East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan Annual Report 2018

East Contra Costa County Habitat Conservancy

December 2019

Cover Photograph: Goldfields on Vaquero Farms

Photo credit: Stephen Joseph

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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
CRPR	California Rare Plant Rank
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
SFSU	San Francisco State University
SMD	Save Mount Diablo
State Water Board	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

Mount Diablo from Kreiger Peak
Photo Credit: ECCC Habitat Conservancy

This is the tenth 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, 2018 and December 31, 2018, 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 2018, 28 projects received permits under the HCP/NCCP. The projects include residential and commercial development, utility infrastructure development, rural infrastructure operations and maintenance, transportation, and activities providing a range of benefits for the communities of east Contra Costa County. Highlights of these approved covered activities include the following:

Residential: The City of Brentwood permitted the Sciortino Ranch Development project which included the development of a 52+/- acre property into a master-planned residential community. The proposed project includes 326 single-family residential houses, 11 non-residential parcels dedicated for landscaping, park, and storm water treatment use, and the infrastructure improvements necessary to support the development of the project.

Commercial: The City of Brentwood permitted a development with six structures that will house seven businesses including Chick-fil-A, 24-Hour Fitness, Outback Steakhouse, DT Quick Service, Dunkin Donuts, and an urgent care unit. The development will include street widening, a traffic signal, utilities, 340 paved parking stalls, and other landscape features.

Transportation: The Contra Costa County Public Works Department, in cooperation with the California Department of Transportation District 4 (Caltrans), permitted a project to provide a truck climbing lane and paved shoulders for future Class II bike lanes along Kirker Pass Road between Clearbrook Drive in the City of Concord and the northernmost Hess Road intersection. The project is needed to improve safety for motorists and bicyclists along this stretch of road. The road is frequently used by commuters and has heavy truck traffic. With sustained grades steeper than 8 percent, trucks are unable to match the speed of other vehicles on the roadway, causing significant congestion and creating a safety hazard. Project elements will include roadway widening for the truck climbing lane, paved shoulders for future Class II bike lanes, relocation of drainage features, retaining wall construction, installation of signage and striping, construction of two bioretention areas, and relocation of other existing roadside features.

Utility Infrastructure: Shell Pipeline/San Pablo Bay Pipe Line Company installed an alternating current mitigation test station, to mitigate for alternating current interference from overhead powerlines, adjacent to an existing crude oil pipeline at Station 8282+80 on East Bay Regional Park District's (EBRPD's) Black Diamond Mines Regional Preserve.

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

Altogether, 28 projects received streamlined permit coverage under the Plan in 2018, including 11 urban development projects, 2 rural infrastructure projects, 12 rural infrastructure operation and maintenance projects, and 3 preserve system activities. These permitted activities resulted in 173 acres of permanent impacts and 100 acres of temporary impacts on terrestrial land cover types; 0.34 acres of permanent impacts and 0.72 acres of temporary impacts on aquatic land cover types and 158 linear feet of permanent impacts and 1,417 linear feet of temporary impacts to stream.

Land Acquisition and Stay-Ahead Provision

During the first 11 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 year 11, 38 properties had been acquired for the Preserve System, totaling over 14,106 acres. All but one of the acquisitions have been completed in partnership with the EBRPD. EBRPD owns these properties and, together with the Conservancy, manages the Preserve System lands.

In the reporting year (year 11) of implementation, two properties, Roddy Ranch Golf Course and Poppi-Halstead, were added to the Preserve System. Both properties are located adjacent to existing Preserve System properties. Collectively these new acquisitions protect 300± acres of land within the inventory area.

The Roddy Ranch Golf Course property is surrounded by the 1,885-acre Roddy Ranch property that was acquired for the Preserve System in 2014. The acquisition protects a 230-acre inholding within the wildlife corridor connecting Black Diamond Mines Regional Preserve to Marsh Creek State Park, Round Valley Regional Preserve, and Los Vaqueros Reservoir watershed lands. In addition, the acquisition of the Roddy Ranch Golf Course offers a tremendous opportunity for restoration of the site to natural habitat. The HCP/NCCP did not map the Roddy Ranch Golf Course within an acquisition zone or subzone as it was assumed to be unavailable for acquisition and not considered as part of the HCP/NCCP's original conservation strategy. Because of the importance of this property to achieve the HCP/NCCP biological goals and objectives, the Wildlife Agencies have provided their support of the acquisition of the Roddy Ranch Golf Course and have authorized credit of 48.71 acres toward Subzone 2e and 127.62 acres toward Subzone 2f.

The Poppi-Halstead property is located in Zone 2, Subzone 2d, in Briones Valley, and is identified in the HCP/NCCP as high priority for acquisition. This acquisition protects approximately 70 acres of critical land in the wildlife corridor connecting Black Diamond Mines Regional Preserve to Marsh Creek State Park, Round Valley Regional Preserve, and Los Vaqueros Reservoir watershed lands. Briones Valley is identified in the ECCC HCP/NCCP as one of the potential movement corridors for San Joaquin kit fox.

Additional highlights of the acquisitions include the following.

- A total of 260.3 acres of annual grassland were acquired during the reporting period, and approximately 7,967 acres have been protected to date (48% of the annual grassland preservation requirement).

- 13.5 acres of oak woodland were acquired in the reporting period, and 2,491.5 acres have been protected to date (623% of the oak woodland preservation requirements).
- 24.5 acres of oak savanna were acquired in the reporting period, and 410.3 acres have been protected to date (82% of the oak savannah preservation requirements).
- 0.93 acre of seasonal wetland were acquired in the reporting period, and 13.1 acres have been protected to date (8% of the seasonal wetland preservation requirements).

The Conservancy remains in compliance with the Plan's Stay-Ahead Provision. In 11 years of implementation the Conservancy has made substantial progress 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 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 was constructed in 2018. The Horse Valley Creek and Wetland Restoration Project, a joint project of the Conservancy and East Bay Regional Park District, is a wetland and stream restoration project within the Marsh Creek Watershed. The project restored 2.25 acres of seasonal wetland habitat and 4,150 linear feet of intermittent stream channel within the restoration site.

To date, the Conservancy has constructed 11 restoration projects. Four 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.
- Until an In-Lieu Fee (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 an 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 approved using an interim strategy that would eventually be replaced by the ILF program. In 2013 and again in 2017, 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 five-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 one-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.
- The Conservancy is seeking to establish an In-Lieu Fee 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 will 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.

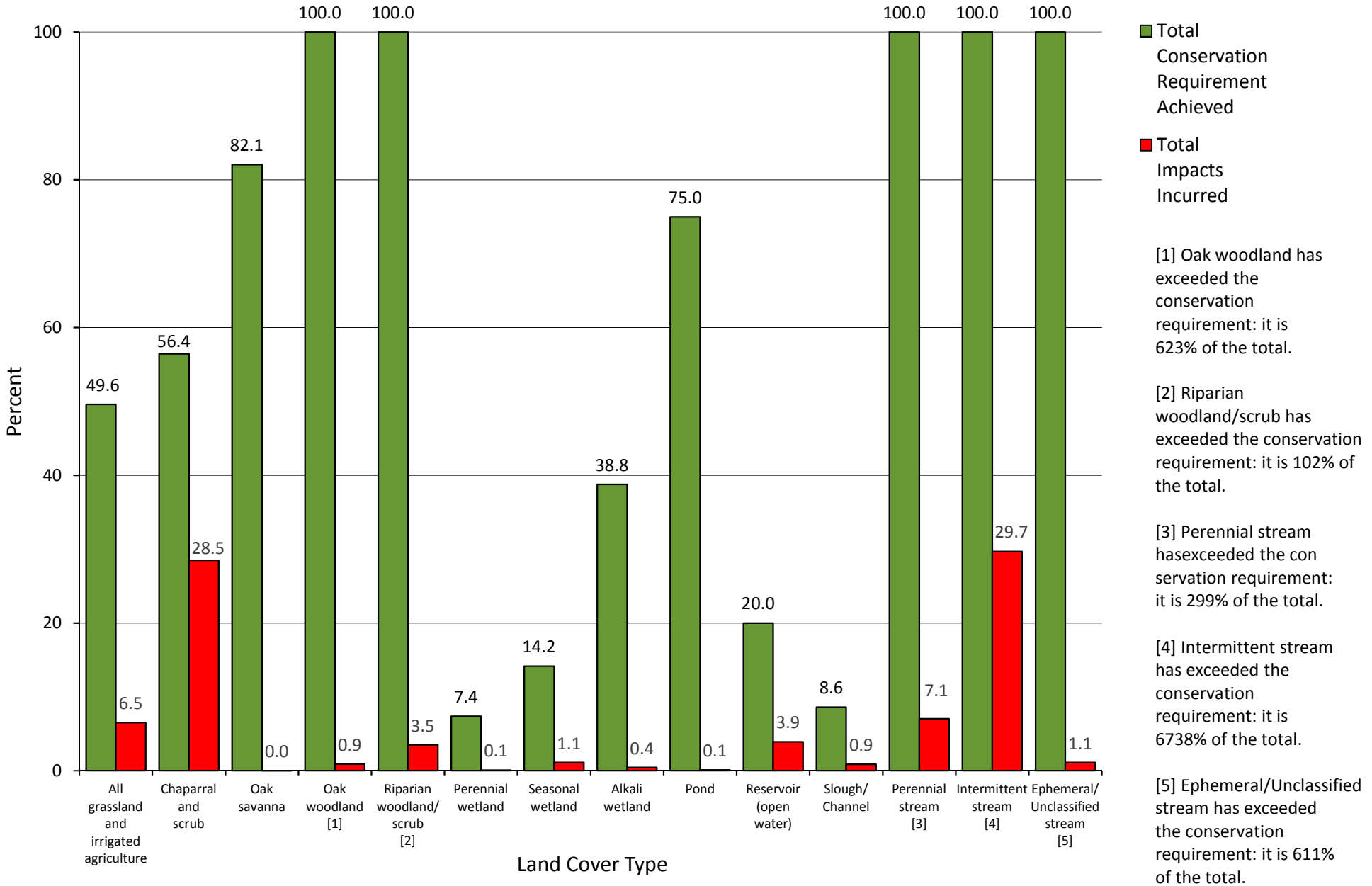
- To date, 17 covered projects and two Conservancy restoration projects have received permit coverage through the RGP.

Funding

The Conservancy spent a total of $5,160,107 on implementation of the ECCC HCP/NCCP in 2018. This includes grant funds that were spent on land acquisitions, restoration projects, and preserve management activities. The Conservancy remained under the total approved 2018 Budget. The Conservancy successfully pursued and secured grants during the 2018 reporting period. Various federal and state sources granted $3,101,502 toward land acquisitions, restoration projects and preserve management activities. Mitigation fees and other payments from project proponents received from 2018 permitted projects totaled $2,792,463. In total, the Conservancy received $5,893,965 in revenue (interest included). Local matching funds, which include grants awarded to local partners, totaled $448,836.

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 623% of the total.

[2] Riparian woodland/scrub has exceeded the conservation requirement: it is 102% of the total.

[3] Perennial stream hasexceeded the con servation requirement: it is 299% of the total.

[4] Intermittent stream has exceeded the conservation requirement: it is 6738% of the total.

[5] Ephemeral/Unclassified stream has exceeded the conservation requirement: it is 611% of the total.

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

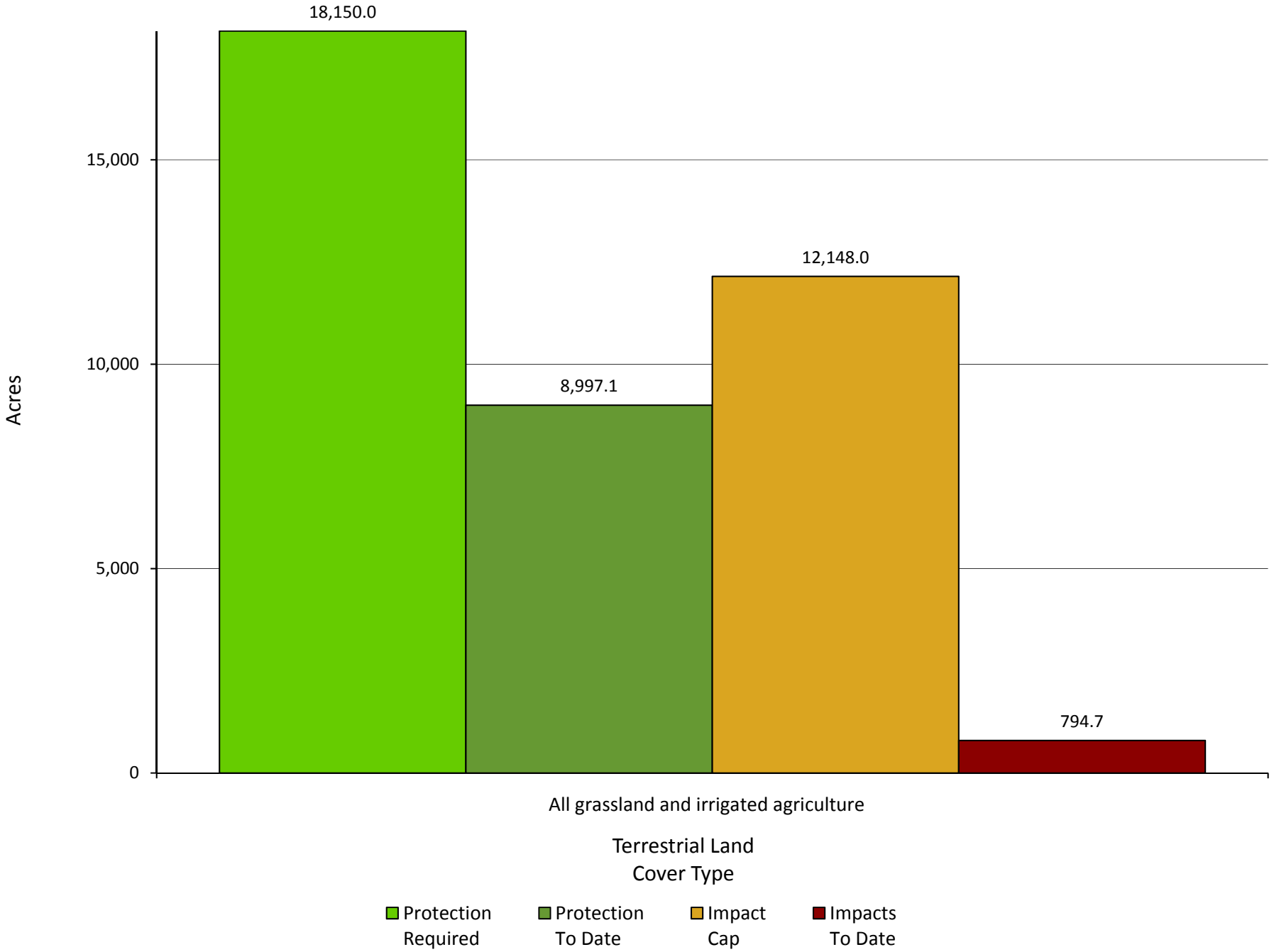


Figure ES-2b. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Terrestrial Land Cover Types

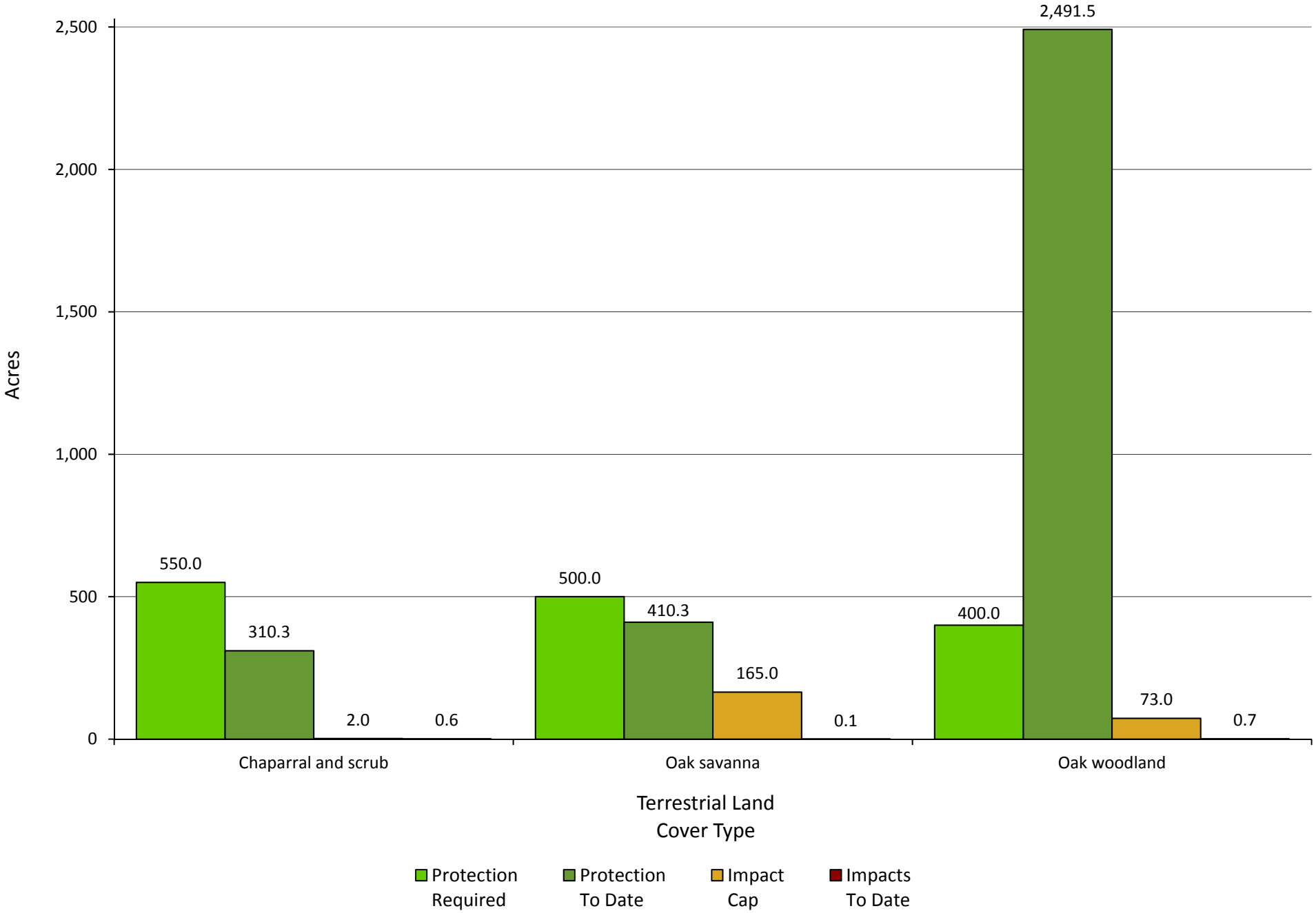


Figure ES-3a. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Aquatic Land Cover

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.

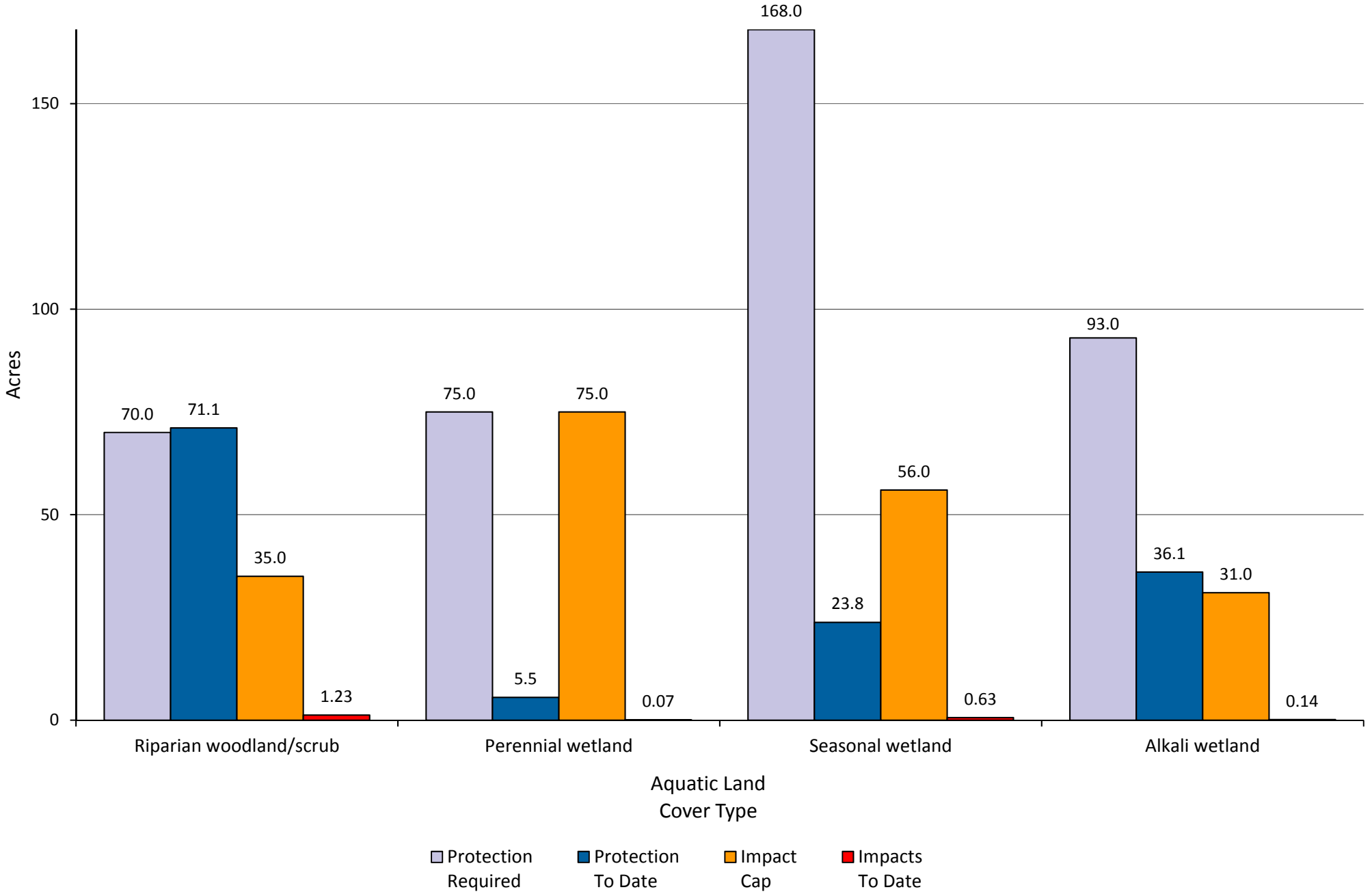


Figure ES-3b. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Aquatic Land Cover

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.

