SANTA ANA WATERSHED ASSOCIATION ANNUAL REGULATORY REPORT

MITIGATION PROJECTS
JULY 1ST, 2023 – JUNE 30TH, 2024

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Santa Ana Watershed Association

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Arundo removal in the Prado Basin.

INTRODUCTION

ABOUT SAWA

The Santa Ana Watershed Association (SAWA) is a 501 c 3 non-profit corporation serving the Santa Ana River watershed. For more than 25 years, SAWA and its partners have been promoting a healthy Santa Ana River watershed for wildlife and people. The Santa Ana River is over 96 miles long; its watershed spans approximately 2,800 square miles and ranges in elevation from 11,500 feet to sea level through five distinctive life zones. The Santa Ana River Watershed is the largest watershed in California's South Coast Region. It lies in one of Earth's 25 Biodiversity Hotspots: areas rich in flora and fauna that are threatened by human activity.

A major goal of SAWA is to restore the natural functions of the watershed through the enhancement and restoration of the native riparian community. This is accomplished by the removal of invasive plant species and the management of existing resources, including both habitat and wildlife. The largest threat to the riparian habitat within the Santa Ana River Watershed is the spread of invasive plant species, notably *Arundo donax* (hereafter "arundo" or "giant reed"). This exotic plant has invaded much of the watershed, out-competing native vegetation, consuming more water than that of native plant species

and having drastic impacts on wildlife habitat. Removing arundo is complex, requiring decades of retreatments and intensive monitoring.

SAWA's comprehensive eradication efforts include identification and mapping of invasive species, initial biomass removal, follow-up treatments, and intensive biological monitoring during all stages of eradication. Most importantly, SAWA monitors the removal areas long after the arundo has been eradicated to ensure that native vegetation and wildlife are recovering and that there is no re-infestation of the invasive plants. When it is observed that natural succession is not sufficient to ensure recovery of native habitat, active restoration and enhancement is often employed.

To date, SAWA has removed nearly 6,917 acres of arundo and other invasive plants throughout the watershed.

COLLABORATION

SAWA conducts environmental management projects, working collaboratively with governmental agencies, conservation organizations, and private citizens. The most notable collaborating agencies include the U.S. Army Corps of Engineers (USACE), U.S. Fish & Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), U.S. Forest Service (USFS), California Department of Water Resources (DWR), Santa Ana Watershed Project Authority (SAWPA), Riverside County Flood and Water Conservation District (RCFCD), Riverside County Parks and Open Space District and the Regional Water Quality Control Board (RWQCB).

The Santa Ana River Watershed Program formally began in 1995, with the signing of a landmark agreement between the Orange County Water District (OCWD), USACE, and the U.S. Department of Interior for the USFWS. This agreement allowed the OCWD to conserve water behind Prado Dam, but also recognized the need for watershed restoration by allowing a portion of the project mitigation to occur in the upper Santa Ana River watershed, many miles from the project site.

Habitat restoration, primarily through invasive plant species control, is the current focus of the Watershed Program because most of the funding obtained was earmarked for arundo control and related biological monitoring. Biological monitoring is conducted to avoid impacts to wildlife species during project activities and document recovery of wildlife and its habitat, with a focus on the Least Bell's Vireo (*Vireo bellii pusillus*). The Santa Ana River Watershed Program accepted grant funds and mitigation responsibilities of projects which have an adverse impact on riparian habitat. Mitigation projects are designated and approved by the SAWA Board of Directors. For copies of the past annual mitigation report and annual Least Bell's Vireo monitoring reports, visit SAWA's web site at www.sawatershed.org

This report includes mitigation activities and status of SAWA projects in CDFW Regions 5 and 6, as well as mitigation projects contracted by other permittees. This reporting period reflects activities from July 1, 2023 to June 30, 2024. The next report will be issued in October 2025 and will cover the period July 1, 2024 through June 30, 2025.

CDFW REGION 5

The reports contained herein cover SAWA projects funded by the In-lieu Fee program and mitigations and are located within the California Department of Fish and Wildlife Region 5.

CARBON CANYON AERA

PROJECT BACKGROUND

Carbon Canyon AERA runs along Carbon Canyon Creek, adjacent to the Carbon Canyon Discovery Center, near Brea, CA. Originally the 4-acre project area was infested with about 2 acres of giant reed (*Arundo donax*). SAWA placed one mitigation at this location, and removal work began in November 2012. Control efforts have continued in subsequent years to control the re-emergence of giant reed.

Table 1: Carbon Canyon AERA - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2009-0020-R5 (Op Law) SPL-2009-00292-JPL RWQCB Cert. 9/17/09	North Diemer Access Road Project	Metropolitan Water District of Southern California	$75,000 (12/4/09)	0.7	ILF
Totals			**$75,000**	**0.7**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: Enhancement activities did not occur during this reporting period. Staff have been actively pursuing an access agreement.

Table 2: Carbon Canyon AERA – Summary of Mitigation Activities

Project placed in:	**2012**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2012	2	Initial removal	Giant reed
2013	n/a	Treatment	Giant reed
1/1/14 to 6/30/14	None	n/a	n/a
7/1/14 to 6/30/15	0.2	Treatment	Giant reed
7/1/15 to 6/30/16	None	n/a	n/a
7/1/16 to 6/30/17	0.25	Treatment	Giant reed
7/1/17 to 6/30/18	0.2	Treatment	Giant reed
7/1/18 to 6/30/19	None	n/a	n/a
7/1/19 to 6/30/20	None	n/a	n/a

Table 2: Carbon Canyon AERA – Summary of Mitigation Activities			
7/1/20 to 6/30/21	None	n/a	n/a
7/1/21 to 6/30/22	None	n/a	n/a
7/1/22 to 6/30/23	None	n/a	n/a
7/1/23 to 6/30/24	None	n/a	n/a

Removal/treatment methods: No removal or treatment occurred during this reporting period.

Table 3: Chemicals Used During Herbicide Treatments
No treatment occurred during this reporting period.

Amount removed/treated: No removal or treatment occurred during this reporting period.

Removal/treatment frequency and timing: No removal or treatment occurred during this reporting period.

Disposal of removed/treated biomass: No removal or treatment occurred during this reporting period.

Monitoring Activities: Bioassessment occurred on 6/27/24 and a total of 3.25 hours were spent on the bioassessment during this reporting period.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>35-50 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>50-75%	
Overall native vegetative cover:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Mulefat	*Baccharis salicifolia*	5-15%
California Walnut	*Juglans californica*	5-15%
Laurel Sumac	*Malosma laurina*	5-15%
Blue Elderberry	*Sambucus mexicana*	5-15%
Phacelia	*Phacelia* sp.	1-5%

Table 4: Current Site Conditions		
Non-native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Poison Hemlock	*Conium maculatum*	15-25%
Eucalyptus	*Eucalyptus* sp.	15-25%
Mustard species	Brassicaceae sp.	5-15%
Arundo	*Arundo donax*	<1%
Castor Bean	*Ricinus communis*	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
California Quail	*Callipepla californica*	None
Mourning Dove	*Zenaida macroura*	None
Anna's Hummingbird	*Calypte anna*	None
Acorn Woodpecker	*Melanerpes formicivorus*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
California Scrub-Jay	*Aphelocoma californica*	None
Wrentit	*Chamaea fasciata*	None
Song Sparrow	*Melospiza melodia*	None
California Towhee	*Melozone crissalis*	None
Spotted Towhee	*Pipilo maculatus*	None
Bullock's Oriole	*Icterus bullockii*	None
Black-headed Grosbeak	*Pheuctictus melanocephalus*	None
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
California Ground Squirrel	*Otospermophilus beecheyi*	None

Table 5: Wildlife Species Detected on Site		
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Southern Pacific Rattlesnake	*Crotalus oreganus helleri*	None

Project Status and Remedial Action

The Carbon Canyon AERA Project is in its 13th year. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. The bioassessment conducted on 6/27/2024 recorded both giant reed and castor bean to be less than 1%. Tamarisk was absent from the site. The site has thus reached the success criteria and is a candidate for close out.

Financial Summary

Table 6: Carbon Canyon AERA Yearly Costs	
Reporting Period	**Total Cost**
2012	$29,452.84
2013	$2,919.20
1/1/14 to 6/30/14	$310.68
7/1/14 to 6/30/15	$504.83
7/1/15 to 6/30/16	$329.97
7/1/16 to 6/30/17	$556.19
7/1/17 to 6/30/18	$5,598.65
7/1/18 to 6/30/19	$164.75
7/1/19 to 6/30/20	$0.00
7/1/20 to 6/30/21	$0.00
7/1/21 to 6/30/22	$0.00
7/1/22 to 6/30/23	$355.52
7/1/23 to 6/30/24	$305.66

GPS Photo Points

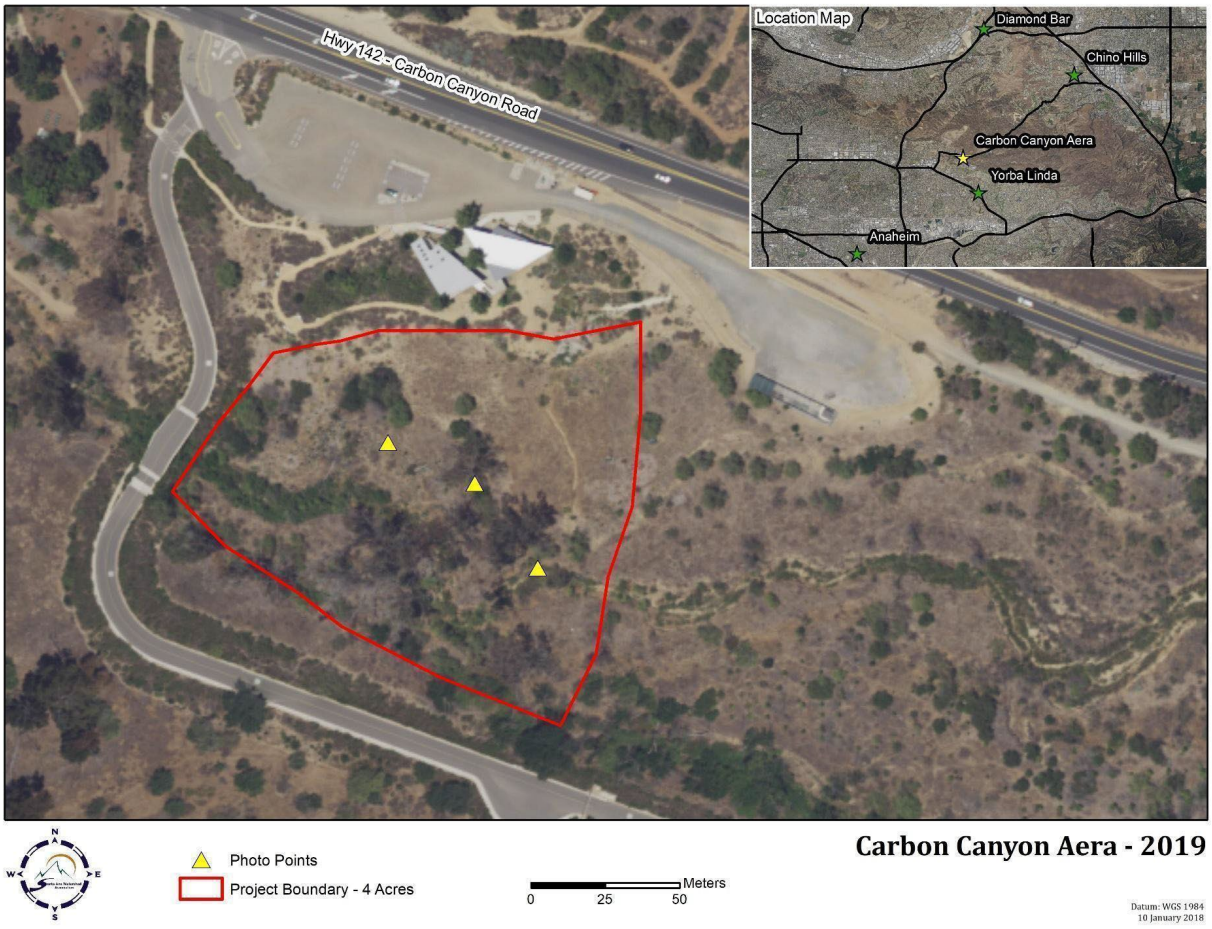
Table 7: Carbon Canyon AERA GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	107° ESE	423575, 3753513
2	236° WSW	423553, 3753541
3	99° E	423524, 3753555
3a	99° E	423538, 3753564

PP#1 TAKEN 6/21/23 (LEFT) & 6/27/24 (RIGHT).

PP#2 TAKEN 6/21/23 (LEFT) & 6/27/24 (RIGHT).

PP#3/3A: PP#3 TAKEN 6/21/23 (LEFT) & PP#3A TAKEN 6/27/24 (RIGHT). PHOTOPOINT #3 WAS SHIFTED FROM ITS ORIGINAL POSITION TO POINT 3A DUE TO VEGETATION OBSCURING VIEW.

MAP


Hwy 142 - Carbon Canyon Road
Location Map
Diamond Bar
Chino Hills
Carbon Canyon Aera
Yorba Linda
Anaheim
Photo Points
Project Boundary - 4 Acres
Meters
0
25
50
Carbon Canyon Aera - 2019
Datum: WGS 1984
10 January 2018

IRVINE LAKE (SANTIAGO CREEK)

PROJECT BACKGROUND

Irvine Lake is located in Santiago Canyon, east of Orange, CA. The project is bounded by the Santa Ana Mountains to the north-east and south, and SR-241 to the west. Originally, the project was infested with 1.88 acres of giant reed along the shores of the lake. In 2013, the Santa Ana Watershed Association (SAWA) began removal work for four mitigations. Extensive management practices have been employed to ensure there is no measurable water pollution. Therefore, this project has demonstrated that such an operation can safely occur at a critical drinking water reservoir. Control efforts have continued in subsequent years to control the re-emergence of these species.

Table 1: Irvine Lake (Santiago Creek) - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2008-0314-R5 (Op Law) SPL-2008-01063-JPL	Fullerton Layover Facility Project	Orange County Transportation Agency	$19,000 (4/1/09)	0.09	ILF
SPL-2009-00674-JPL R8-2009-0047	Olinda Alpha Landfill Expansion	Orange County Waste & Recycling	$75,000 (9/1/09)	1.0	ILF
1600-2008-0420-R5 (Op Law) SPL-2008-01145-MAS RWQCB Cert. 2/27/09	Santiago Creek Bike Trail-Tustin Branch Trail	City of Orange	$75,000 (10/1/10)	0.79	ILF
Totals			**$169,000**	**1.88**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: Treatments targeted the removal of giant reed (*Arundo donax*) within the project area. A total of 300 hours were utilized in the removal of the giant reed.

Table 2: Irvine Lake (Santiago Creek) – Summary of Mitigation Activities

Project placed in:	**2012**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2013	1.88	Initial removal	Giant reed
1/1/14 to 6/30/14	None	n/a	n/a
7/1/14 to 6/30/15	0.06	Treatment	Giant reed
7/1/15 to 6/30/16	0.06	Treatment	Giant reed
7/1/16 to 6/30/17	None	n/a	n/a

Table 2: Irvine Lake (Santiago Creek) – Summary of Mitigation Activities			
7/1/17 to 6/30/18	None	n/a	n/a
7/1/18 to 6/30/19	None	n/a	n/a
7/1/19 to 6/30/20	None	n/a	n/a
7/1/20 to 6/30/21	None	n/a	n/a
7/1/21 to 6/30/22	None	n/a	n/a
7/1/22 to 6/30/23	0.06	Removal	Giant reed
7/1/23 to 6/30/24	0.02	Removal	Giant reed

Removal/treatment methods: Removal of giant reed was conducted using hand tools.

Table 3: Chemicals Used During Herbicide Treatments
No herbicides were applied during this reporting period.

Amount removed/treated: ~ 0.02 acre of arundo was removed during this reporting period.

Removal/treatment frequency and timing: Treatments were conducted on: 7/13/2023, 7/17/2023, 7/18/2023, 7/19/2023, 7/20/2023, 8/14/2023, 8/15/2023, 8/16/2023, 8/17/2023, 4/17/2024 & 4/18/2024.

Disposal of removed/treated biomass: Biomass was stacked above the high-water mark and allowed to decompose into soil.

Monitoring Activities: A bioassessment was conducted on 6/20/24. Access has been restored and annual treatments are scheduled for fall. The current site conditions listed below reflect the conditions as of June 20th, 2024. A total of 140 monitoring hours were spent in this reporting period.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>5-10 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>25-50%	
Overall native vegetative cover:	>15-25%	
Common Name	**Scientific Name**	**Coverage Class**
Mulefat	*Baccharis salicifolia*	>15-25%
Goodding's Black Willow	*Salix gooddingii*	>15-25%

Table 4: Current Site Conditions		
Arroyo Willow	*Salix lasiolepis*	>15-25%
Coyote Brush	*Baccharis pilularis*	<1%
Horse Weed	*Erigeron canadensis*	<1%
Tarweed	*Madia* sp.	<1%
Red Willow	*Salix laevigata*	<1%
Elderberry	*Sambucus mexicana*	<1%
California Sagebrush	*Artemisia californica*	trace
California Buckwheat	*Eriogonum fasciculatum*	trace
Non-native coverage:	>25-50%	
Common Name	Scientific Name	Coverage Class
Black Mustard	*Brassica nigra*	>15-25%
Tamarisk	*Tamarix ramosissima*	>15-25%
Shortpod Mustard	*Hirschfeldia incana*	>5-15%
Tocalote	*Centaurea melitensis*	1-5%
White Sweetclover	*Melilotus albus*	1-5%
Arundo	*Arundo donax*	trace
Castor Bean	*Ricinus communis*	trace

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Canada Goose	*Branta canadensis*	None
Mallard	*Anas platyrhynchos*	None
California Quail	*Callipepla californica*	None
Pied-billed Grebe	*Podilymbus podiceps*	None
Western Grebe	*Aechmophorus occidentalis*	None
Clark's Grebe	*Aechmophorus clarkii*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Anna's Hummingbird	*Calypte anna*	None
American Coot	*Fulica americana*	None
Caspian Tern	*Hydroprogne caspia*	None
Double-crested Cormorant	*Nannopterum auritum*	CDFW Watchlist
Great Blue Heron	*Ardea herodias*	None
Great Egret	*Ardea alba*	None
Snowy Egret	*Egretta thula*	None
Turkey Vulture	*Cathartes aura*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
American Kestrel	*Falco sparverius*	None
Cassin's Kingbird	*Tyrannus vociferans*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
American Crow	*Corvus brachyrhynchos*	None
Tree Swallow	*Tachycineta bicolor*	None
Blue-gray Gnatcatcher	*Polioptila caerulea*	None
European Starling	*Sturnus vulgaris*	None
Song Sparrow	*Melospiza melodia*	None
Yellow-breasted Chat	*Icteria virens*	CDFW Species of Special Concern
Great-tailed Grackle	*Quiscalus mexicanus*	None
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Desert Cottontail	*Sylvilagus audubonii*	None

Project Status and Remedial Action

The Irvine Lake Project is in its 12th year. The project goal for this ILF placement is to eradicate 1.88 acres of giant reed (*Arundo donax*) from around the perimeter of Irvine Lake. Within the scope of requirements for SAWA's In-lieu Fee program, the project goals are close to being met. The project boundaries were identified as the giant reed (*Arundo donax*) clumps only and do not include the entire perimeter of the lake. As documented on the bioassessment conducted on 6/20/2024, giant reed (*Arundo donax*) is now at "Trace" which has met the goals outlined per the ILF agreement. Treatment methods have proven effective in controlling giant reed, which is almost eradicated at this site; unfortunately, they are less effective in controlling tamarisk, which has become the dominant non-native. In addition, other non-native species have emerged around the lake.

Financial Summary

Table 6: Irvine Lake Yearly Costs

Reporting Period	Total Cost
2013	$92,065.22
1/1/14 to 6/30/14	$142.70
7/1/14 to 6/30/15	$14,487.53
7/1/15 to 6/30/16	$2,221.91
7/1/16 to 6/30/17	$1,132.77
7/1/17 to 6/30/18	$1,209.04
7/1/18 to 6/30/19	$489.56
7/1/19 to 6/30/20	$525.60
7/1/20 to 6/30/21	$0.00
7/1/21 to 6/30/22	$534.58
7/1/22 to 6/30/23	$11,205.02
7/1/23 to 6/30/24	$44,300.87

GPS Photo Points

Table 7: Irvine Lake GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1a	120° SE	433760, 3636912
1b	205° SW	433760, 3636912
1c	280° W	433760, 3636912
1d	240° W	433760, 3636912
4a	332° NW	433373, 3736874

PP#1A taken 7/17/23 (left) and 6/20/24 (right).

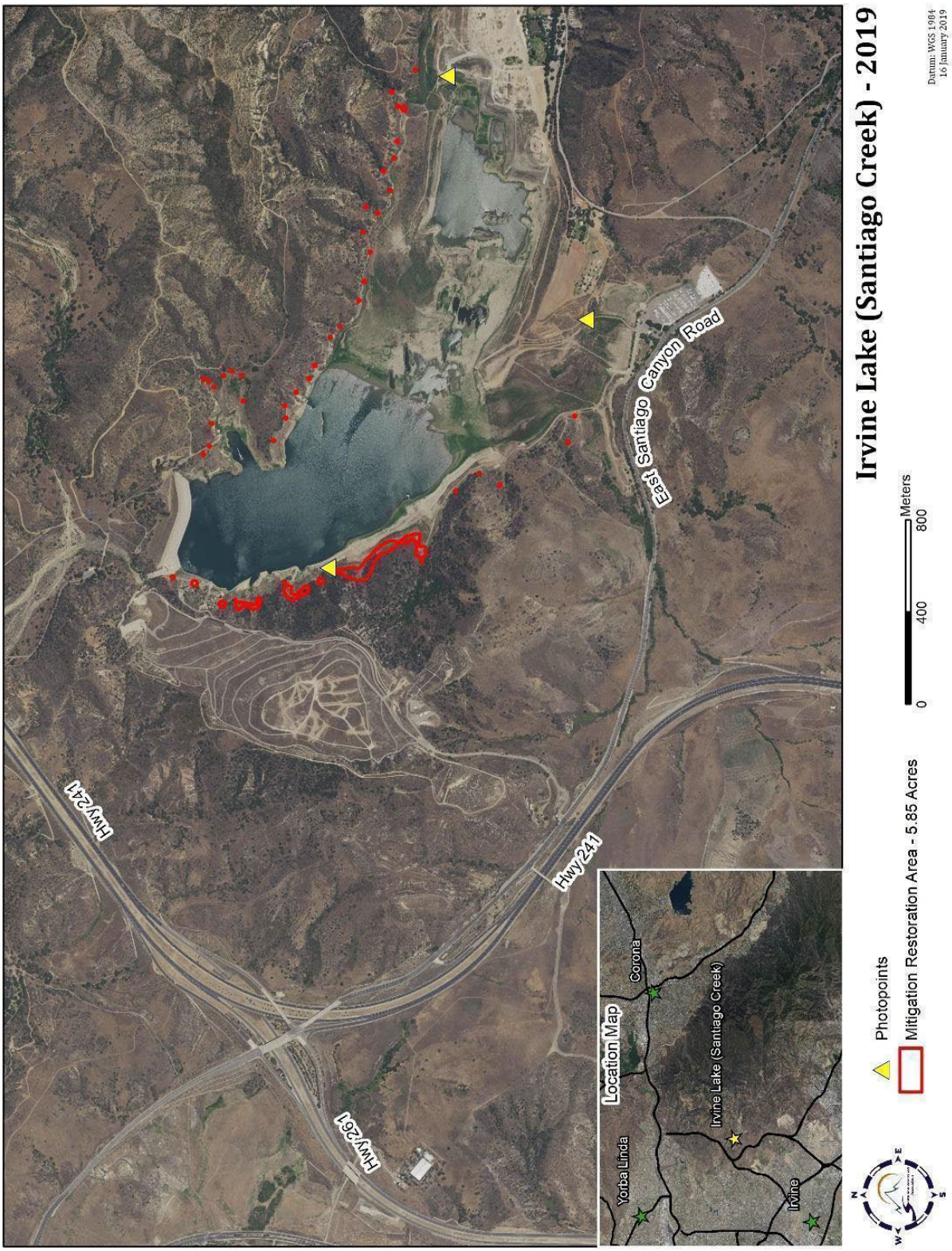
PP#1B taken 7/17/23 (left) and 6/20/24 (right).

PP#1C TAKEN 7/17/23 (LEFT) AND 6/20/24 (RIGHT).


PP#1D TAKEN 7/17/23 (LEFT) AND 6/20/24 (RIGHT).


PP#4A TAKEN 7/17/23 (LEFT) AND 6/20/24 (RIGHT).


MAP


Irvine Lake (Santiago Creek) - 2019
Datum: WGS 1984
16 January 2019
East Santiago Canyon Road
Hwy/241
Hwy/261
Location Map
Corona
Irvine Lake (Santiago Creek)
Yorba Linda
Irvine
Photopoints
Mitigation Restoration Area - 5.85 Acres
Meters
0
400
800

IRVINE PARK (SANTIAGO CREEK)

PROJECT BACKGROUND

Irvine Park is located in Santiago Canyon, east of Orange, CA. The 26-acre project is bounded by the Santa Ana Mountains to the north-east and south, SR-241 to the south, and Santiago Canyon Road to the west. Originally, the Inland Empire Resource Conservation District (IERCD) conducted the invasive removal of 8.207 acres, as part of eight mitigations. In 2012, IERCD gave management of the project to the Santa Ana Watershed Association (SAWA). Control efforts have continued in subsequent years to control the re-emergence of these species.

