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

Annual Report 2024

East Contra Costa County Habitat Conservancy

East Contra Costa County Habitat Conservancy

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COVER PHOTO: NOMAD ECOLOGY

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Abbreviations

BDMRP	Black Diamond Mines Regional Preserve
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 2024 calendar year and since the start of Plan implementation, detailing progress toward achieving the Plan's biological goals and objectives.

The ***East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan*** (HCP/NCCP or Plan) 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.

Prepared by the East Contra Costa County Habitat Conservancy (Conservancy), this annual report summarizes implementation activities undertaken during the 2024 calendar year (January 1, 2024, through December 31, 2024)[1] and cumulatively per the conditions of the HCP/NCCP.

[1] 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 2023–2024 water year.

Owl's clover covers a hillside in Deer Valley (Roddy Ranch area) in the Preserve System.
NOMAD ECOLOGY/2023

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 Endangered Species Act (CESA) while carrying out specific actions referred to as covered activities. 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 (EBRPD)

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*	SC[e]	—
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[f]
Amphibians			
California tiger salamander	*Ambystoma californiense*	ST[g]	FT
California red-legged frog	*Rana aurora draytonii*	—	FT
Foothill yellow-legged frog	*Rana boylii*	SE[h]	FT[h]
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
- SE State Listed as Endangered
- CSC California Special Concern Species
- CSC-1 Bird Species of Special Concern; First Priority
- FP Fully Protected
- SC State Candidate Species

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

e The status of western burrowing owl changed to SC in 2024.

f The status of western pond turtle changed to FP in 2023.

g The status of California tiger salamander changed to ST in 2010.

h The status of foothill yellow-legged frog changed to SE in 2020 and FT in 2023.

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:

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

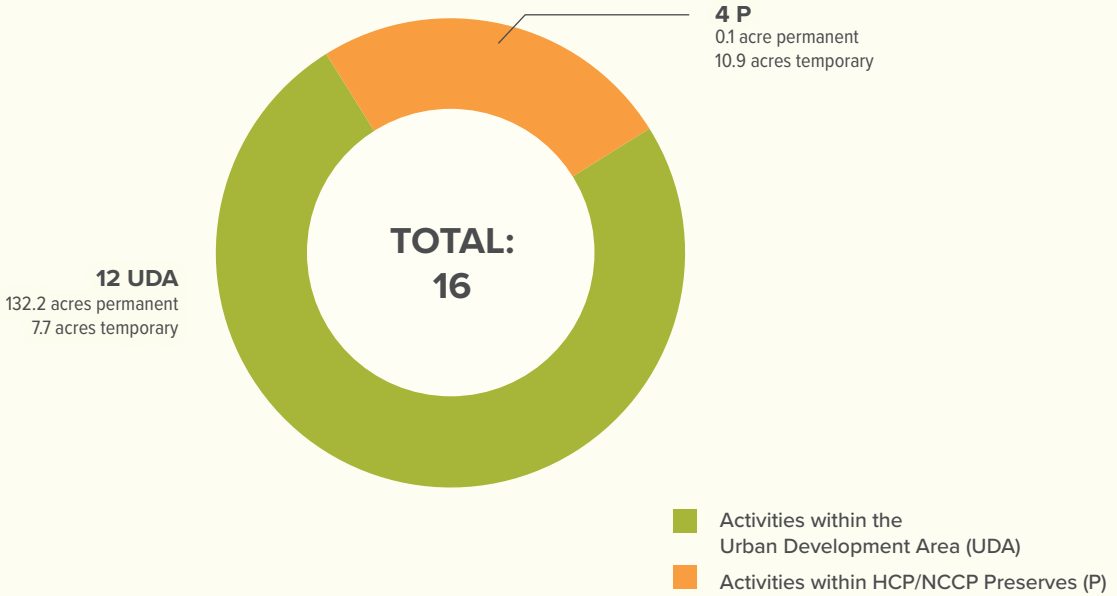
Figure 1 and **Tables 2–4** summarize covered activities undertaken during the reporting period and since Plan inception. **Figures 2 and 3** and **Tables 5–7** quantify impacts associated with these covered activities.

Sand Creek Road Extension.
CITY OF BRENTWOOD

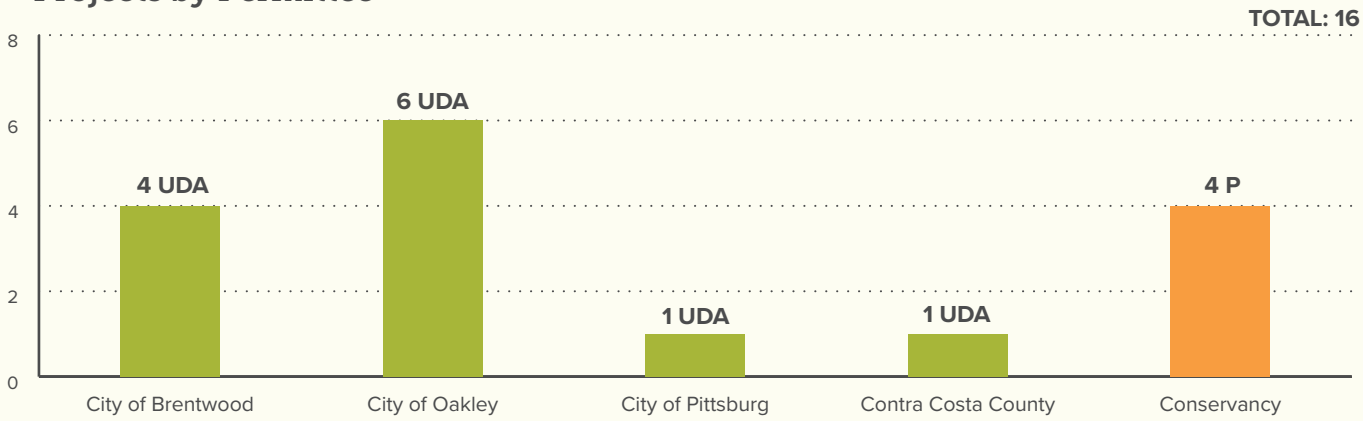
A total of 16 covered activities were permitted during the reporting period: 12 within the Urban Development Area and 4 within the HCP/NCCP preserves.

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

Projects by Project Type



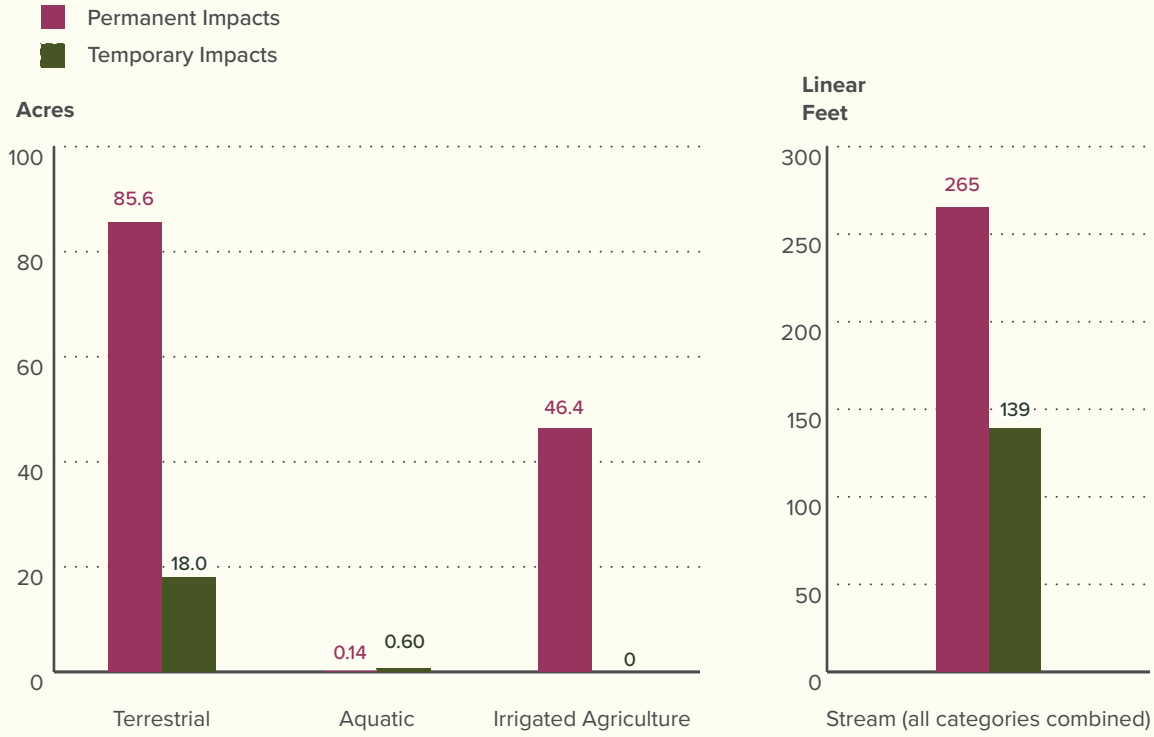
Projects by Permittee



The 16 covered activities of the reporting period resulted in 18.6 acres temporary impacts and 132.2 acres permanent impacts on terrestrial land cover types.

Temporary stream impacts totaled 139 linear feet (10 linear feet perennial stream and 129 linear feet intermittent stream), and permanent stream impacts totaled 265 linear feet (75 linear feet perennial stream, 80 linear feet intermittent stream, and 110 linear feet ephemeral stream).

