

**East Contra Costa County  
Habitat Conservation Plan/  
Natural Community Conservation Plan**

Annual Report 2022



East Contra Costa County  
Habitat Conservancy





East Contra Costa County  
Habitat Conservancy

**EAST CONTRA COSTA COUNTY HABITAT CONSERVANCY**

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**COVER PHOTO:** *Briones Valley*, Stephen Joseph

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# Abbreviations

<b>CDFW</b>	California Department of Fish and Wildlife
<b>CESA</b>	California Endangered Species Act
<b>Corps</b>	U.S. Army Corps of Engineers
<b>EBRPD</b>	East Bay Regional Park District
<b>ESA</b>	federal Endangered Species Act
<b>Conservancy</b>	East Contra Costa County Habitat Conservancy
<b>Plan or HCP/NCCP</b>	East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan
<b>HCP</b>	habitat conservation plan
<b>NCCP</b>	natural community conservation plan
<b>O&amp;M</b>	operations and maintenance
<b>RGP</b>	Regional General Permit
<b>RPA</b>	riparian planting area
<b>USFWS</b>	U.S. Fish and Wildlife Service

# Introduction

This document summarizes implementation activities undertaken in the 2022 calendar year (January 1, 2022, through December 31, 2022) and since Plan inception and outlines progress toward achieving the Plan's biological goals and objectives.

Prepared by the East Contra Costa County Habitat Conservancy (Conservancy), this annual report summarizes implementation activities undertaken during the 2022 calendar year (January 1, 2022, through December 31, 2022) and cumulatively per the conditions of the ***East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan*** (HCP/NCCP or Plan).

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 establishes a framework for regional conservation and development, providing 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.

**Note:** Hydrological restoration monitoring follows the California water year; accordingly, those activities are tracked from October 1 through September 31 the following calendar year.





Permits issued in 2007 by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) allow the Permittees to comply with the federal Endangered Species Act (ESA) and California's Endangered Species Act (CESA). The Plan's Permittees are listed below:

- Contra Costa County
- Contra Costa County Flood Control and Water Conservation District
- City of Brentwood
- City of Clayton
- City of Oakley
- City of Pittsburg
- East Bay Regional Park District
- East Contra Costa County Habitat Conservancy

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. The Plan provides comprehensive species, wetlands, and ecosystem conservation and contributes to the recovery of endangered species in northern California. **Table 1** lists species covered by the Plan.

This HCP/NCCP allows for two development scenarios that are referred to as the Initial Urban Development Area and the Maximum Urban Development Area. Once the Initial Urban Development Area impact cap is exceeded, the Conservancy will be working under the second scenario, which is Maximum Urban Development Area. These scenarios also have different levels of required protection and restoration. In this report, the Maximum Urban Development Area scenario is represented in the tables and figures when applicable, though the Conservancy currently operates under the Initial Urban Development Area scenario.

**Table 1. Covered Species of the Plan**

Common Name <sup>a</sup>	Scientific Name	Status—State/CNPS <sup>b,c</sup>	Status—Federal <sup>d</sup>
<b>Mammals</b>			
Townsend's western big-eared bat	<i>Corynorhinus townsendii townsendii</i>	CSC	—
San Joaquin kit fox	<i>Vulpes macrotus mutica</i>	ST	FE
<b>Birds</b>			
Tricolored blackbird	<i>Agelaius tricolor</i>	CSC-1	—
Golden eagle	<i>Aquila chrysaetos</i>	FP	BGPA
Western burrowing owl	<i>Athene cunicularia hypugea</i>	CSC-1	—
Swainson's hawk	<i>Buteo swainsoni</i>	ST	—
<b>Reptiles</b>			
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	CSC	—
Alameda whipsnake	<i>Masticophis lateralis euryxanthus</i>	ST	FT
Giant garter snake	<i>Thamnophis gigas</i>	ST	FT
Western pond turtle	<i>Clemmys marmorata</i>	CSC	—
<b>Amphibians</b>			
California tiger salamander	<i>Ambystoma californiense</i>	CSC	FT
California red-legged frog	<i>Rana aurora draytonii</i>	—	FT
Foothill yellow-legged frog	<i>Rana boylei</i>	CSC	—
<b>Invertebrates</b>			
Longhorn fairy shrimp	<i>Brachinecta longiantenna</i>	—	FE
Vernal pool fairy shrimp	<i>Brachinecta lynchi</i>	—	FT
Midvalley fairy shrimp	<i>Brachinecta mesovallensis</i>	—	—
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	—	FE
<b>Plants</b>			
Mount Diablo manzanita	<i>Arctostaphylos auriculata</i>	1B	—
Brittlescale	<i>Atriplex depressa</i>	1B	—
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	1B	—
Big tarplant	<i>Blepharizonia plumosa</i>	1B	—
Mount Diablo fairy lantern	<i>Calochortus pulchellus</i>	1B	—
Recurved larkspur	<i>Delphinium recurvatum</i>	1B	—
Round-leaved filaree	<i>Erodium macrophyllum</i>	1B	—
Diablo helianthella	<i>Helianthella castanea</i>	1B	—
Brewer's dwarf flax	<i>Hesperolinon breweri</i>	1B	—
Showy madia	<i>Madia radiata</i>	1B	—
Adobe navarretia	<i>Navarretia nigelliformis</i> ssp. <i>nigelliformis</i>	—	—

**Notes**

a The Conservancy has completed a CEQA species analysis that indicates that conservation actions completed as part of the HCP/NCCP will have a beneficial (or neutral) impact on all species of concern found in the Plan area:  
<https://www.cocohcp.org/265/Other-Documents>

b **State Status:**  
 ST State Listed as Threatened  
 CSC California Special Concern Species  
 CSC-1 Bird Species of Special Concern; First Priority  
 FP Fully Protected

c **California Native Plant Society (CNPS):**  
 1B Rare, Threatened, or Endangered in California and Elsewhere

d **Federal Status:**  
 FE Federally Listed as Endangered  
 FT Federally Listed as Threatened  
 BGPA Bald and Golden Eagle Protection Act

# Covered Activities

This section describes covered activities and their impacts on land cover type and covered plants.

The Plan allows incidental take coverage for the following covered activities:

- Rural infrastructure projects
- Rural infrastructure operations and maintenance (O&M) projects
- Activities within the HCP/NCCP Preserves
- Activities within the Urban Development Area

**Figure 1** and **Tables 2–4** summarize covered activities undertaken during the reporting period and since Plan inception. **Figures 2 and 3** and **Tables 5–7** quantify impacts associated with these covered activities.

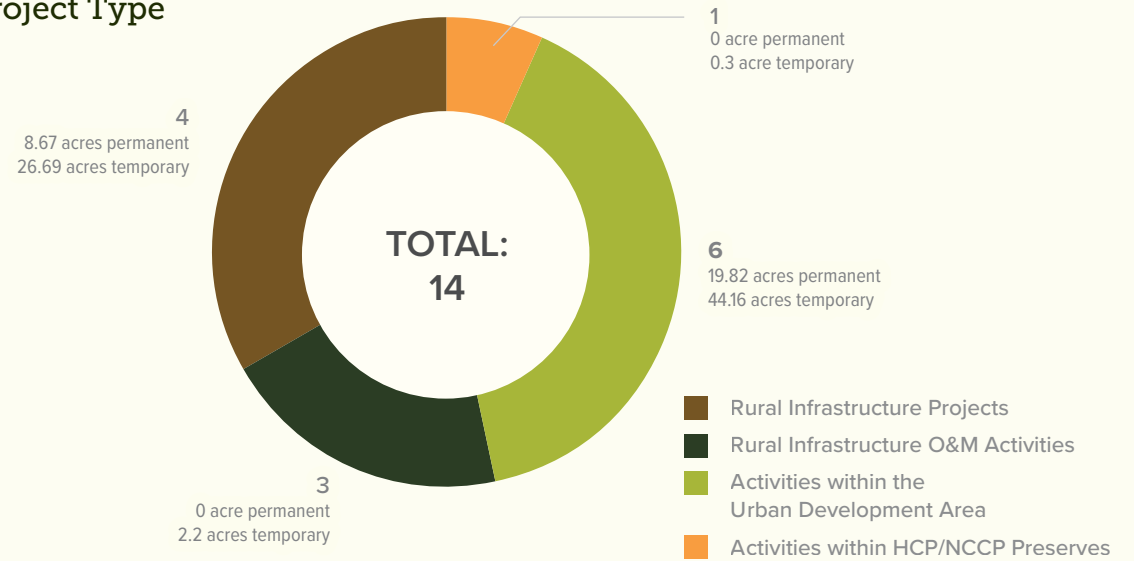




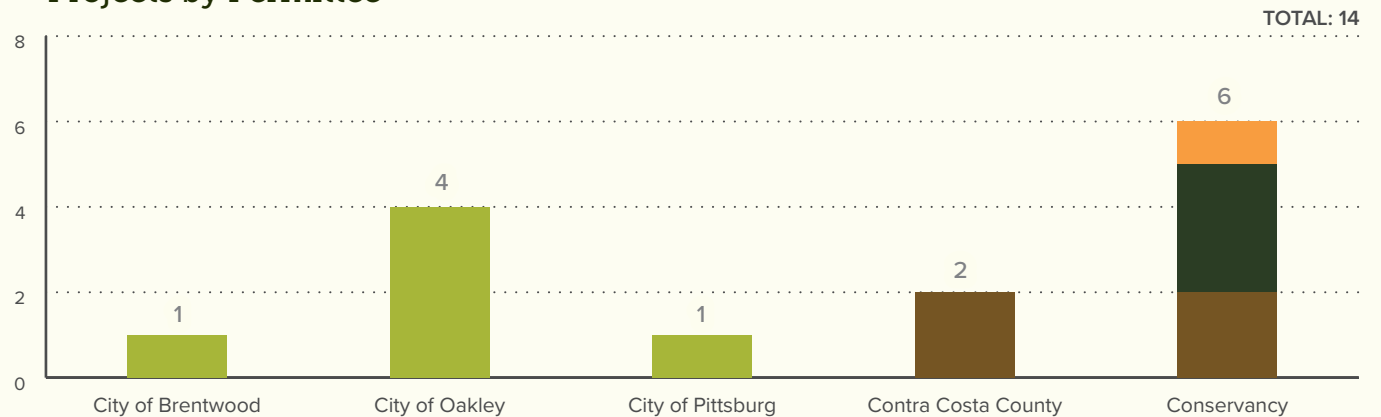
## Figure 1. Covered Activities by Activity Type and Permittee—Reporting Period

A total of 14 activities were permitted during the reporting period: 6 in the Urban Development Area, 3 rural infrastructure O&M activities, 4 rural infrastructure projects, and 1 activity within the HCP/NCCP Preserves.

### Projects by Project Type

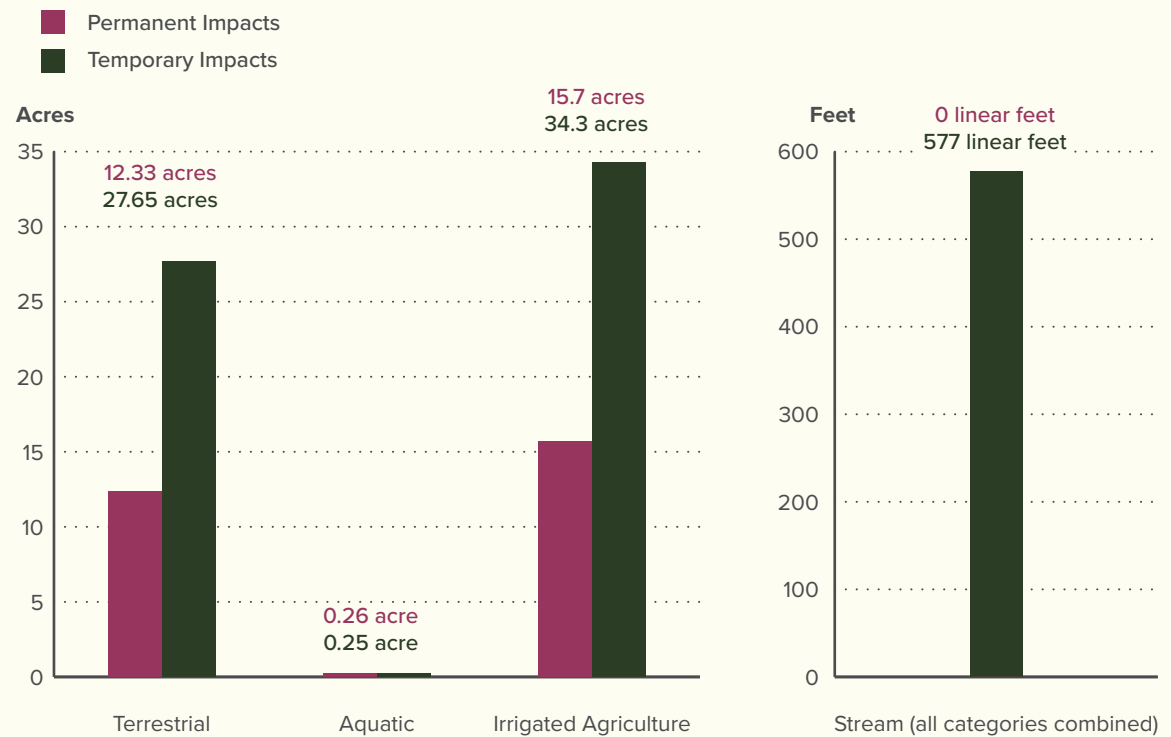


### Projects by Permittee



The 14 projects undertaken during the reporting period resulted in 62.2 acres temporary impacts, 28.29 acres permanent impacts on land cover, 577 linear feet temporary stream impacts (14 linear feet of intermittent stream and 563 linear feet ephemeral streams). No perennial streams were impacted.

