East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan Annual Report 2020

East Contra Costa County Habitat Conservancy

June 2021

Cover Photograph: View of Mount Diablo from the Preserve System

Photo credit: Stephen Joseph

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Acronyms and Abbreviations

2013/2017 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
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
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
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

Western Burrowing Owls
Photo Credit: Nomad Ecology

This is the twelfth 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, 2020 and December 31, 2020, 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.

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

Covered Activities

In 2020, 26 projects received permits through the HCP/NCCP. The projects include residential and commercial development, transportation, utility infrastructure, rural infrastructure projects, rural infrastructure operations and maintenance, and restoration projects providing a range of benefits for the communities of eastern Contra Costa County. Some of these covered activities are highlighted below.

Residential: The City of Brentwood permitted The Groves project which includes the subdivision of a 20+/- acre property. The proposed project includes 160 homes with associated landscaping, street network, and two community parks. The City of Pittsburg permitted the Tuscany Meadows project to subdivide a 173+/- acre property into 917 single-family residential units. The proposed project includes 14.6 acres designated for multi-family development.

Commercial: The City of Oakley permitted the Oakley Logistics Center project, which will construct a 150-acre logistics center for the transportation and distribution of commercial goods.

Utility Infrastructure: The City of Brentwood proposed to construct Phase 2 of a non-potable water distribution system to provide recycled grey water to existing landscape irrigation customers. The project includes a new water pipeline and water storage tanks with associated pumps and valves.

Land Acquisition and Stay-Ahead Provision

The Conservancy made significant progress toward the Plan's acquisition goals (see Figures ES-1 through ES-4) during the last 13 years of Plan implementation. By the end of year 13, 41 properties have been acquired for the Preserve System, totaling over 14,229 acres. All but one of the acquisitions were 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 13) of implementation, two properties, Bloching and Nortonville Strip, were added to the Preserve System. Both properties are located adjacent to existing Preserve System properties and together they protect approximately 8.65 acres of land within the inventory area.

The Conservancy remains in compliance with the Plan's Stay-Ahead Provision. The Conservancy has made substantial progress in 13 years of implementation toward many of the Plan's 30-year conservation requirements. Conservation of all land cover types is ahead of impacts incurred (see Figures ES-1 through ES-4). The Stay-Ahead Provision only reflects land cover requirements and does not reflect geographical requirements intended to ensure Preserve System connectivity. The Conservancy is aware of both the qualitative and quantitative goals of the Plan. Figure ES-4 illustrates that the Conservancy is on target with the average pace necessary to assemble the 30,300-acre Preserve System estimated to be required by Year 30 under the maximum impact scenario.

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 six miles of streams (this figure represents the maximum impact scenario; the ultimate impacts and restoration/creation requirements may be much less).

No new restoration projects were constructed in 2020, however, initial planning and some preparatory site work for the future Roddy Ranch Golf Course Restoration Project commenced in 2020. To date, 11 restoration projects have been constructed. Six of the restoration 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. In 2020, the projects monitored were: Irish Canyon Riparian Restoration Project, Ang Riparian Restoration Project, and Horse Valley Creek and Wetland Restoration Project. Monitoring efforts in 2020 were severely restricted due to the shelter-in-place orders that were implemented statewide in response to the COVID-19 pandemic, and hazardous air quality conditions due to the extensive Lightening Complex wildfires burning around the Bay Area. The monitoring of restoration projects impacted by these restrictions include: Upper Hess Creek Watershed Habitat Restoration Project; Vaquero Farms Seasonal Wetland Creation Project – Seasonal Wetland 3; and Vaquero Farms Seasonal Wetland 3 Creation.

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 was no precedent.

Important milestones reached to date are summarized below.

On May 4, 2012, the Corps issued a Regional General Permit (RGP) related to the HCP/NCCP. The RGP is designed to streamline wetland permitting in the HCP/NCCP inventory area by coordinating the avoidance, minimization, and mitigation measures in the Plan with the Corps'

wetland permitting requirements. Currently, the RGP only relates to Clean Water Act Section 404 permits, but discussions are ongoing with the State Water Board and Regional Water Boards to coordinate their requirements with the RGP and HCP/NCCP.

On April 30, 2012, USFWS issued a Biological Opinion for the RGP. The Biological Opinion relies on the HCP/NCCP for mitigation measures and eliminates the need for the Corps to consult individually with USFWS for each project covered by the RGP. The term of the Biological Opinion corresponds with the 30-year term of the HCP/NCCP.

The Conservancy is seeking to establish an In-Lieu Fee (ILF) program to comply with the *Compensatory Mitigation for Losses of Aquatic Resources* (Mitigation Rule; Code of Federal Regulations [CFR], Title 33, Part 332). The proposed ILF program would be implemented in conjunction with requirements of the RGP and HCP/NCCP. The ILF program would sanction payment of HCP/NCCP fees as suitable mitigation under Corps permits. The Conservancy is working with the Corps to develop the ILF program agreement.

Until the ILF program is in place, the interim approach is *permittee-responsible compensatory mitigation*, an option defined in Mitigation Rule 33 CFR Part 332. Under this approach, until the ILF is approved, the Conservancy will designate a portion of its existing wetland restoration sites as compensatory mitigation for an applicant's project, and this will fulfill the applicant's Section 404 compensatory mitigation requirements under the RGP. The Corps initially approved using this interim strategy for up to 1 year, at which time the interim strategy would be replaced by the ILF program. In 2013, the Corps approved extending the interim strategy while it continues to work on the ILF program.

The Corps issued the first RGP in 2012 for a 5-year period and an expiration date of May 4, 2017. On June 6, 2017, the Corps re-issued RGP 1 with a new expiration date of June 6, 2022. There was a 1-month gap in RGP coverage. During that time, there were three pending permit applications: one Conservancy restoration project and two Contra Costa County Public Works projects. The schedules for these projects were not affected by the month-long gap in RGP coverage.

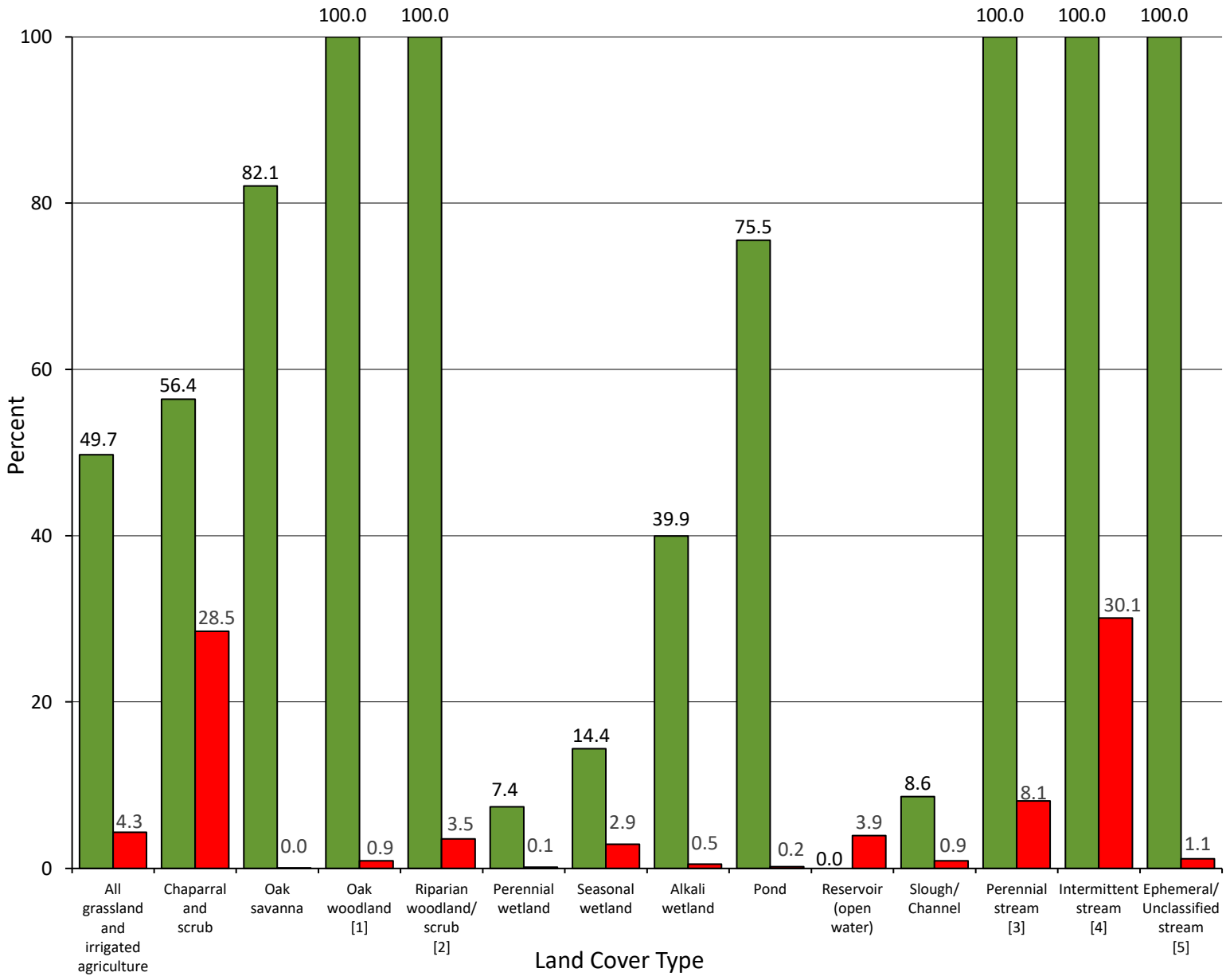
To date, 23 covered projects and three Conservancy restoration projects have received permit coverage through the RGP.

Funding

In 2020, the Conservancy's expenditures totaled $2,123,907 on implementation of the ECCC HCP/NCCP. This includes grant funds that were spent on land acquisitions, restoration projects, and preserve management activities. The Conservancy remained under the approved 2020 Budget. The Conservancy continued to pursue and secure grants during the 2020 reporting period. Various federal and state sources granted $674,030 toward land acquisitions, restoration projects and preserve management activities. Mitigation fees and other payments from project proponents of 2020 permitted projects totaled $3,726,490. In total, the Conservancy received $4,499,164 in revenue (interest included). Local matching funds, which include grants awarded to local partners, totaled $126,233.

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 646% of the total.

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

[3] Perennial stream has exceeded the conservation requirement: it is 306% 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 622% of the total.

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

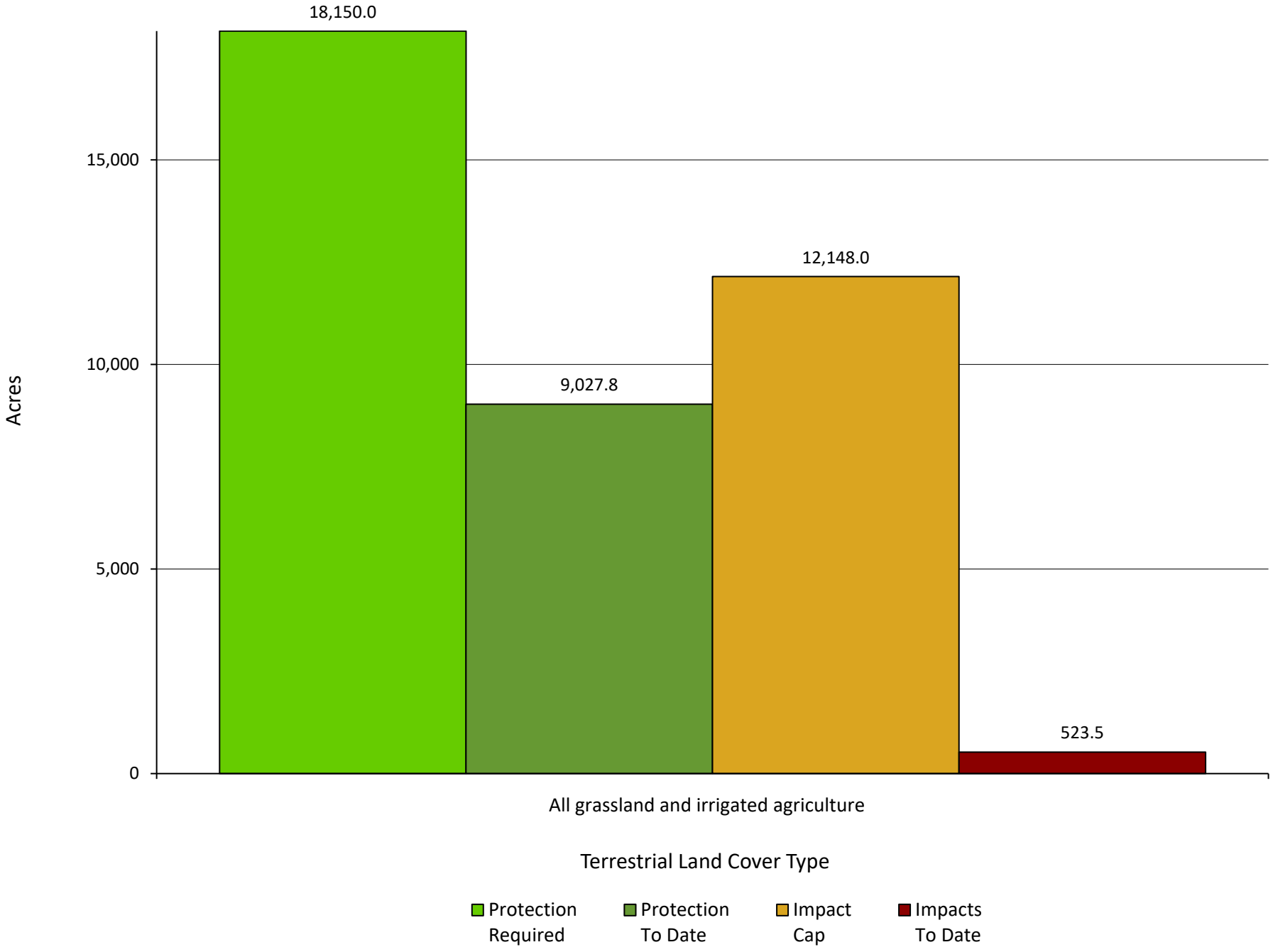


Figure ES-2b. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Terrestrial Land Cover Types

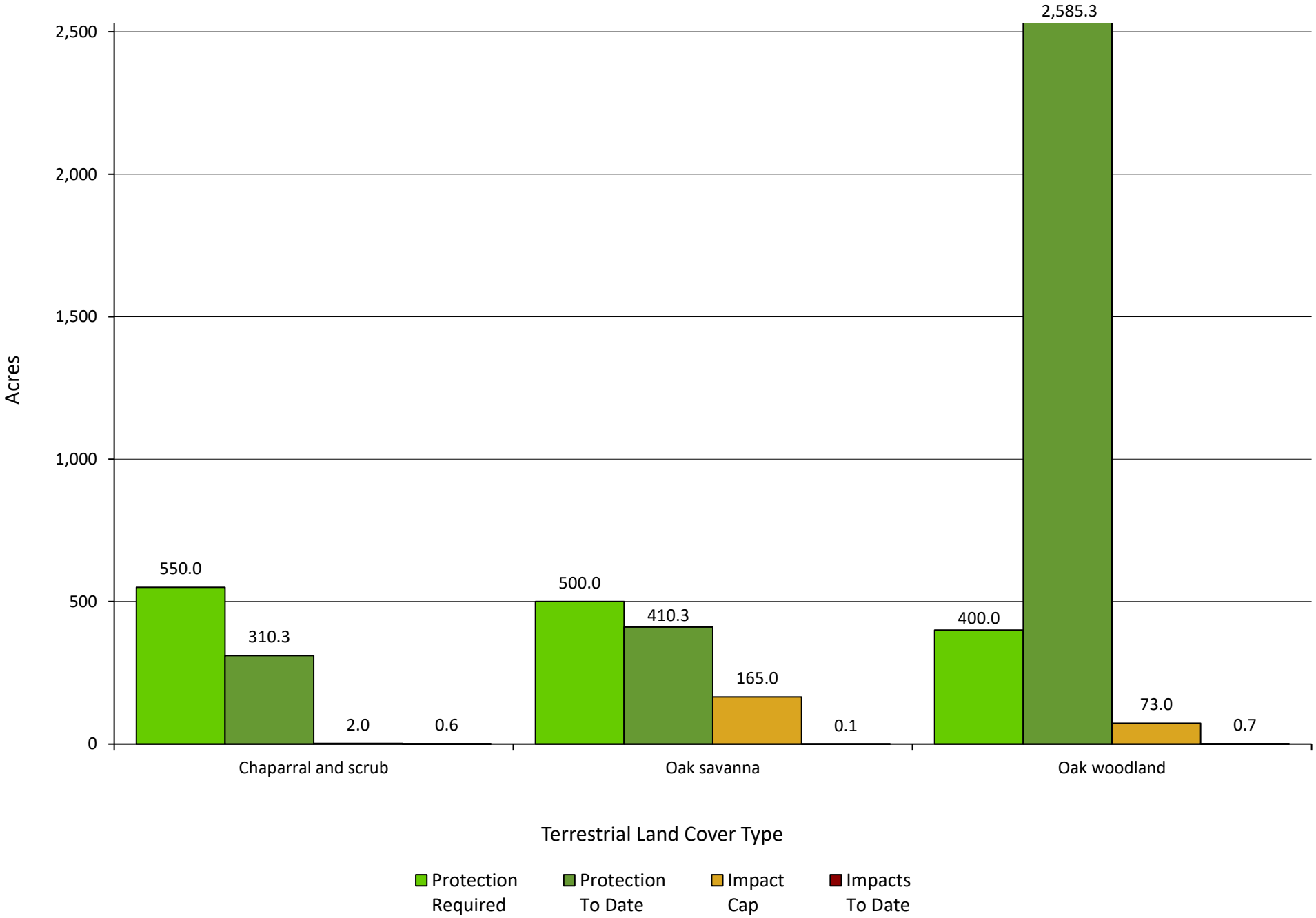


Figure ES-3a. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Aquatic Land Cover

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.

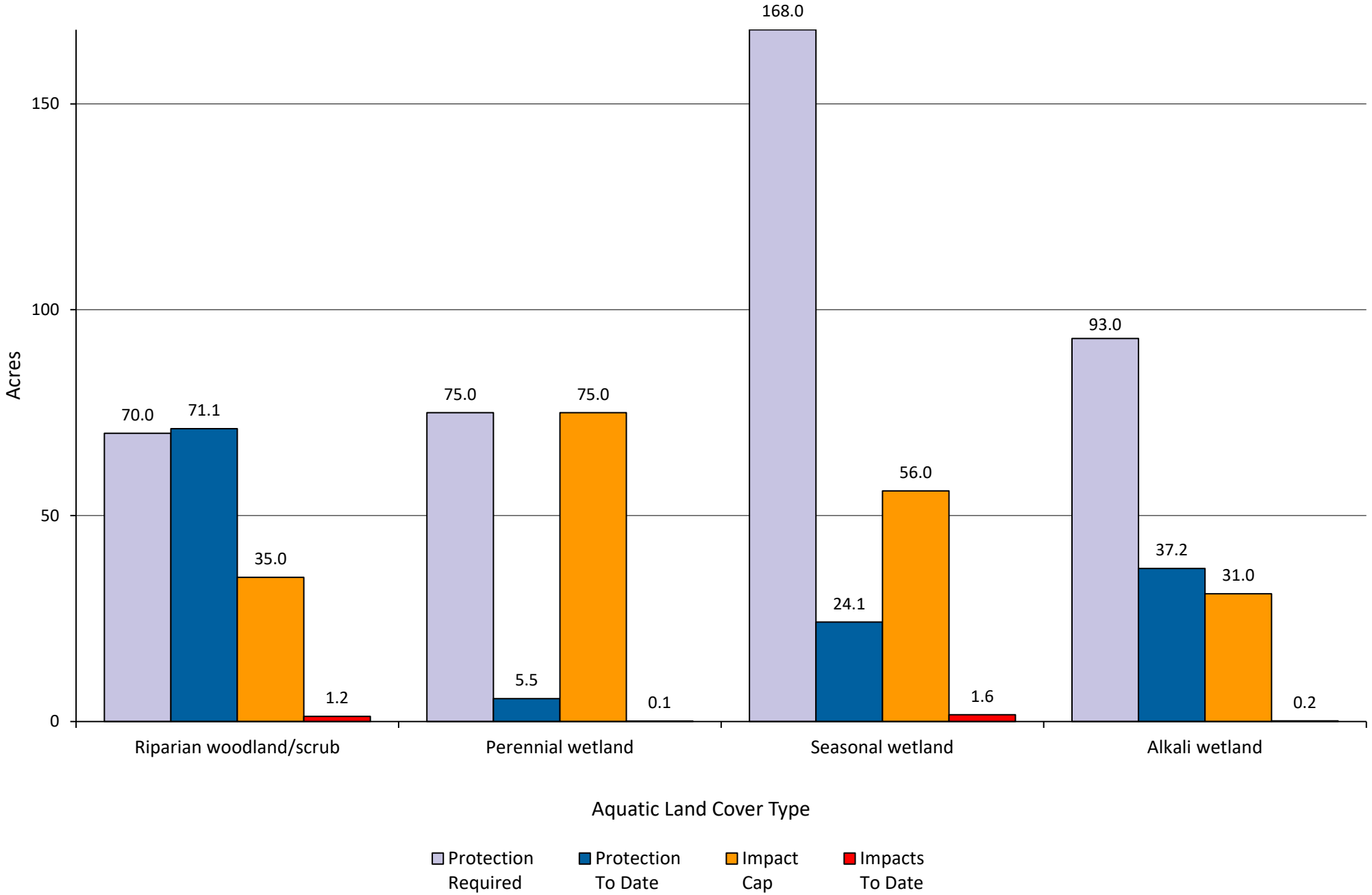


Figure ES-3b. Detailed Comparison of Conservation Required and Achieved to Impact Limit and Incurred for Aquatic Land Cover

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.