Table 1: Irvine Park (Santiago Creek) - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2007-0003-R5 2007-76-Y RWQCB Cert. 9/25/07	Santiago Canyon Creek Recharge Enhancement Project	Orange County Water District	$50,000 (8/29/01)	1.0	ILF
199915117-YJC	Saddleback Meadows	California Quartet	$100,000 (6/11/03)	2	ILF
200300194-YJC	Frank R. Bowerman Landfill	County of Orange IWMD	$16,200 (9/27/04)	0.324	ILF
1600-2004-0256-R5 200500154-JPL RWQCB Cert. 11/16/04	Caliber Motors Satellite Sales Facility	Ellas Properties Inc.	$5,000 (12/28/04)	0.1	ILF
CDFW Op Law	Robert B. Diemer Filtration Plant Emergency Spillway Vegetation Clearing Project	Metropolitan Water District of So. Cal	$25,000 (2/1/05)	0.45	ILF
5-028-00 200000736-YJC	Yorba Linda Heights Project	Pulte Home Corp	$162,500 (2/1/05)	3.25	ILF
1600-2004-0060-R5	Southern California Regional Rail Bridge Project	So Cal Regional Rail Authority	$75,000 (7/24/06)	1.083	ILF
Totals			**$433,700**	**8.207**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, hand treatments were conducted targeting: castor bean, milk thistle, and mustard. A total of 30 hours were spent on enhancement activities.

Table 2: Irvine Park (Santiago Creek) – Summary of Mitigation Activities			
SAWA management began in:		**2012**	
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
Prior to 2012	8.207	Initial removal	Giant reed
2012	1.3	Treatment	Giant reed
2013	n/a	Treatment	Giant reed
1/1/14 to 6/30/14	None	n/a	n/a
7/1/14 to 6/30/15	None	n/a	n/a
7/1/15 to 6/30/16	3.9	Treatment	Giant reed
7/1/16 to 6/30/17	None	n/a	n/a
7/1/17 to 6/30/18	0.2	Treatment	Giant reed, castor bean, tree tobacco
7/1/18 to 6/30/19	4	Treatment	Giant reed, castor bean, thistle sp., mustard, tamarisk
7/1/19 to 6/30/20	3	Treatment	Giant reed, castor bean, thistle sp., mustard, tamarisk
7/1/20 to 6/30/21	2	Treatment	Giant reed, castor bean, thistle sp., mustard
7/1/21 to 6/30/22	1	Treatment	Giant reed, castor bean, thistle sp., mustard
7/1/22 to 6/30/23	0.5	Treatment	Castor bean, thistle sp., mustard
7/1/23 to 6/30/24	0.2	Treatment	Castor bean, thistle sp., mustard

Removal/treatment methods: No herbicide treatments were conducted during this reporting period.

Table 3: Chemicals Used During Herbicide Treatments
No herbicides were used during this reporting period.

Amount removed/treated: Approximately 0.2 acre of castor bean, milk thistle, mustard, and tamarisk was treated during this reporting period.

Removal/treatment frequency and timing: The project is monitored annually by the HRS crew, and targeted species are treated as encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 7/11/2023.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site to dry and decompose in place.

Monitoring Activities: The annual bioassessment survey took place on 6/25/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This site is included in SAWA's vireo assessment surveys conducted three times annually during nesting season. A total of 3 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Coyote Brush	*Baccharis pilularis*	>5-15%
Mulefat	*Baccharis salicifolia*	>5-15%
Goodding's Black Willow	*Salix gooddingii*	>5-15%
Elderberry	*Sambucus mexicana*	>5-15%
Western Sycamore	*Platanus racemosa*	1-5%
Non-native coverage:	>15-25%	
Common Name	**Scientific Name**	**Coverage Class**
Mustard species	Brassicaceae sp.	>15-25%
Tocalote	*Centaurea melitensis*	>15-25%
Bull Thistle	*Cirsium vulgare*	>5-15%
Eucalyptus	*Eucalyptus* sp.	1-5%
Clover species	*Melilotus* sp.	1-5%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
California Quail	*Callipepla californica*	None
Mourning Dove	*Zenaida macroura*	None
Snowy Egret	*Egretta thula*	None
White-tailed Kite	*Elanus leucurus*	CDFW Fully Protected Species; BLM Sensitive Species
Red-tailed Hawk	*Buteo jamaicensis*	None
Acorn Woodpecker	*Melanerpes formicivorus*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Red-crowned Parrot	*Amazona viridigenalis*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
California Scrub-Jay	*Aphelocoma californica*	None
American Crow	*Corvus brachyrhynchos*	None
Common Raven	*Corvus corax*	None
Tree Swallow	*Tachycineta bicolor*	None
Bushtit	*Psaltriparus minimus*	None
Phainopepla	*Phainopepla nitens*	None
Blue-gray Gnatcatcher	*Polioptila caerulea*	None
California Gnatcatcher	*Polioptila californica*	Federally threatened; CDFW Species of Special Concern
Bewick's Wren	*Thryomanes bewickii*	None
House Wren	*Troglodytes aedon*	None
California Thrasher	*Toxostoma redivivum*	None
Western Bluebird	*Sialia mexicana*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
Song Sparrow	*Melospiza melodia*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
California Towhee	*Melozone crissalis*	None
Spotted Towhee	*Pipilo maculatus*	None
Yellow-breasted Chat	*Icteria virens*	CDFW Species of Special Concern
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Bobcat	*Lynx rufus*	None
California Ground Squirrel	*Otospermophilus beecheyi*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
San Diegan Tiger Whiptail	*Aspidoscelis tigris stejnegeri*	CDFW Species of Special Concern
Western Fence Lizard	*Sceloporus occidentalis*	None
Western Side-blotched Lizard	*Uta stansburiana elegans*	None

Project Status and Remedial Action

The Irvine Park Project is in its 12th year. The project goal for this ILF placement is to reduce targeted non-natives (castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has been met. Currently, giant reed and castor bean are absent. Treatments should continue as needed to ensure these species are well controlled. Other non-native species, such as mustard and thistle species, have emerged as dominant non-native species, and should be treated as funding allows, or by securing other funding sources if necessary.

Financial Summary

Table 6: Irvine Park (Santiago Creek) Yearly Costs	
Reporting Period	**Total Cost**
2012	$2,906.89

Table 6: Irvine Park (Santiago Creek) Yearly Costs	
Reporting Period	**Total Cost**
2013	$1,371.66
1/1/14 to 6/30/14	$0
7/1/14 to 6/30/15	$0
7/1/15 to 6/30/16	Unavailable
7/1/16 to 6/30/17	$378.06
7/1/17 to 6/30/18	$8,894.09
7/1/18 to 6/30/19	$27,208.08
7/1/19 to 6/30/20	$49,182.16
7/1/20 to 6/30/21	$44,001.06
7/1/21 to 6/30/22	$39,547.62
7/1/22 to 6/30/23	$17,173.54
7/1/23 to 6/30/24	$6,478.61

GPS Photo Points

Table 7: Irvine Park GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	217° SW	430049, 3740294
2	354° N	429885, 3740204
3	142° NE	429339, 3740626
5	103° E	429786, 3740294
6	330° NW	429638, 3740129

PP#1 TAKEN 6/22/23 (LEFT) AND 6/25/24 (RIGHT).

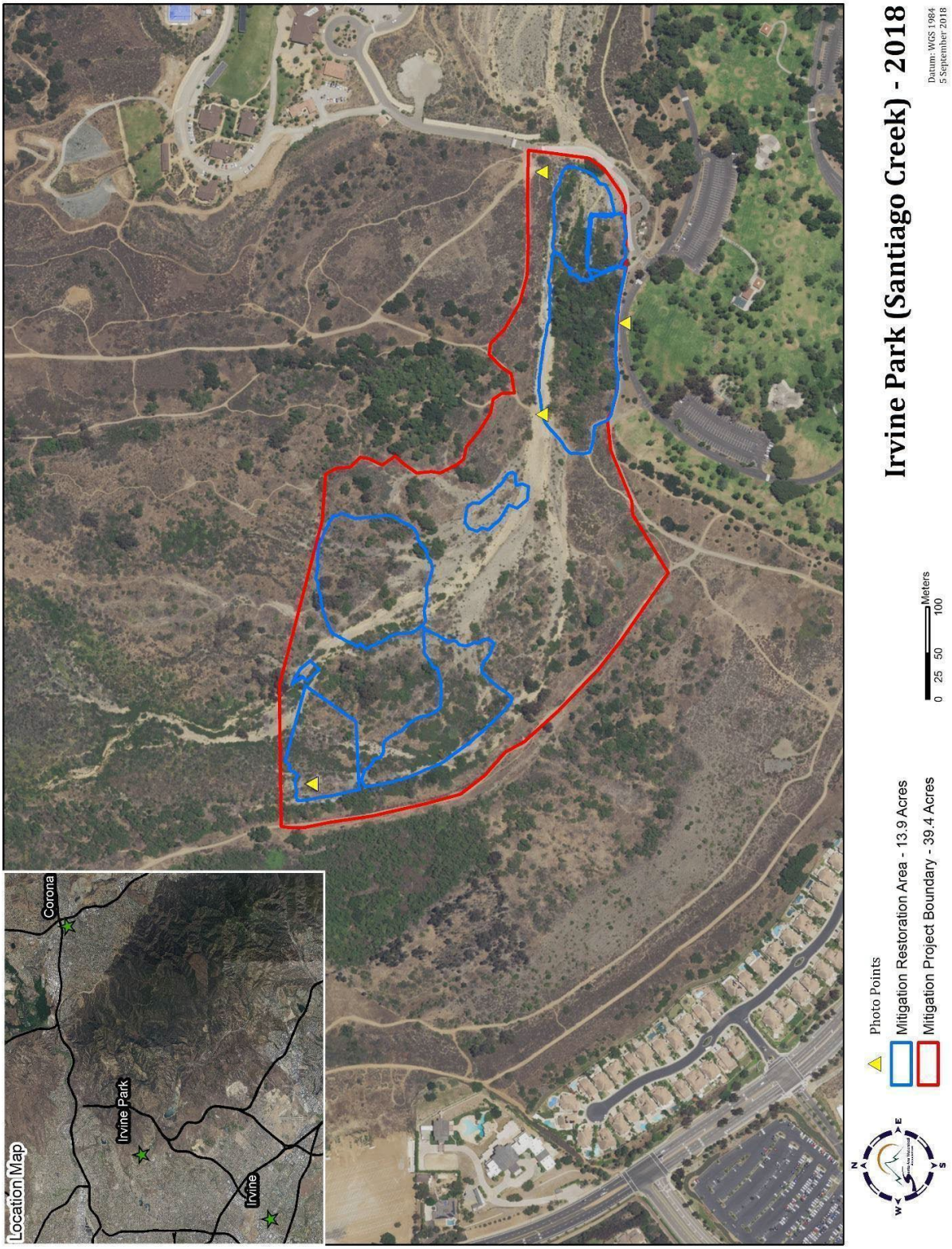

PP#2 TAKEN 6/22/23 (LEFT) AND 6/25/24 (RIGHT).


PP#3 TAKEN 6/22/23 (LEFT) AND 6/25/24 (RIGHT).


PP#5 TAKEN 6/22/23 (LEFT) AND 6/25/24 (RIGHT).


PP#6 TAKEN 6/22/23 (LEFT) AND 6/25/24 (RIGHT).


MAP


Irvine Park (Santiago Creek) - 2018
Datum: WGS 1984
5 September 2018
Meters
0 25 50 100
Photo Points
Mitigation Restoration Area - 13.9 Acres
Mitigation Project Boundary - 39.4 Acres
Location Map
Corona
Irvine Park
Irvine

SANTIAGO CREEK PHASE I

PROJECT BACKGROUND

Santiago Phase I is located in Santiago Canyon, upstream of Irvine Lake and east of Orange, CA. The project is bounded by the Santa Ana Mountains to the north and east, and Santiago Canyon Road to the south and west. Originally, the 206-acre project was infested with giant reed (*Arundo donax*), castor bean (*Ricinus communis*), and Spanish broom (*Spartium junceum*). In 2012, the Santa Ana Watershed Association (SAWA) began removal work for one mitigation. After initial removal, native species such as Fremont cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), and willows (*Salix* spp.) were encouraged to re-colonize through control efforts. This succession benefits the local wildlife, as well as water quality and quantity. Control efforts have continued in subsequent years to control the re-emergence of non-native species.

Table 1: Santiago Creek Phase I - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2005-0284-R5 2002-00505-DPS RWQCB Cert. 12/20/05	Mountain Park Development Project	The Irvine Company	$845,180 (1/24/06)	18.804	ILF
Totals			**$845,180**	**18.804**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed, castor bean, tamarisk, and Spanish broom. A total of 180 hours were spent on enhancement activities.

Table 2: Santiago Creek Phase I – Summary of Mitigation Activities

Project placed in:	2012		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2012	23	Initial removal treatment	Spanish broom giant reed, perennial pepperweed, castor bean
2013	n/a	Treatment	Giant reed, Spanish broom
1/1/14 to 6/30/14	n/a	Treatment	Giant reed, Spanish broom
7/1/14 to 6/30/15	None	n/a	n/a
7/1/15 to 6/30/16	13	Treatment	Giant reed, Spanish broom
7/1/16 to 6/30/17	None	n/a	n/a

Table 2: Santiago Creek Phase I – Summary of Mitigation Activities Continued			
7/1/17 to 6/30/18	0.2	Treatment	Giant reed, castor bean, tree tobacco, Spanish broom
7/1/18 to 6/30/19	2	Treatment	Giant reed, castor bean, tamarisk, Spanish broom
7/1/19 to 6/30/20	2	Treatment	Giant reed, castor bean, tamarisk, Spanish broom
7/1/20 to 6/30/21	1.8	Treatment	Giant reed, castor bean, tamarisk, Spanish broom
7/1/21 to 6/30/22	1.5	Treatment	Giant reed, castor bean, tamarisk, Spanish broom
7/1/22 to 6/30/23	0.5	Treatment	Giant reed, castor bean, tamarisk, Spanish broom
7/1/23 to 6/30/24	0.25	Treatment	Giant reed, castor bean, tamarisk, Spanish broom

Removal/treatment methods: All herbicide treatments are conducted using foliar application with manual removal of biomass during this reporting period.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount Used**	**Purpose**
Roundup Custom	62 ounces	Herbicide
Liberate	9 ounces	Surfactant

Amount removed/treated: Approximately 0.25 acre of giant reed, castor bean, tamarisk, and Spanish broom was treated during this reporting period.

Removal/treatment frequency and timing: This project is monitored annually by HRS, and targeted species are treated as encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 7/5/2023, 7/6/2023, 8/30/2023 & 8/31/2023.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site to dry and decompose in place.

Monitoring Activities: The annual bioassessment survey took place on 6/20/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This site is

included in SAWA's vireo assessment surveys conducted three times annually during nesting season. A total of 35.5 hours were spent on monitoring and management activities.

Current Site Conditions

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Mulefat	*Baccharis salicifolia*	5-15%
California Buckwheat	*Eriogonum fasciculatum*	5-15%
Laurel Sumac	*Malosma laurina*	5-15%
Western Sycamore	*Platanus racemosa*	5-15%
Mixed Red, Black, and Arroyo Willows	*Salix laevigata, S. gooddingii,* and *S. lasiolepis*	5-15%
White Alder	*Alnus rhombifolia*	1-5%
Thickleaf Yerba Santa	*Eriodictyon crassifolium*	1-5%
Live Oak	*Quercus* sp.	1-5%
Non-native coverage:	15-25%	
Common Name	**Scientific Name**	**Coverage Class**
Mustard species	Brassicaceae sp.	5-15%
Thistle spp.	*Cirsium* spp.	1-5%
Poison Hemlock	*Conium maculatum*	1-5%
Eucalyptus	*Eucalyptus* sp.	1-5%
Castor Bean	*Ricinus communis*	1-5%
Arundo	*Arundo donax*	<1%
Spanish Broom	*Spartium junceum*	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Anna's Hummingbird	*Calypte anna*	None
Costa's Hummingbird	*Calypte costae*	USFWS Bird of Conservation Concern
Turkey Vulture	*Cathartes aura*	None
Red-tailed Hawk	*Buteo jamaicensis*	None
Ash-throated Flycatcher	*Myiarchus cinerascens*	None
Western Wood-Pewee	*Contopus sordidulus*	None
Western Flycatcher (formerly Pacific-slope Flycatcher)	*Empidonax difficilis*	None
Black Phoebe	*Sayornis nigricans*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
California Scrub-Jay	*Aphelocoma californica*	None
Common Raven	*Corvus corax*	None
Tree Swallow	*Tachycineta bicolor*	None
Bushtit	*Psaltriparus minimus*	None
Wrentit	*Chamaea fasciata*	None
Phainopepla	*Phainopepla nitens*	None
White-breasted Nuthatch	*Sitta carolinensis*	None
Blue-gray Gnatcatcher	*Polioptila caerulea*	None
California Gnatcatcher	*Polioptila californica*	Federally threatened; CDFW Species of Special Concern
House Wren	*Troglodytes aedon*	None
Northern Mockingbird	*Mimus polyglottos*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
California Towhee	*Melozone crissalis*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Spotted Towhee	*Pipilo maculatus*	None
Yellow-breasted Chat	*Icteria virens*	CDFW Species of Special Concern
Orange-crowned Warbler	*Leiothlypis celata*	None
Common Yellowthroat	*Geothlypis trichas*	None
Black-headed Grosbeak	*Pheuctictus melanocephalus*	None
Blue Grosbeak	*Passerina caerulea*	None
Lazuli Bunting	*Passerina amoena*	None
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Coyote	*Canis latrans*	None
Desert Cottontail	*Sylvilagus audubonii*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Western Fence Lizard	*Sceloporus occidentalis*	None
Unknown Snake	Serpentes sp.	None
Western Side-blotched Lizard	*Uta stansburiana elegans*	None

Project Status and Remedial Action

The Santiago Phase I Project is in its 13th year since project management was given to SAWA. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has not been met. Currently giant reed is <1%, castor bean is 1-5%, and tamarisk is absent. Other non-native species, such as thistles and mustard, have emerged. Removal of these other non-native species is recommended to preserve habitat quality.

Financial Summary

Table 6: Santiago Creek Phase I Yearly Costs	
Reporting Period	**Total Cost**
2012	$2,354.77
2013	$3,873.38
1/1/14 to 6/30/14	$1,139.81
7/1/14 to 6/30/15	$0
7/1/15 to 6/30/16	$5,606.63
7/1/16 to 6/30/17	$417.61
7/1/17 to 6/30/18	$4,182.81
7/1/18 to 6/30/19	$7,682.53
7/1/19 to 6/30/20	$11,798.16
7/1/20 to 6/30/21	$9,473.08
7/1/21 to 6/30/22	$7,735.81
7/1/22 to 6/30/23	$22,657.40
7/1/23 to 6/30/24	$10,857.13

GPS Photo Points

Table 7: Santiago Creek Phase I GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	182° S	437237, 3736070
3	267° W	473262, 3735728
4	270° W	473199, 3736241
5	130° SE	476676, 3737363
6	180° S	435746, 3737495
7	200° S	435978, 3737486
8	315° NW	437155, 3736546

PP#1 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


PP#3 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


PP#4 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).

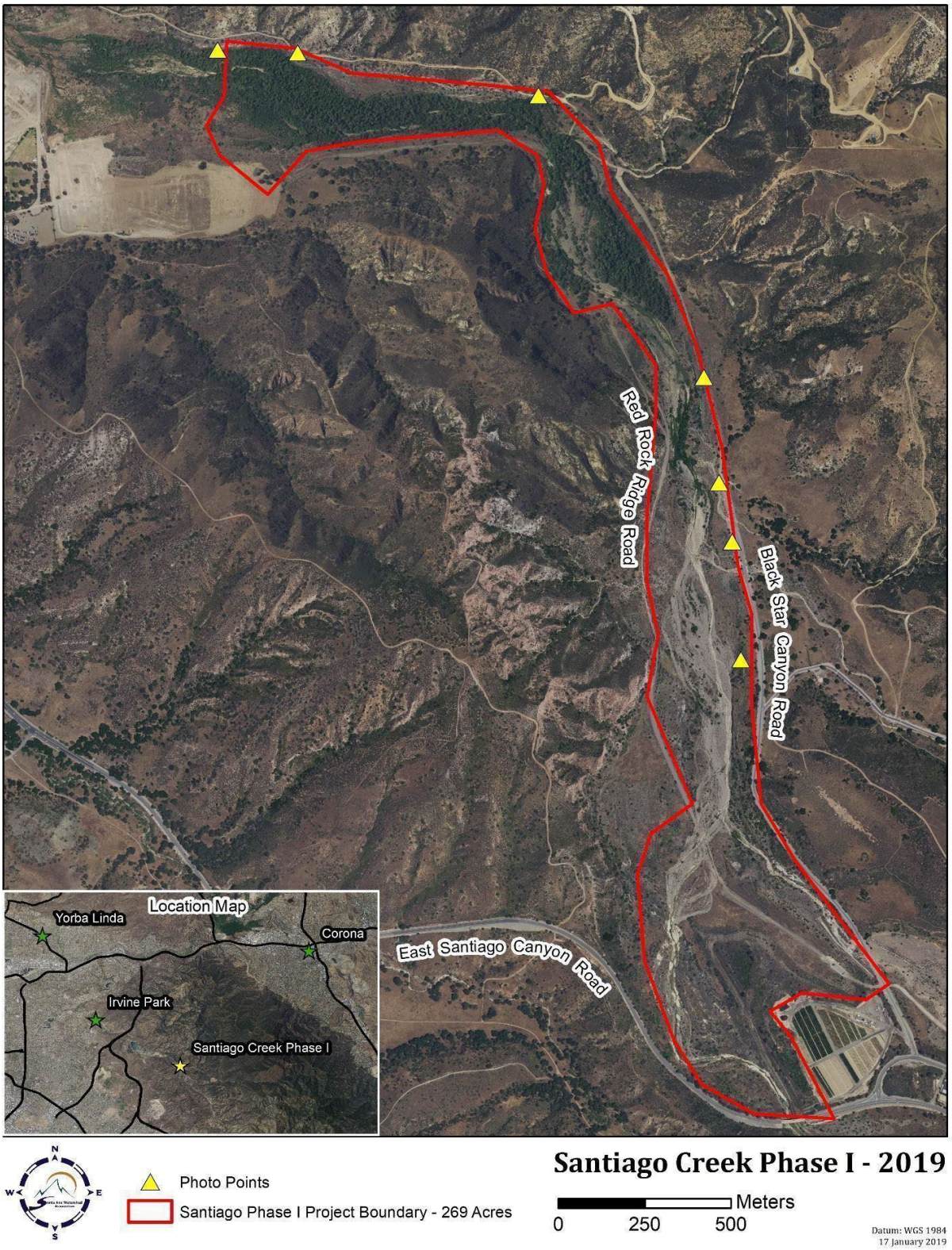

PP#5 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


PP#6 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


PP#7 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


PP#8 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).

MAP


Red Rock Ridge Road
Black Star Canyon Road
East Santiago Canyon Road
Location Map
Yorba Linda
Corona
Irvine Park
Santiago Creek Phase I
Photo Points
Santiago Phase I Project Boundary - 269 Acres
Santiago Creek Phase I - 2019
Meters
0
250
500
Datum: WGS 1984
17 January 2019

SANTIAGO CREEK PHASE II

PROJECT BACKGROUND

Santiago Creek Phase II is located north-east of the intersection of SR-55 and Chapman Ave, in Orange, CA. The project site begins where the channelized portion of Santiago Creek ends and extends downstream to Chapman Ave. Originally, the 19-acre project was infested with giant reed (*Arundo donax*). Initial removal began in 2007, with continued control efforts in subsequent years to control the re-emergence of these species.

Table 1: Santiago Creek Phase II - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2004-0187-R6 200300640-WJC RWQCB Cert. 8/24/05	May Ranch Phase 6 Residential Development Project	KB Home Coastal, Inc.	$453,000 (10/7/05)	9.06	ILF
1600-2005-0386-R5 200301268-YJC RWQCB Cert. 1/24/06	Boy Scouts of America Outdoor Education Camp	Boy Scouts of America	$50,000 (2/27/06)	0.72	ILF
1600-2003-5167-R5	SR-22 HOV Lane Project	Orange County Transportation Authority	$25,000 (9/28/05)	0.51	ILF
30-2005-32-DGW	Del Rio Project	North Orange Del Rio Land, LLC	$35,000 (1/24/06)	0.04	ILF
Totals			**$563,000**	**10.33**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, no herbicide was applied. Treatments consisted of manual labor to remove castor bean and mustard. A total of 70 hours were spent on enhancement activities.

Table 2: Santiago Creek Phase II – Summary of Mitigation Activities

Project placed in:	2007		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2007	0.5	Initial removal	Giant reed
2008	0.8125	Treatment	Giant reed, tamarisk

Table 2: Santiago Creek Phase II – Summary of Mitigation Activities			
Project placed in:	**2007**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2009	0.75	Treatment	Castor bean, palms, tamarisk
2010	n/a	Treatment	Tamarisk, tree of heaven, castor bean
2011	None	n/a	n/a
2012	None	n/a	n/a
2013	n/a	Treatment	Giant reed, tamarisk
1/1/14 to 6/30/14	None	n/a	n/a
7/1/14 to 6/30/15	n/a	Treatment	Giant reed, castor bean, tree tobacco
7/1/15 to 6/30/16	0.95	Treatment	Giant reed, castor bean, tree tobacco
7/1/16 to 6/30/17	0.6	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, milk thistle
7/1/17 to 6/30/18	0.5	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, milk thistle
7/1/18 to 6/30/19	2	Treatment	Castor bean, mustard
7/1/19 to 6/30/20	1	Treatment	Castor bean, mustard
7/1/20 to 6/30/21	0.5	Treatment	Castor bean, mustard
7/1/21 to 6/30/22	0.3	Treatment	Castor bean, mustard
7/1/22 to 6/30/23	0.2	Treatment	Castor bean, mustard
7/1/23 to 6/30/24	0.1	Treatment	Castor bean, mustard

Removal/treatment methods: During this reporting period, no herbicide was applied. Treatments consisted of manual labor to remove castor bean and mustard.

Table 3: Chemicals Used During Herbicide Treatments
No herbicides were applied in this reporting period.

Amount removed/treated: Approximately 0.1 acre of castor bean and mustard was treated during this reporting period.

Removal/treatment frequency and timing: This project is monitored annually by HRS, and targeted species are treated as encountered. During this reporting period, treatments occurred on 7/10/2023, 4/29/2024 & 6/11/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site to dry and decompose in place.