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



Cumulative permanent land cover impacts total 1,481.8 acres, and temporary impacts on land cover total 818.7 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

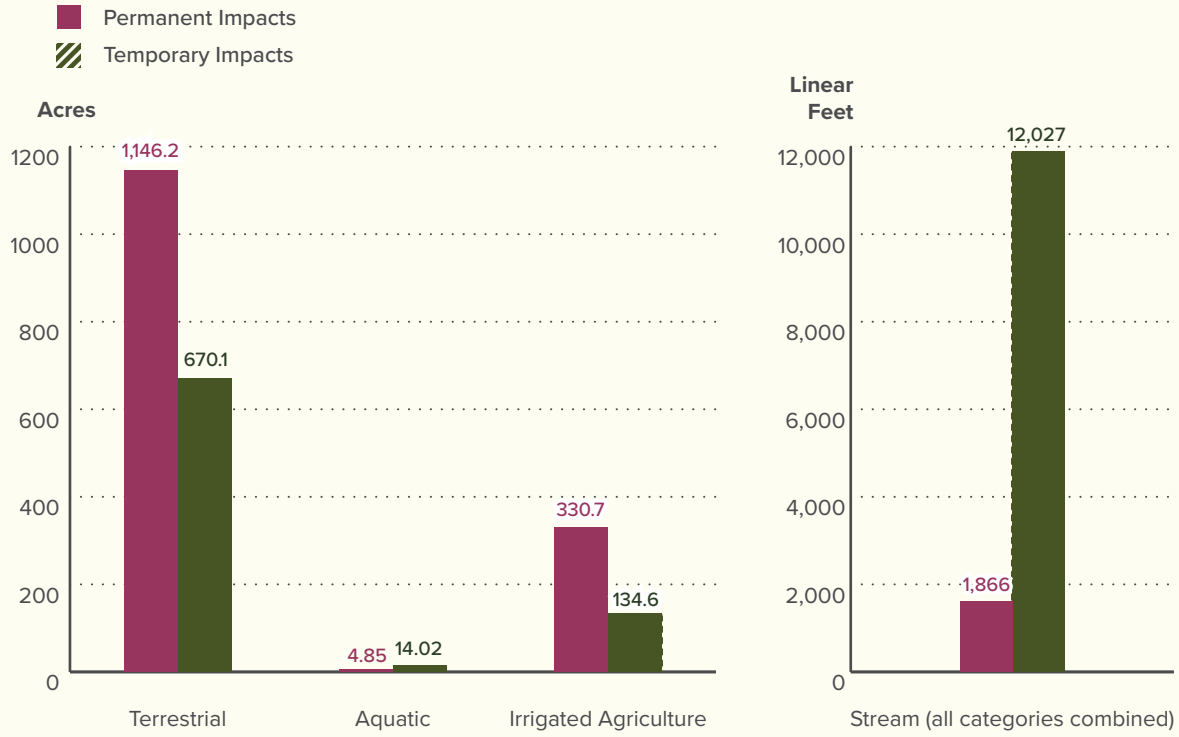


Table 2. Reporting Period Summary of Covered Activities

Project Name	Covered By	Project Type	Location	Description	Impacts, permanent (acres)	Impacts, temporary (acres)
Brentwood Costco Wholesale and Gas Station Project	City of Brentwood	UDA	Lone Tree Plaza Drive, just west of California State Route 4	Construction of a Costco Wholesale retail facility and associated gas station	23.1	—
Hanson Lane (Subdivision 9574)	City of Brentwood	UDA	East ends of Lone Tree Way and Hanson Lane, Brentwood	Construction of an 89-lot residential subdivision	12.9	—
Cowell Ranch, Subdivision 9452	City of Brentwood	UDA	Marsh Creek Road between Vasco Road and Trilogy Parkway, Brentwood	Construction of a 140-lot subdivision, a bioretention basin, and open space and a private park	27.3	—
Trumark Trailside (Apricot Way)	City of Brentwood	UDA	1777 Apricot Way, Brentwood	Construction of 63 single-family residential parcels, one bioretention area, and a landscaped area adjacent to Sand Creek	20.9	—
Subdivision 9615 Temporary Basin	City of Oakley	UDA	West of Machado Lane and south of Cypress Road, Oakley	Construction of a temporary basin to support dewatering Subdivision 9615, just east of the site	—	7.7
Sellers Ave (DeJesus Property)	City of Oakley	UDA	West side of Sellers Road, Oakley	Construction of a 77-lot residential subdivision	20.1	—
Cypress Road/Knightsen Crossing	City of Oakley	UDA	North end of Knightsen Road, at the intersection with East Cypress Road, Oakley	The final phase of road improvements associated with the Gilbert Property Development Project	0.3	<0.1
Shops at Laurel Fields	City of Oakley	UDA	998 Laurel Avenue, Oakley	Construction of a commercial center	7.4	—
Burroughs Stockpile	City of Oakley	UDA	1136 E Cypress Road, Oakley	Construction of 208 single family homes, roads, and ancillary features	13.4	—
CIP 247: East Cypress Road Phase 2	City of Oakley	UDA	East Cypress Road, Oakley	Widening of East Cypress Road in the City of Oakley	5.6	—
Liberty Subdivision II	City of Pittsburg	UDA	360 Central Avenue, Pittsburg	Construction of 17 new single-family homes with related access roads and landscaping	1.0	—
Kelley Residence, 1201 Pine Lane, Clayton (Phase 1)	Contra Costa County	UDA	1201 Pine Lane, Clayton	First phase of construction of a single family home with entrance drive, bridge, and turn-around	0.2	—
Hess Creek Watershed Pond Desilting Project	Conservancy	P	Land Waste Management Preserve Property	De-silting of a pond in the Hess Creek Watershed due to severe storms in the winter of 2022–2023	—	0.2
Upper Hess Grazing Infrastructure	Conservancy	P	Land Waste Management Preserve Property	Installation of water pipeline, a solar pump, water tanks, and water troughs to have a cattle water source, allowing for more appropriate grazing management	<0.1	8.4
Irish Canyon Culverts Replacement 101 and 102	Conservancy	P	Irish Canyon Preserve Property	Replacement of two existing culverts under an unpaved dirt access road within the Irish Canyon Preserve	<0.1	0.1
Vasco Hills Regional Preserve 2023 Pond Repairs	Conservancy	P	Vasco Hills Regional Preserve	Repair of six ponds in the Vasco Hills Regional Preserve that were damaged during the winter of 2022–2023	<0.1	2.3
Total					**132.2**	**18.6**

Note

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

Abbreviations

P Activities within HCP/NCCP preserves

UDA Activities within the Urban Development Area

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
Brentwood Costco Wholesale and Gas Station Project							•	•			
Burroughs Stockpile		•		•			•	•			
CIP 247: East Cypress Road Phase 2		•		•			•	•			
Cowell Ranch, Subdivision 9452						•	•	•			
Cypress Road/Knightsen Crossing		•					•	•			
Hanson Lane (Subdivision 9574)		•		•			•	•			
Hess Creek Watershed Pond Desilting Project		•						•			
Irish Canyon Culverts Replacement 101 and 102		•						•			
Kelley Residence, 1201 Pine Lane, Clayton (Phase 1)		•		•				•			
Upper Hess Grazing Infrastructure								•			
Liberty Subdivision II							•	•			
Sellers Ave (DeJesus Property)							•	•			
Shops at Laurel Fields							•	•			
Subdivision 9615 Temporary Basin							•	•			
Trumark Trailside (Apricot Way)		•		•			•	•			
Vasco Hills Regional Preserve 2023 Pond Repairs		•						•			

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
Brentwood Costco Wholesale and Gas Station Project									•	•			•	•			•	•																		
Burroughs Stockpile									•	•	•		•	•	•		•	•	•		•	•	•										•	•		
CIP 247: East Cypress Road Phase 2									•	•			•	•			•	•			•	•														
Cowell Ranch, Subdivision 9452					•	•	•						•	•	•		•	•	•																	
Cypress Road/Knightsen Crossing									•	•	•		•	•	•		•	•	•																	
Hanson Lane (Subdivision 9574)									•	•			•	•			•	•																		
Hess Creek Watershed Pond Desilting Project					•	•			•	•			•	•											•	•			•	•						
Irish Canyon Culverts Replacement 101 and 102					•	•			•	•			•	•															•	•						
Kelley Residence, 1201 Pine Lane, Clayton (Phase 1)									•	•			•	•			•	•											•	•						
Upper Hess Grazing Infrastructure					•	•			•	•			•	•																						
Liberty Subdivision II													•	•	•		•	•	•		•	•	•													
Sellers Ave (DeJesus Property)									•	•	•		•	•	•		•	•	•																	
Shops at Laurel Fields									•	•	•		•	•	•		•	•	•																	
Subdivision 9615 Temporary Basin									•	•	•		•	•	•		•	•	•																	
Trumark Trailside (Apricot Way)					•	•	•						•	•	•		•	•	•																	
Vasco Hills Regional Preserve 2023 Pond Repairs					•	•			•	•			•	•											•	•			•	•						

Project Name	Alkali Milkvetch		Big Tarplant		Brewer's 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
Brentwood Costco Wholesale and Gas Station Project																																				
Burroughs Stockpile	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•											•	•				
CIP 247: East Cypress Road Phase 2																																				
Cowell Ranch, Subdivision 9452			•	•											•	•																				
Cypress Road/Knightsen Crossing																																				
Hanson Lane (Subdivision 9574)																																				
Hess Creek Watershed Pond Desilting Project			•	•	•	•			•	•	•	•			•	•	•	•									•	•			•	•				
Irish Canyon Culverts Replacement 101 and 102			•	•	•	•			•	•	•	•	•	•	•	•	•	•									•	•			•	•				
Kelley Residence, 1201 Pine Lane, Clayton (Phase 1)	•	•	•	•	•	•	•	•			•	•	•	•	•	•											•	•			•	•				
Upper Hess Grazing Infrastructure			•	•	•	•					•	•					•	•																		
Liberty Subdivision II																																				
Sellers Ave (DeJesus Property)																																				
Shops at Laurel Fields																																				
Subdivision 9615 Temporary Basin																																				
Trumark Trailside (Apricot Way)																																				
Vasco Hills Regional Preserve 2023 Pond Repairs	•	•	•	•			•	•	•	•	•	•			•	•	•	•	•	•	•	•	•	•			•	•					•	•		

Abbreviations

AMM	Avoidance and minimization measures	PS	Planning surveys
CM	Construction monitoring	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	<0.1	4.1	137.4	296.0
Alkali grassland	<0.1	6.0	0.8	10.0
Ruderal	82.3	7.9	1,003.2	356.4
Chaparral and scrub	—	—	0.6	1.7
Oak savanna	3.2	—	3.3	2.5
Oak woodland	0.1	—	0.9	3.5
Subtotal terrestrial	*85.6*	*18.0*	*1,146.2*	*670.1*
Aquatic				
Riparian woodland/scrub	0.09	<0.01	1.47	2.68
Perennial wetland [a]	—	—	0.08	0.77
Seasonal wetland	—	0.06	1.88	4.16
Alkali wetland	—	0.01	0.15	1.01
Pond	—	0.53	0.12	0.63
Reservoir (open water) [b]	—	—	0.47	4.14
Slough/channel	0.04	0.01	0.69	0.62
Subtotal aquatic	*0.14*	*0.60*	*4.85*	*14.02*
Stream length by width category				
< 25 feet wide	80	129	787	6,848
> 25 feet wide	185	10	1,079	5,180
Stream length by type and order				
Perennial	75	10	257	4,727
Intermittent	80	129	1,201	5,052
Ephemeral, 3rd or higher order	—	—	—	225
Ephemeral, 1st or 2nd order	110	—	408	2,024
Subtotal stream length	*265*	*139*	*1,866*	*12,027*
Irrigated agriculture				
Cropland	46.4	—	215.0	33.4
Pasture	—	—	40.3	93.8
Orchard	—	—	14.5	0.2
Vineyard	—	—	61.0	7.2
Subtotal irrigated agricultural	*46.4*	*0.0*	*330.7*	*134.6*
Totals (excludes subtypes)				
Acres	**132.2**	**18.6**	**1,481.8**	**818.7**
Linear feet	**265**	**139**	**1,866**	**12,027**

