East Contra Costa County Habitat Conservancy

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

Annual Report 2023

East Contra Costa County Habitat Conservancy

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COVER PHOTO: *Briones Ridge, Stephen Joseph*

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Abbreviations

CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
Corps	U.S. Army Corps of Engineers
EBRPD	East Bay Regional Park District
ESA	federal Endangered Species Act
Conservancy	East Contra Costa County Habitat Conservancy
Plan or HCP/NCCP	East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan
HCP	habitat conservation plan
ILF	In-lieu fee
NCCP	natural community conservation plan
O&M	operations and maintenance
RGP	Regional General Permit
USFWS	U.S. Fish and Wildlife Service

Introduction

This document summarizes implementation activities undertaken in the 2023 calendar year (January 1, 2023, through December 31, 2023) and since the start of Plan implementation, detailing 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 2023 calendar year (January 1, 2023, through December 31, 2023) 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 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, and the hydrological restoration monitoring data in this report are from the 2022–2023 water 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 the Plan's covered activities are 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, the Maximum Urban Development Area. These scenarios 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, although the Conservancy currently operates under the Initial Urban Development Area scenario.

Table 1. Covered Species of the Plan

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

Notes

a The Conservancy 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
- FP Proposed for Listing
- 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 types and covered plants.

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

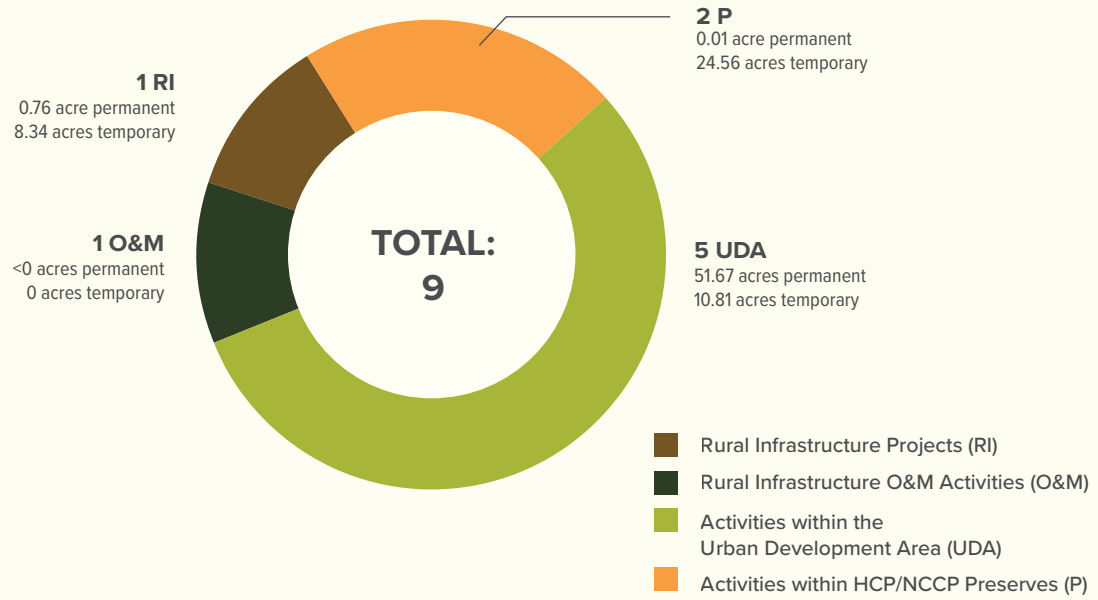
- Rural infrastructure projects
- Rural infrastructure operations and maintenance (O&M) projects
- Activities within the HCP/NCCP Preserves
- Activities within the Urban Development Area

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.

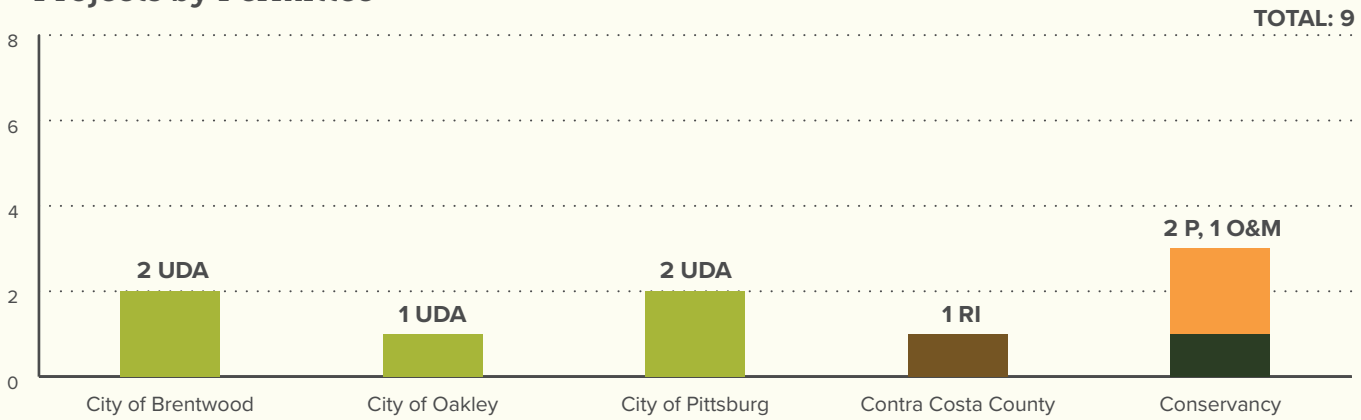
A total of nine activities received permit coverage during the reporting period: five in the Urban Development Area, one rural infrastructure O&M activity, one rural infrastructure project, and two activities within the HCP/NCCP Preserves.

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

Projects by Project Type

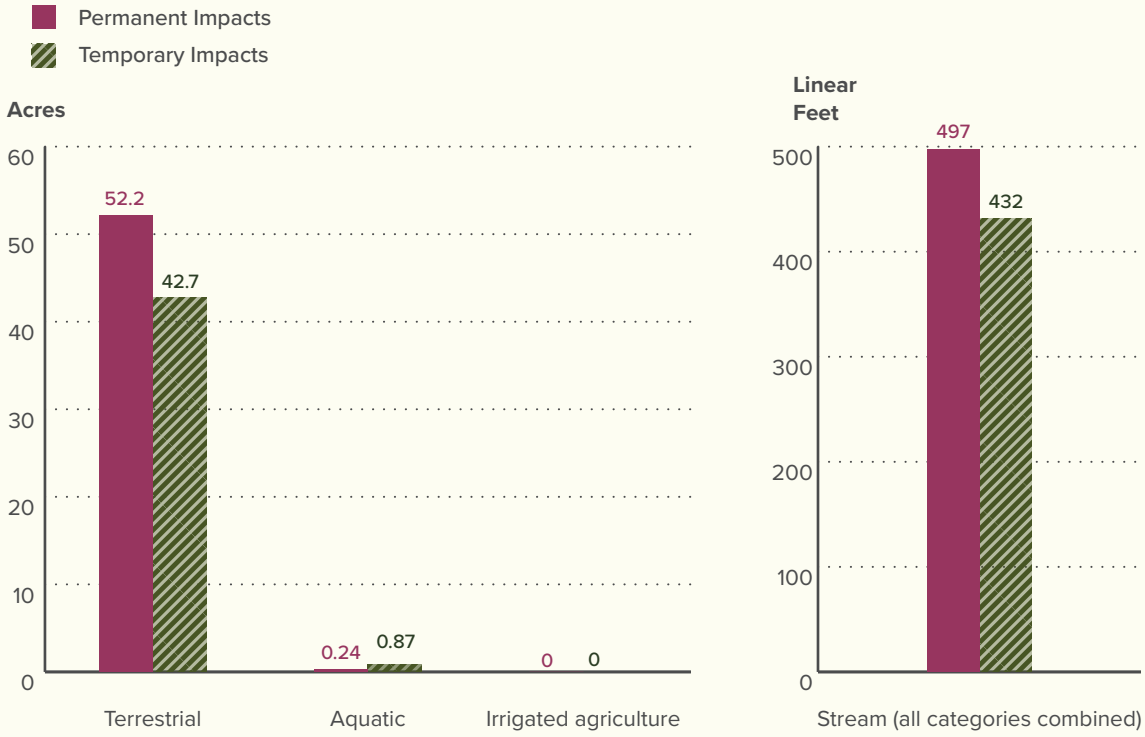


Projects by Permittee



The nine projects undertaken during the reporting period resulted in 42.7 acres temporary impacts and 52.2 acres permanent impacts on terrestrial land cover, 432 linear feet temporary impacts on streams (20 linear feet of perennial stream and 412 linear feet intermittent streams), and 497 linear feet permanent impacts on streams (11 linear feet of perennial stream and 486 linear feet intermittent streams). No ephemeral streams were impacted.

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



Cumulative permanent land cover impacts total 1,349.6 acres, and temporary impacts on land cover total 800.1 acres. In total, 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