### Figure 2. Land Cover Impacts by Land Cover Type—Reporting Period



Cumulative permanent land cover impacts total 1,297.17 acres, and temporary impacts on land cover total 756.44 acres. Since Plan inception, the majority of permanent stream impacts have been on intermittent streams, while temporary impacts have occurred in equal measure on perennial and intermittent streams.

### Figure 3. Land Cover Impacts by Land Cover Type—Cumulative





**Table 2.** Reporting Summary for Covered Activities—Reporting Year

Project Name	Jurisdiction	Project Type	Location	Description	Permanent Impacts (acres)	Temporary Impacts (acres)
Anton Oakley (Elm Lane)	City of Oakley	Activities within the Urban Development Area	5301 Elm Lane, Oakley	Developing a new 170-unit, 3 story, wood frame constructed affordable workforce housing project.	5.13	1.3
The Ranchettes at Neroly	City of Oakley	Activities within the Urban Development Area	Southeast corner of intersection of Oakley Road and Neroly Road in Oakley	Subdivision of the parcel into 7 residential lots, each with a new home and ancillary services.	7.1	
CCWD Canal Temporary Impacts (associated with Grand Cypress Preserve)	City of Oakley	Activities within the Urban Development Area	East side of Jersey Island Road, north of Rock Slough, south of Dutch Slough and west of the Summer Lake Project	Haul routes and stockpile areas needed during construction of Segment 5 of the Contra Costa Canal undergrounding project.		34.35
Brady Lots	City of Oakley	Activities within the Urban Development Area	North and south of East Cypress Road, just west of Sand Mound Slough in Oakley	The project is a portion of the Summer Lake North project and the site will be developed into residential lots and roads.	1.22	7.69
Pittsburg Renal Center	City of Pittsburg	Activities within the Urban Development Area	1600 North Park Boulevard, Pittsburg	Construction of a 14,350 square foot shell building for future development of a dialysis clinic.	1.46	0.82
Byron Hot Springs Solar Project	Contra Costa County	Rural Infrastructure Projects	Adjacent to Byron Highway, approximately 1.5 miles southeast of Byron. Byron Airport is located approximately one mile southwest of the site, and Clifton Court Forebay is located approximately 1.3 miles east of the site.	Development of a small-scale utility solar facility that will generate a total of 1.0 megawatts energy when complete.	5.42	
Ameresco Keller Canyon Renewable Natural Gas (RNG) Facility and Pipeline Project	Contra Costa County	Rural Infrastructure Projects	901 Bailey Road, Pittsburg	Installation of new gas processing equipment and an underground pipeline from the new equipment to an interconnection point on Pacific Gas and Electric's (PG&E's) existing transmission infrastructure.	3.25	26.48
PG&E Gas Transmission Pipeline (L-114 Vintage Pipeline Replacement Project—Addendum	ECCC Habitat Conservancy	Rural Infrastructure Projects	North of Marsh Creek Reservoir and south of Vineyards at Marsh Creek Parkway in Brentwood	Approximately 2,000 feet of 22-inch pipe will be replaced with new 24-inch pipe using a horizontal directional drill to avoid the Marsh Creek waterway and sensitive habitat within Marsh Creek Historic State Park.		0.21
Phillips 66 Line 200 Anomaly Investigation and Repair—Winter 2022 Project	ECCC Habitat Conservancy	Rural Infrastructure O&M Activities	SID 193,100: Lat: 37.791526, Long: -121.664340 SID 193,120: Lat: 37.791635, Long: -121.664597 SID 193,220: Lat: 37.792105, Long: -121.665625	Anomaly investigation and repairs at three dig locations to address a total of four anomalies along the existing Line 200 Mainline trunk pipeline in eastern Contra Costa County.		0.17
P66 Line 200 Vasco Road Remediation Project—Near Vasco Road, Byron, CA	ECCC Habitat Conservancy	Rural Infrastructure O&M Activities	Near Vasco Road in Byron, CA and near Latitude 37°47'42.79"N and Longitude 121°40'21.49"W	A total of 19 soil borings will be drilled and sampled to investigate if there is any remaining subsurface petroleum contamination resulting from the August 27, 2011 crude oil pipeline leak in this area.		1.6
Marsh Creek Restoration and Instream Dam Improvement Project	ECCC Habitat Conservancy	Rural Infrastructure Projects	Marsh Creek State Historic Park 21767 Marsh Creek Road, Brentwood	This project removed portions of a small, inoperative dam in Marsh Creek to restore channel form and prevent further erosion of an important archaeological site.		
Sciortino Ranch Center—Grocery Outlet, Commercial Phase 2 & Panda Express	City of Brentwood	Activities within the Urban Development Area	Northeast corner of Brentwood Boulevard and Technology Way in Brentwood	Construction of a multiple buildings and associated parking on a nearly 5-acre vacant lot to complete the Sciortino Ranch Commercial Center.	4.91	
Hess Creek Log Jam Repair Restoration Project	ECCC Habitat Conservancy	Activities within HCP/NCCP Preserves	Hess Property	A head cut gully has been developing in the channel over the last several years which will be repaired using a staked log jam.		0.3
Phillips 66 Line 200 Anomaly Investigation and Repair—Summer 2021 Project 1st Amendment	ECCC Habitat Conservancy	Rural Infrastructure O&M Activities	Near Vasco Hills Regional Preserve and Vasco Caves Regional Preserve	This amendment covers a minor increase in impact in order to implement additional AMMs to limit disturbance of the eagles making use of the historic nesting tree.		0.43
<b>Total</b>					<b>28.5</b>	<b>73.4</b>

**Table 3.** Reporting Period Summary of Natural Community and Landscape-Level Conditions on Covered Activities by Project

Project Name	Conservation Measures										
	2.11	2.12	1.6	1.7	1.8	1.9	1.10	1.11	1.12	1.13	1.14
Anton Oakley (Elm Lane)							•	•			
The Ranchettes at Neroly							•	•			
CCWD Canal Temporary Impacts (associated with Grand Cypress Preserve)		•					•	•			
Brady Lots		•					•	•			
Pittsburg Renal Center							•	•			
Byron Hot Springs Solar Project							•	•			
Ameresco Keller Canyon Renewable Natural Gas (RNG) Facility and Pipeline Project		•						•			
PG&E Gas Transmission Pipeline (L-114 Vintage Pipeline Replacement Project—Addendum		•						•			
Phillips 66 Line 200 Anomaly Investigation and Repair—Winter 2022 Project								•			
P66 Line 200 Vasco Road Remediation Project—Near Vasco Road, Byron, CA								•			
Marsh Creek Restoration and Instream Dam Improvement Project		•						•			
Sciortino Ranch Center—Grocery Outlet, Commercial Phase 2 & Panda Express							•	•			
Hess Creek Log Jam Repair Restoration Project		•						•			
Phillips 66 Line 200 Anomaly Investigation and Repair—Summer 2021 Project 1st Amendment								•			

**Conservation Measures**

- 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 Urban Development Area

**Table 4.** Reporting Period Summary of Species-Level Conditions on Covered Activities by Project

Project Name	Townsend's Big-Eared Bat				San Joaquin Kit Fox				Golden Eagle				Western Burrowing Owl				Swainson's Hawk				Giant Garter Snake				California Tiger Salamander				California Red-Legged Frog				Covered Shrimp			
	PS	PCS	AMM	CM	PS	PCS	AMM	CM	PS	PCS	AMM	CM	PS	PCS	AMM	CM	PS	PCS	AMM	CM	PS	PCS	AMM	CM	PS	PCS	AMM	CM	PS	PCS	AMM	CM	PS	PCS	AMM	CM
Anton Oakley (Elm Lane)									.	.			.	.			.	.																		
The Ranchettes at Neroly									.	.			.	.			.	.																		
CCWD Canal Temporary Impacts (associated with Grand Cypress Preserve)	.	.							.	.											.	.											.	.		
Brady Lots									.	.			.	.			.	.																		
Pittsburg Renal Center									.	.			.	.			.	.																		
Byron Hot Springs Solar Project					.	.			.	.			.	.			.	.																		
Ameresco Keller Canyon Renewable Natural Gas (RNG) Facility and Pipeline Project	.	.			.	.			.	.			.	.							.				.											
Phillips 66 Line 200 Anomaly Investigation and Repair—Winter 2022 Project					.	.			.	.			.	.							.	.			.	.										
P66 Line 200 Vasco Road Remediation Project (Near Vasco Road, Byron, CA)					.	.							.	.																						
Marsh Creek Restoration and Instream Dam Improvement Project					.	.			.	.			.	.			.	.							.	.			.	.						
Sciortino Ranch Center—Grocery Outlet, Commercial Phase 2 & Panda Express													.																							
Hess Creek Log Jam Repair Restoration Project									.	.			.	.							.	.			.	.			.	.						
Phillips 66 Line 200 Anomaly Investigation and Repair—Summer 2021 Project 1st Amendment									.	.	.	.																								

Project Name	Alkali Milkvetch		Big Tarplant		Brewers Dwarf Flax		Contra Costa Goldfields		Diamond-Petaled Poppy		Large-Flowered Fiddleneck		Mount Diablo Buckwheat		Round-Leaved Filaree		Showy Madia	
	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS
Anton Oakley (Elm Lane)																		
The Ranchettes at Neroly																		
CCWD Canal Temporary Impacts (associated with Grand Cypress Preserve)																		
Brady Lots																		
Pittsburg Renal Center																		
Byron Hot Springs Solar Project																		
Ameresco Keller Canyon Renewable Natural Gas (RNG) Facility and Pipeline Project			.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phillips 66 Line 200 Anomaly Investigation and Repair—Winter 2022 Project			.	.			.	.	.	.	.	.			.	.	.	.
P66 Line 200 Vasco Road Remediation Project (Near Vasco Road, Byron, CA)			.	.					.	.	.	.			.	.	.	.
Marsh Creek Restoration and Instream Dam Improvement Project	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sciortino Ranch Center—Grocery Outlet, Commercial Phase 2 & Panda Express																		
Hess Creek Log Jam Repair Restoration Project			.	.	.	.			.	.	.	.	.	.	.	.	.	.
Phillips 66 Line 200 Anomaly Investigation and Repair—Summer 2021 Project 1st Amendment																		

- Abbreviations**
- PS Planning surveys
  - PCS Pre-construction surveys
  - AMM Avoidance and minimization measures
  - CM Construction monitoring

Table continues on following page



**Table 4.** Reporting Period Summary of Species-Level Conditions on Covered Activities by Project (continued)

Project Name	Adobe Navarretia		Brittlescale		San Joaquin Spearscale		Diablo Helianthella		Caper Fruited Tropicocarpum		Mount Diablo Fairy-Lantern		Mount Diablo Manzanita		Recurved Larkspur	
	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS
Anton Oakley (Elm Lane)																
The Ranchettes at Neroly																
CCWD Canal Temporary Impacts (associated with Grand Cypress Preserve)																
Brady Lots																
Pittsburg Renal Center																
Byron Hot Springs Solar Project																
Ameresco Keller Canyon Renewable Natural Gas (RNG) Facility and Pipeline Project	.	.									.					
Phillips 66 Line 200 Anomaly Investigation and Repair—Winter 2022 Project	.	.	.	.	.	.			.	.					.	.
P66 Line 200 Vasco Road Remediation Project (Near Vasco Road, Byron, CA)	.	.														
Marsh Creek Restoration and Instream Dam Improvement Project	.	.			.	.	.	.			.	.				
Sciortino Ranch Center—Grocery Outlet, Commercial Phase 2 & Panda Express																
Hess Creek Log Jam Repair Restoration Project											.	.				
Phillips 66 Line 200 Anomaly Investigation and Repair—Summer 2021 Project 1st Amendment																

**Abbreviations**

PS Planning surveys

PCS Pre-construction surveys

**Table 5.** Summary of Impacts on Land Cover Types—Reporting Period and Cumulative (acres, unless noted)

Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Terrestrial</b>				
Annual grassland	1.6	20.4	137.0	258.6
Alkali grassland	0.0	0.0	0.8	3.2
Ruderal	10.8	7.3	869.3	341.0
Chaparral and scrub	0.0	0.0	0.6	1.7
Oak savanna	0.0	0.0	0.1	2.5
Oak woodland	0.0	0.0	0.7	2.3
Subtotal terrestrial	12.33	27.65	1,008.40	609.29
<b>Aquatic</b>				
Riparian woodland/scrub	0.00	0.18	1.23	2.17
Perennial wetland <sup>a</sup>	0.00	0.00	0.08	0.73
Seasonal wetland	0.26	0.08	1.88	4.11
Alkali wetland	0.00	0.00	0.15	1.00
Pond	0.00	0.00	0.01	0.11
Reservoir (open water) <sup>b</sup>	0.00	0.00	0.47	4.14
Slough/Channel	0.00	0.00	0.65	0.28
Subtotal aquatic	0.26	0.25	4.47	12.54
<b>Stream length by width category</b>				
< 25 feet wide	0	563	707	6,719
> 25 feet wide	0	14	397	4,738
<b>Stream length by type and order</b>				
Perennial	0	0	171	4,697
Intermittent	0	14	635	4,511
Ephemeral, 3rd or higher order	0	10	0	225
Ephemeral, 1st or 2nd order	0	553	298	2,024
Subtotal stream length	0	577	1,104	11,457
<b>Irrigated agriculture</b>				
Cropland	0.0	0.0	168.6	33.4
Pasture	5.4	34.3	40.3	93.8
Orchard	0.0	0.0	14.5	0.2
Vineyard	10.2	0.0	61.0	7.2
Subtotal irrigated agricultural	15.7	34.3	284.3	134.6
<b>Totals (excludes subtypes)</b>				
Acres	28.2	62.2	1,297.2	756.4
Linear feet	0.0	577	1,104	11,457

**Notes**

- a Perennial wetlands are equivalent to permanent wetlands.
- b Reservoir (open water) is equivalent to aquatic.
- c Cumulative impact acreages and linear feet may differ slightly from previous years due to refinements to the data tracking system.