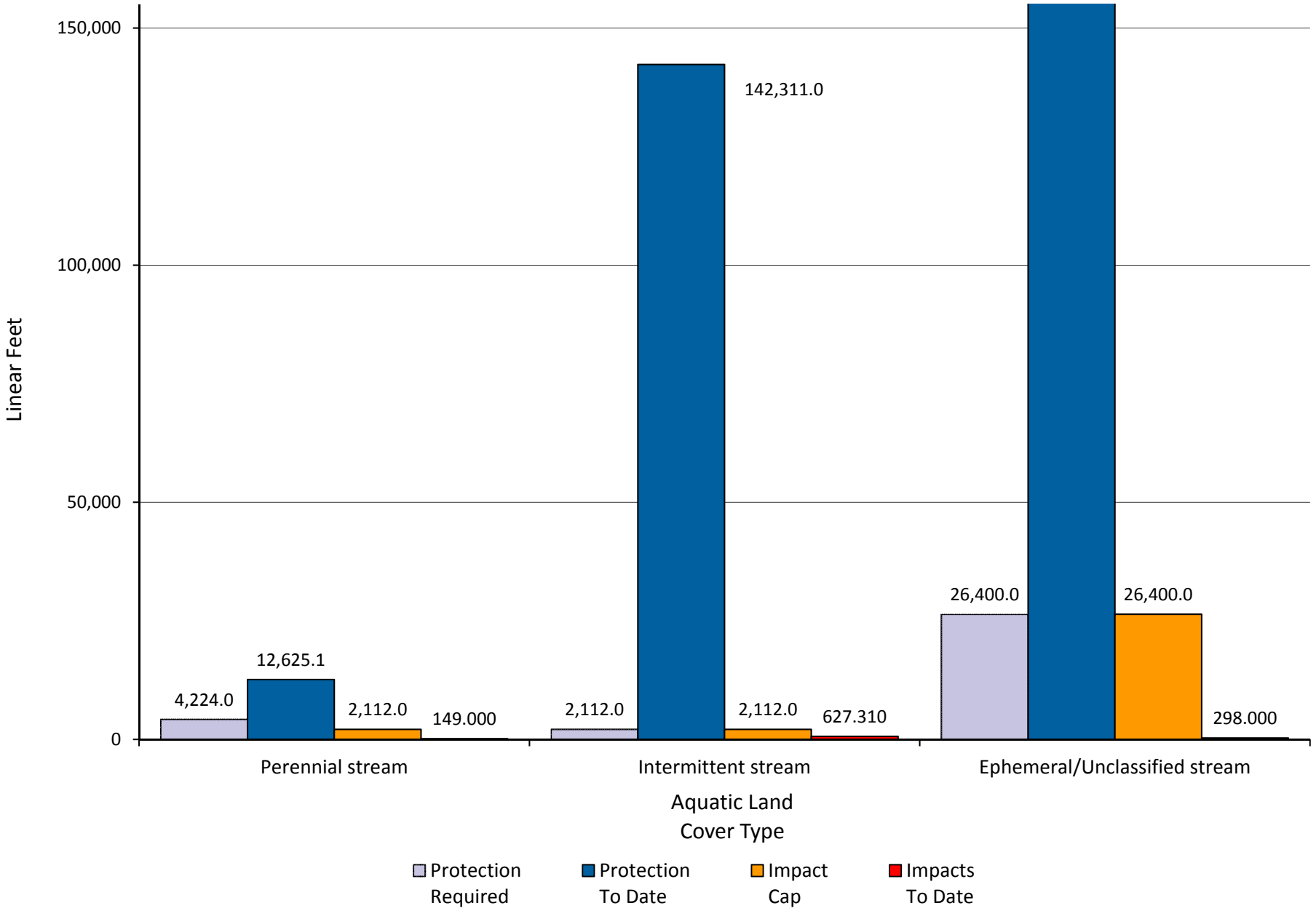
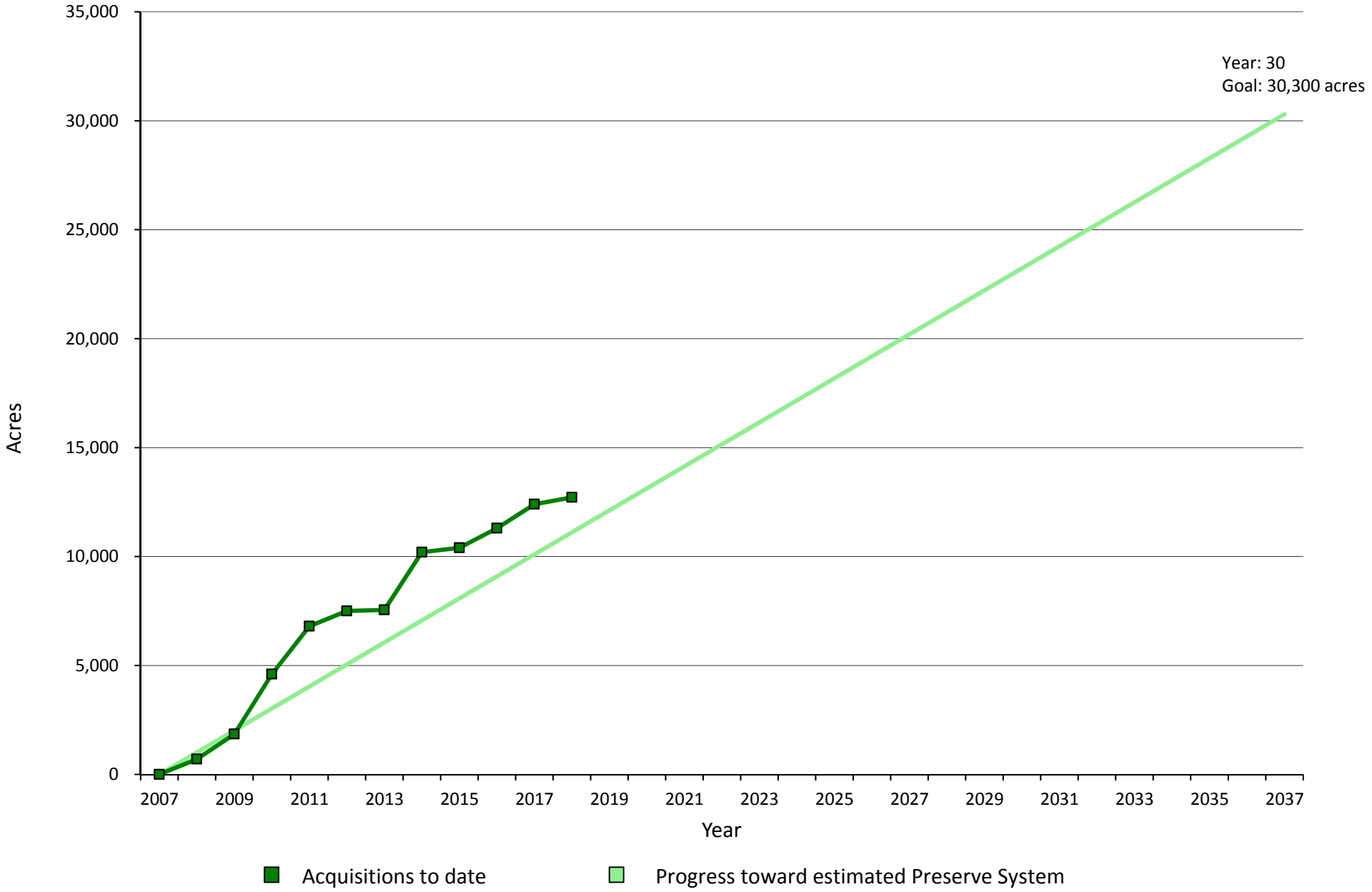


Figure ES-4. Progress Toward Assembling the Preserve System

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

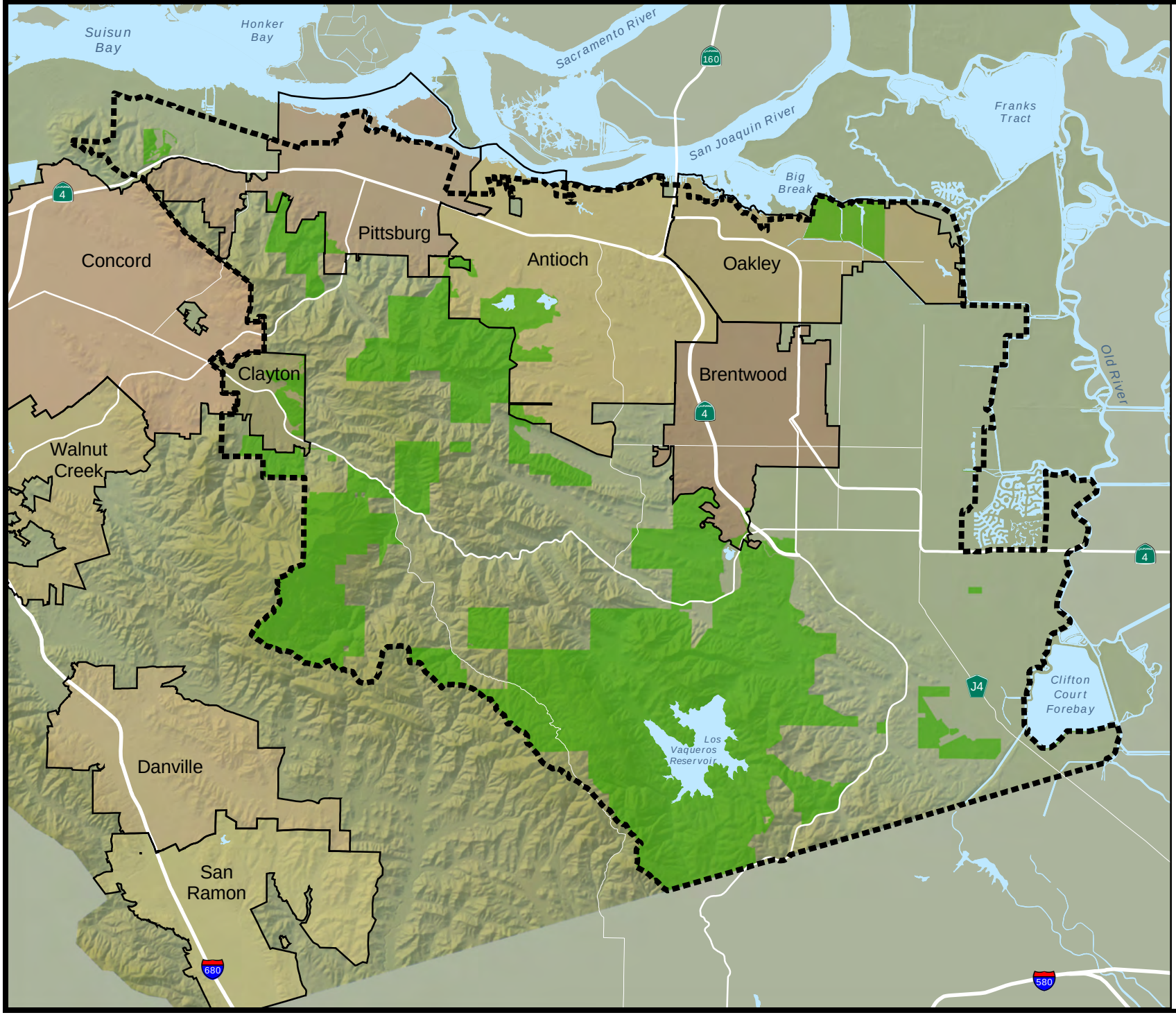
East Contra Costa County HCP/NCCP Background

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 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, formerly 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 to 11,853 acres of urban development and 1,126 acres

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

N

Miles

2 1 0 2

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East Contra Costa County Habitat Conservancy

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 and 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. All but one acquisition to date has been acquired by EBRPD. EBRPD has more than 80 years of experience managing public open space lands and now owns more than 120,000 acres. HCP/NCCP Preserve System lands acquired by EBRPD may ultimately be available for public access where those activities are compatible with species conservation and recovery.

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, 2018, through December 31, 2018. 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 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 tracked.

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) and an overview of the Conservancy's budget and expenditures during the reporting period. This section also includes the Conservancy's Mitigation Fee Act Reporting.

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

- Eleven (11) urban development area projects
- Two rural infrastructure projects
- Twelve (12) rural infrastructure operation and maintenance projects
- Three Preserve System activities

All covered activities mitigated impacts through the payment of HCP/NCCP fees. In 2018, mitigation fees, contribution to recovery charges, and administrative fees related to covered projects totaled $2,783,177. 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: preconstruction surveys, avoidance and minimization measures, 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*.

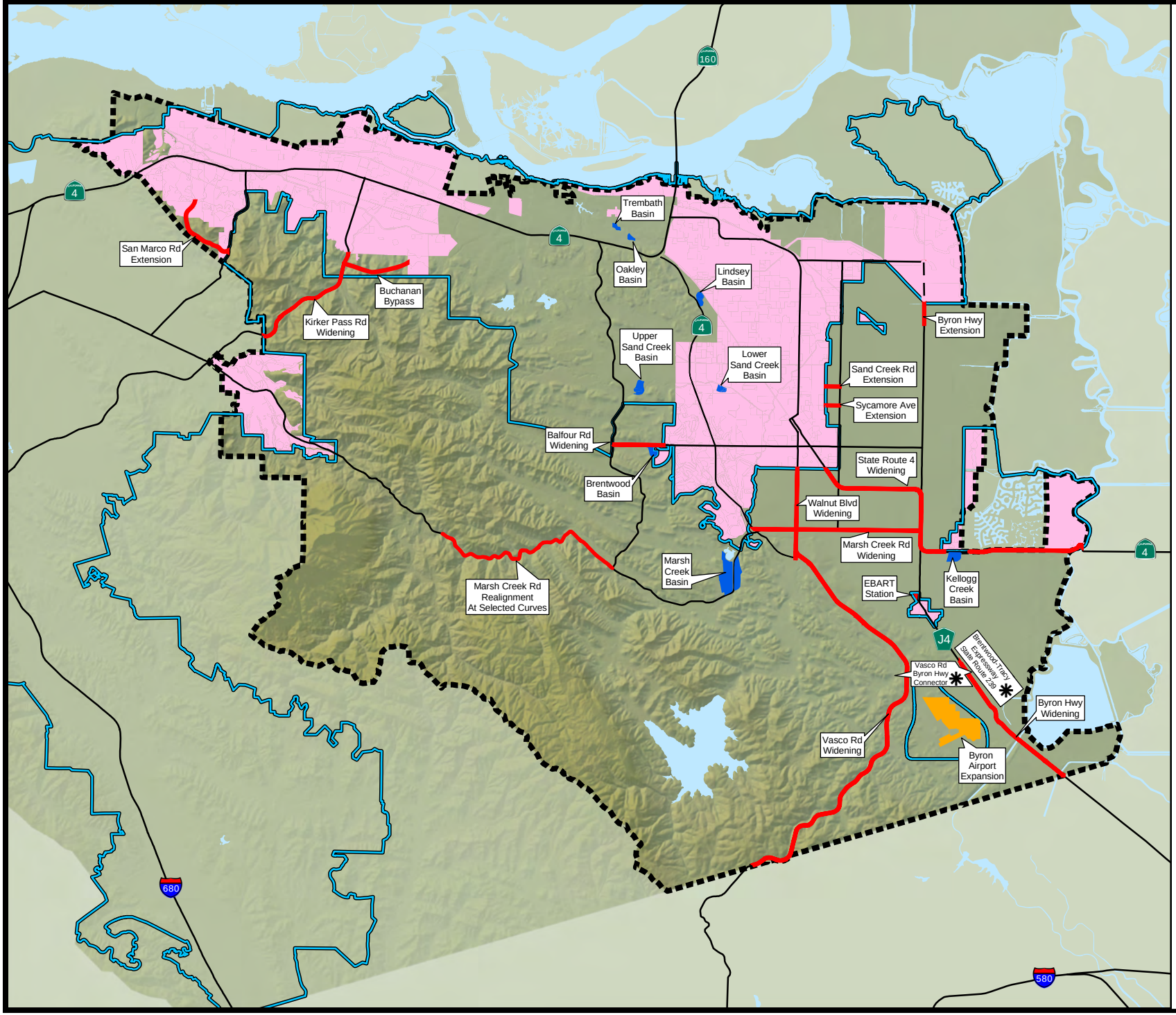
Specific project circumstances determine which conditions apply to each project. For example, Condition 1.12 *Implement Best Management Practices for Rural Road Maintenance* only applies to rural road maintenance projects. Compliance with these conditions is a required component of the HCP/NCCP.

As shown in Tables 2 and 3, landscape, natural community, and species level conditions applied to all 28 covered activities during the 2018 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 173.4 acres of permanent impacts and 100.7 acres of temporary impacts (Table 4). There were 158 linear feet of permanent impacts and 1,417 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 to aquatic land cover types during the reporting period occurred in six watersheds: East County Delta, Kellogg, Kirker, Lower Marsh, Sand, and Upper Marsh (Table 6).

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



Legend

Inventory Area

County Urban Limit Line

Rural Infrastructure Projects

(Please see Chapter 2 for details)

Detention Basins

Transportation Projects

Byron Airport

Initial Urban Development Area (transportation & other Infrastructure projects in this area are also covered.)

✱ Precise location to be determined. Please see Chapter 2 for a description of alignment limitations under HCP/NCCP permit.

N

Miles

2 1 0 2

03/13/2018

East Contra Costa County Habitat Conservancy

Figure 3a. Location and impact acreage for Projects that Received Coverage in 2018

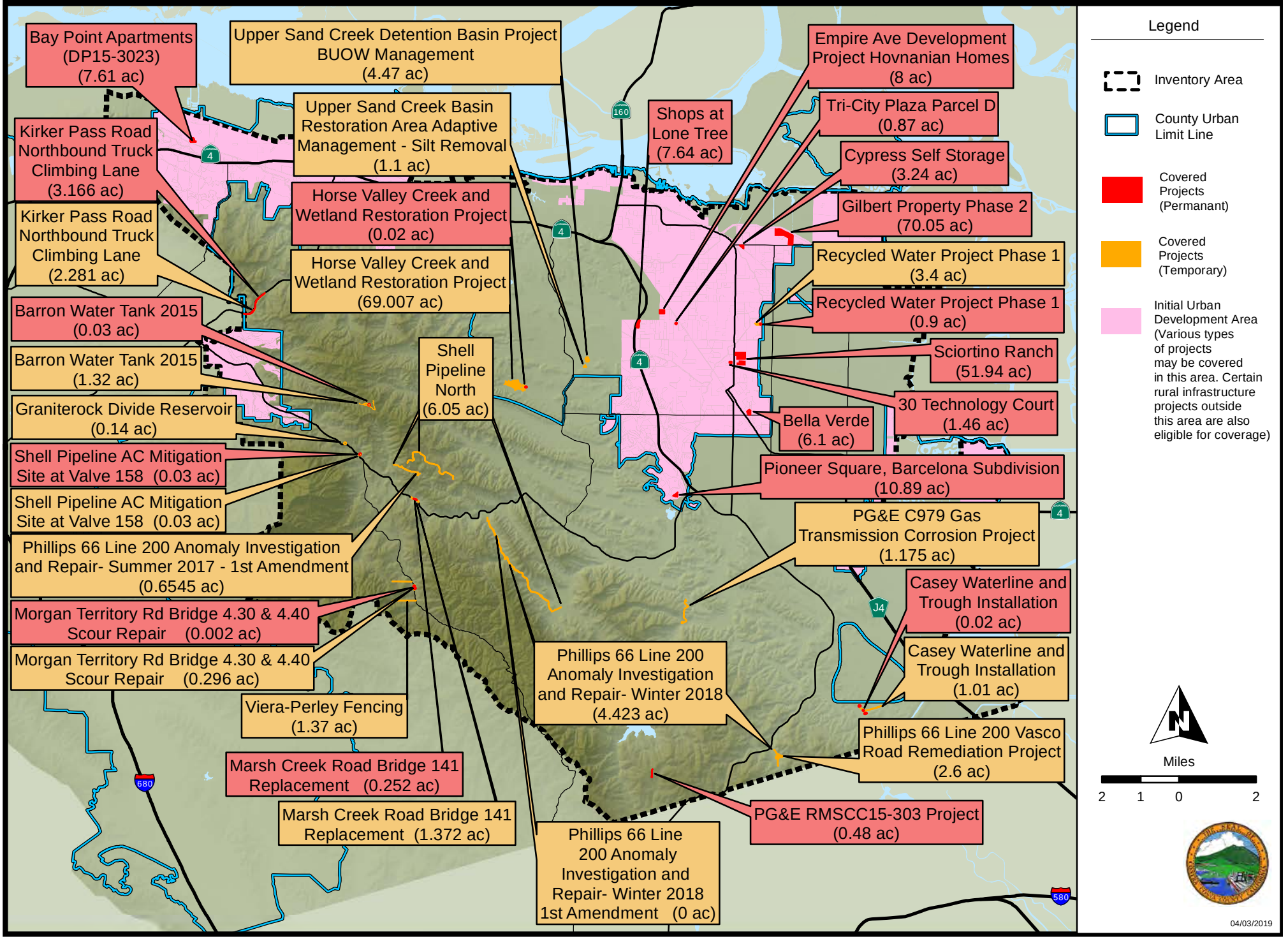
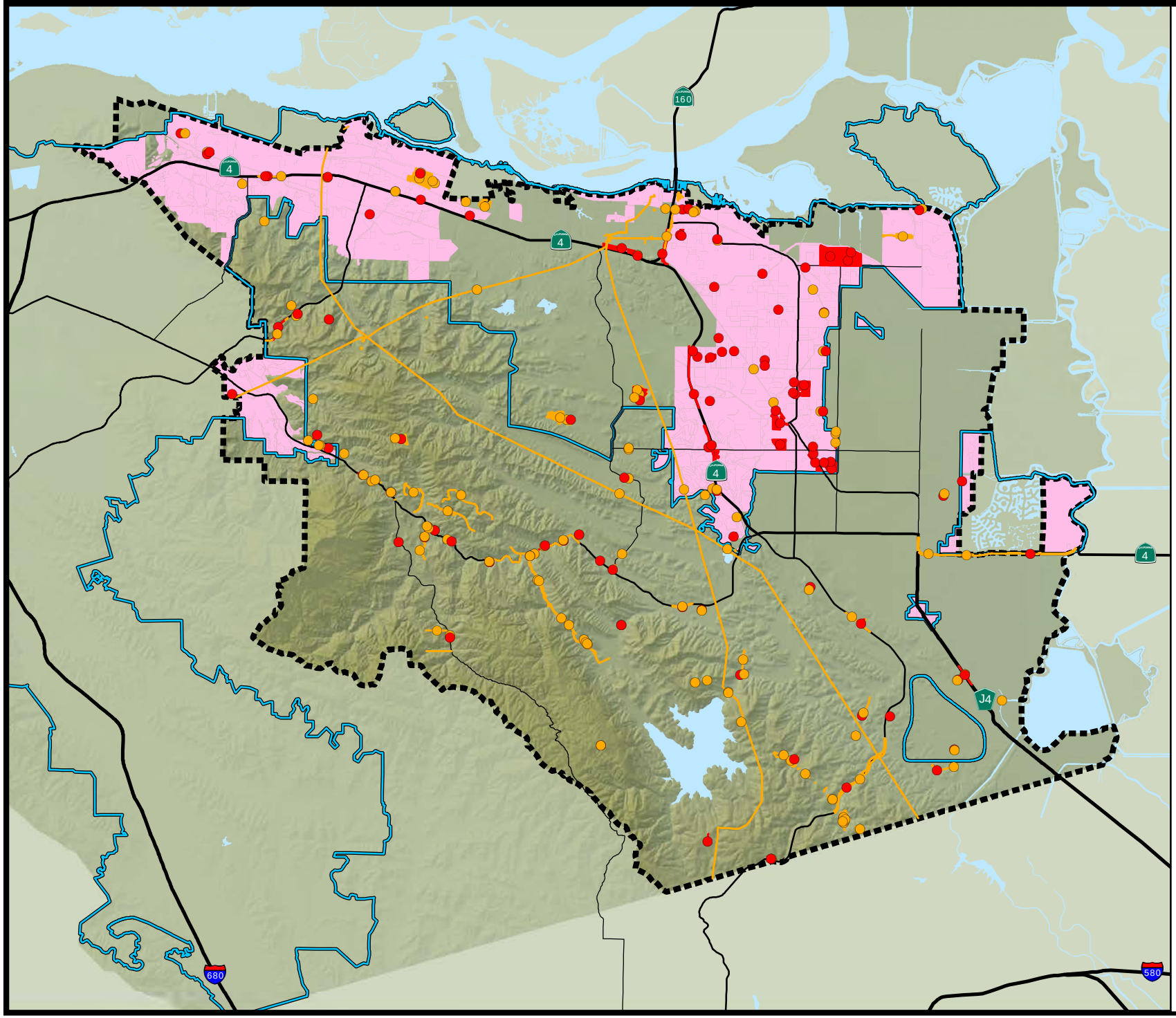


Figure 3b. Location of Covered Projects to-date (2008-2018)



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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04/03/2019

East Contra Costa County Habitat Conservancy

Table 1. Reporting Summary of Covered Activities for 2018

Project Name	Activity Type	Covered By	Location	Description
Activities within the Urban Development Area				
30 Technology Court	Commercial	City of Brentwood	30 and 31 Technology Court, Brentwood, CA	The project merged APNs 016-410-005 and 016-410-006 and constructed a 20,000 +/- square foot building with a parking lot that contains 47 parking stalls and was landscaped.
Shops at Lone Tree (Center Pointe Commercial Development)	Commercial	City of Brentwood	Jeffery Way and Lone Tree Way, Brentwood CA	The Shops at Lone Tree project is a commercial development with six structures that will house seven businesses including Chick-fil-A, 24-hour fitness, Outback Steakhouse, DT Quick Service, Dunkin Donuts and an urgent care unit. The Chick-fil-A restaurant provides drive through service. The development also includes street widening, a traffic signal, utilities, 340 paved parking stalls and other landscape features.
Tri-City Plaza-Parcel D	Commercial	City of Brentwood	East side of Fairview Avenue, 500+/- ft. south of Lone Tree Road, Brentwood	The project involved construction of two buildings encompassing 10,815 square feet in total, with associated site improvements on the parcel. The new parking lots provide a total of up to 48 parking spaces and two charging stations for electric vehicles. There is landscaped strips of trees and shrubs surrounding the new building and within and surrounding the parking lots.
2700 Empire Ave	Residential	City of Brentwood	2700 Empire Avenue, Brentwood, CA	The project subdivided an 8-acre property into a 48 single-family residence development with a community park and a bio retention swale to accommodate storm water runoff.
Bella Verde Development	Residential	City of Brentwood	362 Balfour Road, Brentwood, CA	The project subdivided a 6.1 acre project site into 48 new residential lots, with three additional parcels to accommodate the construction of a storm water treatment basin and landscape areas. The lots range in size from 3,149 square feet to 6,588 square feet with an average size of 3,640 square feet.
Sciortino Ranch Development	Residential	City of Brentwood	East of the intersection of Sand Hill Road and Brentwood Boulevard. Two parcels straddle Sand Hill Road	The project subdivided the 51.94-acre Sciortino Ranch site to create 326 single-family residential lots. An additional 11 non-residential parcels will be dedicated for landscaping, park, and/or storm water treatment use.