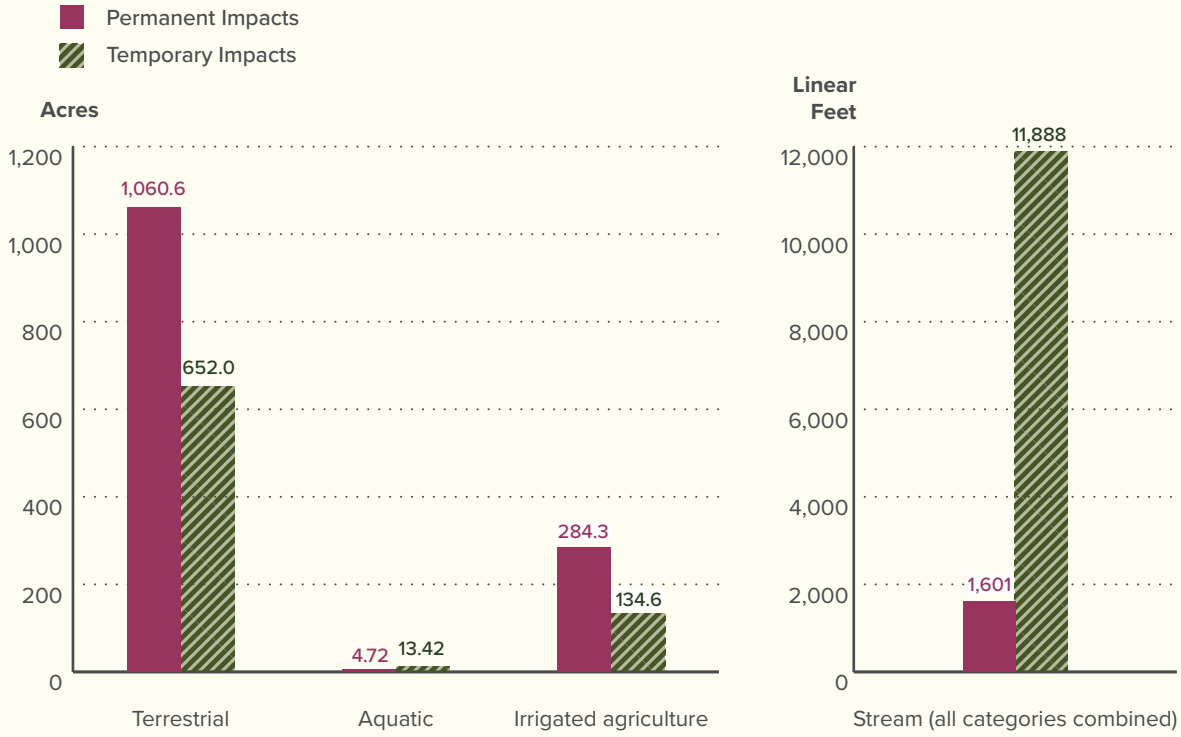


Table 2. Reporting Period Summary of Covered Activities

Project Name	Covered By	Project Type	Location	Description	Permanent Impacts (acres)	Temporary Impacts (acres)
Marsh Creek Road Bridges Replacement Project, Bridges 143 and 145	Contra Costa County	Rural Infrastructure Projects	Unincorporated Antioch/Brentwood area	Replacement of two bridges on Marsh Creek Road to meet current design standards	0.8	8.3
Sand Creek Roadway Extension Phase 1 Project	City of Brentwood	Activities within the Urban Development Area	Southeast of the intersection of Old Sand Creek Road and Heidorn Ranch Road, Brentwood	Extension of Sand Creek Road from the westerly existing terminus at SR 4, across Sand Creek, to Heidorn Ranch Road	3.3	1.9
Orchard Grove (Adams Lane)/ Subdivision 9535	City of Brentwood	Activities within the Urban Development Area	1801 Lone Oak Road, Brentwood	Construction of a 51-lot residential subdivision	16.5	<0.1
Machado Lane Subdivision 9615	City of Oakley	Activities within the Urban Development Area	West side of Machado Lane and south of Cypress Road, Oakley	Construction of a 76-lot residential subdivision	19.9	—
Americana Park Storm Water Bypass Channel	City of Pittsburg	Activities within the Urban Development Area	North Parkside Drive at Power Ave, Pittsburg	Construction of a new flood control channel	0.1	8.9
Solar RV/Boat Storage	City of Pittsburg	Activities within the Urban Development Area	3478 Pittsburg-Antioch Highway, Pittsburg	Construction of a solar RV/boat storage facility	12.0	—
Civic Rancho Meadows Livestock Water Project	ECCC Habitat Conservancy	Activities within the HCP/NCCP Preserves	6301 Chadbourne Road, Unincorporated Contra Costa County	Installation of a water tank and trough to be used by cattle grazing on the Civic Rancho Meadows Preserve property	<0.1	0.1
Nunn Property Maintenance: Ditch Cleaning	ECCC Habitat Conservancy	Activities within the HCP/NCCP Preserves	South of Delta Road, east of Byron Highway, north of Eagle Lane	Maintenance and cleaning of agricultural ditches and replacement of two culverts	—	24.5
T Mobile PL266 Roddy Ranch (Site No: BA01266A)	ECCC Habitat Conservancy	Rural Infrastructure O&M Activities	1 Tour Way, Antioch	Modification of existing telecommunications site	<0.1	—
Total					**52.4**	**43.7**

Note

Numbers in tables may not sum to the total due to rounding.

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
Marsh Creek Road Bridges Replacement Project, Bridges 143 and 145		•						•			•
Sand Creek Roadway Extension Phase 1 Project		•					•	•			
Orchard Grove (Adams Lane)/ Subdivision 9535		•					•	•			
Machado Lane Subdivision 9615							•	•			
Americana Park Storm Water Bypass Channel		•					•	•			
Solar RV/Boat Storage		•					•	•			
Civic Rancho Meadows Livestock Water Project		•						•			
Nunn Property Maintenance: Ditch Cleaning		•						•		•	
T Mobile PL266 Roddy Ranch (Site No: BA01266A)								•			

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
Marsh Creek Road Bridges Replacement Project, Bridges 143 and 145	•	•			•	•			•	•	•		•	•			•	•							•	•			•	•			•	•		
Sand Creek Roadway Extension Phase 1 Project					•	•			•	•	•		•	•			•	•							•	•			•	•						
Orchard Grove (Adams Lane)/ Subdivision 9535									•	•			•	•			•	•											•	•						
Machado Lane Subdivision 9615									•	•			•	•			•	•																		
Americana Park Storm Water Bypass Channel									•	•			•	•			•	•							•	•			•	•						
Solar RV/Boat Storage													•	•			•	•															•	•	•	
Civic Rancho Meadows Livestock Water Project					•	•			•	•			•	•																						
Nunn Property Maintenance: Ditch Cleaning									•	•			•	•			•	•			•	•			•	•			•	•			•	•		
T Mobile PL266 Roddy Ranch (Site No: BA01266A)					•	•			•	•			•	•			•	•																		

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		Adobe Navarretia		Brittlescale		San Joaquin Spearscale		Diablo Helianthella		Caper Fruited Tropido-carpum		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	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS	PS	PCS
Marsh Creek Road Bridges Replacement Project, Bridges 143 and 145	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•					•	•										
Sand Creek Roadway Extension Phase 1 Project	•	•															•	•	•	•																
Orchard Grove (Adams Lane)/ Subdivision 9535																																				
Machado Lane Subdivision 9615																																				
Americana Park Storm Water Bypass Channel	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•											•	•				
Solar RV/Boat Storage																																				
Civic Rancho Meadows Livestock Water Project	•	•	•	•	•	•			•	•	•	•	•	•	•	•	•	•	•	•					•	•					•	•				
Nunn Property Maintenance: Ditch Cleaning	•	•							•	•					•	•	•	•	•	•	•	•	•	•			•	•			•	•			•	•
T Mobile PL266 Roddy Ranch (Site No: BA01266A)									•	•					•	•			•	•																

Abbreviations

AMM Avoidance and minimization measures
CM Construction monitoring
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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Terrestrial				
Annual grassland	0.4	33.3	137.4	291.9
Alkali grassland	0.0	0.8	0.8	4.0
Ruderal	51.6	7.4	920.9	348.4
Chaparral and scrub	0.0	0.0	0.6	1.7
Oak savanna	0.0	0.0	0.1	2.5
Oak woodland	0.2	1.2	0.9	3.5
Subtotal terrestrial	*52.2*	*42.7*	*1,060.6*	*652.0*
Aquatic				
Riparian woodland/scrub	0.14	0.50	1.37	2.68
Perennial wetland [a]	0.00	0.04	0.08	0.77
Seasonal wetland	0.00	0.00	1.88	4.11
Alkali wetland	0.00	0.00	0.15	1.00
Pond	0.10	0.00	0.12	0.11
Reservoir (open water) [b]	0.00	0.00	0.47	4.14
Slough/channel	0.00	0.33	0.65	0.61
Subtotal aquatic	*0.24*	*0.87*	*4.72*	*13.42*
Stream length by width category				
< 25 feet wide	0	0	707	6,719
> 25 feet wide	497	432	894	5,170
Stream length by type and order				
Perennial	11	20	182	4,717
Intermittent	486	412	1,121	4,923
Ephemeral, 3rd or higher order	0	0	0	225
Ephemeral, 1st or 2nd order	0	0	298	2,024
Subtotal stream length	*497*	*432*	*1,601*	*11,888*
Irrigated agriculture				
Cropland	0.0	0.0	168.6	33.4
Pasture	0.0	0.0	40.3	93.8
Orchard	0.0	0.0	14.5	0.2
Vineyard	0.0	0.0	61.0	7.2
Subtotal irrigated agricultural	*0.0*	*0.0*	*284.3*	*134.6*
Totals (excludes subtypes)				
Acres	52.4	43.6	1,349.6	800.1
Linear feet	497	432	1,601	11,888

Notes

Numbers in tables may not sum to the total due to rounding.

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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Brushy				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.01	0.12
Seasonal wetland	0	0	0.00	0.00
Alkali wetland	0	0	0.02	0.63
Pond	0	0	0.02	0.03
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.01
Subtotal aquatic	*0*	*0*	*0.04*	*0.79*
Stream (linear feet)				
Total stream length	0	0	132	510
Stream length by width category				
< 25 feet wide	0	0	110	392
> 25 feet wide	0	0	22	118
Stream length by type and order				
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	0	76	96
Subtotal stream length	*0*	*0*	*132*	*510*
Clifton Court Forebay				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.00	0.00
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0*	*0.00*	*0.00*
Stream (linear feet)				
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
Stream length by type and order				
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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Deer				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.00	0.00
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0*	*0.00*	*0.00*
Stream (linear feet)				
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
Stream length by type and order				
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*
East Antioch				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.00	0.03
Seasonal wetland	0	0	0.00	0.07
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0*	*0.00*	*0.09*
Stream (linear feet)				
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
Stream length by type and order				
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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
East County Drainages				
Aquatic (acres)				
Riparian woodland/scrub	0	0.11	0.42	0.31
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.47	1.57
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.34	3.35
Slough/channel (includes stream)	0	0.33	0.58	0.40
Subtotal aquatic	*0.00*	*0.45*	*1.81*	*5.63*
Stream (linear feet)				
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
Stream length by type and order				
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*
Kellogg				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.05	0.31
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.29	0.01
Alkali wetland	0	0	0.00	0.11
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.07	0.14
Subtotal aquatic	*0*	*0*	*0.41*	*0.57*
Stream (linear feet)				
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
Stream length by type and order				
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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Kirker				
Aquatic (acres)				
Riparian woodland/scrub	0	0.00	0.05	0.27
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.00	0.00
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0.00*	*0.05*	*0.27*
Stream (linear feet)				
Total stream length	0	0	0	45
Stream length by width category				
< 25 feet wide	0	0	0	45
> 25 feet wide	0	0	0	0
Stream length by type and order				
Perennial	0	0	0	0
Intermittent	0	0	0	35
Ephemeral, 3rd or higher order	0	0	0	10
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	*0*	*0*	*0*	*45*
Lower Marsh				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.04
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.00	0.00
Alkali wetland	0	0	0.13	0.24
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.13	0.79
Slough/channel (includes stream)	0	0	0.00	0.06
Subtotal aquatic	*0*	*0*	*0.26*	*1.13*
Stream (linear feet)				
Total stream length	11	20	44	4,680
Stream length by width category				
< 25 feet wide	0	0	0	586
> 25 feet wide	11	20	44	4,094
Stream length by type and order				
Perennial	11	20	11	4,231
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	*11*	*20*	*44*	*4,680*