**Table 6.** Impacts on Aquatic Land Cover Types and Streams by Watershed/Basin—Reporting Period and Cumulative

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Brushy</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0.01	0.12
Seasonal wetland	0	0	0	0
Alkali wetland	0	0	0.02	0.63
Pond	0	0	0.01	0.03
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0.01
Subtotal aquatic	0	0	0.04	0.79
<b>Stream (linear feet)</b>				
Total stream length	0	10	132	379
Stream length by width category				
< 25 feet wide	0	10	110	392
> 25 feet wide	0	0	22	118
<b>Stream length by type and order</b>				
Perennial	0	0	56	283
Intermittent	0	0	0	0
Ephemeral, 3rd or higher order	0	0	0	131
Ephemeral, 1st or 2nd order	0	10	76	96
Subtotal stream length	0	10	132	510
<b>Clifton Court Forebay</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0	0
<b>Stream (linear feet)</b>				
Total stream length	0	0	47	112
Stream length by width category				
< 25 feet wide	0	0	0	0
> 25 feet wide	0	0	47	112
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	47	112
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	47	112

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Deer</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0	0
<b>Stream (linear feet)</b>				
Total stream length	0	0	12	43
Stream length by width category				
< 25 feet wide	0	0	0	15
> 25 feet wide	0	0	12	28
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	12	43
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	12	43
<b>East Antioch</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0	0.0
Seasonal wetland	0	0	0	0.1
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0	0.1
<b>Stream (linear feet)</b>				
Total stream length	0	0	0	12
Stream length by width category				
< 25 feet wide	0	0	0	12
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	0	12
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	0	12

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>East County Drainages</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0.42	0
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0.22	0.02	0.47	1.57
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0.34	3.35
Slough/Channel (includes stream)	0	0	0.58	0.07
Subtotal aquatic	0.22	0.02	1.81	5.19
<b>Stream (linear feet)</b>				
Total stream length	0	0	0	0
Stream length by width category				
< 25 feet wide	0	0	0	0
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	0	0
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	0	0
<b>Kellogg</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0.05	0.31
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0.29	0.01
Alkali wetland	0	0	0	0.11
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0.07	0.14
Subtotal aquatic	0	0	0.41	0.57
<b>Stream (linear feet)</b>				
Total stream length	0	0	6	440
Stream length by width category				
< 25 feet wide	0	0	0	440
> 25 feet wide	0	0	6	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	6	0
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	440
Subtotal stream length	0	0	6	440

Table continues on following page

**Table 6.** Impacts on Aquatic Land Cover Types and Streams by Watershed—Reporting Period and Cumulative (continued)

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Kirker</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0.18	0.05	0.27
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0.18	0.05	0.27
<b>Stream (linear feet)</b>				
Total stream length	0	10	0	45
Stream length by width category				
< 25 feet wide	0	10	0	45
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	0	35
Ephemeral, 3rd or higher order	0	10	0	10
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	10	0	45
<b>Lower Marsh</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0.04
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0	0
Alkali wetland	0	0	0.13	0.24
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0.13	0.79
Slough/Channel (includes stream)	0	0	0	0.06
Subtotal aquatic	0	0	0.26	1.13
<b>Stream (linear feet)</b>				
Total stream length	0	0	33	4,660
Stream length by width category				
< 25 feet wide	0	0	0	622
> 25 feet wide	0	0	33	4,074
<b>Stream length by type and order</b>				
Perennial	0	0	0	4,211
Intermittent	0	0	33	365
Ephemeral, 3rd or higher order	0	0	0	84
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	33	4,660

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Lower Mt. Diablo</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0	0
<b>Stream (linear feet)</b>				
Total stream length	0	0	193	0
Stream length by width category				
< 25 feet wide	0	0	193	0
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	0	0
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	193	0
Subtotal stream length	0	0	193	0
<b>Oakley</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0.98	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0.98	0
<b>Stream (linear feet)</b>				
Total stream length	0	0	0	0
Stream length by width category				
< 25 feet wide	0	0	0	0
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	0	0
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	0	0

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Sand</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0.30	0.73
Perennial wetland <sup>a</sup>	0	0	0.04	0.57
Seasonal wetland	0	0	0.02	2.37
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0.36	3.67
<b>Stream (linear feet)</b>				
Total stream length	0	0	295	3,639
Stream length by width category				
< 25 feet wide	0	0	295	3,639
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	295	3,639
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	295	3,639
<b>Upper Marsh</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0.34	0.61
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0.06	0.03
Alkali wetland	0	0	0	0
Pond	0	0	0.01	0.08
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0.41	0.72
<b>Stream (linear feet)</b>				
Total stream length	0	14	299	1,312
Stream length by width category				
< 25 feet wide	0	0	58	978
> 25 feet wide	0	14	241	374
<b>Stream length by type and order</b>				
Perennial	0	0	93	191
Intermittent	0	14	177	257
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	29	904
Subtotal stream length	0	14	299	1,352

Table continues on following page

**Table 6.** Impacts on Aquatic Land Cover Types and Streams by Watershed—Reporting Period and Cumulative (continued)

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Upper Mt. Diablo</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0.02	0.02
Seasonal wetland	0	0	0.01	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0.02	0.02
<b>Stream (linear feet)</b>				
Total stream length	0	0	22	53
Stream length by width category				
< 25 feet wide	0	0	22	53
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	22	12
Intermittent	0	0	0	0
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	41
Subtotal stream length	0	0	22	53
<b>West Antioch</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0	0
Perennial wetland <sup>a</sup>	0	0	0	0
Seasonal wetland	0	0	0	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0	0	0	0
<b>Stream (linear feet)</b>				
Total stream length	0	0	8	10
Stream length by width category				
< 25 feet wide	0	0	8	10
> 25 feet wide	0	0	0	0
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	8	10
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	0	0	8	10

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative <sup>c</sup>	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
<b>Willow</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	0.08	0.02
Perennial wetland <sup>a</sup>	0	0	0.02	0
Seasonal wetland	0.04	0.06	0.04	0
Alkali wetland	0	0	0	0
Pond	0	0	0	0
Reservoir (open water) <sup>b</sup>	0	0	0	0
Slough/Channel (includes stream)	0	0	0	0
Subtotal aquatic	0.04	0.06	0.14	0.08
<b>Stream (linear feet)</b>				
Total stream length	0	543	57	582
Stream length by width category				
< 25 feet wide	0	543	21	549
> 25 feet wide	0	0	36	33
<b>Stream length by type and order</b>				
Perennial	0	0	0	0
Intermittent	0	0	57	39
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	543	0	543
Subtotal stream length	0	543	57	582
<b>Total</b>				
<b>Aquatic (acres)</b>				
Riparian woodland/scrub	0	0	1.23	2.17
Perennial wetland <sup>a</sup>	0	0	0.08	0.73
Seasonal wetland	0	0	1.88	4.11
Alkali wetland	0	0	0.15	0.98
Pond	0	0	0.02	0.11
Reservoir (open water) <sup>b</sup>	0	0	0.47	4.14
Slough/Channel (includes stream)	0	0	0.65	0.28
Total aquatic	0	0.25	4.48	12.52
<b>Stream (linear feet)</b>				
Total stream length	0	577	1,104	11,286
Stream length by width category				
< 25 feet wide	0	563	707	6,755
> 25 feet wide	0	14	397	4,738
<b>Stream length by type and order</b>				
Perennial	0	0	171	4,697
Intermittent	0	14	635	4,511
Ephemeral, 3rd or higher order	0	10	0	225
Ephemeral, 1st or 2nd order	0	553	298	2,024
Total stream length	0	577	1,104	11,457

**Notes**

- a Perennial wetlands are equivalent to permanent wetlands.
- b Reservoir (open water) is equivalent to aquatic.
- c Cumulative impact acreages and linear feet may differ slightly from previous years due to refinements to the data tracking system.



**Table 7.** Reporting Period and Cumulative Impacts on Covered Plants

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

**Notes**

- a This column provides the limit of impacts, by number of occurrences, on plant species allowable under the HCP/NCCP per HCP/NCCP Table 5-20.
- b Vasco Road Safety Phase 1 Project population was translocated to the Souza II preserve property in 2011; however, the population did not survive. See Table 10 for conservation efforts. The Conservancy is working on establishing a new population.
- c 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 conditions, 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.

# Land Acquisition

This section documents properties acquired for the Preserve System during the reporting period. It also tracks impacts and land acquisition across the Preserve System.

## Habitat Conserved

One property was acquired by the Conservancy during the reporting period: the Pugh property. This acquisition increased the Conservancy's Preserve System to 43 properties encompassing approximately 12,000 acres. All but one of the acquisitions were completed in partnership with the East Bay Regional Park District (EBRPD). EBRPD owns these properties and, together with the Conservancy, manages the Preserve System lands.

**Figure 4** shows the current Preserve System.





### **Pugh Property**

The newly acquired 79.8-acre Pugh property is located south of Byron in a rural unincorporated area of southeast Contra Costa County. The property borders two Preserve System properties on the north and western side: Grandma’s Quarter and Souza III. This property protects core habitat for San Joaquin kit fox and improves connectivity between known breeding habitats. The extensive grasslands make it prime habitat for raptors such as golden eagles. There is one pond on the property where California tiger salamander and California red-legged frog have been found. A total of five wind turbines of the Buena Vista Wind Farm are present on the site.

The Pugh property is located within the Altamont Pass Wind Resource Area, which is known to have the densest population of golden eagles in the lower United States.

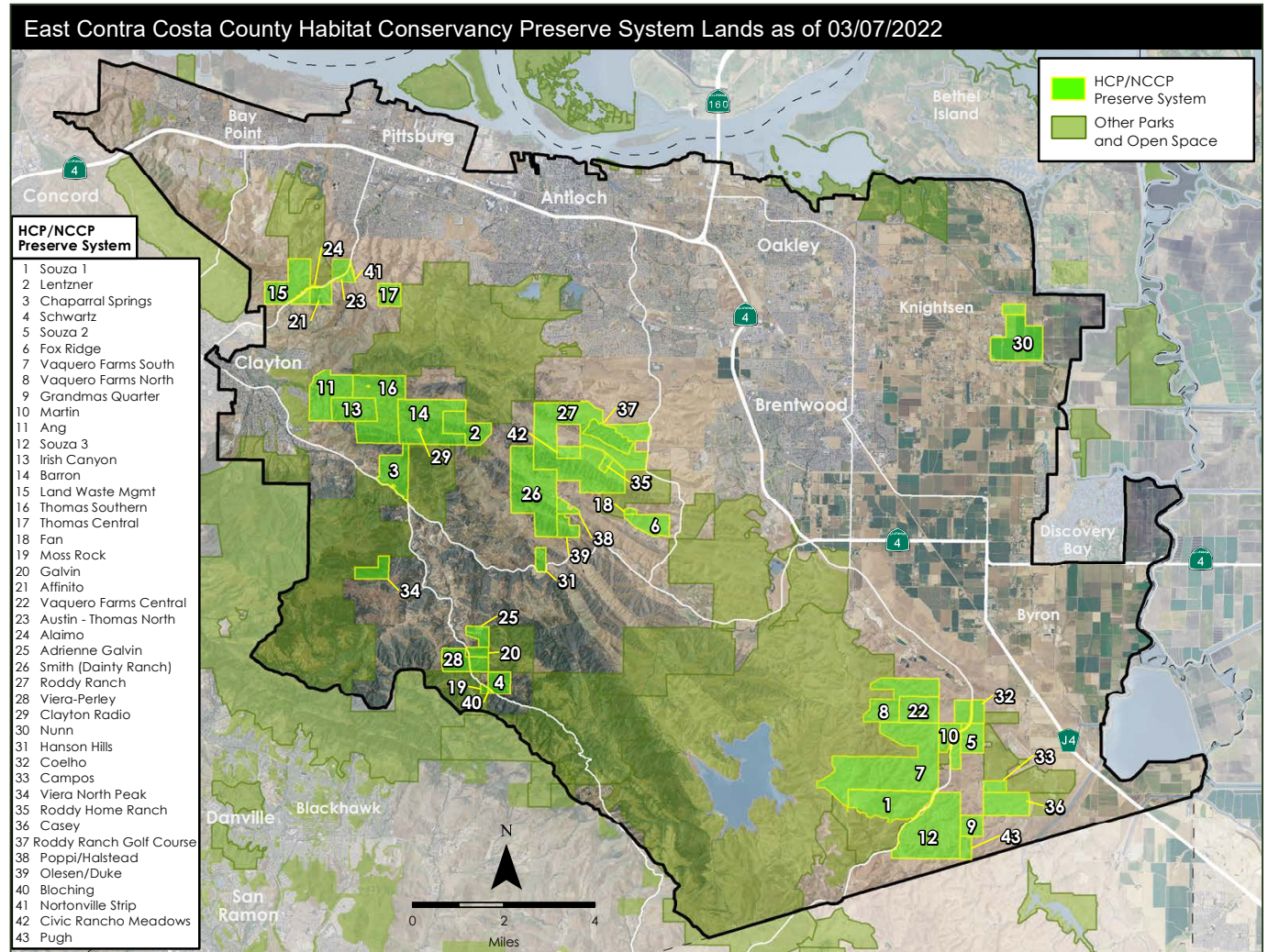
## **Preservation Achieved**

**Figure 5** shows progress toward assembling the Preserve System. **Table 8** summarizes natural community protection, restoration, and creation by land cover type. **Table 9** shows the progress towards fulfilling preservation requirements for jurisdictional wetlands and waters, and **Table 10** shows the status of conservation of covered plants.



