perpetuity

In the HCP/NCCP, annual costs to operate and maintain the Preserve System in perpetuity are estimated to be slightly less than the annual cost for program administration, preserve management, and monitoring estimated during the final funding period of the Plan, or approximately $3.0 million or $3.3 million[5] annually under the initial or Maximum Urban Development Area, respectively. Actual long-term costs may be lower if the Conservancy can develop streamlined procedures for management and monitoring during the permit term, secure partners, or reduce administrative costs. Responsibility for funding long-term management and monitoring rests solely with the Permittees.

The Conservancy is required to develop a detailed plan for the long-term funding of operation and maintenance and to secure all necessary commitments to implement this Plan before using 50% of all authorized take under the Maximum Urban Development Area (this equals 50% of 12,704 acres, or 6,352 acres) or at the end of year 15 of implementation, whichever occurs first. The Conservancy continues to plan for this requirement, and in 2014 the Conservancy Board determined to have a long-term funding plan in place by Year 10. In addition, the Conservancy has begun to secure potential sources for long-term funding. A number of Preserve System properties provide lease revenues. The Conservancy and EBRPD have agreed to dedicate a portion of the revenue from the existing leases to long-term management of the Preserve System.

Mitigation Fee Act Annual Reporting

The Annual Report also functions as the East Contra Costa County Habitat Conservancy's Annual Report on fees collected pursuant to the Mitigation Fee Act. The information for compliance with this reporting requirement is included in this document. The required elements includes

[5] This is equivalent to approximately $125 per acre per year or $110 per acre per year in operational and capital costs for Preserve System operation under the Initial or Maximum Urban Development Areas, respectively.

the following eight categories and references and information is provided where applicable for the Development Fee and the Wetland Mitigation Fee:

1. **A brief description of the type of fee in the account or fund**:

   a) The purpose of the Development Fee is to mitigate for impacts to open space, habitat and species covered by the HCP/NCCP. The Development Fee revenues will be used to fund the acquisition of land that does or could provide habitat for covered species, the management and enhancement such land and habitat and the administrative actions necessary to accomplish these tasks, as more particularly set forth in the HCP/NCCP, incorporated herein by reference.

   b) The purpose of the Wetland Mitigation Fee is to mitigate for impacts to Jurisdictional Wetlands and Waters, riparian woodland/scrub or stream buffers. The Wetland Mitigation Fee revenues will be used to fund the restoration, creation and management of Jurisdictional Wetlands and Waters and riparian woodland/scrub and the administrative actions necessary to perform these tasks, as more particularly set forth in the HCP/NCCP.

2. **The amount of the fees:**

FEE TYPE	Fees for Participating Special Entity Projects	Fees For Cities/County projects
Development Fees (per acre)		
Zone 1	$13,491.41	$14,711.45
Zone II	$26,982.82	$29,422.91
Zone III	$6,745.71	$7,356.34
Wetland Mitigation Fees (per acre, except as noted)		
Riparian woodland/scrub	$98,978.33	$76,433.07
Perennial wetlands	$145,423.14	$104,592.62
Seasonal Wetland	$337,100.98	$226,617.33
Alkali wetland	$340,512.08	$214,548.95
Ponds	$184,474.23	$113,979.13
Aquatic (open water)	$92,237.12	$57,660.03
Slough/ Channel	$134,428.18	$130,070.30
Streams 25 feet wide or less - fee per linear foot	$375.76	$623.14
Streams greater than 25 feet wide - fee per linear foot	$563.64	$938.65

3. **The beginning and ending balance of the account or fund:**

   The Conservancy beginning and ending balances are included in the financial audit that was reviewed and accepted by the Governing board of the East Contra Costa County

Habitat Conservancy on April 23, 2018. A summary of the finances including beginning and ending balance, revenue (which includes mitigation fees collected, grants, contribution to recovery fees, and administrative fees), interest earned, and funds expended is summarized here:

	Beginning Balance	Revenue	Interest Earned	Expended Funds	Ending Balance
Total Balance	$2,781,528	$6,904,296	$24,377	$6,766,760	$2,619,615

4. **The amount of the fees collected and the interest earned:** See Tables 18 and 19.
5. **An identification of each public improvement on which fees were expended and the amount of the expenditure on each improvement, including the total percentage of the cost of the public improvement that was funded with the fees:** See Tables 8b and 13a.
6. **An identification of an approximate date by which the construction of the public improvement will commence if the Board determines that sufficient funds have been collected to complete financing on an incomplete public improvement, and the public improvement remains incomplete:** On June 4, 2018 the Conservancy Governing Board approved the construction of the Horse Valley Creek and Wetland Restoration Project. Construction is expected to start no later than August 1, 2018 and is expected to be complete by October 31, 2018.
7. **A description of each interfund transfer or loan from the account or fund, including the public improvement on which the transferred or loaned fees will be expended, and, in the case of an interfund loan, the date on which the loan will be repaid, and the rate of interest that the account or fund will receive on the loan:** Not Applicable.
8. **The amount of refunds made pursuant to Government Code section 66001€ and any allocations pursuant to Government Code section 66001 (f):** Not Applicable.