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	0.01	0.00	0.01
Alkali wetland	0	0	0.02	0.63
Pond	0	0.53	0.02	0.56
Reservoir (open water) [b]	0	0	0.00	0.00
Slough/channel (includes stream)	0	0	0.00	0.01
Subtotal aquatic	*0*	*0.54*	*0.04*	*1.33*
Stream (linear feet)				
Total stream length	54	0	186	510
Stream length by width category				
< 25 feet wide	54	129	164	521
> 25 feet wide	0	0	22	118
Stream length by type and order				
Perennial	0	0	56	283
Intermittent	54	129	54	129
Ephemeral, 3rd or higher order	0	0	0	131
Ephemeral, 1st or 2nd order	0	0	76	96
Subtotal stream length	*54*	*129*	*186*	*639*
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	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	0.58	0.40
Subtotal aquatic	*0*	*0*	*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	110	0	116	440
Stream length by width category				
< 25 feet wide	0	0	0	440
> 25 feet wide	110	0	116	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	110	0	110	440
Subtotal stream length	*110*	*0*	*116*	*440*

Table continues on following page

Table 6. Impacts on Aquatic Land Cover Types and Streams by Watershed/Basin—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	0.05	0.27
Perennial wetland [a]	0	0	0.00	0.00
Seasonal wetland	0	0.06	0.00	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*	*0.06*	*0.05*	*0.32*
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)	0.04	0.01	0.04	0.06
Subtotal aquatic	*0.04*	*0.01*	*0.30*	*1.13*
Stream (linear feet)				
Total stream length	75	10	119	4,690
Stream length by width category				
< 25 feet wide	0	0	0	586
> 25 feet wide	75	10	119	4,104
Stream length by type and order				
Perennial	75	10	86	4,241
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	*75*	*10*	*119*	*4,690*

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	0	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*	*0*	*0.43*	*3.68*
Stream (linear feet)				
Total stream length	0	0	401	3,681
Stream length by width category				
< 25 feet wide	0	0	295	3,639
> 25 feet wide	0	0	106	42
Stream length by type and order				
Perennial	0	0	0	0
Intermittent	0	0	401	3,681
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	0
Subtotal stream length	*0*	*0*	*401*	*3,681*
Upper Marsh				
Aquatic (acres)				
Riparian woodland/scrub	0	0	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	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*	*0*	*0.59*	*1.10*
Stream (linear feet)				
Total stream length	0	0	679	1,651
Stream length by width category				
< 25 feet wide	0	0	58	978
> 25 feet wide	0	0	621	673
Stream length by type and order				
Perennial	0	0	93	191
Intermittent	0	0	557	556
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	29	904
Subtotal stream length	*0*	*0*	*679*	*1,651*

Table continues on following page

Table 6. Impacts on Aquatic Land Cover Types and Streams by Watershed/Basin—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	0.09	<0.01	0.09	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	*0.09*	*<0.01*	*0.11*	*0.02*
Stream (linear feet)				
Total stream length	26	0	48	53
Stream length by width category				
< 25 feet wide	26	0	48	53
> 25 feet wide	0	0	0	0
Stream length by type and order				
Perennial	0	0	22	12
Intermittent	26	0	26	0
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	41
Subtotal stream length	*26*	*0*	*48*	*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	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*	*0*	*0.14*	*0.12*
Stream (linear feet)				
Total stream length	0	0	57	652
Stream length by width category				
< 25 feet wide	0	0	21	549
> 25 feet wide	0	0	36	103
Stream length by type and order				
Perennial	0	0	0	0
Intermittent	0	0	57	109
Ephemeral, 3rd or higher order	0	0	0	0
Ephemeral, 1st or 2nd order	0	0	0	543
Subtotal stream length	*0*	*0*	*57*	*652*
Total				
Aquatic (acres)				
Riparian woodland/scrub	0.09	0.00	1.47	2.68
Perennial wetland [a]	0.00	0.00	0.08	0.77
Seasonal wetland	0.00	0.06	1.88	4.17
Alkali wetland	0.00	0.00	0.15	0.98
Pond	0.00	0.53	0.13	0.63
Reservoir (open water) [b]	0.00	0.00	0.47	4.14
Slough/channel (includes stream)	0.04	0.01	0.69	0.62
Total aquatic	**0.14**	**0.60**	**4.86**	**13.99**
Stream (linear feet)				
Total stream length	265	10	1,866	11,898
Stream length by width category				
< 25 feet wide	80	129	787	6,848
> 25 feet wide	185	10	1,079	5,180
Stream length by type and order				
Perennial	75	10	257	4,727
Intermittent	80	129	1,201	5,052
Ephemeral, 3rd or higher order	0	0	0	225
Ephemeral, 1st or 2nd order	110	0	408	2,024
Total stream length	**265**	**139**	**1,866**	**12,027**

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

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 onsite were propagated, and monitoring reports document that round-leaved filaree persists onsite and is as abundant as it was before the project.

Land Acquisition

Habitat Conserved

This section documents properties acquired for the Preserve System.

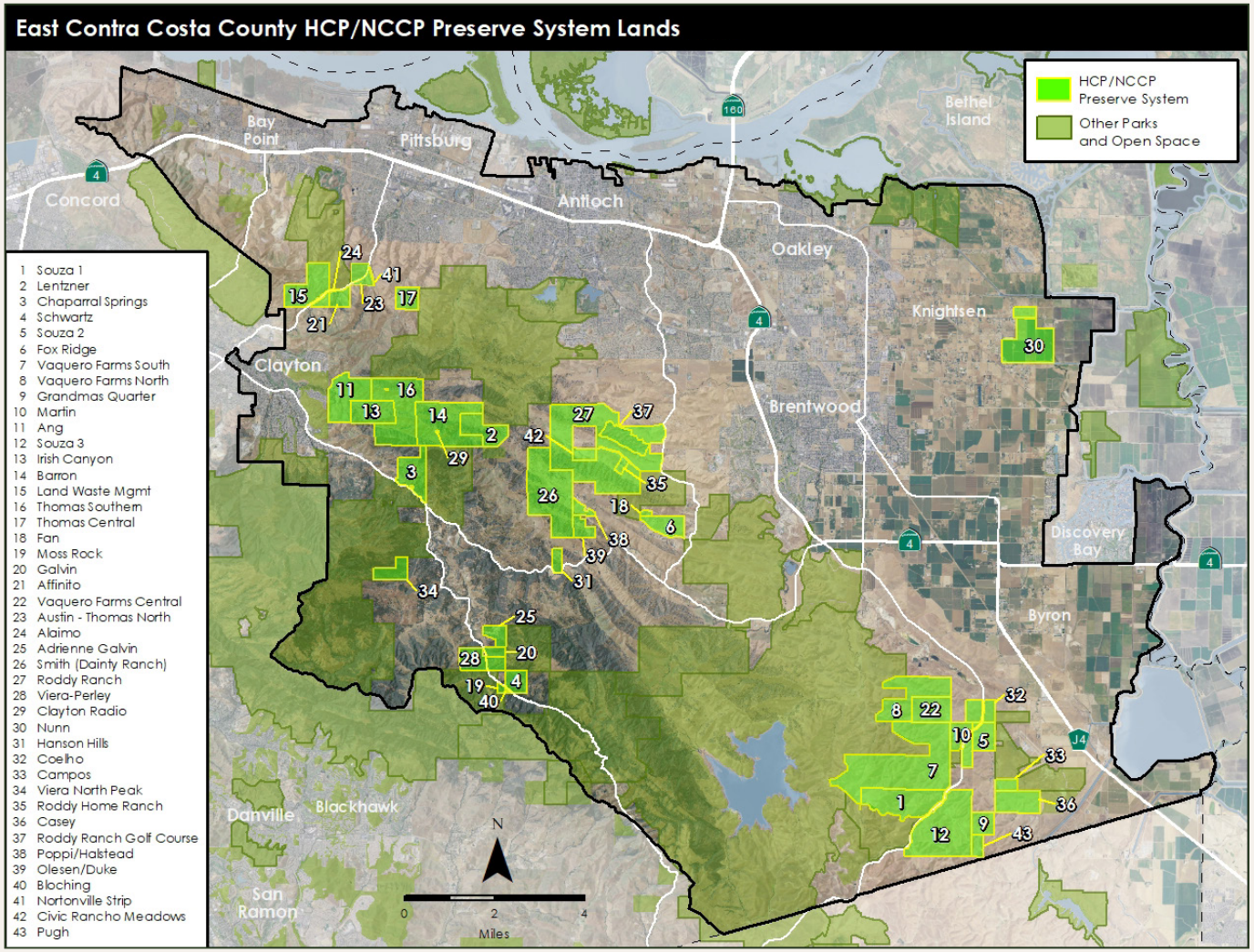
There were no new land acquisitions during the reporting period. The Plan's Preserve System stands at 43 properties encompassing over 14,400 acres of land, approximately 12,900 acres of which are credited toward the Plan's acquisition and preservation requirements. All but one of the acquisitions were completed in partnership with EBRPD, a Permittee of the Plan. EBRPD owns these properties and, together with the Conservancy, manages the majority of the Preserve System lands. **Figure 4** shows the current Preserve System.

Figure 5 shows progress toward assembling the Preserve System. **Table 8** summarizes natural community protection 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.

Clayton Ranch.
NOMAD ECOLOGY

The Conservancy's Preserve System consists of 43 properties encompassing approximately 12,900 acres of new conservation.