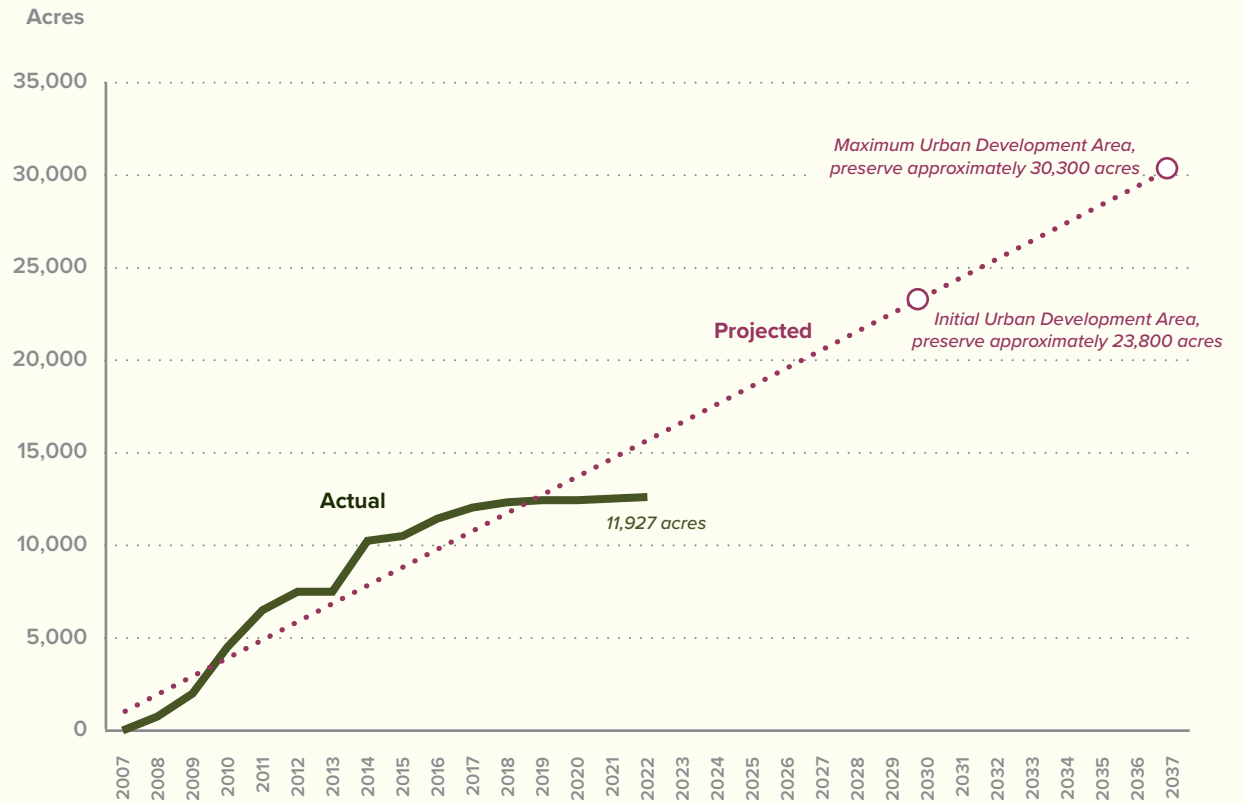
### Figure 4. Preserve System Map

The Conservancy's Preserve System consists of 43 properties encompassing approximately 12,000 acres of new conservation.



### Figure 5. Progress toward Assembling the Preserve System

In most years, acquisition for the Preserve System has exceeded what is needed to achieve the 30,300-acre estimate by Year 30 of the permit term.





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

Land Cover Type	Land Cover Requirements <sup>a</sup> (acres)			Reporting Period (acres)				Cumulative (acres)				Percent Complete (%) <sup>b</sup>		
	Protection	Creation	Restoration	Protection	No Credit <sup>c</sup>	Creation	Restoration	Protection	No Credit <sup>c</sup>	Creation	Restoration	Protection	Creation	Restoration
<b>Terrestrial</b>														
Annual grassland	16,500	--	--	75.2	--	--	--	8,180.9	1,463.6		0.6	50%	--	--
Alkali grassland	1,250	--	--	--	--	--	--	275.79	17.5		0.0	22%	--	--
Ruderal	--	--	--	1.5	--	--	--	118.55	25.7		0.0	--	--	--
Chaparral and scrub	550	--	--	--	--	--	--	310.57	0.0		0.0	56%	--	--
Oak savanna	500	--	165	--	--	--	--	399.83	23.0		0.0	80%	--	0%
Oak woodland	400	--	--	--	--	--	--	2,564.3	131.6		0.0	641%	--	--
<i>Subtotal terrestrial</i>	<i>19,200</i>	<i>0.0</i>	<i>165</i>	<i>76.6</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>10,745.2</i>	<i>1,661.4</i>	<i>0.0</i>	<i>0.6</i>	<i>56%</i>	<i>--</i>	<i>0%</i>
<b>Aquatic</b>														
Riparian woodland/scrub	70	--	55	--	--	--	--	72.41	0.2		5.40	103%	--	10%
Perennial wetland <sup>d</sup>	75	--	85	--	--	--	--	5.38	5.8		0.16	7%	--	0%
Seasonal wetland	168	--	163	0.10	--	--	--	13.44	1.4		10.70	8%	--	7%
Alkali wetland	93	--	67	--	--	--	--	34.75	4.3		2.40	37%	--	4%
Pond	16	16	--	0.07	--	--	--	11.36	2.7	0.61	0.00	71%	4%	--
Reservoir (open water) <sup>e</sup>	12	6	--	0.07	--	--	--	0	0.0		0.00	0%	--	--
Slough/Channel	36	--	72	--	--	--	--	3.1	0.0		0.00	9%	--	0%
<i>Subtotal aquatic</i>	<i>470</i>	<i>22</i>	<i>442</i>	<i>0.24</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>140.4</i>	<i>14.4</i>	<i>0.61</i>	<i>18.66</i>	<i>30%</i>	<i>3%</i>	<i>4%</i>
<b>Stream (length in linear feet)</b>														
Perennial	4,224	--	2,112	--	--	--	--	12,919	889		0	306%	--	0%
Intermittent	2,112	--	2,112	--	--	--	--	137,957	25,242		4,328	6532%	--	205%
Ephemeral <sup>f</sup>	26,400	--	26,400	--	--	--	--	68,702	878		4,103	260%	--	16%
Classification pending <sup>f</sup>	--	--	--	--	--	--	--	89,220	16,445	0	2,951	--	--	--
<i>Subtotal stream length</i>	<i>32,736</i>	<i>0.0</i>	<i>30,624</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>308,798</i>	<i>43,454</i>	<i>0</i>	<i>11,382</i>	<i>943%</i>	<i>--</i>	<i>37%</i>
<b>Irrigated agriculture</b>														
Cropland	400	--	--	--	--	--	--	541.4	--		--	135%	--	--
Pasture	--	--	--	--	--	--	--	71.3	--		--	--	--	--
Orchard	--	--	--	--	--	--	--	4.7	--		--	--	--	--
Vineyard	--	--	--	--	--	--	--	--	--		--	--	--	--
<i>Subtotal irrigated agricultural</i>	<i>400</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>617.5</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>--</i>	<i>--</i>	<i>--</i>

**Notes**

- a 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.
- b The HCP/NCCP allows for out-of-kind restoration and creation for certain land cover types. Information in these column do not reflect any out-of-kind mitigation, and will be noted if such compensation has occurred. See Chapter 5 of the HCP/NCCP for additional details.
- c These acres refer to land within the Preserve System that receive no credit toward HCP/NCCP conservation goals due to prior conservation of those areas (i.e. pre-existing conservation easements).
- d Perennial wetlands are equivalent to permanent wetlands.
- e Reservoir (open water) is equivalent to aquatic.
- f Many of the streams identified as "classification pending" will ultimately be classified as ephemeral.

**Table 9.** Cumulative Summary of Progress toward Preservation Requirements of Wetlands and Waters

Jurisdictional Wetlands and Waters Requirement	Total Requirement <sup>a</sup>	Reporting Period Area Acquired <sup>b</sup>	Cumulative Area Acquired	Percentage of Requirement Met by Acquisition
Preserve-wide Riparian woodland/scrub (acres)	70	0.00	72.41	103%
Preserve-wide Perennial wetland (acres)	75	0.00	5.38	7%
Preserve-wide Seasonal wetland (acres)	168	0.10	13.44	8%
Preserve-wide Alkali wetland (acres)	93	0.00	34.75	37%
Preserve-wide Pond (acres)	16	0.07	11.36	71%
Preserve-wide Reservoir (open water) (acres)	12	0.00	0	0%
Preserve-wide Slough/Channel (acres)	36	0.00	3.1	9%
Preserve-wide stream length (feet)	32,736	0.00	308,798	943%
<b><i>Stream length by type</i></b>				
Perennial (feet)	4,224	0.00	12,919	306%
Intermittent (feet)	2,112	0.00	137,957	6,532%
Ephemeral <sup>c</sup> (feet)	26,400	0.00	68,702	260%
Classification Pending <sup>b</sup> (feet)	—	0.00	89,220	—

**Notes**

- a Requirements are dependent on the amount of impacts. The requirements provided are based on the conservative estimates of wetland impacts provided in the Plan.
- b Reporting period may not reflect preserve acquisitions for that year, since field-verification of wetlands/waters on properties are conducted after acquiring properties, sometimes the following year.
- c Many of the streams identified as “classification pending” will ultimately be classified as ephemeral.

**Table 10.** Summary of Covered Plant Preservation to Date

Common Name	Scientific Name	Number of Occurrences Protected			
		Required	Reporting Period	Cumulative	% Complete
Mount Diablo manzanita	<i>Arctostaphylos auriculata</i>	2	0	0	0%
Brittlescale	<i>Atriplex depressa</i>	2 (4) <sup>a</sup>	0	3	150%
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	0	0	10	—
Big tarplant	<i>Blepharizonia plumosa</i>	3	0 <sup>b</sup>	13	433%
Mount Diablo fairy lantern	<i>Calochortus pulchellus</i>	1	0	6	600%
Recurved larkspur	<i>Delphinium recurvatum</i>	2	0	0	0%
Round-leaved filaree	<i>Erodium macrophyllum</i>	2	0	5	250%
Diablo helianthella	<i>Helianthella castanea</i>	2	0	13	650%
Brewer's dwarf flax	<i>Hesperolinon breweri</i>	3	0	6	200%
Showy madia	<i>Madia radiata</i>	0	0	0	—
Adobe navarretia <sup>c</sup>	<i>Navarretia nigelliformis</i> subsp. <i>nigelliformis</i>	1	0	0	0%
Shining navarretia <sup>c</sup>	<i>Navarretia nigelliformis</i> subsp. <i>radians</i>	0	0	(7)	—
<b>Total</b>		<b>18 (20)</b>	<b>0</b>	<b>49</b>	

**Notes**

- a 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.
- b One population of approximately 3,605 individuals was recorded at the Civic Rancho Meadows property in 2022, representing an extension of a previously known population from the Roddy Ranch property.
- c 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*).

This section summarizes habitat restoration and creation projects and activities undertaken during the reporting period and documents cumulative restoration and creation by watershed.

# Habitat Restoration and Creation

Habitat restoration and creation is a critical component of the Plan’s conservation strategy. Restoration and creation of specific habitats and land cover types are required in addition to protection of land within the Preserve System. **Figure 6** shows a map of restoration projects.

**Table 11** shows restoration and creation of aquatic land cover types in the Plan by watershed. Restoration has occurred in three of the five watersheds in the Permit Area; **Table 12** summarizes restoration acreages.





## Upper Hess Creek Watershed Restoration Project

The reporting period was Monitoring Year 11 for the Upper Hess Creek Watershed Restoration Project. While hydrologic monitoring was scheduled to be completed each month from November through June, monitoring only took place in December due to the lack of rain for the remainder of the season. On this visit, a small area of the Main Stock Pond and portions of four of the Alluvial Valley Basins were inundated, but all other features were dry. Vegetation monitoring in May showed vegetation mirroring the dry conditions, with only one volunteer willow (*Salix* spp.) and a few patches of spike rush (*Eleocharis macrostachya*) representing wetland plants and the remainder of the plant community being either facultative or facultative upland species.

In April, Upper Hess was visited to check on the status of the willow poles that were planted the prior fall. At the visit, 18 willow poles were found alive and leafed out. Additionally, the presence of three nesting pairs of tricolored blackbird (*Agelaius tricolor*) was confirmed in the cattails in the Main Stock Pond as well as many more of the birds foraging in the adjacent grassland vegetation.



In June 2022, a fire started along Kirker Pass Road and tore through the Alluvial Valley and the Lower Channel as well as the surrounding hillsides. This fire burned the wetland vegetation in the Alluvial Valley as well as the planted willow trees along the Lower Channel. The ground was charred until January of the following year (2023) when the winter rains washed the ash away.