Table 17. 2017 Conservancy Budget: Expenditures and Comparison to Budget Projections

	HCP/NCCP Projected Cost Estimate			2017 Budget by Revenue Source					2017 Expenditures
Cost Category	Years 6-10	Average Cost Per Year (Years 6-10)	% of Total	Development Fee Account	Wetland Mitigation Fee Account	Contributions to Recovery/ Grant Funding	TOTAL	% of Total	Total Expenditures for 2017
Program Administration and Permitting Program	$2,317,255	$436,451	5%	$967,198	$0	$130,000	$1,097,198	7%	$1,072,837
Land Acquisition	$23,224,521	$4,644,904	55%	$629,547	$0	$11,050,000	$11,679,547	77%	$4,942,379
Management, Restoration and Recreation Planning and Design	$1,365,238	$473,835	3%	$165,312	$283,755	$0	$449,067	3%	$242,698
Habitat Restoration/ Creation	$7,015,158	$1,403,032	17%	$0	$1,092,401	$150,000	$1,242,401	8%	$122,647
Environmental Compliance	$567,600	$113,520	1%	$92,136	$45,528	$0	$137,664	1%	$119,049
HCP/NCCP Preserve Management and Maintenance	$4,772,670	$954,534	11%	$223,832	$0	$0	$223,832	1%	$76,588
Monitoring, Research, and Adaptive Management	$2,074,364	$414,873	5%	$109,832	$0	$170,000	$279,832	2%	$190,563
Remedial Measures	$30,000	$6,000	0%	$6,000	$0	$0	$6,000	0%	$0
Contingency Fund (5% of non-land acquisition costs)	$806,197	$161,239	2%	$0	$0	$121,800	$121,800	1%	$0
TOTAL	$42,173,003	$8,608,388	100%	$2,193,856	$1,421,683	$11,621,800	$15,237,339	100%	$6,766,760

Table 18. Summary of All Revenues Received

Type	Reporting Period	Cumulative[1]
Development Fees (permanent and temporary impacts)	$1,738,476	$9,221,600
Wetland Mitigation Fees (permanent and temporary impacts to aquatic features)	$197,398	$914,900
Contributions to Recovery	$64,640	$1,405,500
Other Revenue[2]	$46,229	$3,792,100
Grants	$4,881,931	$60,518,100
Local Matching Funds[3]	$848,188	$24,832,800
Total	**$7,776,861**	**$93,522,600**

[1] Amounts are rounded

[2] Other includes interest earnings, administrative and staff time, contribution from EBRPD for the ECCC HCP/NCCP 10-Year Anniversary, and reimbursements. Includes pre-HCP payments in *Cumulative Total.*

[3] Includes grants awarded to local partners. Grants awarded to the Conservancy are shown in *Grants* . Estimates of EBRPD land acquisition due diligence costs and preserve management expenditures are also included.

Table 19. Summary Accounting of Fee and Grant Revenues Received in Reporting Period

Type	Amount
Mitigation Fees for Terrestrial Impacts (permanent impacts)	
Balfour Road Shoulder Widening	$104,610
Byron Highway - Camino Diablo Intersection	$2,430
Gilbert (Phase I)	$30,158
Gilbert (Phase I Grading)	$30,158
Gilbert (Phase I Grading)	$608,907
Garin Ranch Basin and Heron Park Basin Improvements	$6,341
Canal Road Bridge Replacement Project	$135
Gilbert Stockpile	$105,552
Oakley Gateway 7-11 & Self-Storage Project	$53,403
Sellers Pointe (City of Brentwood)	$203,312
Palemro Project (City fo Brentwood)	$277,164
Oakley Recreation Center (City of Oakley)	$63,171
Verna Way (City of Clayton)	$14,418
Executive RV & Boat Storage Phase 2 (City of Oakley)	$9,857
Morgan Territory Road Slide Repair Project	$809
Development Fees subtotal	*$1,510,425*
Mitigation Fees for Terrestrial Impacts (temporary impacts)	
Phillips 66 Line 200 Anomaly Investigation/Repair Spring 2017	$5,294
Phillips 66 Line 200 Anomaly Investigation/Repair Spring 2017	$112
Phillips 66 Line 200 Anomaly Investigation/Repair Spring 2017	$11,159
Phillips 66 Line 200 Anomaly Investigation/Repair Winter 2016	$4,723
Balfour Road Shoulder Widening	$9,250
Byron Highway - Camino Diablo Intersection	$375
Shell Pipeline North 20 EBRPD Repair Sites 11-14	$12,970
Garin Ranch Basin and Heron Park Basin Improvements	$3,546
Canal Road Bridge Replacement Project	$396
Phillips 66 Line 200 Anomaly Investigation/Repair Summer 2017	$40,465
PG&E Walnut Crossover Rebuild Project	$25,715
Columbia Solar (City of Pittsburg)	$52,157
Upper Sand Creek Basin, Temporary Stockpile Soil	$12,061
Upper Sand Creek Basin, Adaptive Management Work	$899
Morgan Territory Road Slide Repair Project	$48,929
Mitigation Fees subtotal	*$228,050*
Wetland Mitigation Fees (permanent impacts to aquatic features)	
Garin Ranch Basin and Heron Park Basin Improvements	$43,259
Moita Road Improvement Project	$23,679
Gilbert (Phase I Grading)	$106,220
Wetland Mitigation Fees subtotal	*$173,158*
Wetland Mitigation Fees (temporary impacts to aquatic features)	
Garin Ranch Basin and Heron Park Basin Improvements	$24,240
Wetland Mitigation Fees subtotal	*$24,240*
Contributions to Recovery	
Phillips 66 Line 200 Anomaly Investigation/Repair Spring 2017	$5,341
Phillips 66 Line 200 Anomaly Investigation/Repair Winter 2016	$4,723
Shell Pipeline North 20 EBRPD Repair Sites 11-14	$11,485
Phillips 66 Line 200 Anomaly Investigation/Repair Summer 2017	$25,233
PG&E Walnut Crossover Rebuild Project	$17,857
Contribution to Recovery subtotal	*$64,640*
Other Revenue (Admin/Staff Time Fees for Participating Special Entities, Interest, Miscellaneous)	
Shell Pipeline North 20 EBRPD Repair Sites 11-14 (Admin/Staff Time)	$1,360
Phillips 66 Line 200 Anomaly Investigation/Repair Winter 2016	$4,082
EBRPD Foundation for 10-Year Anniversary Celebration (Sponsorship)	$5,000