Monitoring Activities: The annual bioassessment survey took place on 6/20/2024 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. A total of 10.25 hours were spent on monitoring and management activities.

Current Site Conditions

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>25-50%	
Native coverage:	>15-25%	
Common Name	**Scientific Name**	**Coverage Class**
Laurel Sumac	*Malosma laurina*	5-15%
California Sagebrush	*Artemisia californica*	1-5%
Mulefat	*Baccharis salicifolia*	1-5%
Thickleaf Yerba Santa	*Eriodictyon crassifolium*	1-5%
Western Sycamore	*Platanus racemosa*	1-5%
Goodding's Black Willow	*Salix gooddingii*	1-5%

Table 4: Current Site Conditions		
Non-native coverage:	>5-15%	
Common Name	**Scientific Name**	**Coverage Class**
Peruvian Pepper Tree	*Schinus molle*	5-15%
Mustard species	Brassicaceae sp.	1-5%
Eucalyptus	*Eucalyptus* sp.	1-5%
Various ornamental trees/shrubs (bottlebrush, carrotwood, etc.)	n/a	1-5%
Castor Bean	*Ricinus communis*	1-5%
Arundo	*Arundo donax*	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Mallard	*Anas platyrhynchos*	None
Great Egret	*Ardea alba*	None
Turkey Vulture	*Cathartes aura*	None
Black Phoebe	*Sayornis nigricans*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
American Crow	*Corvus brachyrhynchos*	None
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	None
Bushtit	*Psaltriparus minimus*	None
Northern Mockingbird	*Mimus polyglottos*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
Song Sparrow	*Melospiza melodia*	None
Hooded Oriole	*Icterus cucullatus*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern

Table 5: Wildlife Species Detected on Site		
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
California Ground Squirrel	*Otospermophilus beecheyi*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Western Fence Lizard	*Sceloporus occidentalis*	None

Project Status and Remedial Action

The Santiago Creek Phase II Project is in its 17th year. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has not been met. Currently, castor bean is 1-5%, giant reed is <1%, and tamarisk is absent. Treatments should continue as needed to ensure these species are well controlled. However, other non-native species, such as pepper tree, eucalyptus, ornamental trees, and mustard species, have emerged as dominant non-native species. Additional efforts to remove these other non-native species is recommended. The amount of invasive plants removed does not equal the mitigation placements. Some mitigations might have to be placed in an alternative project.

Financial Summary

Table 6: Santiago Creek Phase II Yearly Costs	
Reporting Period	**Total Cost**
2008	$3,900
2009	$3,800
2010	$1,798
2011	$0
2012	$0
2013	$1,439.18
1/1/14 to 6/30/14	$0
7/1/14 to 6/30/15	$2,459.17
7/1/15 to 6/30/16	$3,008.19
7/1/16 to 6/30/17	$3,921.39

Table 6: Santiago Creek Phase II Yearly Costs	
Reporting Period	**Total Cost**
7/1/17 to 6/30/18	$11,160.04
7/1/18 to 6/30/19	$18,151.95
7/1/19 to 6/30/20	$10,311.46
7/1/20 to 6/30/21	$21,570.85
7/1/21 to 6/30/22	$30,400.37
7/1/22 to 6/30/23	$12,458.86
7/1/23 to 6/30/24	$3,936.54

GPS Photo Points

Table 7: Santiago Creek Phase II GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	6° N	423551, 3739284
2	14° N	423585, 3739304
3	360° N	423618, 3739319
5	268° W	422888, 3739692

PP#1 taken 6/27/23 (left) and 6/20/24 (right).

PP#2 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


PP#3 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


PP#5 TAKEN 6/27/23 (LEFT) AND 6/20/24 (RIGHT).


MAP


Hwy 55
E Chapman Avenue
Location Map
Yorba Linda
Anaheim
Santiago Creek Phase II
Santa Ana
Irvine
Photo Points
Santiago Phase II Project Boundary - 19 Acres
Santiago Creek Phase II - 2019
Meters
0
100
200
Datum: WGS 1984
17 January 2019

CDFW REGION 6

The reports contained herein cover SAWA projects funded by the In-lieu Fee program and mitigations and are located within the California Department of Fish and Wildlife Region 6.

CAL-NEV PIPELINE

This project is managed by the Inland Empire Resource Conservation District (IERCD). Annual reports can be obtained by contacting the IERCD: 25864-K Business Center Dr., Redlands, CA 92374, (909) 799-7407, info@iercd.org.

CENTERPOINTE

This project is managed by the Inland Empire Resource Conservation District (IERCD). Annual reports can be obtained by contacting the IERCD: 25864-K Business Center Dr., Redlands, CA 92374, (909) 799-7407, info@iercd.org.

HABITAT FOR HAMNER

PROJECT BACKGROUND

Habitat for Hamner is located along the Santa Ana River, downstream of Hamner Ave, in Corona, CA. Originally the 30-acre project was infested with roughly 15 acres of giant reed (*Arundo donax*). Initial removal occurred in 2007. Control efforts continued in 2008, and SAWA was handed management of the project in 2009. The mitigation project was placed at this time to retain control over the removed vegetation and prevent re-infestation. In 2015, SAWA identified two new landowners holding multiple parcels at the mitigation site, and treatments halted to gain new access agreements. The project area has since been reduced to 4.6 acres, which better reflects the mitigated acreage placed here.

Table 1: Habitat for Hamner - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2008-0104-R6 SPL-2008-00785-JEM	JCSD Plant 1 100-year Flood Protection Project	Albert A. Webb Associates	$120,000 (1/13/09)	2	ILF
Totals			**$120,000**	**2**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed, castor bean, mustard, perennial pepperweed, and poison hemlock. A total of 35 hours were spent on enhancement activities.

Table 2: Habitat for Hamner – Summary of Mitigation Activities

Project placed in:	2007		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2007	26	Initial removal	Giant reed
2008	n/a	Treatment	Giant reed
2009	7.5	Treatment	Giant reed, castor bean
2010	4.75	Treatment	Giant reed, perennial pepperweed, tree tobacco, bull thistle
2011	12.75	Treatment	Giant reed, perennial pepperweed, tree tobacco, bull thistle
2012	0.3 to 1.5	Treatment	Giant reed

Table 2: Habitat for Hamner – Summary of Mitigation Activities			
Project placed in:	**2007**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2013	6.5	Treatment	Giant reed and other non-natives
1/1/14 to 6/30/14	None	n/a	n/a
7/1/14 to 6/30/15	1.5	Treatment	Giant reed
7/1/15 to 6/30/16	None	n/a	n/a
7/1/16 to 6/30/17	None	n/a	n/a
7/1/17 to 6/30/18	0.5	Treatment	Giant reed, castor bean, mustard, perennial pepperweed
7/1/18 to 6/30/19	1.5	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, poison hemlock
7/1/19 to 6/30/20	1	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, poison hemlock
7/1/20 to 6/30/21	0.5	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, poison hemlock
7/1/21 to 6/30/22	0.3	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, poison hemlock
7/1/22 to 6/30/23	0.2	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, poison hemlock
7/1/23 to 6/30/24	0.1	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, poison hemlock

Removal/treatment methods: All herbicide treatments are conducted using a foliar application with 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Type**
Roundup Custom	18 ounces	Herbicide
Denali	2 ounces	Water conditioner

Amount removed/treated: Approximately 0.1 acre of giant reed, castor bean, mustard, perennial pepperweed, and poison hemlock was treated during this reporting period.

Removal/treatment frequency and timing: The project is monitored annually by HRS, and targeted species are treated as they are encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 10/30/2023, 5/30/2024 & 6/14/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site and allowed to dry and decompose in place above the high water mark.

Monitoring Activities: The annual bioassessment survey took place on 6/14/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This site is regularly monitored for Least Bell's Vireo by a SAWA biologist, under different funding sources. A total of 14.5 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>75%	
Native coverage:	>75%	
Common Name	**Scientific Name**	**Coverage Class**
Mulefat	*Baccharis salicifolia*	>15-25%
Arroyo Willow	*Salix lasiolepis*	>15-25%
Goodding's Black Willow	*Salix gooddingii*	>5-15%
Stinging Nettle	*Urtica dioica*	>5-15%
Fremont Cottonwood	*Populus fremontii*	1-5%
Non-native coverage:	>5-15%	
Common Name	**Scientific Name**	**Coverage Class**
Poison Hemlock	*Conium maculatum*	5-15%
Sweet Clover	*Melilotus* sp.	1-5%
Arundo	*Arundo donax*	<1%
Mustard species	Brassicaceae sp.	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
Bushtit	*Psaltriparus minimus*	None
Bewick's Wren	*Thryomanes bewickii*	None
Lesser Goldfinch	*Spinus psaltria*	None
Song Sparrow	*Melospiza melodia*	None
California Towhee	*Melozone crissalis*	None
Spotted Towhee	*Pipilo maculatus*	None
Yellow-breasted Chat	*Icteria virens*	CDFW Species of Special Concern
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
California Ground Squirrel	*Otospermophilus beecheyi*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Western Fence Lizard	*Sceloporus occidentalis*	None

Project Status and Remedial Action

The Habitat for Hamner Project is in its 18th year. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has been met. Giant reed, castor bean, and tamarisk were detected at <1% in the most recent bioassessment. Treatments should continue as needed to ensure these species are well controlled. The biologist recommends treating all non-native species. Future impacts include the USACE Norco Bluffs stabilization project, whose footprint will cover the entire treatment area on the south side of the river.

FINANCIAL SUMMARY

Table 6: Habitat for Hamner Yearly Costs	
Reporting Period	**Total Cost**
2007	Unavailable
2008	$51,000
2009	$9,000
2010	$1,657
2011	$9,853.50
2012	$7,404.63
2013	$3,873.38
1/1/14 to 6/30/14	$0
7/1/14 to 6/30/15	$5,157.10
7/1/15 to 6/30/16	$764.12
7/1/16 to 6/30/17	$4,098.53
7/1/17 to 6/30/18	$39,215.95
7/1/18 to 6/30/19	$26,544.11
7/1/19 to 6/30/20	$15,780.77
7/1/20 to 6/30/21	$11,812.33
7/1/21 to 6/30/22	$10,489.44
7/1/22 to 6/30/23	$7,023.67
7/1/23 to 6/30/24	$5,877.18

GPS Photo Points

Table 7: Habitat for Hamner GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	165° S	448298, 3756431
2	200° S	448250, 3756432
3	185° S	448121, 3756470
4	255° S	448226, 3756402
5	230° SW	448181, 3756368

PP#1 taken 6/13/23 (left) and 6/14/24 (right).

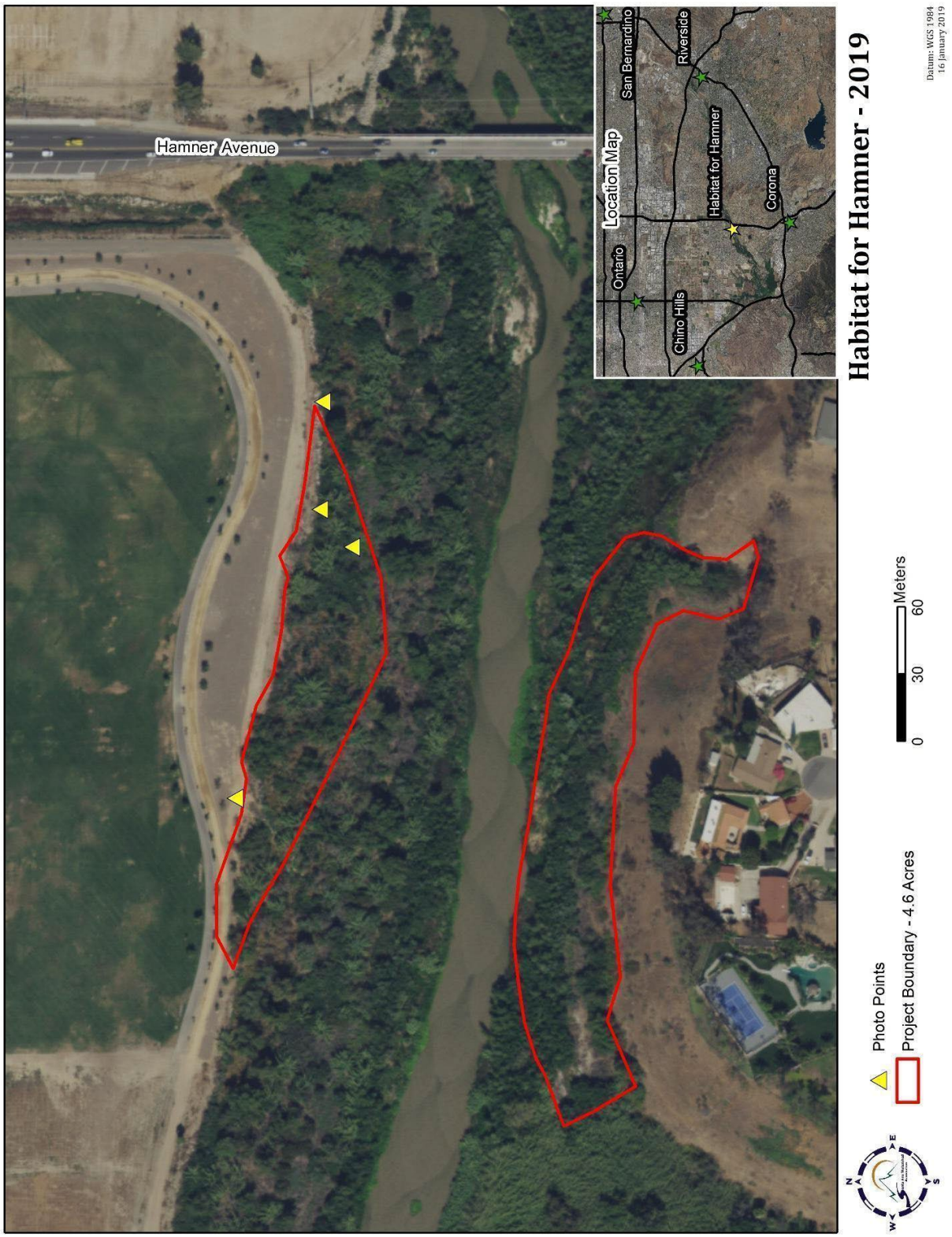

PP#2 taken 6/13/23 (left) and 6/14/24 (right).


PP#3 TAKEN 6/13/23 (LEFT) AND 6/14/24 (RIGHT).


PP#4 TAKEN 6/13/23 (LEFT) AND 6/14/24 (RIGHT).


PP#5 TAKEN 6/13/23 (LEFT) AND 6/14/24 (RIGHT).


MAP


Habitat for Hamner - 2019
Datum: WGS 1984
16 January 2019
Hamner Avenue
Location Map
San Bernardino
Riverside
Habitat for Hamner
Corona
Ontario
Chino Hills
Meters
0
30
60
Photo Points
Project Boundary - 4.6 Acres
N
E
S
W

MOCKINGBIRD CANYON MCB

PROJECT BACKGROUND

Mockingbird Canyon MCB is a conservation easement located in Mead Valley, CA just south of Riverside. The project is bounded by Markham Avenue, Alder Avenue, and residential development. The 11.9-acre easement was infested with 3.233 acres of giant reed (*Arundo donax*), perennial pepperweed (*Lepidium latifolium*), and other non-native plants. The easement was acquired in 2009 with the placement of five mitigations and removal work began in early 2011. Control efforts have continued in subsequent years to control the re-emergence of these species. In 2011 and 2012, the Santa Ana Watershed Association (SAWA) planted native trees and shrubs to aid in habitat restoration and to meet mitigation guidelines.

Table 1: Mockingbird Canyon - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2004-0145-R6 (Op Law)	Quincy Channel hydro-modification	Highpointe Moreno Valley II, LLP	$75,000 (3/23/09)	1	ILF
1600-2007-0106-R6 (Op Law) SPL-2007-00374-JPL RWQCB Cert. 12/4/07	Hawarden Development Project	Hawarden Development Corp	$60,000 (1/27/09)	1	ILF
SPL-2008-00254-YLC	San Sevaine Villas Affordable Housing Project	NorthTown Housing Development	$60,000 (11/8/08 & 7/7/09)	0.51	ILF with additional criteria
1600-2008-0096-R6 SPL-2008-0923	Kitching Street Improvements Project	City of Moreno Valley	$75,000 (6/18/09)	0.183	ILF
1600-2008-0105-R6 SPL-2008-00814-SLP	Agua Mansa Commerce Center Project	AMB Property Corp.	$112,500 (12/17/09)	0.54	ILF
Totals			**$382,500**	**3.233**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to perennial pepperweed, mustard, and wild radish. A total of 32 hours were spent on enhancement activities.

Table 2: Mockingbird Canyon MCB – Summary of Mitigation Activities			
Project placed in:	**2010**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2010	3.233	Initial Removal	Giant reed, perennial pepperweed, other non-natives
2011	122 containers and pole cuttings	Restoration	Mulefat, red willow
2012	n/a	Restoration	Hand watering. >80% survival
2013	3.39	Treatment	Perennial pepperweed, mustard, tocalote
1/1/14 to 6/30/14	1.5	Treatment	Perennial pepperweed, mustard, tocalote
7/1/14 to 6/30/15	1	Treatment	Perennial pepperweed, mustard, tocalote
7/1/15 to 6/30/16	1	Treatment	Perennial pepperweed, mustard, tocalote
7/1/16 to 6/30/17	0.33	Treatment	Perennial pepperweed, mustard, wild radish
7/1/17 to 6/30/18	0.3	Treatment	Perennial pepperweed, mustard, wild radish
7/1/18 to 6/30/19	0.5	Treatment	Giant reed, perennial pepperweed, mustard
7/1/19 to 6/30/20	0.25	Treatment	Perennial pepperweed, mustard, wild radish
7/1/20 to 6/30/21	0.25	Treatment	Perennial pepperweed, mustard, wild radish
7/1/21 to 6/30/22	0.25	Treatment	Perennial pepperweed, mustard, wild radish
7/1/22 to 6/30/23	0.2	Treatment	Perennial pepperweed, mustard, wild radish
7/1/23 to 6/30/24	0.1	Treatment	Perennial pepperweed, mustard, wild radish

Removal/treatment methods: All herbicide treatments are conducted using a foliar application with 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Rodeo (glyphosate)	54 ounces	Herbicide
Roundup Custom	134 ounces	Herbicide
Denali	17 ounces	Water conditioner

Amount removed/treated: Approximately 0.1 acre of perennial pepperweed, mustard, and wild radish was treated during this reporting period.

Removal/treatment frequency and timing: This project is monitored annually by HRS, and targeted species are treated as encountered. During this reporting period, treatments occurred on 11/15/2023 & 3/4/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site to dry and decompose in place.

Monitoring Activities: The annual bioassessment survey took place on 6/18/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This site is included in the sites SAWA regularly monitors for Least Bell's Vireo (*Vireo bellii pusillus*) under different funding sources. A total of 12 hours were spent on monitoring and management activities.

Current Site Conditions

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>1-2 meters	
Overall vegetative coverage:	>75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Stinging Nettle	*Urtica dioica*	>15-25%
Coyote Bush	*Baccharis emoryi*	>5-15%
Mulefat	*Baccharis salicifolia*	>5-15%
Fremont Cottonwood	*Populus fremontii*	>5-15%
Goodding's Black Willow	*Salix gooddingii*	>5-15%
Elderberry	*Sambucus mexicana*	>5-15%

Branching Phacelia	*Phacelia ramosissima*	<1%
Non-native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Pepperweed	*Lepidium latifolium*	>15-25%
Black Mustard	*Brassica nigra*	>5-15%
Stinknet	*Oncosiphon pilulifer*	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Eurasian Collared-Dove	*Streptopelia decaocto*	None
Mourning Dove	*Zenaida macroura*	None
Anna's Hummingbird	*Calypte anna*	None
Red-tailed Hawk	*Buteo jamaicensis*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Northern Flicker	*Colaptes auratus*	None
Ash-throated Flycatcher	*Myiarchus cinerascens*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
California Scrub-Jay	*Aphelocoma californica*	None
American Crow	*Corvus brachyrhynchos*	None
Common Raven	*Corvus corax*	None
Bushtit	*Psaltriparus minimus*	None
Bewick's Wren	*Thryomanes bewickii*	None
California Thrasher	*Toxostoma redivivum*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
Song Sparrow	*Melospiza melodia*	None
California Towhee	*Melozone crissalis*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Spotted Towhee	*Pipilo maculatus*	None
Brown-headed Cowbird	*Molothrus ater*	None
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Black-headed Grosbeak	*Pheuctictus melanocephalus*	None
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Coyote	*Canis latrans*	None
California Ground Squirrel	*Otospermophilus beecheyi*	None
Raccoon	*Procyon lotor*	None
Desert Cottontail	*Sylvilagus audubonii*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Baja California Tree Frog	*Pseudacris hypochondriaca*	None

Project Status and Remedial Action

The Mockingbird Canyon MCB Project is in its 14th year. One of the project goals for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, this project goal has been met. However, 0.46 acre of the site is subjected to alternative goal criteria of 90% coverage of native species (<5% deviation allowed), <5% non-native species, and 0% invasive species. These goals have not been met, due to the current coverage of perennial pepperweed and lack of native species coverage. Additional and continued treatments will be required. Persistent drought has affected many species at this site and has contributed to death of trees, increased woody debris, and deadfall. No standing water has been present for the past several years. Ninety percent riparian coverage may be unattainable at this arid location. Goals should be discussed with the regulatory agencies to revise as needed. Modifying vegetative coverage goals to include coastal sage scrub species is recommended.

Financial Summary

Table 6: Mockingbird Canyon MCB Yearly Costs	
Reporting Period	**Total Cost**
2011	$2,387.06
2012	$11,168.31
2013	$5,307.29
1/1/14 to 6/30/14	$1,004.48
7/1/14 to 6/30/15	$3,497.86
7/1/15 to 6/30/16	$4,177.29
7/1/16 to 6/30/17	$15,245.42
7/1/17 to 6/30/18	$23,776.37
7/1/18 to 6/30/19	$19,412.86
7/1/19 to 6/30/20	$15,032.30
7/1/20 to 6/30/21	$16,937.92
7/1/21 to 6/30/22	$19,412.86
7/1/22 to 6/30/23	$7,676.19
7/1/23 to 6/30/24	$6,931.00

GPS Photo Points

Table 7: Mockingbird Canyon MCB GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	55° NE	468054, 3746350
2a	305° NW	468076, 3746344
2b	245° W	468076, 3746344
3N	115° E	468063, 3746333
4N	234° SW	468084, 3746317

PP#1 TAKEN 6/28/23 (LEFT) AND 6/18/24 (RIGHT).

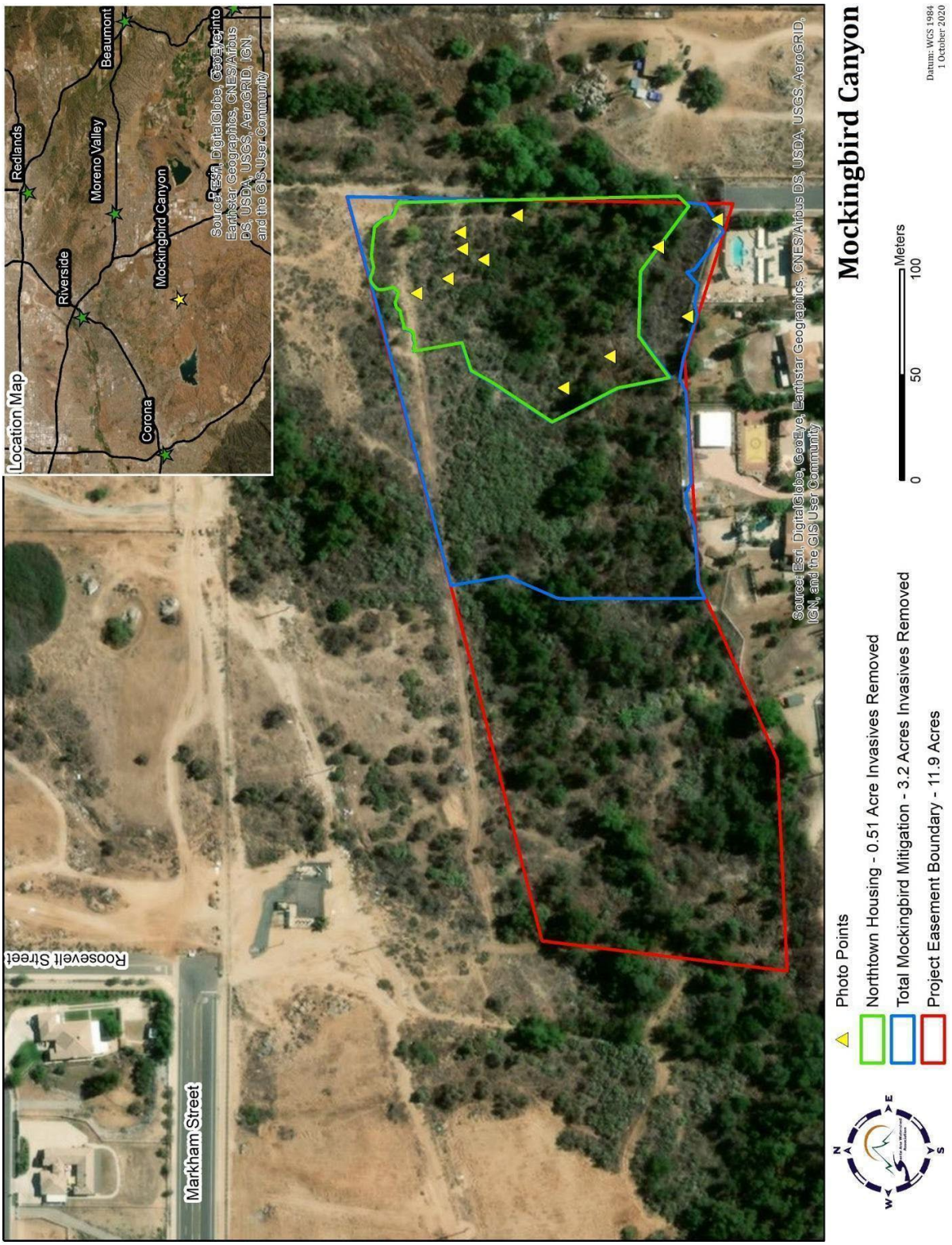

PP#2A TAKEN 6/28/23 (LEFT) AND 6/18/24 (RIGHT).