Project Name	Activity Type	Covered By	Location	Description
Pioneer Square-Barcelona Subdivision-Vineyards Phase 4	Residential	City of Brentwood	Miwok Avenue and adjacent to Vineyards Parkway in Brentwood, CA	The Vineyards Phase 4 project entails the construction of 72 single-family residential homes. The project site was fine graded, with some additional rough grading as needed, to construct home site pads and to focus site drainage. All trees on the project site were removed for project implementation.
City of Brentwood Recycled Water Project - Phase 1	Utility	City of Brentwood	2201 Elkins Way, Brentwood, CA	The City constructed a new recycled water pipeline, recycled water storage tanks, and pumps/valves for the purpose of providing additional recycled water to existing landscape irrigation customers.
Bay Point Family Apartments (DP15-3023)	Residential	Contra Costa County	Located at the corner of Port Chicago Highway and Willow Pass Road, Bay Point, CA	The 134 unit multi-family development established 8 three-story apartment buildings, a community building, pool, basketball court, garage buildings and uncovered parking.
Gilbert Property Phase 2	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 including 506 single-family residential houses, 17 acres of trails, park, levees and a storm water detention pond, and the infrastructure improvements necessary to support the development of the project.
Cypress Self Storage Project	Commercial	City of Oakley	Located directly south of the intersection of East Cypress Road and Picasso Drive, and north of the at and SF Railroad right-of-way in easterly Oakley, CA	The project involved a General Plan amendment from Multi-Family High Density to Commercial; a Rezone from M-12 to Commercial P-1; and Design review of the Self Storage Facility and leasing office with related sales and rental. The storage facility consists of one and two/three story buildings totaling up to approximately 139,408 sq. ft. plus a 1,024 sq. ft. office building, a total of four standard parking stalls and one handicap stall.

Project Name	Activity Type	Covered By	Location	Description
Rural Infrastructure Projects				
Marsh Creek Road Bridge #141 Replacement Project	Transportation	Contra Costa County-Public Works	Marsh Creek Road 2 miles east of Morgan Territory Road in the Clayton Area of unincorporated Contra Costa County	CCC Public Works Department, in cooperation with Caltrans, replaced the existing Marsh Creek Road Bridge #141 across Marsh Creek. The purpose of the project was to replace the existing single-span bridge with a new single-span bridge that meets current design standards.
Kirker Pass Road Northbound Truck Climbing Lane-Inside	Transportation	Contra Costa County-Public Works	Kirker Pass Road, Contra Costa County	CCC Public Works Department, in cooperation with the California Department of Transportation District 4 (Caltrans), will construct a truck climbing lane along Kirker Pass Road between Clearbrook Drive in the City of Concord and the northernmost Hess Road intersection.
Rural Infrastructure O&M Activities				
Upper Sand Creek Basin Restoration Area Adaptive Management - Silt Removal	Flood Control	Contra Costa County-Public Works	6100 Deer Valley Road, Antioch	CCC Public Works Department conducted silt removal from the Upper Sand Creek Basin restoration area channel and repair a berm that failed due to storms earlier in the year. Approximately 190 cubic yards of silt were removed from within the engineered in-channel siltation basin at 2 locations and approximately 110 cubic yards of fill (willow mattress) were placed at the failed berm.
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management	Flood Control	Contra Costa County-Public Works	6100 Deer Valley Road, Antioch	CCC Public Works Department conducted western burrowing owl management on the soil stockpile at Upper Sand Creek Detention Basin Project.
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair Project	Transportation	Contra Costa County-Public Works	Morgan Territory Road, Clayton at mile post 4.3 and 4.4	Morgan Territory Road Bridges 4.30 and 4.40 have significant bank erosion around both bridges. The project includes installing rip rap (rock) on embankment slopes, placing a reinforced concrete slab in the channel below each bridge from abutment to abutment, filling voids in the boulder abutments with mortar, removal of one tree (Bridge 4.40) where stability has been undermined due to erosion, repairing and replacing existing bridge railings, installation of a guard rail at the bridge approaches, and channelizing roadway runoff with an oversized drain.

Project Name	Activity Type	Covered By	Location	Description
Line 200 Vasco Road Remediation Project	Utility	ECCC Habitat Conservancy	near Vasco Road in Byron, CA and near Latitude 37°47’42.79”N and Longitude 121°40'21.49"W.	Phillips 66 Pipeline, LLC plans to install and sample six additional groundwater monitoring wells to further investigate the subsurface petroleum contamination resulting from the August 27, 2011 crude oil pipeline leak in this area. Four existing monitoring wells were previously installed under the existing Participating Special Entity Agreement effective January 1, 2016.
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 - 1st Amendment	Utility	ECCC Habitat Conservancy	5.5 miles southeast of the City of Clayton	Phillips 66 Pipeline, LLC submitted an Amendment to the Summer 2017 Project to gain HCP/NCCP coverage for an additional year of existing dirt road coverage. Use of 2,852 feet of existing dirt road resulted in temporary disturbance of 1.309 acres with a 10-foot road use buffer added in.
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018	Utility	ECCC Habitat Conservancy	Various locations along P66 Line 200 from Kirker Pass Road in Concord to approximately 1.5 mi southwest Vasco Road and Armstrong intersection in unincorporated Contra Costa County	Phillips 66 Pipeline, LLC conducted anomaly investigation and repairs at seven distinct dig locations (Digs) to address a total of thirteen anomalies along the existing Line 200 Mainline trunk pipeline in eastern Contra Costa County. Work involved temporary impacts to relatively small work areas ranging from approximately 0.040 acres to approximately 0.059 acres.
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 - 1st Amendment	Utility	ECCC Habitat Conservancy	0.55 miles south east of the termination of Sycamore Springs Road in unincorporated Brentwood. Latitude 37°52'40.48"N; Longitude 121°48'34.09"W	Phillips 66 Pipeline, LLC submitted an Amendment to the Winter 2018 Project Plan to gain HCP/NCCP coverage for a modified dig site. Dig 500 resulted in temporary impacts to approximately 16 linear feet of stream channel, mainly along the eastern bank of Sycamore Creek. Work was conducted when surface flow in the stream was absent to limit the potential for water quality impacts, as well as reduce the potential for incidental take of listed species that might make use of the stream when wetted.

Project Name	Activity Type	Covered By	Location	Description
PG&E RMSCC15-303 Project	Utility	ECCC Habitat Conservancy	Los Vaqueros Watershed approximately 1.4 mile north of intersection of Los Vaqueros Road and Vasco Road	PG&E excavated a portion of Gas Transmission Pipeline 303 (L-303) within the Los Vaqueros Watershed to inspect and repair the coating covering the pipeline. Excavation of the underground pipeline was required to perform repairs due to potential anomalies that have been identified through routine safety inspections.
PG&E C-979 Spans 64, 242, and 243 Gas Transmission Corrosion Project	Utility	ECCC Habitat Conservancy	19 Walnut Boulevard, Brentwood, CA 94513	PG&E replaced the coating at the air-to-soil (ATS) transitions of three gas transmission pipeline spans (64, 242, and 243) along Gas Transmission Pipelines 131 and 114 in Contra Costa County, CA. This maintenance work was required by the California Public Utilities Commission (CPUC) in order to address atmospheric corrosion along exposed pipelines. The scope of work at each location included exposing approximately 1-foot of buried pipe at the ends of each span and replacing the pipe coating at the ATS transitions on the ends of the span.
Shell Pipeline AC Mitigation Site at Valve 158	Utility	ECCC Habitat Conservancy	12803 Marsh Creek Road, 0.2 mile north of Morgan Territory Road	Shell Pipeline/San Pablo Bay Pipe Line Company installed an alternating current mitigation test station adjacent to an existing crude oil pipeline at Station 8282+80 on East Bay Regional Park District's (EBRPD's) Black Diamond Mines Regional Preserve.
Shell Pipeline North 20 Repair Project 2018	Utility	ECCC Habitat Conservancy	Three repair digs are located 6 miles apart between the Cities of Clayton and Byron.	Shell Pipeline/San Pablo Bay Pipe Line Company conducted repair digs on their existing 20-inch crude oil pipeline at three locations on private property and East Bay Regional Park District (EBRPD) property.
January 2017 Storm Damage Repair Projects-FEMA 4301-DR-CA: Divide Reservoir	Utility	ECCC Habitat Conservancy	Marsh Creek Road approx. 1 mile north of Morgan Territory Road, unincorporated Contra Costa County	Graniterock repaired a land slide on an access road to Contra Costa Water District's Divide Reservoir. The repair work for the slide consisted of excavating the disturbed area to stable soil, filling the excavated area with imported engineered fill, and hydroseeding the repaired slope.

Project Name	Activity Type	Covered By	Location	Description
Activities within the HCP/NCCP Reserve System				
Barron Water Tank and Trough Installation Project (2015)	Other	ECCC Habitat Conservancy	Barron Property	The ECCC Habitat Conservancy installed 1,300 feet of water pipeline, a water tank, and a water trough on the Barron Property. This project was implemented to provide a water source for cattle to allow for more appropriate grazing management of the property. Project occurred in 2015 but was not accounted for in previous annual reports.
Horse Valley Creek and Wetland Restoration Project	Restoration Project	ECCC Habitat Conservancy	Roddy Ranch Preserve	The ECCC Habitat Conservancy and East Bay Regional Park District constructed a wetland and riparian restoration project within the Marsh Creek Watershed in northeastern Contra Costa County. The project restored 2.25 acres of seasonal wetland habitat and 4,150 linear feet of intermittent stream channel within the restoration site. 194,000 square feet of constructed access road and 151,000 square feet of artificial channel were decommissioned to aid in the restoration of the site's hydrologic conditions and historic habitat. The stock pond berm that failed in the winter 2016-2017 was also repaired.
Viera-Perley Fencing Project	Other	ECCC Habitat Conservancy	Veira-Perley Property	The ECCC Habitat Conservancy installed new fencing along the northern and southern property boundaries of a Preserve System property.
Casey Waterline and Trough Installation	Other	ECCC Habitat Conservancy	Casey Property	The ECCC Habitat Conservancy installed approximately 1,800 feet of water pipeline, a well and solar-powered pump, two water tanks, and two water troughs on the Casey preserve property. This project was implemented to provide a water source for cattle to allow for more appropriate grazing management of the property.

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
Kirker Pass Road Northbound Truck Climbing Lane-Inside		✓					✓	✓			✓
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair Project		✓						✓	✓		
Marsh Creek Road Bridge #141 Replacement Project		✓						✓			✓
Pioneer Square-Barcelona Subdivision- Vineyards Phase 4								✓			
Sciortino Ranch Development							✓	✓			
Bella Verde Development							✓	✓			
Tri-City Plaza-Parcel D							✓	✓			
Shops at Lone Tree (Center Pointe Commercial Development)								✓			
City of Brentwood Recycled Water Project - Phase 1		✓						✓			
Cypress Self Storage Project							✓	✓			
Bay Point Famiy Apartments (DP15-3023)							✓	✓			
Shell Pipeline AC Mitigation Site at Valve 158								✓			
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018		✓						✓			
2700 Empire Ave							✓	✓			
30 Technology Court							✓	✓			
January 2017 Storm Damage Repair Projects-FEMA 4301-DR-CA: Divide Reservoir							✓	✓			
PG&E C-979 Spans 64, 242, and 243 Gas Transmission Corrosion Project		✓		✓				✓			
PG&E RMSCC15-303 Project								✓			
Shell Pipeline North 20 Repair Project 2018							✓	✓			

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
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 - 1st Amendment		✓						✓			
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 - 1st Amendment		✓						✓			
Line 200 Vasco Road Remediation Project								✓			
Gilbert Property Phase 2		✓		✓			✓	✓			
Casey Waterline and Trough Installation		✓						✓			
Viera-Perley Fencing Project								✓			
Horse Valley Creek and Wetland Restoration Project		✓						✓			
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management								✓			
Upper Sand Creek Basin Restoration Area Adaptive Management - Silt Removal		✓						✓		✓	
Barron Water Tank and Trough Installation Project (2015)								✓			

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
Kirker Pass Road Northbound Truck Climbing Lane-Inside					X	X			X	X			X	X										
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair Project									X	X							X	X						
Marsh Creek Road Bridge #141 Replacement Project	X				X	X			X	X			X											
Pioneer Square-Barcelona Subdivision- Vineyards Phase 4	X				X	X			X				X	X			X							
Sciortino Ranch Development									X				X	X			X	X						
Bella Verde Development													X	X			X	X						
Tri-City Plaza-Parcel D									X	X			X	X			X	X						
Shops at Lone Tree (Center Pointe Development)					X				X				X	X			X	X						
City of Brentwood Recycled Water Project - Phase 1													X	X			X				X			
Cypress Self Storage Project	X	X							X	X			X	X			X	X						
Bay Point Famiy Apartments (DP15-3023)													X	X			X	X						
Shell Pipeline AC Mitigation Site at Valve 158									X	X			X	X										
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018					X	X			X	X			X	X										
2700 Empire Ave					X	X							X	X			X	X						
30 Technology Court									X	X			X	X			X	X						
January 2017 Storm Damage Repair Projects-FEMA 4301-DR-CA: Divide Reservoir	X	X											X	X										
PG&E C-979 Spans 64, 242, and 243 Gas Transmission Corrosion Project					X	X			X	X			X	X	X		X	X	X					
PG&E RMSCC15-303 Project					X	X			X	X			X	X	X		X	X	X					
Shell Pipeline North 20 Repair Project 2018					X	X			X	X			X	X										
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 - 1st Amendment					X	X			X	X			X	X										
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 - 1st Amendment					X	X			X	X			X	X										
Line 200 Vasco Road Remediation Project					X								X											
Gilbert Property Phase 2									X	X			X	X			X	X						
Casey Waterline and Trough Installation					X	X							X	X	X									
Viera-Perley Fencing Project									X	X														
Horse Valley Creek and Wetland Restoration Project					X	X	X		X	X			X	X										
Barron Water Tank and Trough Installation Project (2015)					X	X			X	X			X	X										
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management													X	X										
Upper Sand Creek Basin Restoration Area Adaptive Management - Silt Removal													X	X										

[1] The implementation of these condtions and their results can be found in the planning survey reports and are avaiable 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
Kirker Pass Road Northbound Truck Climbing Lane-Inside	X				X								X	X			X	X			X	X		
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair Project					X																X	X		
Marsh Creek Road Bridge #141 Replacement Project	X				X	X											X	X						
Pioneer Square-Barcelona Subdivision- Vineyards Phase 4																								
Sciortino Ranch Development																	X	X						
Bella Verde Development																	X	X						
Tri-City Plaza-Parcel D																								
Shops at Lone Tree (Center Pointe Development)																	X	X						
City of Brentwood Recycled Water Project - Phase 1	X												X	X			X	X						
Cypress Self Storage Project																								
Bay Point Famiy Apartments (DP15-3023)																								
Shell Pipeline AC Mitigation Site at Valve 158													X	X										
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018	X				X												X	X			X	X		
2700 Empire Ave																								
30 Technology Court																								
January 2017 Storm Damage Repair Projects-FEMA 4301-DR-CA: Divide Reservoir	X	X			X	X											X	X			X	X		
PG&E C-979 Spans 64, 242, and 243 Gas Transmission Corrosion Project	X				X												X	X						
PG&E RMSCC15-303 Project	X				X												X	X						
Shell Pipeline North 20 Repair Project 2018	X				X												X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 - 1st Amendment	X				X												X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 - 1st Amendment	X				X												X	X			X	X		
Line 200 Vasco Road Remediation Project	X				X												X							
Gilbert Property Phase 2									X	X														
Casey Waterline and Trough Installation													X	X			X	X			X	X		
Viera-Perley Fencing Project																					X	X		
Horse Valley Creek and Wetland Restoration Project	X	X			X	X			X				X	X			X	X			X	X		
Barron Water Tank and Trough Installation Project (2015)													X	X			X	X			X	X		
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management																								
Upper Sand Creek Basin Restoration Area Adaptive Management - Silt Removal	X	X	X		X	X	X																	

[1] The implementation of these condtions and their results can be found in the planning survey reports and are avaiable 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
Kirker Pass Road Northbound Truck Climbing Lane-Inside	X	X			X	X			X	X			X	X			X	X			X	X		
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair Project																								
Marsh Creek Road Bridge #141 Replacement Project									X	X							X	X			X	X		
Pioneer Square-Barcelona Subdivision- Vineyards Phase 4																								
Sciortino Ranch Development																								
Bella Verde Development																								
Tri-City Plaza-Parcel D																								
Shops at Lone Tree (Center Pointe Development)																								
City of Brentwood Recycled Water Project - Phase 1	X	X			X	X			X	X			X	X			X	X			X	X		
Cypress Self Storage Project																								
Bay Point Famiy Apartments (DP15-3023)																								
Shell Pipeline AC Mitigation Site at Valve 158					X	X			X	X							X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018					X	X			X	X			X	X			X	X			X	X		
2700 Empire Ave																								
30 Technology Court																								
January 2017 Storm Damage Repair Projects-FEMA 4301-DR-CA: Divide Reservoir					X	X			X	X			X	X			X	X			X	X		
PG&E C-979 Spans 64, 242, and 243 Gas Transmission Corrosion Project					X	X															X	X		
PG&E RMSCC15-303 Project					X	X			X	X							X	X						
Shell Pipeline North 20 Repair Project 2018					X	X											X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 - 1st Amendment					X	X			X	X			X	X			X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 - 1st Amendment					X	X			X	X			X	X			X	X			X	X		
Line 200 Vasco Road Remediation Project					X				X								X				X			
Gilbert Property Phase 2																								
Casey Waterline and Trough Installation	X	X			X	X			X	X			X	X			X	X			X	X		
Viera-Perley Fencing Project																								
Horse Valley Creek and Wetland Restoration Project	X	X			X	X			X	X			X	X			X	X			X	X		
Barron Water Tank and Trough Installation Project (2015)	X	X			X	X			X	X			X	X			X	X			X	X		
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management																								
Upper Sand Creek Basin Restoration Area Adaptive Management - Silt Removal																								

[1] The implementation of these condtions and their results can be found in the planning survey reports and are avaiable 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
Kirker Pass Road Northbound Truck Climbing Lane-Inside									X	X			X	X			X	X		
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair Project													X	X			X	X		
Marsh Creek Road Bridge #141 Replacement Project					X	X														
Pioneer Square-Barcelona Subdivision- Vineyards Phase 4																				
Sciortino Ranch Development									X	X										
Bella Verde Development									X	X										
Tri-City Plaza-Parcel D																				
Shops at Lone Tree (Center Pointe Development)																				
City of Brentwood Recycled Water Project - Phase 1																	X	X		
Cypress Self Storage Project																				
Bay Point Famiy Apartments (DP15-3023)																				
Shell Pipeline AC Mitigation Site at Valve 158													X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018	X	X											X	X			X	X		
2700 Empire Ave																				
30 Technology Court																				
January 2017 Storm Damage Repair Projects-FEMA 4301-DR-CA: Divide Reservoir	X	X											X	X			X	X		
PG&E C-979 Spans 64, 242, and 243 Gas Transmission Corrosion Project	X	X																		
PG&E RMSCC15-303 Project																				
Shell Pipeline North 20 Repair Project 2018	X	X											X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 - 1st Amendment	X	X			X	X							X	X			X	X		
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 - 1st Amendment	X	X			X	X							X	X			X	X		
Line 200 Vasco Road Remediation Project	X				X															
Gilbert Property Phase 2																				
Casey Waterline and Trough Installation	X	X			X	X			X	X							X	X		
Viera-Perley Fencing Project													X	X						
Horse Valley Creek and Wetland Restoration Project	X	X			X	X			X	X			X	X			X	X		
Barron Water Tank and Trough Installation Project (2015)	X	X											X	X			X	X		
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management																				
Upper Sand Creek Basin Restoration Area Adaptive Management - Silt Removal																				

[1] The implementation of these condtions and their results can be found in the planning survey reports and are avaiable 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
Kirker Pass Road Northbound Truck Climbing Lane-Inside					X	X			X	X						
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair Project					X	X										
Marsh Creek Road Bridge #141 Replacement Project					X	X			X	X						
Pioneer Square-Barcelona Subdivision- Vineyards Phase 4																
Sciortino Ranch Development																
Bella Verde Development																
Tri-City Plaza-Parcel D																
Shops at Lone Tree (Center Pointe Development)																
City of Brentwood Recycled Water Project - Phase 1																
Cypress Self Storage Project																
Bay Point Famiy Apartments (DP15-3023)																
Shell Pipeline AC Mitigation Site at Valve 158					X	X										
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018					X	X										
2700 Empire Ave																
30 Technology Court																
January 2017 Storm Damage Repair Projects-FEMA 4301-DR-CA: Divide Reservoir					X	X										
PG&E C-979 Spans 64, 242, and 243 Gas Transmission Corrosion Project																
PG&E RMSCC15-303 Project																
Shell Pipeline North 20 Repair Project 2018					X	X										
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 - 1st Amendment					X	X			X	X						
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 - 1st Amendment					X	X			X	X						
Line 200 Vasco Road Remediation Project																
Gilbert Property Phase 2																
Casey Waterline and Trough Installation									X	X						
Viera-Perley Fencing Project					X	X										
Horse Valley Creek and Wetland Restoration Project									X	X						
Barron Water Tank and Trough Installation Project (2015)																
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management																
Upper Sand Creek Basin Restoration Area Adaptive Management - Silt Removal																

[1] The implementation of these condtions and their results can be found in the planning survey reports and are avaiable 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	0.67	77.13	101.71	201.58
Alkali grassland	--	0.14	0.78	1.76
Ruderal	170.98	19.80	530.42	278.33
Chaparral and scrub	0.53	1.61	0.57	1.60
Oak savanna	0.04	0.67	0.06	2.07
Oak woodland	0.13	0.55	0.66	2.38
Subtotal terrestrial	*172.34*	*99.90*	*634.20*	*487.72*
Aquatic				
Riparian woodland/scrub	0.21	0.40	1.23	2.00
Perennial wetland[1]	--	0.10	0.07	0.69
Seasonal wetland	0.12	0.19	0.63	2.41
Alkali wetland	--	--	0.14	0.84
Pond	--	0.04	0.01	0.08
Reservoir (open water)[2]	--	--	0.47	4.14
Slough/Channel (includes stream)	--	--	0.65	0.15
Subtotal aquatic	*0.34*	*0.72*	*3.19*	*10.31*
Stream (length in linear feet)				
Total stream length	158.00	1,417.00	1,074.31	5,972.70
Stream length by width category				
≤ 25 feet wide	--	1,220.00	677.00	5,248.50
> 25 feet wide	158.00	197.00	397.31	724.20
Stream length by type and order				
Perennial	93.00	297.00	149.00	684.50
Intermittent	65.00	258.00	627.31	4,255.20
Ephemeral, 3rd or higher order	--	--	--	--
Ephemeral, 1st or 2nd order	--	862.00	298.00	1,033.00
Subtotal stream length	*158.00*	*1,417.00*	*1,074.31*	*5,972.70*
Irrigated agriculture				
Cropland	--	--	128.09	32.38
Pasture	--	--	0.15	1.80
Orchard	--	--	10.27	0.21
Vineyard	--	--	24.08	7.36
Subtotal irrigated agricultural	--	--	*162.59*	*41.75*
Other				
Nonnative woodland	0.72	0.08	1.05	1.91
Wind turbines	--	--	--	0.57
Subtotal other	*0.72*	*0.08*	*1.05*	*2.48*

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	0.02	--	0.02	0.38
Wildrye grassland	--	--	0.03	0.02
Wildflower fields	--	--	--	--
Squirreltail grassland	--	--	--	--
One-sided bluegrass grassland	--	--	--	--
Serpentine grassland	--	--	--	--
Saltgrass grassland (alkali grassland)	--	0.14	0.20	0.53
Alkali sacaton bunchgrass grassland	--	--	--	--
Other uncommon vegetation types	--	--	0.06	--
Subtotal uncommon vegetation types	*0.02*	*0.14*	*0.31*	*0.93*
Uncommon Landscape Features or Habitat Elements				
Rock outcrop	--	--	0.15	0.13
Cave	--	--	--	--
Springs/seeps	--	--	--	--
Scalds	--	0.00	--	0.00
Sand deposits	--	--	--	--
Turf	--	--	0.50	5.70
Buildings - Bat Roosts (number)	--	--	--	--
Mines (number)	--	--	--	--
Buildings (number)	--	--	--	--
Potential nest sites (number)	--	--	--	--
Subtotal uncommon landscape features (acres)	--	*0.00*	*0.65*	*5.84*
Subtotal uncommon landscape features (number)	--	--	--	--
Totals (excludes subtypes)				
Acres	173.40	100.70	801.02	542.26
Linear feet	158.00	1,417.00	1,074.31	5,972.70

[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.