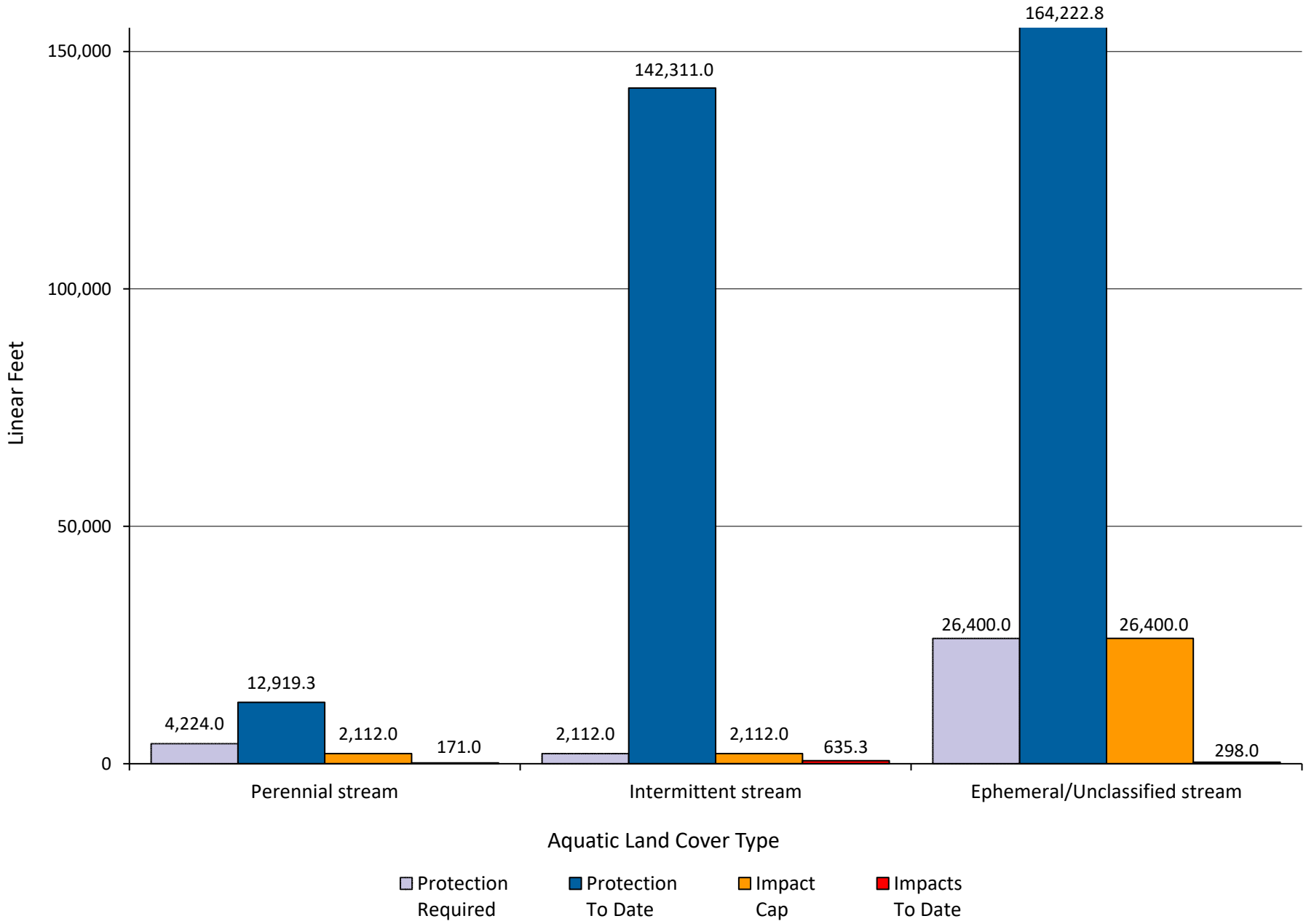
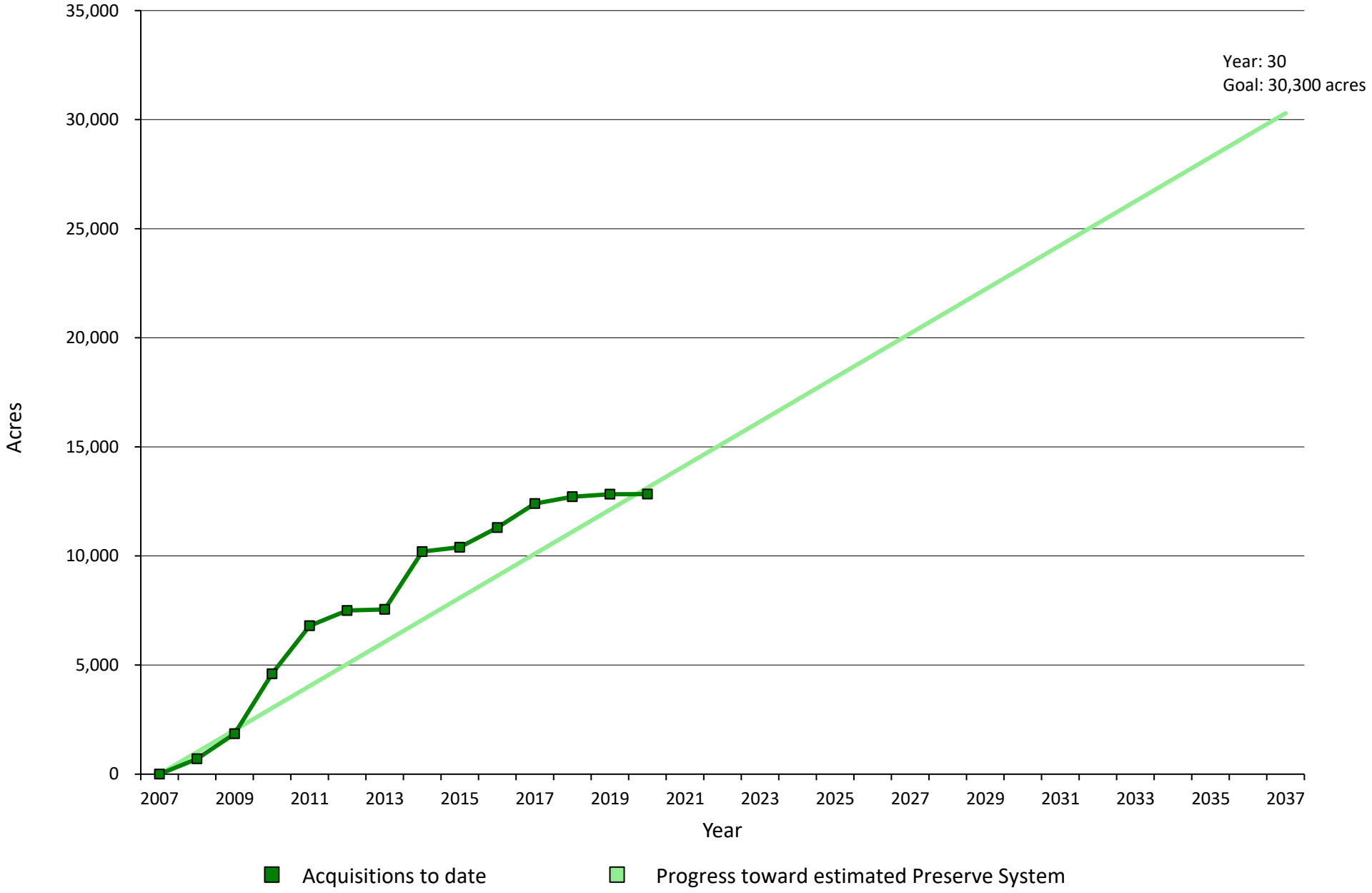


Figure ES-4. Progress Toward Assembling the Preserve System

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



I. INTRODUCTION

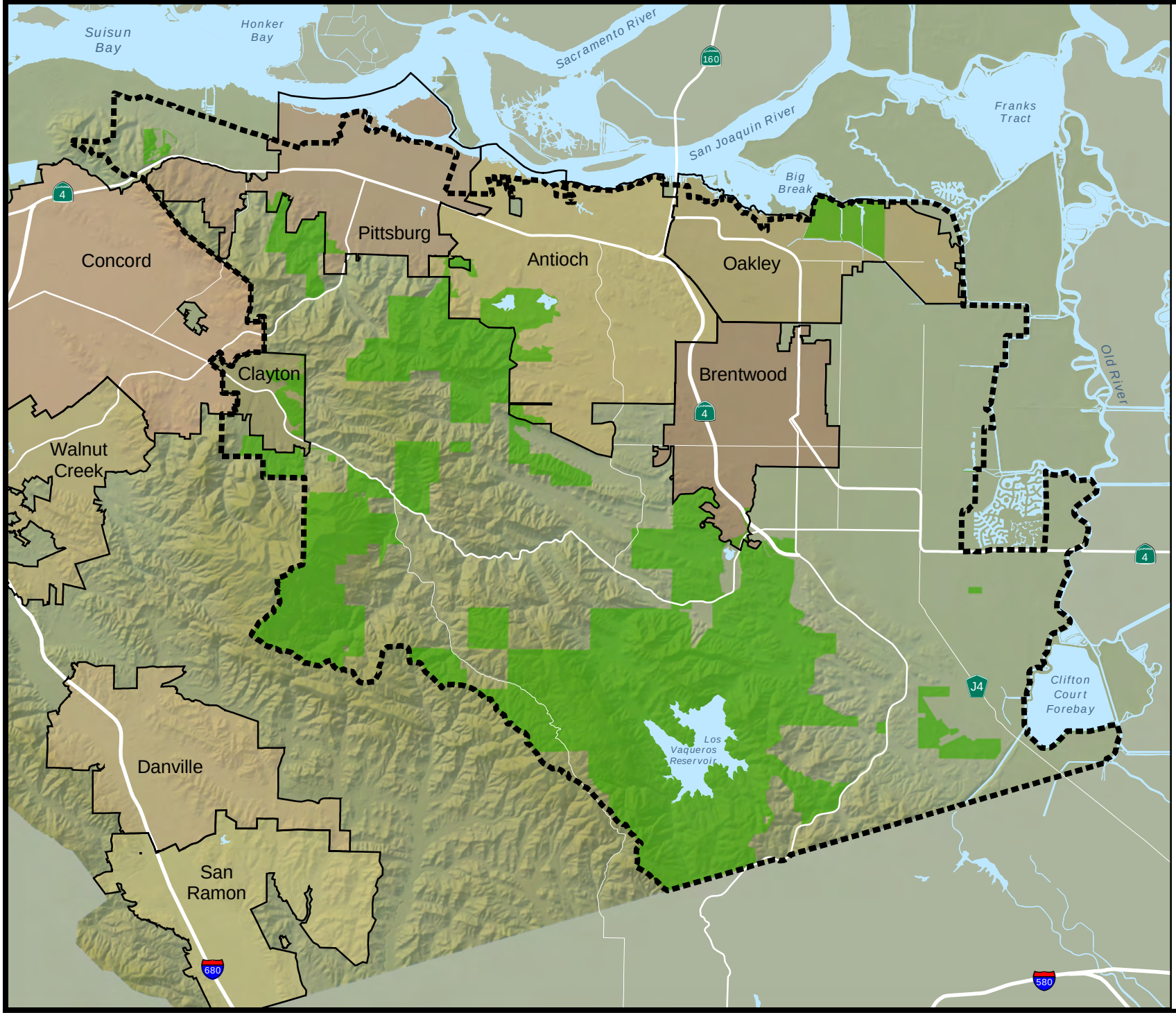
East Contra Costa County HCP/NCCP Background

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 8,670–11,853 acres of urban development and 1,126 acres of

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

03/13/2018

East Contra Costa County Habitat Conservancy

rural infrastructure projects. The primary means to offset these impacts is to conserve and restore lands in a Preserve System. The Preserve System will encompass between 23,800–30,300 acres of land that will be managed to benefit the 28 species covered by the Plan as well as the natural communities that they, and hundreds of other species, depend on for habitat.

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

EBRPD is the primary landowner and land manager for the Preserve System, and so far, all but one of the land acquisitions have been completed in partnership with 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 will ultimately be available for public access.

Annual Report

The purpose of this Annual Report is to provide the Governing Board, USFWS, CDFW, permittees of the HCP/NCCP, 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, 2020, through December 31, 2020. 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 assessed.

Habitat Restoration and Creation

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

Preserve Management

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

Monitoring, Research, and Adaptive Management

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

Stay-Ahead Provision

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

Changed Circumstances and Remedial Measures

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

Finances

Section IX includes accounting of revenue received by type (e.g., development fees, wetland fees, grants), an overview of the Conservancy's budget and expenditures during the reporting period, and mitigation fee act annual 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 twenty-six (26) projects received take coverage under the Plan during the reporting period (Table 1 and Figures 3a and 3b). Covered activities include the following.

Thirteen (13) urban development area projects

One (1) rural infrastructure project

Seven (7) rural infrastructure operation and maintenance projects

Five (5) Preserve System activities

All covered activities mitigated impacts through the payment of HCP/NCCP fees. In addition, the Nortonville Strip property was conveyed to the East Bay Regional Park District as part of a Land Dedication In-Liu of Development Fee Agreement related to the development of the Tuscany Meadows project in the City of Pittsburg. In 2020, mitigation fees and contribution to recovery charges from covered projects totaled $3,705,490. See Section IX for more details.

Conditions on Covered Activities

The purpose of conditions on covered activities is to meet regulatory standards to avoid and minimize potential impacts on covered species (payment of fees or provision of land in lieu of

fees satisfies mitigation requirements). Conditions also reduce and minimize impacts on important natural communities. Conditions on covered activities include completion of preconstruction surveys, minimization of development footprints that are adjacent to preserves, establishment of stream setbacks and fuel management buffers, management of the urban-wildland interface, maintenance of hydrologic conditions, avoidance of direct impacts on extremely rare plants and fully protected wildlife species and covered migratory birds, best management practices for flood control, and design requirements for roads outside the urban development area. Each condition is described in detail in Chapter 6 of the Plan under Section 6.4, *Specific Conditions on Covered Activities*.

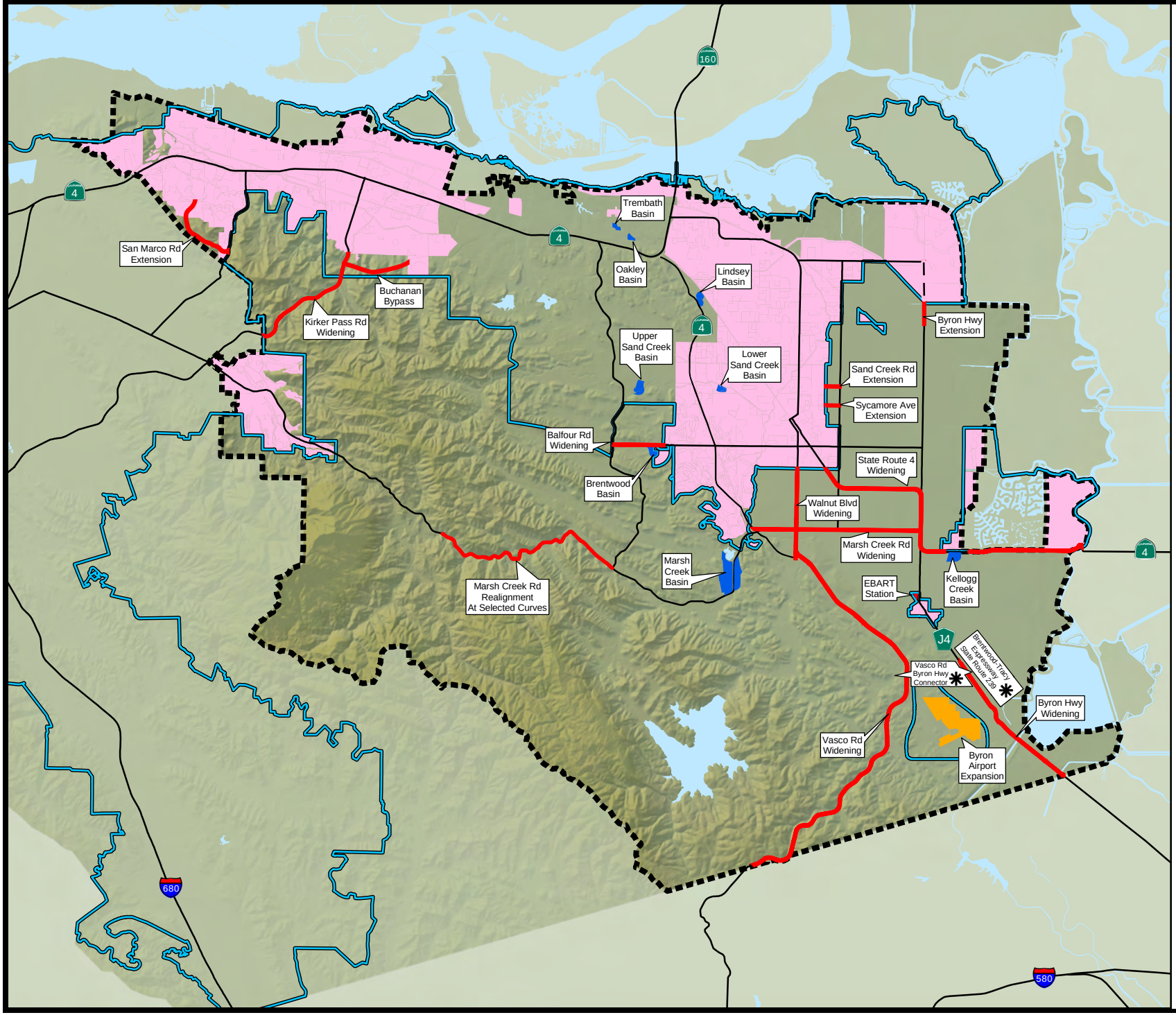
Specific project circumstances determine which conditions apply to each project. For example, Condition 1.12 *Implement Best Management Practices for Rural Road Maintenance* only applies to rural road maintenance projects. Compliance with the conditions on covered activities is an important part of the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

As shown in Tables 2 and 3, landscape, natural community, and species level conditions were applied to all 26 covered activities implemented during the 2020 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 306.4 acres of permanent land cover impacts and 31.9 acres of temporary land cover impacts (Table 4). There were 22.0 linear feet of permanent impacts and 4,273.0 linear feet of temporary impacts on streams during the reporting period. No covered plants were removed by covered projects in the reporting period (Table 5). Impacts on aquatic land cover types during the reporting period occurred in five watersheds: Brushy, East Antioch, Lower Marsh, Oakley, and Upper Mt. Diablo (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 2020

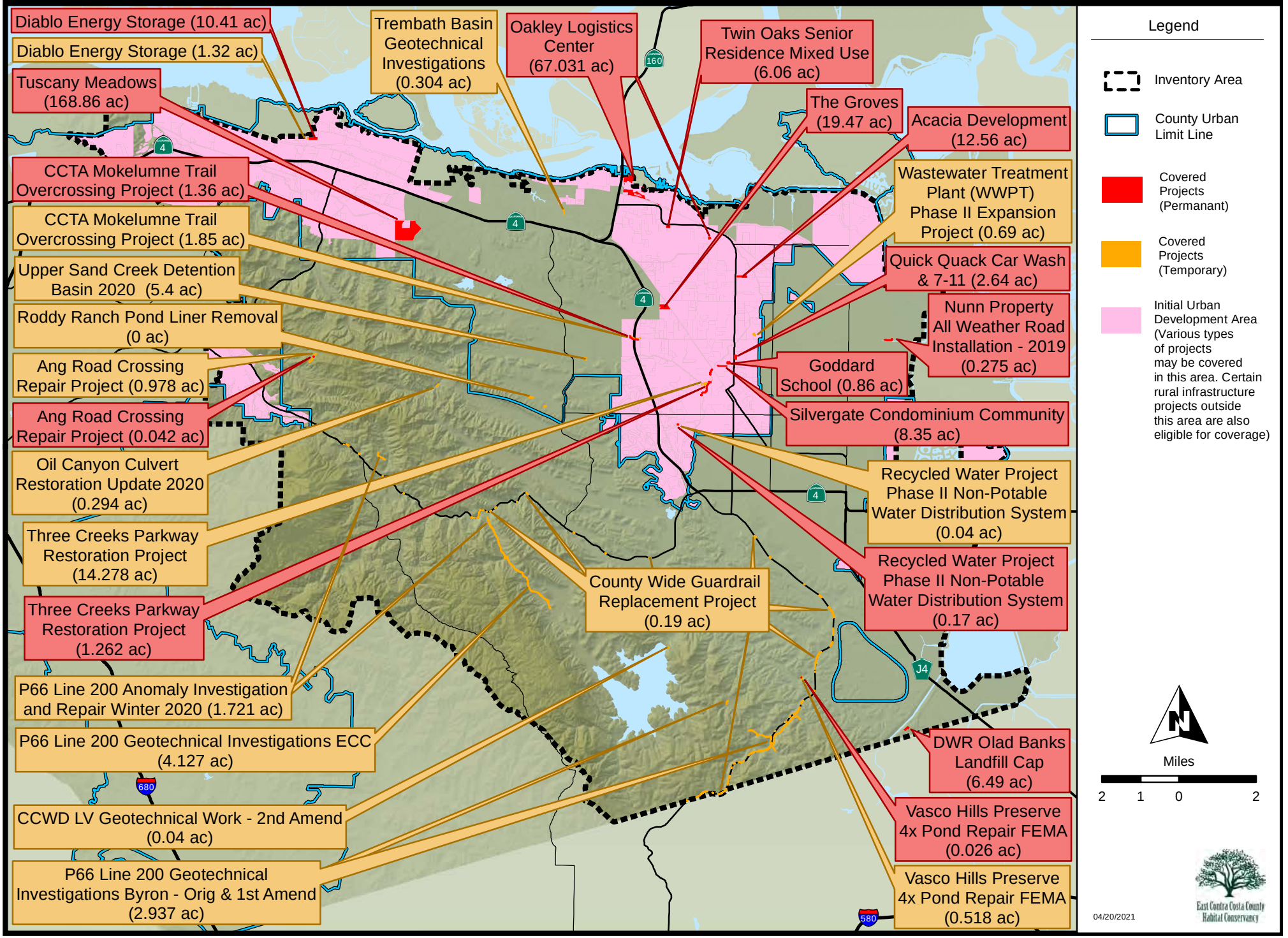
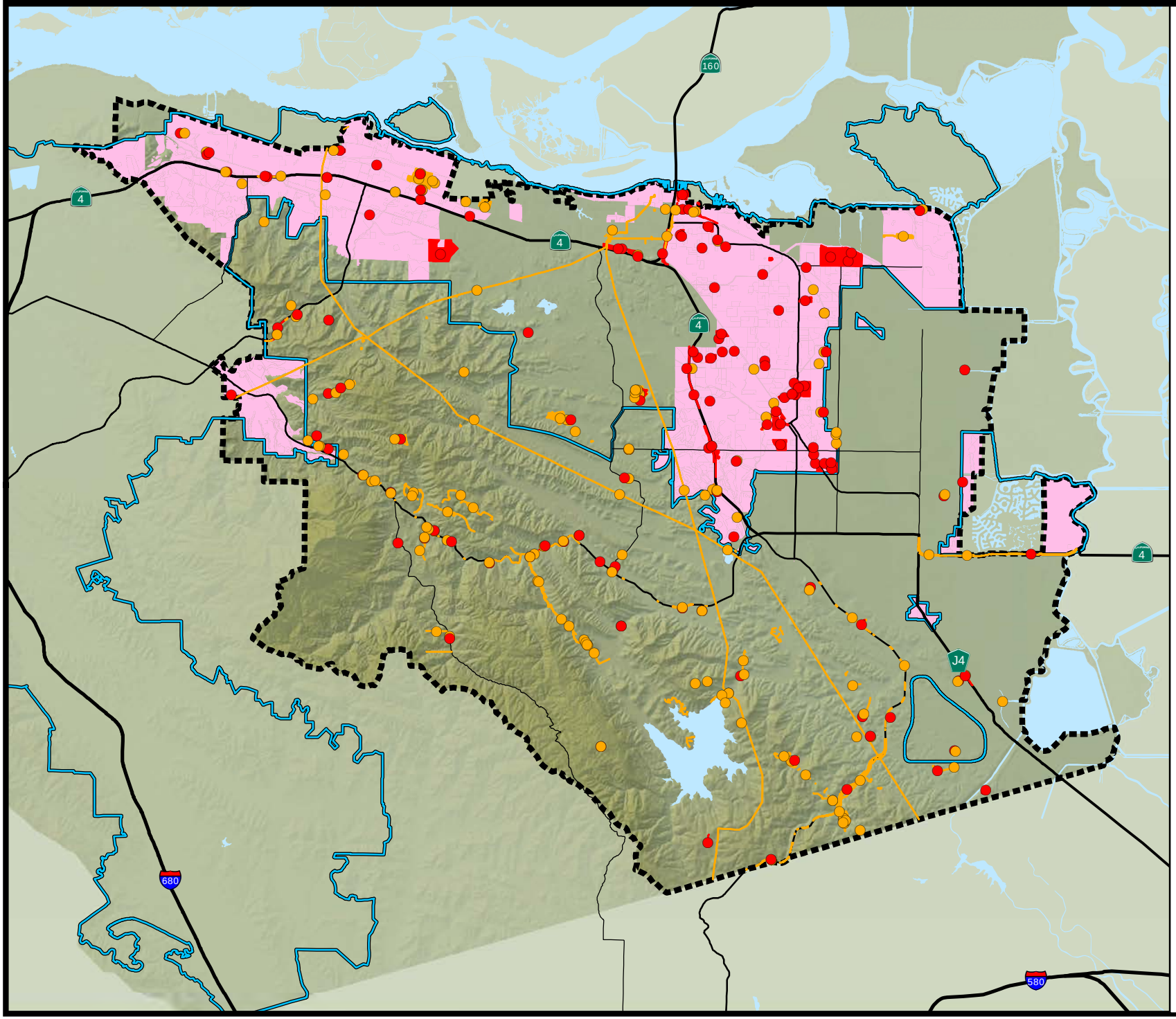


Figure 3b. Location of Covered Projects to Date (2008-2020)



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)

N

Miles

2 1 0 2

04/20/2021

East Contra Costa County Habitat Conservancy

Table 1. Reporting Summary of Covered Activities for 2020

Project Name	Activity Type	Covered By	Location	Description
Activities within the Urban Development Area				
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project	Transportation	ECCC Habitat Conservancy	Spanning over and adjacent on either side of SR-4 approximately 0.5 mile south of Lone Tree Way.	Construction of an 18 feet wide bridge to establish a connection between the east and west sides of SR-4, closing a gap between the existing Mokelumne Trail segments east and west of the freeway. The overcrossing would include a multi-span bridge with columns in the SR-4 median.
Three Creeks Parkway Restoration Project at Marsh Creek	Restoration Project	CCC Flood Control District	Marsh Creek channel between Dainty Avenue and the railroad crossing.	Restoration project to improve flood protection and restore Marsh Creek at the confluence of Sand Creek and Deer Creek.
The Groves/Orfanos	Residential	City of Brentwood	East side of Empire Ave, 0.30+/- miles north of Lone Tree Rd, Brentwood, CA	160 home residential subdivision with associated landscaping, street network, and two community parks.
Brentwood Goddard School	Residential	City of Brentwood	121 Technology Way, 111 Technology Way and 21 Technology Ct, City of Brentwood	Development of a 10,000 square ft daycare facility and includes a building structure, parking, play area, landscaping, and site furnishings.
Quick Quack Car Wash and 7-11	Commercial	City of Brentwood	Northeast corner of East Sand Creek Road and Brentwood Boulevard, City of Brentwood	Construction of a new gasoline canopy and 7-11 convenience store, and a new car wash facility.
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System	Utility	City of Brentwood	City of Brentwood	Phase 2 of a new recycled water pipeline and includes recycled water storage tanks and pumps/valves for the purpose of providing additional recycled water to existing landscape irrigation customers.
City of Brentwood Wastewater Treatment Plant Phase II Expansion Project	Utility	City of Brentwood	2251 Elkins Way, Brentwood, CA 94513	The City of Brentwood is proposing to construct a modular expansion of its wastewater treatment facility, which includes constructing additional treatment unit processes consisting of a rectangular reactor with adjacent shop addition, secondary clarifier, biosolids dryer building and Waste Activated Sludge storage tanks

Project Name	Activity Type	Covered By	Location	Description
Silvergate Condominium Community	Residential	City of Brentwood	O'Hara Ave near the Sand Creek Rd intersection in Brentwood, CA	Development of a 166-unit condominium community on project site.
Twin Oaks Senior Residence	Residential	City of Oakley	2605 Main Street, Oakley CA	Construction of senior residences, community and retail spaces, and associated parking.
Acacia Development	Residential	City of Oakley	5360 Main Street, Oakley, CA	Subdivision to construct 108 Single family homes and associated infrastructure.
Oakley Logistics Center	Commercial	City of Oakley	6000 Bridgehead Road, Oakley, California. West side of Del Antico Avenue, just north of Walnut Drive, Oakley, California (Off-site Water Quality Basin)	Construction of a 150-acre logistics center to transport and distribute goods by various operators on a commercial basis.
Tuscany Meadows	Residential	City of Pittsburg	South of Buchanan Road and west of Somersville Road, Pittsburg, CA	Subdivion comprised of 917 single-family residential units, each with a new home and ancillary services, and 14.6 acres designated for multi-family development. Connects into the City ’s existing sewer, storm drain, and roadway systems. Water will be also be provided by the City following inclusion of the site in CCWD boundary and inclusion in to the Central Valley Project boundary.
Diablo Energy Storage	Utility	City of Pittsburg	701 Willow Pass Road and 550 W. 10th Street, Pittsburg, CA	Proposal to install advanced energy storage technology (e.g., lithium ion batteries) and associated control equipment, ancillary outdoor electrical equipment and temporary use of adjacent parcel for construction staging.