PP#2B TAKEN 6/28/23 (LEFT) AND 6/18/24 (RIGHT).


PP#3 TAKEN 6/28/23 (LEFT) AND 6/18/24 (RIGHT).


PP#4 TAKEN 6/28/23 (LEFT) AND 6/18/24 (RIGHT).


MAP


Mockingbird Canyon
Location Map
Redlands
Beaumont
Moreno Valley
Riverside
Mockingbird Canyon
Corona
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Roosevelt Street
Markham Street
Photo Points
Northtown Housing - 0.51 Acre Invasives Removed
Total Mockingbird Mitigation - 3.2 Acres Invasives Removed
Project Easement Boundary - 11.9 Acres
Meters
0
50
100
Datum: WGS 1984
1 October 2020

QUAIL RUN PHASE II

PROJECT BACKGROUND

Quail Run Phase II is located at the Quail Run Park in Riverside, CA. The project is bounded by Central Avenue, Sycamore Canyon Boulevard, and residential development. Originally, the 23-acre project was infested with 1.67 acres of giant reed (*Arundo donax*) and 0.9 acre of castor bean (*Ricinus communis*). In 2012, the Santa Ana Watershed Association (SAWA) received agency approval to begin work. Invasive removal for eight mitigations occurred in September 2013. Control efforts have continued in subsequent years to control the re-emergence of these species. In January 2015, SAWA planted 1-meter pole cuttings to aid in habitat restoration where the giant reed was removed.

Table 1: Quail Run Phase II – Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2004-0009-R6 (Op Law) 200400654-GS 36-2004-04-DGW	Crafton Hills Repair Project	Department of Water Resources	$33,000 (12/14/10)	0.25	ILF
SPL-2004-899-WJC	First Street and Potrero Avenue Roadway Improvement Project	City of Beaumont	$25,000 (5/22/10)	0.15	ILF
SPL-2007-01094-FBV	Stagecoach Park Project	City of Corona	$50,000 (1/6/06)	0.48	ILF
SPL-2009-00139-VCC	I-215 West Perimeter Drainage Improvement Project	Donahue Schriber Realty Group	$33,000 (7/20/10)	0.112	ILF
1600-2009-0138-R6 SPL-2009-00750-JPL R8-2010-054	Florida Promenade Specific Plan Amendment	Hemet Hospitality Investments	$62,000 (11/22/10)	0.48	ILF
1600-2010-0089-R6 (Op Law) 2004-0004-DWQ	Bundy Canyon Plaza Project	Bundy I-15, LP	$33,000 (1/19/12)	0.14	ILF
SPL-2007-00128-SLP	Alabama Street Arch Culvert Construction Project	San Bernardino County Flood Control District	$25,000 (3/30/11)	0.25	ILF
1600-2011-0007-R6 (Op Law) SPL-2011-00236 332011-12	Line Section-51 Pipeline Erosion Repair Project	Kinder Morgan Energy Partners	$25,000 (10/22/11)	0.25	ILF
Totals			**$286,000**	**2.112**	

Enhancement Activities: During this reporting period, herbicide was applied to giant reed, castor bean, milk thistle, mustard, and tamarisk. A total of 178 hours were spent on enhancement activities.

Table 2: Quail Run Phase II – Summary of Mitigation Activities			
Project placed in:	**2013**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2013	2.57	Initial Removal	Giant reed and other non-native vegetation
1/1/14 to 6/30/14	None	n/a	n/a
7/1/14 to 6/30/15	1.61	Treatment	Giant reed and castor bean
7/1/15 to 6/30/16	1.46	Treatment	Giant reed and castor bean
7/1/16 to 6/30/17	1	Treatment	Giant reed, castor bean, tamarisk, tree tobacco
7/1/17 to 6/30/18	1.8	Treatment	Giant reed, castor bean, tamarisk, tree tobacco
7/1/18 to 6/30/19	0.25	Treatment	Giant reed, castor bean, milk thistle, mustard, tamarisk
7/1/19 to 6/30/20	0.25	Treatment	Giant reed & castor bean
7/1/20 to 6/30/21	0.25	Treatment	Giant reed, castor bean, milk thistle, mustard, and tamarisk
7/1/21 to 6/30/22	0.25	Treatment	Giant reed, castor bean, milk thistle, mustard, and tamarisk
7/1/22 to 6/30/23	0.1	Treatment	Giant reed, castor bean, milk thistle, mustard, and tamarisk
7/1/23 to 6/30/24	0.1	Treatment	Giant reed, castor bean, milk thistle, mustard, and tamarisk

Removal/treatment methods: All herbicide treatments are conducted using a foliar application with 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Rodeo (glyphosate)	441 ounces	Herbicide
Denali	53 ounces	Water conditioner
Garlon 3A	3	Herbicide
Competitor	1.5	Methylated Seed Oil

Amount removed/treated: During this reporting period, approximately 0.1 acre of giant reed, castor bean, milk thistle, and mustard was treated. In addition, tamarisk (*Tamarix* sp.) was treated as it was encountered.

Removal/treatment frequency and timing: This project site is monitored by HRS and targeted species are treated as encountered. For maximum efficacy, giant reed is treated with the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 7/31/2023, 10/31/2023, 3/4/2024, 3/5/2024, 5/1/2024 & 6/12/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site and allowed to dry and decompose in place.

Monitoring Activities: The annual bioassessment survey took place on 6/6/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This site is included in SAWA's vireo assessment surveys conducted three times annually during nesting season. A total of 27.5 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Western Sycamore	*Platanus racemosa*	>15-25%
Goodding's Black Willow	*Salix gooddingii*	>15-25%
Mulefat	*Baccharis salicifolia*	>5-15%
Fremont Cottonwood	*Populus fremontii*	>5-15%
Mixed red willow and arroyo willow	*Salix laevigata* and *Salix lasiolepis*	>5-15%
Phacelia	*Phacelia* sp.	1-5%
Poison Oak	*Toxicodendron diversilobum*	1-5%
Stinging Nettle	*Urtica dioica*	1-5%
Watercress	*Nasturtium officinale*	<1%
Non-native coverage:	1-5%	
Common Name	**Scientific Name**	**Coverage Class**
Castor Bean	*Ricinus communis*	1-5%
Peruvian Pepper Tree	*Schinus molle*	1-5%
Poison Hemlock	*Conium maculatum*	<1%
Shortpod Mustard	*Hirschfeldia incana*	<1%
Mexican Feathergrass	*Stipa tenuissima*	<1%
Tamarisk	*Tamarix ramosissima*	<1%
Mexican Fan Palm	*Washingtonia robusta*	<1%
Arundo	*Arundo donax*	not detected

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Mallard	*Anas platyrhynchos*	None
California Quail	*Callipepla californica*	None
Mourning Dove	*Zenaida macroura*	None
Anna's Hummingbird	*Calypte anna*	None
Costa's Hummingbird	*Calypte costae*	USFWS Bird of Conservation Concern
Allen's Hummingbird	*Selasphorus sasin*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Ash-throated Flycatcher	*Myiarchus cinerascens*	None
Western Flycatcher	*Empidonax difficilis*	None
Black Phoebe	*Sayornis nigricans*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
California Scrub-Jay	*Aphelocoma californica*	None
Common Raven	*Corvus corax*	None
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	None
Cliff Swallow	*Petrochelidon pyrrhonota*	None
Bushtit	*Psaltriparus minimus*	None
Blue-gray Gnatcatcher	*Polioptila caerulea*	None
California Gnatcatcher	*Polioptila californica*	Federally threatened; CDFW Species of Special Concern
Bewick's Wren	*Thryomanes bewickii*	None
House Wren	*Troglodytes aedon*	None
California Thrasher	*Toxostoma redivivum*	None
Northern Mockingbird	*Mimus polyglottos*	None
House Finch	*Haemorhous mexicanus*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Lesser Goldfinch	*Spinus psaltria*	None
Bell's Sparrow	*Artemisiospiza belli*	CDFW Watchlist
Song Sparrow	*Melospiza melodia*	None
California Towhee	*Melozone crissalis*	None
Hooded Oriole	*Icterus cucullatus*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Coyote	*Canis latrans*	None
California Ground Squirrel	*Otospermophilus beecheyi*	None
Eastern Fox Squirrel	*Sciurus niger*	None
Desert Cottontail	*Sylvilagus audubonii*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Belding's Orange-throated Whiptail	*Aspidoscelis hyperthra beldingi*	USFS Sensitive Species; CDFW Watchlist
Baja California Tree Frog	*Pseudacris hypochondriaca*	None
Western Fence Lizard	*Sceloporus occidentalis*	None
Granite Spiny Lizard	*Sceloporus orcuttii*	None
Western Side-blotched Lizard	*Uta stansburiana elegans*	None

Project Status and Remedial Action

The Quail Run Phase II Project is in its 12th year. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, this project goal has not been met. Currently, castor bean is 1-5%, giant reed is absent, and tamarisk is <1%. Most of the castor bean plants noted in the bioassessment were seedlings, which had been treated and were dead or dying. Treatment methods used to eradicate the

target species have proven effective, with minimal regrowth. Native riparian pole cuttings were planted in the 2014-2015 reporting period and are helping to establish the understory and canopy. However, the understory is poorly developed within the wetted channel. Research and additional plantings of species that would do well in that microclimate is recommended for improved habitat quality.

Financial Summary

Table 6: Quail Run Phase II Yearly Costs	
Reporting Period	**Total Cost**
2013	$66,850
1/1/14 to 6/30/14	$136.45
7/1/14 to 6/30/15	$9,191.89
7/1/15 to 6/30/16	$6,207.02
7/1/16 to 6/30/17	$5,910.44
7/1/17 to 6/30/18	$7,572.91
7/1/18 to 6/30/19	$12,135.35
7/1/19 to 6/30/20	$13,633.46
7/1/20 to 6/30/21	$14,204.36
7/1/21 to 6/30/22	$18,235.00
7/1/22 to 6/30/23	$22,070.33
7/1/23 to 6/30/24	$17,653.16

GPS Photo Points

Table 7: Quail Run Phase II GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	184° S	470439, 3757467
2	137° SE	470497, 3757468
3	123° SE	470592, 3757437
4	148° SE	470509, 3757469
5	186° S	470500, 3757469
6	44° NE	470690, 3757555

PP#1 TAKEN 6/29/23 (LEFT) AND 6/6/24 (RIGHT).


PP#2 TAKEN 6/29/23 (LEFT) AND 6/6/24 (RIGHT).


PP#3 TAKEN 6/29/23 (LEFT) AND 6/6/24 (RIGHT).


PP#4 TAKEN 6/29/23 (LEFT) AND 6/6/24 (RIGHT).


PP#5 TAKEN 6/29/23 (LEFT) AND 6/6/24 (RIGHT).


PP#6 TAKEN 6/24/22 (LEFT) AND 6/6/24 (RIGHT). PHOTOPOINT #6 WAS NOT PHOTOGRAPHED IN 2023.


MAP


Quail Run Phase II - 2019
Datum: WGS 1984
16 January 2019
Hwy 215 / Hwy 60
Central Avenue
Meters
0
100
200
Photo Points
Project Boundary - 20 Acres
Location Map
San Bernardino
Redlands
Riverside
Quail Run
Moreno Valley
Corona

REACH 3B SAN TIMOTEO

Report written and provided by the Inland Empire Resource Conservation District (IERCD). See Appendix B.

RLC – ALESSANDRO ARROYO 1.52

PROJECT BACKGROUND

RLC – Alessandro Arroyo 1.52 is located on an 11.66 acre Rivers and Lands Conservancy conservation easement along an unnamed drainage in Riverside County. The 11.66 acre property was originally infested with giant reed (*Arundo donax*), castor bean (*Ricinus communis*), perennial pepperweed (*Lepidium latifolium*) and tamarisk (*Tamarix* sp.). The mitigation funds were received in 2016. In the fall of 2019 initial biomass removal was completed. Control efforts have continued to control the re-emergence of these species.

Table 1: RLC – Alessandro Arroyo 1.52 Project - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Purpose of Funds
1600-2014-0218-R6 (Op Law) 332014-25	Monteolivio Project	Nova Homes, Inc.	$170,000.00	1.52	Permittee-based Mitigation: Removal & Maintenance
Totals			**$170,000.00**	**1.52**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed, castor bean, perennial pepperweed and tamarisk. A total of 76 hours were spent on enhancement activities.

Table 2: RLC – Alessandro Arroyo 1.52 – Summary of Mitigation Activities

Project placed in:	2019		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/19 to 6/30/20	1.55	Initial removal	Giant reed, tamarisk, castor bean & perennial pepperweed
7/1/20 to 6/30/21	1	Removal and treatment	Giant reed, tamarisk, castor bean & perennial pepperweed
7/1/21 to 6/30/22	0.5	Removal and treatment	Giant reed, tamarisk, castor bean & perennial pepperweed

Table 2: RLC – Alessandro Arroyo 1.52 – Summary of Mitigation Activities			
Project placed in:	**2019**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/22 to 6/30/23	0.25	Removal and treatment	Giant reed, tamarisk, castor bean & perennial pepperweed
7/1/23 to 6/30/24	0.25	Removal and treatment	Giant reed, tamarisk, castor bean & perennial pepperweed

Removal/treatment methods: All giant reed was masticated utilizing SAWA's green climber machine. Follow up treatments were conducted using a foliar application method. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Roundup Custom	138 ounces	Herbicide
Denali	3 ounces	Water conditioner

Amount removed/treated: A total of 0.25 acre of initial removal occurred during this reporting period.

Removal/treatment frequency and timing: Ideal timing for treating tamarisk is in the fall, when translocation is higher toward the root zone, causing death to the roots and improving the rate of control. This project site is monitored by HRS, and targeted species are treated as encountered. During this reporting period, treatments and other removal work occurred on 9/11/2023, 9/28/2023 & 11/13/2023.

Disposal of removed/treated biomass: All biomass was ground up or treated on-site and allowed to decompose into soil mulch.

Monitoring Activities: The annual bioassessment survey took place on 6/26/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. A total of 16 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>10-15 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Red Willow	*Salix laevigata*	>50-75%
Arroyo Willow	*Salix lasiolepis*	>25-50%
Mulefat	*Baccharis salicifolia*	1-5%
Stinging Nettle	*Urtica dioica*	1-5%
Non-native coverage:	1-5%	
Common Name	**Scientific Name**	**Coverage Class**
Palm sp.	Arecaceae sp.	1-5%
Eucalyptus	*Eucalyptus* sp.	1-5%
Peruvian Pepper Tree	*Schinus molle*	1-5%
Tamarisk	*Tamarix* sp.	1-5%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Mourning Dove	*Zenaida macroura*	None
Anna's Hummingbird	*Calypte anna*	None
Cooper's Hawk	*Accipiter cooperii*	CDFW Watchlist
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Northern Flicker	*Colaptes auratus*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
California Scrub-Jay	*Aphelocoma californica*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
American Crow	*Corvus brachyrhynchos*	None
Bushtit	*Psaltriparus minimus*	None
Bewick's Wren	*Thryomanes bewickii*	None
House Wren	*Troglodytes aedon*	None
Lesser Goldfinch	*Spinus psaltria*	None
Song Sparrow	*Melospiza melodia*	None
California Towhee	*Melozone crissalis*	None
Spotted Towhee	*Pipilo maculatus*	None
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Western Fence Lizard	*Sceloporus occidentalis*	None
Western Side-blotched Lizard	*Uta stansburiana elegans*	None

Project Status and Remedial Action

The RLC – Alessandro Arroyo 1.52 Project is in its 5th year. In compliance with the Habitat Management and Monitoring Plan (HMMP), the project goals for this permittee-based mitigation are to reduce all non-native coverage listed as moderate or high on the California Invasive Plant Council's plant inventory list to <5% and restore native coverage to 95%. The non-native goals have been met but the native cover goal of 95% has not yet been met. Arundo regrowth after treatments is minimal, but treatment should continue in order to prevent reestablishment.

Financial Summary

Table 6: RLC – Alessandro Arroyo 1.52 Yearly Costs	
Reporting Period	**Total Cost**
7/1/19 to 6/30/20	$45,743.07
7/1/20 to 6/30/21	$20,911.79
7/1/21 to 6/30/22	$33,677.78
7/1/22 to 6/30/23	$19133.47
7/1/23 to 6/30/24	$7,066.47

GPS Photo Points

Table 7: RLC - Alessandro Arroyo - 1.52 Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	86° E	468012, 3752766
2	218° SW	468603, 3752265
3	191° S	468139, 3752833
4	4° N	468571, 3752141

PP#1 taken 6/27/23 (left) and 6/26/24 (right).

PP#2 TAKEN 6/27/23 (LEFT). DUE TO NEW HOME CONSTRUCTION, PHOTO POINT #2 IS NO LONGER ACCESSIBLE AND WILL NOT BE INCLUDED IN THIS OR SUBSEQUENT REPORTS.

PP#3 TAKEN 6/27/23 (LEFT) AND 6/26/24 (RIGHT).

PP#4 TAKEN 6/27/23 (LEFT) AND 6/26/24 (RIGHT).

MAP


Location Map
San Bernardino
Redlands
Riverside
Moreno Valley
RLC - Alessandro Arroyo - 1.52
Corona
Perris
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User
Berry Road
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
N
W
E
S
Photo Points
Project Boundary ~ 12 Acres
RLC - Alessandro Arroyo - 1.52
Meters
0
75
150
Datum: WGS 1984
22 September 2020

SAR – Upstream River Rd – Phase I CDFW

Project Background

SAR – Upstream River Rd – Phase I CDFW Project covers approximately 16.56 acres along the Santa Ana River (SAR) in Riverside County. The project includes the area downstream of Hamner Avenue and ends upstream of River Road. Originally the project site was infested with giant reed (*Arundo donax*), castor bean (*Ricinus communis*), tamarisk (*Tamarix sp.*), and other non-native species. In 2019, removal work for the project began. Control efforts have continued since initial removal to control the re-emergence of these species.

Table 1: SAR – Upstream River Rd – Phase I CDFW Project - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2005-0246-R6	Route 79 Improvement Project	BNSF Agreement	$150,000.00	3.0	ILF
1600-2005-0228-R6	Lake Matthews Dam Seepage	Metropolitan Water District	$60,000.00	1.2	ILF
R8-2006-0076	Residential Development – Stetson Ranch	SunCal Stetson Ranch LLC	$55,000.00	1.1	ILF
1600-2006-0078-R6	Nuevo Business Park	SCSGF Kearny Nuevo LLC	$10,000.00	0.1	ILF
1600-2006-0254-R6	Citrus Investor LLC	Citrus Investor LLC	$10,000.00	0.024	ILF
1600-2008-0300-R5 SPL-2002-00937 CRWQCB 302008-19	Baker Ranch Community	Shea Baker Ranch Associates LLC	$75,000.00	0.59	ILF
1600-2010-0135-R6 (Op Law) SARWQCB 332010-27	Route 74 Headwall Removal & Culvert Extension Project	California Department of Transportation	$15,000.00	0.1	ILF
1600-2010-0079-R6 (Op Law)	Route 79 Improvement Project	Caltrans District 8	$19,000.00	0.0092	ILF

Table 1: SAR – Upstream River Rd – Phase I CDFW Project - Mitigations Placed at Project					
Permit Number	**Project Name**	**Permittee Name**	**Amount Received**	**Mitigated Acreage**	**Mitigation Type**
1600-2011-0164-R6 R8-2011-0051	Interstate 15/Duncan Canyon Road New Interchange Project	City of Fontana	$75,000.00	1.0	ILF
1600-2011-0143-R6	Colton Crossing Rail-To-Rail Separation Project	UP Railroad Co.	$75,000.00	0.72	ILF
1600-2011-0199-R6 (Op Law) 362011-19	Mercado Community Park Project	City of Perris	$33,000.00	0.159	ILF
1600-2011-0228-R6 (Op Law)	Street Drainage Improvements Project	City of Highland	$62,000.00	0.28	ILF
1600-2012-0094-R6	Westridge Commerce Center Project	Ridge Rancho Belago, LLC	$19,000.00	0.18	ILF
Totals			**$658,000.00**	**8.4622**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed (*Arundo donax*), castor bean (*Ricinus communis*), tamarisk (*Tamarix sp.*). A total of 1,074 hours were spent on enhancement activities.

Table 2: SAR – Upstream River Rd – Phase I CDFW – Summary of Mitigation Activities			
Project Placed in:	**2019**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/19 to 6/30/20	10.24	Initial Removal + Maintenance	Giant reed, castor bean, tamarisk
7/1/20 to 6/30/21	9	Treatment	Giant reed, castor bean, tamarisk
7/1/21 to 6/30/22	5	Treatment	Giant reed, castor bean, tamarisk
7/1/22 to 6/30/23	2	Treatment	Giant reed, castor bean, tamarisk
7/1/23 to 6/30/24	1.5	Treatment	Giant reed, castor bean, tamarisk

Removal/treatment methods: All herbicide treatments are conducted using a foliar application with 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Roundup Custom	2,069 ounces	Herbicide
Denali	210.5 ounces	Water conditioner

Amount removed/treated: Approximately 1.5 acres of giant reed, castor bean, and tamarisk were treated during this reporting period.

Removal/treatment frequency and timing: This project is monitored by HRS, and targeted species are treated as encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on: 7/3/2023, 7/5/2023, 7/6/2023, 7/31/2023, 8/1/2023, 8/2/2023, 8/3/2023, 8/7/2023, 8/8/2023, 8/9/2023, 8/10/2023, 8/14/2023, 8/15/2023, 8/16/2023, 8/17/2023, 8/22/2023, 8/23/2023, 8/24/2023, 8/28/2023, 8/29/2023, 10/30/2023, 11/1/2023, 11/2/2023, 12/14/2023, 1/8/2024, 2/12/2024, 4/1/2024, 6/20/2024 & 6/27/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site and allowed to dry and decompose in place above the high water mark.

Monitoring Activities: The annual bioassessment survey took place on 6/21/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. A total of 153.5 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>10-15 meters	
Average shrub height class:	>1-2 meters	
Overall vegetative coverage:	>75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Coulter's Horseweed and other natives	*Laennecia coulteri*	>5-15%
Fremont Cottonwood	*Populus fremontii*	>5-15%
Arroyo Willow	*Salix lasiolepis*	>5-15%
Desert Wild Grape	*Vitis girdiana*	>5-15%
Goodding's Black Willow	*Salix gooddingii*	1-5%
Yellow Willow	*Salix lasiandra*	1-5%
Stinging Nettle	*Urtica dioica*	1-5%
Rough Cocklebur	*Xanthium strumarium*	1-5%
Non-native coverage:	1-5%	
Common Name	**Scientific Name**	**Coverage Class**
Arundo	*Arundo donax*	1-5%
Thistle spp.	Asteraceae sp.	1-5%
Poison Hemlock	*Conium maculatum*	1-5%
Flat-leaved Horseweed	*Erigeron bonariensis*	1-5%
Perennial Pepperweed	*Lepidium latifolium*	1-5%
Clover species	*Melilotus* sp.	1-5%
Dock species	*Rumex* sp.	1-5%
Mustard species	*Brassica* sp.	<1%
Stinknet	*Oncosiphon pilulifer*	<1%
Tamarisk	*Tamarix ramosissima*	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Cooper's Hawk	*Accipiter cooperii*	CDFW Watchlist
Acorn Woodpecker	*Melanerpes formicivorus*	None
Downy Woodpecker	*Dryobates pubescens*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
Hutton's Vireo	*Vireo huttoni*	None
House Wren	*Troglodytes aedon*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
Song Sparrow	*Melospiza melodia*	None
Spotted Towhee	*Pipilo maculatus*	None
Yellow-breasted Chat	*Icteria virens*	CDFW Species of Special Concern
Orange-crowned Warbler	*Leiothlypis celata*	None
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Black-headed Grosbeak	*Pheuctictus melanocephalus*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Bullfrog	*Lithobates catesbeianus*	None
Western Fence Lizard	*Sceloporus occidentalis*	None
Red-eared Slider	*Trachemys scripta elegans*	None

Project Status and Remedial Action

The SAR – Upstream River Road Phase I Project is in its 5th year. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has not been met. Currently, giant reed

is at 1-5%, castor bean is not detected, and tamarisk is <1%. Additional removal and treatment will be required.

Financial Summary

Table 6: SAR – Upstream River Rd Yearly Costs	
Reporting Period	**Total Cost**
7/1/19 to 6/30/20	$97,7523.03
7/1/20 to 6/30/21	$191,064.06
7/1/21 to 6/30/22	$77,039.30
7/1/22 to 6/30/23	$5,3755.49
7/1/23 to 6/30/24	$99,791.93

GPS Photo Points

Table 7: SAR - Upstream River Rd - Phase I CDFW Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	245° SW	445673, 3755258
2	190° S	445683, 3755106
3	250° W	445683, 3755106
4	280° W	445657, 3754906
5	230° SW	445657, 3755068
6	10° N	445657, 3755068
7	217° SW	445637, 3755224
8	30° NE	445637, 3755224

PP#1 TAKEN 6/14/23 (LEFT). PHOTOPOINT #1 WAS OBSCURED BY VEGETATION IN 2024; PHOTO POINTS #7 AND #8, ESTABLISHED IN 2024, SHOW A BROAD VIEW OF THE SITE NEAR THIS LOCATION.

PP#2 TAKEN 6/14/23 (LEFT) AND 6/21/24 (RIGHT).

PP#3 TAKEN 6/14/23 (LEFT) AND 6/21/24 (RIGHT).

PP#4 TAKEN 6/14/23 (LEFT) AND 6/21/24 (RIGHT).