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 Road Safety Phase 1 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	
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	0.00	132.00	368.50
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	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	0.00	76.00	86.00
	Subtotal stream length	*0.00*	*0.00*	*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	
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	0.12	0.00	0.25	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	0.34	3.35
	Slough/Channel[3] (includes stream)	0.00	0.00	0.58	0.00
	Subtotal aquatic	*0.12*	*0.00*	*1.59*	*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	
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	42.00	6.00	42.00
	Stream length by width category				
	≤ 25 feet wide	0.00	42.00	0.00	42.00
	> 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	42.00	0.00	42.00
	Subtotal stream length	*0.00*	*42.00*	*6.00*	*42.00*
Kirker	**Aquatic (acres)**				
	Riparian woodland/scrub	0.05	0.04	0.05	0.09
	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	*0.05*	*0.04*	*0.05*	*0.09*
	Stream (linear feet)				
	Total stream length	0.00	35.00	0.00	35.00
	Stream length by width category				
	≤ 25 feet wide	0.00	35.00	0.00	35.00
	> 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	35.00	0.00	35.00
	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*	*35.00*	*0.00*	*35.00*

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

		Impacts			
		Reporting Period		Cumulative	
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]	0.00	0.00	0.13	0.79
	Slough/Channel[3] (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.26*	*1.07*
	Stream (linear feet)				
	Total stream length	0.00	282.00	33.31	355.70
	Stream length by width category				
	≤ 25 feet wide	0.00	282.00	0.00	282.00
	> 25 feet wide	0.00	0.00	33.31	73.70
	Stream length by type and order				
	Perennial	0.00	211.00	0.00	211.00
	Intermittent	0.00	71.00	33.31	144.70
	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*	*282.00*	*33.31*	*355.70*
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	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Sand	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.30	0.73
	Perennial wetland[1]	0.00	0.10	0.04	0.57
	Seasonal wetland	0.00	0.19	0.02	2.37
	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*	*0.29*	*0.36*	*3.67*
	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	0.17	0.35	0.34	0.61
	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	0.04	0.01	0.08
	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	*0.17*	*0.39*	*0.41*	*0.72*
	Stream (linear feet)				
	Total stream length	158.00	1,058.00	299.00	1,297.50
	Stream length by width category				
	≤ 25 feet wide	0.00	861.00	58.00	938.00
	> 25 feet wide	158.00	197.00	241.00	359.50
	Stream length by type and order				
	Perennial	93.00	86.00	93.00	191.00
	Intermittent	65.00	152.00	177.00	242.50
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	820.00	29.00	864.00
	Subtotal stream length	*158.00*	*1,058.00*	*299.00*	*1,297.50*

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

		Impacts			
		Reporting Period		Cumulative	
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	0.00	0.00	41.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	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	0.00	0.00	41.00
	Subtotal stream length	*0.00*	*0.00*	*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	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Total	**Aquatic (acres)**				
	Riparian woodland/scrub	0.21	0.40	1.23	2.00
	Perennial wetland[1]	0.00	0.10	0.07	0.69
	Seasonal wetland	0.12	0.19	0.63	2.41
	Alkali wetland	0.00	0.00	0.14	0.84
	Pond	0.00	0.04	0.01	0.08
	Reservoir (open water)[2]	0.00	0.00	0.47	4.14
	Slough/Channel[3] (includes stream)	0.58	0.00	0.65	0.15
	Total aquatic	0.34	0.72	3.19	10.31
	Stream (linear feet)				
	Total stream length	158.00	1,417.00	1,074.31	5,972.70
	Stream length by width category				
	≤ 25 feet wide	0.00	1,220.00	677.00	5,248.50
	> 25 feet wide	158.00	197.00	397.31	724.20
	Stream length by type and order				
	Perennial	93.00	297.00	149.00	684.50
	Intermittent	65.00	258.00	627.31	4,255.20
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	862.00	298.00	1,033.00
	Total stream length	158.00	1,417.00	1,074.31	5,972.70

[1] Perennial wetlands are equivalent permanent wetlands.

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

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.*

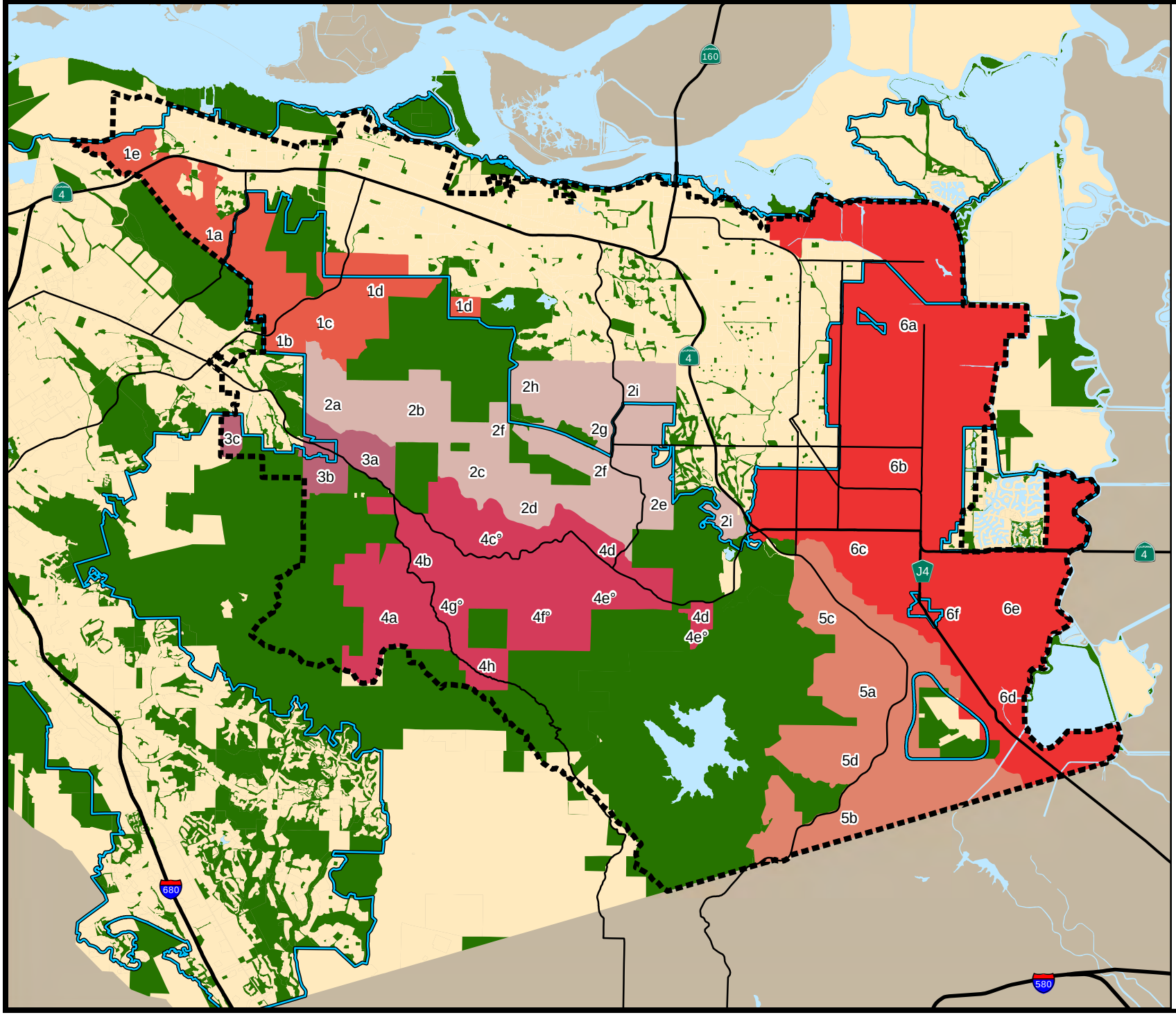
Acquisition Analysis Zones

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 to 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 scenarios 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

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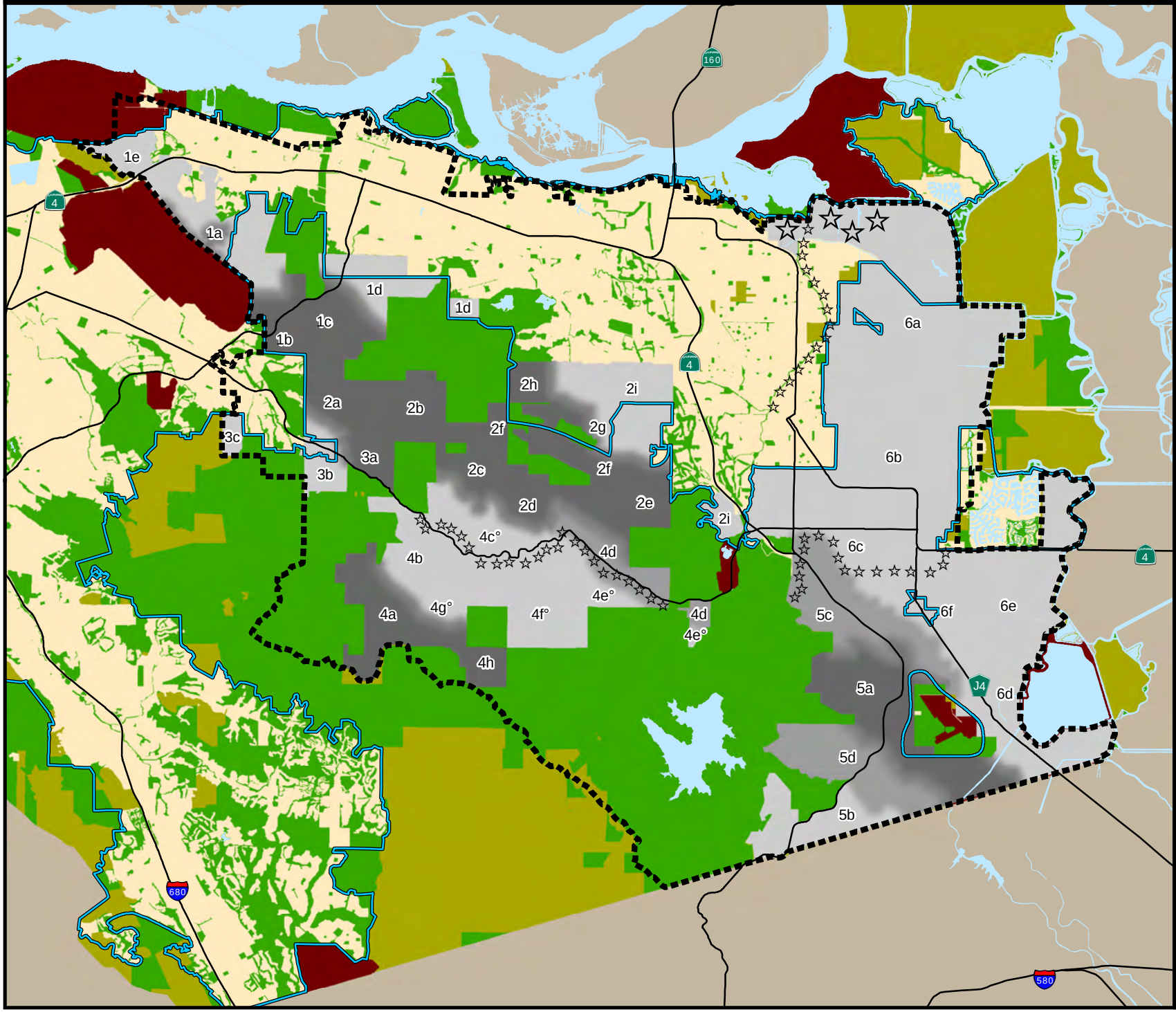
Figure 5. Acquisition Priorities Under Initial Urban Development Area Scenario



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

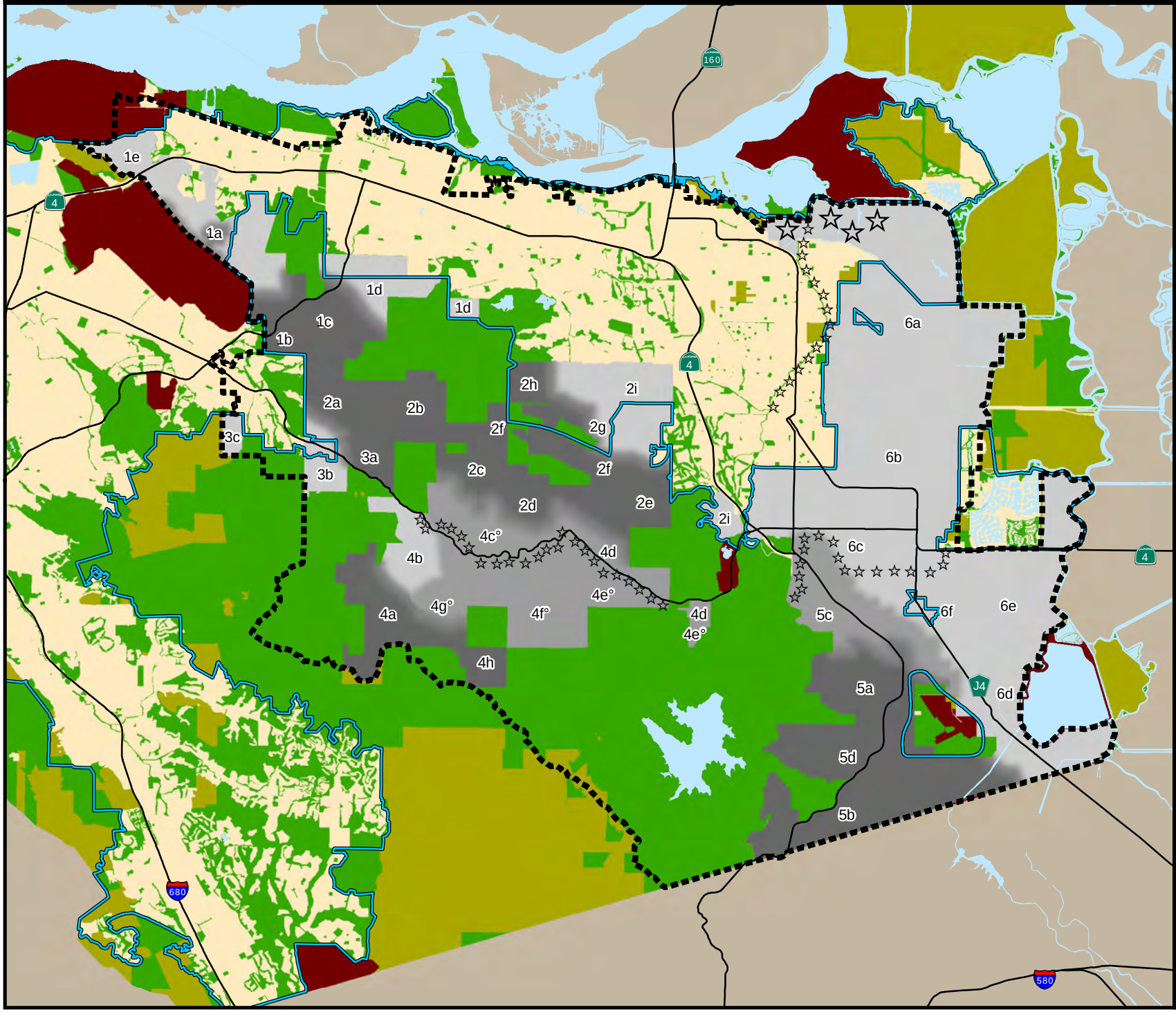
Miles

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

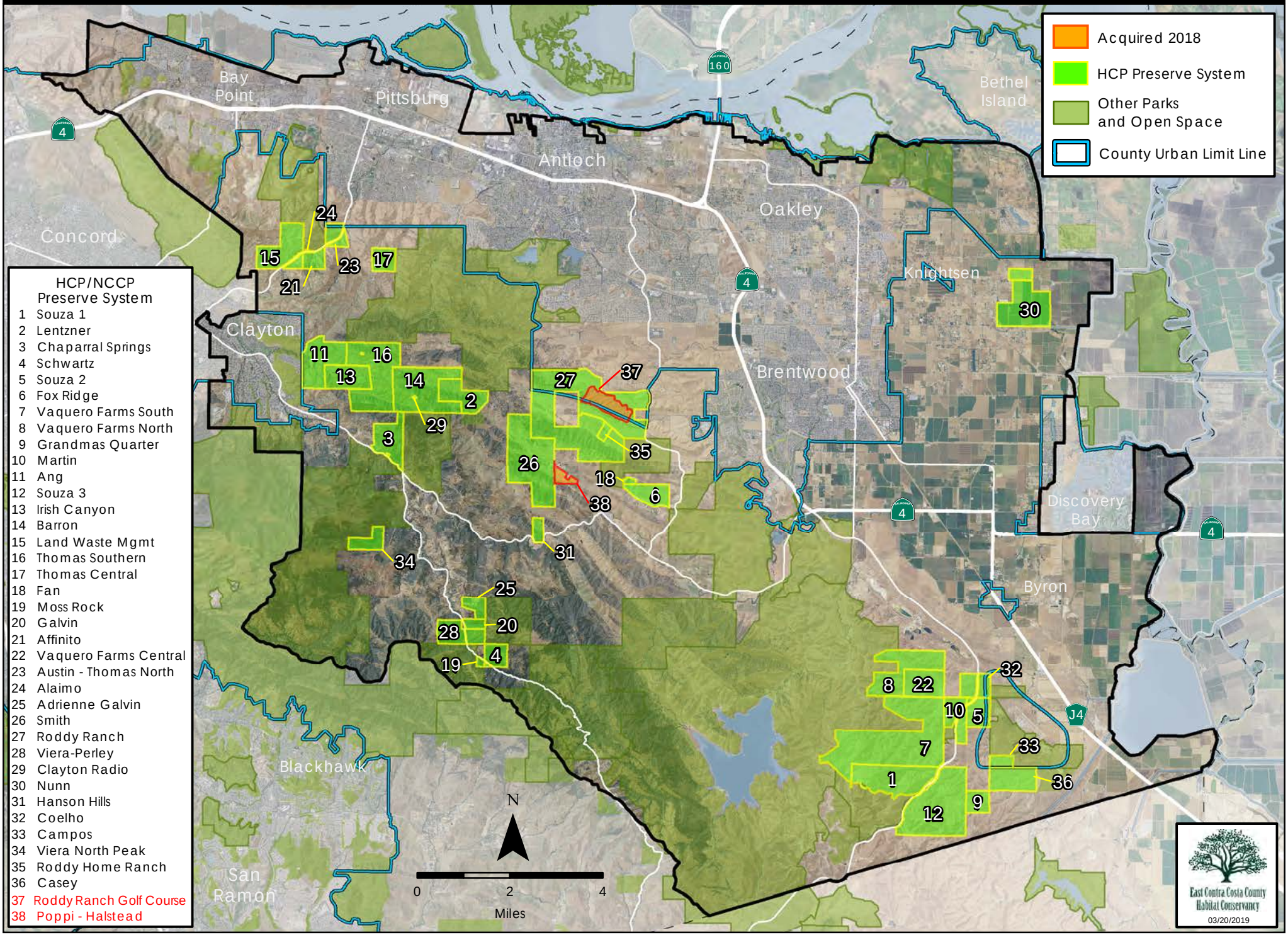
Miles

2 1 0 2

East Contra Costa County Habitat Conservancy

03/13/2018

Figure 7. Acquisitions Completed under HCP/NCCP as of December 31. 2018



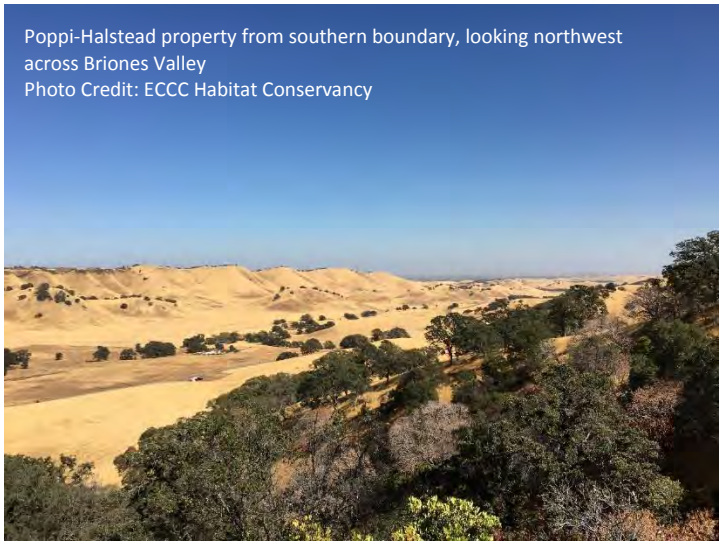
In addition to quantitative land acquisition requirements by land cover type and Zone, qualitative land acquisition requirements are also provided for some Zones. For instance, connection to existing public lands or preservation of a certain number of ponds or covered plant populations are required.

2018 Land Acquisition

The Conservancy acquired two properties in 2018 for the Preserve System, totaling approximately 314 acres (GIS): Poppi-Halstead (70 acres) and Roddy Ranch Golf Course (244 acres). The two properties are shown in Figure 7, and details of the properties are shown in Figures 8 through 11. Table 7 shows the cumulative summary of acquired properties and their funding sources.

Tables 8a, 8b, and 9 show the land cover types protected by the two acquisitions in 2018.

Poppi-Halstead Property



Poppi-Halstead property from southern boundary, looking northwest across Briones Valley
Photo Credit: ECCC Habitat Conservancy

The 70-acre Poppi-Halstead property is located in Acquisition Zone 2, Subzone 2d in Briones Valley. It is roughly 7 miles west of Brentwood, and approximately 2.2 miles from the Briones Valley Road and Deer Valley Road intersection. The Property is comprised of three parcels – two of the parcels' entire northern boundaries are adjacent to Briones Valley Road, while the center parcel has a portion of its northern boundary adjacent to the road. Briones Valley Road is a public right-of-way that is a roughly paved, two-lane road. The Poppi-Halstead property has street frontage of approximately 3,400 feet along Briones Valley Road. Much of the property lies south of the road,with a small portion to the north where Briones Valley Road crosses the Poppi-Halstead property. The Poppi-Halstead property is irregular, almost triangular, in shape and has level to slightly sloping areas adjacent to the road, then moderate to steeply-sloping areas in the southern parts of the property.

The Poppi-Halstead property is identified in the HCP/NCCP as high priority for acquisition; largely due to the Briones Valley's potential to function as a movement route for San Joaquin kit fox. Briones Valley is an important secondary movement route for kit fox identified in the HCP/NCCP conservation strategy. The movement route is approximately 5 miles long, 4.5 miles of which traversed private land at the time the HCP/NCCP was written.

The acquisition will help to mitigate movement-route loss due to development of rural ranchettes in lower Briones Valley. Development threatens to fragment grassland habitat within the valley. The Poppi-Halstead property is adjacent to the Smith property that was acquired for the Preserve System in 2014. The acquisition protects critical land in the northwest end 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.

The Property also offers recreational benefits. Acquisition of the Property will support a key goal of EBRPD's Master Plan: Creating a Park in Deer Valley.

Roddy Ranch Golf Course Property

Roddy Ranch Golf Course property from the southwestern corner of the Property, looking east.

The 244-acre Roddy Ranch Golf Course property is located in Zone 2, Subzones 2e and 2f and is surrounded by the 1,885-acre Roddy Ranch property that was acquired for the Preserve System in 2014. The ECCC HCP/NCCP had not mapped the Property within an acquisition zone or subzone, due to the fact that the Roddy Ranch Golf Course property was designated in the category of "Parks, Urban Parks, Open Space, and Public Watershed" and was assumed to be unavailable for acquisition. Zone 2 excluded the Roddy Ranch Golf Course due to a dedication of development rights on the property. Development rights had been granted to three parties: County of Contra Costa, Contra Costa County Agricultural Trust, and the California Department of Fish and Wildlife, and gives the parties the right to disapprove any proposed construction, development or improvement, except for construction of the golf course and ancillary uses. However, the deed restriction did not constitute a grant of conservation rights. Because of the importance of this property to achieve the HCP/NCCP biological goals and objectives, the Wildlife Agencies have provided their support of the acquisition of the Roddy Ranch Golf Course and have authorized credit of 48.71 acres toward Subzone 2e and 127.62 acres toward Subzone 2f. As discussed above, the Property was not identified in any subzone in the ECCC HCP/NCCP. Based on the property's land cover types , strategic importance as a wildlife corridor, and restoration potential, the land is comparable to conservation land in subzones 2e and 2f.