In mid-2022, a fire occurred in the Upper Hess area within the Alluvial Valley, leaving charred ground through early 2023. After 2 consecutive years of fire impacts, the Conservancy replanted willows in the downstream area of the project site. (Image: © Google Earth Pro 2023)



## Vaquero Farms Seasonal Wetlands (Pool 3)

The 2021–2022 season was year 7 of hydrologic monitoring for the Vaquero Farms Seasonal Wetland 3. Rainfall data from a nearby station showed 9.03 inches of precipitation, which was more than double compared to the previous year (3.92 inches) and approximately 120% compared to normal rainfall for the area. Despite this, Seasonal Wetland 3 was not inundated with water. With only trace amounts of rain falling after December, no further site visits were conducted for hydrological monitoring.

During vegetation monitoring in April, Seasonal Wetland 3 was found to support upland vegetation. This was expected given the lack of standing water earlier in the season. In May, invasive perennial pepperweed (*Lepidium latifolium*) plants in Seasonal Wetland 3 were treated by digging up and spraying the cut tubers.

## Ang Riparian Restoration Project

In late September 2017, Save Mount Diablo 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 called for a mix of valley oak (*Quercus lobata*), buckeye (*Aesculus californica*), and red willow (*Salix laevigata*) 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. Red willow survival has been the least successful over the 3 monitoring years (2020–

This restoration project will help meet the HCP/NCCP goal for improving riparian woodland habitat to support covered wildlife species such as California red-legged frog and California tiger salamander.



2022) with zero survival recorded in 2022, while valley oak and buckeye have been more successful with at least 50% survival averaged over the five RPAs.

## Horse Valley Creek and Wetland Restoration Project

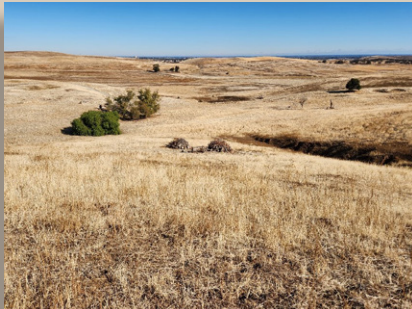
The Horse Valley Wetland Creation and Creek Restoration Project is a coordinated effort between the Conservancy and EBRPD and was constructed in the summer and fall of 2018. The project is located on the Roddy Ranch property south of the city of Antioch and was selected to restore the site's historic function by removing artificial alterations that have impacted site hydrology and habitat quality. This involves creek restoration with net channel gain and creation of new wetland habitats.

Monitoring began in 2018 following the completion of construction activities and will extend for a 5-year period or until performance standards have been met. The performance standards include criteria for wetland creation, wetland covered species habitats, and restored ephemeral creek criteria.



Year 4 monitoring showed that 19 of the 37 created seasonal wetlands met all the applicable performance standards, and none of the 20 Channel Assessment Reaches met all applicable performance standards. This low level of performance was due primarily to below-average rainfall during Year 4.

This restoration project will provide breeding habitat for California red-legged frog and California tiger salamander as well as suitable habitat for vernal pool invertebrates. It also contributes to stay-ahead and the following conservation measures: *2.1 Enhance, Restore, and Create Land Cover Types and Species Habitat* and *2.3 Restore Wetlands and Create Ponds*.



In September 2022, a stand of tree of heaven was removed.

Inoculation of the constructed seasonal wetlands with vernal pool branchiopod cysts had not yet taken place as of the end of Year 4, so no monitoring related to these species occurred.

Vegetation sampling was performed on April 14 and 28, 2022, during peak spring bloom. All 37 of the created seasonal wetlands met the invasive weed performance standard, and 22 met the wetland species dominance performance standard. The vegetation data corresponded very closely to the hydrology data, with the wetlands that dried up by February 2022 not being dominated by wetland vegetation, while the wetlands that remained ponded into February were dominated by wetland vegetation.

## Roddy Ranch Golf Course, Invasive Weed Control

The Roddy Ranch golf course was in operation through August 2016 and has been closed to the public since it was acquired by the Conservancy in 2018. It is surrounded by the 1,861-acre Roddy Ranch Preserve and is located immediately north of Deer Valley, which has very few invasive weed threats and is southeast of the Conservancy's Horse Valley Creek and Wetland Restoration project, which was constructed on the Roddy Ranch Preserve in 2018.

When the golf course ceased to be managed, weeds rapidly moved in and dominated the area. Invasive weed mapping conducted in spring 2018 showed 160 acres of the 230-acre property being infested with 14 different non-native noxious weeds. The Conservancy has been managing the weeds onsite for the immediate habitat benefits, but also to prevent the weeds from moving in all directions into the rest of the Preserve System. Italian thistle (*Carduus pycnocephalus* subsp. *pycnocephalus*) now occurs in scattered patches of low density—typical of grassland in the region. Jubata grass (*Cortaderia jubata*) and fennel (*Foeniculum vulgare*) have been eradicated from the site. Stinkwort (*Dittrichia graveolens*) and artichoke thistle (*Cynara cardunculus* subsp. *flavescens*) are still present but in much smaller numbers. In 2022, invasive weeds were spot-sprayed with herbicide in March and May, the stand of tree of heaven (*Ailanthus altissima*) that was spreading via seedlings was removed in September, and stinkwort was hand-pulled throughout the site in September and October.

In the area on the west side of the property previously seeded with native seed mix, dense non-native grass was present in January 2022, which suggests that non-native grass will move in and colonize gaps left by invasive weed control. In 2021, Great Valley gumweed (*Grindelia camporum*) was seeded in the same area on a slope with dense non-native annual grass cover but did not establish onsite. It did, however, establish successfully immediately to the north, in a level valley bottom in areas with moister soils. This suggests that Great Valley gumweed, collected from nearby Horse Valley, prefers gentle slopes and moister soils and will do well in level areas at the bottom of the slopes.

## Hess Creek Channel Restoration Project

The 5.22-acre Hess Creek Channel Restoration Project is located on the north edge of the Diablo Range in the northwest region of the HCP/NCCP Plan Area. This restoration project includes a series of components along the main stem of Hess Creek where a 930-foot portion of the creek was re-routed, stabilized, and enhanced. In addition, 0.30 acre of seasonal wetlands, 0.08 acre of other waters, and 2.57 acres of riparian woodland were restored. Detailed monitoring was not required for the reporting year, however in the previous year (year 7 of monitoring) the project was meeting performance criteria, with the exception of re-established wetland acreage.

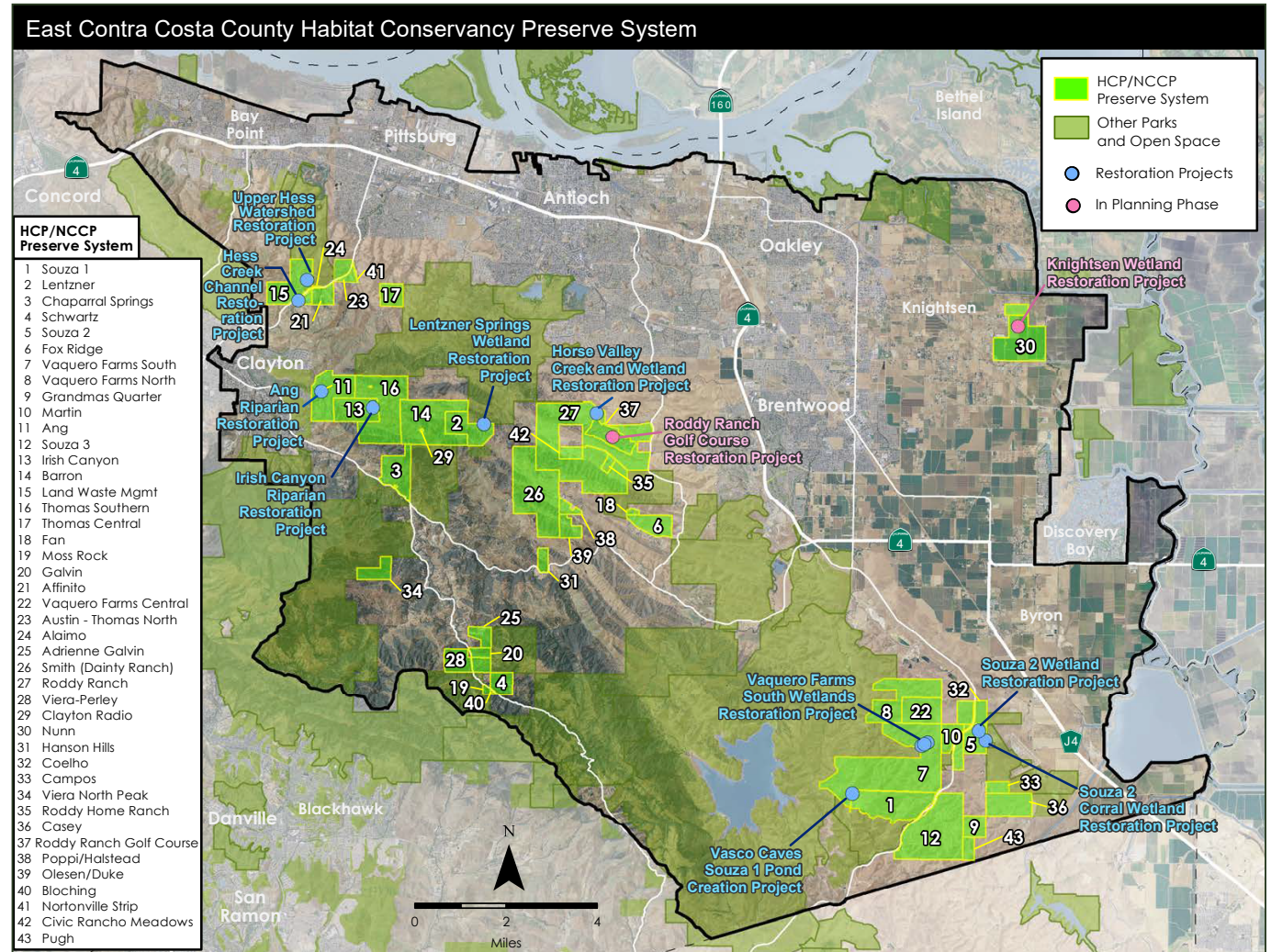
## Upcoming Restoration Projects

The Conservancy currently has one restoration project in planning, the Knightsen Wetland Restoration Project, with the objective to create and restore wetlands as well as other habitat and improve Delta water quality.

The Roddy Ranch Golf Course Habitat Restoration and Public Access Plan is the most recent project to be approved by the Conservancy, EBRPD, USFWS, and CDFW. This property will support grassland habitat objectives and is a part of a larger planned 3,700-acre Deer Valley Regional Preserve.



Figure 6. Location of Restoration and Creation Projects



A total of 11 restoration projects  
have been undertaken in the  
Preserve System.



**Table 11.** Aquatic Land Cover and Stream Restoration and Creation by Watershed

Basin/Watershed	Aquatic Land Cover (acres)							Stream (linear feet)					
	Riparian woodland/ scrub	Perennial wetlands <sup>a</sup>	Seasonal wetlands	Alkali wetlands	Ponds	Reservoir (open water) <sup>b</sup>	Slough/ channel	Aquatic Land Cover Total	Perennial	Intermittent	Ephemeral	Classification Pending	Stream Total
<b><i>Brushy Creek N Stem Sub Basin</i></b>													
Restoration	—	0.16	8.10	—	—	—	—	8.26	—	2,075	508	—	2,582
Creation	—	—	—	—	0.30	—	—	0.30	—	—	—	—	0.00
<i>Subtotal</i>	—	0.16	8.10	—	0.30	—	—	8.56	—	2,075	508	0.00	2,582
<b><i>Frisk Creek Sub Basin</i></b>													
Restoration	—	—	0.33	—	—	—	—	0.33	—	—	—	—	0
Creation	—	—	—	—	—	—	—	—	—	—	—	—	0
<i>Subtotal</i>	—	—	0.33	—	—	—	—	0.33	—	0	0	0	0
<b><i>Kirker Creek</i></b>													
Restoration	3.08	—	0.23	2.40	—	—	—	5.71	—	—	1,7560	—	1,760
Creation	—	—	—	—	0.12	—	—	0.12	—	—	—	—	0.00
<i>Subtotal</i>	3.08	—	0.23	2.40	0.12	—	—	5.83	—	0	1,760	0.00	1,760
<b><i>Sand Creek Sub Basin</i></b>													
Restoration	—	—	2.00	0.05	—	—	—	2.05	—	—	684	4,103	4,787
Creation	—	—	—	—	0.19	—	—	0.19	—	—	—	—	0
<i>Subtotal</i>	—	—	2.00	0.05	0.19	—	—	2.24	—	0	684	4,103	4,787
<b><i>Upper Mt. Diablo Creek</i></b>													
Restoration	2.31	—	—	—	—	—	—	2.31	—	2,254	—	—	2,254
Creation	—	—	—	—	—	—	—	—	—	—	—	—	0
<i>Subtotal</i>	2.31	—	—	—	—	—	—	2.31	—	2,254	0	0	2,254
<b>Total for Inventory Area</b>	<b>5.39</b>	<b>0.16</b>	<b>10.66</b>	<b>2.45</b>	<b>0.61</b>	<b>—</b>	<b>—</b>	<b>19.27</b>	<b>—</b>	<b>4,328</b>	<b>2,951</b>	<b>4,103</b>	<b>11,382</b>

**Notes**

a Perennial wetlands include wetlands of indeterminate hydrology. In Appendix J, perennial wetlands are classified as wetlands.

b 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.