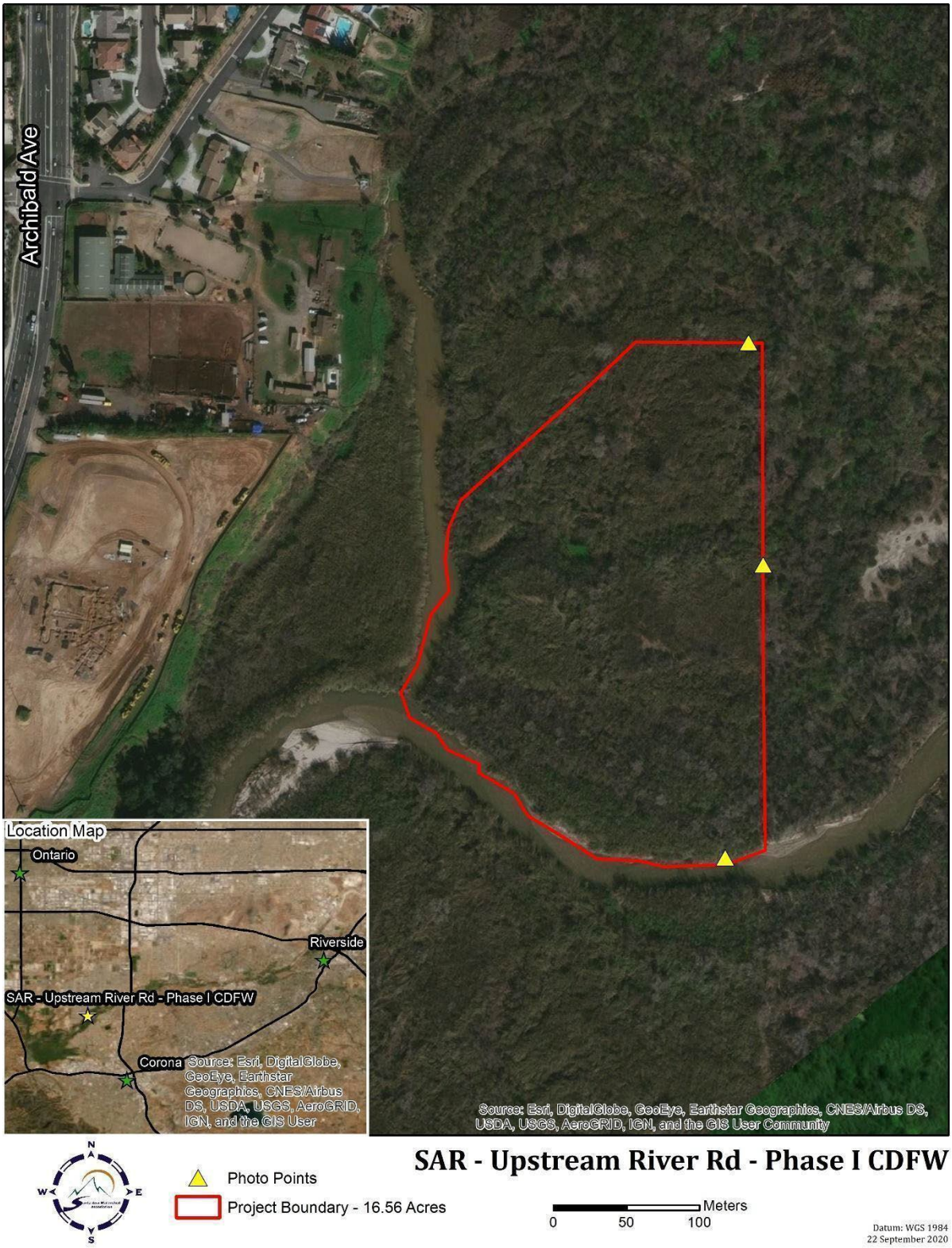
PP#5 ESTABLISHED 6/21/24 TO REPLACE PP#2, AS BROAD VIEW OF THE SITE FORMERLY VISIBLE IN PP #2 IS NOW OBSCURED BY VEGETATION.

PP#6 ESTABLISHED 6/21/24 TO REPLACE PP#3, AS BROAD VIEW OF THE SITE FORMERLY VISIBLE IN PP #2 IS NOW OBSCURED BY VEGETATION.

PP#7 ESTABLISHED 6/21/24 TO REPLACE PP#1, AS VIEW OF THE SITE FORMERLY VISIBLE IN PP #1 IS NOW OBSCURED BY VEGETATION.

PP#8 ESTABLISHED 6/21/24 TO REPLACE PP#1, AS VIEW OF THE SITE FORMERLY VISIBLE IN PP #1 IS NOW OBSCURED BY VEGETATION.

MAP


Archibald Ave
Location Map
Ontario
Riverside
SAR - Upstream River Rd - Phase I CDFW
Corona
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
N
W
E
S
Photo Points
Project Boundary - 16.56 Acres
Meters
0
50
100
SAR - Upstream River Rd - Phase I CDFW
Datum: WGS 1984
22 September 2020

SCE STARGLOW 0.8

PROJECT BACKGROUND

The Starglow Mitigation site is located off of Crestmore Road, just west of Rancho Jurupa Park, within the City of Riverside, County of Riverside, at coordinates: 33.9769642 N, -117.4218653 W. The property is owned by the County of Riverside and SAWA has acquired an access agreement for the purpose of the non-native giant cane (*Arundo donax*) removal and control. The parcel associated with the project area is: APN 186270004. The project sits on a 10.03-acre project area.

Table 1: SCE Starglow 0.8 - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
EPIMS-RIV13392-R6	Menifee Cajalco Road Pole Replacement Project	Southern California Edison	$169,917.14	0.8	Habitat Enhancement
Totals			**$169,917.14**	**0.8**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed (*Arundo donax*). A total of 51 hours were spent on enhancement activities.

Table 2: SCE Starglow 0.8 – Summary of Mitigation Activities

Project placed in:	2021		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/21 to 6/30/22	0.8 Acres	Removal/Treatment	Giant reed, tamarisk, castor bean
7/1/22 to 6/30/23	0.3	Treatment	Giant reed, tamarisk, castor bean
7/1/23 to 6/30/24	0.15	Treatment	Giant reed, tamarisk, castor bean

*Removal/treatment methods:*All herbicide treatments are conducted using a foliar application with 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Roundup Custom	93 ounces	Herbicide
Denali	11.25 ounces	Water Conditioner

Amount removed/treated: Approximately 0.15 acre of giant reed was treated during this reporting period.

Removal/treatment frequency and timing: The project site is monitored by HRS, and targeted species are treated as encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 7/12/2023, 11/6/2023, 4/30/2024 & 6/10/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site to dry and decompose in place above the high water mark.

Monitoring Activities: Bioassessment occurred on 6/20/24. The data collected include native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This location is included in the sites SAWA regularly monitors for Least Bell's Vireo (*Vireo bellii pusillus*) under different funding sources. A total of 13.75 hours were spent on monitoring and management activities.

Current Site Conditions

Table 4: Current Site Conditions		
Average tree height class:	>10-15 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Desert Wild Grape	*Vitis girdiana*	>50-75%
Western Ragweed	*Ambrosia psilostachya*	>5-15%
Coyote Bush	*Baccharis pilularis*	>5-15%
Fremont Cottonwood	*Populus fremontii*	>5-15%
Arroyo Willow	*Salix lasiolepis*	>5-15%
Yerba Mansa	*Anemopsis californica*	1-5%
Cattail	*Typha latifolia*	<1%
Stinging Nettle	*Urtica dioica*	<1%

Table 4: Current Site Conditions		
Non-native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Shortpod Mustard	*Hirschfeldia incana*	>15-25%
Bull Thistle	*Cirsium vulgare*	>5-15%
Arundo	*Arundo donax*	1-5%
Tree Tobacco	*Nicotiana glauca*	1-5%
Poison Hemlock	*Conium maculatum*	<1%
Mexican Fan Palm	*Washingtonia robusta*	<1%
White Sweetclover	*Melilotus albus*	trace
Canary Island Palm	*Phoenix canariensis*	trace
Rabbit's Foot Grass	*Polypogon monspeliensis*	trace

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Mourning Dove	*Zenaida macroura*	None
Anna's Hummingbird	*Calypte anna*	None
Red-tailed Hawk	*Buteo jamaicensis*	None
Northern Flicker	*Colaptes auratus*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
American Crow	*Corvus brachyrhynchos*	None
Bushtit	*Psaltriparus minimus*	None
Lesser Goldfinch	*Spinus psaltria*	None
Song Sparrow	*Melospiza melodia*	None
California Towhee	*Melozone crissalis*	None
Spotted Towhee	*Pipilo maculatus*	None
Yellow-breasted Chat	*Icteria virens*	CDFW Species of Special Concern

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Coyote	*Canis latrans*	None
Desert Cottontail	*Sylvilagus audubonii*	None

Project Status and Remedial Action

The SCE - Starglow Project is in its 3rd year. The project goal for this HEAP placement is to reduce targeted non-natives giant reed to <5%. Within the scope of requirements the project goal has not been met. As of the June 20, 2024 bioassessment, giant reed is at <1-5%. Continued removal and treatment will be required.

Financial Summary

Table 6: SCE Starglow 0.8 Yearly Costs	
Reporting Period	**Total Cost**
7/1/21 to 6/30/22	$26,663.20
7/1/22 to 6/30/23	$14508.84
7/1/23 to 6/30/24	$6,649.81

GPS Photo Points

Table 7: SCE Starglow 0.8 GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	280° W	461099, 3759568
2	10° N	461059, 3759613
3	295° NW	460984, 3759643
4	235° SW	461006, 3759752
5	105° E	460939, 3759796

PP#1 TAKEN 6/29/23 (LEFT) AND 6/20/24 (RIGHT).

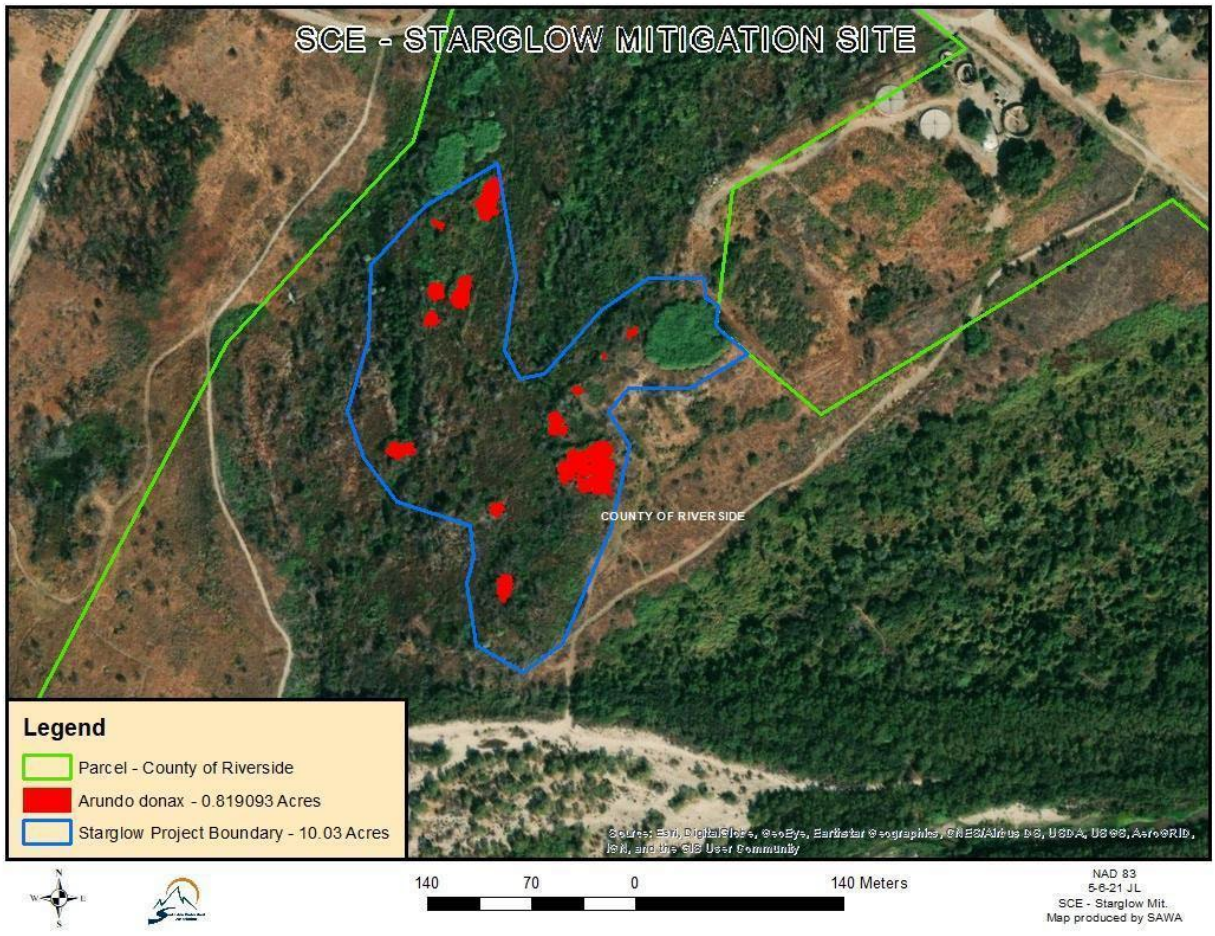

PP#2 TAKEN 6/29/23 (LEFT) AND 6/20/24 (RIGHT).


PP#3 TAKEN 6/29/23 (LEFT) AND 6/20/24 (RIGHT).


PP#4 TAKEN 6/29/23 (LEFT) AND 6/20/24 (RIGHT).


PP#5 TAKEN 6/29/23 (LEFT) AND 6/20/24 (RIGHT).


MAP


SCE - STARGLOW MITIGATION SITE
COUNTY OF RIVERSIDE
Legend
Parcel - County of Riverside
Arundo donax - 0.819093 Acres
Starglow Project Boundary - 10.03 Acres
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
140
70
0
140 Meters
NAD 83
5-6-21 JL
SCE - Starglow Mit.
Map produced by SAWA

SUNNYSLOPE

PROJECT BACKGROUND

Sunnyslope is located along the Sunnyslope Channel, a tributary to the Santa Ana River, in Riverside, CA. The project is located on 9.28 acres within riparian habitat downstream of the Louis Rubidoux Nature Center. Originally, this project was established to restore the creek for Santa Ana Sucker (*Catostomus santaanae*) habitat. Invasive removal for three mitigations occurred in 2013. Control efforts have continued in subsequent years to control the re-emergence of these species. In November of 2019, the 46 Fire burned through the mitigation site.

Table 1: Sunnyslope Project - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2011-0165-R6 (Op Law) SPL-2011-00570-SME 33-2011-07	North Norco Channel Flood Control Improvements Project	Realty Bancorp Equities, Inc.	$82,500 (6/5/13)	1.1	ILF
1600-2007-0213-R6 (Op Law) SPL-2008-00242 33-2007-43	Walgreens Project	Arlington-Van Buren Investment, LLC	$156,000 (2/24/10)	2.08	ILF
SPL-2008-00358-FBV RWQCB Cert. 11/3/09	Sycamore Creek Area Project	Starfield Sycamore Investors, LLC	$33,000 (1/28/10)	0.15	ILF
Totals			**$271,500**	**3.33**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed (*Arundo donax*), castor bean (*Ricinus communis*), and tamarisk (*Tamarix* sp.). A total of 109 hours were spent on enhancement activities.

Table 2: Sunnyslope – Summary of Mitigation Activities

Project placed in:	2012		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2012	Pole cuttings	Restoration	Mulefat
2013	4	Initial removal	Giant reed, tamarisk
1/1/14 to 6/30/14	None	n/a	n/a

Table 2: Sunnyslope – Summary of Mitigation Activities			
Project placed in:	**2012**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/14 to 6/30/15	0.93	Treatment	Giant reed, tamarisk
7/1/15 to 6/30/16	0.93	Treatment	Giant reed, tamarisk
7/1/16 to 6/30/17	0.5	Treatment	Giant reed, castor bean, tamarisk, tree of heaven
7/1/17 to 6/30/18	0.42	Treatment	Giant reed, castor bean, tamarisk, tree of heaven
7/1/18 to 6/30/19	2	Treatment	Giant reed, castor bean, tamarisk
7/1/19 to 6/30/20	1.5	Treatment	Giant reed, castor bean, tamarisk
7/1/20 to 6/30/21	1	Treatment	Giant reed, castor bean, tamarisk
7/1/21 to 6/30/22	0.5	Treatment	Giant reed, castor bean, tamarisk
7/1/22 to 6/30/23	0.2	Treatment	Giant reed, castor bean, tamarisk
7/1/23 to 6/30/24	0.1	Treatment	Giant reed, castor bean, tamarisk

Removal/treatment methods: All herbicide treatments are conducted using a foliar application with 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Roundup Custom	47 ounces	Herbicide
Denali	3.75 ounces	Water conditioner

Amount removed/treated: Approximately 0.1 acre of giant reed, castor bean, and tamarisk was treated during this reporting period.

Removal/treatment frequency and timing: The project site is monitored by HRS, and targeted species are treated as encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 7/12/2023, 9/5/2023, 11/6/2023, 4/30/2024 & 6/10/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site to dry and decompose in place above the high-water mark.

Monitoring Activities: Bioassessment occurred on 6/20/24. The data recorded below includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This location is included in the sites SAWA regularly monitors for Least Bell's Vireo (*Vireo bellii pusillus*) under different funding sources. A total of 16.5 hours were spent on monitoring and management activities.

Current Site Conditions

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Desert Wild Grape	*Vitis girdiana*	>15-25%
Fremont Cottonwood	*Populus fremontii*	>5-15%
Red Willow	*Salix laevigata*	>5-15%
Arroyo Willow	*Salix lasiolepis*	>5-15%
Western Sycamore	*Platanus racemosa*	1-5%
Elderberry	*Sambucus mexicana*	1-5%
Buffalo Gourd	*Cucurbita foetidissima*	<1%
Thornapple	*Datura wrightii*	<1%
Telegraph Weed	*Heterotheca grandiflora*	<1%
Non-native coverage:	>15-25%	
Common Name	**Scientific Name**	**Coverage Class**
Black Mustard	*Brassica nigra*	>15-25%
Tocalote	*Centaurea melitensis*	>15-25%
Shortpod Mustard	*Hirschfeldia incana*	>15-25%
Tree Tobacco	*Nicotiana glauca*	1-5%
Tree of Heaven	*Ailanthus altissima*	<1%
Arundo	*Arundo donax*	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Greater Roadrunner	*Geococcyx californianus*	None
Red-tailed Hawk	*Buteo jamaicensis*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Ash-throated Flycatcher	*Myiarchus cinerascens*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
Blue-gray Gnatcatcher	*Polioptila caerulea*	None
House Wren	*Troglodytes aedon*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
California Towhee	*Melozone crissalis*	None
Spotted Towhee	*Pipilo maculatus*	None
Common Yellowthroat	*Geothlypis trichas*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Western Fence Lizard	*Sceloporus occidentalis*	None
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Coyote	*Canis latrans*	None
California Ground Squirrel	*Otospermophilus beecheyi*	None
Desert Cottontail	*Sylvilagus audubonii*	None

Project Status and Remedial Action

The Sunnyslope Project is in its 12th year. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has been met. As of the June 20, 2024 bioassessment, giant reed is

at <1%, castor bean is absent, and tamarisk is absent. Continued removal and treatment will be required. Other non-native species have also emerged, and control of these is recommended. This project is a candidate for closure.

Financial Summary

Table 6: Sunnyslope Yearly Costs	
Reporting Period	**Total Cost**
2011	$2,085.99
2012	$121.17
2013	$68,183.59
1/1/14 to 6/30/14	$1,984.54
7/1/14 to 6/30/15	$9,223.77
7/1/15 to 6/30/16	$945.51
7/1/16 to 6/30/17	$10,342.02
7/1/17 to 6/30/18	$13,852.70
7/1/18 to 6/30/19	$15,415.37
7/1/19 to 6/30/20	$20,525.16
7/1/20 to 6/30/21	$32,842.59
7/1/21 to 6/30/22	$28,016.47
7/1/22 to 6/30/23	$8777.46
7/1/23 to 6/30/24	$10,348.41

GPS Photo Points

Table 7: Sunnyslope GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
2	41° NE	460044, 3759244
2A	118° SE	460047, 3759245
3	170° S	460076, 3759303
4	147° SE	459936, 3758993
6	37° NE	460105, 3759092

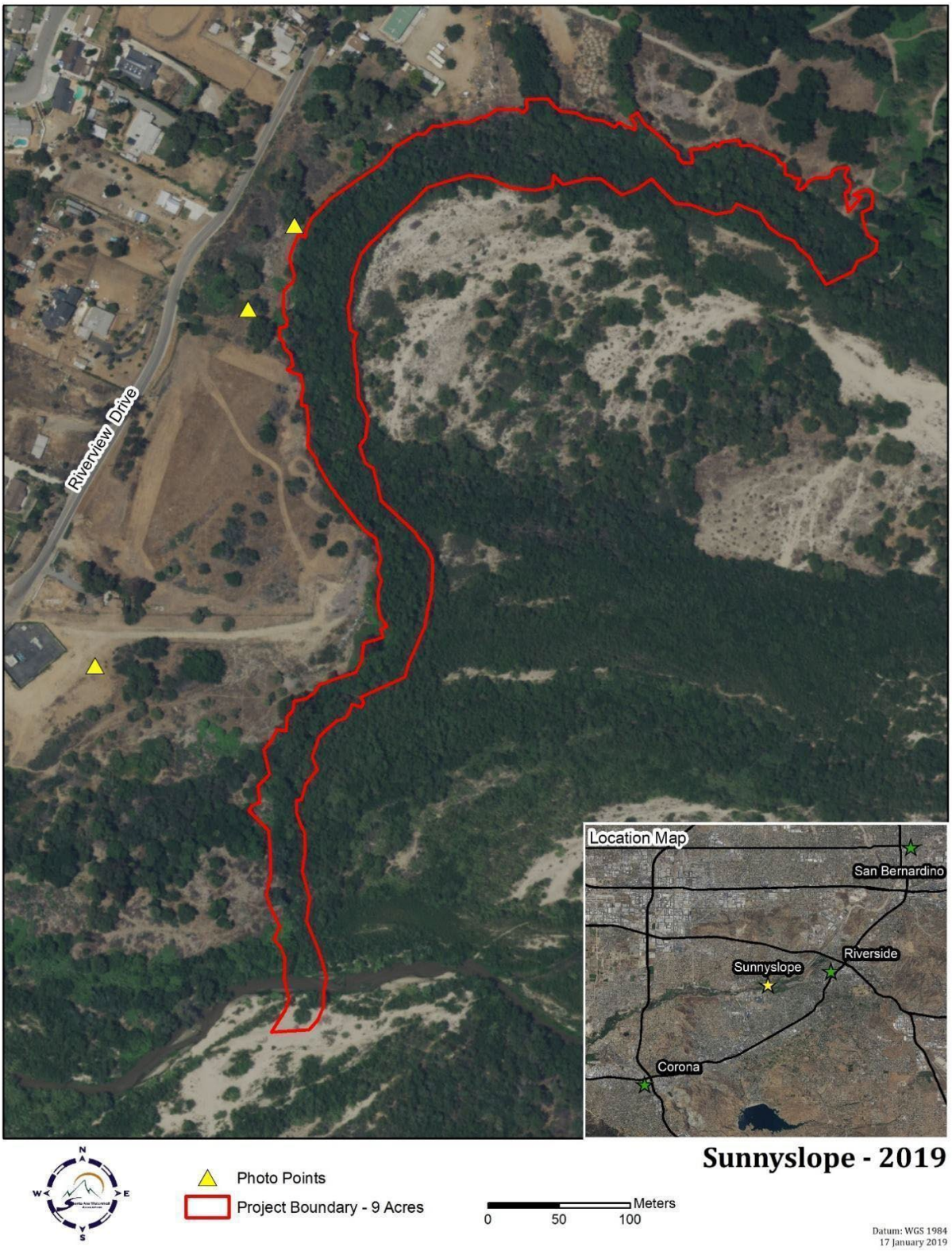
PP#2 taken 6/30/23 (left) and PP#2A taken 6/20/24 (right). PP#2 was shifted in 2024 due to soil erosion.

PP#3 taken 6/30/23 (left) and 6/20/24 (right).

PP#4 TAKEN 6/17/22 (LEFT) AND 6/30/23 (RIGHT).

PP#6 TAKEN 6/17/22 (LEFT) AND 6/30/23 (RIGHT).

MAP


Riverview Drive
Location Map
San Bernardino
Riverside
Sunnyslope
Corona
Photo Points
Project Boundary - 9 Acres
Meters
0
50
100
Sunnyslope - 2019
Datum: WGS 1984
17 January 2019

TEMESCAL WASH 3M 2.8-ACRE OLD STONE HEIGHTS

PROJECT BACKGROUND

Temescal Wash 3M 2.8-Acre Old Stone Heights is located in the Temescal Wash, in El Cerrito, CA, south of Corona, CA. The project site is bounded by Minnesota Rd to the north, the FST Main Quarry Plant to the east, and residential areas to the southwest. Originally, the project site was infested with giant reed (*Arundo donax*) and other non-native invasive plants. In 2014, the Santa Ana Watershed Association (SAWA) began removal work for this mitigation. Control efforts have continued in subsequent years to control the re-emergence of these species.

Table 1: Temescal Wash 3M 2.8-Acre Old Stone Heights Project - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
332007-18	Parcel Map 30626	Old Stone Heights, LLC	$66,510.44 (7/21/14)	2.8	ILF with additional criteria
Totals			**$66,510.44**	**2.8**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed, castor bean, perennial pepperweed, tamarisk, and annual weeds such as mustard. A total of 250 hours were spent on enhancement activities.