The HCP/NCCP identified Deer Valley as a potential movement route for the San Joaquin kit fox. The movement route is approximately 4 miles long. At the time of Plan development, the Plan stated that "Roddy Ranch Golf Course also separates the two valleys [Deer Valley and Horse Valley] but is not considered a barrier to kit fox because annual grassland is interspersed between the greens and fairways… and kit fox are known to use golf courses in the southern part of their

range" (p. 5-45). The Roddy Ranch Golf Course property already protected the wildlife corridor in Deer Valley connecting Black Diamond Mines Regional Preserve to Marsh Creek State Park, Round Valley Regional Preserve, and Los Vaqueros Reservoir watershed lands. Now, as part of the Preserve System, Roddy Ranch Golf Course also offers a tremendous opportunity for habitat restoration.

The Property also offers recreational benefits. Acquisition of the Property supports a key goal of EBRPD's Master Plan: Creating a Park in Deer Valley. The Property already contains a network of paved cart paths that could serve as trails, so long as they are compatible with the management of habitat and covered species of the Plan.

Preservation Requirements Progress

Table 10 summarizes progress toward preservation requirements of covered plant populations.[2] To date, 55 known occurrences of covered plant populations have been protected in the Preserve System. This includes occurrences on the newly acquired Poppi-Halstead property.

Diablo helianthella on the Poppi-Halstead property
Photo Credit: Heath Bartosh, Nomad Ecology, LLC.

During the reporting period, the Poppi-Halstead property was surveyed for covered plants that bloom in the late spring/early summer. During the 2018 plant surveys on the property, one covered plant species, Diablo helianthella (*Helianthella castanea*), was observed. Spring plant surveys on the property are to be completed in spring of 2019, which may reveal additional covered species.

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.

- 62% of the Zone 2 requirement to protect annual grasslands was met.
- 50% of the Zone 4 requirement to protect chaparral/scrub was met.
- 20% of the Zone 5 requirement to protect alkali grassland was met.
- 51% of the Zone 5 requirement to protect alkali wetland was met.

[2] 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.

- 48% of the estimated minimum overall land acquisition requirement and 35% of the estimated maximum requirement were met.

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.

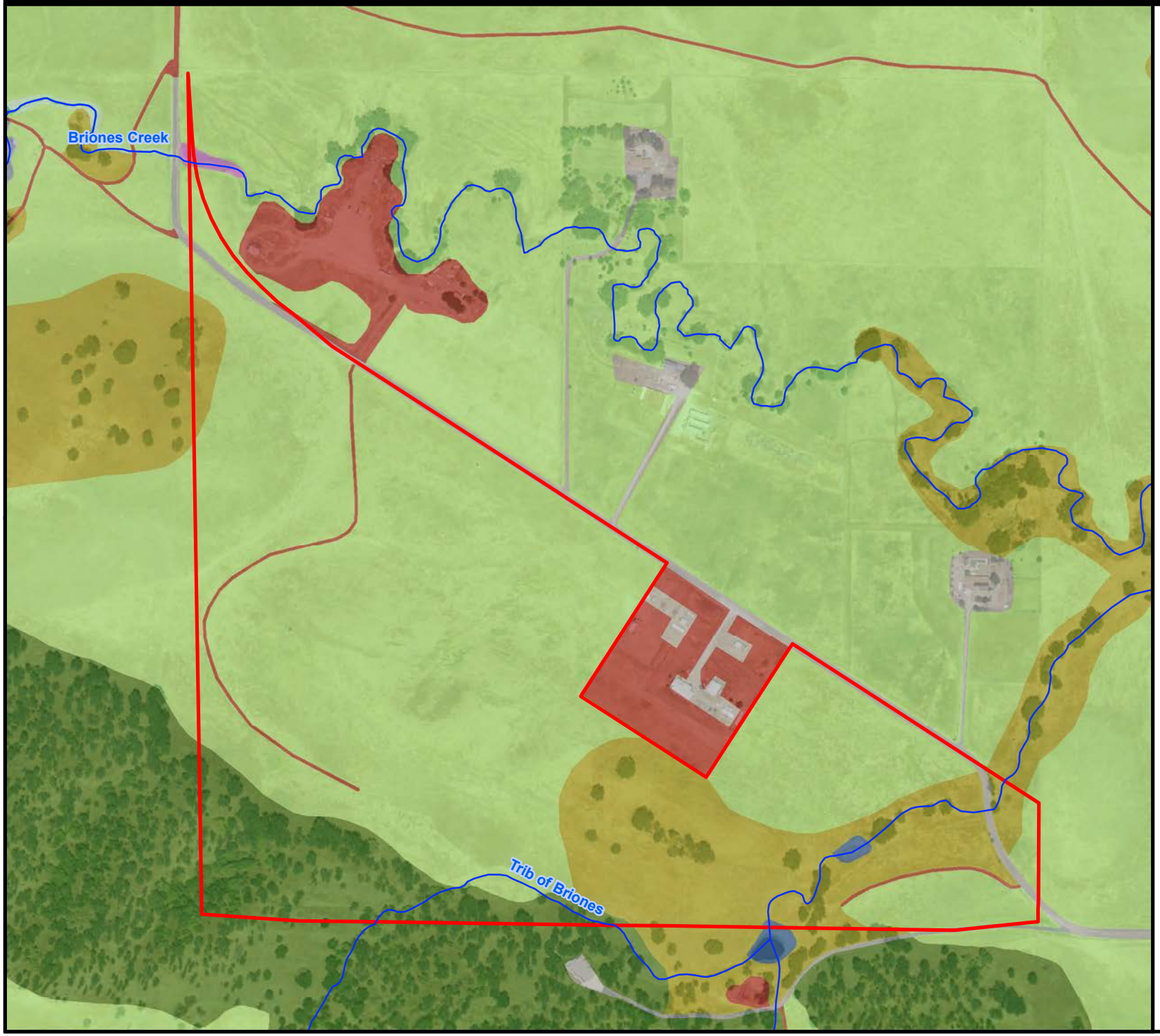
A Note on Land Cover Mapping Refinements and Cumulative Acreages

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 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. Poppi-Halstead Property - Landcover Map



Legend

Property Boundary

Landcover

Grassland
- grassland (48.87 acres)
- alkali grassland
- ruderal (0.61 acres)

Wetland
- permanent wetland
- seasonal wetland (0.02 ac)
- alkali wetland

Aquatic
- stream (1,777.71 feet)
- aquatic/open water
- pond (0.18 acres)
- slough/channel
- riparian
- chaparral
- oak savanna (12.26 acres)
- oak woodland (6.74 acres)
- rock outcrops

Irrigated Agriculture
- pasture
- cropland
- vineyard

Developed
- urban (1.04 acres)
- aqueduct
- wind turbines

N

03/20/2019

East Contra Costa County Habitat Conservancy

Feet

0 350 700

Figure 9. Poppi-Halstead Representative Photographs

Photo 1: View just south of Briones Valley Road looking south onto the Property.

Photo 2: View from the Property looking in a northeast direction toward Briones Valley Road.

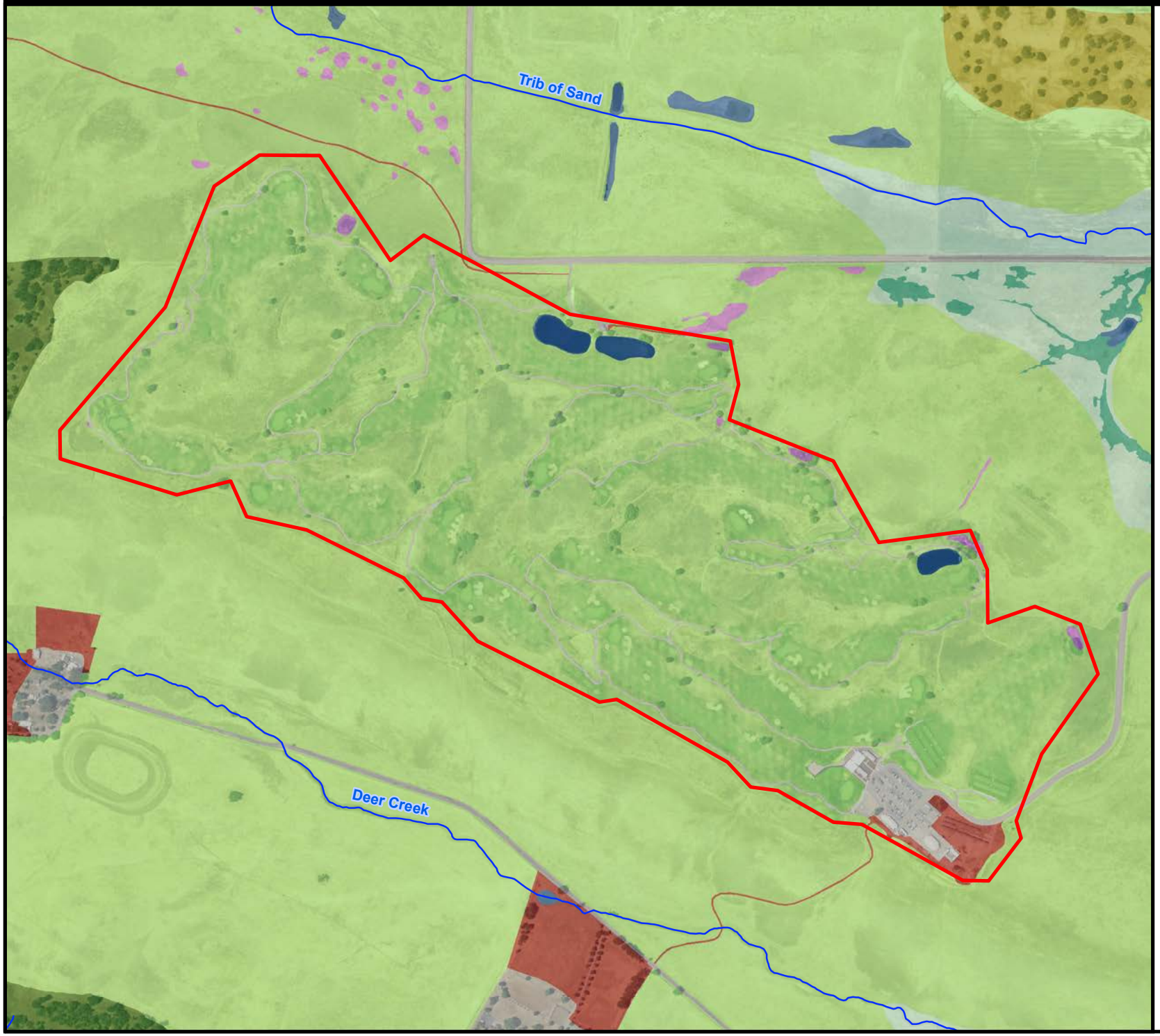
Photo 3: View looking east across the Property.

Photo 4: Oak trees located on the southwestern portion of the Property.

Photo 5: View from the southern boundary of the Property looking north-west across Briones Valley.

Photo 6: View from the southwest corner of the Property looking north-east across Briones Valley.

Figure 10. Roddy Ranch Golf Course Property - Landcover Map



Legend

Property Boundary

Landcover

Grassland
- grassland (211.43 acres)
- alkali grassland
- ruderal (2.8 acres)

Wetland
- permanent wetland
- seasonal wetland (0.92 ac)
- alkali wetland

Aquatic
- stream (0 feet)
- aquatic (2.4 acres)
- pond
- slough/channel

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

Irrigated Agriculture
- pasture
- cropland
- vineyard

Developed
- urban (12.24 acres)
- aqueduct
- wind turbines

N

03/20/2019

East Contra Costa County Habitat Conservancy

Feet

0 600 1,200

Figure 11. Roddy Ranch Golf Course Representative Photographs

Photo 1: View of the Property from the southwest corner looking east.

Photo 2: Large irrigation lake on the Property.

Photo 3: Wetland that functions as a pond overflow on the Property.

Photo 4: View of cart paths with Mount Diablo in the background.

Photo 5: View of cart paths on the Property.

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

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

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

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

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

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

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

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	

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 savanna
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 savanna
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 and closing costs	$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

Roddy Ranch Golf Course

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 4/30/2018
Acres: 230
Key land cover: Annual Grassland, Ruderal
Appraised Value: $1,955,000
Purchase Price: $1,955,000

Source	Funding amount	Percent	Section 6 Match
EBRPD	$20,000	1%	yes
Section 6 Grant (FY15)	$879,750	45%	no
WCB Prop. 84	$1,055,250	54%	yes
TOTAL	$1,955,000	100%	

Non-Federal Match Needed: $1,075,250 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	*$20,000*
WCB Proposition 84	$1,055,250
TOTAL	$1,075,250

Poppi/Halstead

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 11/9/2018
Acres: 71.99
Key land cover: Annual Grassland, Ruderal
Appraised Value: $725,000
Purchase Price: $725,000

Source	Funding amount	Percent	Section 6 Match
EBRPD	$348,000	48%	yes
Section 6 Grant (FY15)	$377,000	52%	no
TOTAL	$725,000	100%	

Non-Federal Match Needed: $460,778 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$348,000
Due diligence and closing costs	$29,525
Start-up Management	$83,253
TOTAL	$460,778

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	--	--	262.5	--	--	0.6	7,966.9	1,463.6	--	0.62	48%	--	--
Alkali grassland	1,250	--	--	--	--	--	--	276.8	17.5	--	0.02	22%	--	--
Ruderal	--	--	--	3.4	--	--	--	125.0	25.7	--	--	--	--	--
Chaparral and scrub	550	--	--	--	--	--	--	310.3	0.0	--	--	56%	--	--
Oak savanna	500	--	165	12.3	--	--	--	410.3	23.0	--	--	82%	--	0%
Oak woodland	400	--	--	6.7	--	--	--	2,491.5	131.6	--	--	623%	--	--
Subtotal terrestrial	*19,200*	--	*165*	*284.9*	*0.0*	*0.0*	*0.6*	*11,580.9*	*1,661.4*	--	*0.64*	*60%*	--	0%
Aquatic														
Riparian woodland/scrub	70	--	55	--	--	--	--	65.71	0.20	--	5.40	94%	--	10%
Perennial wetland[1]	75	--	85	--	--	--	--	5.38	5.80	--	0.16	7%	--	0%
Seasonal wetland	168	--	163	0.93	--	--	2.00	13.11	1.40	--	10.70	8%	--	7%
Alkali wetland	93	--	67	--	--	--	--	33.65	4.30	--	2.40	36%	--	4%
Pond	16	16	--	0.17	--	0.19	--	11.38	2.70	0.61	--	71%	4%	--
Reservoir (open water)[2]	12	6	--	--	--	--	--	--	--	--	--	0%	0%	--
Slough/Channel	36	--	72	--	--	--	--	3.10	0.00	--	--	9%	--	0%
Subtotal aquatic	*470*	*22*	*442*	*1.10*	--	*0.19*	*2.00*	*132.33*	*14.40*	*0.61*	*18.66*	*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	17.20	--	--	--	137,982.90	25,242.10	--	8,478.10	6533%	--	401%
Ephemeral[4]	26,400	--	26,400	0.00	--	--	--	67,670.00	877.80	--	--	256%	--	0%
Classification pending[4]	--	--	--	1,760.50	--	--	--	86,611.80	16,445.30	--	2,267.17	--	--	--
Subtotal stream length	*32,736*	--	*30,624*	*1,777.70*	--	--	--	*304,889.80*	*43,454.30*	--	*10,745.27*	*931%*	--	*35%*
Irrigated agriculture														
Cropland	400	--	--	--	--	--	--	541.4	0.0	0.0	0.0	135%	--	--
Pasture	--	--	--	--	--	--	--	71.3	0.0	0.0	0.0	--	--	--
Orchard	--	--	--	--	--	--	--	0.1	0.0	0.0	0.0	--	--	--
Vineyard	--	--	--	--	--	--	--	0.0	0.0	0.0	0.0	--	--	--
Subtotal irrigated agricultural	*400*	--	--	--	--	--	--	*612.8*	--	--	--	--	--	--
Other														
Nonnative woodland	--	--	--	--	--	--	--	0.7	--	--	--	--	--	--
Wind turbines	--	--	--	--	--	--	--	20.0	--	--	--	--	--	--
Subtotal other	--	--	--	--	--	--	--	*20.7*	--	--	--	--	--	--
Developed														
Urban	--	--	--	13.9	--	--	--	60.6	0.8	--	--	--	--	--
Aqueduct	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turf	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Landfill	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal developed	--	--	--	13.9	--	--	--	*60.6*	*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	--	--	--	--	--	--	--	18.2	4.5	--	--	--	--	--
Cave	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Springs/seeps	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Scalds	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sand deposits	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mines (number)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Buildings (number)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Potential nest sites (number)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal uncommon landscape features	--	--	--	--	--	--	--	*18.2*	*4.5*	--	--	--	--	--
Totals (excludes subtypes)														
Acres	--	--	--	299.8	0.0	0.2	2.6	12,425.4	1,681.1	0.6	19.3	--	--	--
Linear feet (Streams)	--	--	--	1,777.70	0.00	0.00	0.00	304,889.80	43,454.30	0.00	10,745.27	--	--	--

[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

Land Cover Type	Poppi/Halstead Protection	Poppi/Halstead Existing Easement (No credit)	Roddy Ranch Golf Course Protection	Roddy Ranch Golf Course Existing Easement (No credit)	Reporting Period Totals Protection	Reporting Period Totals Existing Easement (No credit)
Terrestrial						
Annual grassland	48.9	0.0	211.4	0.0	260.3	0.0
Alkali grassland	0.0	0.0	0.0	0.0	0.0	0.0
Ruderal	0.6	0.0	0.6	0.0	1.2	0.0
Chaparral and scrub	0.0	0.0	0.0	0.0	0.0	0.0
Oak savanna	12.3	0.0	12.3	0.0	24.5	0.0
Oak woodland	6.7	0.0	6.7	0.0	13.5	0.0
Subtotal terrestrial	*68.5*	*0.0*	*231.0*	*0.0*	*299.5*	*0.0*
Aquatic						
Riparian woodland/scrub	0.00	0.00	0.00	0.00	0.00	0.00
Perennial wetland[1]	0.00	0.00	0.00	0.00	0.00	0.00
Seasonal wetland	0.02	0.00	0.91	0.00	0.93	0.00
Alkali wetland	0.00	0.00	0.00	0.00	0.00	0.00
Pond	0.17	0.00	0.00	0.00	0.17	0.00
Reservoir (open water)[2]	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
Subtotal aquatic	*0.19*	*0.00*	*0.91*	*0.00*	*1.10*	*0.00*
Stream (length in linear feet)						
Total stream length	1,777.71	0.00	0.00	0.00	1,777.7	0.0
Stream length by width category						
≤ 25 feet wide	0.00	0.00	0.00	0.00	0.0	0.0
> 25 feet wide	0.00	0.00	0.00	0.00	0.0	0.0
Stream length by type and order						
Perennial	0.00	0.00	0.00	0.00	0.0	0.0
Intermittent	17.17	0.00	0.00	0.00	17.2	0.0
Ephemeral	0.00	0.00	0.00	0.00	0.0	0.0
Classification pending	1,760.54	0.00	0.00	0.00	1,760.5	0.0
Subtotal stream length	*1,777.71*	*0.00*	*0.00*	*0.00*	*1,777.71*	*0.00*
Irrigated agriculture						
Cropland	0.0	0.0	0.0	0.0	0.0	0.0
Pasture	0.0	0.0	0.0	0.0	0.0	0.0
Orchard	0.0	0.0	0.0	0.0	0.0	0.0
Vineyard	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal irrigated agricultural	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Other						
Nonnative woodland	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
Subtotal other	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Developed						
Urban	1.0	0.0	12.3	0.0	13.3	0.0
Aqueduct	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
Landfill	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal developed	*1.0*	*0.0*	*12.3*	*0.0*	*13.3*	*0.0*

Table 8b. Continued

Land Cover Type	Poppi/Halstead Protection	Poppi/Halstead Existing Easement (No credit)	Roddy Ranch Golf Course Protection	Roddy Ranch Golf Course Existing Easement (No credit)	Reporting Period Totals Protection	Reporting Period Totals Existing Easement (No credit)
Uncommon Vegetation Types (subtypes of above land cover types)						
Purple needlegrass grassland	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
Wildflower fields	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
One-sided bluegrass grassland	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
Saltgrass grassland (alkali grassland)	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
Other uncommon vegetation types	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*
Uncommon Landscape Features or Habitat Elements						
Rock outcrop	0.0	0.0	0.0	0.0	0.0	0.0
Cave	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
Scalds	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
Mines (number)	0.0	0.0	0.0	0.0	0.0	0.0
Buildings (number)	0.0	0.0	0.0	0.0	0.0	0.0
Potential nest sites (number)	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal uncommon landscape features	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal uncommon habitat elements	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Totals (excludes subtypes)						
Acres	69.7	0.0	244.2	0.0	313.9	0.0
Linear feet	1,777.71	0.00	0.00	0.00	1,777.71	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	0.00	65.71	94%
Preserve-wide Perennial wetland (acres)	75	0.00	5.38	7%
Preserve-wide Seasonal wetland (acres)	168	0.93	13.11	8%
Preserve-wide Alkali wetland (acres)	93	0.00	33.65	36%
Preserve-wide Pond (acres)	16	0.17	11.38	71%
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	1,777.70	304,889.80	931%
Stream length by type				
Perennial (feet)	4,224	0.00	12,625.10	299%
Intermittent (feet)	2,112	17.20	137,982.90	6533%
Ephemeral[2] (feet)	26,400	0.00	67,670.00	256%
Classification Pending[2] (feet)	--	1,760.50	86,611.80	--

[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	4	150%
San Joaquin spearscale	*Atriplex joaquiniana*	0	0	10	--
Big tarplant	*Blepharizonia plumosa*	3	0	12	400%
Mount Diablo fairy lantern	*Calochortus pulchellus*	1	1	6	600%
Recurved larkspur	*Delphinium recurvatum*	2	0	0	0%
Round-leaved filaree	*Erodium macrophyllum*	2	2	5	250%
Diablo helianthella	*Helianthella castanea*	2	1	13	650%
Brewer's dwarf flax	*Hesperolinon breweri*	3	2	5	167%
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)	7	55	

[1] For the 2015 Annual Report, we are recording sightings confirmed in 2015. Surveys will continue at 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	0.0	0.0	0%
1b	Annual grassland (1,450 acres combined w/ 1c)	TBD	1,450	0.0	49.5	3%
1c	Annual grassland (1,450 acres combined w/ 1b)	TBD	--	0.0	483.8	--
1d	25% of total area	478	478	0.0	201.5	42%
1e	No specific requirements	--	--	--	--	--
All	Estimated minimum requirement	2,100	2,250	0.0	860.0	38%
All	Estimated maximum requirement	2,850	3,150	0.0	860.0	27%
Zone 2						
2a	At least 60% of subzone	1,104	1,104	0.0	1,414.3	128%
2a	Annual grassland (850 acres)	--	850	0.0	934.9	111%
2a	90% of chaparral in 2a, 2b, and 2c (122 acres total)	--	see below	0.0	0.4	0%
2a	Land to protect Mount Diablo manzanita	--	--	--	--	--
2b	Annual grassland (450 acres)	450	450	0.0	391.3	87%
2b	Connection between Black Diamond R.P. and Clayton Ranch (w/ 2c)		see below	--	--	--
2b	90% of chaparral in 2a, 2b, and 2c (122 acres total)		see below	--	--	--
2c	Annual grassland (400 acres)	400	400	0.0	146.5	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 (122 acres total)		see below	--	--	--
2c	Seven (7) of thirteen (13) ponds for TRBL, CTS, WPT, or CRLF		7	0.0	0.0	0%
2d	Annual grassland (800 acres)	800	800	48.9	439.2	55%
2d	Known occurrence of round-leaved filaree (#)	1	1	1	1	100%
2e	Annual grassland (800 acres)	800	800	0.0	420.6	53%
2e	See 2e/2f/2h below		see below	--	--	--
2f	Annual grassland (1,000 acres)	1,000	1,000	0.0	452.3	45%
2f	San Joaquin kit fox movement corridor	--	--	--	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	0.0	274.9	46%
2h	Two occ. of big tarplant (number)	2	2	0	1	50%
2h	Known occ. of Mt. Diablo manzanita and Brewer's dwarf flax (number)	2	2	0	3	150%
2h	San Joaquin kit fox (75%)			--	--	--
2h	Silvery legless habitat, if present			--	--	--
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%)	112	112	0.0	9.8	8%
2e/2f/2h	Annual grassland, combined	2,400	2,400	0.0	1,147.8	48%
All	Vernal pool invertebrate suitable habitat, wherever possible	--	--	--	--	Yes (not quantified
All	Estimated minimum requirement	7,500	7,500	69.7	4,892.9	65%
All	Estimated maximum requirement	9,550	9,550	69.7	4,892.9	51%
All	Alternative Stay Ahead Measurement for Zone 2	--	4,900	0.0	0.0	0%
Zone 3						
3a	90% of modeled AWS suitable core habitat	159	159	0.0	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	0.0	292.7	73%
All	Estimated maximum requirement	750	750	0.0	292.7	39%
Zone 4						
4a	75% of natural land cover types	1,700	1,700	0.0	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	953	953	0.0	0.0	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	791	791	0.0	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	200	200	0.0	132.5	66%
4c/4e/4f/4g	18%IUDA or 39%MUDA of natural land cover types in 4c, 4e, 4f, 4g	1,400	3,000	0.0	0.0	0%
All	Chaparral/Scrub	270	270	0.0	133.8	50%
All	Estimated minimum requirement	4,900	6,050	884.6	884.6	15%
All	Estimated maximum requirement	6,150	8,350	884.6	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	0.0	0.0	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(4)	0	2	100% (50%)
5a/5d	At least 2 occurrences of recurved larkspur	--	2	0	1	50%
5a/5d	170 acres connected to Byron Airport preserved areas	--	170	0.0	587.8	346%
5a/5b/5d	Annual grassland	--	7,100	0.0	3,633.8	51%
All	Grassland	5,300	8,100	0.0	3,633.8	45%
All	Alkali grassland	750	900	0.0	176.1	20%
All	Alkali wetland	40	40	0.0	20.4	51%
All	Vernal pool invertebrate suitable habitat, wherever possible	--	--	--	--	Yes (not quantified
All	Estimated minimum requirement	6,100	9,050	0.0	3,956.4	44%
All	Estimated maximum requirement	7,200	11,450	0.0	3,956.4	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	0.0	0.0	0%
6d/6e	Alkali wetland	20	40	0.0	0.0	0%
6a/6b/6c/6f	Cropland or Pasture	250	400	0.0	612.7	153%
All	Estimated minimum requirement	450	800	0.0	639.3	80%
All	Estimated maximum requirement	550	1,100	0.0	639.3	58%
All Zones						
All	Estimated minimum requirement	21,450	26,050	299.5	12,428.4	48%
All	Estimated maximum requirement	27,050	34,350	299.5	12,428.4	35%

[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
WPT = western pond turtle
CRLF = California red-legged frog

Zone/ Subzone	Requirements[1]	Acres	Min. Acres Required (MUDA)	Acquired Reporting Period	Acquired Cumulative To date	Percent Achieved
SJKF = San Joaquin kit fox		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.