Table 19. Summary Accounting of Fee and Grant Revenues Received in Reporting Period

Type		Amount
SR4/Balfour Road Interchange Improvements Project (Admin/Staff Time)		$11,215
Pooled Interest Earnings		$24,377
Miscellaneous		$195
Other subtotal		*$46,229*
Grants[1]	**Source**	
USFWS Section 6 FY14 for Campos Acquisition	Federal	$241,800
WCB Prop 117 for Campos Acquisition	State	$226,200
USFWS Section 6 for FY12 Viera North Peak Acquisition	Federal	$432,600
USFWS Section 6 FY15 for Viera North Peak Acquisition	Federal	$220,400
WCB Prop 84 for Viera North Peak Acquisition	State	$427,000
USFWS Section 6 FY14 for Roddy Home Ranch Acquisition	Federal	$680,600
USFWS Section 6 FY15 for Roddy Home Ranch Acquisition	Federal	$10,600
WCB Prop 84 for Roddy Home Ranch Acquisition	State	$307,200
Contra Costa Avian Fund (NFWF) for Casey Acquisition	State	$28,000
USFWS Section 6 FY14 for Casey Acquisition	Federal	$1,077,600
WCB Prop 84 for Casey Acquisition	State	$1,055,800
CDFW LAG Grant P1582104	State	$17,886
CDFW LAG Grant P1682906	State	$27,606
CDFW Prop 1 Grant P169607 for Knightsen Wetland Restoration and Flood Protection Project	State	$76,237
CDFW LAG Grant P1682906	State	$8,640
CDFW LAG Grant P1682905	State	$39,217
CDFW LAG Grant P1582104	State	$4,545
Grants subtotal		*$4,881,931*
Local Matching Funds		
EBRPD (Campos Purchase Price)		$52,000
EBRPD (Campos Due Diligence and Closing Costs)		$2,682
EBPRD (Roddy Home Ranch Purchase Price)		$537,600
EBRPD (Roddy Home Ranch Due Diligence and Closing Costs)		$15,906
EBRPD (Casey Purchase Price)		$240,000
Local funding subtotal		*$848,188*
Total		**$7,776,861**

[1] Grants awarded to the Conservancy for implementation of the HCP/NCCP's conservation strategy

Table 20. Grants Awarded to Conservancy for Implementation of East Contra Costa County HCP/NCCP[1]