Table 2: Temescal Wash 3M 2.8-Acre Old Stone Heights– Summary of Mitigation Activities

Project placed in:	**2014**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/14 to 6/30/15	2.86	Initial removal	Giant reed, tamarisk, castor bean, mustard, perennial pepperweed
7/1/15 to 6/30/16	2.74	Treatment	Giant reed, tamarisk, castor bean
7/1/16 to 6/30/17	0.14	Treatment	Giant reed, castor bean, mustard, palms, perennial pepperweed
7/1/17 to 6/30/18	0.1	Treatment	Giant reed, castor bean, mustard, palms, perennial pepperweed
7/1/18 to 6/30/19	2	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, tamarisk

Table 2: Temescal Wash 3M 2.8-Acre Old Stone Heights– Summary of Mitigation Activities			
Project placed in:	**2014**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/19 to 6/30/20	1	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, tamarisk
7/1/20 to 6/30/21	0.5	Treatment	Giant reed, castor bean, mustard, perennial pepperweed
7/1/21 to 6/30/22	0.25	Treatment	Giant reed, castor bean, mustard, perennial pepperweed
7/1/22 to 6/30/23	0.1	Treatment	Giant reed, castor bean, mustard, perennial pepperweed
7/1/23 to 6/30/24	0.1	Treatment	Giant reed, castor bean, mustard, perennial pepperweed

Removal/treatment methods: Herbicide treatments were conducted using foliar application. Foliar application was conducted using 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Roundup Custom	549 ounces	Herbicide
Denali	71 ounces	Water conditioner

Amount removed/treated: Approximately 0.1 acre of giant reed, castor bean, mustard, and perennial pepperweed was treated during this reporting period.

Removal/treatment frequency and timing: The project site is monitored by HRS, and targeted species are treated as encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 9/6/2023, 9/7/2023, 2/15/2024, 2/22/2024, 2/26/2024, 2/28/2024, 2/29/2024, 4/8/2024 & 4/9/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site to dry and decompose in place above the high-water mark.

Monitoring Activities: The annual bioassessment survey took place on 6/21/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This location is included in the sites SAWA monitors for Least Bell's Vireo (*Vireo bellii pusillus*) under different funding sources. A total of 18.75 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>15-20 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>25-50%	
Native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Stinging Nettle	*Urtica dioica*	15-25%
Goodding's Black Willow	*Salix gooddingii*	5-15%
Brittlebush	*Encelia farinosa*	1-5%
Fremont Cottonwood	*Populus fremontii*	1-5%
Elderberry	*Sambucus mexicana*	1-5%
Non-native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Peruvian Pepper Tree	*Schinus molle*	25-50%
Mustard species	Brassicaceae sp.	5-15%
Castor Bean	*Ricinus communis*	1-5%
Arundo	*Arundo donax*	<1%
Eucalyptus	*Eucalyptus* sp.	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Anna's Hummingbird	*Calypte anna*	None
Cooper's Hawk	*Accipiter cooperii*	CDFW Watchlist
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Western Flycatcher	*Empidonax difficilis*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
Common Raven	*Corvus corax*	None
Bushtit	*Psaltriparus minimus*	None
Wrentit	*Chamaea fasciata*	None
California Gnatcatcher	*Polioptila californica*	Federally threatened; CDFW Species of Special Concern
Bewick's Wren	*Thryomanes bewickii*	None
Lesser Goldfinch	*Spinus psaltria*	None
Spotted Towhee	*Pipilo maculatus*	None
Yellow-breasted Chat	*Icteria virens*	CDFW Species of Special Concern
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Coyote	*Canis latrans*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Western Fence Lizard	*Sceloporus occidentalis*	None

Project Status and Remedial Action

The Temescal 3M 2.8-Acre Old Stone Heights project is in its 11th year. The project goal for this ILF placement is to reduce targeted non-natives (perennial pepperweed, tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has not been met. Currently, perennial pepperweed is not detected, castor bean is 1-5%%, giant reed is <1%, and tamarisk is absent. There is currently no riparian canopy or understory development, and native planting may be required to improve vegetative cover. The hydrology at this site is not adequate to support riparian habitat. Additional funding to meet these requirements may be necessary.

Financial Summary

Table 6: Temescal Wash 3M 2.8-Acre Old Stone Heights Yearly Costs	
Reporting Period	**Total Cost**
7/1/14 to 6/30/15	$6,297.80
7/1/15 to 6/30/16	$3,238.99
7/1/16 to 6/30/17	$9,524.38
7/1/17 to 6/30/18	$10,430.16
7/1/18 to 6/30/19	$19,754.13
7/1/19 to 6/30/20	$8,690.26
7/1/20 to 6/30/21	$19,040.36
7/1/21 to 6/30/22	$18,406.62
7/1/22 to 6/30/23	$14,088.27
7/1/23 to 6/30/24	$21,731.12

GPS Photo Points

Table 7: Temescal Wash 3M 2.3-Acre Old Stone Heights GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	207° SW	452640, 3744704
2	104° E	452519, 3744609
3	276° W	452675, 3744534
4	90° E	452392, 3744475

PP#1 TAKEN 6/28/23 (LEFT) AND 6/21/24 (RIGHT).


PP#2 TAKEN 6/28/23 (LEFT) AND 6/21/24 (RIGHT).


PP#3 TAKEN 6/28/23 (LEFT) AND 6/21/24 (RIGHT).


PP#4 TAKEN 6/28/23 (LEFT) AND 6/21/24 (RIGHT).

MAP


Minnesota Road
Location Map
Riverside
Corona
Temescal Wash 3M 2.8 Acre
Lake Elsinore
Photo Points
Project Boundary - 13 Acres
Temescal Wash 3M 2.8 Acre - 2019
Meters
0
50
100
Datum: WGS 1984
17 January 2019

TEMESCAL WASH PHASE V 115 ACRE

PROJECT BACKGROUND

The Temescal Wash Phase V 115 Acre project is located on approximately 115 acres along Temescal Creek in El Cerrito of the County of Riverside. The project is approximately ¼ mile south of Sherborn St and ends on the north side of Cajalco Rd. The project is bounded by an active rock quarry along the majority of its perimeter. Originally the 115-acre project was infested with large patches of giant reed (*Arundo donax*) and tamarisk (*Tamarix sp.*). Initial removal occurred in 2001 and was monitored for re-growth for five years before being turned over to the Santa Ana Watershed Association (SAWA) in 2006 for continued monitoring and control of target species. SAWA has subsequently treated castor bean (*Ricinus communis*), perennial pepperweed (*Lepidium latifolium*), and other non-native species as needed.

Table 1: Temescal Wash Phase V 115 Acre Project - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Mitigation Type
1600-2010-0149-R6 (Op Law) SPL-2010-00522-CLD 332010-29	Temescal Canyon Business Park	Temescal Office Partners, LP	$33,000 (6/26/12)	0.25	ILF
200401-500-SMJ RWQCB Cert. 8/24/04	Storm Drain Improvements at Corydon St and Melinda Ln, Lake Elsinore	Riverside County Transportation Department	$3,125 (10/28/04)	0.1	ILF
1600-2005-0039-R6 2005-00978-DPS RWQCB Cert. 7/22/05	Construction of Five Storm Drain Outlet Structures in Salt Creek for Tract #30808	Community Park 124, LLC	$25,000 (12/21/05 & 1/19/06)	0.3	ILF
Totals			**$61,125**	**0.65**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to giant reed, castor bean, tree tobacco, mustard, poison hemlock, and perennial pepperweed. A total of 250 hours were spent on enhancement activities.

Table 2: Temescal Wash Phase V 115 Acre– Summary of Mitigation Activities			
Project Placed in:	**2001**		
SAWA management began in:	**2006**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
2001	1.55	Initial Removal	Giant reed, castor bean, and other non-natives
2012 and prior		Not available	
7/1/12 to 6/30/13	None	n/a	n/a
7/1/13 to 6/30/14	n/a	n/a	n/a
7/1/14 to 6/30/15	None	n/a	n/a
7/1/15 to 6/30/16	6.9	Treatment	Giant reed, tamarisk
7/1/16 to 6/30/17	1.75	Treatment	Giant reed, castor bean, tree tobacco
7/1/17 to 6/30/18	1.5	Treatment	Giant reed, castor bean, tree tobacco
7/1/18 to 6/30/19	5	Treatment	Giant reed, castor bean, mustard, perennial pepperweed, poison hemlock, tamarisk
7/1/19 to 6/30/20	4	Treatment	Giant reed, castor bean, tree tobacco
7/1/20 to 6/30/21	3	Treatment	Giant reed, castor bean, tree tobacco, mustard, poison hemlock, and perennial pepperweed
7/1/21 to 6/30/22	2	Treatment	Giant reed, castor bean, tree tobacco, mustard, poison hemlock, and perennial pepperweed
7/1/22 to 6/30/23	1	Treatment	Giant reed, castor bean, tree tobacco, mustard, poison hemlock, and perennial pepperweed
7/1/23 to 6/30/24	0.75	Treatment	Giant reed, castor bean, tree tobacco, mustard, poison hemlock, and perennial pepperweed

Removal/treatment methods: All herbicide treatments were conducted using a foliar application with 4-gallon backpack sprayers. SAWA's Habitat Restoration Services (HRS) conducted these treatments.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Rodeo (glyphosate)	427 ounces	Herbicide
Roundup Custom	275 ounces	Herbicide
Garlon 3A	13 ounces	Herbicide
Competitor	6 ounces	Methylated Seed Oil
Denali	31 ounces	Water conditioner

Amount removed/treated: Approximately 0.75 acre of giant reed, castor bean, tree tobacco, mustard, poison hemlock, and perennial pepperweed was treated during this reporting period.

Removal/treatment frequency and timing: The project site is monitored by HRS, and targeted species are treated as encountered. For maximum efficacy, giant reed is treated when the biomass reaches 2 to 4 feet in height. During this reporting period, treatments occurred on 9/5/2023, 9/6/2023, 9/7/2023, 11/6/2023, 11/7/2023, 11/8/2023, 12/12/2023 & 12/13/2023.

Disposal of removed/treated biomass: The large amount of biomass produced during this removal was mulched, spread and allowed to dry and decompose in place, in an effort to reduce erosion and weed emergence.

Monitoring Activities: The annual bioassessment survey took place on 6/21/24 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. This location is included in the sites SAWA monitors for Least Bell's Vireo (*Vireo bellii pusillus*) under different funding sources. A total of 11.75 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4: Current Site Conditions		
Average tree height class:	>35-50 meters	
Average shrub height class:	>2-5 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>50-75%	
Common Name	**Scientific Name**	**Coverage Class**
Fremont Cottonwood	*Populus fremontii*	15-25%
Mixed Red, Black, and Arroyo Willows	*Salix laevigata, S. gooddingii,* and *S. lasiolepis*	5-15%
Western Sycamore	*Platanus racemosa*	1-5%
Desert Wild Grape	*Vitis girdiana*	1-5%
Fremont Cottonwood	*Populus fremontii*	15-25%
Non-native coverage:	>5-15%	
Common Name	**Scientific Name**	**Coverage Class**
Mustard species	*Brassicaceae sp.*	1-5%
Eucalyptus	*Eucalyptus sp.*	1-5%
Stinknet	*Oncosiphon pilulifer*	1-5%
Castor Bean	*Ricinus communis*	1-5%
Peruvian Pepper Tree	*Schinus molle*	1-5%
Arundo	*Arundo donax*	<1%

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Mourning Dove	*Zenaida macroura*	None
White-throated Swift	*Aeronautes saxatalis*	None
Cooper's Hawk	*Accipiter cooperii*	CDFW Watchlist

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Red-tailed Hawk	*Buteo jamaicensis*	None
Nuttall's Woodpecker	*Dryobates nuttallii*	None
Cassin's Kingbird	*Tyrannus vociferans*	None
Western Flycatcher (formerly Pacific-slope Flycatcher)	*Empidonax difficilis*	None
Least Bell's Vireo	*Vireo bellii pusillus*	Federally and state endangered
Common Raven	*Corvus corax*	None
Bushtit	*Psaltriparus minimus*	None
Blue-gray Gnatcatcher	*Polioptila caerulea*	None
Bewick's Wren	*Thryomanes bewickii*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
California Towhee	*Melozone crissalis*	None
Spotted Towhee	*Pipilo maculatus*	None
Hooded Oriole	*Icterus cucullatus*	None
Yellow Warbler	*Setophaga petechia*	CDFW Species of Special Concern
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
Coyote	*Canis latrans*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
San Diegan Tiger Whiptail	*Aspidoscelis tigris stejnegeri*	CDFW Species of Special Concern
Western Fence Lizard	*Sceloporus occidentalis*	None

Project Status and Remedial Action

The Temescal Wash Phase V 115 Acre Project is in its 19th year. The project goal for this ILF placement is to reduce targeted non-natives (tamarisk, castor bean, and giant reed) to <1%. Within the scope of requirements for SAWA's In-lieu Fee program, the project goal has not been met. Currently, castor bean is 1-5%, giant reed is <1%, and tamarisk is found in trace amounts. Treatments should continue as needed to ensure these species are well controlled. However, other non-native species, such as perennial pepperweed and annual mustard species, have emerged as dominant non-native species. Additional efforts to remove these other non-native species is recommended.

Financial Summary

Table 6: Temescal Wash Phase V 115 Acre Yearly Costs

Reporting Period	Total Cost
2012 and prior	Not available
2013	$0
1/1/14 to 6/30/14	$395.98
7/1/14 to 6/30/15	$0
7/1/15 to 6/30/16	$19,137.62
7/1/16 to 6/30/17	$5,927.84
7/1/17 to 6/30/18	$56,353.10
7/1/18 to 6/30/19	$53,113.73
7/1/19 to 6/30/20	$49,657.08
7/1/20 to 6/30/21	$41,717.55
7/1/21 to 6/30/22	$46,320.45
7/1/22 to 6/30/23	$22,842.74
7/1/23 to 6/30/24	$20,460.66

GPS Photo Points

Table 7: Temescal Wash Phase V 115 Acre GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	332° N	452426, 3745825
2	310° NW	452020, 3745704
3	54° NE	452022, 3745703
4	104° NE	452680, 3744751

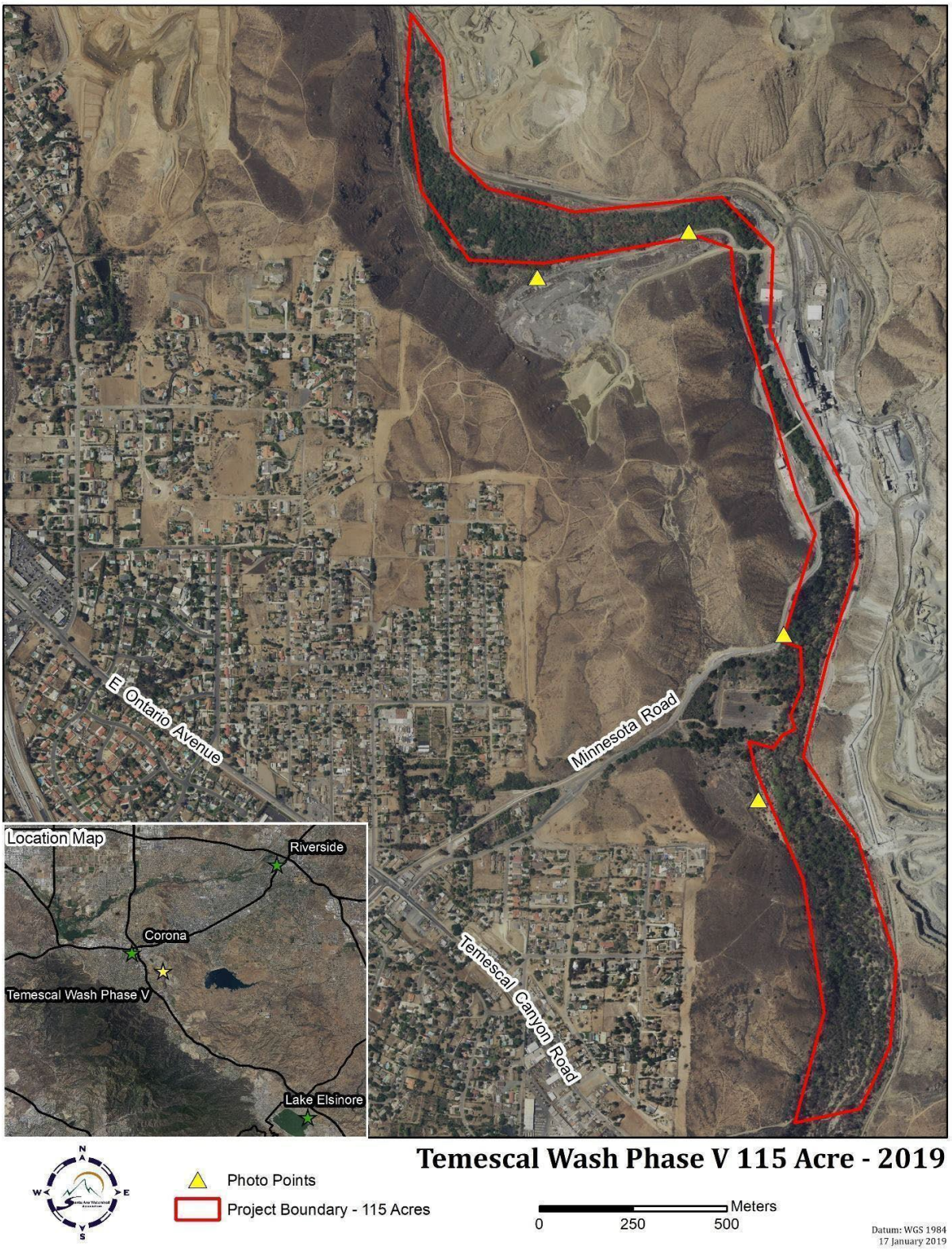
PP#1 taken 6/28/23 (left) and 6/21/24 (right).


PP#2 taken 6/28/23 (left) and 6/21/24 (right).


PP#3 TAKEN 6/28/23 (LEFT) AND 6/21/24 (RIGHT).


PP#4 TAKEN 6/28/23 (LEFT) AND 6/21/24 (RIGHT).


MAP


E Ontario Avenue
Minnesota Road
Temescal Canyon Road
Location Map
Riverside
Corona
Temescal Wash Phase V
Lake Elsinore
N
W
E
S
Photo Points
Project Boundary - 115 Acres
Meters
0
250
500
Temescal Wash Phase V 115 Acre - 2019
Datum: WGS 1984
17 January 2019

WOLFSKILL 1.47

PROJECT BACKGROUND

Wolfskill 1.47 is located along Laborde Canyon in the San Jacinto Valley. Originally, the 1.47-acre project was infested with tamarisk (*Tamarix sp.*). In 2014, the Santa Ana Watershed Association (SAWA) received agency approval to begin work and invasive removal for one mitigation began. Control efforts have continued in subsequent years to control the re-emergence of this species.

Table 1: Wolfskill 1.47 Project - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Purpose of Funds
1600-2012-0210-R6 (Op Law) 332012-36	I-215/Newport Road Interchange Improvement Project	Riverside County Transportation Department	$200,234.90	1.47	Permittee-based Mitigation: Enhancement
Totals			**$200,234.90**	**1.47**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: During this reporting period, herbicide was applied to Russian thistle (*Salsola tragus*) and incidentally encountered annual weeds. A total of 285 hours were spent on enhancement activities.

Table 2: Wolfskill 1.47 – Summary of Mitigation Activities

Project placed in: 2014

Reporting Period	Amount Removed or Treated (in acres)	Type of Activity	Species Removed or Treated
7/1/14 to 6/30/15	0.5	Initial Removal	Tamarisk and non-native annual weeds
7/1/15 to 6/30/16	0.5	Treatment	Tamarisk and non-native annual weeds
7/1/16 to 6/30/17	0.3	Treatment	Russian thistle, tamarisk, and non-native annual weeds
7/1/17 to 6/30/18	0.27	Treatment	Russian thistle, tamarisk, and non-native annual weeds

Table 2: Wolfskill 1.47 – Summary of Mitigation Activities			
Project placed in:	**2014**		
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/18 to 6/30/19	<0.1	Treatment	Russian thistle, tamarisk, and non-native annual weeds
7/1/19 to 6/30/20	<0.1	Treatment	Russian thistle, tamarisk, and non-native annual weeds
7/1/20 to 6/30/21	<0.1	Treatment	Russian thistle and non-native annual weeds
7/1/21 to 6/30/22	<0.1	Treatment	Russian thistle and non-native annual weeds
7/1/22 to 6/30/23	<0.1	Treatment	Russian thistle and non-native annual weeds
7/1/23 to 6/30/24	<0.25	Treatment	Russian thistle and non-native annual weeds

Removal/treatment methods SAWA's Habitat Restoration Services (HRS) conducted treatments using 4-gallon backpack sprayers.

Table 3: Chemicals Used During Herbicide Treatments		
Product	**Amount used**	**Purpose**
Roundup Custom	685 ounces	Herbicide
Denali	90 ounces	Water conditioner

Amount removed/treated: Less than 0.25 acre of Russian thistle and other annual non-native weeds was treated during this reporting period.

Removal/treatment frequency and timing: This project site is monitored by HRS, and targeted species are treated as encountered. During this reporting period, treatments and other removal work occurred on 12/6/2023, 12/7/2023, 2/13/2024, 4/2/2024, 4/3/2024, 5/2/2024, 5/28/2024 & 5/29/2024.

Disposal of removed/treated biomass: Due to the small amounts being treated, biomass is left on site and allowed to dry and decompose in place. Annual weeds removed by hand are bagged to be disposed of at a landfill.

Monitoring Activities: The annual 2023 bioassessment survey took place on 6/27/23 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. The Rabbit Fire (CALFIRE Incident CA-RRU-102458), which started on July 14, 2023, burned 8,283 acres surrounding and including the entire site. A subsequent post-fire bioassessment was conducted on 8/7/23 to document changes in site conditions; these are documented in Table 4a below. The annual 2024 bioassessment survey took place on 6/13/24. A total of 19.75 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4a: Site Conditions 8/7/23 - AFTER RABBIT FIRE		
Average tree height class:	>2-5 meters	
Average shrub height class:	<1-2 meters	
Overall vegetative coverage:	1-5%	
Native coverage:	1-5%	
Common Name	**Scientific Name**	**Coverage Class**
Saltbush	*Atriplex canescens*	1-5%
Thornapple	*Datura wrightii*	<1%
Arrowweed	*Pluchea sericea*	<1%
Blue Elderberry	*Sambucus mexicana*	<1%
Non-native coverage:	1-5%	
Common Name	**Scientific Name**	**Coverage Class**
Brome grasses	*Bromus diandrus and B rubens*	<1%
Stinknet	*Oncosiphon pilulifer*	<1%

Table 4: Current Site Conditions		
Average tree height class:	>2-5 meters	
Average shrub height class:	>1-2 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Thornapple	*Datura wrightii*	>15-25%
Annual Bursage	*Ambrosia acanthicarpa*	1-5%
Doveweed	*Croton setiger*	1-5%
Arrowweed	*Pluchea sericea*	1-5%
California Sagebrush	*Artemisia californica*	<1%
Mulefat	*Baccharis salicifolia*	<1%
Brittlebush	*Encelia farinosa*	<1%
Desert Olive	*Forestiera pubescens*	<1%
Sage species	*Salvia* sp.	<1%
Elderberry	*Sambucus mexicana*	<1%
Flatpod Prickly Poppy	*Argemone munita*	trace
Non-native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Non-native Brome Grasses	*Bromus* spp.	25-50%
Lamb's Quarters	*Chenopodium album*	1-5%
Shortpod Mustard	*Hirschfeldia incana*	1-5%
Tocalote	*Centaurea melitensis*	<1%
Tree Tobacco	*Nicotiana glauca*	<1%
Stinknet	*Oncosiphon pilulifer*	<1%
Tamarisk	*Tamarix ramosissima*	<1%
Puncture Vine	*Tribulus terrestris*	trace

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
California Quail	*Callipepla californica*	None
Mourning Dove	*Zenaida macroura*	None
Common Raven	*Corvus corax*	None
California Gnatcatcher	*Polioptila californica*	Federally threatened; CDFW Species of Special Concern
Rock Wren	*Salpinctes obsoletus*	None
Bewick's Wren	*Thryomanes bewickii*	None
House Finch	*Haemorhous mexicanus*	None
California Towhee	*Melozone crissalis*	None
Lazuli Bunting	*Passerina amoena*	None
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
California Ground Squirrel	*Otospermophilus beecheyi*	None
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
San Diegan Tiger Whiptail	*Aspidoscelis tigris stejnegeri*	CDFW Species of Special Concern
Western Side-blotched Lizard	*Uta stansburiana elegans*	None
California Ground Squirrel	*Otospermophilus beecheyi*	None

PROJECT STATUS AND REMEDIAL ACTION

The Wolfskill 1.47 Project is in its 10th year. The project goal for this permittee-based Mitigation: Enhancement placement is to reduce targeted non-natives to <5%. Currently, tamarisk is <1%. Treatments should continue as needed to ensure these species are well controlled. The placement of this mitigation was directed by CDFW to be placed at the Gilman Springs property and SAWA is following the placement directed by CDFW.

Financial Summary

Table 6: Wolfskill 1.47 Yearly Costs	
Reporting Period	**Total Cost**
7/1/14 to 6/30/15	$4,679.34
7/1/15 to 6/30/16	$10,496.51
7/1/16 to 6/30/17	$35,079.49
7/1/17 to 6/30/18	$36,419.86
7/1/18 to 6/30/19	$31,499.03
7/1/19 to 6/30/20	$10,056.09
7/1/20 to 6/30/21	$14,042.55
7/1/21 to 6/30/22	$12,405.86
7/1/22 to 6/30/23	$12,214.51
7/1/23 to 6/30/24	$26,240.30

GPS Photo Points

Table 7: Wolfskill 1.47 GPS Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	12° N	498059, 3747665
2	335° NW	498084, 3747648
3	242° SW	498154, 3747822
4	153° SE	498106, 3747861
5RF	350° N	498091, 3747699
6RF	170° S	498082, 3747788
7RF	40° NE	498082, 3747788
8RF	130° SE	498119, 3747811
9RF	190° S	498132, 3747855

PP#1 TAKEN 6/27/23 (TOP LEFT), 8/7/23 AFTER THE RABBIT FIRE (RIGHT), AND 6/13/24 (BOTTOM LEFT).

PP#2 TAKEN 6/27/23 (TOP LEFT), 8/7/23 AFTER THE RABBIT FIRE (RIGHT), AND 6/13/24 (BOTTOM LEFT).

PP#3 TAKEN 6/27/23 (TOP LEFT), 8/7/23 AFTER THE RABBIT FIRE (RIGHT), AND 6/13/24 (BOTTOM LEFT).