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. Restoration projects that the Conservancy has undertaken since the commencement of plan implementation are shown in Tables 13a and 13b. Habitat restoration and creation includes several focus areas to date, 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 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).

2018 Projects and Monitoring

Restoration projects that have completed their monitoring requirements, met their success criteria, and were deemed complete in or prior to the reporting year are no longer described in

the annual report 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 constructed in 2018 - The Horse Valley Creek and Wetland Restoration Project. The project created 37 seasonal wetland basins intended to support a total of 2.25 acres of newly created seasonal wetland habitat for vernal pool listed invertebrates and plants, and includes a larger pond along the restored channel intended to provide suitable breeding habitat for California red-legged frog. The project also included filling of 2,420 linear feet of disturbed, straightened channel and establishing 4,150 linear feet of restored channel for a net gain of 585 linear feet.

In 2018, the Conservancy monitored the following five restoration projects (Figure 12)

- Upper Hess Creek Watershed Habitat Restoration Project (constructed 2011)
- Vaquero Farms Seasonal Wetland Creation Project (Seasonal Wetlands 1 and 2 constructed in 2012)
- Hess Creek Channel Restoration Project (constructed 2014)[3]
- Vaquero Farms Seasonal Wetland 3 Creation (constructed 2015)
- Ang Riparian Restoration Project (constructed 2017)

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

Monitoring in 2018 demonstrated advancement toward achievement of site-specific restoration objectives.

Upper Hess Watershed Habitat Restoration Project (2011)

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 and 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

[3] A monitoring report was not required for the Hess Creek Channel Restoration Project in Year 4 so this project is not summarized for this reporting year.

[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.

seeded with a native seed mix. The results presented below are summarized from the *Year Seven Created Wetlands Monitoring Report: Upper Hess Creek Restoration Project* (Monk & Associates 2018a).

Monitoring and Adaptive Management

Monitoring at the Upper Hess Watershed Habitat Restoration Project site took place in the reporting year between November 2017 and June 2018. During Year 7 monitoring, not all components of the Upper Hess Watershed Habitat Restoration project met their performance criteria, and adaptive management and monitoring will continue.

Recommendations

Several of the required performance criteria were not met by the end of monitoring Year 7. As such, the Conservancy will continue to monitor and adaptively manage the project until such time that it does meet success criteria. The following are specific recommendations for the restoration area:

1. Regrade the Alluvial Valley Wetland basins so flows extend through the middle areas of the Alluvial Valley Wetlands and do not bypass the middle by staying on the outer sides of the valley bottom. This is in addition to the remedial grading completed in 2017.

2. Increase elevations along the northern edge of the Alluvial Valley Wetlands to promote greater flow and shallow wetland basins. Defined entrance and exit flow locations should be created as a design objective.

3. The Conservancy should continue to manage invasive plants within the restoration area.

Vaquero Farms Seasonal Wetlands Creation Project (Seasonal Wetlands 1 and 2) (2012)

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. The wetland features are intended to function as vernal pools and provide habitat for vernal pool fairy shrimp and other vernal pool species. The reporting year is monitoring Year 6 for the project. The monitoring results are summarized from the *Annual Monitoring Report for Seasonal Wetlands 1 and 2* (Monk & Associates 2018b).

Monitoring and Adaptive Management

These seasonal wetlands are monitored for hydrology, vegetation and wildlife presence.

Hydrologic monitoring was conducted between January and May of 2018, vegetation monitoring took place in June 2018. Species usage monitoring took place at every visit to the wetlands.

Rainfall in the project area was only 96% of normal during the 2017-2018 wet season. Between October 1, 2017 and June 1, 2018, 12.33 inches of rain fell (12.88 inches is normal for the area). October and November 2017 were particularly dry months with only 0.72-inch and 1.15 inches falling in those months, respectively. In January, Seasonal Wetland 1 was still dry, Seasonal Wetland 2 held approximately 8 inches of water, and the control wetland, was inundated approximately one inch. By February, Seasonal Wetland 2 only held 3 inches of water, and both Seasonal Wetland 1 and the control wetland were dry. In March, Seasonal Wetland 1 held only 1 inch of water, Seasonal Wetland 2 held 6 inches, and the control wetland was inundated to 2 inches. By April, Seasonal Wetland 1 was dry, Seasonal Wetland 2 held 3 inches and the control wetland held approximately 0.5-inches of water in hoof prints. All pools were dry by May.

Though the rainfall patterns in 2018 we not favorable for consistent wetland inundation, not species usage of the pools, both pools did meet vegetation success criteria. Both pools have had presence California tiger salamander in past years, and Pool 1 has had documented vernal pool fairy shrimp. This year, due to rainfall patterns, nether pool supported listed species.

Recommendations

Low rainfall is the only factor limiting 100% functionality of the seasonal wetlands. No remedial measures are recommended at this time.

Vaquero Farms Seasonal Wetland 3 Creation (2015)

Project Overview

The third wetland at Vaquero Farms was constructed in October of 2015. The pool was constructed between two other pools that were constructed in 2012. 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. The reporting year is the monitoring Year 3 for the project. The monitoring results are summarized from the *Annual Monitoring Report Seasonal Wetland 3* (Monk & Associates 2018c).

Seasonal Wetland 3 in January 2018
Photo Credit: Monk & Associates

Hydrologic monitoring was conducted between January and May of 2018, vegetation monitoring took place in June 2018. Species usage monitoring took place at every visit to the wetlands. The wetland did meet the Year 3 success criteria. Similar to Pools 1 and 2, discussed above, this pool's hydrology and species usage is dependent on rainfall. This pool has had presence California tiger salamander in past years, and Pool 1 has had documented vernal pool fairy shrimp. This year, due to rainfall patterns, the pool did not support listed species.

Recommendations

Seasonal Wetland 3 is functioning as intended. The only thing preventing this created wetland from functioning 100% is low rainfall totals. No remedial actions are recommended at this time.

Ang Riparian Restoration Project (2017-2019)

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, located on the 462-acre Ang property, is similar to that of the Irish Canyon Riparian Restoration Project – to improve riparian woodland habitat for wildlife by filling in gaps in existing vegetation along the banks of Irish Canyon Creek.

Ang Pond Restoration Project, January 2018
Photo Credit: Save Mount Diablo

During the reporting year, SMD finished prepping and planting the fifth and last planting site within the planting area initiated in 2017. The following activities were conducted at the planting site:

- Incorporating an organic soil conditioner to help break up dense clay soils
- Digging planting holes
- Building tree cages out of recycled fencing materials from Irish Canyon
- Building rodent cages
- Installing t-posts
- Planting riparian vegitation
- Installing protective materials around each plant
- Watering, weeding, and building berms around each plant

Towards the end of the year, oak plantings that had died or never sprouted were replaced. In addition half of the planned red willow stakes were installed (the other portion of the plantings took place in early 2019, due to availability of viable willow branches).

Horse Valley Wetland Creation and Creek Restoration Project (2018)

The Horse Valley Wetland Creation and Creek Restoration Project was constructed in the summer and fall of 2018. The project is located on the Roddy Ranch property and was selected based on the relatively flat terrain which is conducive to seasonal wetland creation, and the presence of a natural creek channel that had been disturbed and straightened, offering a good opportunity for creek restoration with net channel gain.

Horse Valley Wetland Creation and Creek Restoration Project, March 2019
Photo Credit: ECCC Habitat Conservancy

The final design incorporated 37 seasonal wetland basins intended to support a total of 2.19 acres of newly created seasonal wetland habitat, including a large pond along the restored channel intended to provide suitable breeding habitat for California red-legged frog (*Rana draytonii*). The wetlands were designed to provide suitable habitat for vernal pool invertebrates and plants. The as-built area of the wetlands was mapped at 2.246 acres. The as-built stream channel length is 4,150 linear feet.

As the project was constructed in 2018, the first year of monitoring has not been conducted. Monitoring for this restoration project will include metrics for hydrology (including species-specific metrics for California red-legged frog and California tiger salamander), covered species occupancy, vegetation (wetland species dominance), extent of wetland at the end of year 5, channel stability, wetland vegetation abundance, and invasive plant species abundance.

Figure 14. Location of Habitat Restoration and Creation Projects

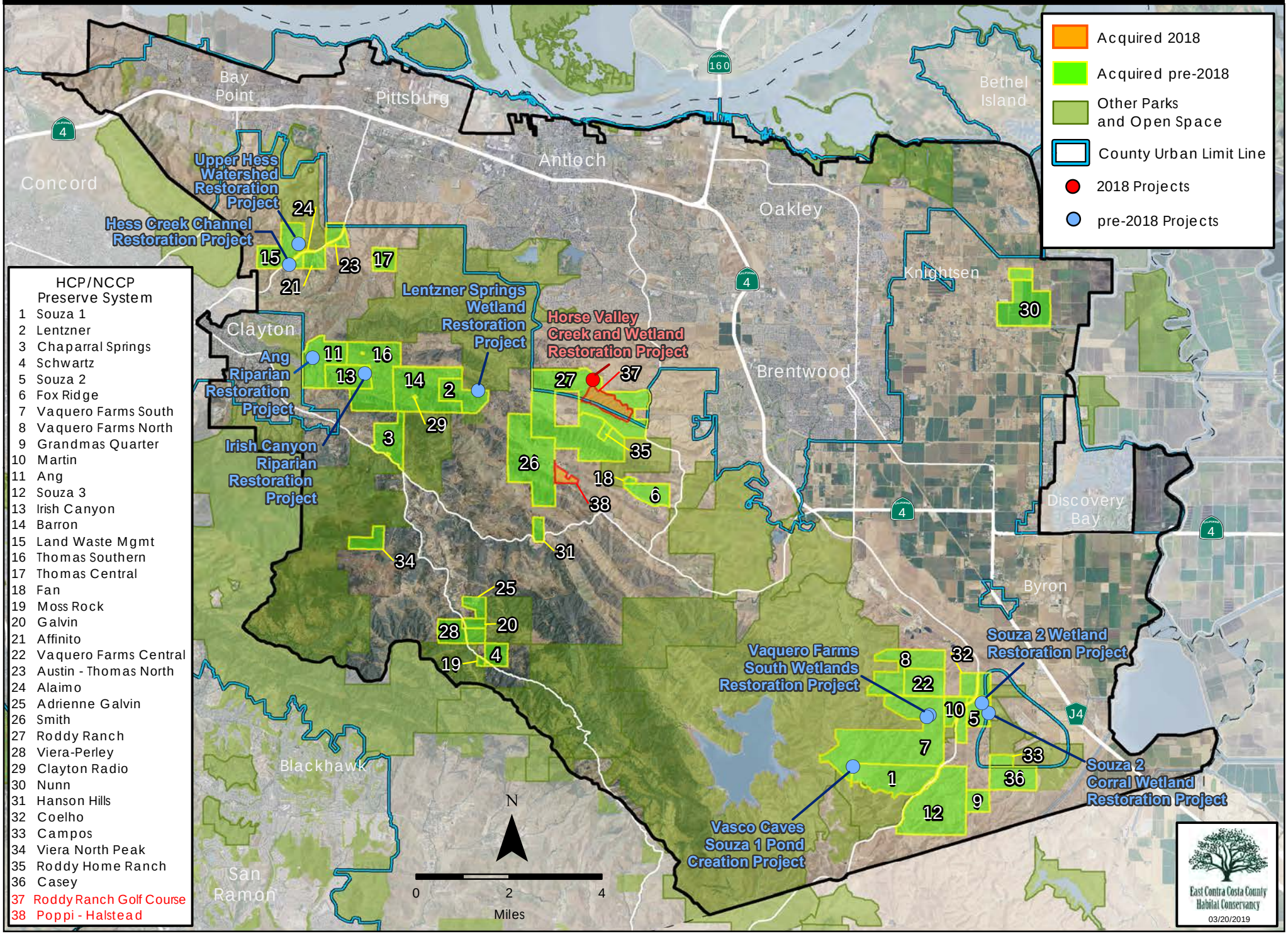


Table 12. Aquatic and Stream Land Cover Restoration and Creation by Watershed

	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	8.10	--	--	--	--	8.26	--	2,074.58	--	507.61	2,582.19
Creation	--	--	--	--	0.30	--	--	0.30	--	--	--	--	0.00
subtotal	*0.00*	*0.16*	*8.10*	*0.00*	*0.30*	*0.00*	*0.00*	*8.56*	*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	--	--	2.00	0.05	--	--	--	2.05	--	4,150.00	--	--	4,150.00
Creation	--	--	--	--	0.19	--	--	0.19	--	--	--	--	0.00
subtotal	*0.00*	*0.00*	*2.00*	*0.05*	*0.19*	*0.00*	*0.00*	*2.24*	*0.00*	*4,150.00*	*0.00*	*0.00*	*4,150.00*
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**	**10.66**	**2.45**	**0.61**	**0.00**	**0.00**	**19.27**	**0.00**	**8,478.09**	**0.00**	**2,267.17**	**10,745.26**

[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	2018 Status	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. New vegetation success criteria and project sign-off set 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.
Irish Canyon Riparian Restoration Project	2009-2010	Riparian woodland	N/A	N/A	Year 9 (2018)	CRLF continue to be present in the area	

Restoration Project Name	Year Constructed	Habitat Type	Required Monitoring	Performance/Success Criteria	2018 Status	Target Species Observed On-Site (Post Restoration)	Notes
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 7 (2018)	CRLF	Several of the required performance criteria were not met by the end of monitoring Year 7. Conservancy will continue to monitor and adaptively manage the project until such time that it does meet success criteria. Recommended remedial grading would improve the performance of the Alluvial Valley Wetlands.
Souza II Corral Seasonal Wetland Restoration Project	2012	Seasonal Wetland Vernal Pool	Years 1-5	Inundation; % Dominated by wetland vegetation; Relative cover of native wetland vegetation; Wetland acreage	Completed; Year 5 (2017)	CTS, VPFS	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 6 (2018)	CTS and VPFS in pond 1, CTS only in pond 2	Both wetlands met hydrology criteria in year 5. Seasonal Wetland 1 did not meet the hydrology criteria in Year 6. Both seasonal wetlands met the hydrophytic plant criteria in Year 6.
Hess Creek Channel Restoration Project	2015	Seasonal Wetland Stream Channel Riparian Woodland Riparian Streamside	Years 1, 2, 3, 5, 7, 10	Relative cover of wetland vegetation; Wetland acreage; Stream channel; Riparian vegetation cover; Riparian vegetation survival; Invasive vegetation cover	Year 4 (2018)	Project is movement habitat and not breeding habitat	

Restoration Project Name	Year Constructed	Habitat Type	Required Monitoring	Performance/Success Criteria	2018 Status	Target Species Observed On-Site (Post Restoration)	Notes
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 3 (2018)	VPFS (Year 2)	Seasonal Wetland 3 did not mirror the control wetland's hydroperiod and the hydrologic performance criterion was not met in Year 3. Seasonal Wetland 3 did meet the Year 3 success criterion of 2% hydrophytic vegetation cover or greater.
Ang Riparian Restoration Project	2017	Riparian woodland	N/A	N/A	Year 2 (2018)	N/A	192 riparian trees were planted in late 2017. Weeding, watering, and replanting of failed seed were conducted in 2018.
Horse Valley Creek and Wetland Restoration Project	2018	Seasonal Wetland Stream Channel CRLF and CTS Breeding	Years 1-5	N/A	Year 0 (2018)	CTS	37 seasonal wetlands including a large pond for CRLF breeding. Repair of a large pond for CTS breeding. Seasonal wetlands designed to provide habitat for vernal pool invertebrates and plants.

[1] Final projects are in preparation for submission to the U.S. Army 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 Restored**	**Riparian Restored**	**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	2017	0.00	0.00	0.4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.117
Vaquero Farms Seasonal Wetlands Creation (Pools 1 and 2)	2012	2018	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	0.30	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 Riparian Restoration Project	2016 (late Fall)	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	0.00	0.00	N/A
Horse Valley Creek and Wetland Restoration Project	2018	N/A	0.00	0.00	2.25	0.00	0.00	0.00	0.17	0.00	4,150.00	0.00	N/A
TOTAL			**0.00**	**0.54**	**4.58**	**2.47**	**1.25**	**0.87**	**0.23**	**5.60**	**9,210.50**	**730.00**	**1.12**

Table 13c. Hess Creek Channel Restoration Project (2015) 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.Vaquero Farms Seasonal Wetlands Creation Project (Pools 1 and 2; 2012)
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 13e. Upper Hess Habitat Restoration Project (2011) Specific Objectives and Performance Criteria

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 13f.
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 13f. 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	Average relative percent cover of dominant wetland indicator species	10% Cover
3	Average relative percent cover of dominant wetland indicator species	20% Cover
4	Average relative percent cover of dominant wetland indicator species	35% Cover
5	Average relative percent cover of dominant wetland indicator species	50% Cover

Table 13g. Horse Valley Creek and Wetland Restoration Project (2018) Specific Objectives and Performance Criteria

Wetlands (and other Aquatic)	Performance Criteria
SO-1. Increase native emergent vegetation and habitat for benefited species by creating 37 new seasonal wetlands (2.25 acres)	a) Wetland remains ponded for a minimum of 14 continuous days during the rainy season. b) Wetland is dominated by wetland vegetation or otherwise meets the USACE definition of wetland vegetation. c) Invasive weeds are less than 10% absolute cover. d) Wetland supports a minimum 20% vegetation cover within the ordinary high water mark.
SO-2. Reduce sediment deposition and downstream transport by remediating the onsite sources of excessive sediment and repairing incised and erosive stream channel.	Qualitative assessment including photo documentation before and annually for 5 years after restoration activity determines that erosion in tributary drainages and on site has reduced. Restored creek channels are generally stable and intact with <1% of all channel banks exhibiting signs of erosion or other instability.
SO-3. Increase wetland and pond capacity and duration by creating new seasonal wetlands.	Wetland and pond acreage onsite has increased and is in the range of the targeted 2.25 acres of restored wetlands within 5 years following restoration construction. A Formal wetland delineation completed at the end of Year 5 shows wetland meets jurisdictional criteria.
SO-4. Increase flows to and connectivity among wetlands and wetland complexes by creating 37 new pools within a hydrologically connected wetland complex.	Qualitative assessment and hydrologic monitoring based on photo-documentation annually for 5 years after restoration activity shows the creek is hydrologically connected between the channel and floodplain wetlands.
SO-5. Improve streamflow and connectivity by restoring the ephemeral stream channel to its historic location and channel geometry.	Restored creek channel demonstrate a measured net increase in linear footage from pre-restoration conditions and maintains stability in the historic channel.
SO-6. Restore wildlife habitat function and hydrologic function by creating a new wetland complex and restoring the ephemeral stream channel to its historic location and channel geometry.	a) CTS habitat wetlands (designed for greater than 15 inches maximum ponding depth) remain ponded for a minimum of 100 continuous days during the rainy season. b) CRLF habitat wetland (designed for greater than 24 inches maximum ponding depth) remains ponded for a minimum of 200 continuous days during the rainy season. c) Wetland supports presence of target listed shrimp species for several years after initial inoculation with cysts (timing of inoculation TBD based on site conditions and cyst availability).

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.

The Conservancy is working with the East Bay Regional Park District, USFWS and CDFW to prepare preserve management plans for the Preserve System lands. Until the management plans have been approved by all four agencies, the lands are managed consistent with the Habitat Conservation Plan. The following sections describe the progress to date in developing the first preserve management plans and implementing management actions.

Preserve Management Plans

Preserve management plans were originally expected to be prepared on an acquisition-by-acquisition basis within 1 year of land acquisition; however, the Conservancy and its partners have agreed to develop plans that address multiple properties. The decision to approach preserve management plans this way was based on 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.

A draft of the *Vasco Hills/Byron Vernal Pools Preserve Management Plan* has been prepared for 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 have collaborated closely on developing the *Vasco Hills/Byron Vernal Pools Preserve Management Plan*, assembling and reviewing numerous iterations of draft materials. The Conservancy's Public Advisory Committee reviewed the draft preserve management plan in November 2018. The Conservancy Board reviewed the Preserve Management Plan in December 2018 and forwarded it to EBRPD. The preserve management plan is anticipated to be approved by the Conservancy, EBRPD, USFWS and CDFW in mid-2019. This is the first preserve management plan prepared by the Conservancy and it is expected to expand to include neighboring properties as they are acquired.

Work on the *Clayton Ranch/Black Diamond Mines Preserve Management Plan* is underway and a complete draft is expected in 2019.

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

Current Management - Conceptual Ecological Models

The initial "monitoring design phase" of the HCP/NCCP focuses on the development of management-oriented conceptual ecological models.. 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, four separate conceptual ecological models for the grassland, wetland/pond, oak woodland, and riparian natural communities have been developed for the HCP/NCCP.

The conceptual ecological models include all natural communities' threats and stressors that can be managed over the life of the permit term. Based on the Monitoring Program, each of the four models incorporates management approaches suited for the natural community. The focus of management actions in grasslands will be on grazing and invasive species management and will expand to address other threats/stressors as needed. The initial focus of management actions for wetlands/ponds will be on grazing, invasive species management, and habitat restoration/enhancement, and will expand to address other threats/stressors as needed. For oak woodlands the focus of management will be those factors that limit oak regeneration, including non-native plant species and feral pigs. For riparian woodland, the focus of management will be to minimize habitat degradation through management of livestock access to watercourses and management of riparian vegetation. The riparian woodland conceptual ecological model also includes an action to restore engineered channels and restore floodplain connectivity.

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 2018 reporting period, and provides an effort-to-date summary of the extent of land cover types enhanced.

Efforts in 2018

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 2.1 (*Enhance, Restore, and Create Land Cover Types and Species Habitat)*, Conservation Measure 2.2 (*Manage Wetlands and Ponds)*, Conservation Measure 2.4 (*Manage Grassland)*, Conservation Measure 2.6 (*Manage Oak Woodland and Oak Savannah)*, and Conservation Measure 2.9 (*Manage Streams and Riparian Woodland/Scrub).*

Natural Resource Maintenance and Enhancement Projects

In 2018, natural resource maintenance and enhancement projects continued on all properties within the Vasco Hills/Byron Vernal Pools Preserve management area, Clayton Ranch management area, Concord Hills management area, Deer Valley management area, as well as at the Black Diamond Mines Regional Preserves and the Nunn property. Additionally, projects initiated in previous years continued in 2018.