Funding Source	Agency	Purpose	Amount	Required Match	Expended through 2017	Remaining	Grant Close Date	Complete
Section 6 (2006)	USFWS admin. by WCB	Acquisition	$6,531,054	$7,982,399	$6,531,054	$0	June 2010	Y
Section 6 (2007)	USFWS admin. by WCB	Acquisition	$7,000,000	$8,555,600	$7,000,000	$0	June 2011	Y
Section 6 (2008)	USFWS admin. by WCB	Acquisition	$6,000,000	$7,333,333	$5,934,114	$0	Feb 2013	Y
Section 6 (2009)	USFWS admin. by WCB	Acquisition	$2,500,000	$3,055,556	$2,500,000	$0	Aug 2014	Y
Section 6 (2010)	USFWS admin. by WCB	Acquisition	$6,000,000	$7,333,333	$6,000,000	$0	Aug 2014	Y
Section 6 (2011)	USFWS admin. by WCB	Acquisition	$4,463,936	$5,455,922	$4,463,936	$0	Oct 2016	Y
Section 6 (2012)	USFWS admin. by WCB	Acquisition	$1,000,000	$1,222,222	$1,000,000	$0	Sep 2016	Y
Section 6 (2014)	USFWS admin. by WCB	Acquisition	$2,000,000	$2,444,444	$2,000,000	$0	Dec 2017	Y
Section 6 (2015)	USFWS admin. by WCB	Acquisition	$2,000,000	$2,444,444	$240,000	$1,760,000	Oct 2018	
CVPIA - HRP	USBR	Acquisition	$1,241,631	$500,000	$1,241,631	$0	Sep 2010	Y
IRWMP - Prop 50	SWRCB	Acquisition or restoration	$750,000	$500,000	$750,000	$0	June 2012	Y
IRWMP - Prop 50 (reprogrammed)	SWRCB	Acquisition or restoration	$1,400,000	$500,000	$1,400,000	$0	Mar 2012	Y
IRWMP - Prop 84	DWR	Acquisition or restoration	$650,000	$216,667	$650,000	$0	Dec 2014	Y
NCCP Local Assistance (P0630019)	CDFW	Historical Ecology and Implementation	$120,000	$0	$120,000	$0	Mar 2009	Y
NCCP Local Assistance (P0730010)	CDFW	Start-up Restoration	$60,000	$120,000	$60,000	$0	Dec 2008	Y
NCCP Local Assistance (P0882016)	CDFW	Souza 2 Wetland Restoration Project	$150,000	$0	$125,100	$0	April 2011	Y
NCCP Local Assistance (P0982030)	CDFW	Hess Restoration Project	$150,000	$111,000	$150,000	$0	Mar 2012	Y
NCCP Local Assistance (P1082019)	CDFW	Wetland and rare plant inventory	$27,000	$0	$27,000	$0	April 2013	Y
NCCP Local Assistance (P1082020)	CDFW	Effective Monitoring Plan	$50,000	$0	$50,000	$0	April 2013	Y
NCCP Local Assistance (P1082021)	CDFW	Restoration Project Monitoring/Management	$85,000	$0	$85,000	$0	April 2013	Y
NCCP Local Assistance (P1182103)	CDFW	Baseline Inventory	$40,000	$0	$40,000	$0	April 2014	Y
NCCP Local Assistance (P1182104)	CDFW	Restoration Project Monitoring/Management	$50,000	$0	$50,000	$0	April 2014	Y
NCCP Local Assistance (P1182105)	CDFW	Preserve Management Plan Development	$75,000	$0	$75,000	$0	April 2014	Y
NCCP Local Assistance (P1282108)	CDFW	Ang Pond Restoration Project	$95,000	$0	$24,816	$0	April 2015	Y
NCCP Local Assistance (P1382112)	CDFW	Baseline Inventory	$60,157	$0	$60,157	$0	Mar 2016	Y
NCCP Local Assistance (P1582104)	CDFW	Rare and Invasive Plant Management	$50,000	$0	$44,170	$5,830	Mar 2018	
NCCP Local Assistance (P1682905)	CDFW	Native Bunchgrass and Invasive Weed Mapping	$50,100	$0	$39,217	$10,883	Mar 2019	
NCCP Local Assistance (P1682906)	CDFW	Baseline Sampling for CRLF, CTS, and WPT Habitat	$50,000	$0	$36,246	$13,754	Mar 2019	
Prop 1 (P1696007)	CDFW	Knightsen Wetland Restoration and Flood Protection	$240,000	$0	$109,838	$130,162	Sept 2019	
EQIP	NRCS	Ang riparian planting, fencing, cattle trough	$75,585	$0	$0	$75,585	Dec 2018	
Gordon and Betty Moore Foundation	-	Acquisition Fox Ridge	$880,000	50% desired	$880,000	$0	Dec 2009	Y
Gordon and Betty Moore Foundation	-	Acquisition and Research Souza 3	$2,250,000	50% desired	$2,066,969	$183,031	On-going	
Gordon and Betty Moore Foundation	-	Acquisition Fan, Galvin, Moss Rock, VF Central	$1,300,000	50% desired	$1,300,000	$0	Jan 2012	Y
Gordon and Betty Moore Foundation	-	Acquisition of Roddy Ranch	$1,000,000	$0	$1,000,000	$0	July 2014	Y
Prop 84 NCCP account	WCB	Acquisition of Barron	$973,930	$0	$973,930	$0	Feb 2012	Y
Prop 84 NCCP account	WCB	Acquisition of Thomas	$1,842,966	$0	$1,842,966	$0	June 2012	Y
Prop 84 NCCP account	WCB	Acquisition of Affinito	$1,005,750	$0	$1,005,750	$0	Dec 2012	Y
Prop 84 NCCP account	WCB	Acquisition of Vaquero Farms Central	$230,000	$0	$230,000	$0	Dec 2012	Y
Prop 84 NCCP account	WCB	Acquisition of Thomas North	$388,755	$0	$388,755	$0	Aug 2013	Y
Prop 84 NCCP account	WCB	Acquisition of Smith	$2,260,275	$0	$2,260,275	$0	July 2014	Y
Prop 84 NCCP account	WCB	Acquisition of Roddy Ranch	$4,841,875	$0	$4,841,875	$0	July 2014	Y
Prop 84 NCCP account	WCB	Acquisition of Viera/Perley	$877,500	$0	$877,500	$0	July 2014	Y
Prop 84 NCCP account	WCB	Acquisition of Viera North Peak	$427,000	$0	$427,000	$0	July 2017	Y

Prop 84 NCCP account	WCB	Acquisition of Roddy Home Ranch	$307,200	$0	$307,200	$0	Oct 2017	Y
Prop 84 NCCP account	WCB	Acquisition of Casey	$1,055,800	$0	$1,055,800	$0	Oct 2017	Y
Prop 117	WCB	Acquisition of Campos	$226,200	$0	$226,200	$0	May 2017	Y
Contra Costa Avian Fund	NFWF	Acquisition of Casey/Raptor Habitat	$28,000	$0	$26,600	$1,400		
			$62,859,714	**$47,937,420**	**$60,518,100**	**$2,180,644**		

[1] Funding from partners not included. EBRPD has contributed over $16 million of its own funds or its grants funds to joint land acquisitions.

Acronyms:

CDFW: California Department of Fish and Wildlife

CVPIA HRP: Central Valley Project Improvement Act Habitat Restoration Program

DWR: Department of Water Resources

EBRPD: East Bay Regional Park District

EQIP: Environmental Quality Incentives Program

IRWMP: Integrated Regional Water Management Plan

NCCP: Natural Community Conservation Plan

NFWF: National Fish and Wildlife Foundation

NRCS: Natural Resource Conservation Service

Section 6: Cooperative Endangered Species Conservation Fund, HCP Land Acquisition (authorized in Section 6 of federal Endangered Species Act)

SWRCB: State Water Resources Control Board

USBR: United States Bureau of Reclamation

USFWS: United States Fish and Wildlife Service

WCB: California Wildlife Conservation Board, affiliated with CDFW

X. PROGRAM ADMINISTRATION

Minor and Major Amendments

The Conservancy made no minor or major amendments to the Plan during the reporting period.

Implementation Policies

The Conservancy did not develop any new implementation policies during the reporting period.

Coordinated Wetland Permitting

Background and 2017 Achievements

The HCP/NCCP was designed to conserve not only endangered species, but wetlands and waters that provide habitat for these species and support other natural resource functions and values. This approach was intended, in part, to enable permit streamlining to extend beyond endangered species and to include regional permitting under state and federal laws for impacts on jurisdictional wetlands and waters. The interest in integrating federal and state wetland permitting into the HCP/NCCP process is the same as the articulated purpose of the Plan—to benefit stream and wetland resources by conserving these resources in a more coordinated and comprehensive fashion on a regional scale and to provide an integrated, coordinated approach to permitting in lieu of the often inefficient and costly project-by-project approach.