Watershed/Basin and Land Cover Type	Reporting Period		Cumulative [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Lower Mt. Diablo				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.00	0.00
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0*	*0.00*	*0.00*
Stream (linear feet)				
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
Stream length by type and order				
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*
Oakley				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.98	0.00
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0*	*0.98*	*0.00*
Stream (linear feet)				
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
Stream length by type and order				
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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Sand				
Aquatic (acres)				
Riparian woodland/scrub	0.07	0.01	0.37	0.74
Perennial wetland [a]	0	0	0.04	0.57
Seasonal wetland	0	0	0.02	2.37
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0.07*	*0.01*	*0.43*	*3.68*
Stream (linear feet)				
Total stream length	106	42	401	3,681
Stream length by width category				
< 25 feet wide	0	0	295	3,639
> 25 feet wide	106	42	106	42
Stream length by type and order				
Perennial	0	0	0	0
Intermittent	106	42	401	3,681
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	*106*	*42*	*401*	*3,681*
Upper Marsh				
Aquatic (acres)				
Riparian woodland/scrub	0.07	0.39	0.41	1.00
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.06	0.03
Alkali wetland	0	0	0.00	0.00
Pond	0.10	0	0.11	0.08
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0.17*	*0.39*	*0.59*	*1.10*
Stream (linear feet)				
Total stream length	380	300	679	1,651
Stream length by width category				
< 25 feet wide	0	0	58	978
> 25 feet wide	380	300	621	673
Stream length by type and order				
Perennial	0	0	93	191
Intermittent	380	300	557	556
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	29	904
Subtotal stream length	*380*	*300*	*679*	*1,651*

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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Upper Mt. Diablo				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.02	0.02
Seasonal wetland	0	0	0.01	0.00
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0*	*0.02*	*0.02*
Stream (linear feet)				
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
Stream length by type and order				
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*
West Antioch				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.00	0.00
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0	0.00	0.00
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0*	*0*	*0.00*	*0.00*
Stream (linear feet)				
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
Stream length by type and order				
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 [c]	
	Permanent Impacts	Temporary Impacts	Permanent Impacts	Temporary Impacts
Willow				
Aquatic (acres)				
Riparian woodland/scrub	0	0	0.08	0.02
Perennial wetland [a]	0	0.04	0.02	0.04
Seasonal wetland	0	0	0.04	0.06
Alkali wetland	0	0	0.00	0.00
Pond	0	0	0.00	0.00
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.00
Subtotal aquatic	*0.00*	*0.04*	*0.14*	*0.12*
Stream (linear feet)				
Total stream length	0	70	57	652
Stream length by width category				
< 25 feet wide	0	0	21	549
> 25 feet wide	0	70	36	103
Stream length by type and order				
Perennial	0	0	0	0
Intermittent	0	70	57	109
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	543
Subtotal stream length	*0*	*70*	*57*	*652*
Total				
Aquatic (acres)				
Riparian woodland/scrub	0.14	0.50	1.37	2.68
Perennial wetland [a]	0.00	0.04	0.08	0.77
Seasonal wetland	0.00	0.00	1.88	4.11
Alkali wetland	0.00	0.00	0.15	0.98
Pond	0.11	0.00	0.13	0.11
Reservoir (open water) [b]	0.00	0.00	0.47	4.14
Slough/channel (includes stream)	0.00	0.33	0.65	0.61
Total aquatic	**0.25**	**0.87**	**4.73**	**13.39**
Stream (linear feet)				
Total stream length	497	432	1,601	11,848
Stream length by width category				
< 25 feet wide	0	0	707	6,719
> 25 feet wide	497	432	894	5,170
Stream length by type and order				
Perennial	11	20	182	4,717
Intermittent	486	412	1,121	4,923
Ephemeral, 3rd or higher order	0	0	0	225
Ephemeral, 1st or 2nd order	0	0	298	2,024
Total stream length	**497**	**432**	**1,601**	**11,888**

Notes

Numbers in tables may not sum to the total due to rounding.

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 [a]	Impacts (occurrences)	
			Reporting Period	Cumulative
Mount Diablo manzanita	*Arctostaphylos auriculata*	0	—	0
Brittlescale	*Atriplex depressa*	1	—	0
San Joaquin spearscale	*Atriplex joaquiniana*	0	—	1 [b]
Big tarplant	*Blepharizonia plumosa*	1	—	0
Mount Diablo fairy lantern	*Calochortus pulchellus*	0	—	0
Recurved larkspur	*Delphinium recurvatum*	1	—	0
Round-leaved filaree	*Erodium macrophyllum*	2	—	— [c]
Diablo helianthella	*Helianthella castanea*	0	—	0
Brewer's dwarf flax	*Hesperolinon breweri*	0	—	0
Showy madia	*Madia radiata*	0	—	0
Adobe navarretia	*Navarretia nigelliformis* ssp. *nigelliformis*	1	—	0
Total		**6**	**0**	**1**

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 onsite and is as abundant as it was 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

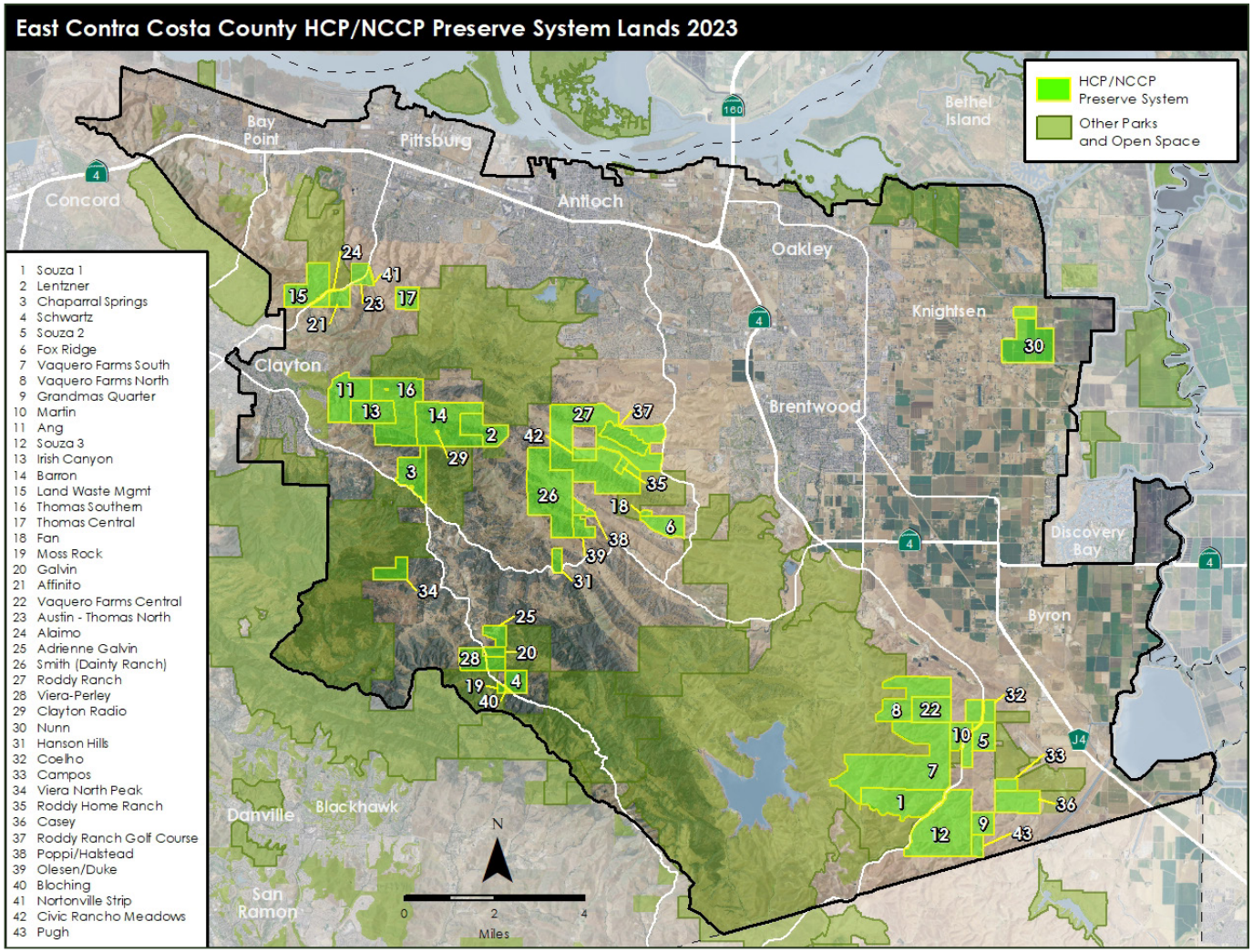
There were no new land acquisitions during the reporting period. The Plan's Preserve System stands at 43 properties encompassing over 14,400 acres of land, approximately 12,700 acres of which are credited toward the Plan's acquisition and preservation requirements. All but one of the acquisitions were completed in partnership with the East Bay Regional Park District (EBRPD), a Permittee of the Plan. EBRPD owns these properties and, together with the Conservancy, manages the Preserve System lands. **Figure 4** shows the current Preserve System.

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.

The Conservancy's Preserve System consists of 43 properties encompassing approximately 12,700 acres of new conservation.

Figure 4. Preserve System Map



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 under the Maximum Urban Development Area scenario.