Invasive Plant Control

In 2018, there were several invasive plant species project conducted by the EBRPD and the Conservancy. Efforts to control invasive plant species continued on all reserve properties during the reporting year and included the following:

- In the Vasco Hills/Bryon Vernal Pools Preserve, the EBRPD grubbed approximately 1.75 acres of stinkweed (*Dittrichia graveolens*) and 0.5 acre of perennial pepperweed (*Lepidium latifolium*).
- On the Nunn property in August and September approximately 8 acres of invasive plant species were identified and sprayed by the EBRPD Integrated Pest Management Program. Invasive plant species were also manually and mechanically removed, depending on the species and extent of invasion.
- Targeted cattle grazing also was used to manage weeds on the Nunn property.
- Purple star thistle (*Centaurea calcitrapa*) was removed from the Irish Canyon property in August 2018.
- Stinkwort was removed from the Affinito property in May 2018 and herbicide and pre-emergent was applied at the Affinito property in November.
- Weed mapping and aggressive weed control was initiated at the Roddy Ranch Golf Course. A strategy has been developed to start weed control along cart paths to avoid spreading seed as people and vehicles travel on the property.

Invasive Wildlife Control

In 2018, feral pig management was performed at the Irish Canyon property in August to reduce damage to riparian woodland saplings.

Grazing Management

EBRPD staff oversees the grazing operations on the Preserve System properties. 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- with the goal of encouraging sustainable stocking rates that maximize resource values rather than maximizing the number of livestock per acre.

Throughout the year, EBRPD staff met with grazing tenants to prepare annual work plans, monitor grazing units and produce stocking reports. Stocking reports were reviewed monthly. Staff also met individually with eight grazing tenants in October and November of 2018 to review the past and future grazing seasons. As part of grazing management, grasslands were also monitored on a weekly basis andresidual dry matter sampling was conducted at all properties in August, September, and October.

Physical improvement were made on multiple properties to support grazing management. On the Nunn property, improvements were made in early 2018 to water/well access to support grazing. This included the purchase of solar equipment, plumbing and a new water tank. A tank and trough system was installed in late 2018 on the Ang property. The water system was installed to take pressure off of a seep and a pond, and to help spread cattle more evenly across the rangeland.

Land Management

This section summarizes management activities undertaken on the HCP/NCCP preserves during the 2018 reporting year and discusses management issues on the preserves.

For the 2018 reporting year, 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 actions conducted across all properties in 2018 are summarized below (excludes those activities that were discussed above in *Natural Community Enhancement*). Since the Vasco Hills/Byron Vernal Pools Preserve area has a draft management plan, the management actions for this area are detailed in an individual section.

Management Actions – All Properties

- General Inspections
    - Patrolled HCP/NCCP Preserve System properties weekly and documented wildlife sightings.

- Security and Safety
    - Installed locks at Deer Valley locations.
    - Monitored, reviewed, and filed camera images, maintain SD cards/batteries at Affinito, Hess, Chadbourne, and Thomas north properties monthly and after incidents.
    - Responded to motion activated video camera alarms (Bay Alarm) monthly on the Roddy Ranch Golf Course.
    - Provided residence occupation for daily security on the Affinito property.
    - Checked storm damage on all properties in January, February, and March.
    - Reinstalled cut/missing locks on Empire Mine Road gates monthly.
    - Checked and recharged fire extinguishers on Roddy and Affinito properties in January.
    - Responded to cars parked near Kirker Pass, to prevent trespass and fence damage on Thomas north in February and July.
    - Standby monitored wildland fire adjacent to the Clayton Ranch property in July.
    - Evicted trespassers/illegal camper on the Roddy Ranch property in March and August.

- New Infrastructure
    - Constructed 4,187 ft+/- of fencing on the Roddy Ranch/McCauley property in April.
    - Constructed 2,196 ft+/- of fencing on the Hess Southern Triangle property in September.
    - Constructed 2,300 ft+/- of fencing on the Hanson property in September.
    - Fabricated and installed gate, and repaired 200 feet of fence on the Deer Valley/Smith property in May.
    - Installed articulated ford crossing on the Ang property in October.
    - Replaced the bottom strand of barbed wire with barbless on the eastern parcel of the Viera-Perley property along Morgan Territory Road in March.
    - Removed and replaced approximately 6,000 linear feet of barbed wire on the north and south boundaries of the western parcel of the Viera-Perly property in October.
    - Installed the Casey Solar Well Project. The project included pouring a new well slab, installing a new pump, installing a solar panel, and direct burying HDPE distribution lines to two storage tanks and two troughs.

- Installed 200 yards of E-Fence to protect the triangular alkali scald at the entrance gate to the Casey property.

- General Maintenance
  - Graded trails at the Ang, Barron, Irish Canyon, Thomas-south, Upper Hess, Affinito properties in August and September.
  - Pruned trees to clear security camera view-line on the Affinito, Hess, Chadbourne, Thomas-north properties in January.
  - Maintained and cleared road drainages in the winter months after storms.
  - Maintained grounds(pruning, mowing, weed-eating) on the Affinito property in March, May, and August.
  - Mowed(weed-eater) three-acre fuel break along the residential area frontage at the Ang property in May.
  - Mowed trails in preparation for grading on the Ang, Barron, Irish Canyon, Roddy, Thomas-south properties in June.
  - Maintained equipment and tools on a weekly basis.
  - Cleaned out the gutters at the Affinito main house in October.
  - Trimmed branches to reduce video motion activation at pump house on the Roddy Ranch Golf Course in April.
  - Pruned trees at the Affinito property in April.
  - Installed “Preserved Forever” sign at the Thomas north property in June.
  - Repaired the vehicle gate at Deer Valley property/Empire Mine Road in January.
  - Maintained well pump at the Affinito property in February.
  - Mowed (weed-eater) vegetation at the Roddy Ranch Golf Course and Affinito properties in March, June and December.
  - Installed float valve at Upper Hess in May.
  - Installed well pump, pressure tank/switch, and connected to water line at the Alaimo/Hess property in July.
  - Moved two truckloads of wood fence rails from the Roddy Ranch Golf Course to the Chadbourne property in August.
  - Removed downed tree on the Deer Valley property in August.
  - Repaired the wooden water tank leak on the Affinito property in February and December.
  - Secured structures from illegal trespass on the Affinito and Thomas North properties in January.
  - Met with Bay Alarm technician for camera system battery issues on the Roddy Golf Course in July and August.

- Removed dead tree and pruning on the Affinito property in April.
- Pruned trees on the Roddy Ranch/Chadbourne property in October.
- Installed hose bib for HCP restoration contractor on the Roddy Ranch Golf Course in July.

Before and after demolition of the Clayton Radio Tower
Photo Credit: East Bay Regional Park District

- Infrastructure Surveys
  - Conducted a property line survey on the Fox Ridge property in May.
  - Assessed/measured fenceline for replacement on the Poppi-Halstead property in August.
  - Completed a property structure inventory on the Deer Valley and Affinito properties in October.

- Debris Removal and Vandalism Repair
  - Submitted illegal dump reports to the County for the Kirker Pass Road properties monthly.
  - Demolished Clayton Radio property building and tower.
  - Removed 35 tires from the Roddy Ranch/Chadbourne property in January.
  - Removed a lean-to structure in the Roddy Golf Course parking area in August.
  - Removed a homeless encampment on the Affinito property in January.
  - Removed a homeless encampment on the Thomas north property in October.
  - Removed 0.75 mile of dilapidated fence with volunteer group on the Thomas south property in January, February, and April.

- Removed illegal dumping (5 cubic yards) on the Roddy Ranch Golf Course in August.
- Cleaned graffiti from "no trespassing" signs on the Roddy Ranch/Horse Valley property in May.
- Repaired vandalized fence on the Roddy Ranch/Horse Valley property in July and August.
- Painted the pump house at the Roddy Ranch Golf Course to cover graffiti in January.
- Painted the toilet structure at the Roddy Ranch Golf Course to cover graffiti in June.
- Remove metal debris from the Roddy Ranch Golf Course parking lot in June.
- Removed 1 mile of dilapidated fence with volunteer group on the Deer Valley property in July, August, September, October, and December.
- Removed 0.25 mile of dilapidated fence with volunteer group from the Hess Southern Triangle property in November.
- Hauled away 12 dump truck loads of old fence materials from the Thomas South, Deer Valley, and Hess properties in January, April, and July through December.
- Hauled away 3 cubic yards of debris from the Smith/Dainty property in March.
- Cleaned up debris and prepared future shop space at the Roddy Ranch/Chadbourne property in January, September, and October.
- Installed "No Trespassing" signs at the Roddy Ranch/Chadbourne property in January.
- Cleaned out the one-bedroom house in preparation for demolition on the Roddy Ranch/Chadbourne property in November.

Vasco Hills/Byron Vernal Pools Preserve Management Actions

Management actions undertaken at the Vasco Hills/Byron Vernal Pool Preserve include the following:

- Biologist Shawn Smallwood continued golden eagle (*Aqulia chrysaetos*) and burrowing owl (*Athene cunicularia*) surveys.
- Patrick Kolar from the U.S. Geological Survey (USGS) continued Diablo Range golden eagle surveys.
- Conducted two tours for EBRPD dispatchers in the month of February.
- Removed and replace approximately 8,000 linear feet of barbed wire fencing from the Vaquero Farms arena in the spring and fall. The replacement fence has six gates and a barbless bottom strand.

- Removed hazardous materials from the Casey property in spring.
- Hand lifted all cattle guards and cleaned all soil out.
- Mowed approximately 10 miles of fire roads in May in preparation for trail grading.
- Graded approximately 18.5 miles of fire roads in May.
- Repaired and re-rocked approximately 7,000 feet of fire roads in the fall to reduce patrol distances and provide all-weather access to Vasco Caves.
- Installed the Casey Solar Well Project. The project included pouring a new well slab, installing a new pump, installing a solar panel, and direct burying HDPE distribution lines to two storage tanks and two troughs.
- Conducted approximately 42 patrols on HCP lands at Vasco and approximately 24 at the Morgan Territory landbanks.
- Installed 200 yards of E-Fence to protect the triangular alkali scald at the entrance gate to the Casey property.
- Conducted invasive plant species management.

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 baseline information as the Preserve System is assembled; and 3) the *long-term monitoring phase*, in which we 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.

Though restoration monitoring is a type of effectiveness monitoring, it is not discussed in this section. Restoration monitoring is discussed in Section IV, *Habitat Restoration and Creation*.

Monitoring Design Phase

The monitoring design phase was planned to occur during the first 5 years of Plan implementation/preserve management. It involves the development of a comprehensive monitoring strategy that provides 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 monitoring the effectiveness of management actions and the status and trends of covered species at the Vasco Hills/Byron Vernal Pools Management Area. A complete draft of the revised protocols was provided to the Wildlife Agencies in early 2018. 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 in meeting the Plan's biological goals and objectives. The inventory design includes standardized protocols 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. With this data, an annual report is produced and the Conservancy updates GIS data. The following is a summary of the baseline inventory as reported in *2018 Covered Plant Species Inventory of Preserve System Acquisitions* (Nomad Ecology 2018a).

Plants

HCP/NCCP plant species (covered and no-take species) inventories and focused botanical surveys were conducted in March, April, May, June, and September 2018, to correspond with the blooming periods. Properties surveyed included Barron, Fan, Lentzner, Smith, Souza 3, Thomas Central, Thomas Southern, Vaquero Farms Central, and Viera North Peak. The Poppi-Halstead acquisition was also surveyed but was not accessible until late May of 2018, therefore only covered species that bloom in late spring and summer were targeted. Early spring covered species will be surveyed on Poppi-Halstead in 2019. The Fan property was accessible throughout all necessary blooming periods; however, this acquisition was only targeted for early spring covered and no-take plant species. In addition, Vaquero Farms Central and Souza 3 were surveyed as a part of Planning Surveys for stock pond repair projects.

The primary objective of these surveys was to target areas of suitable habitat for covered and no-take species. These surveys were executed by walking transects within target species' suitable habitat. These transects were separated by a distance of up to 10 meters, depending on the target species, topography, or subject plant community. Visual surveys are considered adequate for determining the presence or absence of covered plant species that have a potential to occur within preserve acquisitions. Census information for plant populations encountered were enumerated either by direct count or estimation.

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.

During the course of these surveys, four covered plant species were observed within acquisition properties: round-leaved filaree (*California macrophylla*[5]), Mount Diablo fairy lantern (*Calochortus*

[5] It should be noted that this taxon was removed from the CNPS Inventory on 12/11/17, therefore no longer retaining a CRPR.

pulchellus), Diablo helianthella (*Helianthella castanea*), and Brewer's Dwarf flax (*Hesperolinon breweri*). Overall, a total of five populations of covered plant species (two populations of Brewer's dwarf flax) were recorded with an estimated number of 1,541 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.

In addition, eight non-covered, but special status, plant species were observed during covered plant inventory surveys: Contra Costa manzanita (*Arctostaphylos manzanita* var. *laevigata;* CRPR[6] 1B.2), crownscale (*Atriplex coronata* var. *coronata;* CRPR 4.2); Jepson's wolly sunflower (*Eriophyllum jepsonii;* CRPR 4.3); Jepson's coyote thistle (*Eryngium jepsonii;* CRPR 1B.2); phlox-leaf serpentine bedstraw (*Galium andrewsii* subp. *gatense*; CRPR 4.2), woodland woolythreads (*Monolopia gracilens;* CRPR 1B.2), Michael's rein orchid (*Piperia michaelii*; CRPR 4.2); and Mt. Diablo jewelflower (*Streptanthus hispidus;* CRPR 1B.3). Although not included in the HCP/NCCP as covered or no-take species they are considered rare by the CNPS.

A table of all HCP/NCCP covered plants that have been identified on the Preserve System, along with progress toward meeting preservation objectives, is provided in Table 10.

Long-term Preserve Monitoring Phase

As of December 2018, 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 of 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.

[6] CRPR is the acronym for California Rare Plant Rank which is a native plant rarity ranking assigned by the California Native Plant Society, in collaboration with the California Department of Fish and Wildlife, based on CNPS's Inventory of Rare and Endangered Plants of California (California Native Plant Society 2018).

Independent Conservation Assessment Team

HCP/NCCP Chapter 8, *Plan Implementation* calls for the periodic convening of an Independent Conservation Assessment Team (Team). The role of the 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. The Conservancy convened a five-member Team in fall 2017 and hosted a workshop for the Team on February 7–9, 2018. The Team was comprised of the following scientists (areas of expertise in parentheses):

- Sharon Collinge, Ph.D. (restoration ecology, grassland ecology, landscape ecology, plant ecology);
- Larry Ford, Ph.D. (grassland ecology, monitoring);
- Jaymee Marty, Ph.D. (grassland ecology, restoration ecology, monitoring, plant ecology);
- Dan Rosenberg, Ph.D.[7] (monitoring, landscape ecology, ornithology); and
- Peter Trenham, Ph.D. (herpetology, landscape ecology, monitoring).

The following questions were posed to the Team before the workshop to help guide their assessment of HCP/NCCP implementation and to provide useful feedback:

1. Has the Conservancy made sufficient progress towards meeting its land acquisition and habitat restoration goals by land cover type?
2. Are changes needed to land acquisition or habitat restoration practices to better achieve HCP/NCCP requirements?
3. Based on the information provided and the field visit, are land management methods appropriate to achieve the biological goals and objectives of the HCP/NCCP?
4. Are baseline monitoring methods used by the Conservancy and its contractors appropriate to measure achievement of the biological objectives of the HCP/NCCP?

[7] Dr. Rosenberg also served as panel chair.

5. Are monitoring methods used by the Conservancy and its contractors appropriate to measure achievement of the biological objectives of the plan and inform adaptive management?
6. Are monitoring data being interpreted appropriately to evaluate whether biological objectives of the plan are being achieved?

The workshop consisted of a field trip, presentations, and discussions. The February 7th field trip provided an overview of the HCP/NCCP Plan Area and recent acquisitions for the Preserve System (e.g., Vasco Hills/Byron Vernal Pools Preserve). On February 8th, the Conservancy and its consultants (ICF and Nomad Ecology) presented talks on HCP/NCCP development, implementation, and monitoring results to date to the Team. The remainder of the workshop consisted of discussions among the Team and other workshop attendees, including staff and consultants of the Conservancy, City of Antioch, CDFW, and USFWS. Finally, the Team discussed among themselves each of the above questions.

The Team presented their workshop findings and recommendations in a final report dated April 12, 2018 (Collinge et al. 2018). Key highlights from the report include the following:

- The Conservancy is to be commended for its land acquisition to date and insightful planning for future acquisitions. The Team agree that the greatest threat to conservation in the ECCC HCP/NCCP Plan Area is habitat loss, and land acquisition is the most important component of the HCP/NCCP that will contribute to regional conservation.
- The Team recommend changes to the monitoring and adaptive management program to better track how management actions are contributing to HCP/NCCP biological goals and objectives. Specific recommendations include the following:
    - Develop conceptual models to guide management and monitoring;
    - Conduct experimental management trials instead of “status and trends” monitoring (Nichols and Williams 2006); and
    - Plan and conduct all research, monitoring, and survey activities so they’re clearly and directly linked to feasible management actions.

The Conservancy has developed preliminary conceptual models for some natural communities (e.g., grassland, oak woodland, wetland and pond) and plans to develop conceptual models for the covered species in 2019. It will also consider and assess feasibility for implementing some of the Team’s recommendations for modifying the HCP/NCCP monitoring and adaptive management program.

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.

The Conservancy sponsors, funds and participates in research activities that may inform management of the Preserve System. In addition to applying for funding and using Conservancy funds for these activities, the Conservancy Board sets aside $15,000 each year to fund small grants through the Conservancy's Science and Research Grant Program.

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 for conducting management or monitoring actions that support and/or lead to better management of natural communities or covered species.

2018 Research Efforts

Evaluation of Efficacy of Wildlife Undercrossings

This study began in November 2016 and concluded in 2018. The study was designed to evaluate the efficacy of wildlife undercrossings as part of Vasco Road safety improvements. Specifically, nine culverts were installed under a 1.1-mile segment of Vasco Road to minimize the effects of habitat fragmentation, increase permeability for wildlife passage, and decrease road mortality with an emphasis on the California red-legged frog (*Rana draytonii*) and California tiger salamander (*Ambystoma californiense*). The study was being conducted by Sapere Environmental and ran through June 2018 (Sapere Environmental 2019). The goals of the study were to evaluate how California red-legged frogs and California tiger salamanders use the culverts and determine their efficacy as movement corridors for a broad range of wildlife taxa.

A total of 15 camera traps were installed in four culverts (1, 5, 7 and 8) and operational from January 27, 2017 to July 4, 2017. Cameras were reinstalled at culverts 1, 5, 7 and 8 on November 2, 2018. Additionally, on February 26, 2018, cameras were installed on culverts 3, 4 and 6. Animex fencing was also installed to direct species under the cameras' sensor window. Data was

retrieved from camera traps every 7 to 15 days with the interval varying primarily based on battery life which is affected by battery type, environmental conditions (e.g., temperature, humidity), and camera activity.

The study culminated in 4,413,122 images for years 1 and 2 combined, consisting of 7,188 capture events. Year 2 was a more productive year in terms of gross number of captured events for all taxa, increasing from 3,032 to 4,175 total captures. The number of capture events approximately tripled for frogs/toads and snakes, and nearly doubled for non-rodent mammals, which is likely a direct result of expanding the study to include three additional culverts and 33% more calendar nights. Although the total number of capture events was higher in Year 2, the capture rate (number of capture events divided by number of trap-nights) was similar across both years (i.e., 2.31 for year 1 versus 2.50 for year 2). A total of 34 species were identified from the camera images during the study, including six rodents, four lizards, eleven mammals, three frogs/toads, two salamanders, four snakes and four birds – this included California red-legged frog (*Rana draytoni)*, California tiger salamander (*Ambystoma californiense*), American badger (*Taxidea taxus)*, North American river otter (*Lontra canadensis*), and spotted skunk (*Spilogale putorius)*, which are all uncommon or special-status species.

Forty-seven ccapture events for California red-legged frogs and fourteen for California tiger salamanders were documented in the Study. No crossings were documented for either species. However, the absence of documented crossings does not preclude successful crossings through the culverts.

California red-legged frog in ponded portion of culvert
Photo Credit: Sapere Environmental, LLC.

The study speculated that the lack documented crossings of the two species could be due to image capture constraints. In the interest of balancing photo-documentation of species with the labor required to analyze the volume of images captured as a result of using time-lapse, the researchers decided to use a 30-second time-lapse setting. An interval of 10 seconds could have been used, but it would have resulted in over 10 million images which would have been infeasible to process due to budget and time constraints. However, using the 30-second time-lapse setting meant that animals had ample time to move through the sensor window between photographs. This may have impacted the results, as it is possible that frogs, salamanders, reptiles, and other wildlife that may not be detected by the passive infrared sensor, crossed under the cameras outside of the time-lapse window and were not recorded.

Overall, results from this study further inform the literature on species monitoring. Specifically, that trail cameras utilizing time-lapse and passive infrared sensors are a marginally-reliable tool for photo-documenting the presence of amphibians and are particularly effective for mammals

and reptiles. The study also provided useful information on the effectiveness of the road improvements. The intended purposes of the culverts under Vasco Road and barrier fencing along the edge of the right-of-way were to allow for safe passage of animals, decrease road mortality (especially among listed and rare species), and minimize the effects of habitat fragmentation posed by a busy thoroughfare. The study confirmed that this goal was achived with the documentation of eleven species using the culverts for passage. California red-legged frogs and California tiger salamanders were not among those documented using the culverts for passage, however these species did use the culverts for habitat. Furthermore, inferences made from documented crossing events by reptiles and mammals suggests that California red-legged frogs and California tiger salamanders could, and likely do, use the culverts as linkages between fragmented habitats. This is particularly relevant given that it may only require one or a few individuals safely crossing under Vasco Road every few years to maintain sufficient gene flow for healthy subpopulations and to combat the effects of genetic isolation.

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 continued in 2018 and will run through December 2019.

Bat Fatalities in the Altamont Pass Wind Resource Area

This research study began in 2017 and was completed in 2018. The analysis and reporting is expected to be available in June 2019. 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. This may be achieved by improving detection rates of available carcasses and adjusting for the portion of fatalities that are never found.

The study intends to 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 location of bat fatality finds is correlated with nocturnal mammalian and diurnal avian scavenger activity levels.

Invasive Species Weed Mapping

In 2017, Nomad Ecology started a pilot study using remote sensing to map invasive weeds and native bunch grasses in the Vasco Hills/ Byron Vernal Pools management area. The project was completed in early 2019. This project was designed to provide crucial information related to baseline conditions of natural resources under the Conservancy's stewardship, that have yet to be systematically mapped within the Plan area. In support of the *Inventory Phase* of the inventory and monitoring requirements outlined by the Plan, this project investigated the efficacy and accuracy of using object-based classification and other remote sensing methods to map target resources in challenging grassland systems.

Utilizing species composition data collected in the field and high-resolution multi-spectral aerial imagery collected at specific seasons, this project aimed to identify and map purple needlegrass grassland communities, invasive plant infestations, and clay barrens. Collected data would aso be used to evaluate the applicability of these methods for future wetland and aquatic resource mapping; which was previously completed for the Plan area. The high-resolution aerial imagery itself also provides a baseline dataset that can be compared to future imagery for identifying and analyzing changes in vegetation/land cover types into the future.

Overall, this project demonstrated that a combination of field work, heads-up digitizing using high-resolution multi-spectral aerial imagery, and ground-truthing were the most effective for mapping target resources. Additionally, this project provided a spatial framework for developing weed abatement efforts which prioritize protection of covered species and of intact target resources that are immediately threatened by invasive weed populations.

Monitoring Fossorial Mammal Burrows in Vasco Caves and Vasco Hills Preserves

This project is funded in part 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.

Baseline Surveys and Long-term Monitoring Protocol for Burrowing Owls

In early 2018, the Conservancy applied for and was awarded a Local Assistance Grant from CDFW to conduct baseline surveys and long-term burrowing owl monitoring. The study will determine the size and distribution of burrowing owl populations in the Vasco Hills/Byron Vernal Pools Management Area. In addition, it will (a) develop a scientifically-valid and cost-effective protocol for long-term monitoring of burrowing owl populations in the Management Area; (b) replicate the surveys conducted by Smallwood and others (2008) to determine whether there have been any changes in the size and reproductive success of the burrowing owl population on the 617-acre Souza 1 parcel; and (c) conduct a pilot study to evaluate the feasibility of using high-resolution imagery (acquired through a previous Local Assistance Grant award) to identify ground squirrel complexes. Project work will begin in April 2019.

Ecological Requirements and Conservation Priorities for Golden Eagles in Eastern Contra Costa County

In December 2018, the Conservancy Board approved the full funding of a proposal from J. David Wiens (USGS), Patrick Kolar (USGS), and Doug Bell (EBRPD) to conduct research on golden eagle habitat. Funding was provided under the Conservancy's 2019 Science and Research Grant Program.