Discussions with U.S. Army Corps of Engineers (Corps), U.S. Environmental Protection Agency, State Water Resources Control Board (State Water Board), the Regional Water Quality Control Boards (Regional Water Boards), CDFW, and USFWS regarding this parallel approach to compliance with wetlands regulations started in 2002 during the early stages of developing the HCP/NCCP. Coordinating wetlands regulation with HCPs is a difficult process in part because there is no precedent.

On May 4, 2012, the Corps issued a Regional General Permit (RGP) related to the HCP/NCCP. On April 30, 2012, USFWS issued a Biological Opinion on the RGP. The issuance of the RGP and Biological Opinion are important milestones for the overall goals of the HCP/NCCP. On June 6th 2017, the USACE re-issued RGP 1 with a new expiration date of June 6, 2022. To date, 16 covered projects and two Conservancy restoration projects have received permit coverage through the RGP.

Summary of Regional General Permit and Associated Biological Opinion

The RGP is designed to streamline wetland permitting in the HCP/NCCP inventory area by coordinating the avoidance, minimization, and mitigation measures in the Plan with the Corps' wetland permitting requirements. Projects eligible to apply for the RGP are those covered by the HCP/NCCP that meet specified wetland impact limitations (i.e., wetland impacts are less than 1.5 acres). The RGP has a greater impact threshold than the Corps' existing Nationwide Permit Program, which limits wetland impacts to 0.5 acre.

The USFWS Biological Opinion for the RGP relies on the HCP/NCCP for mitigation measures and eliminates the need for the Corps to consult individually with USFWS for each project covered by the RGP. The term of the Biological Opinion corresponds with the 30-year term of the HCP/NCCP. By regulation, RGPs must be renewed every 5 years, but in this case, a new Biological Opinion would not be needed, and on June 6, 2017, the Corps re-issued RGP 1 with a new expiration date of June 6, 2022.

With the RGP in place, project proponents will still apply directly to the wetland agencies for their wetland permits. However, due to the close match between HCP/NCCP and RGP permit conditions, the process will be expedited and improved. Key improvements include the following.

- Consistent mitigation ratios and offsite mitigation requirements, which makes it possible to satisfy Corps requirements with HCP/NCCP fees (see *Proposed In-Lieu Fee Instrument/Program* below).
- Consistent emphasis on regional avoidance to avoid "postage-stamp" conservation on project sites that can hinder projects and compromise the functions and values of conserved resources.
- Consistent, regional, watershed approach to conserving wetlands, waters, and species, which will maximize the value and sustainability of conservation actions.

Currently, the RGP only relates to Clean Water Act Section 404 permits, those issued by the Corps, but discussions are ongoing with the State Board and Regional Water Boards to coordinate their requirements with the RGP and HCP/NCCP. This coordination would lead to further permitting assurances and streamlining.

Proposed In-Lieu Fee Instrument/Program

The In-Lieu Fee (ILF) Instrument is the agreement with the Corps and U.S. Environmental Protection Agency (and possibly other agencies such as the State Water Board and Regional Water Boards) that will sanction payment of HCP/NCCP fees as eligible mitigation under the RGP. The ILF Instrument will also provide the Corps and other signatories with oversight of the Conservancy's use of the fees. The resulting ILF program would comply with the recent federal *Compensatory Mitigation for Losses of Aquatic Resources* (Mitigation Rule; 33 [Code of Federal Regulations] CFR Part 332). The proposed ILF program would be implemented in conjunction with

the RGP and HCP/NCCP. Until the ILF program is in place, an interim mitigation strategy is needed to enable payment of HCP/NCCP fees to satisfy RGP requirements. The Conservancy has initiated work with the regulatory agencies to develop an in-lieu fee instrument that would be aligned with HCP/NCCP.

Interim Strategy

With the RGP issued, but the ILF program not yet in place, an interim strategy is needed to coordinate mitigation required under the RGP with HCP/NCCP mitigation fees. The Corps' proposed approach is *permittee-responsible compensatory mitigation*, an option defined in Mitigation Rule 33 CFR Part 332. Under this approach, until the ILF is approved, the Conservancy will designate a portion of its existing wetland restoration sites as compensatory mitigation for an applicant's project, and this will fulfill the applicant's Section 404 compensatory mitigation requirements under the RGP. The Corps initially approved using this interim strategy for up to 1 year. In 2014, the Corps approved extending the interim strategy until the ILF program is approved to replace it. Before one or more of the Conservancy's existing wetland restoration sites is deemed eligible by the Corps for permittee-responsible mitigation purposes, the Conservancy must submit detailed information to the Corps on the site. This information includes point-by-point documentation of how the site complies with each requirement of the Mitigation Rule for a final mitigation plan (33 CFR 332.4[c] 2-14). For the Conservancy's existing wetland restoration projects, the required documentation already exists in the form of construction plans and mitigation and monitoring plans for each project. The Corps will, however, require detailed quarterly and annual monitoring reports on the performance of the restoration projects used by the interim strategy.

Mitigation Fee Audit and Update

The HCP/NCCP requires automatic annual adjustments to HCP/NCCP mitigation fees based on economic indices as well as periodic audits in years 3, 6, 10, 15, 20, and 25 of Plan implementation. These periodic audits assess whether changes in HCP/NCCP implementation costs over time require additional fee adjustment. A periodic audit was completed in 2011 to assess HCP/NCCP costs through Year 3 of Plan implementation.