**Table 12.** Restoration Acreage Summary

Restoration, Creation, and Enhancement Design Target (acres unless otherwise noted)													
Restoration Project Name	Year Constructed	Met Success Criteria	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 (feet)	Stream Channel Created (feet)	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	1.12
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	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
<b>Total</b>			<b>0.00</b>	<b>0.54</b>	<b>4.58</b>	<b>2.47</b>	<b>1.25</b>	<b>0.87</b>	<b>0.23</b>	<b>5.60</b>	<b>9,210.50</b>	<b>730.00</b>	<b>1.12</b>

# Preserve System Management

This section summarizes management actions that took place during the reporting period and highlights notable accomplishments.

During the reporting period, the Preserve System grew to encompass approximately 12,000 acres of conservation land. The Preserve System requires a wide array of land management actions that are geographically, topographically, and ecologically unique to each unit of land. A variety of management actions took place on all preserve properties throughout the year including the following:

- Natural resource maintenance projects
- Invasive plant and wildlife management
- Grazing management
- Fence installation and maintenance
- Gate installation and maintenance



- Trash removal
- Vegetation management
- Safety and security patrol
- Native seed collection
- Outdoor fieldwork to support the above-listed tasks
- Contractor management to support the above-listed tasks
- Ranch road maintenance
- Grazing infrastructure maintenance (tanks, troughs, wells, paddocks)
- Response to fire and flood conditions to protect community and habitat
- Hazard abatement (fallen trees, landslides)

Highlights from the aforementioned tasks include the following:

- The Conservancy implemented a channel repair at the Hess Creek Restoration Project in October 2022. A head cut gully had been observed developing in the channel over the last several years of monitoring. This was repaired using a staked log jam.
- Smooth distaff thistle (*Carthamus criticus*) was removed in May 2022 at the Civic Rancho Meadows in Deer Valley, a property acquired in 2021. The property was surveyed and patches identified, and the thistle was then hand pulled, bagged, and disposed of. This is the first time that this invasive non-native plant has been identified on the Preserve System.



The Preserve System requires land management actions that are geographically, topographically, and ecologically unique to each unit of land.



# Monitoring, Research, and Adaptive Management

This section summarizes monitoring, research, and adaptive management projects undertaken during the reporting period.

The purpose of the monitoring, research, 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. 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.

In 2022, three studies were completed: a covered plant species survey on the Preserve System, a camera station survey for San Joaquin kit fox, and an investigation of an extensive pine and manzanita die-off in the inventory area, which are detailed in the following sections.





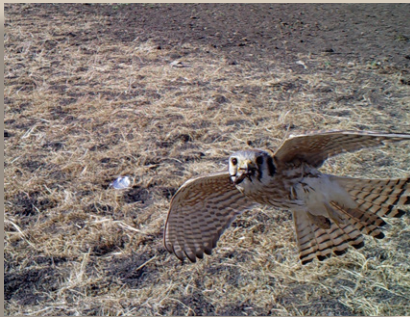
## Science and Research Grant Program

The conservation strategy under the HCP/NCCP is designed to achieve the biological goals and objectives established for the natural communities and the covered species that each community supports. Under the Conservancy's Science and Research Grant Program, the Conservancy funds research that endeavors to illuminate, and where possible to resolve, uncertainties associated with adaptive management of natural communities and covered species. Research selected for funding aids in achieving the biological goals and objectives of the Plan and inform management actions and/or contribute to the general understanding of a covered species.

## San Joaquin Kit Fox Camera Station Survey Report

This study was intended to address the Plan goal to preserve “the most important movement routes and core habitat for San Joaquin kit fox.” The study was conducted in two areas within the Preserve System that have the most suitable habitat for the target species, the Vasco Hills/Byron Vernal Pools management area and the Deer Valley management area.

A total of eight camera stations were set up, producing more than 70,000 photos of animals during the spring, summer, and fall survey dates. San Joaquin kit fox was not caught on camera; however, coyotes were detected frequently which are a known predator of kit foxes. There are no verified sightings of San Joaquin kit fox within the Plan area in the last 20 years. In total, 31 species were detected of which one is a covered target species (burrowing owl [*Athene cunicularia*]) and two are special status species (American badger [*Taxidea taxus*] and loggerhead shrike [*Lanius ludovicianus*]).



American kestrel  
caught on camera.



One population of big tarplant was recorded at the Civic Rancho Meadows property.

## Target Plant Surveys

In 2022, surveys were conducted on the Civic Rancho Meadows and Pugh properties during the months of March, April, May, and September, and a total of one population of covered plant species, big tarplant, was recorded at the Civic Rancho Meadows property. This population is a part of a previously recorded population and will therefore not increase the population size of a known covered plant species population within the preserves. To date, 79% of the species-specific biological goals for covered plant populations have been met.

## Mt. Diablo Manzanita and Knobcone Pine Dieback Study

Extensive dieback and mortality of manzanitas (*Arctostaphylos auriculata* and *A. manzanita*) and knobcone pine (*Pinus attenuata*) were noted in the southwest portion of Mt. Diablo State Park starting in fall 2020. Although dieback was related to severe plant water stress associated with historic drought conditions, this study suggests that the cause of dieback differed for the pines and manzanitas. Mortality of pines appears to be driven primarily by an outbreak of the California fivespined ips (*Ips paraconfusus*), a bark beetle that infests stressed pines and recently cut pine slash. The bark beetle outbreak likely could have been minimized by better management of slash under the severe drought conditions that existed. For manzanitas, it appears that extreme August–September 2020 heat events in combination with high plant water stress induced scorching of the foliage. However, regrowth occurred in many plants and only a small percentage of the scorched manzanitas appeared to be dead or nearly dead in 2022.

# Stay-Ahead Provision

This section evaluates compliance with the Plan's Stay-Ahead Provision for land cover types, covered plants, vernal pool shrimp, and giant garter snake.

The Stay-Ahead Provision of the HCP/NCCP requires that the amount of each land cover type conserved, restored, or created by the Conservancy as a proportion of the total requirement for each land cover type must be roughly proportional to the impact on that land cover type as a proportion of the total impact expected by all covered activities. For example, if 25% of the expected impacts on grasslands have occurred, then at least 25% of the required land acquisition for grasslands must also have occurred. To provide flexibility during implementation, the Conservancy may fall behind by a maximum of 5% of its conservation strategy requirements and still be in compliance with the Stay-Ahead Provision. This deviation accounts for the likely pattern of infrequent acquisition of large parcels that will allow the Conservancy to jump far ahead of impacts with just one transaction.

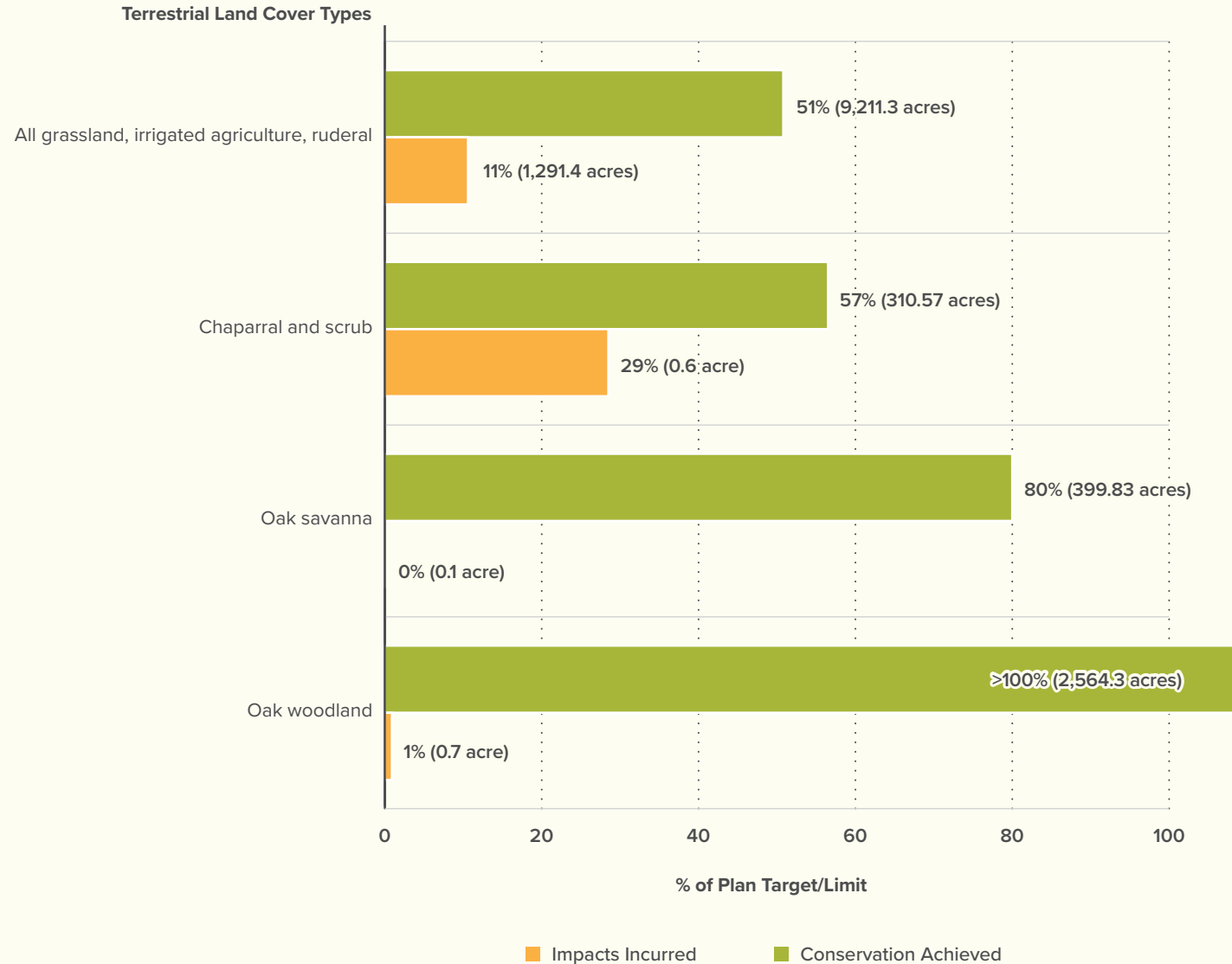


The Conservancy is in compliance with Stay-Ahead requirements. The Plan's Stay-Ahead Provision requires that conservation is ahead of or proportional to impacts for land cover types, plants, vernal pool shrimp, and giant garter snake. This is achieved by acquiring land for the Preserve System in advance of impacts. For vernal pool shrimp, restoration and creation of habitat in addition to preservation is an alternative, and purchase of an equivalent amount of preservation or restoration credit is an option for mitigation.

**Figure 7** displays the conservation achieved and impacts incurred for terrestrial land cover types; **Figure 8** summarizes the same for aquatic land cover types and streams. The reporting period (Year 15) represents 50% of the permit term. If a constant rate of impacts is assumed, allowable impacts should be at about 50% of the impact cap.

The following pages show Stay-Ahead compliance for land cover types (**Table 13** and **Figure 9**), plants (**Table 14**), vernal pool shrimp (**Table 15**), and giant garter snake (**Table 16**).

### Figure 7. Comparison of Conservation Achieved to Impacts Incurred for Terrestrial Land Cover Types—Cumulative

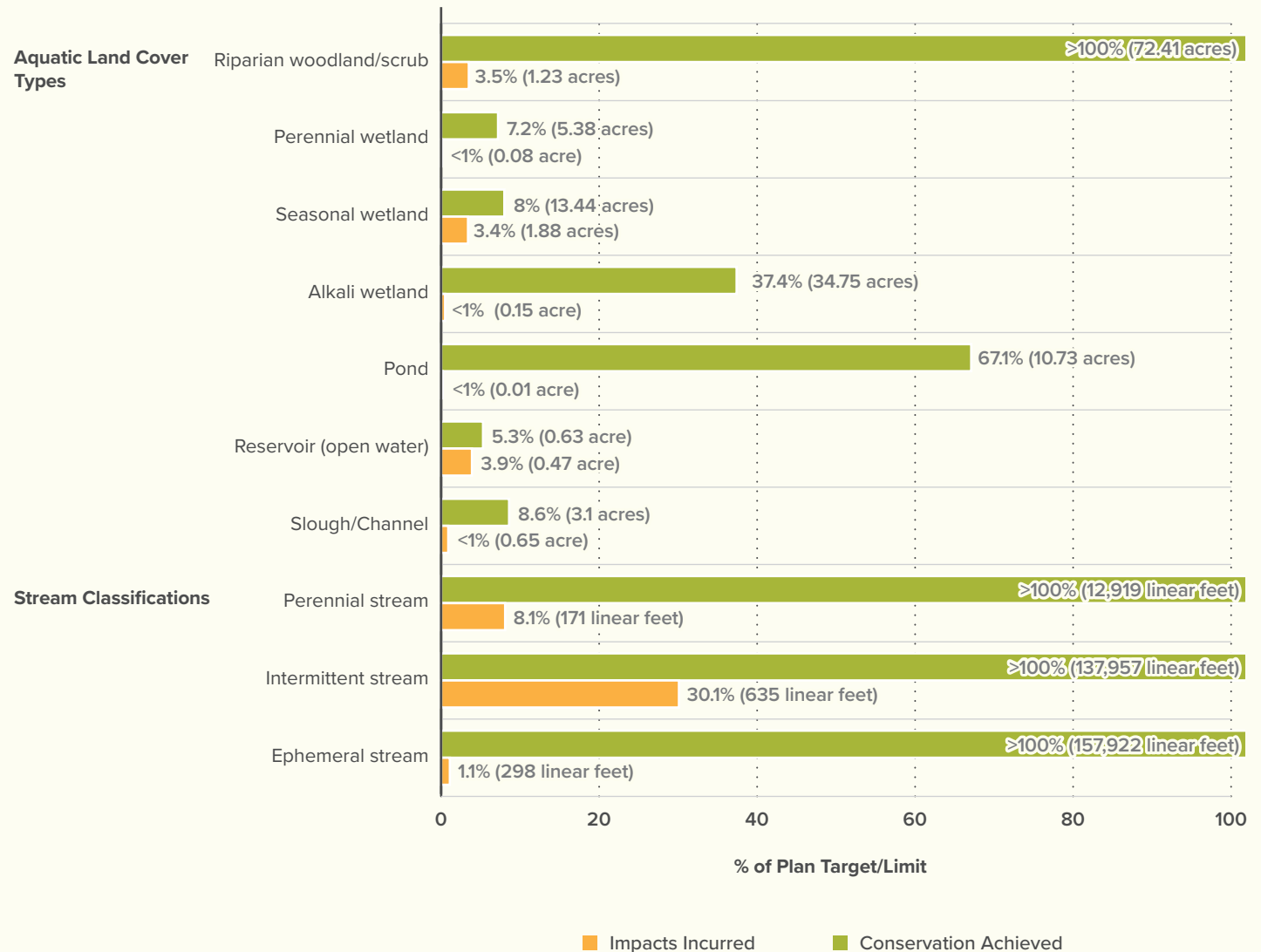


All terrestrial land cover types have achieved more than 50% of protection requirements. Impacts have been small in comparison to the impacts permitted.