The goal of the project is to identify and map spatial patterns in site occupancy and reproduction for golden eagles associated with the network of protected lands in the HCP/NCCP inventory area. To meet this goal, the project leads will expand their established monitoring design to gain complete survey coverage of the HCP/NCCP Preserve System. They will then use established survey protocols to determine occurrence and location of breeding and non-breeding golden eagles, in addition to reproductive success of any nesting pairs identified.

Fungal Disease Risk of California Tiger Salamander and California Red-Legged Frog in the Los Vaqueros Watershed

In December 2018, the Conservancy Board approved the partial funding of a proposal from Kurt Lutz (San Francisco State University [SFSU]), Jeff Wilkinson (H.T. Harvey & Associates), and Vance Vredenburg (SFSU) to conduct research on amphibian fungal diseases. Funding was provided under the Conservancy's 2019 Science and Research Grant Program.

The project leads will conduct a thorough pathogenic fungal disease survey, including tests for *B. dendrobatidis* on California red-legged frog, California tiger salamander, Western toad, and Pacific chorus frog in the Los Vaqueros Reservoir Watershed. By performing this survey, the

project will address the following issues or knowledge gaps in the Los Vaqueros Reservoir Watershed:

1. Potential of a fungal disease outbreak (*B. dendrobatidis*) among resident amphibians, including the infection intensity of each individual sampled;

2. Likelihood that a pond contains *B. dendrobatidis* depending on pond size, temperature, locality, and species composition; and

3. Potential dispersal ability of *B. dendrobatidis* between ponds given connectedness and presence of a mobile reservoir species (*H. regilla*).

Adaptive Management

Based on the best scientific information currently available, it is expected that the Plan's conservation measures will effectively achieve the stated 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 2018, 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). For all land cover types, the percent ahead ranges from 34% to over 100%. Overall, the Conservancy is 11,010 acres ahead across all land cover types and 315,049 linear feet ahead in streams. The Conservancy is 7,810 acres ahead of the Stay-Ahead requirement for grassland and irrigated agriculture land cover types (the current Stay-Ahead requirement is 1,187 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, Creation, Restoration 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	9,000.3	49.6%	12,148	794.7	6.5%	1,187.4	7,812.9	43%
Chaparral and scrub	550	310.3	56.4%	2	0.57	28.5%	156.8	153.6	28%
Oak savanna	500	410.3	82.1%	165	0.1	0.0%	0.2	410.1	82%
Oak woodland	400	2,491.5	622.9%	73	0.7	0.9%	3.6	2,487.9	622%
Subtotal terrestrial	*19,600*	*12,212.4*	*62.3%*	*12,388*	*796.0*	*6%*	*1,347.9*	*10,864.4*	*56%*
Aquatic									
Riparian woodland/scrub	70	71.11	101.6%	35	1.23	3.5%	2.47	68.64	98%
Perennial wetland[1]	75	5.54	7.4%	75	0.07	0.1%	0.07	5.47	7%
Seasonal wetland	168	23.81	14.2%	56	0.63	1.1%	1.88	21.93	13%
Alkali wetland	93	36.05	38.8%	31	0.14	0.4%	0.41	35.64	38%
Pond	16	11.99	75.0%	8	0.01	0.1%	0.02	11.97	75%
Reservoir (open water)[2]	12	0.00	0.0%	12	0.47	3.9%	0.47	-0.47	-4%
Slough/Channel	36	3.10	8.6%	72	0.65	0.9%	0.32	2.78	8%
Subtotal aquatic	*470*	*151.60*	*32.3%*	*289*	*3.19*	*1%*	*5.63*	*145.97*	*31%*
Stream (length in linear feet)									
Perennial stream	4,224	12,625.10	298.9%	2,112	149.00	7.1%	298.00	12,327.10	292%
Intermittent stream	2,112	146,461.00	6934.7%	2,112	627.31	29.7%	627.31	145,833.69	6905%
Ephemeral stream[4]	26,400	156,548.97	593.0%	26,400	298.00	1.1%	298.00	156,250.97	592%
Subtotal stream length	*32,736*	*315,635.07*	*964.2%*	*30,624*	*1,074.31*	*4%*	*1,223.31*	*314,411.76*	*961%*
Totals									
Acres	30,300	12,363.97	41%	12,677	799.2	6.3%	1,353.6	11,010.4	35%
Linear feet	32,736	315,635.07	964%	30,624	1,074.31	3.5%	1,223.31	314,411.76	961%

[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.

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*	4	0	4	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*	6	0	6	100%
Recurved larkspur	*Delphinium recurvatum*	0	0	0	--
Round-leaved filaree	*Erodium macrophyllum*	5	[see note[2]]	5	100%
Diablo helianthella	*Helianthella castanea*	13	0	13	100%
Brewer's dwarf flax	*Hesperolinon breweri*	5	0	5	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		**55**	**0**	**55**	

[1] Vasco Road Safety Phase 1 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		0.550	
Total		**0.067**	**2.076**	**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 inoculated 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/or 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. Due to the timing of final permitting and input from FEMA the repairs are scheduled to occur in 2019.

IX. FINANCES

Budget

The Conservancy analyzed cost projections from the HCP/NCCP, the previous years' actual costs, and the anticipated 2018 work plan to develop the 2018 Budget (Table 17). The Conservancy stayed within the budgeted amount for each cost category and within the total 2018 Budget. Overall, 2018 expenditures to implement the HCP/NCCP totaled $5,160,107.

During the reporting period, the largest budgeted item was land acquisition followed by habitat restoration/creation, program administration, planning and design, monitoring, research, and adaptive management, Environmental Compliance, and Preserve Management and Maintenance. This focus reflects the Conservancy's continued efforts to maintain stay-ahead compliance. In addition, the Conservancy continues to make progress toward restoration requirements. The 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 potentially partnerships with other local agencies. Voters approved several revenue measures for EBRPD in the prior decade, including Measure WW, which provide funding that 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: This includes 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 is also a source of revenue but is received and held by the EBRPD and used for Preserve System management activities, land acquisition, and long-term management.

A total of $5,893,964 in revenue were received by the Conservancy in 2018 (Tables 18 and 19). This amount includes development fees from covered activities ($1,954,788), wetland and stream mitigation fees from covered activities ($147,373), temporary impact fees ($216,473), Contributions to Recovery payments from covered activities ($123,432), "other revenues" ($350,396), and grants ($3,101,502). Local funding from partners totaled $448,836. The "other revenues" includes revenue from non-covered activities, as discussed below.

All grants awarded to date are summarized in Table 20. Since it began implementing the HCP/NCCP through the end of 2018, the Conservancy has been awarded $71,131,000 in grants. These amounts do not include match funding provided by partners. Since Plan implementation, EBRPD has contributed an estimated $21 million of its own funds or its grant funds.

Revenue from Non-covered Activities

The HCP/NCCP allows for additional revenue to be received from non-covered activities. There may be a number of benefits to addressing the mitigation needs of non-covered projects through the structure of the HCP/NCCP. USFWS and CDFW may wish to use the conservation strategy and implementing structure of the Plan to maximize the conservation benefits to covered species and natural communities. Project proponents may wish to utilize the mitigation approach of the Plan to facilitate their mitigation obligations under a variety of state and federal regulations.

Mitigation funds collected from non-covered activities must augment the mitigation and conservation obligations of the Plan (i.e., they may not offset these requirements). Mitigation funding arrangements vary by project, are reviewed and approved by the USFWS and CDFW before acceptance of these funds, and are detailed below:

Kirker Pass Road Northbound Truck Climbing Lane (Area Outside HCP/NCCP)

Contra Costa County Public Works Department received permit coverage for the 1.15-mile Kirker Pass Road Northbound Truck Climbing Lane Project. The project will improve safety and reduce congestion along Kirker Pass Road by constructing a truck climbing lane in the northbound direction. There will be pavement widening on the southeast side of the roadway to provide a 12- foot truck lane and 8-foot paved shoulder. The widening will require significant retaining walls due to the existing slopes and drainage adjacent to the roadway. The project is specifically listed as a covered transportation project in HCP/NCCP Section 2.3.2 (page 2-19), however, approximately 25% of the project (0.32 mile) is located outside of the Plan boundaries. The Kirker Pass Road Northbound Truck Climbing Lane Project is the first "split" project by a co-permittee of the Plan. It is also the first such project for which compliance under the HCP/NCCP within the inventory area is mandatory.

The Conservancy worked with Contra Costa County Public Works, USFWS, and CDFW to develop a strategy that would allow the portion of the project outside the HCP/NCCP permit area to comply with HCP/NCCP avoidance and minimization measures and mitigate through the Conservancy.

The project permanently impacted 0.74 acre of ruderal landcover, 0.04 acre of chaparral and scrub, 0.178 acre of riparian woodland, and 15 feet of intermittent stream less than 25 feet wide. The project temporary impacted 0.3 acre of ruderal landcover, 0.019 acre of riparian woodland, and 180 feet of intermittent stream less than 25 feet wide. To mitigate for the project's impacts, Contra Costa County Public Works paid fees to the Conservancy that were adequate to acquire, preserve, and manage 3.2 acres of habitat in perpetuity for California red-legged frog and Central California tiger salamander.

The revenue for this non-covered activity is detailed in Table 19. The 3.2 acres of compensatory mitigation for this project is reflected in Table 8a.

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[8] 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 include the following eight categories and references and information are 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**:

[8] 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.

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 of 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 City/County Projects
Development Fees (per acre)		
Zone I	$14,404.82	$15,724.46
Zone II	$28,809.65	$31,448.92
Zone III	$7,202.41	$7,862.89
Wetland Mitigation Fees (per acre, except as noted)		
Riparian woodland/scrub	$101,891.30	$78,682.52
Perennial wetland	$149,703.01	$107,670.82
Seasonal wetland	$347,022.00	$233,286.78
Alkali wetland	$350,533.50	$220,863.22
Pond	$189,903.39	$117,333.59
Aquatic (open water)	$94,951.69	$59,356.99
Slough/Channel	$138,384.46	$133,898.33
Streams 25 feet wide or less - fee per linear foot	$386.82	$641.48
Streams greater than 25 feet wide - fee per linear foot	$580.23	$966.28

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

The Conservancy's 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	$2,563,726	$5,666,331	$48,760	$5,160,107	$3,118,710

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:** The Conservancy has a number of pond repairs that are expect to occur in the Vasco Hills/Byron Vernal Pools management area as well as on the Ang property. Those projects are expected to be completed by October 2019.
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. 2018 Conservancy Budget: Actual Expenditures and Comparison to Budget Projections

	HCP/NCCP Projected Cost Estimate			2018 Budget by Revenue Source					2018 Actuals
Cost Category	Years 11-15	Average Cost Per Year (Years 11-15)	% of Total	Development Fee Account	Wetland Mitigation Fee Account	Contributions to Recovery/ Grant Funding	TOTAL	% of Total	Total Expenditures for 2018
Program Administration and Permitting Program	$2,978,706	$595,741	6%	$977,313	$0	$75,000	$1,052,313	11%	$1,133,625
Land Acquisition	$31,752,559	$6,350,512	67%	$439,116	$0	$5,900,000	$6,339,116	65%	$2,484,990
Planning and Design (Management, Restoration, and Recreation)	$849,699	$169,940	2%	$399,381	$0	$170,000	$399,381	4%	$161,214
Habitat Restoration/Creation	$3,469,095	$693,819	7%	$0	$1,052,613	$200,000	$1,252,613	13%	$921,741
Environmental Compliance	$459,000	$91,800	1%	$116,287	$35,000	$0	$151,287	2%	$25,536
Preserve Management and Maintenance	$5,398,690	$1,079,738	11%	$150,528	$0	$0	$150,528	2%	$129,388
Monitoring, Research, and Adaptive Management	$2,074,364	$618,873	4%	$109,938	$0	$147,689	$257,627	3%	$303,614
Remedial Measures	$30,000	$6,000	0%	$6,000	$0	$0	$6,000	0%	$0
Contingency Fund (5% of non-land acquisition costs)	$723,186	$144,637	2%	$0	$0	$130,143	$130,143	1%	$0
TOTAL	$47,735,299	$9,751,060	100%	$2,198,563	$1,087,613	$6,622,832	$9,739,009	100%	$5,160,107

Table 18. Summary of All Revenues Received

Type	Reporting Period	Cumulative[1]
Development Fees	$1,954,788	$15,406,000
Wetland Mitigation Fees	$147,373	$1,455,000
Temporary Impact Fees	$216,473	$1,868,000
Contributions to Recovery	$123,432	$1,419,000
Grants	$3,101,502	$71,131,000
Other[2]	$350,396	$1,611,000
Local Matching Funds[3]	$448,836	$25,282,000
Total	**$6,342,800**	**$118,172,000**

[1] Amounts are rounded

[2] Other includes staff/administrative costs for certain permitting projects, interest, and lease revenue.

[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
Development Fees	
Kirker Pass Road Northbound Truck Climbing Lane - Inside	$128,303
Marsh Creek Road Bridge #141 Replacement	$6,021
Cypress Self Storage (City of Oakley)	$50,947
Gilbert Phase 2 (City of Oakley)	$1,040,835
Garin Ranch Basin and Heron Park Basin Improvements	$821
Shell Pipeline AC Mitigation Site at Valve 158	$864
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair	$58
City of Brentwood Recycled Water Project - Phase 1 (Non-potable Storage Facility)	$14,152
Bay Point Family Apartments (Contra Costa County)	$59,837
Bella Verde Development (City of Brentwood)	$95,919
PG&E RMSCC15-303	$13,829
Tri-City Plaza - Parcel D (City of Brentwood)	$6,841
Shops at Lone Tree (City of Brentwood)	$119,978
30 Technology Court (City of Brentwood)	$22,958
2700 Empire Avenue (City of Brentwood)	$125,796
Sciortino Ranch Development Phase I (City of Brentwood)	$267,630
Development Fees subtotal	*$1,954,788*
Wetland Mitigation Fees	
Kirker Pass Road Northbound Truck Climbing Lane - Inside	$4,553
Marsh Creek Road Bridge #141 Replacement	$71,349
Gilbert Phase 2 (City of Oakley)	$28,101
Garin Ranch Basin and Heron Park Basin Improvements	$5,412
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair	$37,919
Gilbert Revised Stream Setback	$39
Wetland Mitigation Fees subtotal	*$147,373*
Temporary Impact Fees	
Kirker Pass Road Northbound Truck Climbing Lane - Inside	$11,017
Upper Sand Creek Detention Basin Stockpile Burrow Management	$8,041
Marsh Creek Road Bridge #141 Replacement	$9,682
Garin Ranch Basin and Heron Park Basin Improvements	$3,769
Shell Pipeline AC Mitigation Site at Valve 158	$115
Morgan Territory Road Bridges 4.30 and 4.40 Scour Repair	$7,519
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018	$28,618
Storm Damage Repair - FEMA 4301-DR-CA: Divide Reservoir	$4,033
City of Brentwood Recycled Water Project - Phase 1 (Non-potable Storage Facility)	$3,564
PG&E C-979 Spans 64, 242, 243 Gas Transmission Corrosion	$23,343
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017, 1st Amendment	$7,446
Shell Pipeline North 20 2018	$28,512
Phillips 66 Line 200 Vasco Road Remediation	$25,064
Columbia Solar (City of Pittsburg)	$55,748
Mitigation Fees subtotal	*$216,473*
Contributions to Recovery	
Shell Pipeline AC Mitigation Site at Valve 158	$1,000
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018	$19,309
PG&E C-979 Spans 64, 242, 243 Gas Transmission Corrosion	$16,672
PG&E RMSCC15-303	$11,914
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017, 1st Amendment	$629
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018, 1st Amendment	$3,095
Shell Pipeline North 20 2018	$19,256
Phillips 66 Line 200 Vasco Road Remediation	$17,532
Kirker Pass Road Northbound Truck Climbing Lane Project - Outside[1] (CTR/Management Fee)	$34,026

Type		Amount
Contribution to Recovery subtotal		*$123,432*
Other (Admin/Staff Time Fees for Participating Special Entities, Interest, Miscellaneous)		
Kirker Pass Road Northbound Truck Climbing Lane Project - Outside[1] (Mitigation for Non-Covered Activity)		$90,261
Kirker Pass Road Northbound Truck Climbing Lane Project - Outside[1] (Admin/Staff Time)		$5,000
Cypress Preserve (Admin/Staff Time)		$146,375
Philips 66 Line 200 Anomaly Investigation and Repair, Spring 2017 (Admin/Staff Time)		$4,285
PG&E Walnut Crossover Project Rebuild Project (Admin/Staff Time)		$5,000
Phillips 66 Line 200 Anomaly Investigation and Repair, Summer 2017 (Admin/Staff Time)		$4,773
PG&E RMSCC15-303 (Admin/Staff Time)		$1,702
Phillips 66 Line 200 Anomaly Investigation and Repair, Winter 2018 (Admin/Staff Time)		$22,538
PG&E C-979 Spans 64, 242, 243 Gas Transmission Corrosion (Admin/Staff Time)		$4,496
P66 Line 200 Anomaly Investigation and Repair, Winter 2018 Project, 1st Amend (Admin/Staff Time)		$9,827
Phillips 66 Line 200 Vasco Road Remediation (Admin/Staff Time)		$1,485
Storm Damage Repair - FEMA 4301-DR-CA: Divide Reservoir (Admin/Staff Time)		$1,500
Shell Pipeline AC Mitigation Site at Valve 158 (Admin/Staff Time)		$1,000
Shell Pipeline North 20 2018 (Admin/Staff Time)		$2,383
Pooled Interest Earnings		$48,760
Miscellaneous		$1,012
Other subtotal		*$350,396*
Grants[2]	**Source**	
USFWS Section 6 FY15 Roddy Ranch Golf Course Acquisition	Federal	$879,750
WCB State Prop 84 Roddy Ranch Golf Course Acquisition	State	$1,055,250
USFWS Section 6 FY15 Poppi-Halstead Acquisition	Federal	$377,000
NCRC EQIP Ang Grazing and Habitat Improvements	Federal	$16,554
CDFW LAG P1696007 Knightsen Wetland Restoration and Flood Protection Project	State	$117,298
CDFW LAG P1682906 Vasco Pond Surveys	State	$5,650
WCB Prop 84 WC-1720DC Horse Valley Creek and Wetland Restoration Project	State	$350,000
State Coastal Conservancy Horse Valley Creek and Wetland Restoration Project	State	$300,000
Grants subtotal		*$3,101,502*
Local Matching Funds		
EBRPD (Roddy Ranch Golf Course Purchase Price)		$20,000
EBRPD (Roddy Ranch Golf Course Due Diligence and Closing Costs)		$51,311
EBPRD (Poppi/Halstead Purchase Price)		$348,000
EBRPD (Poppi/Halstead Due Diligence and Closing Costs)		$29,525
Local funding subtotal		*$448,836*
Total		**$6,342,800**

[1] This portion of the Kirker Pass Road Northbound Truck Climbing Lane Project is outside the HCP/NCCP and was not covered under the Plan; and therefore is not listed in Table 1. Details of this project are in the 2018 Annual Report text.

[2] 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 2018	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	$1,487,750	$512,250	July 2019	
Section 6 (2017)	USFWS admin. by WCB	Acquisition	$2,000,000	$1,100,000	$0	$2,000,000	Aug 2021	
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	$50,000	$0	Mar 2018	Y
NCCP Local Assistance (P1682905)	CDFW	Native Bunchgrass and Invasive Weed Mapping	$50,100	$0	$48,217	$1,883	Mar 2019	
NCCP Local Assistance (P1682906)	CDFW	Baseline Sampling for CRLF, CTS, and WPT Habitat	$50,000	$0	$47,000	$3,000	Mar 2019	
Prop 1 (P1696007)	CDFW	Knightsen Wetland Restoration and Flood Protection	$240,000	$40,000	$193,534	$46,466	Sept 2019	
Proposition 1 (GA:18-002)	Coastal Conservancy	Horse Valley Creek and Wetland Restoration	$300,000	$0	$300,000	$0	Jan 2019	Y
Proposition 84 (WC-1720DC)	WCB	Horse Valley Creek and Wetland Restoration	$350,000	$0	$350,000	$0	Oct 2021	Y
Proposition 1 (Prop 1-1709)	Delta Conservancy	Knightsen Wetland Restoration	$1,225,000	$0	$0	1225000	Sept 2021	
EQIP	NRCS	Ang Grazing and Habitat Improvements	$75,585	$0	$16,554	$59,031	Dec 2019	
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	$2,183,519	$66,481	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 Nunn	$2,732,400	$0	$2,732,400	$0	Jan 2016	Y
Prop 84 NCCP account	WCB	Acquisition of Coelho	$454,239	$0	$454,239	$0	Dec 2016	Y
Prop 117	WCB	Acquisition of Campos	$226,200	$0	$226,200	$0	May 2017	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 84 NCCP account	WCB	Acquisition of Roddy Ranch Golf Course	$1,055,250	$0	$1,055,250	$0	April 2018	Y
Contra Costa Avian Fund	NFWF	Land acquisition to benefit avian species	$28,000	$0	$26,600	$1,400		
			$70,976,603	**$49,077,420**	**$66,900,122**	**$3,915,511**		

[1] Funding from partners not included. EBRPD has contributed over $21 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 2018 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, 17 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 make 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 one 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. There has been no further action to adopt the 2017 mitigation fee audit and update.

Other Activities

Public Outreach/Engagement

Volunteer Engagement

- In 2018, 41 volunteers working with Save Mount Diablo contributed 240 hours towards over 20 workdays at the Ang Riparian Restoration Project site installing tree cages, watering, picking valley oak (*Quercus lobata)* acorns, harvesting red willow branches, and assisting with willow staking and seed broadcasting.

XI. REFERENCES

Collinge, S., L. Ford, J. Marty, D. Rosenberg, and P. Trenham. 2018. *Science Advisors' Recommendations to Guide Implementation of the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan*. Prepared for East Contra Costa County Habitat Conservancy, Martinez, CA. April 12.

Hall, L. S., P. R. Krausman, and M. L. Morrison. 1997. The Habitat Concept and a Plea for Standard Terminology. *Wildlife Society Bulletin* 25(1):173–182.

H.T. Harvey & Associates. 2011. Upper Hess Creek Restoration Project Restoration Management Plan Outline. May. Los Gatos, CA. Prepared for the East Contra Costa County Habitat Conservancy, Martinez, CA and the East Bay Regional Park District, Oakland, CA.

Monk & Associates. 2018a. *Year Seven Created Wetlands Monitoring Report, East Contra Costa County Habitat Conservancy, Upper Hess Creek Restoration Project*. November. Walnut Creek, CA. Prepared for the East Contra Costa Habitat Conservancy, Martinez, CA.

Monk & Associates. 2018b. *Annual Monitoring Report, Seasonal Wetlands 1 and 2, East Contra Costa County Habitat Conservancy, Vaquero Farms Seasonal Wetland Project (Year Six).* December. Walnut Creek, CA. Prepared for the East Contra Costa Habitat Conservancy, Martinez, CA.

Monk & Associates. 2018c. *Annual Monitoring Report, Seasonal Wetland 3, East Contra Costa County Habitat Conservancy, Vaquero Farms Seasonal Wetland Project (Year Three).* November. Walnut Creek, CA. Prepared for the East Contra Costa Habitat Conservancy, Martinez, CA.

Nichols, J. D. and B. K. Williams. 2006. Monitoring for conservation. *Trends in Ecology and Evolution* 21(12): 668-673.

Nomad Ecology. 2018a. *2018 Covered Plant Species Inventory of Preserve System Acquisitions, East Contra Costa County Habitat Conservancy.* Martinez, CA. Prepared for East Contra County Habitat Conservancy, Martinez, CA.

Nomad Ecology. 2018b. *Special Status and Invasive Plant Management Pilot Project*. Martinez, CA. Prepared for East Contra County Habitat Conservancy, Martinez, CA.

Save Mount Diablo. 2019. *Ang Annual Monitoring Report*. Walnut Creek, CA. February. Prepared for the East Contra Costa County Habitat Conservancy, Martinez, CA

Sapere Environmental. 2019. *Draft Vasco Road Amphibian Undercrossing Pilot Study*. Danville, CA. February. Prepared for the East Contra Costa County Habitat Conservancy, Martinez, CA.

U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. *Recovery Plan for Upland Species of the San Joaquin Valley, California.* Portland, OR: Region 1.

Willdan Financial Services. 2012a. *East Contra Costa County HCP/NCCP Mitigation Fee Audit*. December. Oakland, CA. Prepared for East Contra Costa Habitat Conservancy, Martinez, CA.

Willdan Financial Services. 2012b. *Memorandum: HCP Fee Burden Analysis*. December. Oakland, CA. Prepared for East Contra Costa Habitat Conservancy, Martinez, CA.

Willdan Financial Services. 2013. *East Contra Costa County HCP/NCCP Mitigation Fee Audit and Nexus Study, Final Report.* March.

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 or Take Authorization. This is the authorization from USFWS and CDFW for the "take" of the twenty-eight special-status species and certain other species within the HCP/NCCP plan area, and 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.