Project Name	Activity Type	Covered By	Location	Description
Rural Infrastructure Projects				
Trembath Basin Geotechnical Investigation Project	Flood Control	CCC Flood Control District	Antioch, CA	Expansion of the Trembath Detention Basin in the City of Antioch requires additional geotechnical investigation work to further characterize the subsurface conditions and support the design of the proposed expansion. The geotechnical investigation includes subsurface exploration that includes four rotary wash borings, one of which will receive a vibrating wire piezometer, seven standard cone penetration tests (CPT) and one seismic CPT.
Rural Infrastructure O&M Activities				
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management 2020	Flood Control	CCC Flood Control District	6100 Deer Valley Rd, Antioch, CA	Continuing burrowing owl burrow management at Upper Sand Creek Detention Basin project
Phillips 66 Line 200 ECC Segment Replacement Project - Geotechnical & Cultural Resource Investigation	Utility	ECCC Habitat Conservancy	East Contra Costa County north of Round Valley Regional Park	Geotechnical investigation work at four locations to further understanding of the underlying geology and geologic risks for the planned replacement of the East Contra Costa (ECC) segment of the existing Line 200 pipeline in eastern Contra Costa County.
Phillips 66 Line 200 Anomaly Investigation and Repair – Winter 2020	Utility	ECCC Habitat Conservancy	Southern portion of Calyton Ranch Preserve and second dig lcoation approximatley 5 mi south	Phillips 66 Pipeline, LLC is proposing to conduct anomaly investigation and repairs at two distinct dig locations to address a total of four anomalies along the existing Line 200 Mainline trunk pipeline in eastern Contra Costa County.
CCWD Los Vaqueros Geotechnical Investigations 2nd Amendment	Utility	ECCC Habitat Conservancy	Los Vaqueros Watershed right abutment of the dam	Geotechnical investigations to support the Division of Safety of Dams (DSOD) permitting process.
Department of Water Resources Old Banks Landfill Cap Project	Other	ECCC Habitat Conservancy	Along the Banks Pumping Plant intake canal in Tracy, Contra Costa County, CA	Placement of a permanent cap on the Old Banks Landfill.

Project Name	Activity Type	Covered By	Location	Description
Phillips 66 Line 200 Byron Segment Replacement Project & 1st Amendment - Geotechnical Investigation	Utility	ECCC Habitat Conservancy	Byron, CA	Geotechnical investigations at five locations to further the understanding of the underlying geology and geologic risks for the planned Line 200 Byron Segment Replacement Project in eastern Contra Costa County.
Countywide Guardrail Upgrades	Transportation	Contra Costa County Public Works	Marsh Creek Road (Clayton city limit to Camino Diablo Rd, Byron), Vasco Road (Alameda County line to Walnut Boulevard, Brentwood)	Guardrail replacement with current design standard systems along Marsh Creek Road.
Activities within the HCP/NCCP Reserve System				
FEMA Funded Projects - Oil Canyon Culvert Restoration Update 2020	Other	EBRPD	Black Diamond Mines Regional Preserve, 5175 Somersville Rd, Antioch, CA 94509	Removal of a damaged culvert involving replacing the crossing with an articulated rock ford. EBRPD discovered that a contractor conducted unauthorized work at and adjacent to the proposed Project while working on an unrelated project within Black Diamond Mines Regional Preserve. Unauthorized work included creating wider vehicle access across Oil Creek and an ephemeral swale, excavating at the culvert inlet, placing rock and other fill in Oil Creek, and destabilizing portions of the stream banks.
Nunn Property All Weather Road Installation	Other	ECCC Habitat Conservancy	Nunn Preseve Property	The project rocked and compacted approximately 1500’ of fire trail to maintain all weather access to the water discharge pump platform area on the Nunn property.
Roddy Ranch Golf Course Pond Liner Removal	Restoration Project	ECCC Habitat Conservancy	1 Tour Way, of Deer Valley Road in Antioch	Removal of plastic pond liners from three ponds, as a beginning effort of the greater restoration plans for Roddy Ranch Golf Course,.

Project Name	Activity Type	Covered By	Location	Description
Ang Road Crossing Repair	Other	ECCC Habitat Conservancy	Ang Property	Repair at two locations where an existing dirt fire road crosses a drainage channels and a wetland that involves installing articulated concrete block mats to create a hard surface that is both passable by vehicles and that will not erode from the continuous low flow of water from an upland spring. Excessive erosion has caused the crossings to become impassible to firefighting and ranch vehicles.
Vasco Hills Regional Preserve Pond X4 Repair	Other	ECCC Habitat Conservancy	Vasco Hills Regional Preserve	Pond repair in the Vasco Hills Regional Preserve that was damaged during the winter of 2016-2017. The pond is impounded by a berm which also functions as a maintenance road. The 60-inch culvert under the road broke off and washed out the lower portion of the pond berm and maintenance road, resulting in a large gully and a hole 15 feet in diameter below the berm. This project replaces the 60-inch culvert in its pre-exiting location and repair the berm.

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
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing							✓	✓			
Three Creeks Parkway Restoration Project at Marsh Creek				✓				✓			
The Groves/Orfanos							✓	✓			
Brentwood Goddard School							✓	✓			
Quick Quack Car Wash and 7-11							✓	✓			
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System		✓						✓			
City of Brentwood Wastewater Treatment Plant Phase II Expansion Project		✓		✓				✓			
Silvergate Condominium Community		✓					✓	✓			
Twin Oaks Senior Residence							✓	✓			
Acacia Development							✓	✓			
Oakley Logistics Center		✓					✓	✓			
Tuscany Meadows							✓	✓			
Diablo Energy Storage							✓	✓			
Trembath Basin Geotechnical Investigation Project		✓						✓			
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management 2020								✓			
Phillips 66 Line 200 ECC Segment Replacement Project - Geotechnical & Cultural Resource Investigation		✓						✓			
Phillips 66 Line 200 Anomaly Investigation and Repair – Winter 2020		✓						✓			

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
CCWD Los Vaqueros Geotechnical Investigations 2nd Amendment								✓			
Department of Water Resources Old Banks Landfill Cap Project		✓						✓			
Phillips 66 Line 200 Byron Segment Replacement Project & 1st Amendment - Geotechnical Investigation		✓						✓			
Countywide Guardrail Upgrades		✓						✓	✓		
FEMA Funded Projects - Oil Canyon Culvert Restoration Update 2020		✓						✓			
Nunn Property All Weather Road Installation		✓						✓			
Roddy Ranch Golf Course Pond Liner Removal		✓						✓			
Ang Road Crossing Repair		✓						✓			
Vasco Hills Regional Preserve Pond X4 Repair		✓						✓			

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
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project						X	X			X	X			X	X			X	X					
Three Creeks Parkway Restoration Project at Marsh Creek										X	X			X	X			X	X					
The Groves/Orfanos						X	X			X	X			X	X			X	X					
Brentwood Goddard School														X	X			X	X					
Quick Quack Car Wash and 7-11										X	X			X	X			X	X					
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System										X	X							X	X					
City of Brentwood Wastewater Treatment Plant Phase II Expansion Project										X	X			X	X			X	X			X		
Silvergate Condominium Community														X				X						
Twin Oaks Senior Residence														X	X			X	X					
Acacia Development										X	X			X	X			X	X					
Oakley Logistics Center										X	X			X	X			X	X					
Tuscany Meadows						X	X			X	X			X	X			X	X					
Diablo Energy Storage										X				X				X						
Trembath Basin Geotechnical Investigation Project						X	X			X	X			X	X			X	X					
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management 2020														X	X	X								
Phillips 66 Line 200 ECC Segment Replacement Project - Geotechnical & Cultural Resource Investigation						X	X			X	X			X	X									
Phillips 66 Line 200 Anomaly Investigation and Repair – Winter 2020						X	X			X	X			X	X									
CCWD Los Vaqueros Geotechnical Investigations 2nd Amendment						X	X							X	X									
Department of Water Resources Old Banks Landfill Cap Project						X								X										
Phillips 66 Line 200 Byron Segment Replacement Project & 1st Amendment - Geotechnical Investigation						X	X			X	X	X		X	X									
Countywide Guardrail Upgrades						X	X			X	X			X	X			X	X					
Nunn Property All Weather Road Installation														X	X							X	X	
Roddy Ranch Golf Course Pond Liner Removal						X	X							X	X									
Ang Road Crossing Repair						X	X			X	X			X	X									
Vasco Hills Regional Preserve Pond X4 Repair						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]																							
	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
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project																								
Three Creeks Parkway Restoration Project at Marsh Creek						X	X																	
The Groves/Orfanos																								
Brentwood Goddard School																								
Quick Quack Car Wash and 7-11																								
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System																								
City of Brentwood Wastewater Treatment Plant Phase II Expansion Project																								
Silvergate Condominium Community																								
Twin Oaks Senior Residence																								
Acacia Development																								
Oakley Logistics Center																								
Tuscany Meadows														X	X			X	X			X	X	
Diablo Energy Storage														X	X			X	X			X	X	
Trembath Basin Geotechnical Investigation Project						X	X																	
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management 2020																								
Phillips 66 Line 200 ECC Segment Replacement Project - Geotechnical & Cultural Resource Investigation																		X	X			X	X	
Phillips 66 Line 200 Anomaly Investigation and Repair – Winter 2020		X	X			X	X															X	X	
CCWD Los Vaqueros Geotechnical Investigations 2nd Amendment														X	X			X	X			X	X	
Department of Water Resources Old Banks Landfill Cap Project														X	X			X	X			X	X	
Phillips 66 Line 200 Byron Segment Replacement Project & 1st Amendment - Geotechnical Investigation																		X	X			X	X	
Countywide Guardrail Upgrades		X				X				X				X	X									
Nunn Property All Weather Road Installation																								
Roddy Ranch Golf Course Pond Liner Removal		X	X			X	X																	
Ang Road Crossing Repair		X				X								X	X			X	X			X	X	
Vasco Hills Regional Preserve Pond X4 Repair		X	X			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.

	Species-Level Measures[1]																			
	Contra Costa Goldfields				Diamond-Petaled Poppy				Large-Flowered Fiddleneck				Mount Diablo Buckwheat				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
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project																				
Three Creeks Parkway Restoration Project at Marsh Creek																				
The Groves/Orfanos																				
Brentwood Goddard School																				
Quick Quack Car Wash and 7-11																				
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System																				
City of Brentwood Wastewater Treatment Plant Phase II Expansion Project																				
Silvergate Condominium Community																				
Twin Oaks Senior Residence																				
Acacia Development																				
Oakley Logistics Center																				
Tuscany Meadows		X	X			X	X			X	X			X	X			X	X	
Diablo Energy Storage		X	X			X	X			X	X			X	X			X	X	
Trembath Basin Geotechnical Investigation Project																				
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management 2020																				
Phillips 66 Line 200 ECC Segment Replacement Project - Geotechnical & Cultural Resource Investigation						X	X			X	X			X	X			X	X	
Phillips 66 Line 200 Anomaly Investigation and Repair – Winter 2020														X	X			X	X	
CCWD Los Vaqueros Geotechnical Investigations 2nd Amendment		X	X			X	X			X	X			X	X			X	X	
Department of Water Resources Old Banks Landfill Cap Project		X	X			X	X			X	X			X	X			X	X	
Phillips 66 Line 200 Byron Segment Replacement Project & 1st Amendment - Geotechnical Investigation						X	X			X	X			X	X			X	X	
Countywide Guardrail Upgrades		X	X																	
Nunn Property All Weather Road Installation																				
Roddy Ranch Golf Course Pond Liner Removal																				
Ang Road Crossing Repair		X	X			X	X			X	X							X	X	
Vasco Hills Regional Preserve Pond X4 Repair						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.

	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
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project																				
Three Creeks Parkway Restoration Project at Marsh Creek																				
The Groves/Orfanos																				
Brentwood Goddard School																				
Quick Quack Car Wash and 7-11																				
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System																				
City of Brentwood Wastewater Treatment Plant Phase II Expansion Project																				
Silvergate Condominium Community																				
Twin Oaks Senior Residence																				
Acacia Development																				
Oakley Logistics Center																				
Tuscany Meadows		X	X			X	X			X	X			X	X			X	X	
Diablo Energy Storage		X	X																	
Trembath Basin Geotechnical Investigation Project																				
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management 2020																				
Phillips 66 Line 200 ECC Segment Replacement Project - Geotechnical & Cultural Resource Investigation		X	X											X	X					
Phillips 66 Line 200 Anomaly Investigation and Repair – Winter 2020														X	X					
CCWD Los Vaqueros Geotechnical Investigations 2nd Amendment										X	X									
Department of Water Resources Old Banks Landfill Cap Project		X	X																	
Phillips 66 Line 200 Byron Segment Replacement Project & 1st Amendment - Geotechnical Investigation		X	X																	
Countywide Guardrail Upgrades						X	X			X	X									
Nunn Property All Weather Road Installation																				
Roddy Ranch Golf Course Pond Liner Removal																				
Ang Road Crossing Repair		X	X											X	X					
Vasco Hills Regional Preserve Pond X4 Repair		X	X			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]															
	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
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project																
Three Creeks Parkway Restoration Project at Marsh Creek																
The Groves/Orfanos																
Brentwood Goddard School																
Quick Quack Car Wash and 7-11																
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System																
City of Brentwood Wastewater Treatment Plant Phase II Expansion Project																
Silvergate Condominium Community																
Twin Oaks Senior Residence																
Acacia Development																
Oakley Logistics Center																
Tuscany Meadows		X	X			X	X			X	X					
Diablo Energy Storage		X	X													
Trembath Basin Geotechnical Investigation Project																
Upper Sand Creek Detention Basin Project - Burrowing Owl Burrow Management 2020																
Phillips 66 Line 200 ECC Segment Replacement Project - Geotechnical & Cultural Resource Investigation		X	X													
Phillips 66 Line 200 Anomaly Investigation and Repair – Winter 2020		X	X													
CCWD Los Vaqueros Geotechnical Investigations 2nd Amendment										X	X					
Department of Water Resources Old Banks Landfill Cap Project		X	X													
Phillips 66 Line 200 Byron Segment Replacement Project & 1st Amendment - Geotechnical Investigation		X	X													
Countywide Guardrail Upgrades																
Nunn Property All Weather Road Installation																
Roddy Ranch Golf Course Pond Liner Removal																
Ang Road Crossing Repair		X	X													
Vasco Hills Regional Preserve Pond X4 Repair										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 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	25.45	3.68	127.18	215.72
Alkali grassland	0.00	0.01	0.78	2.76
Ruderal	260.83	28.86	816.20	323.43
Chaparral and scrub	0.00	0.00	0.57	1.60
Oak savanna	0.00	0.15	0.06	2.22
Oak woodland	0.00	0.28	0.66	2.09
Subtotal terrestrial	*286.28*	*32.97*	*945.45*	*547.81*
Aquatic				
Riparian woodland/scrub	--	0.00	1.23	2.00
Perennial wetland[1]	0.02	0.04	0.09	0.73
Seasonal wetland	0.99	0.07	1.62	2.48
Alkali wetland	0.01	0.03	0.15	0.90
Pond	0.00	0.03	0.01	0.11
Reservoir (open water)[2]			0.47	4.14
Slough/Channel (includes stream)	--	0.06	0.65	0.21
Subtotal aquatic	*1.02*	*0.23*	*4.22*	*10.57*
Stream (length in linear feet)				
Total stream length	22.00	4,273.00	1,104.31	10,481.70
Stream length by width category				
≤ 25 feet wide	22.00	273.00	707.00	5,757.50
> 25 feet wide	0.00	4,000.00	397.31	4,724.20
Stream length by type and order				
Perennial	22.00	4,012.00	171.00	4,696.50
Intermittent	0.00	177.00	635.31	4,497.20
Ephemeral, 3rd or higher order	0.00	84.00	0.00	215.00
Ephemeral, 1st or 2nd order	0.00	0.00	298.00	1,073.00
Subtotal stream length	*22.00*	*4,273.00*	*1,104.31*	*10,481.70*
Irrigated agriculture				
Cropland	3.7	0.84	131.8	33.2
Pasture	0.62	0.51	0.8	2.3
Orchard	4.21	--	14.5	0.2
Vineyard	10.5	--	50.7	7.2
Subtotal irrigated agricultural	*19.1*	*1.4*	*197.8*	*42.9*
Other				
Nonnative woodland	--	--	1.05	1.91
Wind turbines	--	--	--	0.57
Subtotal other	--	--	*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	0.38
Wildrye grassland	--	--	0.03	0.02
Wildflower fields	--	--	--	--
Squirreltail grassland	--	--	--	--
One-sided bluegrass grassland	--	--	--	--
Serpentine grassland	--	--	--	--
Saltgrass grassland (alkali grassland)	--	--	0.20	0.53
Alkali sacaton bunchgrass grassland	--	--	--	--
Other uncommon vegetation types	--	--	0.06	--
Subtotal uncommon vegetation types	--	--	*0.31*	*0.93*
Uncommon Landscape Features or Habitat Elements				
Rock outcrop	--	--	0.15	0.13
Cave	--	--	--	--
Springs/seeps	--	--	--	--
Scalds	--	--	--	--
Sand deposits	--	--	--	--
Turf	--	--	0.50	5.70
Buildings - Bat Roosts (number)	--	--	--	--
Mines (number)	--	--	--	--
Buildings (number)	--	--	--	--
Potential nest sites (number)	--	--	--	--
Subtotal uncommon landscape features (acres)	--	--	*0.65*	*5.83*
Subtotal uncommon landscape features (number)	--	--	--	--
Totals (excludes subtypes)				
Acres	306.4	34.5	1,148.5	603.8
Linear feet	22.0	4,273.0	1,104.3	10,481.7

[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	--	1
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[2]]
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**	**1**

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

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Brushy	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.00	0.01	0.12
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.01	0.03	0.02	0.63
	Pond	0.00	0.03	0.00	0.03
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel (includes stream)	0.00	0.00	0.00	0.01
	Subtotal aquatic	*0.02*	*0.06*	*0.03*	*0.79*
	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	381.50
	> 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	131.00
	Ephemeral, 1st or 2nd order	0.00	0.00	76.00	86.00
	Subtotal stream length	*0.00*	*0.00*	*132.00*	*499.50*
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 (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.00*	*0.00*
	Stream (linear feet)				
	Total stream length	0.00	0.00	47.00	112.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	0.00
	> 25 feet wide	0.00	0.00	47.00	112.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	47.00	112.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*47.00*	*112.00*

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Deer	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.00	0.00	0.00
	Seasonal wetland	0.00	0.00	0.00	0.00
	Alkali wetland	0.00	0.00	0.00	0.00
	Pond	0.00	0.00	0.00	0.00
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel (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 Antioch	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.00	0.03	0.00	0.03
	Seasonal wetland	0.00	0.07	0.00	0.07
	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 (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.09*	*0.00*	*0.09*
	Stream (linear feet)				
	Total stream length	0.00	12.00	0.00	12.00
	Stream length by width category				
	≤ 25 feet wide	0.00	12.00	0.00	12.00
	> 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	12.00	0.00	12.00
	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*	*12.00*	*0.00*	*12.00*

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
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	0.00	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 (includes stream)	0.00	0.00	0.58	0.00
	Subtotal aquatic	*0.00*	*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*
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 (includes stream)	0.00	0.00	0.07	0.14
	Subtotal aquatic	*0.00*	*0.00*	*0.41*	*0.46*
	Stream (linear feet)				
	Total stream length	0.00	0.00	6.00	42.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	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	0.00	0.00	42.00
	Subtotal stream length	*0.00*	*0.00*	*6.00*	*42.00*

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Kirker	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	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 (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.05*	*0.09*
	Stream (linear feet)				
	Total stream length	0.00	0.00	0.00	35.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	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	0.00	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*	*0.00*	*0.00*	*35.00*
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 (includes stream)	0.00	0.06	0.00	0.06
	Subtotal aquatic	*0.00*	*0.06*	*0.26*	*1.13*
	Stream (linear feet)				
	Total stream length	0.00	4,249.00	33.31	4,659.70
	Stream length by width category				
	≤ 25 feet wide	0.00	249.00	0.00	622.00
	> 25 feet wide	0.00	4,000.00	33.31	4,073.70
	Stream length by type and order				
	Perennial	0.00	4,000.00	0.00	4,211.00
	Intermittent	0.00	165.00	33.31	364.70
	Ephemeral, 3rd or higher order	0.00	84.00	0.00	84.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*4,249.00*	*33.31*	*4,659.70*

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Lower 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 (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*
Oakley	**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	0.98	0.00	0.98	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 (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.98*	*0.00*	*0.98*	*0.00*
	Stream (linear feet)				
	Total stream length	0.00	0.00	0.00	0.00
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	0.00	0.00
	> 25 feet wide	0.00	0.00	0.00	0.00
	Stream length by type and order				
	Perennial	0.00	0.00	0.00	0.00
	Intermittent	0.00	0.00	0.00	0.00
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	0.00	0.00
	Subtotal stream length	*0.00*	*0.00*	*0.00*	*0.00*

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Sand	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.30	0.73
	Perennial wetland[1]	0.00	0.00	0.04	0.57
	Seasonal wetland	0.00	0.00	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 (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*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	0.00	0.00	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	0.00	0.01	0.08
	Reservoir (open water)[2]	0.00	0.00	0.00	0.00
	Slough/Channel (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.00*	*0.00*	*0.41*	*0.72*
	Stream (linear feet)				
	Total stream length	0.00	0.00	299.00	1,297.50
	Stream length by width category				
	≤ 25 feet wide	0.00	0.00	58.00	978.00
	> 25 feet wide	0.00	0.00	241.00	359.50
	Stream length by type and order				
	Perennial	0.00	0.00	93.00	191.00
	Intermittent	0.00	0.00	177.00	242.50
	Ephemeral, 3rd or higher order	0.00	0.00	0.00	0.00
	Ephemeral, 1st or 2nd order	0.00	0.00	29.00	904.00
	Subtotal stream length	*0.00*	*0.00*	*299.00*	*1,337.50*

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
Upper Mt. Diablo	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	0.00	0.00
	Perennial wetland[1]	0.02	0.02	0.02	0.02
	Seasonal wetland	0.01	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 (includes stream)	0.00	0.00	0.00	0.00
	Subtotal aquatic	*0.02*	*0.02*	*0.02*	*0.02*
	Stream (linear feet)				
	Total stream length	22.00	12.00	22.00	53.00
	Stream length by width category				
	≤ 25 feet wide	22.00	12.00	22.00	53.00
	> 25 feet wide	0.00	0.00	0.00	0.00
	Stream length by type and order				
	Perennial	22.00	12.00	22.00	12.00
	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	*22.00*	*12.00*	*22.00*	*53.00*
West Antioch	**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 (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	8.00	10.00
	> 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	8.00	10.00
	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*	*8.00*	*10.00*

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

		Impacts			
		Reporting Period		Cumulative[3]	
Watershed/ Basin	Land Cover Type	Permanent	Temporary	Permanent	Temporary
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 (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*
Total	**Aquatic (acres)**				
	Riparian woodland/scrub	0.00	0.00	1.23	2.00
	Perennial wetland[1]	0.02	0.04	0.08	0.73
	Seasonal wetland	0.99	0.07	1.62	2.48
	Alkali wetland	0.01	0.03	0.15	0.87
	Pond	0.00	0.03	0.01	0.11
	Reservoir (open water)[2]	0.00	0.00	0.47	4.14
	Slough/Channel (includes stream)	0.00	0.06	0.65	0.21
	Total aquatic	*1.02*	*0.23*	*4.21*	*10.54*
	Stream (linear feet)				
	Total stream length	22.00	4,273.00	1,096.31	10,341.70
	Stream length by width category				
	≤ 25 feet wide	22.00	273.00	707.00	5,793.50
	> 25 feet wide	0.00	4,000.00	397.31	4,724.20
	Stream length by type and order				
	Perennial	22.00	4,012.00	171.00	4,696.50
	Intermittent	0.00	177.00	635.31	4,497.20
	Ephemeral, 3rd or higher order	0.00	84.00	0.00	215.00
	Ephemeral, 1st or 2nd order	0.00	0.00	298.00	1,073.00
	Total stream length	*22.00*	*4,273.00*	*1,104.31*	*10,481.70*

[1] Perennial wetlands are equivalent to permanent wetlands.