Figure 4. Preserve System Map



In most years, acquisition for the Preserve System has been ahead of projections required 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

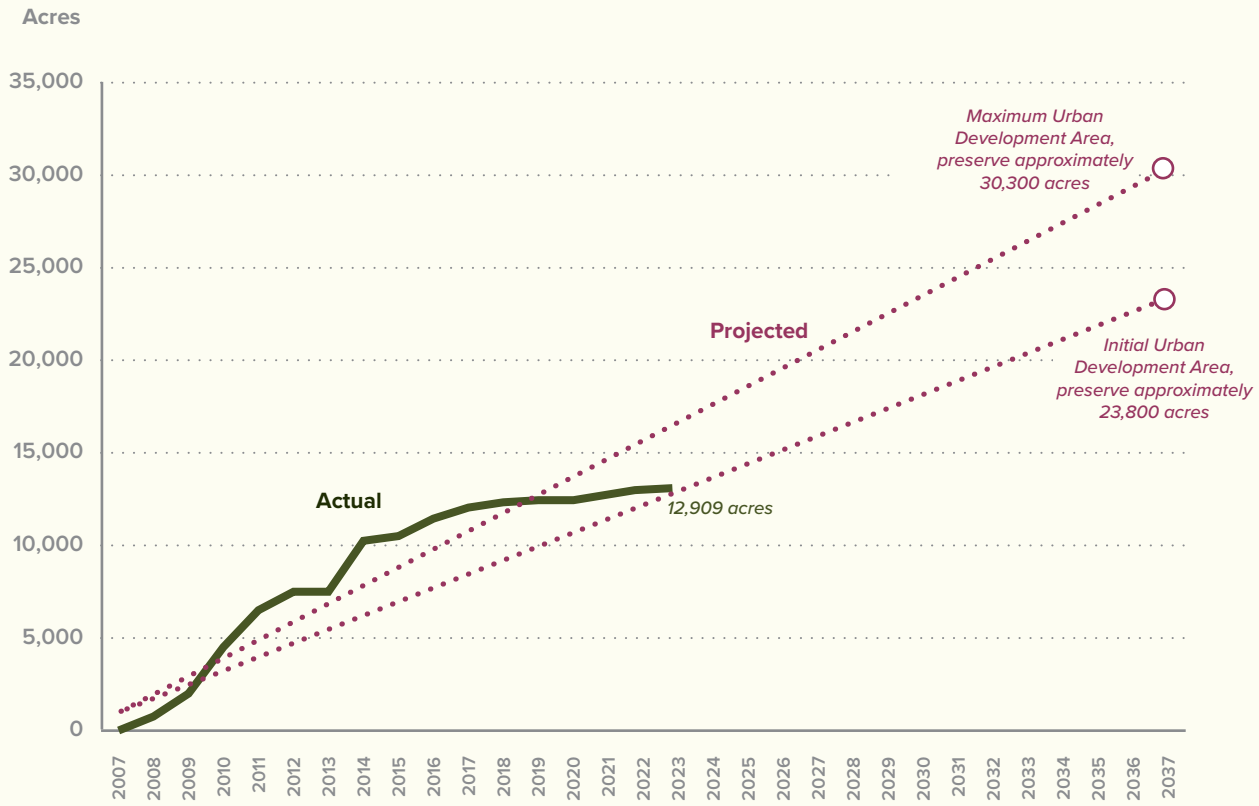


Table 8. Summary of Land Acquisition and Natural Community Protection by Land Cover Type

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)[b]	Protection
Terrestrial						
Annual grassland	16,500	—	—	8,109.2	1,534.9	49%
Alkali grassland	1,250	—	—	273.2	17.7	22%
Ruderal	—	—	—	244.1	25.9	—
Chaparral and scrub	550	—	—	314.7	0.0	57%
Oak savanna	500	—	—	401.4	32.6	80%
Oak woodland	400	—	—	2,683.9	170.5	671%
Rock outcrops	—	—		18.6	4.5	—
Aquatic						
Riparian woodland/scrub	70	—	—	77.80	0.21	111%
Perennial wetland[c]	75	—	—	5.88	5.88	8%
Seasonal wetland	168	—	—	23.50	2.44	14%
Alkali wetland	93	—	—	37.43	4.34	40%
Pond	16	—	—	11.97	2.96	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	—	—	—	*60.9*	*0.8*	—
Wind turbines	—	—	—	*23.0*	*0.0*	—
Stream (length in linear feet)						
Perennial	4,224	—	—	12,919	889	306%
Intermittent	2,112	—	—	138,903	29,568	6,577%
Ephemeral[e]	26,400	—	—	68,702	878	260%
Classification pending[e]	—	—	—	92,526	17,218	—
Acres required for land acquisition						
Initial Urban Development Area	24,300	0.0	0.0	12,909.4	1,802.6	53%
Maximum Urban Development Area	30,300	0.0	0.0	12,909.4	1,802.6	43%

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 Acquired [b]	Cumulative 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	0.00	13.44	8%
Preserve-wide alkali wetland (acres)	93	0.00	34.75	37%
Preserve-wide pond (acres)	16	0.00	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	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 [c] (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	0	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* ssp. *nigelliformis*	1	0	0	0%
Shining navarretia [c]	*Navarretia nigelliformis* ssp. *radians*	0	0	(7)	—

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* ssp. *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* ssp. *radians*. Pending further policy clarification, the Conservancy is continuing to track occurrences of shining navarretia (*Navarretia nigelliformis* ssp. *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.

View of No Name Slough adjacent to the Knightsen Property.

CONSERVANCY

Upper Hess Creek Watershed Restoration Project

The reporting period was Year 13 of monitoring for the Upper Hess Creek Watershed Restoration Project. The winter of 2023–2024 was a moderately wet year, with total rainfall recorded at 14.39 inches, which is 85% of normal. Due to an absence of storm events in October and November, onsite monitoring did not occur until December and continued in January, February, March, and July.

While the total saturated acres were nearly one-tenth of an acre lower than the previous year, the rainfall provided enough moisture to support wetland vegetation. Alkali bulrush (*Bolboschoenus robustus*), an obligate wetland plant, was dominant in the wetland portions and provided dense cover. Other wetland plants observed included nonnative rabbit's foot grass (*Polypogon monspeliensis*), hyssop loose strife (*Lythrum hyssopifolia*), and bristly ox-tongue (*Helminthotheca echioides*).

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. In 2023, wild pig (*Sus scrofa*) damage was discovered in the restoration area and again during the January 2024 site visit. Management of the invasive pig has had a positive impact on the vegetation around the restoration area.

TOP Main Stock Pond, March 2024. Pond is fully inundated. At the time this photo was taken, there were clusters of Sierran treefrog (*Pseudacris sierra*) tadpoles in the shallows near the edges. **BOTTOM** California red-legged frog (*Rana draytonii*) in the alluvial valley wetlands in March 2024.

MONK AND ASSOCIATES

Vaquero Farms Seasonal Wetlands (Pool 3)

February 2024. The seasonal wetland was fully inundated.
MONK AND ASSOCIATES

The 2023–2024 season was Year 9 of hydrologic monitoring for the Vaquero Farms Seasonal Wetlands (Pool 3) as well as monitoring for vernal pool fairy shrimp (*Branchinecta lynchi*), a species federally listed as threatened. Rainfall data from a nearby station showed 8.13 inches of precipitation, which was almost half of the rainfall measured in the previous year (15.8 inches) but is still an considered an above-normal amount.

The wetland was fully inundated in January and February and was fully dry by April. 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 wetland had 50% total vegetative cover—30% hydrophytic vegetation and 20% upland vegetation. About 1% of the hydrophytic species were native. Some species observed were turkey mullein (*Croton setiger*), rabbit's foot grass, and curly dock (*Rumex crispus*). This wetland also met the Year 5 success criterion of ≥5% hydrophytic vegetation cover.

Ang and Irish Canyon Riparian Restoration Project

Planting day on the Ang Preserve in April 2024.
SAVE MOUNT DIABLO

In late September 2017, the Conservancy partnered with Save Mount Diablo, who initiated a riparian planting project on the 462-acre Ang Preserve. 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.

In 2024, new riparian and oak savannah planting areas were established in Irish Canyon, which included 21 new valley oak planting sites, each with three acorns planted. As of August, seven oak seedlings were identified across the tree planting sites—a 33% success rate. Save Mount Diablo plans to establish a seventh riparian planting area for blue oak (*Q. douglasii*) and valley oak in 2025.

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 monitoring period was completed in 2023; however, to attain a larger dataset, additional monitoring for a subset of the monitoring tasks continued into 2024, Year 6 of monitoring. The performance of this year has no bearing on performance standards but nevertheless is being assessed.

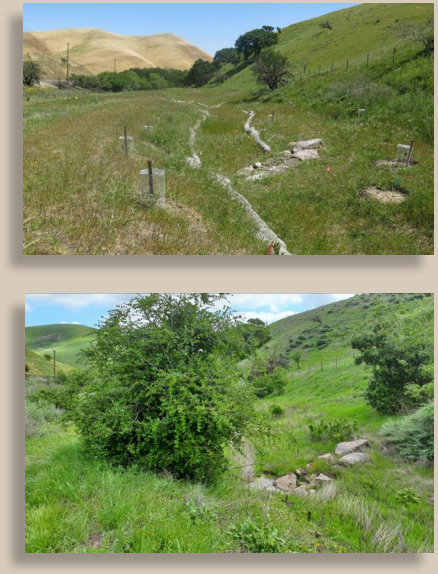
Year 6 saw an estimated 11.65 inches of rainfall at the restoration site, which was about 91% of average. Rainfall was concentrated between mid-December and March and ceased in April. Standing water was present in at least one wetland onsite from February through mid-May. At some point, 21 of the 37 wetlands held standing water, and 19 of those wetlands met the performance standard of 14 continuous days of ponding.

Two of the five wetlands (Wetlands 1 and 20) designated as California tiger salamander habitat met the 100-day ponding period to be considered successful. One California tiger salamander egg mass was observed in Wetland 20, and one was observed in the existing stock pond. Wetland 20 did not meet the 200-day ponding duration performance standard to support California red-legged frog breeding habitat, and it is unlikely that any of the wetlands onsite will be able to sustain such hydroperiods in any but the most exceptionally high rainfall years.

Wetland 20 in February 2024, where the California tiger salamander egg mass was observed.
NOMAD ECOLOGY

The ephemeral channel has at least 14 days of continuous saturation/inundation, meeting the performance standard in Channel Assessment Reaches 11 and 12. All 20 of the reaches met the performance standard for channel stability.

For future management activities, it is recommended that invasive species control continues and wetlands be potentially deepened to better support California tiger salamander breeding habitat. Additionally, there is potential for several of the wetlands to support vernal pool branchiopods, including vernal pool fairy shrimp should the restoration area be inoculated in the future.



Comparison of photo point 12B in April 2015 (**TOP**) and April 2024 (**BOTTOM**).

NOMAD ECOLOGY

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 2023–2024 season was monitoring Year 10 for the project, during which the total recorded precipitation was 16.6 inches and was above average for the prior decade. Riparian canopy cover continued increasing from the seventh monitoring year, with 2.57 acres of total riparian canopy cover, a 1.96-acre increase throughout the entirety of the monitoring period. This growth achieved the performance criteria for the project, requiring the canopy to remain consistent or grow from baseline conditions. Performance criteria of 40% covered was also met for riparian woodland cover, with 36% coverage of woody species, which falls within the margins of sampling error.