PP#4 TAKEN 6/27/23 (TOP LEFT), 8/7/23 AFTER THE RABBIT FIRE (RIGHT), AND 6/13/24 (BOTTOM LEFT).

PP#5RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).

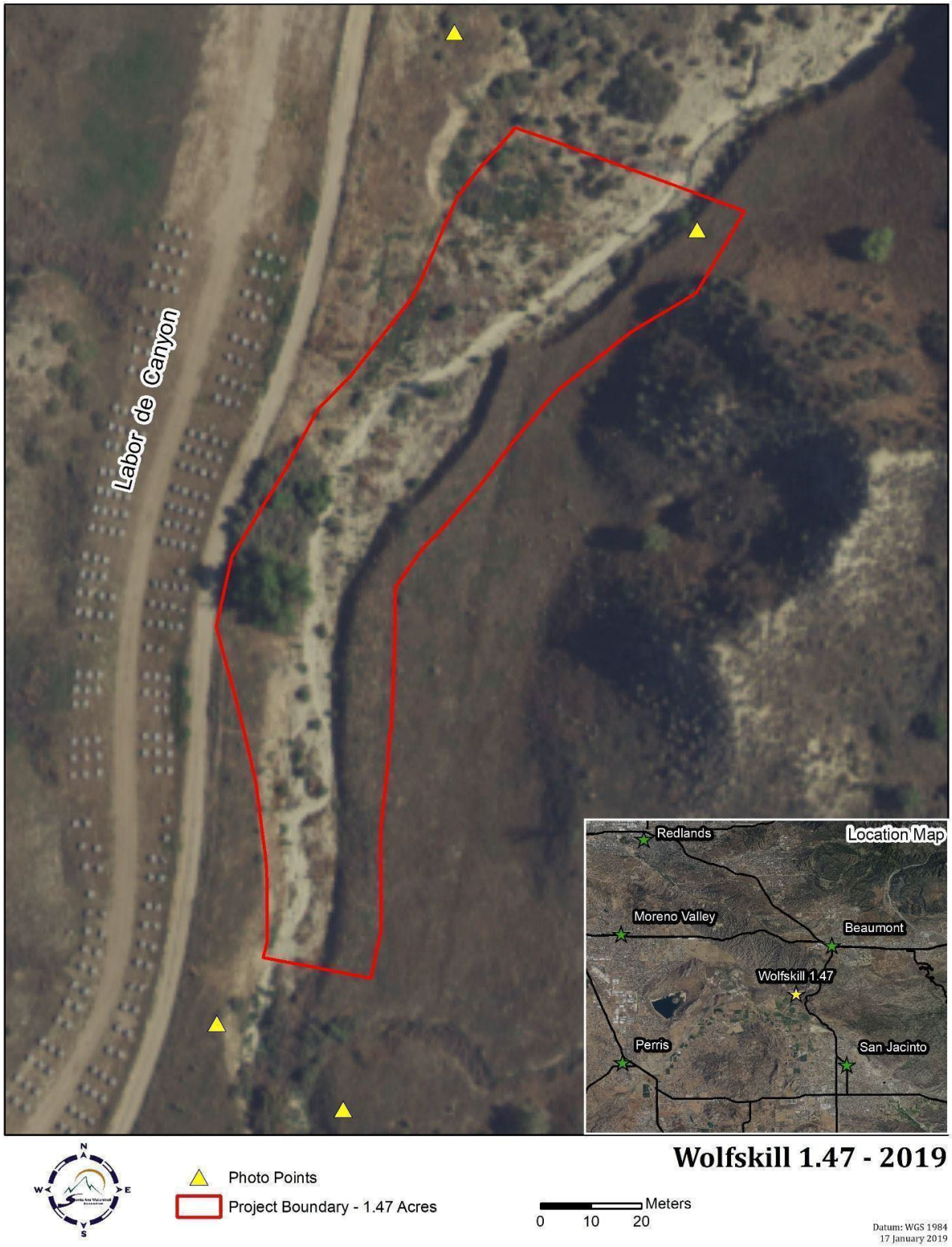
PP#6RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).


PP#7RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).


PP#8RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).


PP#9RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).

MAP


Labor de Canyon
Location Map
Redlands
Moreno Valley
Beaumont
Wolfskill 1.47
Perris
San Jacinto
Photo Points
Project Boundary - 1.47 Acres
Meters
0
10
20
Wolfskill 1.47 - 2019
Datum: WGS 1984
17 January 2019

WOLFSKILL SCE 1.2

PROJECT BACKGROUND

Wolfskill SCE 1.2 is located within Laborde Canyon in the San Jacinto Valley, off Gilman Springs Road approximately 1.7 miles west of Highway 79 and 1.3 miles east of Bridge Street. Baseline vegetation surveys have identified tamarisk (*Tamarix sp.*), Russian thistle (*Salsola tragus*), tree tobacco (*Nicotiana glauca*), and mustard (*Brassicaceae* sp.) as the primary non-natives on site. Work began in January 2019; this mitigation includes control of non-native species as well as native species revegetation.

Table 1: Wolfskill SCE 1.2 Project - Mitigations Placed at Project

Permit Number	Project Name	Permittee Name	Amount Received	Mitigated Acreage	Purpose of Funds
RCA Participating Special Entity Review	Valley-Ivy Glen Sub-transmission Line Project	Southern California Edison	$153,179.34	1.2	Permittee-based Mitigation: Enhancement
Totals			**$153,179.34**	**1.2**	

PROJECT ACTIVITIES AND NON-NATIVE REMOVAL

Enhancement Activities: No treatments were conducted during this reporting period. A total of 0 hours were spent on enhancement activities.

Table 2: Wolfskill SCE 1.2 – Summary of Mitigation Activities

Project placed in: 2019			
Reporting Period	**Amount Removed or Treated (in acres)**	**Type of Activity**	**Species Removed or Treated**
7/1/18 to 6/30/19	1.2	Initial removal	Tamarisk, mustard, tocalote
7/1/19 to 6/30/20	0.9	Treatment	Tamarisk, mustard, tocalote
7/1/20 to 6/30/21	0.5	Treatment.	Tamarisk and non-native annual weeds
7/1/21 to 6/30/22	0.3	Treatment.	Tamarisk and non-native annual weeds
7/1/22 to 6/30/23	0.2	Treatment.	Tamarisk and non-native annual weeds
7/1/23 to 6/30/24	0	N/A	N/A

Removal/treatment methods: Non-native treatments were not conducted in this reporting period.

Table 3: Chemicals Used During Herbicide Treatments
No treatments were conducted during this reporting period.

Amount removed/treated: No treatments were conducted during this reporting period.

Removal/treatment frequency and timing: No treatments were conducted during this reporting period.

Disposal of removed/treated biomass: No treatments were conducted during this reporting period.

Monitoring Activities: The annual 2023 bioassessment survey took place on 6/27/23 to determine current site conditions using a modified rapid assessment method. Recorded data includes native and non-native vegetative coverages, photos at established photo points, and incidentally detected wildlife. The Rabbit Fire (CALFIRE Incident CA-RRU-102458), which started on July 14, 2023, burned 8,283 acres surrounding and including the entire site. A subsequent post-fire bioassessment was conducted on 8/7/23 to document changes in site conditions; these are documented in Table 4a below. The annual 2024 bioassessment survey took place on 6/13/24. A total of 11 hours were spent on monitoring and management activities.

CURRENT SITE CONDITIONS

Table 4a: Site Conditions 8/7/23 - AFTER RABBIT FIRE		
Average tree height class:	>2-5 meters	
Average shrub height class:	<1-2 meters	
Overall vegetative coverage:	1-5%	
Native coverage:	1-5%	
Common Name	**Scientific Name**	**Coverage Class**
Saltbush	*Atriplex canescens*	<1%
Mulefat	*Baccharis salicifolia*	<1%
Thornapple	*Datura wrightii*	<1%
Fremont Cottonwood	*Populus fremontii*	<1%
Non-native coverage:	1-5%	
Common Name	**Scientific Name**	**Coverage Class**
Black Mustard	*Brassica nigra*	<1%
Brome grasses	*Bromus diandrus and B rubens*	<1%
Tamarisk	*Tamarix ramosissima*	<1%
Stinknet	*Oncosiphon pilulifer*	trace
Russian Thistle	*Salsola kali*	trace

Table 4: Current Site Conditions		
Average tree height class:	>2-5 meters	
Average shrub height class:	>1-2 meters	
Overall vegetative coverage:	>50-75%	
Native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Thornapple	*Datura wrightii*	25-50%
Annual Bursage	*Ambrosia acanthicarpa*	1-5%
Four-wing Saltbush	*Atriplex canescens*	1-5%

Table 4: Current Site Conditions		
Mulefat	*Baccharis salicifolia*	1-5%
Flatpod Prickly Poppy	*Argemone munita*	<1%
California Sagebrush	*Artemisia californica*	<1%
Doveweed	*Croton setiger*	<1%
Brittlebush	*Encelia farinosa*	<1%
California Buckwheat	*Eriogonum fasciculatum*	<1%
Fremont Cottonwood	*Populus fremontii*	<1%
Elderberry	*Sambucus mexicana*	<1%
Non-native coverage:	>25-50%	
Common Name	**Scientific Name**	**Coverage Class**
Non-native Brome Grasses	*Bromus spp.*	25-50%
Tocalote	*Centaurea melitensis*	1-5%
Shortpod Mustard	*Hirschfeldia incana*	1-5%
Tamarisk	*Tamarix ramosissima*	1-5%
Tree Tobacco	*Nicotiana glauca*	<1%
Stinknet	*Oncosiphon pilulifer*	<1%
Russian Thistle	*Salsola kali*	<1%
Stork's Bill	*Erodium cicutarium*	trace
London Rocket	*Sisymbrium irio*	trace

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
California Quail	*Callipepla californica*	None
Mourning Dove	*Zenaida macroura*	None
Anna's Hummingbird	*Calypte anna*	None
Red-tailed Hawk	*Buteo jamaicensis*	None

Table 5: Wildlife Species Detected on Site		
Avian Species		
Common Name	**Scientific Name**	**Special Status**
Ash-throated Flycatcher	*Myiarchus cinerascens*	None
Common Raven	*Corvus corax*	None
California Gnatcatcher	*Polioptila californica*	Federally threatened; CDFW Species of Special Concern
Rock Wren	*Salpinctes obsoletus*	None
Bewick's Wren	*Thryomanes bewickii*	None
California Thrasher	*Toxostoma redivivum*	None
House Finch	*Haemorhous mexicanus*	None
Lesser Goldfinch	*Spinus psaltria*	None
California Towhee	*Melozone crissalis*	None
Mammalian Species		
Common Name	**Scientific Name**	**Special Status**
California Ground Squirrel	California Ground Squirrel	California Ground Squirrel
Botta's Pocket Gopher	Botta's Pocket Gopher	Botta's Pocket Gopher
Herpetofaunal Species		
Common Name	**Scientific Name**	**Special Status**
Belding's Orange-throated Whiptail	*Aspidoscelis hyperthra beldingi*	USFS Sensitive Species; CDFW Watchlist
San Diegan Tiger Whiptail	*Aspidoscelis tigris stejnegeri*	CDFW Species of Special Concern
Western Fence Lizard	*Sceloporus occidentalis*	None
Western Side-blotched Lizard	*Uta stansburiana elegans*	None

PROJECT STATUS AND REMEDIAL ACTION

The Wolfskill SCE 1.2 Project is in its 6th year. In compliance with the HMMP, the project goals for this permittee-based mitigation are to reduce all non-native coverage listed as moderate or high on the California Invasive Plant Council's plant inventory list to <5% and restore native woody coverage to 75% These goals have not been met and additional removal and treatment, particularly of tamarisk, are

required. Native pole cuttings planted on-site have had poor survival rates and replanting may be required if native woody coverage restoration goals are to be met.

Financial Summary

Table 6: Wolfskill SCE 1.2 Yearly Costs	
Reporting Period	**Total Cost**
7/1/18 to 6/30/19	$21,464.73
7/1/19 to 6/30/20	$37,713.30
7/1/20 to 6/30/21	$49,057.78
7/1/21 to 6/30/22	$26,663.20
7/1/22 to 6/30/23	$6,878.49
7/1/23 to 6/30/24	$1,335.29

GPS Photo Points

Table 7: Wolfskill SCE 1.2 Photo Points		
Photo Point	**Bearing (°)**	**Coordinates (UTM)**
1	218° SW	498084, 3747648
2	126° SE	498059, 3747665
3	51° NE	498001, 3747522
4RF	50° NE	497975, 3747489
5RF	40° NE	497997, 3747503
6RF	0° N	498039, 3747516
7RF	200° S	498082, 3747577
8RF	0° N	498082, 3747577
9RF	290° W	498082, 3747577

PP#1 TAKEN 6/27/23 (TOP LEFT), 8/7/23 AFTER THE RABBIT FIRE (RIGHT), AND 6/13/24 (BOTTOM LEFT).

PP#2 TAKEN 6/27/23 (TOP LEFT), 8/7/23 AFTER THE RABBIT FIRE (RIGHT), AND 6/13/24 (BOTTOM LEFT).

PP#3 TAKEN 6/27/23 (TOP LEFT), 8/7/23 AFTER THE RABBIT FIRE (RIGHT), AND 6/13/24 (BOTTOM LEFT).

PP#4RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).

PP#5RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 7/1/24 (RIGHT).


PP#6RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).


PP#7RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).


PP#8RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).


PP#9RF ESTABLISHED AND TAKEN 8/7/23 AFTER THE RABBIT FIRE (LEFT) AND 6/13/24 (RIGHT).


MAP


Location Map
Bernardino
Redlands
Riverside
Moreno Valley
Beaumont
Wolfskill SCE 1.2
Perris
San Jacinto
Lake Elsinore
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Wolfskill SCE 1.2
Photo Points
Project Boundary - 1.2 Acres
Meters
0 10 20
Datum: WGS 1984
22 September 2020

CONTRACTS

SAWA is periodically contracted for projects approved under other organizations' permits. SAWA holds no responsibility to meet mitigation criteria and will only perform those actions directed under the contract. During this reporting period, SAWA worked on the following projects. More information about the work SAWA performed under these contracts is available by contacting the executive director.

- Canyon Hills HOA
- Riverside Flood Control: Lake Elsinore Outlet Channel and Gunnerson Pond Project
- Riverside Flood Control: Line C Project
- Riverside Flood Control: SAR
- TEAM RCD – Riverside Flood Control Projects
- City of Chino Hills - Palms
- SBVMWD Facilities Maintenance
- SBVMWD Master Contract 2024
- SJBRCD – May Ranch

APPENDIX A: PERMIT DIRECTORY

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
1600-2003-5167-R5	SR-22 HOV Lane Project	R5	Santiago Creek Phase II	38
1600-2004-0009-R6 (Op Law)	Crafton Hills Repair Project	R6	Quail Run Phase II	66
1600-2004-0060-R5	Southern California Regional Rail Bridge Project	R5	Irvine Park	19
1600-2004-0145-R6 (Op Law)	Quincy Channel Hydro-modification	R6	Mockingbird Canyon MCB	57
1600-2004-0187-R6	May Ranch Phase 6 Residential Development Project	R5	Santiago Creek Phase II	38
1600-2004-0256-R5	Caliber Motors Satellite Sales Facility	R5	Irvine Park	19
1600-2005-0039-R6	Construction of Five Storm Drain Outlet Structures in Salt Creek for Tract #30808	R6	Temescal Wash Phase V	117
1600-2005-0228-R6	Lake Mathews Dam Seepage	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2005-0246-R6	Route 79 Improvement Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2005-0284-R5	Mountain Park Development Project	R5	Santiago Creek Phase I	28
1600-2005-0386-R5	Boy Scouts of America Outdoor Education Camp	R5	Santiago Creek Phase II	38
1600-2006-0078-R6	Nuevo Business Park	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2006-0189-R6 (Op Law)	Repair of Calnev Pipeline east of I-15	R6	Cal-Nev Pipeline	47
1600-2006-0254-R6	Citrus Investor LLC	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2007-0003-R5	Santiago Canyon Creek Recharge Enhancement Project	R5	Irvine Park	19
1600-2007-0075-R6 (Op Law)	Swarthout Canyon Road Washout Repair	R6	Cal-Nev Pipeline	47

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
1600-2007-0105-R6 (Op Law)	Deadman Junction Pipeline Washout Repair	R6	Cal-Nev Pipeline	47
1600-2007-0106-R6 (Op Law)	Hawarden Development Project	R6	Mockingbird Canyon MCB	57
1600-2007-0213-R6 (Op Law)	Walgreens Project	R6	Sunnyslope	101
1600-2008-0096-R6	Kitching Street Improvements Project	R6	Mockingbird Canyon MCB	57
1600-2008-0104-R6	JCSD Plant 1 100-year Flood Protection Project	R6	Habitat for Hamner	49
1600-2008-0105-R6	Agua Mansa Commerce Center Project	R6	Mockingbird Canyon MCB	57
1600-2008-0300-R5	Baker Ranch Community	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2008-0314-R5 (Op Law)	Fullerton Layover Facility Project	R5	Irvine Lake	11
1600-2008-0420-R5 (Op Law)	Santiago Creek Bike Trail - Tustin Branch Trail	R5	Irvine Lake	11
1600-2009-0020-R5 (Op Law)	North Diemer Access Road Project	R5	Carbon Canyon Aera	4
1600-2009-0043-R6 (Rev. 1)	Centerpointe Business Park Project	R6	Centerpointe	48
1600-2009-0138-R6	Florida Promenade Specific Plan Amendment	R6	Quail Run Phase II	66
1600-2010-0079-R6 (Op Law)	Route 79 Improvement Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2010-0089-R6 (Op Law)	Bundy Canyon Plaza Project	R6	Quail Run Phase II	66
1600-2010-0135-R6 (Op Law)	Route 74 Headwall Removal & Culvert Extension Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2010-0149-R6 (Op Law)	Temescal Canyon Business Park	R6	Temescal Wash Phase V	117
1600-2011-0007-R6 (Op Law)	Line Section-51 Pipeline Erosion Repair Project	R6	Quail Run Phase II	66
1600-2011-0143-R6	Colton Crossing Rail-To-Rail Separation Project	R6	SAR - Upstream River Rd – Phase I CDFW	84

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
1600-2011-0164-R6	Interstate 15/Duncan Canyon Road New Interchange Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2011-0165-R6 (Op Law)	North Norco Channel Flood Control Improvements Project	R6	Sunnyslope	101
1600-2011-0199-R6 (Op Law)	Mercado Community Park Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2011-0228-R6 (Op Law)	Street Drainage Improvements Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2012-0094-R6	Westridge Commerce Center Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
1600-2012-0210-R6 (Op Law)	I-215/Newport Road Interchange Improvement Project	R6	Wolfskill 1.47	126
1600-2014-0218-R6 (Op Law)	Monteolivio Project	R6	RLC – Alessandro Arroyo 1.52	77
5-028-00	Yorba Linda Heights Project	R5	Irvine Park	19
CDFW Op Law	Robert D. Diemer Filtration Plant Emergency Spillway Vegetation Clearing Project	R5	Irvine Park	19
EPIMS-RIV13392-R6	Menifee Cajalco Road Pole Replacement Project	R6	Southern California Edison	94
RCA Participating Special Entity Review	Valley-Ivy Glen Sub-transmission Line Project	R6	Wolfskill SCE 1.2	139

U.S. ARMY CORPS OF ENGINEERS (USACE) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
199915117-YJC	Saddleback Meadows	R5	Irvine Park	19
200000736-YJC	Yorba Linda Heights Project	R5	Irvine Park	19
2002-00505-DPS	Mountain Park Development Project	R5	Santiago Creek Phase I	28
200300194-YJC	Frank R. Bowerman Landfill	R5	Irvine Park	19

U.S. ARMY CORPS OF ENGINEERS (USACE) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
200300640-WJC	May Ranch Phase 6 Residential Development Project	R5	Santiago Creek Phase II	38
200301268-YJC	Boy Scouts of America Outdoor Education Camp	R5	Santiago Creek Phase II	38
200400654-GS	Crafton Hills Repair Project	R6	Quail Run Phase II	66
200401-500-SMJ	Storm Drain Improvements at Corydon St and Melinda Ln, Lake Elsinore	R6	Temescal Wash Phase V	117
200500154-JPL	Caliber Motors Satellite Sales Facility	R5	Irvine Park	19
2005-00978-DPS	Construction of Five Storm Drain Outlet Structures in Salt Creek for Tract #30808	R6	Temescal Wash Phase V	117
200601563-SLT	Repair of Calnev Pipeline east of I-15	R6	Cal-Nev Pipeline	47
2007-01258	Swarthout Canyon Road Washout Repair	R6	Cal-Nev Pipeline	47
2007-1288	Deadman Junction Pipeline Washout Repair	R6	Cal-Nev Pipeline	47
2007-76-Y	Santiago Canyon Creek Recharge Enhancement Project	R5	Irvine Park	19
30-2005-32-DGW	Del Rio Project	R5	Santiago Creek Phase II	38
SPL-2002-00937	Baker Ranch Community	R6	SAR - Upstream River Rd – Phase I CDFW	84
SPL-2004-899-WJC	First Street and Potrero Avenue Roadway Improvement Project	R6	Quail Run Phase II	66
SPL-2006-01928-JPL	Centerpointe Business Park Project	R6	Centerpointe	48
SPL-2007-00128-SLP	Alabama Street Arch Culvert Construction Project	R6	Quail Run Phase II	66
SPL-2007-00374-JPL	Hawarden Development Project	R6	Mockingbird Canyon MCB	57
SPL-2007-01094-FBV	Stagecoach Park Project	R6	Quail Run Phase II	66
SPL-2008-00242	Walgreens Project	R6	Sunnyslope	101

U.S. ARMY CORPS OF ENGINEERS (USACE) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
SPL-2008-00254-YLC	San Sevaine Villas Affordable Housing Project	R6	Mockingbird Canyon MCB	57
SPL-2008-00358-FBV	Sycamore Creek Area Project	R6	Sunnyslope	101
SPL-2008-00785-JEM	JCSD Plant 1 100-year Flood Protection Project	R6	Habitat for Hamner	49
SPL-2008-00814-SLP	Agua Mansa Commerce Center Project	R6	Mockingbird Canyon MCB	57
SPL-2008-01063-JPL	Fullerton Layover Facility Project	R5	Irvine Lake	11
SPL-2008-01145-MAS	Santiago Creek Bike Trail - Tustin Branch Trail	R5	Irvine Lake	11
SPL-2008-0923	Kitching Street Improvements Project	R6	Mockingbird Canyon MCB	57
SPL-2009-00139-VCC	I-215 West Perimeter Drainage Improvement Project	R6	Quail Run Phase II	66
SPL-2009-00292-JPL	North Diemer Access Road Project	R5	Carbon Canyon Aera	4
SPL-2009-00674-JPL	Olinda Alpha Landfill Expansion	R5	Irvine Lake	11
SPL-2009-00750-JPL	Florida Promenade Specific Plan Amendment	R6	Quail Run Phase II	66
SPL-2010-00522-CLD	Temescal Canyon Business Park	R6	Temescal Wash Phase V	117
SPL-2011-00236	Line Section-51 Pipeline Erosion Repair Project	R6	Quail Run Phase II	66
SPL-2011-00570-SME	North Norco Channel Flood Control Improvements Project	R6	Sunnyslope	101

REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
2004-0004-DWQ	Bundy Canyon Plaza Project	R6	Quail Run Phase II	66
332007-18	Parcel Map 30626	R6	Temescal Wash 3M 2.8-Acre	109
33-2007-43	Walgreens Project	R6	Sunnyslope	101

REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
332010-29	Temescal Canyon Business Park	R6	Temescal Wash Phase V	117
33-2011-07	North Norco Channel Flood Control Improvements Project	R6	Sunnyslope	101
332011-12	Line Section-51 Pipeline Erosion Repair Project	R6	Quail Run Phase II	66
332012-36	I-215/Newport Road Interchange Improvement Project	R6	Wolfskill 1.47	126
332014-25	Monteolivio Project	R6	RLC – Alessandro Arroyo 1.52	77
362011-19	Mercado Community Park Project	R6	SAR - Upstream River Rd – Phase I CDFW	84
36-2004-04-DGW	Crafton Hills Repair Project	R6	Quail Run Phase II	66
Certificate 1/24/06	Boy Scouts of America Outdoor Education Camp	R5	Santiago Creek Phase II	38
Certificate 11/16/04	Caliber Motors Satellite Sales Facility	R5	Irvine Park	19
Certificate 11/3/09	Sycamore Creek Area Project	R6	Sunnyslope	101
Certificate 12/20/05	Mountain Park Development Project	R5	Santiago Creek Phase I	28
Certificate 12/4/07	Hawarden Development Project	R6	Mockingbird Canyon MCB	57
Certificate 2/27/09	Santiago Creek Bike Trail - Tustin Branch Trail	R5	Irvine Lake	11
Certificate 7/22/05	Construction of Five Storm Drain Outlet Structures in Salt Creek for Tract #30808	R6	Temescal Wash Phase V	117
Certificate 8/24/04	Storm Drain Improvements at Corydon St and Melinda Ln, Lake Elsinore	R6	Temescal Wash Phase V	117
Certificate 8/24/05	May Ranch Phase 6 Residential Development Project	R5	Santiago Creek Phase II	38
Certificate 9/17/09	North Diemer Access Road Project	R5	Carbon Canyon Aera	4

REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) PERMITS (in order of permit number)

Permit Number	Permitted Project Name	CDFW Region	SAWA Mitigation Placement Name	Page
Certificate 9/25/07	Santiago Canyon Creek Recharge Enhancement Project	R5	Irvine Park	19
CRWQCB-302008-19	Baker Ranch Community	R6	SAR - Upstream River Rd – Phase I CDFW	84
R8-2006-0076	Residential Development – Stetson Ranch	R6	SAR - Upstream River Rd – Phase I CDFW	84
R8-2009-0047	Olinda Alpha Landfill Expansion	R5	Irvine Lake	11
R8-2010-054	Florida Promenade Project	R6	Quail Run Phase II	66
R8-2011-0051	City of Fontana	R6	SAR - Upstream River Rd – Phase I CDFW	84
SARWQCB 332010-27	Route 74 Headwall Removal & Culvert Extension Project	R6	SAR - Upstream River Rd – Phase I CDFW	84

APPENDIX B: REACH 3B SAN TIMOTEO

CDFW 2023-2024 REPORT FOR PERMIT 1600-2012-0084-R6: REACH 3B

REPORT AREA I: LIST OF ALL HABITAT CREATION, RESTORATION, ENHANCEMENT, AND CONSERVATION PROJECT AREAS CURRENTLY BEING MANAGED BY PERMITTEE

The Reach 3B Project Area officially encompasses the entirety of the San Timoteo Creek subwatershed, which is approximately 126 square miles of land stretched across Calimesa, Redlands, Yucaipa, and unincorporated portions of San Bernardino and Riverside Counties. Properties under current management in association with this mitigation, listed by category include:

1. *Restoration*:
    a. Ongoing monitoring and management of 6-A of restoration completed within the Cienega Property, west of Palmer Ave, owned by the Rivers and Lands Conservancy took place throughout 2023-24. The restoration goals of this project have been completed and passive monitoring and minor management occurred.
    b. Ongoing assistance and implementation of phased restoration over the San Timoteo Nature Sanctuary, owned by the City of Redlands and managed by the Redlands Conservancy. Total restoration areas consists of approximately 4.36 acres of designated areas along San Timoteo Creek.
2. *Enhancement*:
    Invasive vegetation management activities took place throughout the project area in 2023-24 over the following sites: The San Timoteo Nature Sanctuary owned by the City of Redlands and managed by the Redlands Conservancy; the Cienega Property managed by the Rivers and Lands Conservancy; the Oak Valley Property owned by the Regional Conservation Authority of Western Riverside County (RCA); the 26-A San Bernardino County Flood Control District site, multiple properties owned by California State Parks; multiple sites owned by the Yucaipa Valley Water District; properties owned by the City of Yucaipa; and various privately owned lands within the San Timoteo Watershed.
3. *Conservation*:
    Activities associated with general preservation of property took place alongside much of the San Timoteo Creek mainstem and major tributaries. In addition to general conservation, SAWA member agency the Inland Empire Resource Conservation District (IERCD) continued to manage the 361-A Holmes Property adjacent to the RCA's Oak Valley property, 5-7A of which is being set aside as permanent conservation on behalf of the Reach 3B mitigation project per original project requirements.