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

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

III. LAND ACQUISITION

Preserve System

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

Maximize Size

Preserve the Highest-Quality Natural Communities

Linkage to Other Preserve System Acquisitions

Buffers Urban Impacts

Minimize Edge Effects

Fully Represent Environmental Gradients

Watershed Protection

Full Ecological Diversity within Communities

Management Considerations

Acquisition Analysis Zones

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

Land Acquisition Requirements by Acquisition Zone

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

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.

2020 Land Acquisition

The Conservancy acquired two properties in 2020 for the Preserve System: the Bloching property, approximately 3.25 acres, and the Nortonville Strip property, approximately 5.4 acres, for a total of 8.65 acres. The properties are shown in Figure 7, with details the properties shown in Figures 8 through 11. Table 7 is the cumulative summary of acquired properties and their funding sources.

Tables 8a, 8b, and 9 detail the land cover types protected by the acquisitions.

Bloching Property

The 3.25-acre Bloching property is located in Zone 4, Subzone 4h. It is located in a rural unincorporated area of east-central Contra Costa County along Morgan Territory Road, adjacent to the Schwartz and Moss Rock properties which were acquired and incorporated into the HCP/NCCP Preserve System in 2009 and 2012, respectively.

Oak woodland on the Bloching property.

The Bloching property is comprised of one densely wooded parcel with slight to moderately sloping terrain. The elevation ranges from approximately 960 feet in the northeast area adjacent to Morgan Territory Road, to about 1,080 feet at the western edge. Marsh Creek flows along the northeastern boundary of the property for approximately two-thirds of the property frontage, creating a barrier to access before crossing under Morgan Territory Road near the southwest corner of the parcel. There is an undeveloped physical access at grade from Morgan Territory Road along the southeast portion of the frontage. The property is currently in a more or less natural state, although it previously supported a recreational cabin that was destroyed by fire in the 1970s. Other than deteriorating remnants of the concrete foundation of the cabin, the property has no improvements.

Zone 4, Subzone 4h is identified in the HCP/NCCP as high priority for acquisition. Land acquisition in the Marsh Creek Subbasin will help achieve goals for the preservation of core and movement habitat for Alameda whipsnake, and create important linkages between existing open space and expand protection of the headwaters of Marsh Creek. This area has been identified as critical to the recovery of Alameda whipsnake because it provides connectivity between the Los Vaqueros Watershed and Mount Diablo State Park, both core habitat areas for Alameda whipsnake.

This acquisition removes an inholding, protects approximately 294 feet of March Creek, and provides a linkage between the Schwartz and Moss Rock properties previously acquired for the Preserve System. The acreage of the parcel is small, but it has a large area-to-perimeter ratio and will provide an opportunity to magnify the habitat and species benefits of surrounding Preserve System lands.

Nortonville Strip Property

The 5.4-acre Nortonville Strip property is located in Zone 1, Subzone 1c and 1d. It is located in a rural unincorporated area of north-central Contra Costa County in the eastern portion of the Pittsburg Hills at the valley bottom of Kirker Creek. The property includes portions of two parcels, and is near the western boundary of the HCP/NCCP Inventory Area. Nortonville Road borders the property to the east, and the Austin-Thomas North Property acquired for the Preserve System in 2012 borders it to the west.

Nortonville Strip property, looking southeast away from Kirker Pass Road
Photo Credit: Nomad Ecology

The Nortonville Strip property is approximately 0.4 miles long and approximately 100 feet wide, with a northeast to southwest orientation along Nortonville Road. A barbed wire fence runs along the eastern frontage, and a single gate allows access from Nortonville Road. The property is an undeveloped and relatively flat valley bottom associated with the floodplains of Kirker Creek, and has a gentle incline from 395 feet elevation in the south to 328 feet elevation in the north. The property is dominated by grasslands with no hydrologic features, and drains via sheet flow into Kirker Creek. A small area in the south burned in the 2013 Kirker Fire. Currently, the surrounding lands are used as cattle grazing lands and there is evidence of cattle use on the property. While the Nortonville Strip is not intentionally stocked with cattle, there is no fencing separating it from the Austin-Thomas North property which is occasionally stocked with cattle.

Zone 1, Subzone 1c and 1d is identified in the HCP/NCCP as partially high priority for acquisition (Subzone 1c). The Nortonville Strip property was conveyed to the EBRPD by Nortonville, LLC in partial fulfillment of the development fee requirement for the Tuscany Meadows development project.

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. The properties acquired in 2020 have not yet been surveyed for covered plant species. However, during the reporting period, eleven Preserve System properties were subject to targeted monitoring of covered plant populations with small population sizes recorded in previous survey years (2011-2019). The target populations were revisited to assess extirpation danger due to low population numbers or signs of decline. Covered species assessed included San Joaquin spearscale (*Extriplex joaquinana*), big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), Mount Diablo fairy lantern (*Calochortus pulchellus*), and Brewer's dwarf flax (*Hesperolinon breweri*).

Calochortus pulchellus on the Adrienne Galvin property, May 2020.
Photo Credit: Nomad Ecology

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.

52% of Zone 2 requirement to protect annual grassland and chaparral habitats was met.

50% of Zone 4 requirement to protect chaparral/scrub was met.

19% of Zone 5 requirement to protect alkali grassland was met.

54% of Zone 5 requirement to protect alkali wetland was met.

48% of the estimated minimum overall land acquisition requirement and 37% 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

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

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.

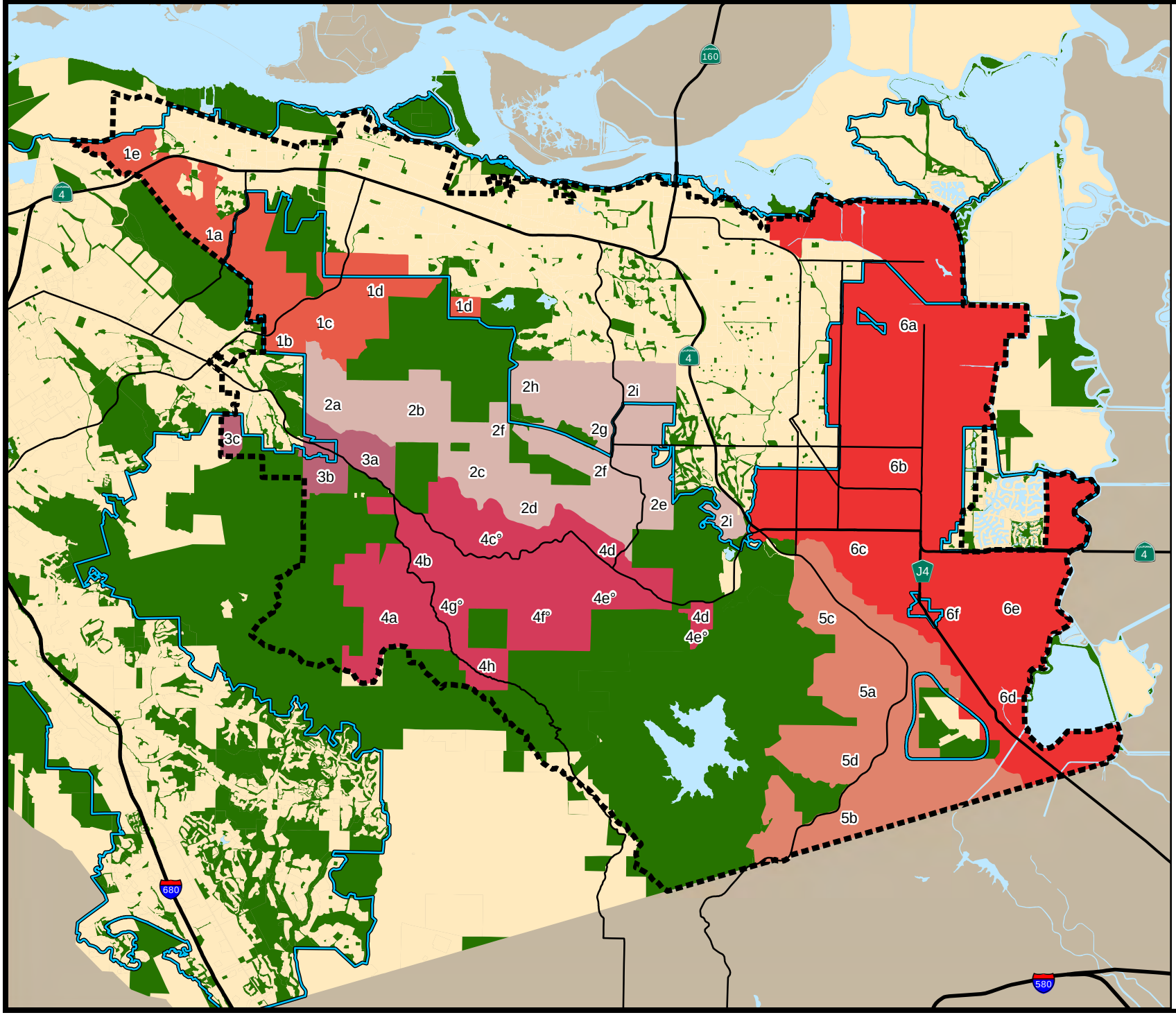
A Note on Land Cover Mapping Refinements and Cumulative Acreages

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

Figure 4. Acquisition Analysis Zones and Sub-Zones



Legend

Inventory Area

County Urban Limit Line

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

Acquisition Analysis Zones

1
2
3
4
5
6

N

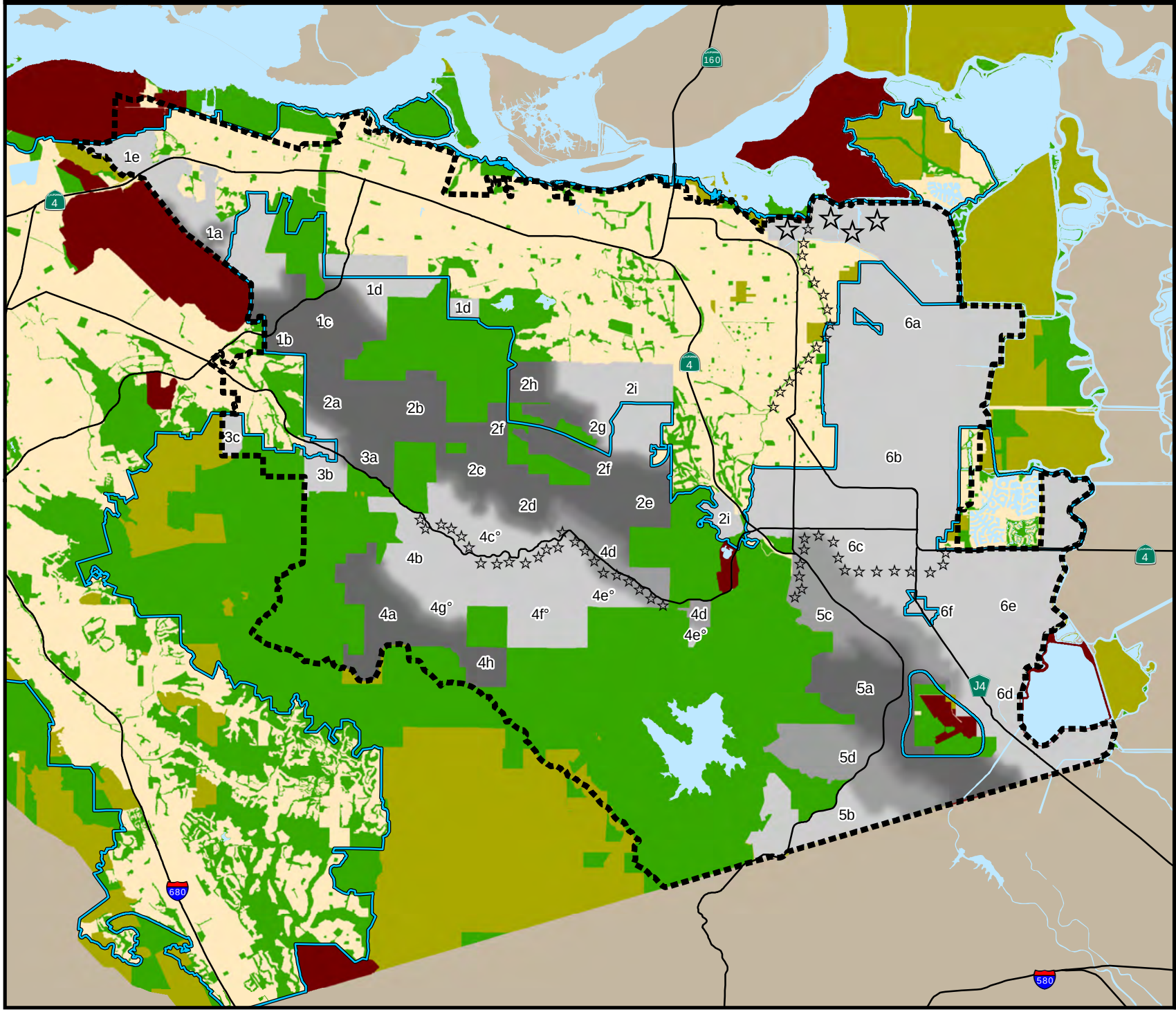
Miles

2 1 0 2

03/13/2018

East Contra Costa County Habitat Conservancy

Figure 5. Acquisition Priorities Under Initial Urban Development Area Scenario



Legend

Inventory Area

County Urban Limit Line

Level of Acquisition Effort

Lower

Medium (1a — Sub-Zone)

Higher

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

Land Use Designations Outside Acquisition Analysis Zones

Parks, Urban Parks, Open Space, and Public Watershed

Public Facilities with Undeveloped Land

Agricultural Land Uses

Development Land Uses

Additional key restoration priorities

Extensive restoration is also planned within areas also emphasized for acquisition

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

N

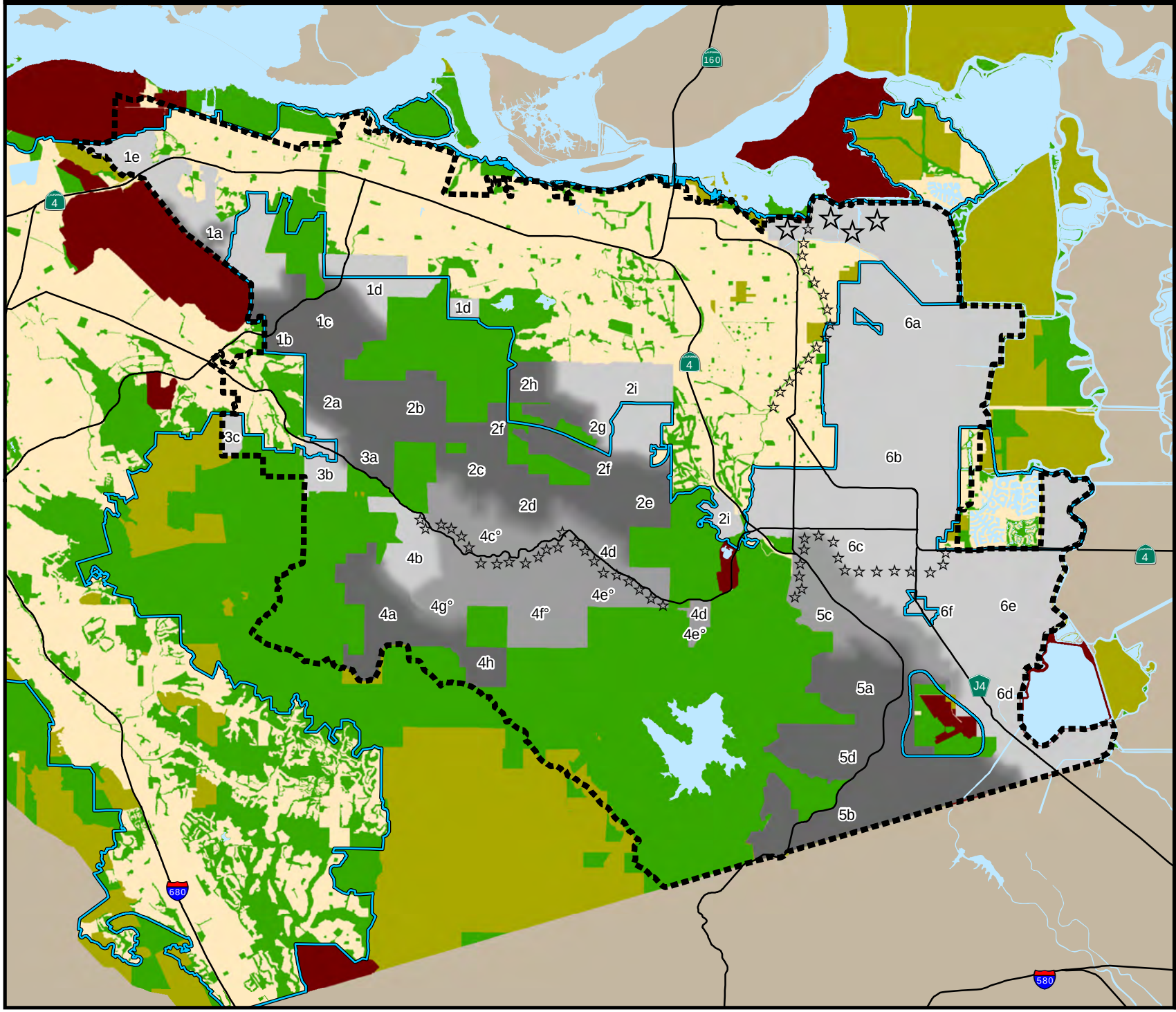
Miles

2 1 0 2

East Contra Costa County Habitat Conservancy

03/13/2018

Figure 6. Acquisition Priorities Under Maximum Urban Development Area Scenario



Legend

Inventory Area

County Urban Limit Line

Level of Acquisition Effort

Lower

Medium (1a — Sub-Zone)

Higher

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

Land Use Designations Outside Acquisition Analysis Zones

Parks, Urban Parks, Open Space, and Public Watershed

Public Facilities with Undeveloped Land

Agricultural Land Uses

Development Land Uses

Additional key restoration priorities

Extensive restoration is also planned within areas also emphasized for acquisition

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

Miles

2 1 0 2

East Contra Costa County Habitat Conservancy

03/13/2018

Figure 7. Acquisitions Completed under HCP/NCCP as of December 31. 2020

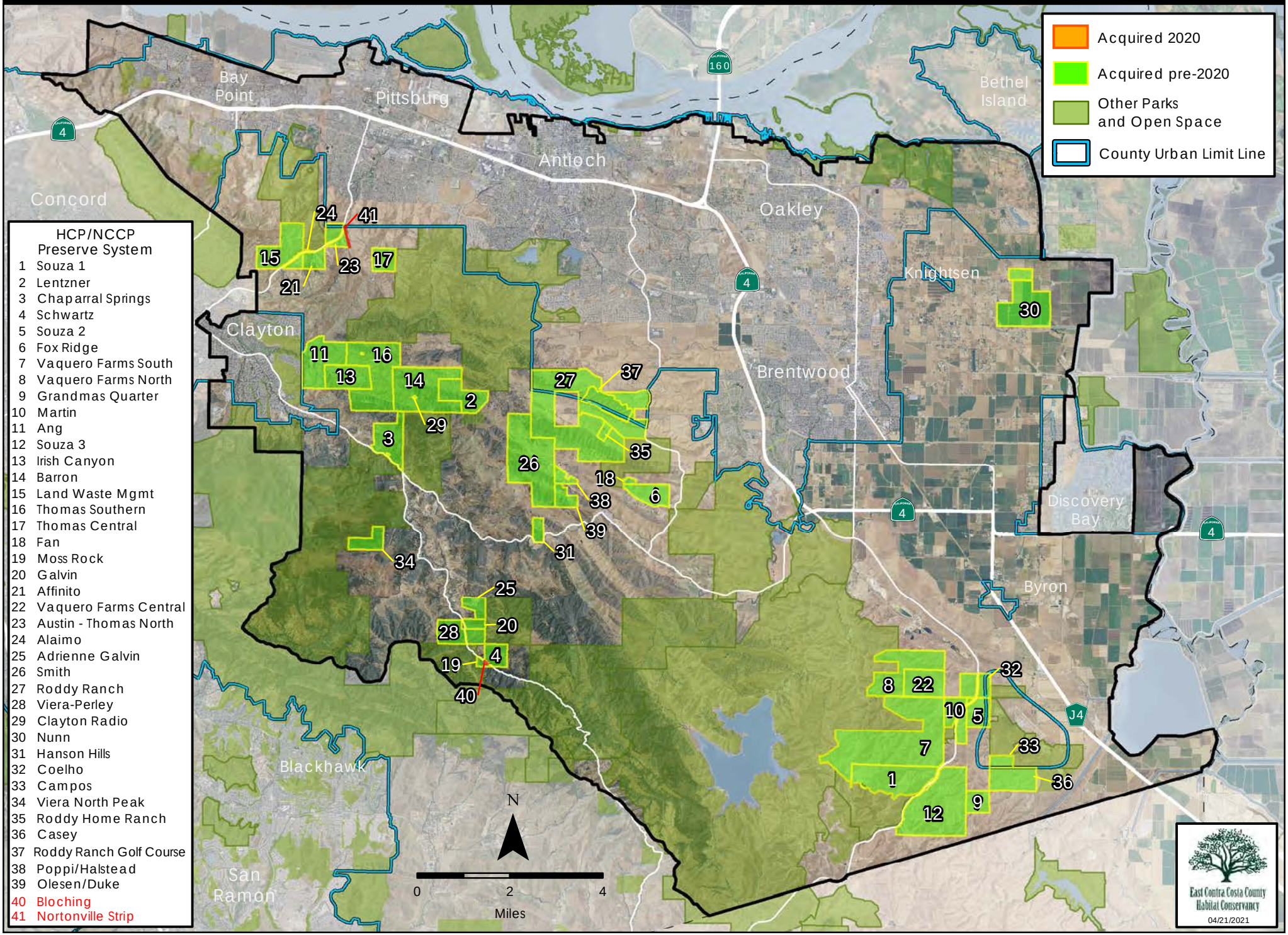


Figure 8. Bloching Property - Landcover Map

Legend

Property Boundary

Landcover

Grassland
- grassland
- alkali grassland
- ruderal

Wetland
- permanent wetland
- seasonal wetland
- alkali wetland

Aquatic
- stream (294.2 feet)
- aquatic/open water
- pond
- slough/channel
- riparian
- chaparral
- oak savanna
- oak woodland (2.86 acres)
- rock outcrops

Irrigated Agriculture
- pasture
- cropland
- vineyard

Developed
- urban
- aqueduct
- wind turbines

N

04/21/2021

East Contra Costa County Habitat Conservancy

Feet

0 75 150

Figure 9. Bloching Representative Photographs

Photo 1: View along Morgan Territory Road looking north. The Property is on the left side of the photo (south of the road).