Figure 5. Progress toward Assembling the Preserve System

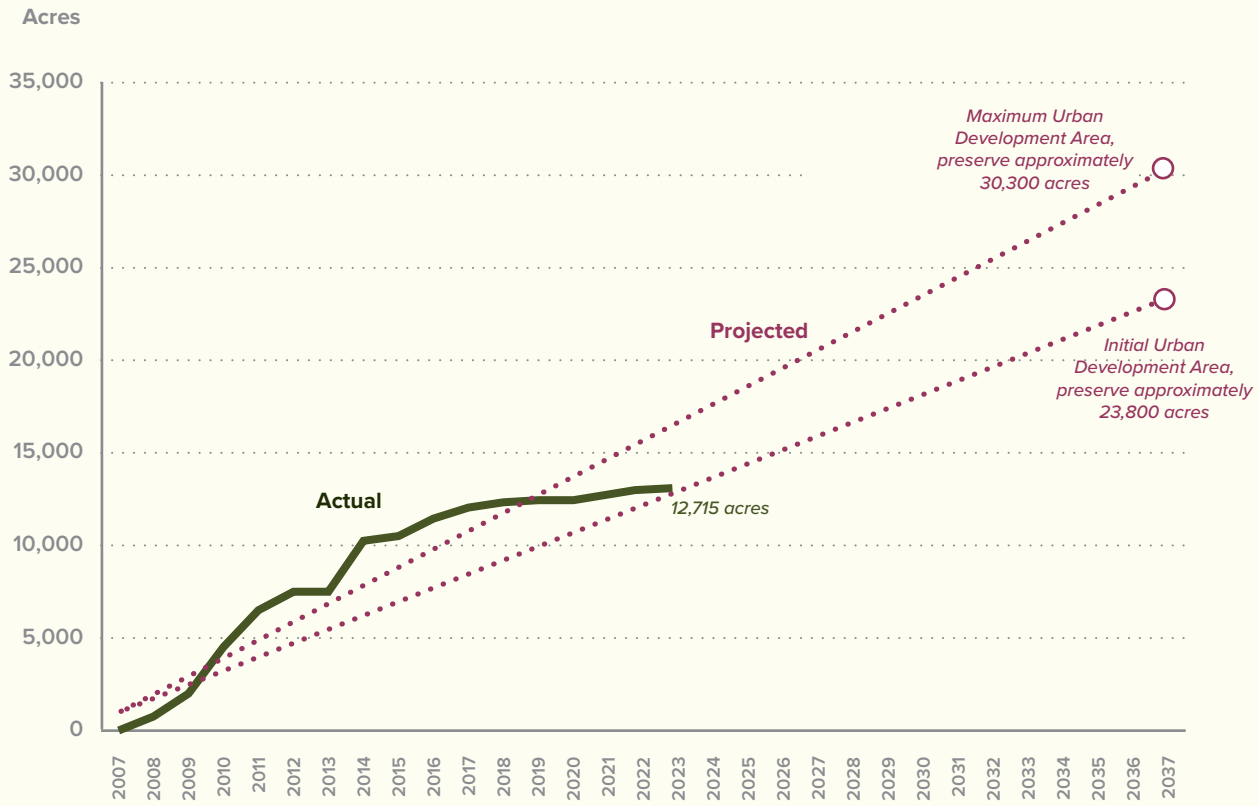


Table 8. Summary of Land Acquisition and Natural Community Protection by Land Cover Type

Land Cover Type	Land Cover Requirements[a] (acres)	Reporting Period (acres)		Cumulative (acres)		Percent Complete (%)
	Protection	Protection	Existing Easement (no credit)[b]	Protection	Existing Easement (no credit)[c]	Protection
Terrestrial						
Annual grassland	16,500	—	—	8,165.6	1,463.6	49%
Alkali grassland	1,250	—	—	273.2	17.5	22%
Ruderal	—	—	—	118.6	25.7	—
Chaparral and scrub	550	—	—	310.6	0.0	56%
Oak savanna	500	—	—	399.8	23.0	80%
Oak woodland	400	—	—	2,564.0	131.5	641%
Rock outcrops	—	—		18.6	4.5	—
Aquatic						
Riparian woodland/scrub	70	—	—	77.80	0.21	111%
Perennial wetland[c]	75	—	—	5.54	5.78	7%
Seasonal wetland	168	—	—	24.20	2.40	14%
Alkali wetland	93	—	—	37.20	4.30	40%
Pond	16	—	—	11.97	2.92	75%
Reservoir (open water)[d]	12	—	—	2.40	0.00	20%
Slough/channel	36	—	—	3.10	0.00	9%
Irrigated agriculture						
Cropland	400	—	—	541.4	—	135%
Pasture	—	—	—	71.3	—	—
Orchard	—	—	—	4.7	—	—
Vineyard	—	—	—	—	—	—
Other						
Nonnative woodland	—	—	—	*0.7*	*0.0*	—
Urban	—	—	—	*61.3*	*0.8*	—
Wind turbines	—	—	—	*23.0*	*0.0*	—
Stream (length in linear feet)						
Perennial	4,224	—	—	12,919	889	306%
Intermittent	2,112	—	—	137,958	25,242	6,532%
Ephemeral[e]	26,400	—	—	68,702	878	260%
Classification pending[e]	—	—	—	89,816	16,444	—
Acres required for land acquisition						
Initial Urban Development Area	24,300	0.0	0.0	12,715	1,682	52%
Maximum Urban Development Area	30,300	0.0	0.0	12,715	1,682	42%

Notes

Numbers in tables may not sum to the total due to rounding.

a All land cover requirements assume the Maximum Urban Development Area scenario.

b 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).

c Perennial wetlands are equivalent to permanent wetlands.

d Reservoir (open water) is equivalent to aquatic.

e 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 Estimated Requirement [a]	Reporting Period Area Acquired [b]	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	0.00	0%
Preserve-wide slough/channel (acres)	36	0.00	3.10	9%
Preserve-wide stream length (feet)	32,736	0.00	308,798.20	943%
Stream length by type				
Perennial (feet)	4,224	0	12,919	306%
Intermittent (feet)	2,112	0	137,957	6,532%
Ephemeral [c] (feet)	26,400	0	68,702	260%
Classification Pending [b] (feet)	—	0	89,220	—

Notes

Numbers in tables may not sum to the total due to rounding.

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	*Arctostaphylos auriculata*	2	0	0	0%
Brittlescale	*Atriplex depressa*	2 (4) [a]	0	3	150%
San Joaquin spearscale	*Atriplex joaquiniana*	0	0	10	—
Big tarplant	*Blepharizonia plumosa*	3	0 [b]	13	433%
Mount Diablo fairy lantern	*Calochortus pulchellus*	1	0	6	600%
Recurved larkspur	*Delphinium recurvatum*	2	0	0	0%
Round-leaved filaree	*Erodium macrophyllum*	2	1	6	300%
Diablo helianthella	*Helianthella castanea*	2	0	13	650%
Brewer's dwarf flax	*Hesperolinon breweri*	3	0	6	200%
Showy madia	*Madia radiata*	0	0	0	—
Adobe navarretia [c]	*Navarretia nigelliformis* subsp. *nigelliformis*	1	0	0	0%
Shining navarretia [c]	*Navarretia nigelliformis* subsp. *radians*	*0*	*0*	*(7)*	—
Total		**18 (20)**	**1**	**57**	—

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*).

Habitat Restoration and Creation

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 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. All completed restoration projects of the HCP/NCCP are located within the Preserve System. **Figure 6** shows a map of restoration projects.

Table 11 summarizes natural community restoration and creation by land cover type, and **Table 12** 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 13** summarizes restoration acreages. The following section discusses the habitat restoration and creation projects that have not yet met success criteria and are still being monitored annually.

Upper Hess Creek Watershed Restoration Project

The reporting period was Monitoring Year 12 for the Upper Hess Creek Watershed Restoration Project. The winter of 2022–2023 was a wet year, with total rainfall recorded at 16.82 inches, which is 99% of normal. Onsite monitoring occurred in November, December, January, March, and July. Additionally, a wetland delineation of the alluvial valley wetlands was completed in 2023.

Exclusion fence repairs were completed, and cattle were successfully kept out of the restoration area. As a result, the vegetation throughout the alluvial valley was much higher than in past years. Alkali bulrush (*Bolboschoenus robustus*), an obligate wetland plant, was dominant in the wetland portions and provided dense cover. Soils in the wetland areas had anywhere from 5 to 15% redoximorphic features such as concentrations along the soil matrix and in the pore linings. Total mapped wetland acreage in the alluvial valley is 1.09 acres—less than the 2.16 acres projected but an increase over the pre-project conditions.

The restored wetland features within the restoration area are all functioning well and providing native plant and wildlife habitat as well as wetland functions and services. Unfortunately, wild pigs discovered the restoration area in 2023 and damage to several areas was observed. However, with appropriate management this species can be controlled to protect the restoration; this has been identified as a management item for early 2024.

Main stock pond, January 2023. The pond is full and spilling (see right side of top photo).

Overview of alluvial valley wetlands, January 2023.

Vaquero Farms Seasonal Wetlands (Pool 3)

The 2022–2023 season was Year 8 of hydrologic monitoring for the Vaquero Farms Seasonal Wetlands (Pool 3). Rainfall data from a nearby station showed 15.78 inches of precipitation, which was almost double compared to the previous year (9.03 inches) and approximately 210% compared to normal rainfall for the area.

March 2023. California tiger salamander larvae and vernal pool fairy shrimp were present in the water at this time.

The wetland was fully inundated in January and March, and by May the wetland was dry, tracking with the control wetland. The hydrologic performance criterion for Year 5 was met with the wetland remaining inundated to a depth of 1 inch or greater for at least 30 days. The vegetation cover at this pool is low with curly dock (*Rumex crispus*), a wetland indicator species, scattered in the middle and at the edges of the pool representing between 5 and 7% cover, meaning that this wetland also met the Year 5 success criterion of 5% hydrophytic vegetation cover or greater.

Souza II Corral Seasonal Wetland

The 2022–2023 season was Year 11 of hydrologic monitoring for the Vaquero Farms Seasonal Wetland 3. Though the Souza II Corral wetland met its wetland success criteria in 2020, monitoring has continued and will continue to determine if the created seasonal wetland supports vernal pool fairy shrimp (*Branchinecta lynchi*), a federally-listed threatened species.

During the monitoring it was noted that the wetland met and exceeded the annual performance criterion for hydrology and was dominated by the native hydrophytic species Great Valley gum plant (*Grindelia camporum*), and thus achieved hydrology and hydrophytic vegetation success once again. In January 2023, all areas of the pool were sampled for vernal pool shrimp species, and only the versatile fairy shrimp (*Branchinecta lindahli*) was identified. This is consistent with results from past years.