In Year 10, a total of 417 naturally recruited (not originally planted) individuals from eight different perennial native species were identified throughout the restoration area, including California buckeye, mugwort (*Artemisia douglasiana*), coyote brush (*Baccharis pilularis* ssp. *consanguinea*), Great Valley gumplant

(*Grindelia camporum*), silver bush lupine (*Lupinus albifrons* ssp. *collinus*), valley oak, California rose (*Rosa californica*), and red willow. Eleven invasive weed species were observed in the restoration area throughout the monitoring year. However, the invasive weed cover ranged from 1 to 5%, meeting the performance criteria of 10% coverage or lower. Weed control will continue to be a priority at the restoration site.

Pond Restoration

Ponds in the Preserve System failed during the 2022/2023 winter storms. These impacts included berm failures, sedimentation, and development of erosive features.

In 2024 four ponds in the Vasco-Byron area were restored and one pond adjacent to the Hess Creek Restoration site was restored. Work was completed on these ponds to restore breeding habitat for California red-legged frog and California tiger salamander. Additional ponds are scheduled for restoration in 2025.

After pond restoration, November 2024.
CONSERVANCY

Upcoming Restoration Projects

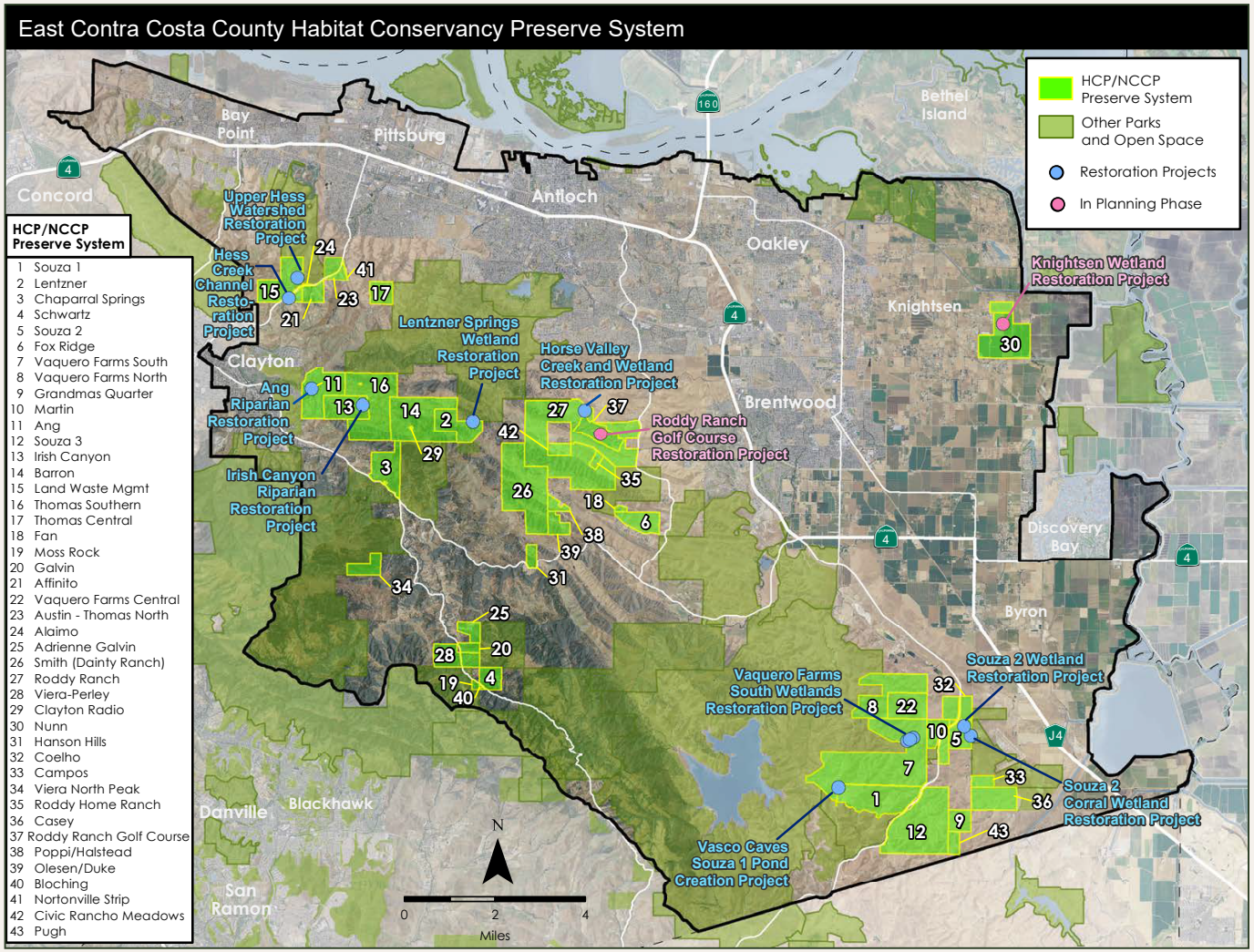
The Conservancy continued planning for two restoration projects, as well as a number of smaller pond repair and restoration projects.

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

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

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

Figure 6. Location of Restoration and Creation Projects



Notes

The Vaquero Farms Wetlands are three discrete features that were built over two construction efforts; therefore, they are shown on the map once but counted as two projects.

Smaller pond restoration projects are not reflected on this map.

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

Land Cover Type	Plan Estimated 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	—	—	0.89	0.61	1.16	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	—	0.40	—	—	8.66	—	2,075	508	—	2,582
Creation	—	—	—	—	0.30	—	—	0.30	—	—	—	—	—
Subtotal	—	*0.16*	*8.10*	—	*0.70*	—	—	*8.96*	—	*2,075*	*508*	—	*2,582*
Frisk Creek Sub Basin													
Restoration	—	—	0.33	—	0.45	—	—	0.78	—	—	—	—	—
Creation	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	*0.33*	—	*0.45*	—	—	*0.78*	—	—	—	—	—
Kirker Creek													
Restoration	3.08	—	0.23	2.40	0.05	—	—	5.76	—	—	1,760	—	1,760
Creation	—	—	—	—	0.12	—	—	0.12	—	—	—	—	0.00
Subtotal	*3.08*	—	*0.23*	*2.40*	*0.17*	—	—	*5.88*	—	—	*1,760*	—	*1,760*
Sand Creek Sub Basin													
Restoration	—	—	2.00	0.05	0.27	—	—	2.32	—	—	684	4,787	5,471
Creation	—	—	—	—	0.19	—	—	0.19	—	—	—	—	—
Subtotal	—	—	*2.00*	*0.05*	*0.46*	—	—	*2.51*	—	—	*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**	**1.77**	**—**	**—**	**20.43**	**—**	**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 Created	Pond Restored	Riparian Created	Riparian Restored	Stream Channel Restored (feet)	Stream Channel Created (feet)
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	0	0
Vasco Caves Souza I Pond Creation Project	2008	2015	0.00	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Souza II Wetland Restoration Project	2009	2015	0.04	0.54	0.81	0.00	0.53	0.64	0.00	0.00	0.00	0.00	2,178	0
Irish Canyon Riparian Restoration Project	2009–2010	2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	689	0
Upper Hess Watershed Restoration Project	2011	N/A	0.00	0.00	1.09	0.79	0.00	0.00	0.07	0.20	0.00	0.00	226	0
Souza II Corral Seasonal Wetland Restoration Project	2012	2017	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0
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	0	0
Hess Creek Channel Restoration Project	2015	N/A	0.00	0.00	0.17	0.30	0.00	0.00	0.00	0.00	2.57	0.77	1,286	730
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	0.00	0.00	0	0
Ang Riparian Restoration Project	2016	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	0	0
Horse Valley Creek and Wetland Restoration Project	2018	N/A	0.00	0.00	2.25	0.00	0.00	0.00	0.00	0.17	0.00	0.00	4,150	0
DEPND 003	2023	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0	0
VCPND 023	2024	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0	0
VCPND 027	2024	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0	0
VCPND 029	2024	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0	0
VCPND 034	2024	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0	0
BDPND 055	2024	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0	0
Total			**0.04**	**0.54**	**6.19**	**1.09**	**0.61**	**0.87**	**0.07**	**1.53**	**2.57**	**3.24**	**8,529**	**730**

Preserve System Management

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

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

Cattle at the Vasco Hills Preserve.
CONSERVANCY

Vaquero Farms Residence Demolition.

EBRPD

- Vegetation management
- Safety and security patrol
- Native seed collection
- Ranch road maintenance
- Fence repair
- Invasive plant control
- Wild pig management
- Grazing infrastructure maintenance (tanks, troughs, wells, paddocks)
- Response to fire and flood conditions to protect community and habitat
- Hazard abatement (fallen trees, landslides)

Projects completed in 2024 include the Vaquero Farms Residence Demolition (pictured above, left) and the Irish Canyon Culvert Replacement (pictured below). Highlights from other 2024 management actions are described below.

Before (**LEFT**) and after (**RIGHT**) photographs of one of the culverts replaced for the Irish Canyon Culvert replacement project.

NOMAD ECOLOGY

Roddy Ranch Golf Course Preserve Management

Invasive weed treatment has been ongoing at this property since 2018 and continued in 2024. As a result, invasive weeds have been significantly reduced at this property and will continue to be controlled. For example, initial mapping showed 152 acres of Italian thistle (*Carduus pycnocephalus*), which formed dense monocultures. Italian thistle onsite now occurs in scattered patches of low density, typical of grassland in the region including on the adjacent Roddy Ranch properties.

The Conservancy has been managing weeds onsite for the immediate habitat benefits, but also to prevent weeds from spreading to the rest of the Preserve System, potentially impacting covered plant populations, healthy rangeland, and recently restored habitats including the Horse Valley Creek and Wetland Restoration Project to the north.

LEFT May 2018—Italian thistle growing in dense stands on the former fairways. **RIGHT** March 2024—Fairway that was dominated by Italian thistle is now dominated by grassland. Skeletons of native narrow tarplant (*Holocarpha virgata* ssp. *virgata*) are visible.

NOMAD ECOLOGY

Upper Hess Creek Watershed Rangeland Infrastructure

Several rangeland infrastructure improvements have been made within the Upper Hess Creek Watershed. In early 2023 fence repairs were completed, and the 2023 and 2024 seasons were the first years since the restoration in 2012 that livestock have not encroached into the restoration area. The monitoring biologists have reported dramatic improvements in the wetland, grassland, and riparian vegetation such as the planted willows in the downstream end of the restoration area. In addition, juvenile California red-legged frogs have been documented dispersing through the restored wetland area.