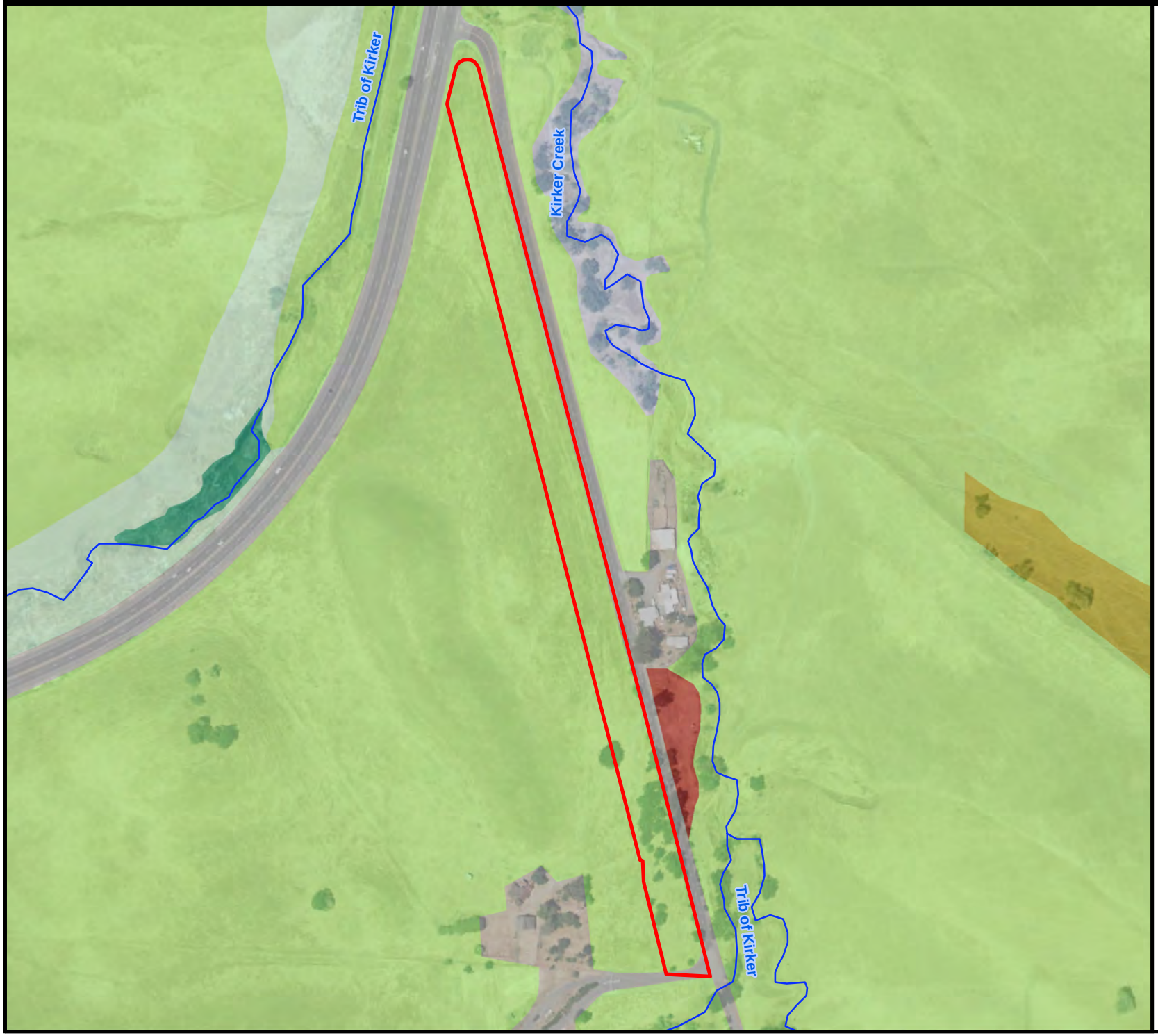
Photo 2: View of trees on the Property.

Photo 3: Marsh Creek runs along the northwestern portion of the Property.

Photo 4: Remnants of the building foundation of the recreational cabin that burned down in the 1970s.

Photo 5: East Bay Regional Park District staff and remnants of the building foundation.

Figure 10. Nortonville Strip Property - Landcover Map



Legend

Property Boundary

Landcover

Grassland
- grassland (5.1 acres)
- alkali grassland
- ruderal

Wetland
- permanent wetland
- seasonal wetland
- alkali wetland

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

Irrigated Agriculture
- pasture
- cropland
- vineyard

Developed
- urban (0.3 acres)
- aqueduct
- wind turbines

N

04/21/2021

East Contra Costa County Habitat Conservancy

Feet

0 250 500

Figure 11. Nortonville Strip Photographs

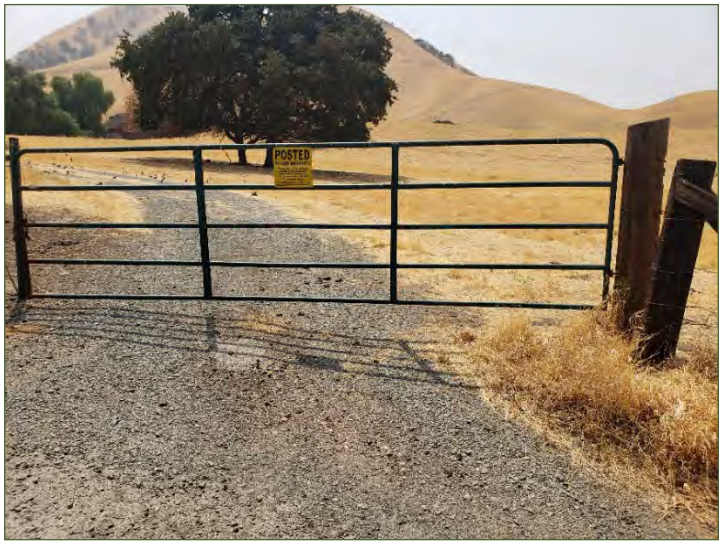


Photo 1: Entrance into the Property from Nortonville Road.

Photo 2: View from the Property from Kirker Pass Road looking SE toward Black Diamond Mines Regional Preserve.

Photo 3: A gravel road along the property line (adjacent to Nortonville Road)

Photo 4: View looking toward Kirker Pass Road of the annual grassland typically found on site.

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

Souza 1

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

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

Section 6 Match: $1,408,023

Lentzner

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

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

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

Chaparral Spring

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

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

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

Schwartz

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

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

Cumulative Remaining Match: $3,566,521

Souza 2

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

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

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

Fox Ridge

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

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

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

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

Excess match from this acq: $651,667

Cumulative Remaining Match: $4,629,588

Vaquero Farms South

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

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

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

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

Cumulative Remaining Match: $2,708,477

Vaquero Farms North

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

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

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

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

Cumulative Remaining Match: $0

Martin

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

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

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

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

Excess match from this acq: $266,331

Grandma's Quarter

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

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

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

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

Cumulative Remaining Match: $254,808

Ang

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

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

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

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

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

Souza 3

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

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

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

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

Non-Easement

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

Souza 3 Conservation Easement Area

Funding Source	Funding amount
EBRPD	$75,975

Cumulative Remaining Match: $346,975

Irish Canyon - Chopra

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

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

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

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

Cumulative Remaining Match: $346,975

Barron

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

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

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

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

Cumulative Remaining Match: $346,975

Land Waste Management

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

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

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

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

Cumulative Remaining Match: $346,975

Thomas Southern/Austin 1

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

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

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

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

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

Thomas Southern/Austin 1 - PG&E lease revenue

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

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

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

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

Thomas Central/Austin 2

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

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

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

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

Affinito

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

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

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

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

Vaquero Farms Central

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

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

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

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

Galvin

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

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

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

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

Moss Rock

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

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

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

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

Fan

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

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

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

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

Thomas North

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

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

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

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

Alaimo

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

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

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

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

Adrienne Galvin

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

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

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

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

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

Olesen/Duke

Acquired by: EBRPD in partnership with Conservancy
Date acquired: 7/18/2019
Acres: 114.89
Key land cover: Annual Grassland, Oak Woodland, Pond
Appraised Value: $1,080,000
Purchase Price: $1,080,000

Source	Funding amount	Percent	Section 6 Match
EBRPD	$467,750	43%	yes
Section 6 Grant (FY15)	$512,250	47%	no
State Prop 84 Grant	$100,000	9%	yes
TOTAL	$1,080,000	100%	

Non-Federal Match Needed: $626,083 (amount necessary to achieve 55:45 ratio of match to Section 6)

Source	*Amount*
EBRPD	$467,750
WCB Proposition 84	$100,000
Due diligence and closing costs	$58,333
TOTAL	$626,083

Bloching

Acquired by:	EBRPD in partnership with Conservancy
Date acquired:	7/31/2020
Acres:	3.25
Key land cover:	Oak Woodland, Stream
Appraised Value:	$210,000
Purchase Price:	$210,000

Source	Funding amount	Percent
EBRPD	$105,000	50%
State Prop 84 Grant	$105,000	50%
TOTAL	$210,000	100%

Nortonville Strip

Acquired by:	EBRPD in partnership with Conservancy
Date acquired:	11/24/2020
Acres:	5.40
Key land cover:	Annual Grassland, Oak Woodland, Ruderal, Urban
Appraised Value:	Internal valuation of $100,000 for title insurance
Purchase Price:	-

Acquisition of the Nortonville Strip property as part of the Multi-Party Mitigation and Land Dedication In-Lieu of Development Fee Agreement between the Conservancy, City of Pittsburg, City of Brentwood, Nortonville, LLC, Seecon Build Homes, Inc., and West Coast Home Builders, Inc. Conveyance connected to the Tuscany Meadows development in the City of Pittsburg.

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	--	--	5.1	--	--	--	7,994.3	1,463.60	--	0.62	48%	--	--
Alkali grassland	1,250	--	--	--	--	--	--	275.8	17.50	--	0.02	22%	--	--
Ruderal	--	--	--	0.1	--	--	--	126.2	25.70	--	--	--	--	--
Chaparral and scrub	550	--	--	--	--	--	--	310.3	--	--	--	56%	--	--
Oak savanna	500	--	165	--	--	--	--	410.3	23.00	--	--	82%	--	0%
Oak woodland	400	--	--	3.1	--	--	--	2,585.3	131.60	--	--	646%	--	--
Subtotal terrestrial	*19,200*	*0.0*	*165*	*8.2*	*0.0*	*0.0*	*0.0*	*11,702.2*	*1,661.4*	*0.0*	*0.6*	*61%*	--	0%
Aquatic														
Riparian woodland/scrub	70	--	55	--	--	--	--	65.7	0.20	--	5.40	94%	--	10%
Perennial wetland[1]	75	--	85	--	--	--	--	5.4	5.80	--	0.16	7%	--	0%
Seasonal wetland	168	--	163	--	--	--	--	13.4	1.40	--	10.70	8%	--	7%
Alkali wetland	93	--	67	--	--	--	--	34.8	4.30	--	2.40	37%	--	4%
Pond	16	16	--	--	--	--	--	11.5	2.70	0.61	--	72%	4%	--
Reservoir (open water)[2]	12	6	--	--	--	--	--	0.0	0.00	--	--	0%	--	--
Slough/Channel	36	--	72	--	--	--	--	3.1	0.00	--	--	9%	--	0%
Subtotal aquatic	*470*	*22*	*442*	*0.00*	*0.00*	*0.00*	*0.00*	*133.84*	*14.40*	*0.61*	*18.66*	*28%*	*3%*	*4%*
Stream (length in linear feet)														
Perennial	4,224	--	2,112	294.2	--	--	--	12,919.3	889.1	--	--	306%	--	0%
Intermittent	2,112	--	2,112	--	--	--	--	137,982.9	25,242.1	--	4,328.1	6533%	--	205%
Ephemeral[4]	26,400	--	26,400	--	--	--	--	67,948.5	877.8	--	4,102.7	257%	--	16%
Classification pending[4]	--	--	--	--	--	--	--	89,220.2	16,445.3	--	2951.40	--	--	--
Subtotal stream length	*32,736*	*0.0*	*30,624*	*294.2*	*0.0*	*0.0*	*0.0*	*308,070.9*	*43,454.3*	0.0	*11,382.2*	*941%*	--	*37%*
Irrigated agriculture														
Cropland	400	--	--	--	--	--	--	541.4	--	--	--	135%	--	--
Pasture	--	--	--	--	--	--	--	71.3	--	--	--	--	--	--
Orchard	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--
Vineyard	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal irrigated agricultural	*400*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*612.8*	*0.0*	*0.0*	*0.0*	--	--	--
Other														
Nonnative woodland	--	--	--	--	--	--	--	0.7	--	--	--	--	--	--
Wind turbines	--	--	--	--	--	--	--	20.0	--	--	--	--	--	--
Subtotal other	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*20.7*	*0.0*	*0.0*	*0.0*	--	--	--
Developed														
Urban	--	--	--	0.1	--	--	--	60.9	0.8	--	--	--	--	--
Aqueduct	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Turf	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Landfill	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Subtotal developed	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*60.9*	*0.8*	*0.0*	*0.0*	--	--	--

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	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	--	--	--
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	--	--	--	*0.0*	*0.0*	*0.0*	*0.0*	*18.2*	*4.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Totals (excludes subtypes)														
Acres	--	--	--	8.3	0.0	0.0	0.0	12,548.6	1,681.1	0.6	19.3	--	--	--
Linear feet (Streams)	--	--	--	294.23	0.00	0.00	0.00	308,070.90	43,454.30	0.00	11,382.20	--	--	--

[1] Perennial wetlands are equivalent to 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	Bloching		Nortonville Strip		Reporting Period Totals	
	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)
Terrestrial						
Annual grassland	--	--	5.05	--	5.05	--
Alkali grassland	--	--	--	--	--	--
Ruderal	--	--	0.09	--	0.09	--
Chaparral and scrub	--	--	--	--	--	--
Oak savanna	--	--	--	--	--	--
Oak woodland	2.86	--	0.19		3.05	--
Subtotal terrestrial	*2.9*	*0.0*	*5.3*	*0.0*	*8.2*	*0.0*
Aquatic						
Riparian woodland/scrub	--	--	--	--	--	--
Perennial wetland[1]	--	--	--	--	--	--
Seasonal wetland	--	--	--	--	--	--
Alkali wetland	--	--	--	--	--	--
Pond	--	--	--	--	--	--
Reservoir (open water)[2]	--	--	--	--	--	--
Slough/Channel	--	--	--	--	--	--
Subtotal aquatic	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
Stream (length in linear feet)						
Total stream length	294.23	--	--	--	294.23	--
Stream length by width category	--	--	--	--	--	--
≤ 25 feet wide	--	--	--	--	--	--
> 25 feet wide	--	--	--	--	--	--
Stream length by type and order	--	--	--	--	--	--
Perennial	294.23	--	--	--	294.23	--
Intermittent	--	--	--	--	--	--
Ephemeral	--	--	--	--	--	--
Classification pending	--	--	--	--	--	--
Subtotal stream length	*294*	*0*	*0*	*0*	*294*	*0*
Irrigated agriculture						
Cropland	--	--	--	--	--	--
Pasture	--	--	--	--	--	--
Orchard	--	--	--	--	--	--
Vineyard	--	--	--	--	--	--
Subtotal irrigated agricultural	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Other						
Nonnative woodland	--	--	--	--	--	--
Wind turbines	--	--	--	--	--	--
Subtotal other	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Developed						
Urban	--	--	0.1	--	0.1	--
Aqueduct	--	--	--	--	--	--
Turf	--	--	--	--	--	--
Landfill	--	--	--	--	--	--
Subtotal developed	*0.0*	*0.0*	*0.1*	*0.0*	*0.1*	*0.0*

	Bloching		Nortonville Strip		Reporting Period Totals	
Land Cover Type	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)	Protection	Existing Easement (No credit)
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	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Uncommon Landscape Features or Habitat Elements						
Rock outcrop	--	--	--	--	--	--
Cave	--	--	--	--	--	--
Springs/seeps	--	--	--	--	--	--
Scalds	--	--	--	--	--	--
Sand deposits	--	--	--	--	--	--
Mines (number)	--	--	--	--	--	--
Buildings (number)	--	--	--	--	--	--
Potential nest sites (number)	--	--	--	--	--	--
Subtotal uncommon landscape features	--	--	--	--	--	--
Subtotal uncommon habitat elements	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Totals (excludes subtypes)						
Acres	2.9	0.0	5.4	0.0	8.3	0.0
Linear feet	294.23	0.00	0.00	0.00	294.23	0.00

[1] Perennial wetlands are equivalent to 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
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	0.00	13.43	8%
Preserve-wide Alkali wetland (acres)	93	0.00	34.75	37%
Preserve-wide Pond (acres)	16	0.00	11.47	72%
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	294.23	308,070.90	941%
Stream length by type				
Perennial (feet)	4,224	294.23	12,919.30	306%
Intermittent (feet)	2,112	0.00	137,982.90	6533%
Ephemeral[2] (feet)	26,400	0.00	67,948.50	257%
Classification Pending[2] (feet)	--	0.00	89,220.20	--

[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]	0	3	150%
San Joaquin spearscale	*Atriplex joaquiniana*	0	0	10	--
Big tarplant	*Blepharizonia plumosa*	3	0	12	400%
Mount Diablo fairy lantern	*Calochortus pulchellus*	1	0	6	600%
Recurved larkspur	*Delphinium recurvatum*	2	0	0	0%
Round-leaved filaree	*Erodium macrophyllum*	2	0	5	250%
Diablo helianthella	*Helianthella castanea*	2	0	13	650%
Brewer's dwarf flax	*Hesperolinon breweri*	3	0	6	200%
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)	0	55	

[1] For the 2015 Annual Report, we began 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]	Initial UDA	Maximum UDA	Acquired Reporting Period	Acquired Cumulative To date	Percent Achieved (to Max UDA)
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	--	2.5	486.3	--
1d	25% of total area	478	478	2.8	204.3	43%
1e	No specific requirements	--	--	--	--	--
All	Estimated minimum requirement	2,100	2,250	0.0	865.4	38%
All	Estimated maximum requirement	2,850	3,150	5.4	865.4	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	110%
2a	90% of chaparral in 2a, 2b, and 2c (122 acres total)	--	see below	--	--	--
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)		122	0.0	3.8	3%
2c	Seven (7) of thirteen (13) ponds for TRBL, CTS, WPT, or CRLF (#)	13	7	0	0	--
2d	Annual grassland (800 acres)	800	800	0.0	461.8	58%
2d	Known occurrence of round-leaved filaree (#)	1	1	0	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	--	--	--	--	--
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	274.7	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%)			0	301.6	0%
2h	Silvery legless habitat, if present			0	33.0	0%
2h	See 2e/2f/2h below		see below	--	--	--

Zone/ Subzone	Requirements[1]	Initial UDA	Maximum UDA	Acquired Reporting Period	Acquired Cumulative To date	Percent Achieved (to Max UDA)
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	1,147.7	48%
All	Vernal pool invertebrate suitable habitat, wherever possible	--	--	--	--	Yes (not quantified)
All	Estimated minimum requirement	7,500	7,500	0.0	5,007.6	67%
All	Estimated maximum requirement	9,550	9,550	0.0	5,007.6	52%
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	2.9	505.9	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	2.9	887.7	15%
All	Estimated maximum requirement	6,150	8,350	2.9	887.7	11%
Zone 5						
5a	See 5a/5d and 5a/5b/5d below	--	see below	--	--	--
5b	See 5a/5b/5d below	--	see below	--	--	--

Zone/ Subzone	Requirements[1]	Initial UDA	Maximum UDA	Acquired Reporting Period	Acquired Cumulative To date	Percent Achieved (to Max UDA)
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)	--	--	0.0	0.0	0%
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)	--	--	--
5a/5d	At least 2 occurrences of recurved larkspur	--	2	--	--	--
5a/5d	170 acres connected to Byron Airport preserved areas	--	170	--	--	--
5a/5b/5d	Annual grassland	--	7,100	0.0	3,633.6	51%
All	Grassland	5,300	8,100	0.0	3,633.6	45%
All	Alkali grassland	750	900	0.0	175.1	19%
All	Alkali wetland	40	40	0.0	21.5	54%
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	8.3	12,551.6	48%
All	Estimated maximum requirement	27,050	34,350	8.3	12,551.6	37%

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

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

IV. HABITAT RESTORATION AND CREATION

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

Wetlands and Streams

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

Alkali Wetlands

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

Mitigation and Contribution to Recovery

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

Over the 30-year life of the Plan, the Conservancy may be required to restore or create a large number of acres of various types of wetlands and waters. If impacts on wetlands and waters are substantial during those 30 years, the cumulative total restoration/creation acreage could be as large as 500 acres. Restoration projects that the Conservancy has undertaken since the commencement of plan implementation are shown in Tables 13a and 13b.

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. No new restoration projects were constructed in 2020, although some preparatory site work was completed on the Roddy Ranch Golf Course which is currently in the restoration planning phase.

In 2020, the Conservancy monitored the following three restoration projects (Figure 12).

- Irish Canyon Riparian Restoration Project (constructed 2010)
- Ang Riparian Restoration Project (constructed 2017)
- Horse Valley Creek and Wetland Restoration Project (constructed 2018)

The Hess Creek Channel Restoration Project (constructed 2014) did not have a monitoring requirement for Year 6 of the project, therefore no monitoring was performed. Monitoring efforts in 2020 were severely restricted due to the shelter-in-place orders that were implemented statewide in response to the COVID-19 pandemic, and hazardous air quality conditions due to the extensive Lightening Complex wildfires burning around the Bay Area. For this reason, Conservancy staff and Contractors were unable to conduct the fieldwork necessary at the appropriate timing to monitor some restoration projects that were due for monitoring in the reporting year. Restoration projects impacted by these restrictions include: Upper Hess Creek Watershed Habitat Restoration Project; Vaquero Farms Seasonal Wetland Creation Project – Seasonal Wetlands 1, and 2; and Vaquero Farms Seasonal Wetland 3 Creation. Though seasonal monitoring consistent with restoration plans was not completed for these projects, general weed monitoring was conducted later in the season to identify maintenance or management needs.

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 cumulative restoration and creation information by watershed.[3] Table 13c through Table 13g contain summaries of the performance criteria for restoration projects.

Monitoring in 2020 demonstrated some advancement toward achievement of site-specific restoration objectives. Rainfall during the monitoring year was significantly below average which had a negative effect on the performance of most of the wetland features at the restoration project sites that were monitored. In addition, site visits to the Upper Hess Creek Watershed Habitat Restoration Project revealed extensive damage from cattle browsing and trampling along with invasive weed occurrences that will need to be managed in the upcoming year.

[3] 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.