Ang Riparian Restoration Project

In late September 2017, the Conservancy partnered with Save Mount Diablo, who initiated a riparian planting project on the 462-acre Ang property. The objective of this riparian planting project is to improve approximately 1.56 acres of riparian woodland habitat for wildlife by filling in gaps of 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. The plantings of valley oak and buckeye were completed in 2018, and plantings of red willow were completed in 2019.

Red willow survival has been the least successful over the four monitoring years (2020–2023) with zero survival recorded in 2022 and two in 2023, while valley oak and buckeye have been more successful with consistently higher numbers of survival at all five riparian planting areas.

Irish Canyon Creek with water in the summertime at Ang, August 2023.

Valley oak at riparian planting area 1, November 2023.

California tiger salamander larvae at Wetland 20, April 2023.

Horse Valley Creek and Wetland Restoration Project

The Horse Valley Creek and Wetland Restoration Project was constructed in 2018. The project is located on the Roddy Ranch property south of the city of Antioch. Past development activities in the area had impacted site hydrology and habitat quality. The restoration project involved restoration and alignment of the creek channel and the creation of new wetlands. Monitoring began in 2018 following the completion of construction activities and is required for a 5-year period or until performance standards are met. The performance standards include criteria for wetland creation, wetland covered species habitats, and restored ephemeral creek criteria.

Year 5 saw exceptionally high rainfall, and a total of 36 of the 37 wetlands met the 14-day ponding performance standard. Even with the exceptionally high rainfall, California red-legged frogs were not detected during amphibian surveys. It is unlikely that any of the wetlands on the site will be able to sustain 200+ day hydroperiods required for this species in any but the most exceptionally high rainfall years. Four out of the five wetlands designed as California tiger salamander habitat met the 100-day ponding period to be considered successful.

Vegetation sampling was performed on June 14, 2023, during peak spring bloom. Of the 37 created wetlands, 28 were dominated by wetland vegetation and met the wetland species dominance performance standard; 9 did not. Of the 28 created seasonal wetlands that were dominated by wetland vegetation, 25 were determined to be seasonal wetlands based on the presence of wetland hydrology, totaling 1.76 acres of created seasonal wetlands. All 37 of the created wetlands met the invasive weed performance standard. Channel monitoring confirmed that a total of 571 linear feet were created and a total of 3,629 linear feet were restored. This performance standard has therefore been met.

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 Plan Area. This restoration project includes a series of components along the mainstem of Hess Creek where a 930-foot portion of the creek was re-routed, stabilized, and enhanced. In addition, the project included the restoration of 0.30 acre of seasonal wetlands, 0.08 acre of other waters, and 2.57 acres of riparian woodland. The monitoring plan did not have detailed reporting required for the reporting year; however, 2 years prior to this reporting year (Year 7 of monitoring), the project was meeting performance criteria, with the exception of reestablished wetland acreage.

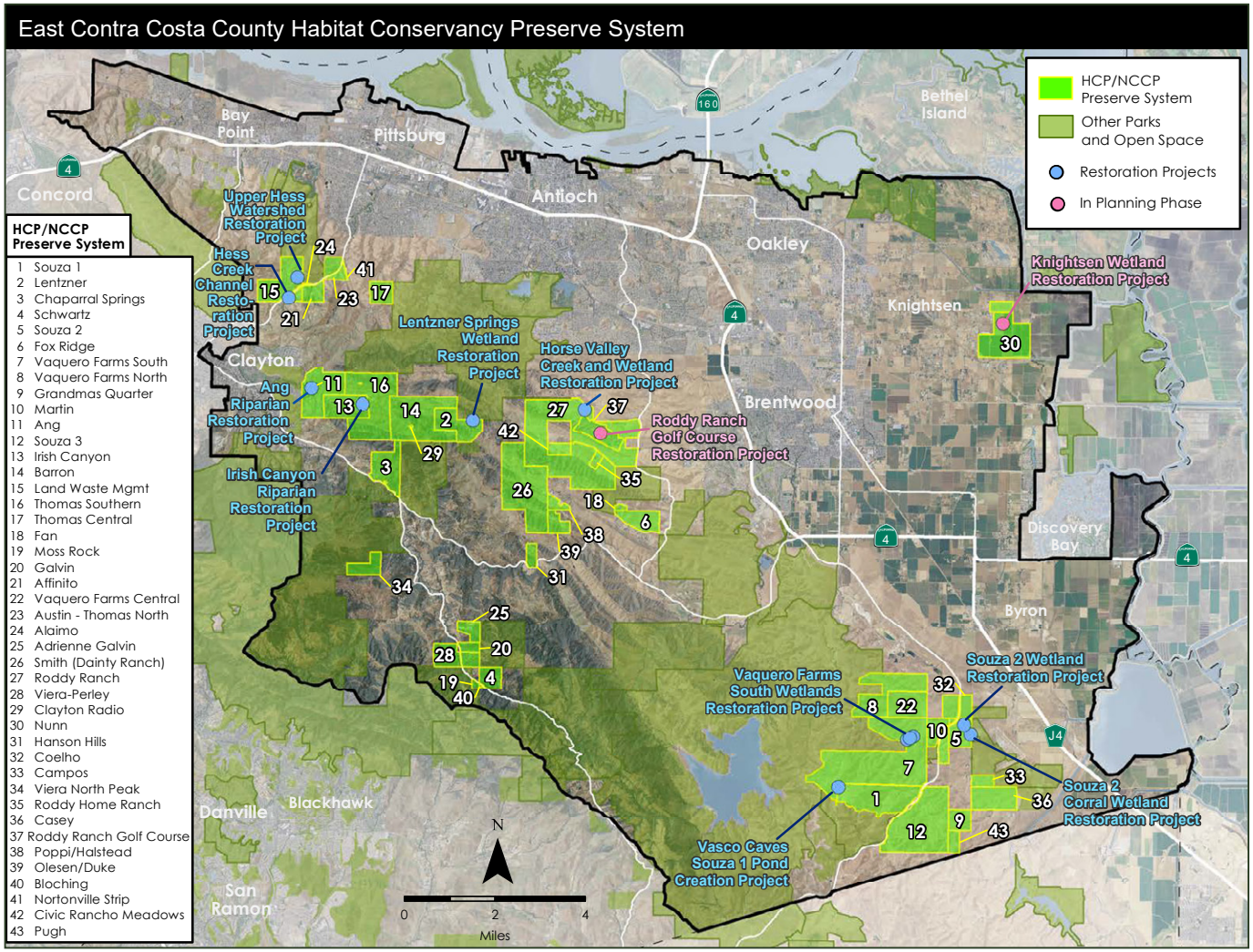
Upcoming Restoration Projects

The Conservancy currently has two restoration projects in the planning phase.

The Knightsen Wetland Restoration Project is intended to create and restore wetlands as well as other habitat and improve Delta water quality. This 645-acre project will restore a mosaic of wetland and upland habitats and support state and federally listed species. Ancillary benefits of the habitat restoration project include the conservation of open space, improved Delta water quality, and increased local resilience to flood events.

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. The project team is working to finalize construction plans for the first phase of work.

Figure 6. Location of Restoration and Creation Projects



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

Table 11. Summary of Natural Community Restoration and Creation by Land Cover Type

Land Cover Type	Requirements [a]		Reporting Period		Cumulative		% Toward Goal	
	Creation	Restoration	Creation	Restoration	Creation	Restoration	Creation	Restoration
Terrestrial								
Oak savanna	—	165	—	—	—	—	—	—
Aquatic								
Riparian woodland/scrub	—	55	—	—	—	5.40	—	10%
Perennial wetland [b]	—	85	—	—	—	0.16	—	0%
Seasonal wetland	—	163	—	—	—	10.70	—	7%
Alkali wetland	—	67	—	—	—	2.40	—	4%
Pond	16	—	—	—	0.61	—	4%	—
Reservoir (open water) [c]	6	—	—	—	—	—	—	—
Slough/channel	—	72	—	—	—	—	—	—
Stream (length in linear feet)								
Perennial	—	2,112	—	—	—	—	—	—
Intermittent	—	2,112	—	—	—	4,328	—	205%
Ephemeral [d]	—	26,400	—	—	—	4,103	—	16%
Classification pending [d]	—	—	—	—	—	2,951	—	—

Notes

Only land cover types that have restoration or creation requirements are included.

a 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 Perennial wetlands are equivalent to permanent wetlands.

c Reservoir (open water) is equivalent to aquatic.

d Many of the streams identified as “classification pending” will ultimately be classified as ephemeral.

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

Basin/Watershed	Aquatic Land Cover (acres)								Stream (linear feet)				
	Riparian woodland/ scrub	Perennial wetlands [a]	Seasonal wetlands	Alkali wetlands	Ponds	Reservoir (open water)[b]	Slough/ channel	Aquatic Land Cover Total	Perennial	Intermittent	Ephemeral	Classification Pending	Stream Total
Brushy Creek N Stem Sub Basin													
Restoration	—	0.16	8.10	—	—	—	—	8.26	—	2,075	508	—	2,582
Creation	—	—	—	—	0.30	—	—	0.30	—	—	—	—	0.00
Subtotal	—	*0.16*	*8.10*	—	*0.30*	—	—	*8.56*	—	*2,075*	*508*	—	*2,582*
Frisk Creek Sub Basin													
Restoration	—	—	0.33	—	—	—	—	0.33	—	—	—	—	—
Creation	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	*0.33*	—	—	—	—	*0.33*	—	—	—	—	—
Kirker Creek													
Restoration	3.08	—	0.23	2.40	—	—	—	5.71	—	—	1,756	—	1,760
Creation	—	—	—	—	0.12	—	—	0.12	—	—	—	—	0.00
Subtotal	*3.08*	—	*0.23*	*2.40*	*0.12*	—	—	*5.83*	—	—	*1,760*	—	*1,760*
Sand Creek Sub Basin													
Restoration	—	—	2.00	0.05	—	—	—	2.05	—	—	684	4,787	5,471
Creation	—	—	—	—	0.19	—	—	0.19	—	—	—	—	0
Subtotal	—	—	*2.00*	*0.05*	*0.19*	—	—	*2.24*	—	—	*684*	*4,787*	*5,471*
Upper Mt. Diablo Creek													
Restoration	2.31	—	—	—	—	—	—	2.31	—	2,254	—	—	2,254
Creation	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	*2.31*	—	—	—	—	—	—	*2.31*	—	*2,254*	—	—	*2,254*
Total for Inventory Area	**5.39**	**0.16**	**10.66**	**2.45**	**0.61**	**—**	**—**	**19.27**	**—**	**4,328**	**2,951**	**4,787**	**12,067**

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 13. Restoration Acreage Summary

Restoration Project Name	Year Constructed	Met Success Criteria	Restoration, Creation, and Enhancement Design Target (acres unless otherwise noted)										
			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	0	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	0	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	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	689	0	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	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	0	1.117
Vaquero Farms Seasonal Wetlands Creation (Pools 1 and 2)	2012	2018	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0	0	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	730	N/A
Vaquero Farms Seasonal Wetland Creation (Pool 3)	2015	2023	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0	0	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	0	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	0	N/A
Total			**0.00**	**0.54**	**4.58**	**2.47**	**1.25**	**0.87**	**0.23**	**5.60**	**9,211**	**730**	**1.12**

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

Preserve System Management

The Preserve System encompasses approximately 14,400 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)

The winter rains of 2022–2023 devastated portions of California and had significant impacts on the Preserve System. Highlights from the 2023 management actions are described below.