To provide incentive for cattle to use different areas of the property, an extensive water system was installed in August and September 2024. The Conservancy and EBRPD refurbished a well on an adjacent conserved parcel, secured power from a nearby PG&E powerline, and a installed a solar-powered pump partway uphill to help move water around the site. Water from this well was used to fill and supply three tanks and fill six troughs across this 420-acre property.

An extensive water system was installed in 2024 to provide water for cattle, encouraging them to use different areas of the Upper Creek Watershed.

CONSERVANCY

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 2024, four studies were completed: a foothill yellow-legged frog survey, a golden eagle (*Aquila chrysaetos*) nest mapping study, a pond turtle assessment, and the Vasco Road undercrossing survey. In addition, a 2024 publication confirmed a new species on the Preserve System: the Bay Miwok evening primrose (*Oenothera deltoides julpunensis*). These studies are detailed in the following sections.

Flowers blooming on the Ang Preserve.
SAVE MOUNT DIABLO

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 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.

Monitoring Studies

Foothill Yellow-Legged Frog Survey

Foothill yellow-legged frog is a covered species of the Plan. Five surveys were conducted from April through August to align with foothill yellow-legged frog breeding and potential for larval presence. However, during the five surveys conducted in Marsh Creek and the Curry Canyon Ranch Preserve, no foothill yellow-legged frogs were observed. Nonetheless, Marsh Creek's presence of plunge pools, large rocks and boulders, and riparian habitat where this species have previously been observed suggests that these frogs may still inhabit the site; additionally, there have been no recorded observances of foothill yellow-legged frog predators.

Despite no observations of foothill yellow-legged frogs, biologists observed seven adult California red-legged frogs, one young of the year, and four larvae. The young of the year was observed in the Curry Canyon Ranch Preserve, and the rest were found along Marsh Creek's main tributary.

Surveys for foothill yellow-legged frog were limited due to sections of Marsh Creek located on private lands that are not part of the HCP/NCCP Preserve System. Future surveys should expand to include other HCP/NCCP Preserve System lands to ensure all potential foothill yellow-legged frog habitat in the study area is surveyed.

Ventral view of a California red-legged frog metamorph in Marsh Creek; photo taken May 17, 2024.

MONK AND ASSOCIATES

Vasco Road Undercrossings

In 2024 (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 2025 at the next set of crossing structures within the Vasco Hills/Byron Vernal Pools Management Area. This study recorded 9,191 species detection events, of which 3,088 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 monitored undercrossing structures beneath Vasco Road, with desert cottontails (*Sylvilagus audubonii*) most frequently detected (2,374 crossing events), followed by coyotes (*Canis latrans*; 563 crossing events), bobcats (*Lynx rufus*; 78 crossing events), raccoons (*Procyon lotor*; 66 crossing events), domestic sheep (*Ovis aries*; 4 crossing events), and three species with 1 crossing event each: American badgers (*Taxidea taxus*), striped skunks (*Mephitis mephitis*), and red foxes (*Vulpes vulpes*).

Western burrowing owls, covered by the HCP/NCCP, were detected incidentally during the camera station survey (61 detection events). Although the species was not observed using the undercrossing structures, detection of it still has implications for management of their habitats.

The survey resulted in a dataset of 71,663 images of 36 different wildlife species, including 12 mammals, 20 birds, 3 reptiles, and 1 amphibian.

NOMAD ECOLOGY

Golden Eagle Surveys

From December 2023 to July 2024, U.S Geological Survey (on behalf of EBRPD) conducted 129 individual surveys at 48 sites throughout Contra Costa County, including in parts of the Preserve System. A total of 31 sites, the “focal” sites, were randomly selected hexagons in the study area, and 17 “non-focal” sites were known from previous years. The design included repeated surveys at the selected sites, during which observers recorded the location, number, age, and behaviors of golden eagles detected.

A total of 34 territorial pairs of golden eagles were detected in 63% of the area surveyed within Contra Costa County: 15 of the golden pairs were observed in the focal sites, and 19 pairs were observed in the non-focal sites. Further, surveyors found evidence of successful reproduction (at least 1 young fledged) in 16 of the total 34 pairs.

A total of 34 territorial pairs of golden eagles were detected in 63% of the area surveyed within Contra Costa County: 15 of the golden pairs were observed in the focal sites, and 19 pairs were observed in the non-focal sites.

SEAN BURKE

Bay Miwok Evening Primrose

The Bay Miwok evening primrose is a flower endemic to a small portion of the San Francisco Bay–Delta. In a 2024 study, botanists describe a proposed new subspecies of the flower—the *Oenothera deltoides* ssp. *julpunensis*. There are currently less than five known populations of the proposed subspecies, four of which are on private land. The largest and only conserved population identified is on the California Department of Water Resources' Dutch Slough property. From 2020 to 2023, observers visited the largest population of the proposed subspecies which were restricted to wind-blown sandy soils on the eastern portion of the Antioch sand sheet.

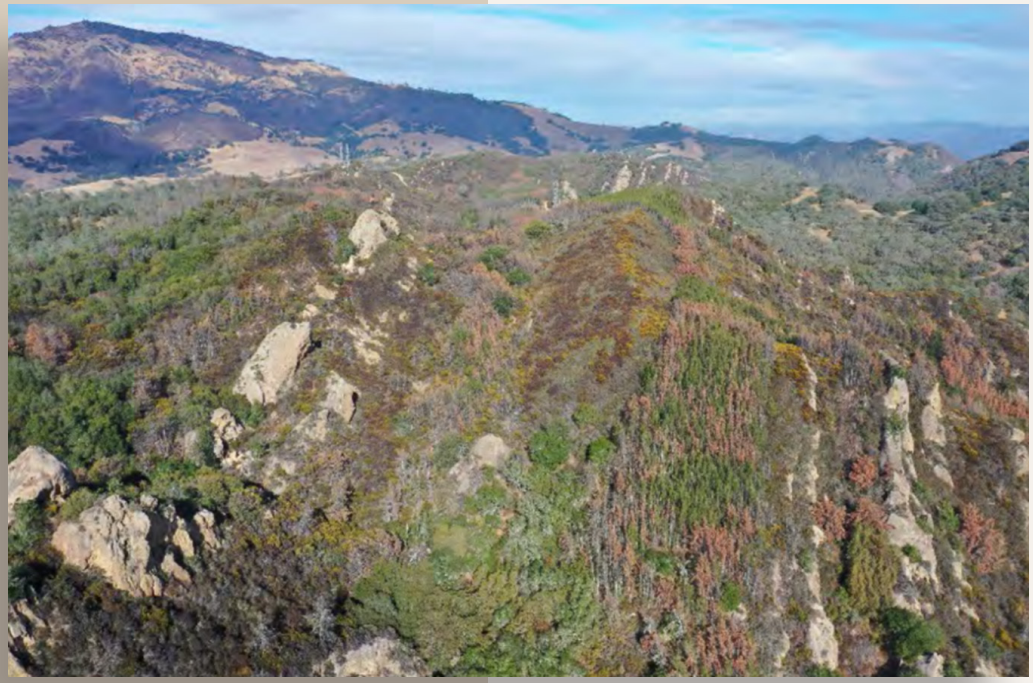
The proposed subspecies, *Oenothera deltoides* ssp. *julpunensis*, in bloom.
CAROLYN KRISO

The population size is estimated to be roughly 1,500 individuals (as of 2023), which is lower than recent estimates of its federal and state endangered counterpart *O. d. howellii* at 5,436 adults (as of 2019). This may warrant consideration of conservation status for the proposed subspecies, as well as management for the protection of the flower, including interventions like invasive species management, which pose a risk to the existing populations.

Manzanita and Pine Die Off Study

In 2020, widespread foliar dieback was observed on Mount Diablo manzanita (*Arctostaphylos auriculata*), Contra Costa manzanita (*Arctostaphylos manzanita* ssp. *laevigata*), and knobcone pine (*Pinus attenuata*) at Mount Diablo State Park as well as nearby Black Diamond Mines Regional Preserve (BDMRP). The purpose of this study was to document the extent of the dieback, identify affected species, and inform regional management. In addition, several goals and objectives of the HCP/NCCP are supported by this study. Mount Diablo manzanita is a covered species under the Plan, and its entire range occurs on Mount Diablo and its surrounding foothills, including BDMRP. Due to its narrow range, the dieback could potentially be putting its long-term survival in jeopardy.

The dieback was thought to be a result of infection by a soilborne pathogen, drought, or both. Phytosphere Research investigated the possible causes and concluded that the dieback was most likely the result of severe water stress in combination with extreme heat events in 2020, and that the pattern of dieback did not match a widespread Phytophthora pathogen infection. Observations of low severity dieback at BDMRP seems be due to Neofusicoccum and related fungi infection, which are widespread in manzanitas and can take hold when plants are stressed.



The left side of the ridge in the foreground has both green and dieback of knobcone pine. The right side of the ridge shows a patch of manzanita with green shrubs near the top of the ridge and shrubs experiencing dieback below.
NOMAD ECOLOGY

To be able to track the spread of any further plant mortality, Nomad Ecology utilized drones and remote sensing techniques to map dieback of manzanita species at BDMRP and dieback of manzanita species as well as knobcone pine at Mount Diablo State Park and Save Mount Diablo lands. The result showed the manzanita dieback at BDMRP was less severe and less widespread than dieback at Mount Diablo State Park and neighboring lands, with 30% and 71% dieback of the mapped area, respectively. One explanation for the more widespread dieback at Mount Diablo State Park is that manzanita was mapped mostly on south facing slopes in that area, whereas manzanita at BDMRP was mapped on a lot more north facing aspects. Knobcone pine dieback was only 17% of the mapped area.

Although manzanitas at Mount Diablo State Park were hit harder by the dieback, significant recovery was documented in spring 2022 and new green growth on living branches observed in 2025. Shrubs at BDMRP seems to have recovered within three years of the first observation of the dieback. Extreme drought conditions and high heat events are becoming more common so it is likely that similar conditions leading to dieback will occur again, which could put manzanita on and surrounding Mount Diablo at risk if future dieback is severe enough, or if it occurs frequently without time for shrubs to recover.

Since the HCP/NCCP goals include climate change resiliency for species needs, if manzanitas on north facing slopes have a higher chance of survival in warming scenarios, north facing slope populations of covered manzanita species could be prioritized for preservation.

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.

Spring wildflowers on the Deer Valley Preserve.
NOMAD ECOLOGY

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 17) represents 57% of the permit term.