Irish Canyon Riparian Restoration Project (2010)

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

Riparian Planting: Oak tree in Irish Canyon
Photo Credit: Nomad Ecology

Monitoring and Adaptive Management

Nomad Ecology biologists conducted a site visit in June 2020 to monitor the creek enhancement planting areas. Many of the caged plants were observed to have outgrown both the tree tubes and cages by several feet. Where possible, the biologists removed tree tubes with shears or knives, but cages were left in place to be addressed later in the season. Some evidence of browsing from the cattle onsite was seen where tree limbs were protruding from cages. Numerous natural recruits of blue oak (*Quercus douglasii*) and valley oak (*Q. lobata*) were observed in Enhancement Area 3. Invasive weeds were present mostly in Enhancement Areas 1 and 2 and will be targeted for control in the future.

Management suggestions include removing cages from all trees with limbs taller than the cage tops (>5 feet), trimming away sparse lower branches on the taller trees to prevent cattle from ripping limbs away when new lower foliage becomes available, placing cages around natural recruits, and invasive weed control.

Ang Riparian Restoration Project (2017)

In late September 2017, Save Mount Diablo (SMD) initiated a new riparian planting project downstream of the 2010 Irish Canyon restoration project. The objective of this project, taking place on the 462 acre Ang property, is similar to that of the Irish Canyon Riparian Restoration Project: improve approximately 1.56 acres of riparian woodland habitat for wildlife by filling in gaps in existing vegetation along the banks of Irish Canyon Creek.

The restoration plan calls for a mix of valley oak, buckeye and red willow planted across five Riparian Planting Areas (RPAs). The plantings of valley oak and buckeye were completed by the end of 2018, and plantings of red willow were completed by the end of the first quarter of 2019.

During the reporting year, SMD was required to cancel all restoration workdays from March through December due to the pandemic, however the summer watering crew were able to continue watering into December with a pause in August when air quality conditions became hazardous. Because of the canceled workdays, SMD was unable to supplement willow or oak plantings to meet the planting plan for winter. The following activities were conducted at the restoration site (Save Mount Diablo 2021):

Riparian Planting Area in fall 2020
Photo Credit: Save Mount Diablo

- Plantings of buckeye and oak saplings in four RPAs were weeded in February.
- Planting sites were watered roughly every three weeks from May through December, with a pause in August.
- Pathways were cleared to the planting areas in May for ease of access for watering crews.

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 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. The project is also specifically intended to create new wetland habitats where none previously existed.

The final design included 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*), and five wetlands intended to provide suitable breeding habitat for California tiger salamander (*Ambystoma californiense*). The wetlands were also designed to provide suitable habitat for vernal pool invertebrates. The As-Built Report maps the area of the wetlands at 2.246 acres. The as-built stream channel length is 4,150 linear feet.

Because rainfall is a major driver of wetland performance, restoration monitoring years are synchronized to California's Water Year, beginning October 1 and ending September 31 the following calendar year. Monitoring Year 2 began on October 1, 2019 and ended September 31, 2020. The monitoring results are summarized from *Annual Restoration Monitoring Report (Year 2) Horse Valley Creek and Wetland Restoration Project* (Nomad Ecology 2020a).

General site conditions in Year 2 included positive levels of revegetation and diminishment of signs of equipment access and construction. Grasses had grown through the majority of installed erosion control blankets and straw wattles were mostly degraded. Cattle were reintroduced to the site partway through Year 1, and by Year 2, cattle trails were evident throughout the site, including trails and hoofprints through many of the wetlands. In June 2020, several patches of invasive Russian knapweed (*Acroptilon repens*) were controlled by a landscape contractor, and several individuals of invasive stinkwort (*Dittrichia graveolens*) were hand-pulled after being discovered during a survey in September.

Created Seasonal Wetlands

Monitoring of the created seasonal wetlands provides the opportunity to document wetland habitat conditions and an assessment of habitat suitability for breeding California tiger salamanders and California red-legged frogs. Inoculation of the constructed seasonal wetlands with vernal pool branchiopod cysts had not yet taken place at the end of Year 2, so monitoring related to these species did not occur in Year 2.

Hydrologic Monitoring


Horse Valley Wetlands 25, 26 and 27 December 2019
Photo Credit: Nomad Ecology

Hydrologic monitoring was conducted between December 2019 and May 2020. Rainfall in the project area was measured at 6.80 inches, approximately half the historical annual average of 12.80 inches. Precipitation was also delivered unevenly in pulses occurring in November and December, and then again in March and April. While the area does experience substantial annual fluctuations in precipitation levels, the 2020 Water Year was the second driest year of the last decade. During Year 2, only 18 of 37 wetlands were observed to hold standing water at any point, and none reached as-built depth. Water was frequently observed in isolated cattle hoof prints rather than contiguous pools. The deepest recorded water depth was six inches at Wetland 26, recorded on December 23 at the first monitoring visit. The remaining 19 wetlands were dry during all monitoring visits, and the entire site was dry by February 21. Rain events in March and April were only sufficient to partially fill one wetland (Wetland 20) and the site was dry again by the final monitoring visit on

May 11. A total of 12 of the 37 wetlands meet the performance standard of 14 days of continuous ponding in Year 2.

Vegetative Cover Monitoring

Vegetation sampling was conducted at two site visits during peak spring bloom on April 15 and 16, 2020. Of the 37 created seasonal wetlands, 16 were dominated by wetland vegetation and met the wetland species dominance performance standard, and 21 did not. Total vegetation cover ranged from 5% to 50% with an average cover of 10% across all created seasonal wetlands. The species with the highest cover across all seasonal wetlands was Italian ryegrass (*Festuca perennis*). Many of the seasonal wetlands were dominated by Italian ryegrass and Mediterranean barley (*Hordeum marinum* subsp*. gussoneanum*) and so met performance standards. The dominant wetland vegetation species observed were primarily annuals that can vary in abundance based on the amount of ponding and soil moisture during germination and the growing season, so lower levels of wetland vegetation dominance is not unexpected in dry conditions.

The performance standard for invasive species cover was met in 19 of the 37 wetlands in Year 2. Invasive weed species present in seasonal wetlands on site included black mustard (*Brassica nigra*), yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus* subsp*. pycnocephalus*), and smooth cat's ear (*Hypochaeris glabra*).

Breeding Habitat Assessment

None of the 37 wetlands attained the 100-day ponding duration required to support breeding habitat for California tiger salamanders, and of the five wetlands specifically designed for this species, only two were observed holding any water and only for a verified ponding duration of 25 days. While surveys for California tiger salamander were not required in Year 2, informal surveys were conducted at the large stock pond, which is a known breeding location, by walking the perimeter and looking for egg masses or larvae along the banks. No California tiger salamanders were observed during any of the visits, although the stock pond was observed to be holding water for a sufficient hydroperiod to support larval development.

Wetland 20 is the only wetland designed for California red-legged frog breeding habitat. It had a maximum measured depth of five inches and verified continuous ponding of 25 days. Neither Wetland 20, nor any of the other wetlands, met the 200-day continuous ponding duration for red-legged frogs. Formal surveys for California red-legged frog will be conducted in Years 3 and 5.

Ephemeral Channel

Prior to the project, the total length of the channel was 3,629 linear feet. Following restoration, the overall stream channel length is 4,150 linear feet, which exceeds the pre-project conditions by 521 linear feet. This performance standard has therefore been met.

Hydrologic Monitoring

Hydrologic monitoring was conducted between December 2019 and May 2020. During Year 2, small, isolated pools or soil saturation were observed at 13 of the 20 Channel Assessment Reaches (CARs) during the first two monitoring visits on December 23 and January 17. Small areas of soil saturation remained through the end of January although there was no standing water observed, and the channel remained dry for the remainder of the monitoring visits. Based on Year 1 observations, it appears that flow within the channel is highly dependent on overflow from the stock pond spillway between CAR-3 and CAR-4. Since the stock pond did not fill completely in Year 2, it is unknown if the channel ever had flowing water or if the observed pooling was from the accumulation of precipitation. It appears that only the upstream portion of the ephemeral channel met the 14-day saturation/inundation performance standard during Year 2.

Vegetative Cover Monitoring

Vegetation sampling was conducted at two site visits during peak spring bloom on April 15 and 16, 2020. Of the 20 CARs, all but 1 (CAR-20) met the performance standard of a minimum 20% of vegetation cover within the ordinary high water mark. CAR-20 is located at the immediate upstream end of the culvert under Empire Mine Road and is covered with rock slope protection, so the vegetative cover standard is not practical at this location. Cover for all 20 CARs ranged from 5-90% and averaged 63.5%. The channel was strongly dominated by Italian ryegrass. Other characteristic species present in the channel included soft chess (*Bromus hordeaceus*), tarplant (*Holocarpha* sp.), hare barley (*Hordeum murinum* subsp *leporinum*), long-beaked filaree (*Erodium botrys*), bur clover (*Medicago polymorpha*), and rose clover (*Trifolium hirtum*).

Channel Stability Monitoring

The ephemeral channel was assessed for stability during each hydrology monitoring visit. Erosion control netting on the sides of the channel banks upstream of the stock pond was observed to be pulled off and trampled by cattle throughout the year, and netting in the bed of the channel was also pulled back by the September monitoring visit. There were no areas of concern noted from erosion, downcutting, or excessive cattle damage. The portion of the unrestored channel at the far downstream end, which was left in its original state, and was observed during Year 1 to have expanded out into a wide braided area before coalescing back into a single channel at the downstream culvert, was monitored and no issues of concern were noted. This area will continue to be monitored since it lacks a defined bed and bank and may be susceptible to erosion.

Recommendations

In total, two of the 37 created seasonal wetlands and 13 of the 20 Channel Assessment Reaches met all of the applicable performance standards in Year 2. The low level of performance was due primarily to the exceptionally low rainfall in Year 2.

Seasonal Wetlands

The poor performance of the wetlands in Year 2 is not unexpected considering the extremely low precipitation conditions. Low rainfall in January followed by no rainfall in February, led to the

early drying of the entire site which the moderate precipitation received in March and April was unable to substantially reverse.

The wetland vegetation species dominance performance standard was met in 16 of the wetlands in Year 2, although the dominant species were primarily non-native annuals. In future years of monitoring, it may be useful to collect data in the center of the seasonal wetland separately from data on the margins, or only collect data in the area that appears to be seasonal wetland. In dry years, annual upland species may become established in seasonal wetlands as they dry faster and earlier.

The majority of invasive weeds present in created seasonal wetlands on site are scattered throughout the restoration site and include black mustard and Italian thistle.

Surveys for California tiger salamander and California red-legged frog were not required in Year 2. None of the wetlands created specifically as breeding habitat for these species met the minimum ponding durations necessary to support larval development due largely to the lack of precipitation. Wetland 20 also did not meet the 200-day ponding duration performance standard for red-legged frogs in Year 1, and it is likely that it will only do so in years of exceptionally high rainfall.

Ephemeral Channel

Only the upstream two-thirds of the channel contained pooled water or saturated soil surface long enough to meet the 14-day saturation/inundation performance standard in Year 2. Flowing water was not observed at any point during the monitoring period.

The ephemeral channel was well-vegetated and all sites met the performance standard with the exception of CAR-20 at the downstream end of the channel which is where rock slope protection was placed to maintain stability at the culvert under Empire Mine Road. It is anticipated that vegetation on site will continue to grow and expand, and that all sites except CAR-20 will meet this performance standard in Year 3 of monitoring. Because CAR-20 is rocked, the vegetation cover performance standard should not apply at this location.

No significant erosion issues were observed during Year 2. Cattle have pulled away the erosion control netting from the bed and banks of the channel near the stock pond which will accelerate any erosive processes in the future. The 350-foot long reach located at the farthest downstream part of the channel did not exhibit any erosion and will continue to be monitored. Erosion and downcutting were noted along the same upland spillway that was identified in the As-Built and Year 1 monitoring reports. This section should be repaired before any more significant erosion occurs.

Knightsen Wetland Restoration Project (In Planning)

The 645-acre Nunn Property is located in the community of Knightsen. The majority of the property (~560 acres) is currently managed as irrigated agriculture producing tomatoes, alfalfa

and other seasonal crops. A portion of the property is separated by Delta Road with the northern 80 acres of the property being seasonally grazed. The Conservancy is working with local agencies to develop a multi-objective project that will address habitat, storm water management, water quality, and public access. In 2017, the Conservancy hired ESA, Balance Hydrologics and Nomad Ecology to complete initial assessments of the property and initiate restoration planning for the site. The planning work, development of concept designs, and additional studies to move the project toward a preferred alternative are all underway.

Reports and other information are available on the project website:
https://www.contracosta.ca.gov/7624/Knightsen-Wetland-Restoration-Project

Roddy Ranch Golf Course (In Planning)

Roddy Ranch Golf Course was a 230-acre, 18-hole course located off Deer Valley Road at the south end of the City of Antioch. EBRPD and the Conservancy are developing a Habitat Restoration and Public Access Plan for the site to restore native grassland habitat and include paths and facilities for passive public recreation, such as walking, jogging, and picnicking. The former golf course property will be a part of the larger 3,500-acre future Deer Valley Regional Park. The planning process to open the former golf course as a park is expected to take 18 months.

In 2020, EBRPD and the Conservancy hired Restoration Design Group who has partnered with Nomad Ecology and other consultants to complete initial studies to inform concept designs for restoration and for public access on the property.

Invasive Weed Control and Monitoring
Work is ongoing to strategically minimize invasive weeds through the use of targeted herbicide applications, and mechanical and hand pulling. Weed control will continue in 2021.

Native Grassland Restoration
In 2019, a local ecotype of great valley gumplant (*Gindelia camporum*) was collected and grown out by Hedgerow Farms for seed production to supply the restoration project. The species will be combined with other local species to develop a rigorous local native seed mix for the property.


Roddy Ranch Golf Course native seeding test plot, February 2021
Photo Credit: Nomad Ecology

An initial 2-acre test plot was identified for experimental seeding on the northwest area of the course on two former fairways. Prior to seeding the standing

dead vegetation was string-line trimmed to a less than one-inch height. The site was drill seeded at a rate of 21.5 pounds per acre in November 2020 with a locally sourced native seed mix consisting of blue wildrye (*Elymus glaucus*), purple needle grass (*Stipa pulcha*), California melic (*Melica californica*), annual fescue (*Festuca microstachys*), and blue eyed grass (*Sisyrinchium bellum*). Despite drought conditions which may adversely affect the outcome, seed had germinated by February 2021.

Initial Wetland Restoration Planning

The northern end of the golf course contains three large plastic lined lakes that were used for irrigation water and water features when the golf course was operational. Historically, irrigation water for the golf course was pumped into these lakes, and then subsequently pumped uphill to then gravity-feed irrigate the golf course. Run off from natural sources as well as this irrigation was directed via an underground drainage network back to these three large lakes. The property is no longer irrigated and water levels in the lakes have dropped significantly, exposing concrete vertical sides, multi-layer plastic lining, and other infrastructure, and creating a trap hazard for wildlife and livestock. Additionally, the plastic liners in the lakes disrupt the hydrologic connection of these features with adjacent areas. Due to the wildlife hazard and the need to understand the hydrology of the site in order to plan for wetland restoration, the project team completed the following activities.

Large irrigation lakes at the former Roddy Ranch Golf Course
Photo Credit: Restoration Design Group

- Removal of the plastic liners in each of the three lakes.
- Construction of two earthen ramps in each lake to facilitate animal ingress/egress.
- Investigation of the underground drainage infrastructure by exposing drain inlets in some areas and capping them to determine whether the soils and hydrology on site will support wetlands.

Reports and other information are available on the project website:
https://www.ebparks.org/about/planning/roddyranch/

Figure 12. Location of Habitat Restoration and Creation Projects

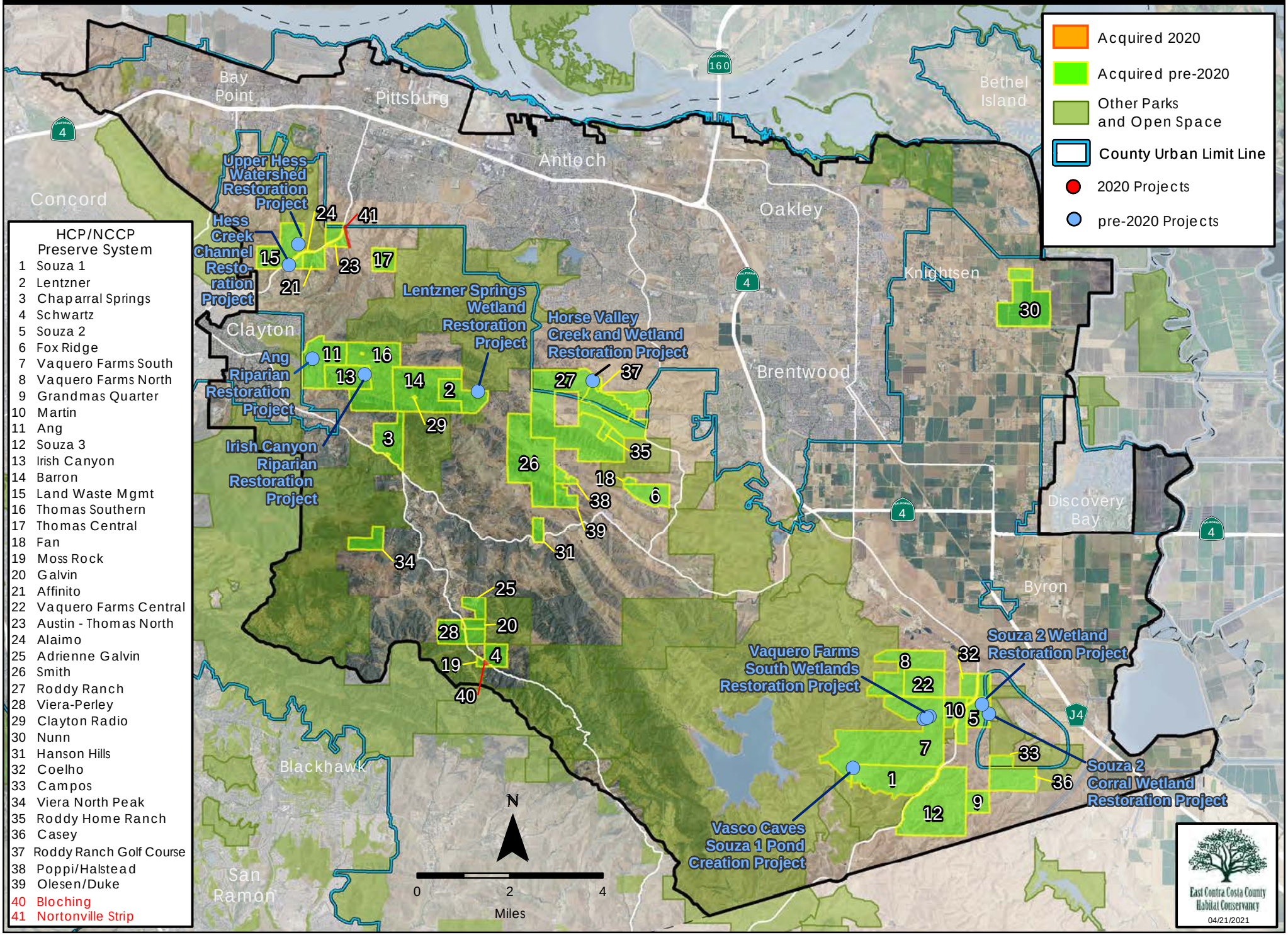


Table 12. Aquatic and Stream Land Cover Restoration and Creation by Watershed

	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	--	--	4,102.71	684.20	4,786.91
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*	*0.00*	*4,102.71*	*684.20*	*4,786.91*
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 Creation for Inventory Area	**5.39**	**0.16**	**10.66**	**2.45**	**0.61**	**0.00**	**0.00**	**19.27**	**0.00**	**4,328.09**	**4,102.71**	**2,951.37**	**11,382.17**

[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	2020 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 11 (2020)	CRLF continue to be present in the area	Riparian plantings are doing well and natural recruitment of oaks in the enhancement areas is progressing.

Restoration Project Name	Year Constructed	Habitat Type	Required Monitoring	Performance/ Success Criteria	2020 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 9 (2020)	CRLF	Monitoring of this site was not possible in Year 9 due to the Covid-19 pandemic and extensive wildfire smoke conditions. Site visits revealed extensive damage from cattle browsing and trampling along with invasive weed occurrences that will need to be managed in the upcoming year.
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	Completed: Year 6 (2018)	VPFS only in pond 1, CTS only in pond 2	Monitoring of this site was not possible in Year 8 due to the Covid-19 pandemic and extensive wildfire smoke conditions.
Hess Creek Channel Restoration Project	2014	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 6 (2020)	Project is movement habitat and not breeding habitat	Monitoring of this project was not required for Year 6.

Restoration Project Name	Year Constructed	Habitat Type	Required Monitoring	Performance/ Success Criteria	2020 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 5 (2020)	VPFS Year 2 and 4	Monitoring of this site was not possible in Year 5 due to the Covid-19 pandemic and extensive wildfire smoke conditions.
Ang Riparian Restoration Project	2017	Riparian woodland	N/A	N/A	Year 4 (2020)	N/A	Restoration workdays were canceled for the majority of the year due to the Covid-19 pandemic. Early weeding of plantings was accomplished in February, and watering continued roughly every three weeks throughout the year.
Horse Valley Creek and Wetland Restoration Project	2018	Seasonal Wetland Stream Channel CRLF and CTS Breeding	Years 1-5	N/A	Year 2 (2020)	CTS	2 of the 37 seasonal wetlands and 13 of the 20 Channel Assessment Reaches met all applicable performance standards for Year 2. Low level of performance was due primarily to exceptionally low rainfall in Year 2. No target species were observed on site in Year 2.

[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 (2014) 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] and Pool 3 [2015]) 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

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 land management is consistent with the Plan's goals and objectives.

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

Preserve Management Plans

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

The *Vasco Hills/Byron Vernal Pools Preserve Management Plan* is under development. The Vasco Hills/Byron Vernal Pools Preserve Management Area is the southeastern portion of the inventory area, covering Acquisition Analysis Zone 5. The management area consists of 11 properties that have been acquired for the Preserve System: Vaquero Farms North, Vaquero Farms Central, Vaquero Farms South, Souza I, Souza II, Souza III, Grandma's Quarter, Martin, Coelho, Campos, and Casey.

The Conservancy and EBRPD staff are collaborating closely on finalizing the *Vasco Hills/Byron Vernal Pools Preserve Management Plan*, reviewing numerous iterations of draft materials. The final draft of the preserve management plan was provided to the Wildlife Agencies and EBRPD for review in 2018. A public draft was released in 2018 and is going through subsequent edits prior to finalization. Significant progress was made in 2020 in revising the Recreation chapter, and the Conservancy expects to finalize the plan in 2021. This is the first preserve management plan prepared by the Conservancy and can be expanded to include neighboring properties as others in the area are acquired. The *Vasco Hills/Byron Vernal Pools Preserve Management Plan* will become a template for future preserve management plans prepared for other regions of the Preserve System.

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

Conceptual Ecological Models

A component of preserve management plans is a monitoring plan. The initial "monitoring design phase" of the HCP/NCCP focuses on the development of management-oriented conceptual ecological models, prioritization and implementation of projects, the identification of focal species or groups of species for intensive monitoring, and the selection of biotic and abiotic indicators of ecosystem condition. The HCP/NCCP requires annual reports to describe any conceptual ecological models developed to date and any changes to them that have taken place. To date, 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 model includes all the threats and stressors that may affect these natural communities over the life of the permit term that can be managed. Based on the Monitoring Program's passive management approach, the focus of management actions in grasslands will be on grazing and invasive species management and will expand to address the other threats/stressors as needed. The initial focus of management actions for wetlands/ponds is on grazing, invasive species management, and habitat restoration/enhancement, and will expand to address the other threats/stressors as needed. For oak woodlands the focus of management will be those factors that limit oak regeneration, which includes 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 2020 reporting period, and provides an effort-to-date summary of the extent of land cover types enhanced.

Efforts in 2020

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 Measures 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*, Conservation Measure 2.9 *Manage Streams and Riparian Woodland/Scrub*

Natural Resource Maintenance and Enhancement Projects

In 2020, 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. Projects initiated in previous years continued in 2020.

Invasive Plant Control

- Controlled several patches of Russian knapweed on the Horse Valley restoration project.
- Pulled stinkwort on the Horse Valley restoration project.
- Grubbed approximately two acres of stinkwort at the Preserve Property along Morgan Territory Road.
- Sprayed and grubbed approximately 20 acres of stinkwort in the Vasco Corridor.
- Pulled approximately 250 stinkwort at the Souza III Corrals.