Nunn Ditch and Culvert Repairs 2023

The winter rains of 2022–2023 hugely impacted the Nunn property near the community of Knightsen. Stormwater and sediment inundated the property, causing damage to agricultural ditches, ranch roads, and culverts. The Conservancy worked with biologists and a local contractor to clear ditches of vegetation and debris and replace culverts so that water will drain across the site in future large storm events.

The Preserve System requires land management actions that are geographically, topographically, and ecologically unique to each unit of land, examples of which are clearing ditches of debris and vegetation (right) and replacing culverts (left).

Horse Valley Pond Repair 2023

A pond berm in Horse Valley partially failed in early 2023. The large pond provides breeding habitat for California tiger salamander and other amphibians. EBRPD staff worked with biologists to install temporary emergency measures to prevent full berm failure and protect breeding habitat. These measures worked, and later in the year the Conservancy and EBRPD were able to repair the breach.

The work involved repairing the breach and reinforcing the entire length of the berm. Contractors trenched 6 feet deep through the center of the berm and backfilled that space with a concrete slurry. As the slurry hardened it created a barrier that will prevent ground squirrels from burrowing through and creating weak areas of the pond berm. This approach was selected as it was the least disruptive to the wildlife using the pond by maintaining water levels and habitat during construction, and prevents future failures that could be catastrophic to the existing population of California tiger salamander.

Horse Valley pond.

California tiger salamanders.

Pond berm repair.

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.

In 2023, three studies were completed: a covered plant species survey, a Townsend's big-eared bat (*Corynorhinus townsendii*) survey, and a camera station survey to investigate how wildlife are using the Vasco Road undercrossings to cross safely under the road, which are detailed in the following sections.

Flowering hogwallow starfish individual.

Flowering long-styled sand-spurrey.

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 informs management actions and/or contributes to the general understanding of a covered species.

In 2023, the Conservancy released a request for proposals to fund small research projects within the Preserve System. The Conservancy's Public Advisory Committee reviewed four proposals and recommended to the Governing Board to fully fund the Contra Costa Resource Conservation District's eDNA Monitoring of Restored Livestock Ponds in Contra Costa County Project.

Monitoring Studies

Rare Plant Survey

A total of six Preserve System properties were surveyed in 2023, which represent two of the six Acquisition Zones: Watersheds of Northern Tributaries of Marsh Creek and Byron Hills. The survey efforts were focused on these six properties and on alkali habitats and clay barrens. HCP/NCCP covered plant species and other special status plant species encountered within the study area were recorded using California Natural Diversity Database field survey forms. During the course of these surveys, one covered plant species was observed: round-leaved filaree (*California macrophylla*). One new population comprising four colonies with a total of 88 individuals was recorded. In addition, three non-covered but special status plant species were observed: small-flowered morning-glory (*Convolvulus simulans*), hogwallow starfish (*Hesperevax caulescens*), and long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*).

Townsend's Big-Eared Bat Survey

Townsend's big-eared bat is one of the covered species of the Plan; however, there are no known occurrences within the Preserve System. This species' distribution is patchy because populations are strongly correlated with the availability of caves and cave-like roosting habitat, including abandoned mines. Townsend's big-eared bats forage in edge habitats along streams that are adjacent to or within a variety of wooded habitats and have been observed to avoid open grassland.

Surveys covered the entire HCP/NCCP Preserve System, which contains a wide range of habitats and potential roosting sites. Surveys were conducted between July and September 2023. No Townsend's big-eared bats were observed during the surveys. Although no roosts were found, the species may still use the preserves for foraging or night roosting. Many of the lands within the Preserve System are characterized by open grasslands, which may be actively avoided by Townsend's big-eared bats.

Part of the HCP/NCCP objective for Townsend's big-eared bat is to "Enhance roosting habitat by protecting any abandoned mine, cave, or building in the Preserve System and, if feasible, creating artificial hibernacula." Performing this initial survey for the bat is an important first step in understanding the presence/absence of the bat and inventorying potential hibernacula.

Barn that was surveyed for Townsend's big-eared bats in July 2023.

Vasco Road Undercrossings

In 2023 (May–December), camera stations were deployed at eight wildlife undercrossing structures beneath Vasco Road to document their use by terrestrial wildlife species to cross safely under the road. Surveys are planned to continue in 2024 along adjacent portions of the road that are also within the Vasco Hills/Byron Vernal Pools Management Area. This study recorded 8,997 species detection events, of which 1,646 were crossing events. These events were recorded any time a species was confirmed traveling all the way through a crossing structure in either direction.

Wildlife frequently used the undercrossing structures beneath Vasco Road that were monitored for this survey, with coyotes (*Canis latrans*) most frequently detected crossing (744 crossing events), followed by desert cottontails (*Sylvilagus audubonii*; 350 crossing events), bobcats (*Lynx rufus*; 196 crossing events), American badgers (*Taxidea taxus*; 90 crossing events), striped skunks (*Mephitis mephitis*; 60 crossing events), domestic cats (*Felis catus*; 15 crossing events), black-tailed jackrabbits (*Lepus californicus*; 5 crossing events), and raccoons (*Procyon lotor*; 3 crossing events).

Two species covered by the HCP/NCCP were detected incidentally during the camera station survey: California tiger salamanders and western burrowing owls. Although neither species was observed using the undercrossing structures, detection of these species still has implications for management of their habitats.

The survey resulted in a dataset of 110,262 images of 40 different wildlife species, including 12 mammals, 24 birds, and 3 reptiles, and 1 amphibian.

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 16) represents 53% of the permit term. If a constant rate of impacts is assumed, allowable impacts should be at about 53% of the impact cap.

The following pages show Stay-Ahead compliance for land cover types (**Table 14** and **Figure 9**), plants (**Table 15**), vernal pool shrimp (**Table 16**), and giant garter snake (**Table 17**).