The Conservancy Board originally approved the changes to HCP/NCCP mitigation fees on July 22, 2011, after first considering the item on March 21, 2011. However, on May 10, 2012, after the Pittsburg City Council's consideration of the Conservancy's 2011 fee recommendations generated concern and comment, the Conservancy Board considered detailed, critical comment on fee changes and response from staff and the original economic team. On July 26, 2012, the Conservancy Board commissioned a new Periodic Fee Audit and directed staff to solicit proposals. On August 20, 2012, the Board approved the selection of a team assembled by Willdan Financial services and led by Robert Spencer of Urban Economics to perform the Periodic Fee Audit, including the information necessary to support the nexus findings the participating cities and the County may make under the Mitigation Fee Act. The Willdan team completed the *East Contra*

Costa County HCP/NCCP Mitigation Fee Audit (Willdan Financial Services 2012a) and *HCP Fee Burden Analysis* (Willdan Financial Services 2012b). Staff posted these materials on the Conservancy website and notified the Conservancy mailing list on December 22, 2012.

On January 23, 2013, the Board considered the fee item and received a presentation on it from Mr. Spencer. The Board received public comment on the matter, authorized Conservancy staff to perform additional work in the interim, and scheduled action on it for the next meeting. Prior to the April 4, 2013, Board meeting, the Board received an updated version of the fee audit report entitled, *East Contra Costa County HCP/NCCP Mitigation Fee Audit and Nexus Study, Final Report*, March 2013 (2013 Fee Report; Willdan Financial Services 2013). The changes made to the Report between December and March were minor. The 2013 Fee Report recommended a reduction to development fees, a reduction in stream fees, and increases to other wetland mitigation fees. The Conservancy Board approved 2013 Fee Report and other related actions at the June 27, 2013, Board meeting.

The Conservancy initiated work on the 2017 mitigation fee audit and update in late 2016. Urban Economics and Hausrath Economics Group completed the mitigation fee audit in early 2017. This was presented to the Conservancy Board as a draft and informational update in June 2017.

Other Activities

Public Outreach/Engagement

Ten-Year Anniversary of the Conservancy

The Conservancy celebrated its 10-year anniversary in 2017 and marked the occasion with several activities. Many of the ideas for celebrating the Conservancy's 10 years were generated by the Conservancy's Public Advisory Committee. Some of the activities included in the celebration included the following.

- "Preserved Forever" signs were installed along the Vasco Road corridor to inform residents that the areas (on both sides of the road) have been acquired and conserved. Additional signage may be installed in the Kirker Pass Road corridor, though this installation has not yet been scheduled.
- Conservancy staff collaborated with EBRPD, Nomad Ecology, Save Mount Diablo, and the California Native Plant Society - East Bay Chapter to lead hikes throughout Preserve System properties, which are not currently open to the public. The hike leaders donated their time to these activities. The following hikes were conducted throughout 2017.
    - March 12 and 13: Byron-Vasco Area, Hike Leader: Nomad Ecology
    - April 2: Smith Property, Hike Leader: CNPS

- April 9 and 10: Roddy Ranch, Hike Leader: Nomad Ecology
- May 13: Irish Canyon, Hike Leader: SMD
- June 5: Kreigor Peak Area, Hike Leader: Nomad Ecology
- July 22: Chaparral Spring, Hike Leader: SMD
- September 23: Hanson Hills, Hike Leader: SMD
- October 28: Thomas Home Ranch, Hike Leader: SMD

- The Conservancy partnered with EBRPD to hire Stephen Joseph to photograph the Preserve System properties. Stephen Joseph, a local photographer well known for his work documenting Mount Diablo and a long-time supporter of Bay Area conservation efforts explored the Preserve for over 9 months. The photographs are available for the Conservancy and EBRPD to use in materials (several are included throughout this Annual Report), presentations, and at events.

Public Hike on Kreigor Property
Photo Credit: East Contra Costa County Habitat Conservancy

- A celebratory event on was held on September 14, 2017, at Roddy Ranch Home Ranch. This was an opportunity to convene federal, state, and local partners as well as others involved in Plan development and implementation.

Volunteer Engagement

- Over 40 volunteers providing 212 man-hours working with Save Mount Diablo continued to work on weed abatement tasks at Irish Canyon and installed 192 riparian plantings on the Ang property.

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XII. LIST OF PREPARERS

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APPENDIX A: GLOSSARY

Definitions of Key Terms and Concepts

Adaptive management. A method for examining alternative strategies for meeting measurable biological goals and objectives and, if necessary, adjusting future conservation management actions according to what is learned (*65 Federal Register 106*; June 1, 2000). (See also Chapter 7 for alternative but similar definitions of adaptive management.)

Anthropogenic. Caused or produced through human agency.

Baseline. The existing environmental state, which includes past and present impacts as well as the anticipated impacts of all permitted projects in the inventory area.

Biological opinion. The document stating the opinion of the U.S. Fish and Wildlife Service and/or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service regarding whether a federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat (*50 Code of Federal Regulations* [CFR] *402.02*). A biological opinion is one of the decision documents of a consultation under Section 7 of the federal Endangered Species Act.

Biodiversity. The variety of organisms considered at all levels, from genetic variants of a single species through arrays of species to arrays of genera, families, and higher taxonomic levels; includes the variety of ecosystems.

Buffer areas. Designated zones of agricultural lands, grassland, or other habitat types adjacent to preserves that are intended to prevent or reduce the undesired intrusion of biota, harmful materials, or disturbances into the preserve, as well as the movement of covered wildlife species from preserve areas into adjoining areas.

Conservation. According to the federal Endangered Species Act (Section 3[3]), the terms *conserve*, *conserving*, and *conservation* are defined as the methods and procedures necessary to bring any endangered or threatened species to the point at which the measures provided under the Act are no longer necessary. Such methods and procedures include, but are not limited to, activities associated with resource management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transportation. The Natural Community Conservation Planning Act defines *conserve*, *conserving*, and *conservation* as the use of methods and procedures within the plan area that are necessary to bring any covered species to the point at which the measures provided pursuant to Chapter 1.5 are not necessary, and for covered species that are not listed pursuant to Chapter 1.5 to maintain or enhance the condition of a species so that listing pursuant to Chapter 1.5 will not become necessary.