Invasive Wildlife Control

In 2020, feral pig management was continued at various locations around the preserve to address damage to grasslands and young trees.

Grazing Management

EBRPD staff oversees the grazing operations on the Preserve. Staff met with grazing tenants to prepare annual work plans, monitor grazing units and produce stocking reports. The grazing leases are based on the EBRPD template and maximize natural resource management. Under this lease structure, rent is based on stocking rate rather than per acre. The goal is to encourage the use of sustainable stocking rates that maximize resource values rather than maximizing the number of livestock per acre. Stocking reports were reviewed monthly. Residual dry matter samples were collected in September at monitoring sites, and a new grazing tenant at Roddy Ranch was selected in the fall. Grazing management occurred on all properties in the Preserve System.

Land Management

This section summarizes management activities undertaken on the HCP/NCCP preserves during the 2020 reporting year and discusses management issues on the preserves.

For the 2020 reporting year, management consisted of the enhancement actions described above, as well as ongoing maintenance, safety and security and planning activities. Land management activities conducted in 2020 are summarized below (excludes those activities that were discussed above in *Natural Community Enhancement*).

- General Inspections and Safety and Security
    - All properties patrolled at least once a week, as well as additional visits if needed to respond to emergencies or address outstanding issues, including deceased wildlife.
    - Replace locks, repair fencing, and remove unauthorized locks on gates.
    - Respond to alarms (motion sensor) at various properties, review and monitor security camera recordings.
    - Respond to various trespassers on properties including break-ins to facilities.
    - Mow fuel breaks along fire roads and trails, and clear vegetation around park entrances and infrastructure.
    - Established a caretaker agreement at Deer Valley/Chadbourne.
- Cleanup
    - Demolition debris removal from the newly constructed corrals at Souza II and Souza III.
    - Debris removal of illegally dumped trash at various properties, and cleanup of homeless encampments.
    - Clear and remove tree pruning and brush clearing debris.
    - Remove old infrastructure from properties including old fencing and posts.
- General Maintenance, Infrastructure and Activities
    - The 60-inch outflow culvert pipe on Vasco Pond X4 in the Vasco Hills Regional Preserve was replaced in its pre-existing position after the original culvert broke off during winter storms in 2016-2017.
    - Concurrent with the culvert replacement at Vasco Pond X4, a large gully breaching the pond berm (which is formed by a maintenance road) was repaired, and additional rock slope protection was added at the inlet and outlet sides of the culvert as head and tail walls to protect the berm from erosion around the culvert area.
    - Erosion repairs were made to an existing dirt fire road where it crosses a drainage channel and a wetland on the Ang Property.
    - Structure fire at Vasco Hills in July destroyed the workshop and a large portion of the horse stable. A shipping container was purchased for additional storage and a temporary shop was set up in the Quonset Hut. A roof was built between the two structures for additional workspace.

- Extensive fencing repairs in excess of 5,900 linear feet, gate repairs and replacement, and new fencing installation in excess of 10,400 linear feet.
- Road maintenance, including filling potholes and grading. Rocked and compacted approximately 1500’ of fire trail to maintain all weather access to the water discharge pump platform area on the Nunn property.
- Repaired and secured stock water infrastructure.
- Installed HCP signage.
- Installed a cattle guard at the southern end of Vaquero Farms Central to facilitate the abandonment of the road south of the vernal pool complex in 2021.
- Coordination to discuss: management activities, pre-bid walk throughs, project development, funding, grazing, encroachment permits, research and tours for new staff.

VI. MONITORING, RESEARCH, AND ADAPTIVE MANAGEMENT

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

Monitoring

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

Effectiveness Monitoring

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

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

Monitoring Design Phase

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

In 2015 and 2016, draft protocols were developed for the Vasco Hills/Byron Vernal Pools Management Area for monitoring the effectiveness of management actions and the status and trends of covered species. A complete draft of the revised protocols were 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 to meet the Plan's biological goals and objectives. The inventory design includes standardized protocols necessary for implementing the inventory phase so that meaningful and consistent baseline data are collected.

The inventory phase was initiated in early- to mid-2008 in the form of pre-acquisition surveys when the first lands were considered for acquisition and incorporation into the Preserve System. Since 2010, Nomad Ecology has been inventorying new acquisitions for special-status plant species and for wetland features. An annual report is produced and the Conservancy updates GIS data. Nomad Ecology did not complete any acquisition inventories in 2020, however, previously recorded small populations of covered species were targeted for follow-up monitoring to assess extirpation danger due to low population size or signs of decline. The following is a summary of the results of these targeted population surveys as reported in *2020 Covered Plant Monitoring Report* (Nomad Ecology 2020b).

Plants

HCP/NCCP plant species (covered and no-take species) populations were identified for monitoring by assessing results of previous surveys conducted between 2011 – 2019 to identify populations with low numbers that may not be self-sustaining or may be in decline. Once target populations and species were identified, surveys were conducted in April, May, June, and September 2020. Targeted plant populations of big tarplant, round-leaved filaree, Mount Diablo fairy lantern, San Joaquin spearscale, and Brewer's dwarf flax are located on the Adrienne Galvin, Coelho, Fox Ridge, Galvin, Lentzner, Roddy Ranch, Schwartz, Smith, Souza III, Vaquero Farms Central, and Vaquero Farms North properties.

The primary objective of these surveys was to revisit known populations with previously recorded low population numbers to assess current population size, health, and habitat quality. Botanists navigated to GPS points for the target populations recorded in previous surveys, then searched suitable habitat around the GPS point. Searching was executed by walking transects up to 10 meters apart, depending on the target species, topography, or subject plant community, within target species' suitable habitat. For the majority of species, a minimum of a 20-meter radius around the GPS point was surveyed. For San Joaquin spearscale, suitable habitat along the entire length of the drainage was surveyed. Habitat descriptions and photographs from prior inventory reports were also used to find previously documented populations.

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 for relocated populations (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) data collected in the field.

A total of 20 populations were surveyed in 2020: six populations of San Joaquin spearscale; five populations of big tarplant; four populations of round-leaved filaree; three populations of Mount Diablo fairy lantern; and two populations of Brewer's dwarf flax. Overall, of the 20 surveyed populations, 13 were observed to still support covered species, 11 of which had increased in abundance from the previous survey. Nine populations had decreased in abundance since the previous survey, seven of which had zero individuals detected during the 2020 survey, including all four populations of round-leaved filaree. There have not be significant management changes in these areas, and fluctuations in these populations could reflect natural variability related to rain or other environmental factors. Conservancy will re-check these populations and continue to monitor them for changes.

Total precipitation for the 2020 Water Year was well below the historical annual precipitation average for the Antioch area. The area does experience substantial yearly fluctuations in precipitation; however, the 2020 Water Year was the second driest year recorded in the last decade. The lack of precipitation in January and February likely had negative impacts on the germination of target species, and overall low precipitation could have affected the vigor and abundance of target populations. In addition, survey timing for round-leaved filaree was not ideal for maximizing detection due to delays in field work necessitated by Covid-19 shelter-in-place orders. For these reasons, several 2020 target populations are recommended for follow-up monitoring in 2021.

For the majority of monitored plant populations, the 2020 surveys provided a second year of population data which is insufficient to illustrate trends, although additional years of data from CNDDB records were available for four populations. Most populations still had low abundance leaving them vulnerable to extirpation, and future management considerations should include increasing population size and genetic diversity through direct seeding or outplanting. Additional potential threats recorded during the surveys include encroachment by non-native annual grassland and thatch buildup at five of the populations, and the presence of yellow star thistle at Roddy Ranch in the vicinity of a big tarplant population. Overall, the target plant populations which were successfully relocated in 2020 appeared healthy despite some indications of stress, likely caused by heat and lack of precipitation, and evidence of herbivory in some populations.

To date, 28 percent of the species-specific biological goals for covered plant populations still need to be met, which includes two populations each of Mount Diablo manzanita (*Arctostaphylos auriculata*) and recurved larkspur (*Delphinium recurvatum*).

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 2020, long-term preserve monitoring had not yet commenced. The long-term monitoring phase will commence once a comprehensive strategy has been developed and approved by USFWS and CDFW (monitoring design phase) and baseline studies are complete

(inventory phase), or before then, if appropriate. Long-term monitoring will use the framework developed during the planning and inventory phases to carry out effectiveness monitoring and to implement adaptive management.

Compliance Monitoring

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

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

Directed Research

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

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

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

Below is a list of recently completed (2020) and on-going research efforts on or related to understanding Preserve System Lands.

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 was originally scheduled to run through December 2019 but was extended for an additional year. Low precipitation rates in 2019/2020, combined with the suspension of field work in response to the COVID-19 pandemic, make it likely that the study will run through December 2021.

Bird and Bat Fatalities in the Altamont Pass Wind Resource Area

Recent research in the Altamont Pass Wind Resource Area (APWRA) has revealed high fatality rates of birds and bats associated with wind energy facilities. There are several pressing needs associated with fatalities of these species 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 these species are fatally injured by wind turbines, including the seasons, time periods, wind conditions, behaviors, and terrain and vegetation settings associated with fatalities. An improvement in the accuracy and precision of fatality estimates is also required by improving detection rates of available carcasses and the adjustments for the portion of the fatalities that are never found.

Shawn Smallwood and Doug Bell (EBRPD) implemented this study in 2017. Analysis and reporting from this project pertaining to the effects of wind turbine curtailment on bird and bat fatalities, and fatality detection rates using trained canine searchers are presented in two publications (Smallwood and Bell 2020, Smallwood et al. 2020), and briefly summarized below. The study area comprised the Buena Vista Wind Energy, Golden Hills Wind Energy, and Sand Hill projects averaging 4.2 km apart in the APWRA.

Effects of Wind Turbine Curtailment on Bird and Bat Fatalities

Operational curtailment has been demonstrated as an effective fatality-reduction measure for bats at wind turbine installations, but data are limited on the effectiveness of the method for birds. Opportune before-after, control-impact (BACI) experiments of the effects of curtailment on bird and bat fatalities during peak fall migration were performed with wind turbines that remained operational during peak fall migration, turbines that were shut down during peak fall migration, and turbines of varying operational status during peak fall migration. The study indicated that wind turbine curtailment significantly reduced near-misses, disrupted flight, and fatality of bats but not of birds. For many bird species, it appears that collision and fatality risk is associated with the above-ground structure of a wind turbine rather than with the moving blades.

Bird and Bat Fatality Detection Using Canines

Dog searches for fatalities at Buena Vista and Golden Hills were performed from September 15 to November 15, 2017 during fall migration. In addition to naturally occurring carcasses, trial carcasses, marked for identification as such, were deposited in known locations the day prior to fatality searches. Dogs found 24 bats and 26 birds during 76 turbine searches at Buena Vista, and 71 bats and 63 birds at 55 turbine searches at Golden Hills during the study period. At Golden Hills, human searchers found 0 of 71 bats found by dogs and 11 of 63 birds found by dogs. Overall, dogs were found to detect 95% of bat and 91% of bird trial carcasses at a higher relative precision rate than human searchers indicating that many available fatality monitoring reports for wind energy installations using human searchers only may be underestimating small bird and bat fatalities.

Monitoring Fossorial Mammal Burrows in Vasco Caves and Vasco Hills Preserves

This is the first small research proposal funded through the Conservancy's small grant program. It began in 2017 and has been extended from the original completion date of 2019 to December 2021. Shawn Smallwood and Doug Bell (EBRPD) are monitoring the impact of different grazing strategies on burrows of raptor prey species and other focal species.

Baseline Surveys and Long-term Monitoring Protocol for Burrowing Owls

In 2018, the Conservancy received a Local Assistance Grant (LAG) (Grant Agreement #P1830905) from the California Department of Fish and Wildlife (CDFW) to conduct baseline surveys in 2019 for western burrowing owl within the 5,362-acre Vasco Hills/Byron Vernal Pools Management Area to aid in its implementation of the HCP/NCCP. In 2020, Nomad Ecology repeated the surveys during the burrowing owl breeding season as part of long-term monitoring of the burrowing owl population within the Management Area.

The second year of surveys (detailed in *Burrowing Owl Surveys, Year 2, East Contra Costa Habitat Conservancy Vasco Hills/Byron Vernal Pools Management Area* [Nomad Ecology 2020c]) was designed to monitor the size and distribution of burrowing owl populations in the Management Area with the goal of assessing the success of the HCP/NCCP in satisfying its stated species-specific goal to "increase the population size and distribution of western burrowing owl". These surveys also replicated previous surveys conducted by Albion Environmental (2006, 2007) within a portion of the Management Area (the 617-acre Souza 1 parcel) in order to determine whether there have been any changes in the size and reproductive success of the burrowing owl population within that parcel, which may serve as an index of the population status throughout the Management Area.

Burrowing Owl Survey Methodology

Juvenile burrowing owls in the Management Area May 2020
Photo Credit: Nomad Ecology

Three rounds of burrowing owl point count surveys, each covering the entire Management Area, were conducted following the site-specific protocol developed by Nomad Ecology for the Year 1 Surveys (Nomad Ecology 2020d). The site-specific protocol was adapted from the survey protocol outlined in Conway and Simon (2003) to ensure results were comparable to other researchers' results. A set of 185 survey stations was utilized along an extensive network of existing ranch roads within the Management Area, including 11 stations added in Year 2 to improve survey coverage. Seven of the new stations were accessed on foot to provide coverage of areas that were not surveyable from the road. The remaining 174 stations were the same as Year 1, including 32 stations on the Souza 1 parcel previously established by Albion Environmental during burrowing owl surveys conducted in 2006 and 2007 (Albion 2006, 2007).

Point count surveys consisted of a minimum six-minute survey at each station which included an initial three-minute passive observation segment followed by a three-minute call-broadcast segment. During the passive observation segment, surveyors used binoculars and spotting scopes to scan the landscape in a 360-degree arc around each survey station. For the call-broadcast segment, a smartphone or tablet paired to a wireless speaker was used to broadcast a 30-second series of burrowing owl calls (coo-coo call and alarm call), followed by 30 seconds of silence. During this time, the surveyors listened for audible responses to the call-broadcast while continuing to scan the landscape with binoculars and spotting scopes. When burrowing owls were detected, the bearing and distance to each owl location, sex and age class (adult or juvenile) when identifiable, and behavioral notes were recorded. At locations where juveniles were observed, additional time was taken to record an accurate count of the number of young to estimate breeding success. Each station was surveyed three times (mid-April to early May, late May to mid-June, and July to August) in 2020 with timing chosen to coincide with successive burrowing owl nesting stages (incubation, nestling, and fledgling). Surveys were conducted at least three weeks apart.

Burrowing owls were observed at 14 separate locations within the Management Area throughout the course of the 2020 breeding season surveys. Nine of the 14 locations represented nests that successfully fledged burrowing owl chicks. The remaining five locations represented locations where pairs were present, but no young were observed and for the purposes of these surveys were considered unsuccessful nests. No single adult burrowing owls were observed during the 2020 surveys. Two of the successful nests were first detected in August with recently fledged

young indicating that nesting continued late into the season. The 14 nesting locations (nine successful and five unsuccessful) fledged a total of 39 young, resulting in a reproductive rate of 2.79 young per nest. Nesting pairs and their fledglings were observed using multiple burrows in the same general area, and in some cases appeared to switch burrows between survey rounds.

No burrowing owls were observed anywhere on the Souza 1 parcel during the 2019 or the 2020 surveys. This indicates a total loss of burrowing owls on Souza 1 compared to the 18 to 19 breeding pairs observed during Albion's 2006-2007 surveys. The nearest observation was approximately 0.2 mile to the north, where one successful nest was located on the Vaquero Farms South parcel. Souza 1 is the only parcel grazed by sheep, which may be relevant as it appears that other cattle-grazed parcels still have low-density burrowing owl populations.

The 2020 survey results showed greater nesting success than shown by the 2019 surveys; more nests were detected, a greater proportion of the nests were successful, more than twice the number of fledglings were produced, and the ratio of fledglings produced per nest increased from 2.00 to 2.79. Many nest locations that were occupied in 2019 were occupied again in 2020, and two nest locations that had been unsuccessful in 2019 were successful in 2020.

Overall site conditions and land management did not change noticeably between 2019 and 2020, so the increase in reproductive success may have been a result of a combination of environmental factors and prey availability. Conditions in 2020 were much drier than 2019, with no significant precipitation after mid-April which may have been more favorable to nesting success. The Santa Clara Valley Habitat Agency also recorded an increase in Western burrowing owl nesting success in 2020, suggesting that regional conditions overall were more favorable for breeding burrowing owls.

Although the population of burrowing owls in the Management Area appears to have increased since 2019, it is still substantially lower than historic levels. The reproductive rate of 2.79 young per pair observed in the 2020 breeding surveys was within the range observed during the Albion 2006-2007 surveys on Souza 1 (3.58 and 1.79, respectively). It is also higher than the range reported by Smallwood et al. (2013) for the greater Altamont Pass area during the 2011 breeding season, which was between 1.20 and 2.03 young per pair.

The Management Area continues to appear to contain abundant suitable habitat for burrowing owls. Some areas with substantial concentrations of unmaintained, collapsed burrows were observed, suggesting that ground squirrel colonies that had been present in prior years were no longer extant. However, even in large ground squirrel colonies where suitable burrows were abundant, burrowing owls still appeared to be absent from much of the available habitat. There are no obvious or documented indicators of why burrowing owl populations in the Management Area have declined so dramatically, but it is likely that they are being affected by the factors that are depressing populations on a larger, regional scale.

Recommendations

Burrowing owl surveys should continue within the Management Area so that population trends can be monitored in the context of the severely reduced numbers that were observed in 2019 and 2020. Without ongoing monitoring, there will be no way to determine if management actions have been effective or should be discontinued. Surveys to assess the status of the rodent population within the Management Area would be helpful in determining potential linkages between prey abundance and burrowing owl populations. The establishment of refugia for rodents may be explored as an option to enhance prey populations, which could be as simple as rock and/or debris piles placed strategically within the Management Area. Assessing ground squirrel populations and burrow concentrations may aid in identifying locations in the Management Area with the highest potential for burrowing owl occupancy, and therefore areas which could be targeted for future management activities. Finally, additional land acquisitions surrounding the Management Area would likely be beneficial for the species since suitable habitat appears to be abundant.

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 we identify. Results from this study are expected to be available by December 2021.

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, and the study will run through March 2021.

The project leads conducted a pathogenic fungal disease survey, including tests for *B. dendrobatidis* of 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 addresses the following issues or knowledge gaps in the Los Vaqueros Reservoir Watershed:

1. Potential of a fungal disease outbreak (*B. dendrobatidis*) of 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;

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

Due to work restrictions and constraints in access and use of lab equipment during 2020 and 2021, there are portions of this study that are greatly delayed.

Adaptive Management

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

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

In 2020, implementation of adaptive management was focused primarily on restoration sites. As discussed in Section IV, *Habitat Restoration and Creation*, each site was monitored to measure progress toward achieving success criteria, and management was adjusted based on monitoring results.

VII. STAY-AHEAD PROVISION

Stay-Ahead Provision

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

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

Stay-Ahead Assessment

Using Stay-Ahead Measurement Method #1, the Conservancy is currently in compliance with the Stay-Ahead Provision (Table 14). The aquatic (open water) category is not ahead (-4%); however, the Plan allows a 5% deviation from the Stay-Ahead Provision requirements without penalty to account for the likely pattern of infrequent land acquisition of large parcels. Preliminary analysis of properties in the Plan Area with "aquatic" habitat are not-yet available for acquisition. More analysis will be needed in the future to determine acquisition of this habitat category and this Stay-Ahead requirement. For all other land cover types, the percent ahead ranges from 7% to over 100%. Overall, the Conservancy is 11,536 acres (rounded) ahead across all land cover types and 318,178 (rounded) linear feet ahead in streams. The Conservancy is 8,246 acres (rounded) ahead of the Stay-Ahead requirement for grassland and irrigated agriculture land cover types (the current Stay-Ahead requirement is 782 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 two 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 one 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.

There were no impacts on vernal pool crustacean habitat during the reporting year. Table 16 details the cumulative impacts on and compensation for vernal pool shrimp since Plan implementation.

Giant Garter Snake Habitat Impacts

The Conservancy's preservation of giant garter snake aquatic habitat is ahead of impacts. The Conservancy's preservation of giant garter snake upland habitat is ahead of impacts.
Compensation for permanent loss of giant garter snake habitat is achieved by implementing the following actions for every acre of impact.

- For every acre of aquatic habitat lost, preserve one acre of aquatic habitat and at least two acres of upland habitat adjacent to the preserved aquatic habitat, and
- For every acre of upland habitat lost, preserve one acre of upland habitat (in addition to the upland habitat preserved as a result of lost aquatic habitat.)

If giant garter snake habitat has not been preserved within the HCP/NCCP Preserve System in excess of that required to offset impacts, there are two options for implementing this compensation requirement: (1) by applicants selecting, acquiring, and managing in perpetuity a local mitigation site that is approved by USFWS for the sole purpose of compensating project impacts on giant garter snake, or (2) by applicants participating in a pre-existing, USFWS-approved mitigation bank with a service area that includes Contra Costa County. If a local mitigation site is selected, the site will be incorporated into the HCP/NCCP Preserve System and managed under the direction of the Conservancy to support or enhance habitat for giant garter snake.

There were no impacts on giant garter snake habitat during the reporting year. Table 17 details the cumulative impacts on and compensation for giant garter snake 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	9,027.8	49.7%	12,148	523.5	4.3%	782.1	8,245.7	45.4%
Chaparral and scrub	550	310.3	56.4%	2	0.6	28.5%	156.8	153.6	27.9%
Oak savanna	500	410.3	82.1%	165	0.1	0.0%	0.2	410.1	82.0%
Oak woodland	400	2,585.3	646.3%	73	0.7	0.9%	3.6	2,581.7	645.4%
Subtotal terrestrial	*19,600*	*12,333.7*	*62.9%*	*12,388*	*524.8*	*4%*	*942.6*	*11,391.1*	*58.7%*
Aquatic									
Riparian woodland/scrub	70	71.11	101.6%	35	1.23	3.5%	2.46	68.65	98.1%
Perennial wetland[1]	75	5.54	7.4%	75	0.09	0.1%	0.09	5.45	7.3%
Seasonal wetland	168	24.13	14.4%	56	1.62	2.9%	4.86	19.27	11.5%
Alkali wetland	93	37.15	39.9%	31	0.15	0.5%	0.46	36.69	39.5%
Pond	16	12.08	75.5%	8	0.01	0.2%	0.03	12.06	75.3%
Reservoir (open water)[2]	12	0.00	0.0%	12	0.47	3.9%	0.47	-0.47	-3.9%
Slough/Channel	36	3.10	8.6%	72	0.65	0.9%	0.33	2.78	7.7%
Subtotal aquatic	*470*	*153.11*	*32.6%*	*289*	*4.22*	*1%*	*8.69*	*144.43*	*31.1%*
Stream (length in linear feet)									
Perennial stream	4,224	12,919.30	305.9%	2,112	171.00	8.1%	342.00	12,577.30	297.8%
Intermittent stream	2,112	142,311.00	6738.2%	2,112	635.31	30.1%	635.31	141,675.69	6708.1%
Ephemeral stream[4]	26,400	164,222.80	622.1%	26,400	298.00	1.1%	298.00	163,924.80	620.9%
Subtotal stream length	*32,736*	*319,453.10*	*975.8%*	*30,624*	*1,104.31*	*4%*	*1,275.31*	*318,177.79*	*972.2%*
Totals									
Acres	30,300	12,486.84	41%	12,677	529.0	4.2%	951.3	11,535.5	37.0%
Linear feet	32,736	319,453.10	976%	30,624	1,104.31	3.6%	1,275.31	318,177.79	972.2%

[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.

Note: 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.

Table 15. Stay-Ahead Assessment: Plants

Common Name	*Scientific Name*	Conservation	Impacts	Difference	% Ahead
Mount Diablo manzanita	*Arctostaphylos auriculata*	0	0	0	--
Brittlescale	*Atriplex depressa*	3	0	3	100%
San Joaquin spearscale	*Atriplex joaquiniana*	10	1	9	90%
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*	6	0	6	100%
Showy madia	*Madia radiata*	0	0	0	--
Adobe navarretia[3]	*Navarretia nigelliformis subsp. nigelliformis*	0	0	0	--
Shining navarretia	*Navarretia nigelliformis subsp. radians*	(7)	1	(7)	--
Total		**55**	**1**	**54**	

[1] Vasco Road Safety Phase 1 Project population was translocated to Souza II property in 2011, however the population did not survive. This table has been updated to account for the single impact to San Joaquin spearscale (*Atriplex joaquiniana*).