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

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

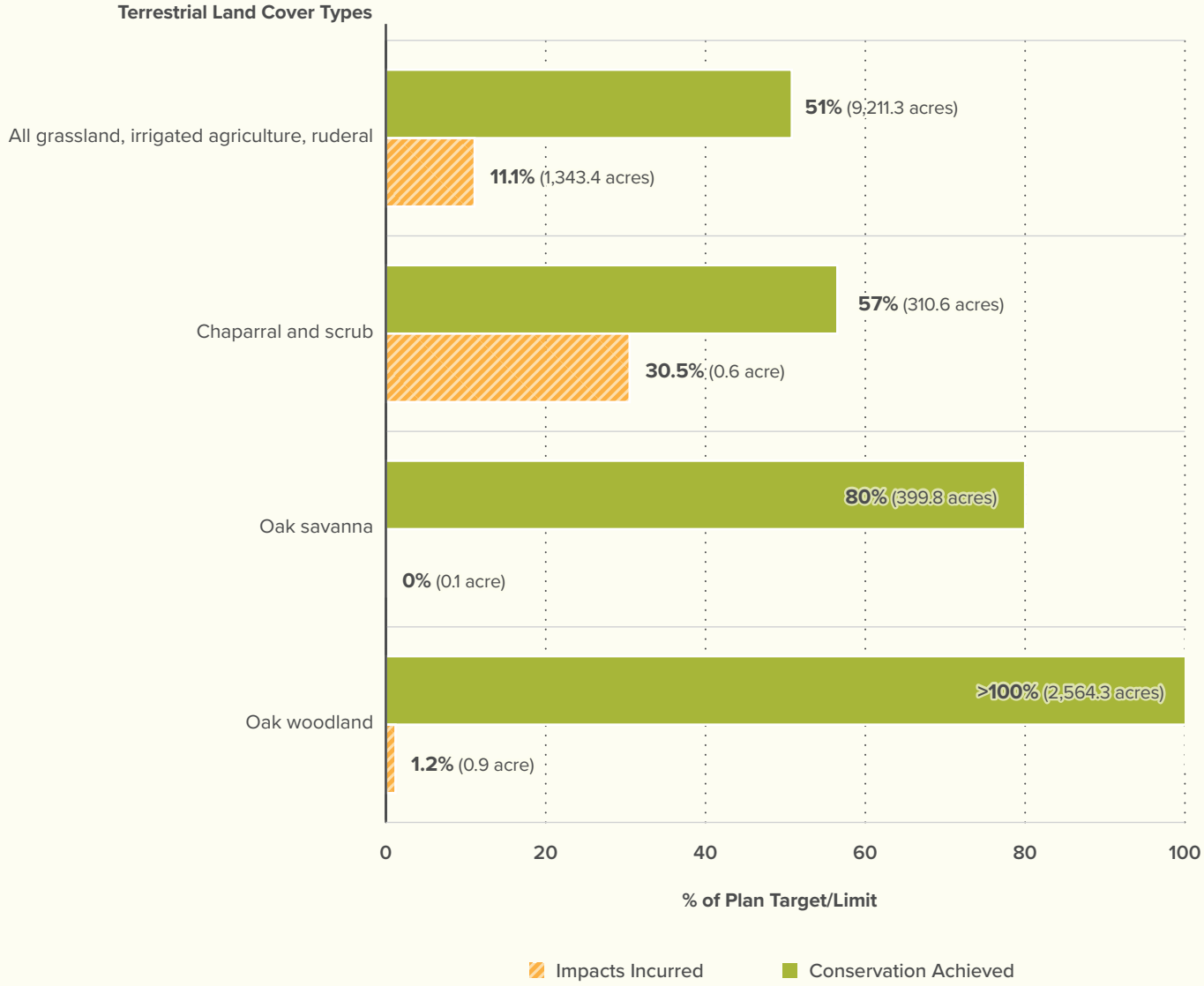
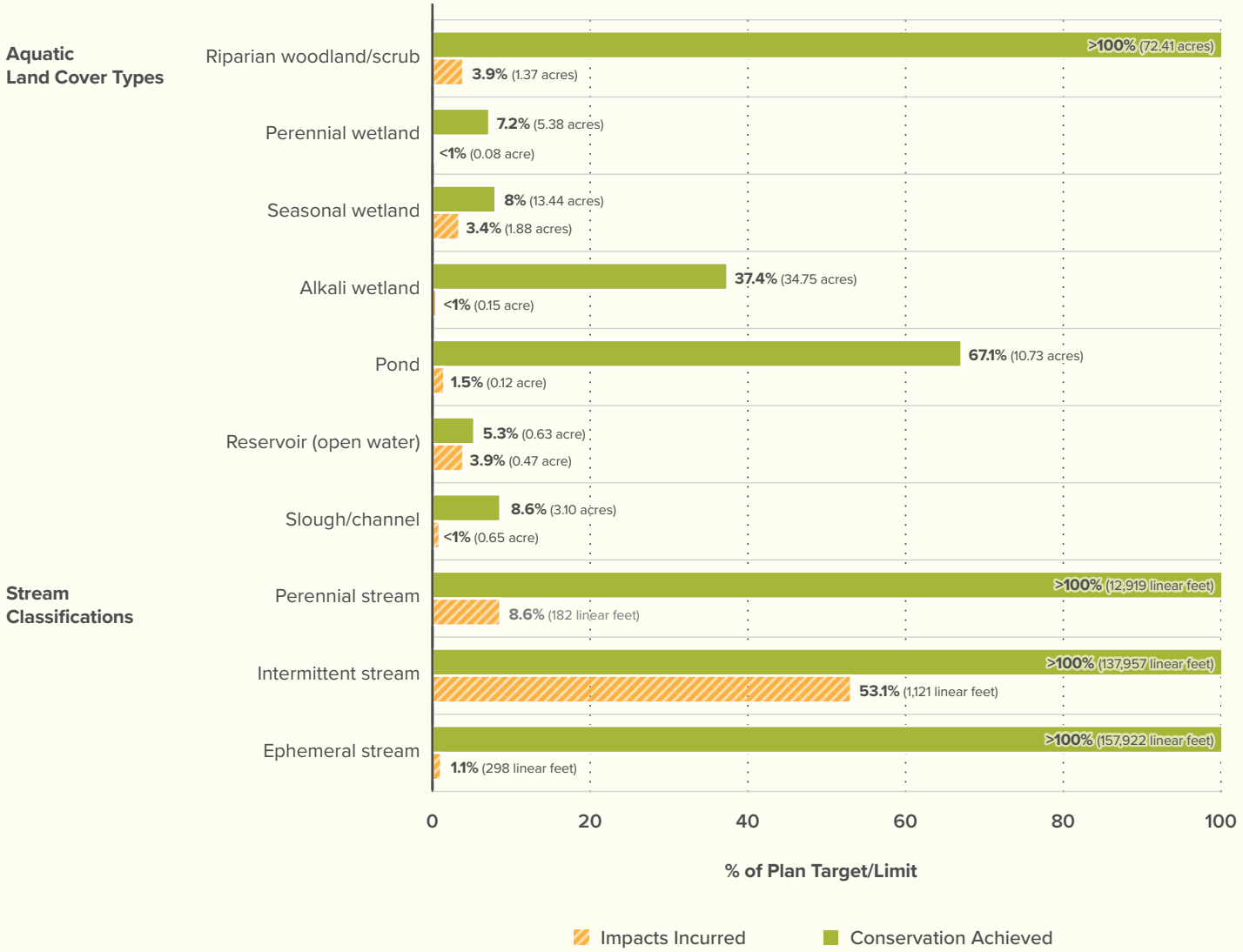


Figure 8. Comparison of Conservation Achieved to Impacts Incurred for Aquatic Land Cover Types and Streams—Cumulative

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 67%. 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.

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.

Figure 9. Stay-Ahead Compliance for Land Cover Types

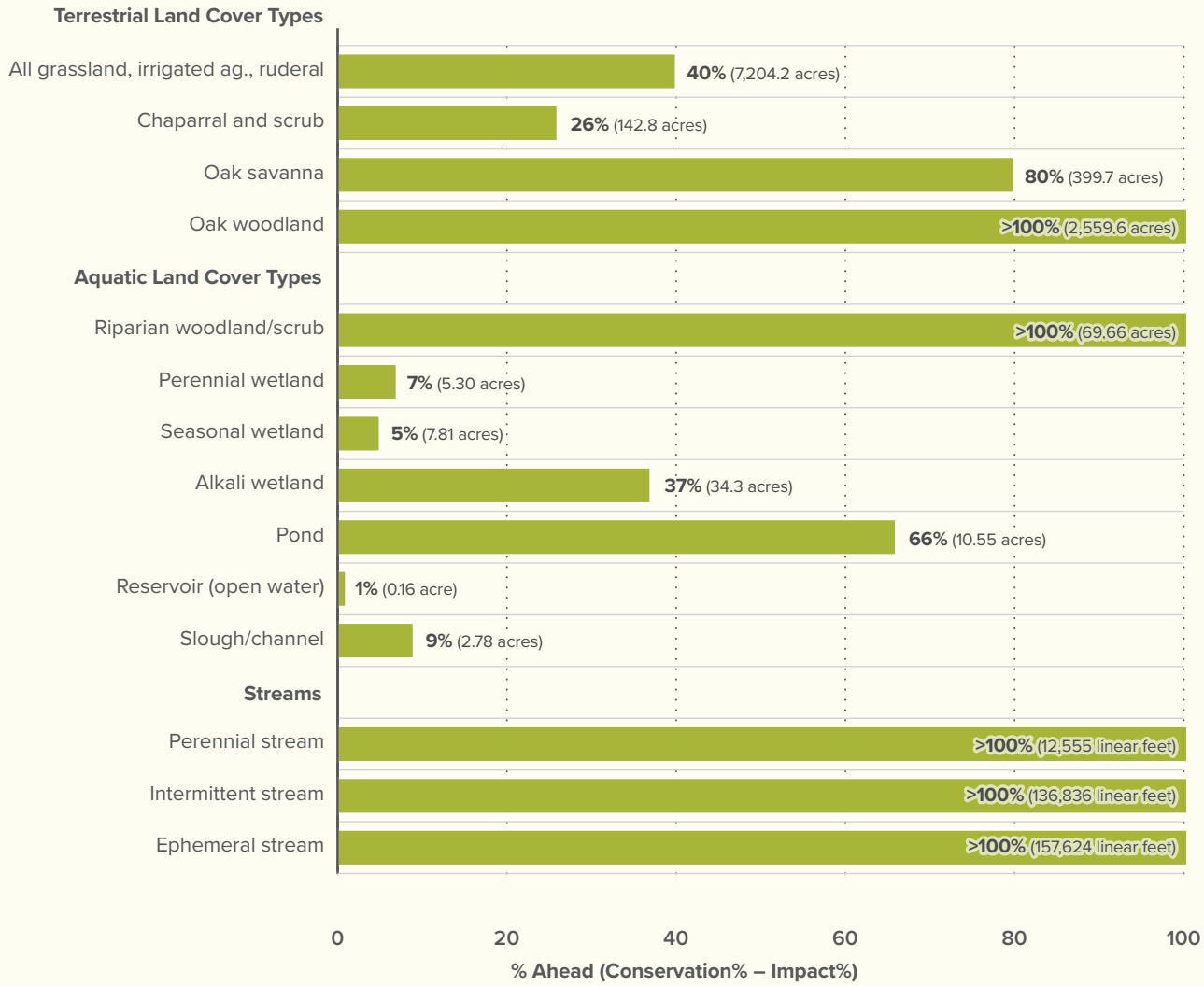


Table 14. Stay-Ahead Assessment—Land Cover and Streams

Land Cover Type	Conservation			Impact			Acres/Feet Required to be Ahead	Acres Ahead	% Ahead [c] (Conservation % - Impacts %)
	Protection Required (acres)	Protection to date (acres)	% of Required	Estimated Impacts (acres)	Impacts to date (acres)	% of Impacts			
Terrestrial									
All grassland, irrigated ag., ruderal	18,150	9,211.3	50.8%	12,148	1,343.4	11.1%	2,007.1	7,204.2	40%
Chaparral and scrub	550	310.57	56.5%	2	0.6	30.5%	167.8	142.8	26%
Oak savanna	500	399.83	80.0%	165	0.1	0.0%	0.2	399.7	80%
Oak woodland	400	2,564.3	641.1%	73	0.9	1.2%	4.7	2,559.6	640%
Aquatic									
Riparian woodland/scrub	70	72.41	103.4%	35	1.37	3.9%	2.75	69.66	100%
Perennial wetland [a]	75	5.38	7.2%	75	0.08	0.1%	0.08	5.30	7%
Seasonal wetland	168	13.44	8.0%	56	1.88	3.4%	5.63	7.81	5%
Alkali wetland	93	34.75	37.4%	31	0.15	0.5%	0.45	34.30	37%
Pond	16	10.73	67.1%	8	0.12	1.5%	0.18	10.55	66%
Reservoir (open water) [b]	12	0.63	5.3%	12	0.47	3.9%	0.47	0.16	1% [b]
Slough/channel	36	3.10	8.6%	72	0.65	0.9%	0.32	2.78	9%
Stream (length in linear feet)									
Perennial stream	4,224	12,919	305.9%	2,112	182	8.6%	364	12,555	297%
Intermittent stream	2,112	137,957	6532.1%	2,112	1,121	53.1%	1,121	136,836	6,479%
Ephemeral stream [d]	26,400	157,922	598.2%	26,400	298	1.1%	298	157,624	597%

Notes

Numbers in tables may not sum to the total due to rounding.