### Figure 8. Comparison of Conservation Achieved to Impacts Incurred for Aquatic Land Cover Types and Streams—Cumulative

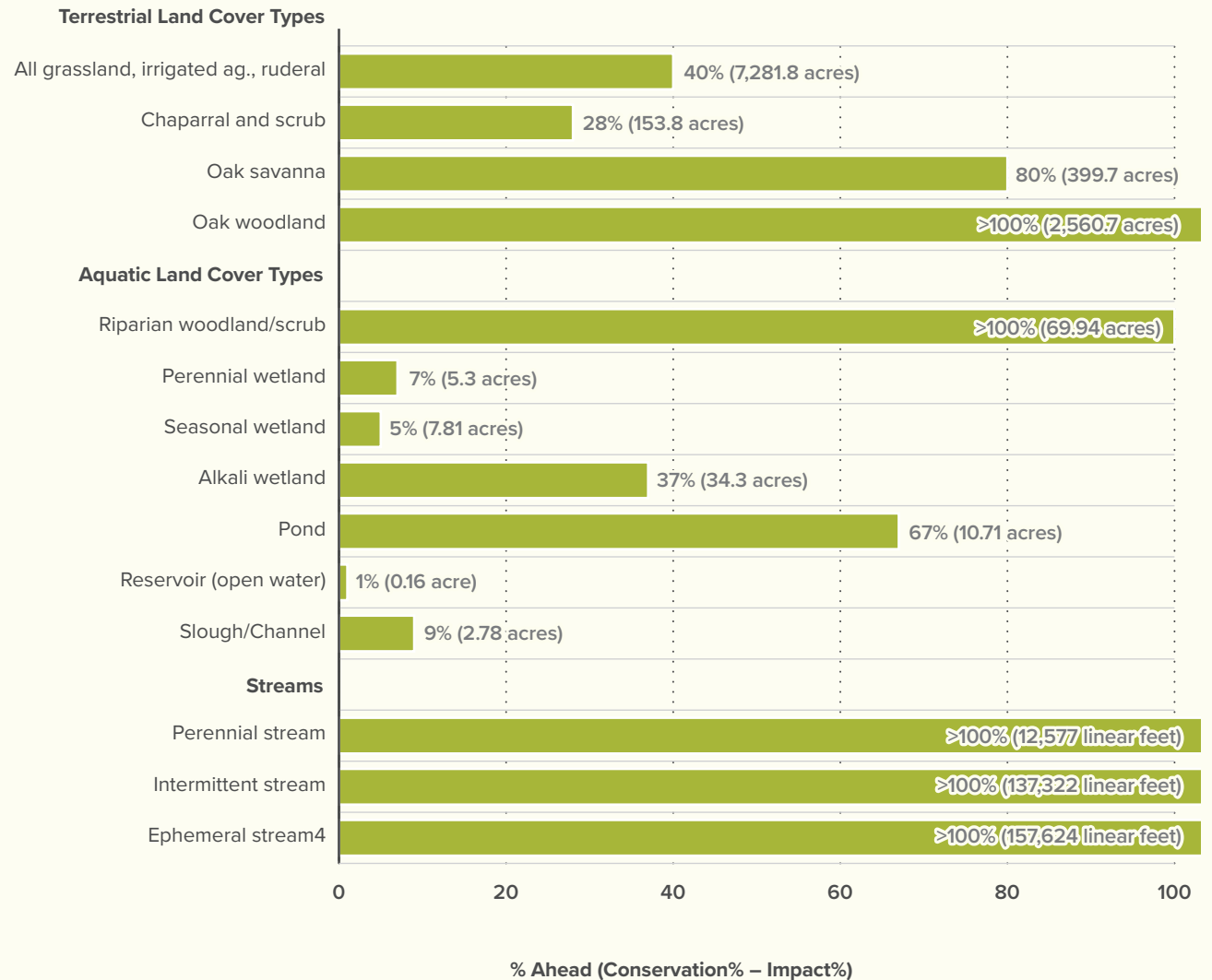
For every aquatic land cover type, conservation is far ahead of impacts incurred. Preservation of riparian woodland/scrub is over 100% of the Plan’s goal, and preservation of pond is about 75%. All impacts on aquatic land cover types are 4% or less than the allowable impacts. For all stream classifications conservation exceeds 100%.



**Note:** Reservoir (open water) is equivalent to “aquatic” and requires conservation ratio of 1:1 wetted acres (pond) and creation of ponds at a ratio of 0.5:1. The stay-ahead calculation is based on a combination of reservoir and pond conservation and creation combined.

### Figure 9. Stay-Ahead Compliance for Land Cover Types

Conservation of all land cover types and stream classifications is ahead of impacts incurred with several land cover types exceeding the required protection for the permit term. Though the Stay-Ahead Provision only reflects land cover acreage 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.



**Table 13. Stay-Ahead Assessment—Land Cover and Streams**

Land Cover Type	Conservation			Impact			Acres/Feet Required to be Ahead	Acres Ahead	% Ahead <sup>c</sup> (Conservation % - Impacts %)
	Protection Required (acres)	Protection to date (acres)	% of Required	Estimated Impacts (acres)	Impacts to date (acres)	% of Impacts			
<b>Terrestrial</b>									
All grassland, irrigated ag., ruderal	18,150	9,211.3	50.8%	12,148.0	1,291.4	10.6%	1,929.5	7,281.8	40%
Chaparral and scrub	550	310.57	56.5%	2.0	0.6	28.5%	156.8	153.8	28%
Oak savanna	500	399.83	80.0%	165.0	0.1	0.0%	0.2	399.7	80%
Oak woodland	400	2,564.3	641.1%	73.0	0.7	0.9%	3.6	2,560.7	640%
<i>Subtotal terrestrial</i>	<i>19,600</i>	<i>11,775.6</i>	<i>60.1%</i>	<i>12,388</i>	<i>1,292.7</i>	<i>10%</i>	<i>2,090.0</i>	<i>10,396.0</i>	<i>50%</i>
<b>Aquatic</b>									
Riparian woodland/scrub	70	72.41	103.4%	35.0	1.23	3.5%	2.47	69.94	100%
Perennial wetland <sup>a</sup>	75	5.38	7.2%	75.0	0.08	0.1%	0.08	5.30	7%
Seasonal wetland	168	13.44	8.0%	56.0	1.88	3.4%	5.63	7.81	5%
Alkali wetland	93	34.75	37.4%	31.0	0.15	0.5%	0.45	34.30	37%
Pond	16	10.73	67.1%	8.0	0.01	0.2%	0.02	10.71	67%
Reservoir (open water) <sup>b</sup>	12	0.63	5.3%	12.0	0.47	3.9%	0.47	0.16	1%
Slough/Channel	36	3.1	8.6%	72.0	0.65	0.9%	0.32	2.78	9%
<i>Subtotal aquatic</i>	<i>470</i>	<i>140</i>	<i>29.8%</i>	<i>289</i>	<i>4.47</i>	<i>2%</i>	<i>9.44</i>	<i>131.00</i>	<i>28%</i>
<b>Stream (length in linear feet)</b>									
Perennial stream	4,224	12,919	305.9%	2,112	171	8.1%	342	12,577	298%
Intermittent stream	2,112	137,957	6532.1%	2,112	635	30.1%	635	137,322	6502%
Ephemeral stream <sup>d</sup>	26,400	157,922	598.2%	26,400	298	1.1%	298	157,624	597%
<i>Subtotal stream length</i>	<i>32,736</i>	<i>308,798</i>	<i>943.3%</i>	<i>30,624</i>	<i>1,104</i>	<i>4%</i>	<i>1,275</i>	<i>307,523</i>	<i>940%</i>
<b>Totals</b>									
Acres	30,300	11,927.4	39%	12,677	1,297.2	10.2%	2,099.6	10,538.2	29%
Linear feet	32,736	308,798	943%	30,624	1,104	3.6%	1,275	307,523	940%

**Notes**

a Perennial wetlands are equivalent to permanent wetlands.

b Reservoir (open water) is equivalent to “aquatic” and requires conservation ratio of 1:1 wetted acres (pond) and creation of ponds at a ratio of 0.5:1. The stay-ahead calculation is based on a combination of reservoir and pond conservation and creation combined.

c 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.

d Many of the streams identified as “classification pending” will ultimately be classified as ephemeral. As such, they are tracked as ephemeral streams for the purposes of the Stay-Ahead Provision.

**Table 14.** Stay-Ahead Assessment—Plants

Common Name	Scientific Name	Conservation	Impacts	Difference	% Ahead
Mount Diablo manzanita	<i>Arctostaphylos auriculata</i>	0	0	0	—
Brittlescale	<i>Atriplex depressa</i>	3	0	3	100%
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	10	1 <sup>a</sup>	9	90%
Big tarplant	<i>Blepharizonia plumosa</i>	13	0	13	100%
Mount Diablo fairy lantern	<i>Calochortus pulchellus</i>	6	0	6	100%
Recurved larkspur	<i>Delphinium recurvatum</i>	0	0	0	—
Round-leaved filaree	<i>Erodium macrophyllum</i>	5	— <sup>b</sup>	5	100%
Diablo helianthella	<i>Helianthella castanea</i>	13	0	13	100%
Brewer's dwarf flax	<i>Hesperolinon breweri</i>	6	0	6	100%
Showy madia	<i>Madia radiata</i>	0	0	0	—
Adobe navarretia <sup>c</sup>	<i>Navarretia nigelliformis</i> subsp. <i>nigelliformis</i>	0	0	0	—
Shining navarretia <sup>c</sup>	<i>Navarretia nigelliformis</i> subsp. <i>radians</i>	(7)	1	(7)	—
<b>Total</b>		<b>49</b>	<b>1</b>	<b>48</b>	

**Notes**

- a 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*).
- b 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.
- c 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 15.** Stay-Ahead Summary—Vernal Pool Shrimp

Project Name/ Preserve Property Name	Species	Impacts to Date (acres) <sup>a</sup>	Preserved Occupied to Date (acres)	Restored/ Created Occupied to Date (acres)
<b>Impacts</b>				
Deer Valley Road Safety Improvements Project, 2012	VPFS	0.060		
Chevron KLM Site 1357 Maintenance Project, 2013	Covered shrimp	0.007		
<b>Restoration, Creation, and Preservation</b>				
Campos	VPFS		0.550	
Casey	VPFS and mid-valley fairy shrimp		0.313	
Coelho	VPFS		0.980	
Souza I	VPFS		0.001	
Souza II	VPFS		0.180	
Souza II-Corral <sup>b</sup>	VPFS			0.4002
Vaquero Farms South	VPFS		0.052	
Vaquero Farms South (Pool 1)	VPFS			0.070
Vaquero Farms South (Pool 3)	VPFS			0.150
<b>Total</b>		<b>0.067</b>	<b>2.076</b>	<b>0.620</b>

**Abbreviation**

VPFS = vernal pool fairy shrimp

**Notes**

- a The 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.
- b 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 continued to survey for 10 years (through 2022) to determine if VPFS are present; VPFS have not be found in this pool.



**Table 16.** Stay-Ahead Summary—Giant Garter Snake

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		
Cypress Preserve, 2021 <sup>a</sup>	0.43	12.46		
Nunn Property (Preserve System Acquisition) <sup>b</sup>			3.10	612.71
<b>Total</b>	<b>0.59</b>	<b>28.58</b>	<b>3.10</b>	<b>612.71</b>

**Notes**

The 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.

- a The Cypress Preserve project’s impacts to GGS habitat is mitigated through an applicant-led restoration project and therefore the impact acreages are not included in the “total” in this table. The Cypress Preserve project is being constructed in phases. Impacts in this table represent all impacts to GGS from the entire project.
- b 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.

# Changed and Unforeseen Circumstances

This chapter notes any changed or unforeseen circumstances that occurred during the reporting period.

USFWS’s “No Surprises” Regulation defines *changed circumstances* as those circumstances affecting a species or geographic area covered by an HCP that can be reasonably anticipated and to which the parties preparing the HCP can plan a response. Unforeseen circumstances cannot be reasonably anticipated and do not require a response to remain in compliance with permit conditions. The NCCP Act has a similar provision for NCCPs.

No changed or unforeseen circumstances occurred during the reporting period.