[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.

Table 17. Giant Garter Snake Stay-Ahead Summary

Project Name/Preserve Property Name	Aquatic Habitat Impacts to Date (acres)	Upland Habitat Impacts to Date (acres)	Aquatic Habitat Preserved to Date (acres)	Upland Habitat Preserved to Date (acres)
Caltrans/Hwy 4 Median Buffer and Shoulder Widening Project, 2012	0.01	4.77		
Emerson Ranch, 2013		5.47		
Gilbert, 2016	0.577	18.34		
Nunn Property (Preserve System Acquisition)[1]			3.10	612.71
Total	**0.59**	**28.58**	**3.10**	**612.71**

[1] The Conservancy is currently in the planning and design phase of a proposed restoration project on the Nunn property and the acres of preservation will change and will be adjusted in forthcoming annual reports.

Notes: The ECCC HCP/NCCP requires preservation of giant garter snake habitat be ahead of impacts at a preservation ratio of 1:1 for aquatic habitat and 3:1 for upland habitat. The Conservancy is in compliance with the stay-ahead requirement.

VIII. CHANGED CIRCUMSTANCES AND REMEDIAL MEASURES

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

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

Changed Circumstances

Non-covered Species Becoming Listed

Appendix B: November 2020 CEQA Species Assessment Update

In December 2020, the Conservancy Board approved Appendix B to the report entitled "Assessment of Plan Effects on California Environmental Quality Act (CEQA) Species". The original 2015 Report provides an assessment of the effects of the Plan on 59 special-status species that were not covered by the Plan but are often addressed in CEQA analyses ("CEQA species"), 41 plant and 18 animal species. The purpose of the assessment is to provide a programmatic, cumulative CEQA effects analysis for CEQA species taking into account impacts of all covered activities, including all adverse and beneficial effects of covered development activities and conservation measures. The cumulative effect on each species was determined to be beneficial, neutral, or adverse but less-than-significant, by considering the number of known populations and extent of suitable habitat that could be adversely affected within areas of anticipated development as well as those that would benefit from being in areas that may be preserved, enhanced, and managed for covered species and communities by the Plan.

Appendix B was prepared to augment the list of species analyzed in 2015. The preparation of Appendix B followed a similar process to the original document. Conservancy staff worked with

H.T. Harvey and Associates to develop the document. Biologists from ICF Jones & Stokes provided additional review. Appendix B analyzes the HCP/NCCP effects on these eight species and concludes that the Plan will not have a significant negative effect on these species. The 2020 update adds three plants, two invertebrates, two fish and one mammal to the analysis.

The species addressed in Appendix B are: Alkali Grass (complex), Jepsen's coyote thistle, Long-styled sand spurrey, Monarch butterfly, Crotch bumble bee, Central California roach, Sacramento hitch, and Mountain lion.

Mountain Lion Listed as a Candidate Species

On April 21, 2020, the California Fish and Game Commission listed the mountain lion (*Puma concolor*) as a candidate species under California Endangered Species Act (CESA). This species has historic and extant occurrence records within the permit area, primarily in the Mount Diablo area. The Conservancy assessed the presence of suitable habitat in areas of potential effect and evaluated the potential impacts of covered activities on mountain lion in November 2020 (East Contra Costa County Habitat Conservancy 2020). The Conservancy found that most of the lands added to the Preserve System through 2019 are in areas where they may directly benefit mountain lions, and when coupled with existing parks and open space, have nearly completed a contiguous corridor that extends from Mount Diablo southeastward almost to the Contra Costa-Alameda County line, helping to protect habitat connectivity for mountain lion. Development on the outskirts of Clayton and Pittsburg is expected to impact mountain lion because these areas are near Mount Diablo. However, preservation of suitable habitat is substantially greater than the loss of such habitat under either the initial or maximum Urban Development Area scenarios. Additionally, habitat enhancement actions for covered species such as San Joaquin kit fox will result in increasing the value of preserves for mountain lion relative to existing conditions. Therefore, the determination was made that Plan implementation will have a net benefit for mountain lion and that incidental take coverage of the species is not desired under the Plan at this time.

IX. FINANCES

Budget

The Conservancy analyzed cost projections from the HCP/NCCP, the previous years' actual costs, and the anticipated 2020 work plan to develop the 2020 Budget (Table 18). The Conservancy stayed within the total 2020 Budget. Overall, 2020 expenditures to implement the HCP/NCCP totaled $2,213,907.

During the reporting period, the largest expenditures were in program administration, followed by planning and design, and then land acquisition. This focus reflects the Conservancy's continued efforts to provide permitting for projects and maintaining stay-ahead compliance. In addition, the Conservancy continues to make progress toward restoration requirements. Monitoring, research, and adaptive management budget and expenditures demonstrate the Conservancy's efforts to establish baseline inventories for new and existing properties.

Revenue Sources

Three main revenue sources are anticipated in the Plan.

Fee collection: Development, wetland, rural road (for certain rural road projects), and temporary impact mitigation fees are paid to mitigate impacts on special-status species, natural communities, and open space.

Local public funding and foundation grants: Acquisition and management of land by local agencies, primarily EBRPD, but could include partnerships with other local agencies. Voters approved several revenue measures for EBRPD in the prior decade, including Measure WW, which provide funding EBRPD may use to partner with the Conservancy. In addition, Foundation grants (e.g., Gordon and Betty Moore Foundation) are anticipated to help the Conservancy fund acquisition, management, restoration, and monitoring.

State and federal: Funding from the state and federal governments to assemble and monitor Preserve System lands. 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 generally received and held by EBRPD and used for Preserve System management activities, land acquisition, and long-term management.

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. No revenue from non-covered activities was received in 2020. A list of mitigation fees from prior non-covered activities is as follows:

- Kirker Pass Road Northbound Truck Climbing Lane (Area Outside HCP/NCCP) (2018)

The Conservancy received a total of $4,499,164 in revenue in 2020 (Tables 19 and 20). This amount includes development fees from covered activities ($3,204,443), wetland and stream mitigation fees from covered activities ($1,698,100), temporary impact fees ($106,512), Contributions to Recovery payments from covered activities ($154,653), administrative/staff time fees ($57,191), and other revenues ($62,454), and grants ($674,030). Local funding from partners totaled $126,233.

All grants awarded to date are summarized in Table 21. Since it began implementing the HCP/NCCP through the end of 2020, the Conservancy has been awarded nearly $71.8 million in grants. Of this amount, $68,459,429 has been spent on implementation of the Plan and $3,122,540 of awarded grant funds remain. 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.

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[4] 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.

[4] 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.

In 2017, the Conservancy completed a fee audit (adopted by the Governing Board in February 2021) which included a long-term funding analysis. In 2019, the Conservancy Board selected the Regional Parks Foundation as the preferred endowment manager and directed staff to prepare an Endowment Agreement for consideration. The final Endowment Agreement between the Conservancy and the Regional Parks Foundation was approved in October 2020.

The initial endowment deposited, totaling $3,100,556, came from two sources: an ECCC HCP/NCCP account held by the California Wildlife Foundation and Preserve System lease revenue held by the East Bay Regional Park District. Other sources of endowment funding include community facility districts, lease revenue on Preserve System lands, existing real estate transfer fees, and other new sources identified in the future. Under the terms of the Endowment Agreement, the Regional Parks Foundation will meet with the Conservancy quarterly to review asset allocation and investment performance. In addition, prior to the expiration of the Plan permits, a separate agreement will be negotiated between the Conservancy and Regional Parks Foundation to establish the terms and conditions for distribution of funds from the endowment to be used for Preserve System management and monitoring in perpetuity.

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 is provided where applicable for the Development Fee and the Wetland Mitigation Fee:

1. **A brief description of the type of fee in the account or fund**:
    a) The purpose of the Development Fee is to mitigate for impacts to open space, habitat and species covered by the HCP/NCCP. The Development Fee revenues will be used to fund the acquisition of land that does or could provide habitat for covered species, the management and enhancement 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.
2. 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.

FEE TYPE	Participating Special Entity Projects	Cities/County Projects
Development Fees (per acre)		
Zone 1	$15,693.67	$17,139.99
Zone II	$31,387.35	$34,279.99
Zone III	$7,846.84	$8,570.72
Wetland Mitigation Fees		
Riparian woodland/scrub	$109,087.61	$84,239.66
Perennial Wetland	$160,276.13	$115,275.32
Seasonal Wetland	$371,531.23	$249,763.19
Alkali wetland	$375,290.73	$236,462.19
Pond	$203,315.75	$125,620.54
Aquatic (open water)	$101,657.88	$63,549.21
Slough/ Channel	$148,158.18	$143,355.21
Streams 25 feet wide or less - fee per linear foot	$414.14	$686.78
Streams greater than 25 feet wide - fee per linear foot	$621.21	$1,034.52

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

   The Conservancy beginning and ending balances are included in the financial audit that was reviewed and accepted by the Governing Board of the East Contra Costa County Habitat Conservancy on April 26, 2021. 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 below. Please note that the amounts presented below are from the 2020 financial audit and may differ than the numbers in this Annual Report's tables and text, namely due to timing differences in and past reporting of revenue and expenditures.

	Beg. Balance	Revenue	Interest Earned	Expended	Ending Balance
Total Balance	$2,255,566	$5,525,464	$30,379	$3,227,465	$4,583,944

4. **The amount of the fees collected and the interest earned:** See Tables 19 and 20.
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 Table 7.
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:** There are no Conservancy funded construction projects anticipated for 2021. Design and planning work for restoration projects is continuing in 2021.

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 (e) and any allocations pursuant to Government Code section 66001 (f):** Not Applicable.

Table 18. 2020 Conservancy Budget: Actual Expenditures and Comparison to Budget Projections

	HCP/NCCP Projected Cost Estimate			2020 Budget by Revenue Source					2020 Actuals
Cost Category	Years 11-15	Average Cost Per Year (Years 11-15)	% of Total	Development Fee Account	Wetland Mitigation Account	Contributions to Recovery/ Grants	Total	% of Total	Total
Program Administration and Permitting Program	$2,978,706	$595,741	6%	$1,165,418	$0	$150,000	$1,315,418	15%	$1,135,357
Land Acquisition	$31,752,559	$6,350,512	67%	$273,054	$0	$4,535,000	$4,808,054	59%	$147,467
Planning and Design (Management, Restoration, and Recreation)	$849,699	$169,940	2%	$240,467	$0	$700,000	$940,467	12%	$561,629
Habitat Restoration/Creation	$3,469,095	$693,819	7%	$0	$472,967	$0	$472,967	6%	$59,065
Environmental Compliance	$459,000	$91,800	1%	$64,814	$50,000	$0	$114,814	1%	$51,763
Preserve Management and Maintenance	$5,398,690	$1,079,738	11%	$14,714	$0	$150,000	$164,714	2%	$66,426
Monitoring, Research, and Adaptive Management	$2,074,364	$618,873	4%	$183,438	$0	$68,000	$251,438	3%	$102,201
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	$161,194	$161,194	2%	$0
TOTAL	$47,735,299	$9,751,060	100%	$1,947,905	$522,967	$5,764,194	$8,235,066	100%	$2,123,907

Table 19. Summary of All Revenues Received

Type	Reporting Period	Cumulative[1]
Development Fees	$3,204,443	$19,159,900
Wetland Mitigation Fees	$239,883	$1,698,100
Temporary Impact Fees	$106,512	$2,092,200
Contributions to Recovery	$154,653	$1,608,500
Grants[3]	$674,030	$72,642,900
Other Revenue[2]	$119,645	$1,870,300
Local Matching Funds[4]	$126,233	$25,926,000
Total	**$4,625,397**	**$124,997,900**

[1] Amounts are rounded.

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

[3] These are grants received, not grants awarded. Please see Table 21 for all grants details.

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

Table 20. Summary Accounting of Fee and Grant Revenues Received in Reporting Period

Type	Amount
Development Fees	
Sciortino Ranch Development (Phase 2) / Terrene (City of Brentwood) [1]	$549,098
Oakley Logistics Center (City of Oakley)	$1,074,165
The Groves/Orfanos (City of Brentwood)	$326,271
DWR Old Banks Landfill Cap	$203,704
Quick Quack Car Wash & 7-11 (City of Brentwood)	$45,250
Brentwood Goddard School (City of Brentwood)	$15,083
Greystone Place (City of Pittsburg) [1]	$31,673
Liberty Residential (City of Pittsburg) [1]	$35,529
Acacia Development (City of Oakley)	$215,278
Diablo Energy Storage (City of Pittsburg)	$178,427
City of Brentwood Recycled Water Project, Phase 2 - Non-Potable Water Distribution System	$2,914
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project	$29,033
Tuscany Meadows (City of Pittsburg)	$304,097
Silvergate Condominium Community (City of Brentwood)	$143,119
Twin Oaks Senior Residence (City of Oakley)	$50,800
Development Fees subtotal	*$3,204,443*
Wetland Mitigation Fees	
Oakley Logistics Center (City of Oakley)	$239,883
Wetland Mitigation Fees subtotal	*$239,883*
Temporary Impact Fees	
County Public Works Countywide Guardrail Upgrade	$398
P66 Line 200 ECC Segment Geotechnical Investigations	$8,799
P66 Line 200 Byron Segment Geotechnical Investigations	$6,016
City of Brentwood Wastewater Treatment Plant Phase II Expansion	$788
CCWD Los Vaqueros Geotechnical Investigations Second Amendment	$1,255
County Public Works Trembath Basin Geotechnical Investigation	$2,744
Diablo Energy Storage (City of Pittsburg)	$1,508
P66 Line 200 Anomaly Investigations and Repair Winter 2020	$14,878
City of Brentwood Recycled Water Project (Non-potable Storage Facility)	$457
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project	$1,412
East Bay Regional Park District FEMA-Funded Pond Repairs - Oil Canyon Restoration	$7,490
Columbia Solar (City of Pittsburg) [2]	$60,766
Temporary Impact Fees subtotal	*$106,512*
Contributions to Recovery	
P66 Line 200 ECC Segment Geotechnical Investigations	$8,799
P66 Line 200 Byron Segment Geotechincal Investigations	$6,016
DWR Old Banks Landfill Cap	$106,852
CCWD Los Vaqueros Geotechnical Investigations Second Amendment	$324
P66 Line 200 Anomaly Investigations and Repair Winter 2020	$12,439
CCTA Mokelumne Trail Bicycle/Pedestrian Overcrossing Project	$20,223
Contributions to Recovery subtotal	*$154,653*
Other (Admin/Staff Time Fees for Participating Special Entities, Interest, Miscellaneous)	
PG&E L-114 Vintage Pipeline Replacement Project Admin/Staff Time	$40,000
Viera North Peak La Rue Lease (Lease Revenue)	$693

Table 20. Summary Accounting of Fee and Grant Revenues Received in Reporting Period

Type		Amount
PG&E I-192D In-Line Inspection Project Admin/Staff Time		$4,385
Oakley Logistics Center (City of Oakley) Offsite SWHA Mitigation		$21,000
P66 Line 200 ECC Segment Pipeline Replacement CEQA Reimbursement		$10,382
CCWD Los Vaqueros Geotechnical Investigations Admin/Staff Time		$3,353
DWR Old Banks Landfill Cap Admin/Staff Time		$3,857
P66 Line 200 Anomaly Investigations and Repair Winter 2020		$1,387
CCTA Mokelumne Trail Overcrossing Admin/Staff Time		$4,209
Pooled Interest Earnings		$30,379
Other subtotal		*$119,645*
Grants[3]		
FEMA Horse Valley Pond Repair[4]	Federal	$14,450
CDFW LAG P1830905 Baseline Survey/Long-term Monitoring Burrowing Owls ???	State	$32,096
Delta Conservancy Prop 1 Knightsen Wetland Restoration and Flood Protection Project	State	$284,825
CDFW LAG P1682905 Native Bunchgrass & Invasive Weed Mapping Project	State	$1,823
WCB LAG WC1945KM 2019224 Roddy Ranch Grassland & Wetland Restoration Project	State	$227,190
WCB Prop 84 Bloching Acquisition	State	$105,000
FEMA EBRPD Reimbursement 2019 FEMA Pond Repairs, Vasco Pond X4	Federal	$8,646
Grants subtotal		*$674,030*
Local Matching Funds		
EBRPD (Bloching Purchase Price)		$105,000
EBRPD (Bloching Due Diligence, Closing Costs, and Staff Time)		$21,233
Local funding subtotal		*$126,233*
Total		**$4,625,397**

[1] These projects were permitted in previous years; mitigation fees conveyed to Conservancy in 202(

[2] Annual temporary impact mitigation fee payment (22 years)

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

[4] Received in 2019 but not included in 2019 Annual Report

Table 21. Grants Awarded to the Conservancy for Implementation of the East Contra Costa County HCP/NCCP

Funding Source	Agency	Purpose	Amount	Required Match	Expended through 2020	Remaining	Grant Close Date	Complete
Section 6 (2006)	USFWS, through WCB	Acquisition	$6,531,054	$7,982,399	$6,531,054	$0	June 2010	Y
Section 6 (2007)	USFWS, through WCB	Acquisition	$7,000,000	$8,555,600	$7,000,000	$0	June 2011	Y
Section 6 (2008)	USFWS, through WCB	Acquisition	$6,000,000	$7,333,333	$5,934,114	$0	Feb 2013	Y
Section 6 (2009)	USFWS, through WCB	Acquisition	$2,500,000	$3,055,556	$2,500,000	$0	Aug 2014	Y
Section 6 (2010)	USFWS, through WCB	Acquisition	$6,000,000	$7,333,333	$6,000,000	$0	Aug 2014	Y
Section 6 (2011)	USFWS, through WCB	Acquisition	$4,463,936	$5,455,922	$4,463,936	$0	Oct 2016	Y
Section 6 (2012)	USFWS, through WCB	Acquisition	$1,000,000	$1,222,222	$1,000,000	$0	Sep 2016	Y
Section 6 (2014)	USFWS, through WCB	Acquisition	$2,000,000	$2,444,444	$2,000,000	$0	Dec 2017	Y
Section 6 (2015)	USFWS, through WCB	Acquisition	$2,000,000	$2,444,444	$2,000,000	$0	July 2019	Y
Section 6 (2017)	USFWS, through WCB	Acquisition	$2,000,000	$1,100,000	$0	$2,000,000	Aug 2022	
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	$50,100	$0	Mar 2019	Y
NCCP Local Assistance (P1682906)	CDFW	Baseline Sampling for CRLF, CTS, and WPT Habitat	$50,000	$0	$50,000	$0	Mar 2019	Y
NCCP Local Assistance (P1830905)	CDFW	Baseline & Long-Term Monitoring Burrowing Owls	$48,000	$0	$48,000	$0	March 2021	Y
Prop 1 (GA:18-002)	Coastal Conservancy	Horse Valley Creek and Wetland Restoration	$300,000	$0	$300,000	$0	Jan 2019	Y
Prop 1 (P1696007)	CDFW	Knightsen Wetland Restoration and Flood Protection	$240,000	$40,000	$239,994	$6	Sept 2019	Y
Prop 1 (Prop 1-1709)	Delta Conservancy	Knightsen Wetland Restoration	$1,225,000	$70,000	$336,889	$888,111	Sept 2021	
Prop 68 LAG (WC-1945KM)	WCB	Roddy Ranch GC Grassland & Wetland Restoration	$555,000	$0	$344,595	$210,405	Mar 2024	
Prop 84 (WC-1720DC)	WCB	Horse Valley Creek and Wetland Restoration	$350,000	$0	$350,000	$0	Oct 2021	Y
EQIP	NRCS	Ang Grazing and Habitat Improvements	$75,585	$0	$18,920	$0	Oct 2019	Y
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	$2,229,695	$20,305	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

Funding Source	Agency	Purpose	Amount	Required Match	Expended through 2020	Remaining	Grant Close Date	Complete
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
Prop 84 NCCP account	WCB	Acquisition of Olesen/Duke	$100,000	$0	$100,000	$0	July 2019	Y
Prop 84 NCCP account	WCB	Acquisition of Bloching	$105,000	$0	$105,000	$0	July 2020	Y
Contra Costa Avian Fund	NFWF	Acquisition of Casey	$28,000	$0	$26,600	$1,400	-	
Contra Costa County Buena Vista Fund	Contra Costa County	Burrowing owl research	$15,000	$0	$12,688	$2,312	-	
			$71,799,603	**$49,147,420**	**$68,459,429**	**$3,122,540**		

Note: Funding from partners not included. EBRPD has contributed over $21 million of its own funds or its grants funds to joint land acquisitions.

Acronyms:
CalOES: California Office of Emergency Services
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 was approached by Contra Costa County Flood Control and Water Conservation District (District) to provide guidance on the stream setback requirements of the Plan. The District is one of the partners in the development of the Three Creeks Restoration Project and owns and maintains the portion of Marsh Creek on which the restoration project will take place. The District has been in discussions with a creekside property owner to acquire a right-of-way to further expand the restoration project, and it became clear during discussions that further guidance was required on whether stream setbacks will be measured based on the existing top of the stream bank (pre-restoration) or the new, modified top of the stream bank (post-restoration). Conservancy staff reviewed the Plan and consulted with the wildlife agencies in developing the new Implementation Policy Regarding Application of the Stream Setback Conservation Measure 1.7.

The Implementation Policy provides the following guidelines for applying *Conservation Measure 1.7 Establish Stream Setbacks* when a Preserve System or Conservancy supported stream restoration project precedes a development project within the Urban Development Area:

1. The stream setback will be measured from the top of the stream bank as it exists at the time of Plan adoption *and* prior to a stream restoration project. Where native riparian vegetation is present, minimum setbacks must extend to the outer dripline of the riparian vegetation, or the specified number of feet measured from top of stream bank, whichever is greatest; and

2. The development project must maintain a buffer from the new, modified top of stream bank adequate to maintain habitat value for covered species, to be determined through the Conservancy permitting process.

Coordinated Wetland Permitting

Background and 2020 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 6, 2017, the USACE re-issued RGP 1 with a new expiration date of June 6, 2022. To date, 23 covered projects and three 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 five years, but in this case, a new Biological Opinion would not be needed, and on June 6, 2017, the Corps re-issued RGP 1 with a new expiration date of June 6, 2022.

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

Consistent mitigation ratios and offsite mitigation requirements, which makes it possible to satisfy Corps requirements with HCP/NCCP fees (see *Proposed In-Lieu Fee Instrument/Program* below).

Consistent emphasis on regional avoidance to avoid "postage-stamp" conservation on project sites that can hinder projects and compromise the functions and values of conserved resources.

Consistent, regional, watershed approach to conserving wetlands, waters, and species, which will maximize the value and sustainability of conservation actions.

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

Proposed In-Lieu Fee Instrument/Program

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

Interim Strategy

With the RGP issued, but the ILF program not yet in place, an interim strategy is needed to coordinate mitigation required under the RGP with HCP/NCCP mitigation fees. The Corps' proposed approach is *permittee-responsible compensatory mitigation*, an option defined in Mitigation Rule 33 CFR Part 332. Under this approach, until the ILF is approved, the Conservancy will designate a portion of its existing wetland restoration sites as compensatory mitigation for an applicant's project, and this will fulfill the applicant's Section 404 compensatory mitigation requirements under the RGP. The Corps initially approved using this interim strategy for up to 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 the 2013 Fee Report and other related actions at the June 27, 2013, Board meeting.

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

Other Activities

Public Outreach/Engagement

Volunteer Engagement

In 2020, despite extremely challenging circumstances, 20 volunteers working with Save Mount Diablo contributed 149 hours towards an overall total of 233 hours worked by staff and volunteers over 13 workdays at the Ang Riparian Restoration Project site. Work involved clearing trails, weeding, and watering.

Dedicated watering crew volunteers, August 2020
Photo Credit: Save Mount Diablo

XI. REFERENCES

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APPENDIX A: GLOSSARY

Definitions of Key Terms and Concepts

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

Anthropogenic. Caused or produced through human agency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Extinct species. A species no longer in existence.

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

Fossorial. Adapted for digging or burrowing into the ground.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Preserve System. All Plan preserves considered collectively.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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