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 15. Stay-Ahead Assessment—Plants

Common Name	Scientific Name	Conservation	Impacts	Difference	% Ahead
Mount Diablo manzanita	*Arctostaphylos auriculata*	0	0	0	—
Brittlescale	*Atriplex depressa*	3	0	3	100%
San Joaquin spearscale	*Atriplex joaquiniana*	10	1 [a]	9	90%
Big tarplant	*Blepharizonia plumosa*	13	0	13	100%
Mount Diablo fairy lantern	*Calochortus pulchellus*	6	0	6	100%
Recurved larkspur	*Delphinium recurvatum*	0	0	0	—
Round-leaved filaree	*Erodium macrophyllum*	6	— [b]	5	100%
Diablo helianthella	*Helianthella castanea*	13	0	13	100%
Brewer's dwarf flax	*Hesperolinon breweri*	6	0	6	100%
Showy madia	*Madia radiata*	0	0	0	—
Adobe navarretia [c]	*Navarretia nigelliformis* subsp. *nigelliformis*	0	0	0	—
Shining navarretia [c]	*Navarretia nigelliformis subsp. radians*	*(7)*	*0*	*(7)*	—
Total		**57**	**1**	**56**	—

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 it was 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 16. Stay-Ahead Summary—Vernal Pool Shrimp

Project Name/ Preserve Property Name	Species	Impacts to Date (acres)	Preserved Occupied to Date (acres)	Restored/ Created Occupied to Date (acres)
Impacts				
Deer Valley Road Safety Improvements Project, 2012	VPFS	0.06	—	—
Chevron KLM Site 1357 Maintenance Project, 2013	Covered shrimp	0.01	—	—
Restoration, Creation, and Preservation				
Coelho	VPFS	—	0.98	—
Souza I	VPFS	—	0.00	—
Souza II	VPFS	—	0.18	—
Vaquero Farms South	VPFS	—	0.05	—
Souza II-Corral	VPFS	—	—	0.40 [a]
Vaquero Farms South (Pool 1)	VPFS	—	—	0.07
Vaquero Farms South (Pool 2)	VPFS	—	—	0.15
Vaquero Farms South (Pool 3)	VPFS	—	—	0.15
Casey	Covered shrimp	—	0.31	—
Campos	VPFS	—	0.55	—
Total	**—**	**0.07**	**2.08**	**0.77**

Abbreviation

VPFS = vernal pool fairy shrimp

Notes

Numbers in tables may not sum to the total due to rounding.

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.

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

Table 17. 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	0.58	18.34	—	—
Grand Cypress Preserve, 2021 [a]	0.43	12.46	—	—
Nunn Property (Preserve System Acquisition) [b]	—	—	3.10	612.71
Total	**0.59**	**28.58**	**3.10**	**612.71**

Notes

Numbers in tables may not sum to the total due to rounding.

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 Grand Cypress Preserve project's impacts on giant garter snake habitat is mitigated through an applicant-led restoration project, therefore the impact acreages are not included in the "total" in this table. The Grand Cypress Preserve project is being constructed in phases. Impacts in this table represent all impacts on giant garter snake 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.

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

Finances

Budget, Expenditures, and Funding

The Conservancy analyzed cost projections from the HCP/NCCP, previous years' actual costs, and the anticipated work plan to develop the annual budget. The expenditures for the reporting period to implement the HCP/NCCP totaled $3,261,994 (**Figure 10**). The Conservancy's expenditure budget categories 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 27% and non-fee funding 73% of revenue (**Figure 11**) (local funding figures have yet to be included in these calculations).

Fee-based funding includes fees for development, wetland mitigation, temporary impacts, rural road fees, and contributions 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 the effects of covered activities 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. If agreed to by the Conservancy, USFWS, and CDFW, 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 was collected in 2023. 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 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.

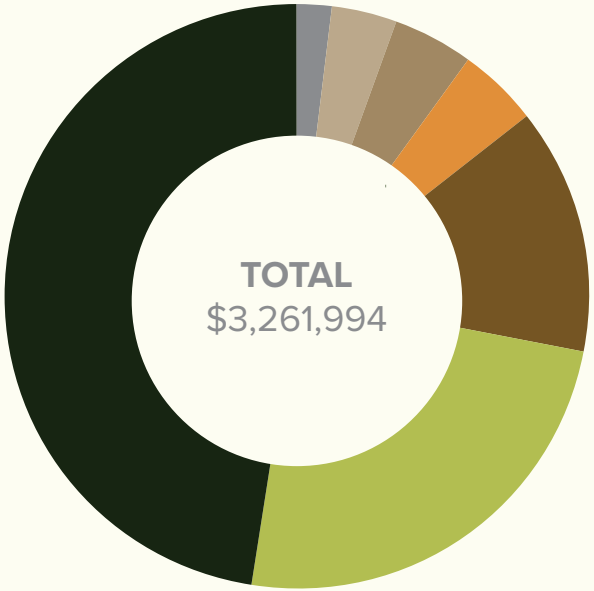
A requirement of the HCP/NCCP is to develop a long-term funding strategy to provide for the stewardship of the Preserve System in perpetuity. Post-permit term costs would be funded by a portion of mitigation fees and other revenue transferred to an endowment over time. The endowment would grow with reinvested 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 value at year end 2023 is $8,250,827.

The expenditures for the reporting period to implement the HCP/NCCP totaled $2,567,955, and in addition $694,040 was transferred to the Endowment for a grand total of $3,261,994.

Figure 10. Summary of Expenditures

Actuals (Reporting Period)

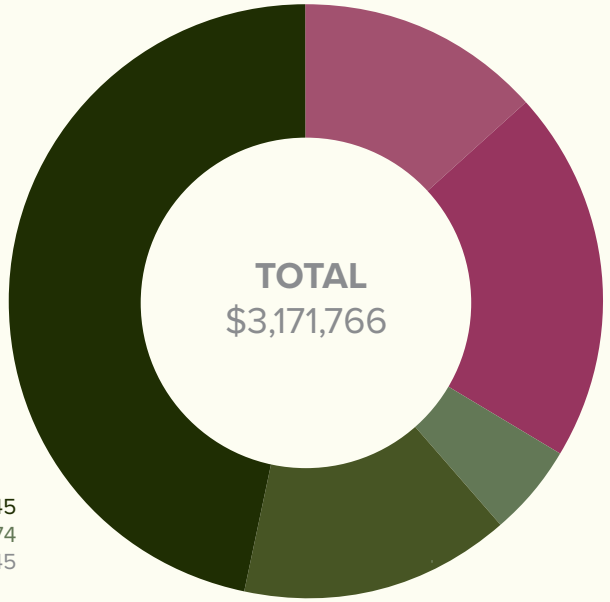


- **Program Administration and Permitting Program** $1,220,352
- **Planning and Design** $634,215
- **Preserve Management and Maintenance** $345,119
- **Environmental Compliance** $118,187
- **Monitoring, Research, and Adaptive Management** $112,555
- **Habitat Restoration and Creation** $93,249
- **Land Acquisition** $44,277
- **Contingency Fund** $0
- **Remedial Measures** $0

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

Figure 11. Summary of Revenue

Revenue (Reporting Period)



Fee Funding
$2,112,265 / 66.6%

Development Fees	$1,485,545
Wetland Mitigation Fees	$466,174
Temporary Impact Fees	$160,545

Non-Fee Funding
$1,059,501 / 33.4%

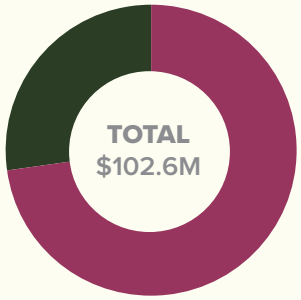
Grants	$639,270
Other Revenue	$420,231

Plan Assumptions

Fee Funding 57.5%

Non-Fee Funding 42.5%

Actual Revenue (Cumulative)



Fee Funding 27.2%

Non-Fee Funding 72.8%

Maximum Urban Development Area assumptions were used.

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 18):**
    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 19).**

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 2023.

   Wetland mitigation fees collected in 2023 were expended on the planning and design activities for the Knightsen Wetland Restoration Project and the Roddy Ranch Golf Course Restoration Project. Other activities funded include the ongoing maintenance and monitoring of previously constructed wetland restoration projects.

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 2025/2026. The Roddy Ranch Golf Course Restoration Project is scheduled for construction in 2025/2026.

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 18. 2023 Fee Schedule

Fee Type	With Fee Audit	Without Fee Audit
Development Fees (per acre, unless otherwise stated)		
Zone 1	$19,871.91	$19,611.52
Zone II	$39,743.83	$39,223.04
Zone III	$9,935.96	$9,805.76
Wetland Mitigation Fees		
Riparian woodland/scrub	$111,060.40	$110,667.08
Perennial Wetland	$170,908.06	$167,718.29
Seasonal Wetland	$401,479.18	$392,489.03
Alkali wetland	$405,871.63	$396,778.59
Pond	$221,421.23	$215,976.51
Aquatic (open water)	$110,711.14	$107,988.87
Slough/ Channel	$156,815.09	$154,206.78
Streams 25 feet wide or less—fee per linear foot	$580.00	$569.07
Streams greater than 25 feet wide—fee per linear foot	$869.47	$854.23

Note

The Permittees were on two different fee schedules throughout the year due to the adoption of the 2022 periodic fee audit on different dates: the Conservancy, 2/27/23; Contra Costa County, 5/9/23; Oakley, 7/11/23; Clayton, 7/18/23; Pittsburg, 8/7/23; Brentwood, 11/14/23. Temporary impact fees are based on the amounts shown adjusted for duration of impact as set forth in Chapter 9 of the HCP/NCCP.

Table 19. 2023 Mitigation Fees

Beginning Balance	Revenue	Interest Earned	Expended	Ending Balance
Development Fee				
$3,039,525	$1,485,545	$113,147	$1,792,684	$2,845,533
Wetland Mitigation Fee				
$0	$466,174	$71,737	$537,911	$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, and expiring on December 1, 2025.

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

Cattle on the preserve lands (credit: Chris Lyall).

Save Mount Diablo Volunteer Water Crew.

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 is continuing to work with the Corps on the development of an ILF Program.

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 fee audit conducted in Year 15 (2022) was adopted by the Permittees in 2023.

In accordance with the Plan requirements, the next mitigation fee audit will take place in 2027, Year 20 of Plan implementation.

Public Outreach/Engagement

In 2023, Save Mount Diablo continued to work with volunteers to maintain the Ang property riparian plantings. A volunteer Watering Crew performed tri-weekly waterings starting in September and through November, and in November volunteers and staff removed tubes and cages from dead trees. In 2023, six volunteers contributed a total of 43 hours to work on this property.

This report was prepared by the East Contra Costa County Habitat Conservancy with technical assistance from ICF.