Conservation measure. A management action that, when implemented, will partially or wholly achieve Plan objectives for covered species, natural communities, biodiversity, or ecosystem function.

Conserved habitat. Species habitat that is protected, enhanced, and/or restored under the Plan.

Construction monitoring. Monitoring by biologists of construction activities to ensure that conservation measures are implemented and impacts on biological resources are avoided or minimized in accordance with Plan requirements.

Contribute to recovery. Actions that measurably increase the baseline conditions necessary to support covered species and contribute to the eventual de-listing of a listed species or prevention of listing of an unlisted species. A contribution to recovery does not include actions necessary to avoid, minimize, or mitigate impacts of covered activities.

Cover (e.g., canopy cover, areal cover). The area of ground covered by vegetation of particular species or vegetation type, generally expressed as a percentage.

Covered species. Those species addressed in the Plan for which conservation measures will be implemented and for which the permittee seeks authorization for take under Section 10 of the federal Endangered Species Act and Section 2081 of the California Endangered Species Act.

Critical habitat. An area designated as critical habitat by the U.S. Fish and Wildlife Service pursuant to the federal Endangered Species Act. Critical habitat areas are specific geographic areas, whether occupied by listed species or not, that are determined to be essential for the conservation and management of listed species, and that have been formally described and designated in the Federal Register.

Dominance. The extent to which a given species predominates a community by virtue of its size, abundance, or coverage.

Ecosystem. A community of organisms and their physical environment interacting as an ecological unit.

Ecosystem function. The sum total of processes operating at the ecosystem level, such as the cycling of matter, energy, and nutrients.

Ecosystem restoration. The reestablishment of ecological functions within an area that historically supported those functions.

Environmental gradient. A shift in physical and ecological parameters, as characterized by transition zones between land cover types and natural communities or topographic gradients across a landscape.

Ephemeral stream. A stream that flows only in response to rain events and receives no groundwater input.

Executive Director. The Executive Director leads the Implementing Entity, and is responsible for Plan implementation, staff management, funding acquisition, and other managerial duties.

Extinct species. A species no longer in existence.

Extirpated species. A species no longer surviving in regions that were once part of its range.

Fossorial. Adapted for digging or burrowing into the ground.

Geographic Information System (GIS). Computer-based mapping technology that manipulates geographic data in digital layers and enables one to conduct a wide array of environmental analyses.

Goal. A broad, guiding principle that identifies an expected outcome of the Plan. Conservation strategy goals describe the desired future condition for each covered species with full implementation of the Plan.

Habitat. The environmental conditions that support occupancy of a given organism in a specified area (Hall et al. 1997). In scientific and lay publications, habitat is defined in many different ways and for many different purposes. For the purpose of the Plan, habitat is defined as the specific places where the environmental conditions (i.e., physical and biological conditions) required to support occupancy by individuals or populations of a given species are present. Habitat may be occupied (individuals or population of the species are, or have recently been, present) or unoccupied (see *unoccupied habitat* below).

Habitat creation. The establishment of a vegetation community in an area that did not previously support it. For example, stock ponds can be created in areas that previously did not support them by grading and installing a check dam.

Habitat enhancement. The improvement of an existing degraded vegetation community. Enhancement involves improving one or more ecological factors, such as species richness, species diversity, overall vegetative cover, or wildlife value. Enhancement activities typically occur on substrates that are largely intact.

Habitat-limited. A habitat-limited species is one whose abundance, distribution, or reproduction is limited by the availability or quality of suitable habitat. See *suitable habitat*.

Habitat quality. The ability of the environment to provide conditions that support the persistence of individuals and populations. The precise meaning of quality varies by species and depends on the subject species' specific needs in the context of a particular area. High-quality habitat for some species comprises only foraging and resting elements; for others it comprises foraging, resting, and nesting elements; for still others it may encompass all elements needed for the species to complete its lifecycle. Low-quality habitat would include only the minimal elements that support occurrence of the species. High-quality habitat tends to support larger numbers of species than low-quality habitat.

Habitat quantity. The area of the environment that supports or could support occupancy of a given organism.

Habitat replacement. To replace habitat is to mitigate habitat loss by enhancing or restoring habitat equivalent to or greater than the habitat lost.

Habitat restoration. The establishment of a vegetation community in an area that historically supported it, but no longer supports it because of the loss of one or more required ecological factors. Restoration may involve altering the substrate to improve a site's ability to support the historic vegetation community.

Harass. An intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (*50 CFR 17.3*).

Harm. An act that actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (*50 CFR 17.3*).

Hydrology. The movement of surface and subsurface water flows in a given area. The hydrology of an area is intimately connected with its precipitation, soils, and topography.

Incidental take. Any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (*50 CFR 17.3*).

In-kind/like-value creation. Establishing the same vegetative community that would provide the same ecological values over time as the vegetation community affected. For example, creating an artificial vernal pool that supports species similar to those found in an affected vernal pool would be in-kind/like-value creation.

Intermittent stream. A stream that is supplied by both rainfall runoff and groundwater. Intermittent streams tend to be seasonal, flowing during the rainy season and into the late spring or early summer.

Jurisdictional wetlands and waters. State and federally regulated wetlands and other water bodies that cannot be filled or altered without permits from either the Corps under Section 404 of the Clean Water Act, the State Water Resources Board, or the Regional Water Quality Control Boards under either Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act, or the CDFW under Fish and Game Code Section 1602, as of the date the Plan takes effect.

Land cover type. The dominant feature of the land surface discernible from aerial photographs and defined by vegetation, water, or human uses.