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

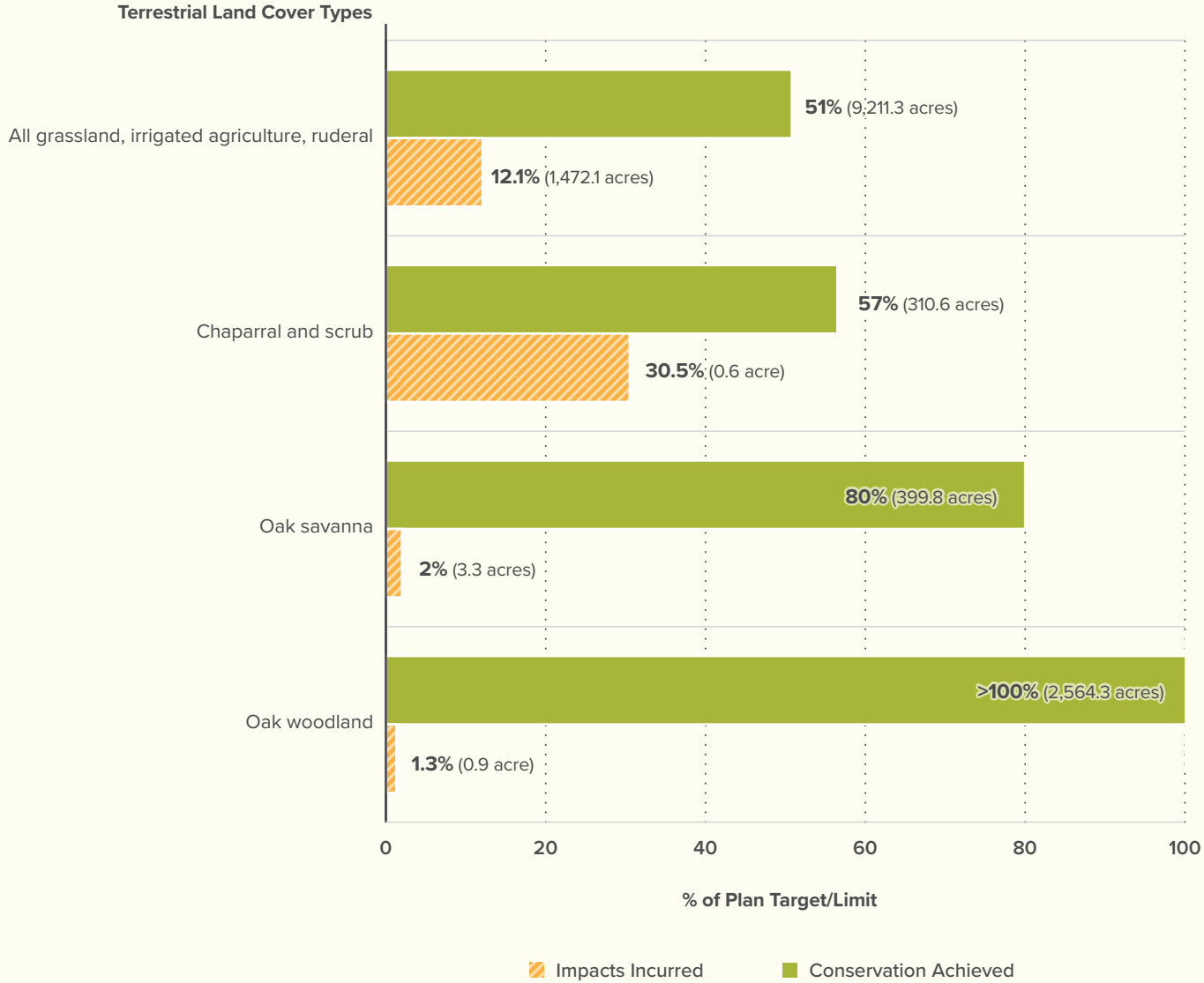
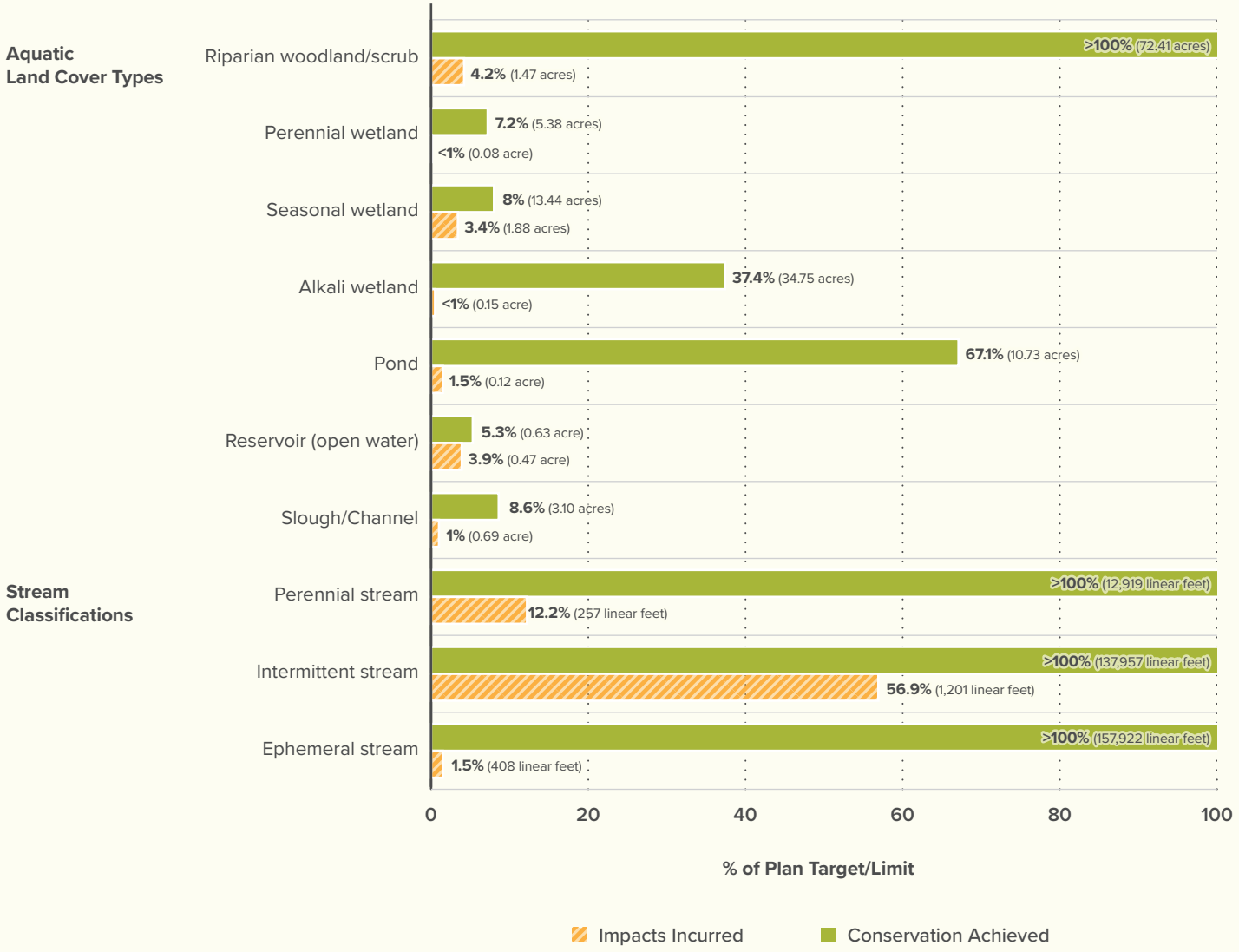


Figure 8. Comparison of Conservation Achieved to Impacts Incurred for Aquatic Land Cover Types and Streams—Cumulative