# Finances

## Budget, Expenditures, and Funding

This section includes the economic assumptions on which the Plan was based, summarizes all revenues received, and assesses the post-permit term funding strategy.

To develop the 2022 budget, the Conservancy analyzed cost projections from the HCP/NCCP, previous years' actual costs, and the anticipated work plan. The expenditures for the reporting period to implement the HCP/NCCP totaled \$3,096,040 (**Figure 10**). The Conservancy's expenditures include program administration, land acquisition, planning and design, environmental compliance, preserve management, monitoring, and habitat restoration. Overall, the Plan anticipated 57.5% of funding from fees and 42.5% from non-fee sources. To date, fee funding makes up 25% and non-fee funding 75% of revenue (**Figure 11**).



Fee-based funding includes fees for development, wetland mitigation, temporary impacts, rural road fees, and contribution to recovery. Contributions to recovery include charges on certain covered activities, levied on Participating Special Entities to contribute funds over and above fee requirements to contribute to the recovery of species in the inventory area. These fees collectively pay for the full cost of mitigating covered activities' effects on the covered species and natural communities addressed by the Plan.

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, and 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 and are reviewed and approved by USFWS and CDFW before acceptance of these funds. No revenue from non-covered activities were collected in 2022. Only one such project—the Kirker Pass Road Northbound Truck Climbing Lane (Area Outside HCP/NCCP) (2018)—was not covered by the HCP/NCCP but fees were received by the Conservancy to facilitate their mitigation obligations.

Non-fee-based funding includes funding from local, state, and federal sources. Grant funding from these sources assist with Plan implementation activities, including land acquisition, restoration and creation, and preserve management and monitoring. In addition, foundation grants (e.g., Gordon and Betty Moore Foundation) also fund these Plan implementation activities.

A requirement of the HCP/NCCP is to develop a long-term funding strategy to provide for the stewardship of the Preserve System in perpetuity. Post-permit term costs would be funded by a portion of mitigation fees and other revenue transferred to an endowment over time. The endowment would grow with reinvested earnings through the end of the permit term. No withdrawals would be made from the endowment to fund the HCP/NCCP during the permit term. At the end of the permit term, the endowment generates ongoing earnings sufficient to fully fund post-permit management and monitoring costs in perpetuity and adjusted for inflation. After the HCP/NCCP permit term ends, distributions from an endowment will be used for long-term management and monitoring of the Preserve System.

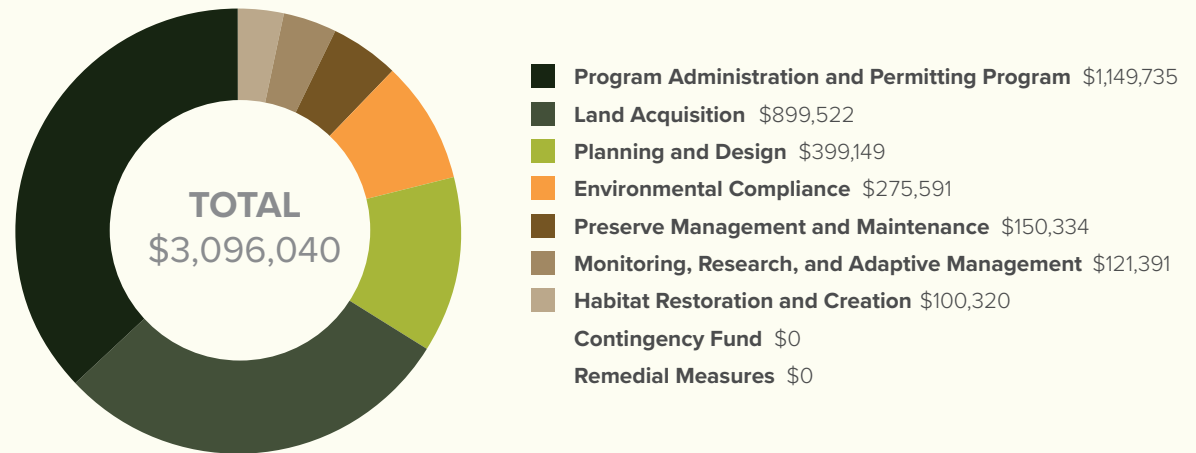
The Conservancy established an endowment account (Endowment) with the Regional Parks Foundation in 2020. Since its establishment, deposits have been made to the Endowment, and its standing at the end of 2022 is at \$6,706,268.



**Figure 10. Summary of Expenditures**

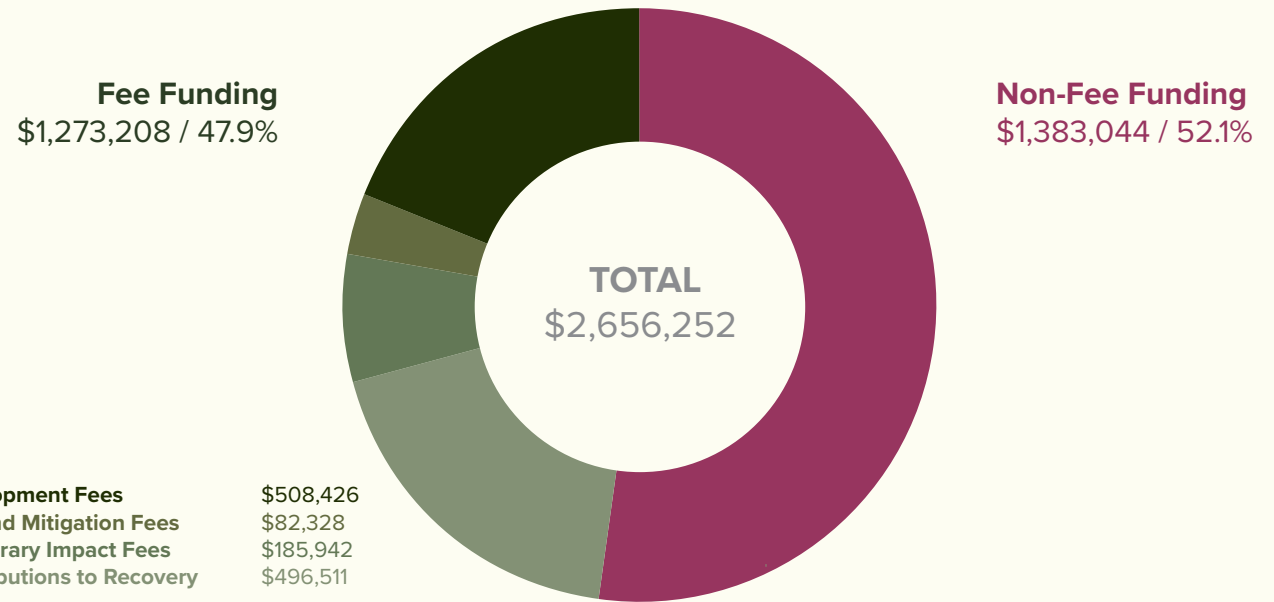
**Actuals (Reporting Period)**

The expenditures for the reporting period to implement the HCP/NCCP totaled \$3,096,040. Less budget was spent this year due to fewer land acquisitions than forecast.



## Figure 11. Summary of Revenue

### Revenue (Reporting Period)



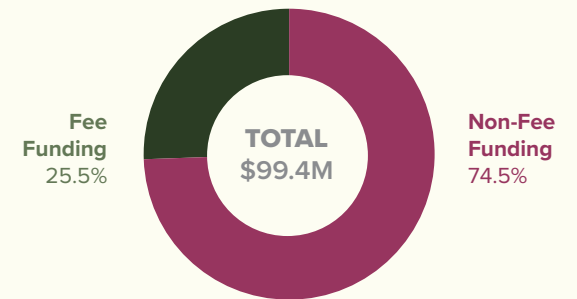
For the reporting period, the majority of fee funding came from development fees and contributions to recovery, while non-fee funding mainly came from grants.

### Plan Assumptions



Maximum Urban Development Area assumptions were used.

### Actual Revenue (Cumulative)



## Mitigation Fee Act Annual Reporting

The Annual Report also functions as the Conservancy's annual reporting on mitigation fees collected pursuant to California Government Code Section 66000 et seq. ("Mitigation Fee Act"), which requires local agencies to provide an accounting of fees charged for development projects. The requirement set forth under Government Code Section 66006(b)(1) provides that each local agency is required on an annual basis, within 180 days after fiscal year end (June 30), for each separate account, to make available to the public the following information.

- 1. A brief description of the type of fee in the account or fund, and the amount of the fee (Table 17):**
  - a) **Development Fee.** 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 that land and habitat, and the administrative actions necessary to accomplish these tasks, as more particularly set forth in the HCP/NCCP. The Development Fee imposed on a development project is determined based on the Development Fee Zone in which the project is located.
  - b) **Wetland Mitigation Fee.** The purpose of the Wetland Mitigation Fee is to mitigate for impacts to Jurisdictional Wetlands and Waters, riparian woodland/scrub, or stream buffers. The Wetland Mitigation Fee revenues will be used to fund the restoration, creation and management of Jurisdictional Wetlands and Waters and riparian woodland/scrub, and the administrative actions necessary to perform these tasks, as more particularly set forth in the HCP/NCCP.
  
- 2. The amount of fees collected and interest earned, and the beginning and ending balance of the account or fund (Table 18).**

- 3. 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.**

Development Fees were expended on a variety of land acquisition, preserve management and monitoring, and habitat conservation plan implementation activities in 2022.

Wetland Mitigation Fees collected in 2022 were expended fully on the planning and design activities for the Knightsen Wetland Restoration and Flood Protection Project. The total cost of the planning phase for this project totals \$1,658,000, with 6.02% funded by Wetland Mitigation Fees and interest in 2022.

- 4. 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.**

Construction of the Knightsen Wetland Restoration and Flood Protection Project is scheduled for construction in 2024/2025.

- 5. 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.**

No interfund transfers or loans have been made.

- 6. The amount of refunds made pursuant to Government Code section 66001(e) and any allocations pursuant to Government Code section 66001(f).**

No refunds were made.

**Table 17. 2022 Fee Schedule**

Fee Type	With Fee Audit	Without Fee Audit
<b>Development Fees (per acre, unless otherwise stated)</b>		
Zone I	\$18,937.95	\$19,679.42
Zone II	\$37,875.90	\$39,358.84
Zone III	\$9,468.98	\$9,840.54
<b>Wetland Mitigation Fees</b>		
Riparian woodland/scrub	\$105,515.99	\$89,571.31
Perennial Wetland	\$159,911.71	\$122,571.26
Seasonal Wetland	\$374,220.31	\$265,571.06
Alkali wetland	\$378,310.21	\$251,428.23
Pond	\$205,923.71	\$133,571.25
Aquatic (open water)	\$102,962.44	\$67,571.34
Slough/ Channel	\$147,029.10	\$152,428.36
Streams 25 feet wide or less—fee per linear foot	\$542.59	\$730.25
Streams greater than 25 feet wide—fee per linear foot	\$814.47	\$1,100.00

**Note**

The Permittees were on two different fee schedules. The Conservancy, County, Clayton, and Oakley adopted the 2017 Fee Audit and Nexus Study (Fee Audit) in 2021, and Pittsburg and Brentwood in March and April, 2022, respectively. Temporary impact fees are based on the amounts shown adjusted for duration of impact as set forth in Chapter 9 of the ECCC HCP/NCCP.

**Table 18. 2022 Mitigation Fees**

Beginning Balance	Revenue	Interest Earned	Expended	Ending Balance
<b>Development Fee</b>				
\$4,070,054	\$555,600	\$52,562	\$1,638,691	\$3,039,525
<b>Wetland Mitigation Fee</b>				
\$0	\$82,328	\$17,455	\$99,783	\$0



# Program Administration

This section summarizes any administrative changes, minor modifications, and amendments proposed or approved during the reporting year.

There were no modifications or amendments made to the Plan during the reporting period. Implementation tasks that occurred during the reporting period are described below.

## Coordinated Wetland Permitting

The Conservancy has continued to work with the U.S. Army Corps of Engineers (Corps) to align permitting for impacts on federally regulated waters with the HCP/NCCP permitting. The Corps issued a Regional General Permit (RGP) 1 in 2012, with the most recent renewal on December 1, 2022. The permit will expire 3 years after the reissuance date.

The Conservancy submitted a proposal to the Corps to implement an In-Lieu Fee (ILF) Program. This will comply with the federal Compensatory Mitigation for Losses of Aquatic Resources (Mitigation Rule; 33 [Code



## Program Administration



Vaquero Farms Seasonal  
Wetland Restoration



Save Mount Diablo Volunteer  
Water Crew



Roddy Ranch

of Federal Regulations] CFR Part 332). The proposed ILF Program will be implemented in conjunction with the RGP and HCP/NCCP and will sanction payment of HCP/NCCP fees as eligible mitigation under the RGP. The most recent draft of the ILF documents was submitted to the Corps in May 2022, and the Conservancy entered into a Water Resources Development Act Memorandum of Agreement with the Corps to expedite review and development of the ILF Program and processing of permits under RGP 1.

## Mitigation Fee Audit and Update

The HCP/NCCP requires automatic annual adjustments to 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.

The reporting period was year 15 of the permit term and in accordance with the Plan requirements, work on the mitigation fee audit and update was initiated.

## Public Outreach/Engagement

In 2022, Save Mount Diablo continued to work with volunteers to maintain the Ang property riparian plantings. A volunteer Watering Crew performed tri-weekly summer watering and in July volunteers removed tubes from dead trees and relocated them to other seedlings. In 2022, seven volunteers contributed a total of 85 hours to work on this property.





East Contra Costa County  
Habitat Conservancy