Land-use designation. The designation, by parcel, in an adopted city or county General Plan of the allowable uses.

Loss of habitat. A reduction in habitat quality or quantity that results from an adverse change in an environmental condition. Environmental conditions may include cover, substrate, channel type, interacting species, river area, reservoir area, water quality, and groundwater depth.

Metapopulation. A group of partially isolated populations belonging to the same species that are connected by pathways of immigration and emigration. Exchange of individuals occurs between such populations, enabling recolonization of sites from which the species has recently become extirpated.

No-take species. Species for which take is not authorized under this Plan. In order to comply with the terms of the Plan, applicants for coverage under the Plan must avoid all direct and indirect impacts on no-take species. See Table 5-3 of the HCP/NCCP for a list of no-take species.

Out-of-kind/like-value. Establishing a similar, but not identical, vegetative community with some of the same ecological functions and values as the affected vegetative community over time.

Perennial stream. A year-round stream that is supplied by both rainfall runoff and groundwater, as well as by substantial dry-season inputs.

Performance indicator. The environmental variables that are quantitatively measured over time to determine if enhanced/created/restored natural communities have successfully met Plan biological goals and objectives.

Performance objective. In monitoring, the optimal desired value for each performance indicator. Performance objectives establish a higher threshold for each indicator than that established for performance standards. Funding, design, and management objectives for enhanced/created/restored natural communities are established at levels that are designed to ensure that the performance objectives are achieved. Failure to meet a performance objective would not constitute a changed circumstance or require remedial measures.

Performance period. In monitoring, the time over which performance standards must be met.

Performance standard. In monitoring, a minimum requirement necessary to achieve biological goals and objectives. Failure to achieve a performance standard could constitute a changed circumstance and require that remedial measures be implemented.

Permittees. Those entities requesting a Section 10(a)(1)(B) incidental take permit from the USFWS and a take permit under the Natural Community Conservation Planning Act from the CDFW for the species and activities covered in the accompanying HCP/NCCP.

Planning surveys. Surveys conducted by applicants for Plan coverage and used in the project-planning process to identify constraints and determine which Plan conservation measures are applicable. Planning surveys also include surveys conducted by the Implementing Entity on potential preserve lands to evaluate whether these lands will meet Plan requirements.

Population. A group of individuals of the same species inhabiting a given geographic area, among which mature individuals reproduce or are likely to reproduce. Ecological interactions and

genetic exchange are more likely among individuals within a population than among individuals of separate populations of the same species.

Range. The geographic area a species is known to occupy or believed to occupy.

Practicable. Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose (45 FR 85344, December 24, 1980: U.S. Environmental Protection Agency, *40 CFR 230.3,* Definitions).

Preconstruction surveys. Surveys conducted by applicants for Plan coverage for certain biological resources immediately prior to construction to ensure that species and habitat avoidance and minimization measures can be effectively implemented during construction of covered projects or implementation of covered activities.

Preserves. Discrete areas of conserved habitats managed as single units under the Plan.

Preserve System. All Plan preserves considered collectively.

Protect habitat. To maintain the existing or enhanced extent of species habitat through acquisition, easements, or other practicable processes for bringing unprotected sites under protected status.

Recovery. The process by which the decline of an endangered or threatened species is arrested or reversed or threats to its survival neutralized so that its long-term survival in nature can be ensured. Recovery entails actions to achieve the conservation and survival of a species (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1998), including actions to prevent any further erosion of a population's viability and genetic integrity, as well as actions to restore or establish environmental conditions that enable a species to persist (i.e., the long-term occurrence of a species through the full range of environmental variation).

Recovery Plan. A document published by the USFWS that lists the status of a listed species and the actions necessary to remove the species from the endangered species list.

Riparian habitat. Vegetation associated with rivers, streams, lake banks, and floodplains.

Ruderal. A species or plant community that occurs on a highly disturbed site.

Signature. Characteristic value, color, or texture on an aerial photograph that correlates to a particular land cover type.

Stream, perennial. A stream that flows throughout the year.

Stream, intermittent. A stream that flows only at certain times of the year, generally in response to precipitation runoff or groundwater input.

Stream, ephemeral. A stream that flows only briefly in direct response to precipitation in the immediate vicinity, and that does not receive groundwater input.

Succession. The change in the composition and structure of a biological community over time. Successional patterns often shift dramatically following a major disturbance (e.g., fire, flood, anthropogenic clearing of land).

Suitable habitat. Habitat that exhibits the characteristics necessary to support a given species.

Take. According to the federal Endangered Species Act (Section 3[18]), to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. According to the California Endangered Species Act (Section 86 of the California Fish and Game Code), *take* means to hunt, pursue, catch, capture, or kill.

Take Coverage. Is defined in the HCP/NCCP in terms of land cover types lost as a result of covered activities. See HCP/NCCP Chapter 3 of for definition of land cover types and Chapter 4 for an estimate of loss of these land cover types.

Umbrella species. A species whose range and habitat requirements are large and broad enough to encompass the range and habitat requirements of other species.

Unoccupied habitat. Habitat that exhibits all the constituent elements necessary for a species, but where surveys have determined that the species is not currently present. The lack of individuals or populations in the habitat is assumed to be the result of reduced numbers or distribution of the species such that some habitat areas are unused. It is expected that these areas would be used if species numbers or distribution were greater. See also definition of *suitable habitat*.

Urban-wildland interface. The narrow zone (<100 feet) between dense urban development and natural land cover in which structures can be built to minimize the damaging indirect effects on covered species or habitats of activities within urban areas.

Vegetation community. A natural or artificial terrestrial community defined by the dominant vegetation and the vegetation structure. This term is used synonymously with the regulatory term *natural community* under the Natural Community Conservation Planning Act of 2002.