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

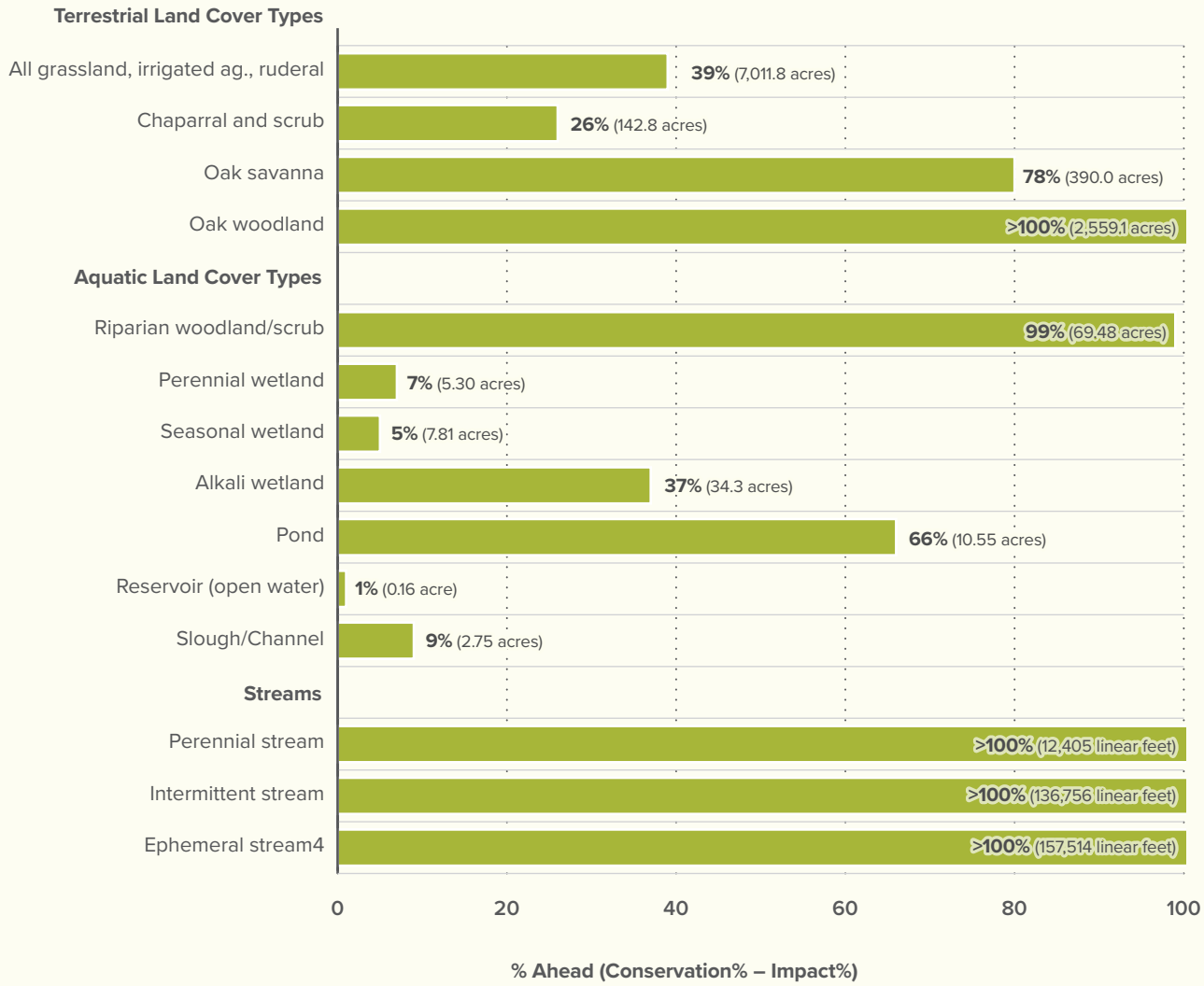


Table 14. Stay-Ahead Assessment—Land Cover and Streams

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	1,472.1	12.1%	2,199.5	7,011.8	39%
Chaparral and scrub	550	310.6	56.5%	2	0.6	30.5%	167.8	142.8	26%
Oak savanna	500	399.8	80.0%	165	3.3	2.0%	9.9	390.0	78%
Oak woodland	400	2,564.3	641.1%	73	0.9	1.3%	5.2	2,559.1	640%
Aquatic									
Riparian woodland/scrub	70	72.41	103.4%	35	1.47	4.2%	2.93	69.48	99%
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%
Slough/channel	36	3.10	8.6%	72	0.69	1.0%	0.35	2.75	9%
Stream (length in linear feet)									
Perennial stream	4,224	12,919	305.9%	2,112	257	12.2%	514	12,405	294%
Intermittent stream	2,112	137,957	6532.1%	2,112	1,201	56.9%	1,201	136,756	6,475%
Ephemeral stream [d]	26,400	157,922	598.2%	26,400	408	1.5%	408	157,514	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 requirement 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* ssp. *nigelliformis*	0	0	0	—
Shining navarretia [c]	*Navarretia nigelliformis* ssp. *radians*	(7)	0	(7)	—

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 onsite were propagated, and monitoring reports document that round-leaved filaree persists onsite and is as abundant as it was before the project.

c The species *Navarretia nigelliformis* ssp. *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* ssp. *radians*. Pending further policy clarification, the Conservancy is continuing to track occurrences of shining navarretia (*Navarretia nigelliformis* ssp. *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	—	<0.01	—
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 continued to survey for 10 years (through 2022) to determine if VPFS were present; VPFS were not 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	—	—
Knightsen 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 proposed 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 Knightsen 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.

Golden eagle soaring above the Preserve System.
SEAN BURKE

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.

The Conservancy develops its annual budget by analyzing cost projections from the HCP/NCCP, actuals, and the annual work plan. Expenditures for the reporting period to implement the HCP/NCCP totaled $3,038,540 (**Figure 10**). 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 25% of revenue, and non-fee funding makes up 75% of revenue (**Figure 11**) (local funding figures have yet to be included in these calculations).

View of No Name Slough adjacent to the Knightsen Property.
CONSERVANCY

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 the effects of covered activities on the covered species and natural communities addressed by the Plan.

No revenue from non-covered activities were collected in 2024. 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. Permitted in 2018, the Kirker Pass Road Northbound Truck Climbing Lane (Area Outside HCP/ NCCP) 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 value at the end of the reporting year is $9,746,434.

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 HCP implementation activities in 2024.

   Wetland Mitigation Fees collected in 2024 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 restoration of ponds, and 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 Project is scheduled for construction in 2026/2027. The Roddy Ranch Golf Course Restoration Project is scheduled for construction in 2026. Monitoring and maintenance of previously constructed wetland projects are ongoing.

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.

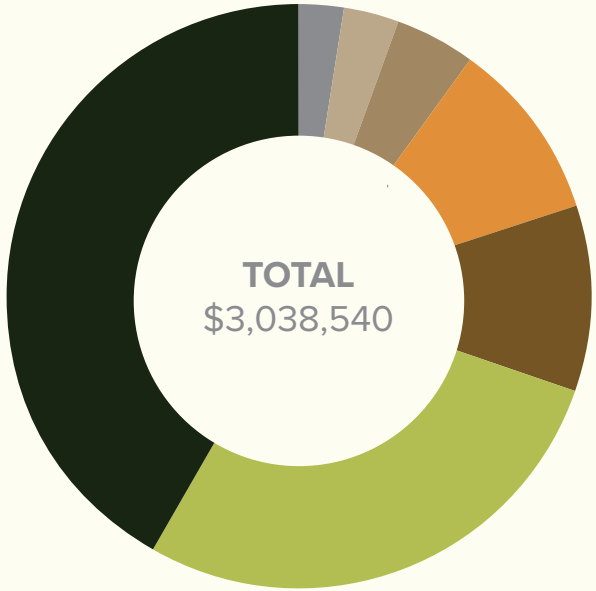
6. The amount of refunds made pursuant to Government Code Section 66001(e) and any allocations pursuant to Government Code section 66001(f).

   No refunds were made.

The expenditures for the reporting period to implement the HCP/NCCP totaled $2,848,518; in addition, $190,021 was transferred to the Endowment (included in the Program Administration and Permitting Program budget category).

Figure 10. Summary of Expenditures

Actuals (Reporting Period)

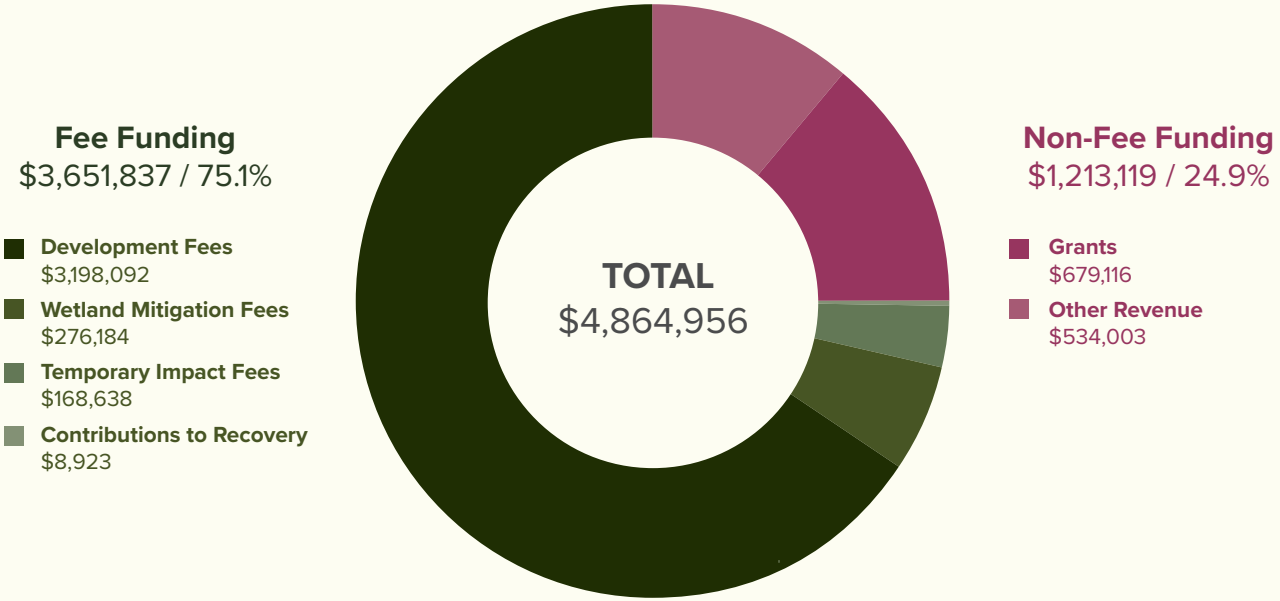


- **Program Administration and Permitting Program** $1,194,055
- **Planning and Design** $793,497
- **Habitat Restoration and Creation** $295,402
- **Preserve Management and Maintenance** $281,335
- **Monitoring, Research, and Adaptive Management** $126,899
- **Environmental Compliance** $92,643
- **Land Acquisition** $64,687
- **Contingency Fund** $0
- **Remedial Measures** $0

For the reporting period, the majority of fee funding came from development fees, while non-fee funding came from grants and other revenue.

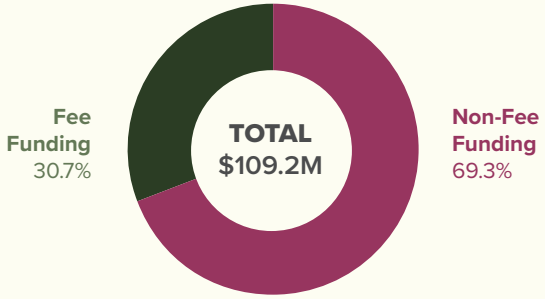
Figure 11. Summary of Revenue

Revenue (Reporting Period)



Plan Assumptions

Actual Revenue (Cumulative)



Maximum Urban Development Area assumptions were used.

Table 18. 2024 Fee Schedule

Fee Type	Fee
Development Fees (per acre, unless otherwise stated)	
Zone I	$20,329.20
Zone II	$40,658.39
Zone III	$10,164.60
Wetland Mitigation Fees	
Riparian woodland/scrub	$113,975.20
Perennial wetland	$175,393.58
Seasonal wetland	$412,016.09
Alkali wetland	$416,523.83
Pond	$227,232.49
Aquatic (open water)	$113,616.78
Slough/Channel	$160,930.74
Streams 25 feet wide or less—fee per linear foot	$595.22
Streams greater than 25 feet wide—fee per linear foot	$892.29

Table 19. 2024 Mitigation Fees

Beginning Balance	Revenue	Interest Earned	Expended	Ending Balance
Development Fee				
$0	$3,665,377	$186,806	$1,480,906	$0
Wetland Mitigation Fee				
$0	$296,340	$15,103	$424,209	$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 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 (expiring December 1, 2025).

Volunteers plant trees on the Ang Preserve.
SAVE MOUNT DIABLO

Tree planting at the Ang Preserve.

SAVE MOUNT DIABLO

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 of Federal Regulations 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 July 2024, and the Conservancy is continuing to work with the Corps on the 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 2024, Save Mount Diablo continued to work with volunteers to maintain the riparian plantings in the Ang and Irish Canyon properties. The work included a new valley oak planting effort at Irish Canyon, maintenance work at all riparian planting areas, and several waterings by the Save Mount Diablo Volunteer Water Crew starting in July and through early October. In 2024, 26 volunteers contributed a total of 155.5 hours to work on these properties, a substantial increase compared to the previous year.

East Contra Costa County
Habitat Conservancy

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