REPORT AREA II: DESCRIPTION OF THE HABITAT RESTORATION, ENHANCEMENT, AND CONSERVATION ACTIVITIES PERFORMED WITHIN EACH PROJECT AREA

Cienega Habitat Restoration: In the 2023-24 reporting period, restoration activity on behalf of this mitigation project consisted of active management and monitoring of Phase III and passive monitoring of phase I and II comprising the 6-A restoration site within Cienega Property. Phases I and II were determined to be successful after five plus years of uplift beginning in 2014. The multi-phased

restoration was conceptualized and completed to include (1) Phase I, 2-A of restoration including 305 locally-sourced non-irrigated pole cuttings and 580 container plants fed by an installed irrigation system planted in 2014; (2) Phase II, 2.7-A of original area but only just over 2-A of area needing active restoration with the balance already occupied by native functional species; 1,060 non-irrigated pole cuttings were installed within this segment of the property in 2015; and (3)Phase III,2.8-A of property located on the east end of Phase I, designed in cooperation with input from United States Fish and Wildlife Service to be comprised of a mix of 325 pole cuttings and five depressional areas vegetated with locally-sourced herbaceous cover in 2016, to maximize foraging opportunities immediately adjacent to optimal LBV nesting sites.

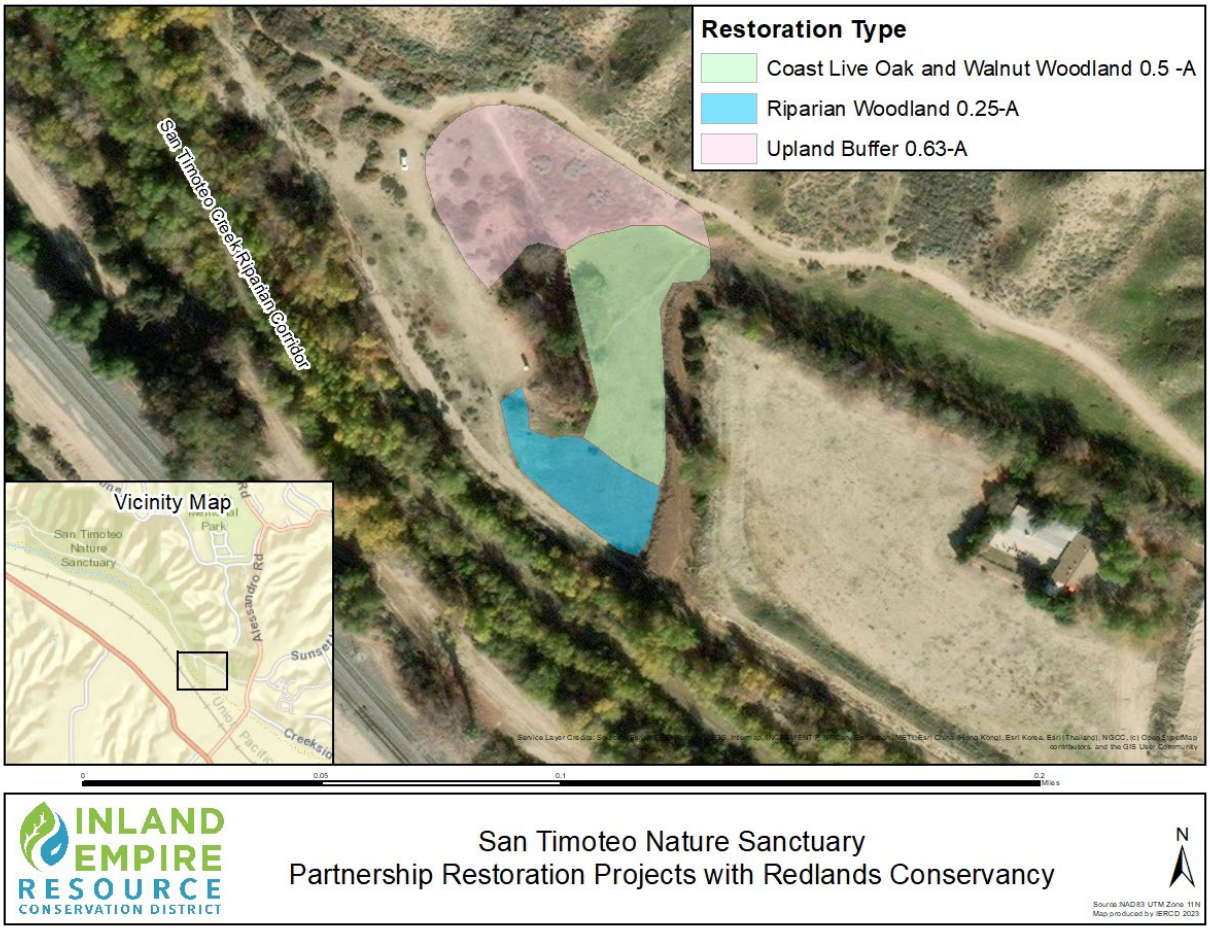
Collectively, these three phases represent six total acres of restoration, and are all focused on uplift of resources within the Rivers and Lands Conservancy-owned Cienega Property primarily for the benefit of least Bell's vireo. All three phases required preparation consisting of tasks including data collection, archeological surveying and records research, communication with project partners, restoration plan creation, and implementation of physical site preparation such as invasive removals, soil ripping, and in the case of Phase I, establishment of an irrigation system. Phase III was maintained through 2023-24 while Phases I and II was passively observed but not actively maintained following determination of success.

CONTINUE TO NEXT PAGE

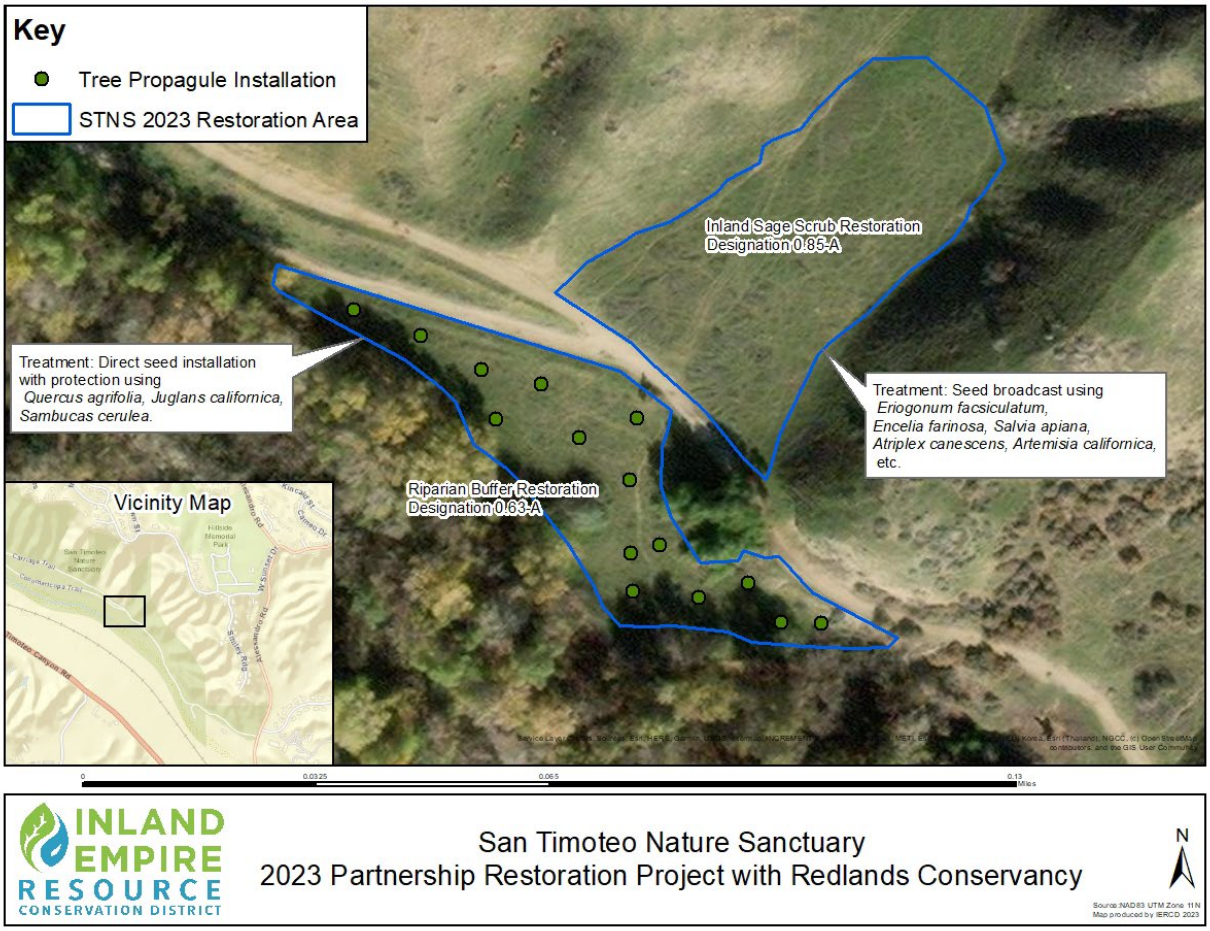

INLAND EMPIRE
RESOURCE
CONSERVATION DISTRICT
Reach 3B Restoration
Phase I, II, & III
Phase 2
Phase 1
Alkali Meadow Restoration
Phase 3
N

San Timoteo Nature Sanctuary Restoration: Beginning in 2019, IERCD began assisting the Redlands Conservancy with small scale restoration projects, primarily in the form of technical guidance, restoration planning, and implementation of projects to be placed at the San Timoteo Nature Sanctuary (STNS). The STNS contains and abuts the northern stretch of San Timoteo Creek immediately above the Reach 3B flood control basins. Total restoration work within STNS to date consists of approximately 4.36 acres of active restored areas being maintained for native species along the San Timoteo Creek corridor. As indicated on the maps below, specific restoration designations where made for the following: **0.25 acres** of willow riparian woodland, **0.5 acres** of coast live oak and walnut woodland, and **1.26 acres** of upland buffer and **2.35 acres** of inland sage scrub. The designated restoration areas are located immediately adjacent to the San Timoteo Canyon riparian strip and will serve to improve quality and function of habitat and buffer for Least Bell's Vireo. Restoration implementation began in late 2020 and involved site preparation, native plant seeding, pole cutting installation, direct seeding of acorns, and container plant installation. In partnership with the Redlands Conservancy, IERCD assisted with providing methodologies and technical guidance with the primarily volunteer led restoration effort. IERCD also provided staff assist with plant installation, seed collection, seeding, pole cutting collection, and invasive species management.

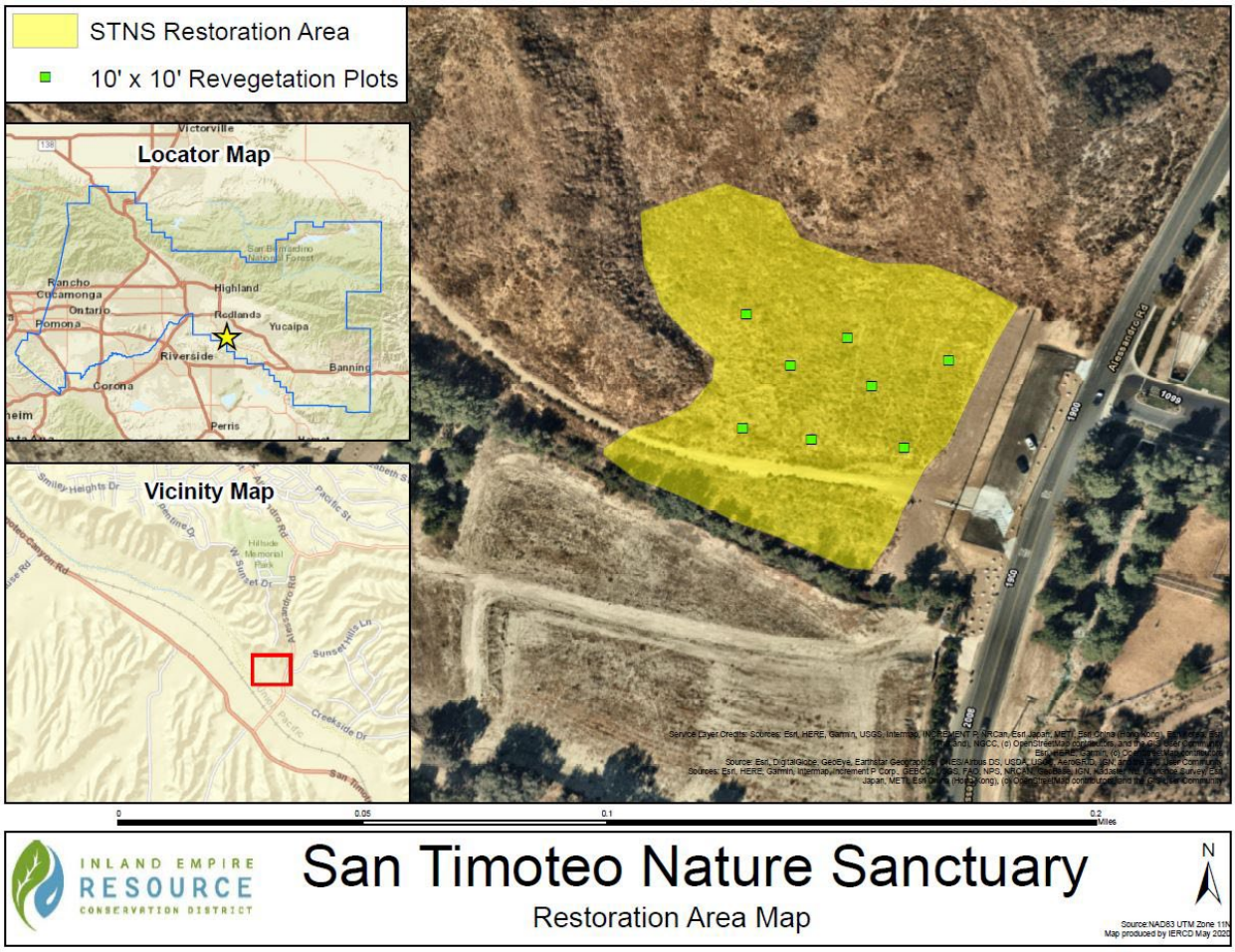
LOCATION OF RESTORATION SITES WITHIN THE SAN TIMOTEO NATURE SANCTUARY



BOBCAT BOWL RESTORATION AREA, SAN TIMOTEO NATURE SANCTUARY. **0.5 ACRES** OF COAST LIVE OAK AND WALNUT WOODLAND, AND **0.63 ACRES** OF UPLAND BUFFER



CARRIAGE TRAIL RESTORATION AREA, SAN TIMOTEO NATURE SANCTUARY. **0.63 ACRES** OF COAST LIVE OAK/SOUTHERN CALIFORNIA WALNUT WOODLAND AND **0.85 ACRES** OF SAGE SAGESCRUB RESTORATION



PARKING LOT RESTORATION AREA, SAN TIMOTEO NATURE SANCTUARY AND **1.5 ACRES** OF INLAND SAGE SCRUB RESTORATION

Enhancement Activities: Enhancement Activities in the 2023-24 reporting period consisted of the following:

A total of 13.509-A of initial removal (IR) and re-treated areas (RTA) was performed within the Reach 3B project area, bringing the cumulative removal total to 590.225-A as of 6/30/2024.

Table I: Quantification of Vegetative Restoration Work, San Timoteo Creek Mitigation Site through 6/30/2023			
Species	**Initial Removal and/or Re-Treated Former Removal Areas through 6/30/2023**	**Initial Removal Areas and/or Re-Treated Areas completed within 07/01/23 - 6/30/2024**	**Initial Removal and/or Re-Treated Areas Cumulative to 6/30/2024**
Giant reed (*Arundo donax*)	209.01 (RTA)	.013(IR)	. 209.023 (RTA)
Tree of heaven (*Ailanthus altissima*)	1.227 (IR) and 3.009(RTA)	0.015 (IR)	1.242 (IR) and 3.009(RTA)
Yellow starthistle (*Centaurea solstitialis*)	64.3 (IR) and 228.97 (RTA)	13.5 (RTA)	64.3 (IR) and 244.74 (RTA)
Tamarisk (*Tamarix spp.*)	5.123 (IR) and 8.17 (RTA)	0.153 (IR)	5.276 (IR) and 8.17 (RTA)
Bull thistle (*Cirsium vulgare*)	12.88 (IR)	N/A	12.88 (IR)
Milk thistle (*Silybum marianum*)	13.89 (IR) and 4.6 (RTA)	N/A	13.89 (IR) and 4.6 (RTA)
Italian thistle (*Carduus pycnocephalus*)	2.49 (IR)	N/A	2.49 (IR)
Russian thistle (*Salsola tragus)*	2.519 (IR)	N/A	2.519 (IR)
Tocalote (*Centaurea melitensis*)/Mixed annual grasses	13.61 (IR)	N/A	13.61 (IR)
Mexican fan palm (*Washingtonia robusta*)	.08 (IR) plus 1 new tree	0.01	.09 (IR) plus 1 new tree

Table I: Quantification of Vegetative Restoration Work, San Timoteo Creek Mitigation Site through 6/30/2023			
Species	**Initial Removal and/or Re-Treated Former Removal Areas through 6/30/2023**	**Initial Removal Areas and/or Re-Treated Areas completed within 07/01/23 - 6/30/2024**	**Initial Removal and/or Re-Treated Areas Cumulative to 6/30/2024**
Perennial pepperweed (*Lepidium latifolium*)	5.25 (IR) and 1.443 (RTA)	0.019 (IR)	5.269 (IR) and 1.443 (RTA)
Castorbean (*Ricinus communis)*	.017 (IR)	.026 (IR)	.047 (IR)
Russian knapweed (*Acroptilon repens*)	.11 (RTA)	N/A	.11 (RTA)
Spanish broom (*Spartium junceum*)	.001(IR)	0.001(IR)	.001(IR)
Canary island date palm (*Phoenix canariensis*)	0	0.036 (IR)	0.036 (IR)
Individual Totals:	121.406 (IR) and 455.311(RTA)	0.262 (IR) and 13.5 (RTA)	121.668 (IR) and 468.811(RTA)
Grand Totals	**576.716**	**13.76**	**590.468**

Conservation Activities: A variety of conservation tasks were implemented throughout the Reach 3B project area in 2023-24; these include but are not limited to surveying of multiple sites for general species health/vigor, presence of trash and evidence of illegal trespass, mapping, data collection and analysis, coordination regarding removal efforts and tree health monitoring with subwatershed partners, and performance of education and outreach on tree health and value of functional oak woodland habitats. The 361-A Holmes property was also acquired by SAWA member agency the Inland Empire Resource Conservation District, and 5-7A will be placed in permanent conservation on behalf of this project per original requirements.

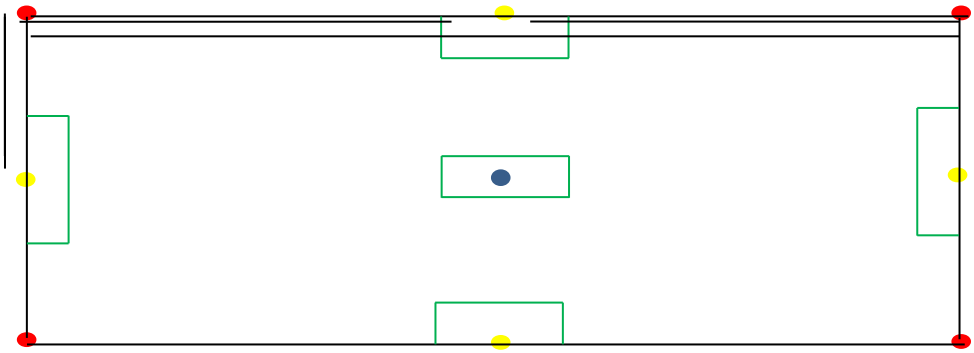
REPORT AREA III: CURRENT SITE CONDITIONS AND RESTORATION MONITORING

Plant Monitoring: Beginning in 2014, a total of 5 vegetation plots were established throughout each of the three phases of the project area, and assessed after planting Phase I in 2014, Phase II 2015, Phase III in 2016. Comprehensive annual monitoring of the ten Phase II and III Plots was completed in the fall of 2022 and discontinued thereafter due to the all restoration area hitting success standard benchmarks and being overall successful.

Plot Set-Up

All Monitoring was implemented by IERCD field biologists. Biologists used hand-held GPS units to navigate to each randomly assigned coordinate. Orientation of plots ran north/south with the contour of the canyon slopes. A permanent center point marker and four corner markers were established to assist in future plot set up efforts.

Four photographs were taken from the plot center in the direction of each centerline chaining pin. Photographs were also taken from the high end of the plot and across the slope.



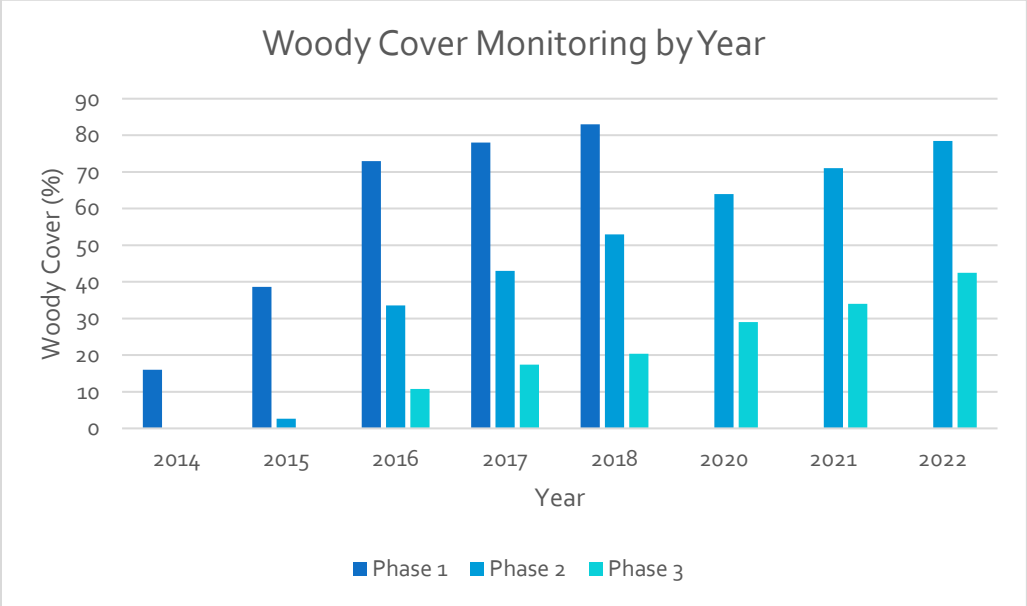
Vegetation Cover:

Biologists recorded ocular estimates of cover for all woody vegetation occurring within the 5m x 15m rectangular plot. Ocular cover estimates were also recorded in five 0.5m x 2.0m sub-plots nested within the larger 5m x 15m plots. Cover estimates were recorded using cover class categories as follows: 1) <1%; 2) 1-5%; 3) 6-25%; 4) 26-50%; 5) 51-75%; 6) 76-90%; 7) >90%. The midpoint of cover ranges was used to calculate mean percent cover.

Results

Overall Woody Cover by Phase and Year

Woody Data (2014-2022)								
	2014	2015	2016	2017	2018	2020	2021	2022
Phase 1	16	38.6	73	78	83	-	-	-
Phase 2	0	2.6	33.6	43	53	64	71	78.5
Phase 3	0	0	10.8	17.4	20.4	29	34	42.5



*Phase 3 restoration focused on establishment of alkali meadow habitat and less woody cover. Large swaths of the phase 3 site are dominated by low growing native herbaceous species including *Disticlis spicata, Spurgularia* marina, and *Atriplex serranana*.

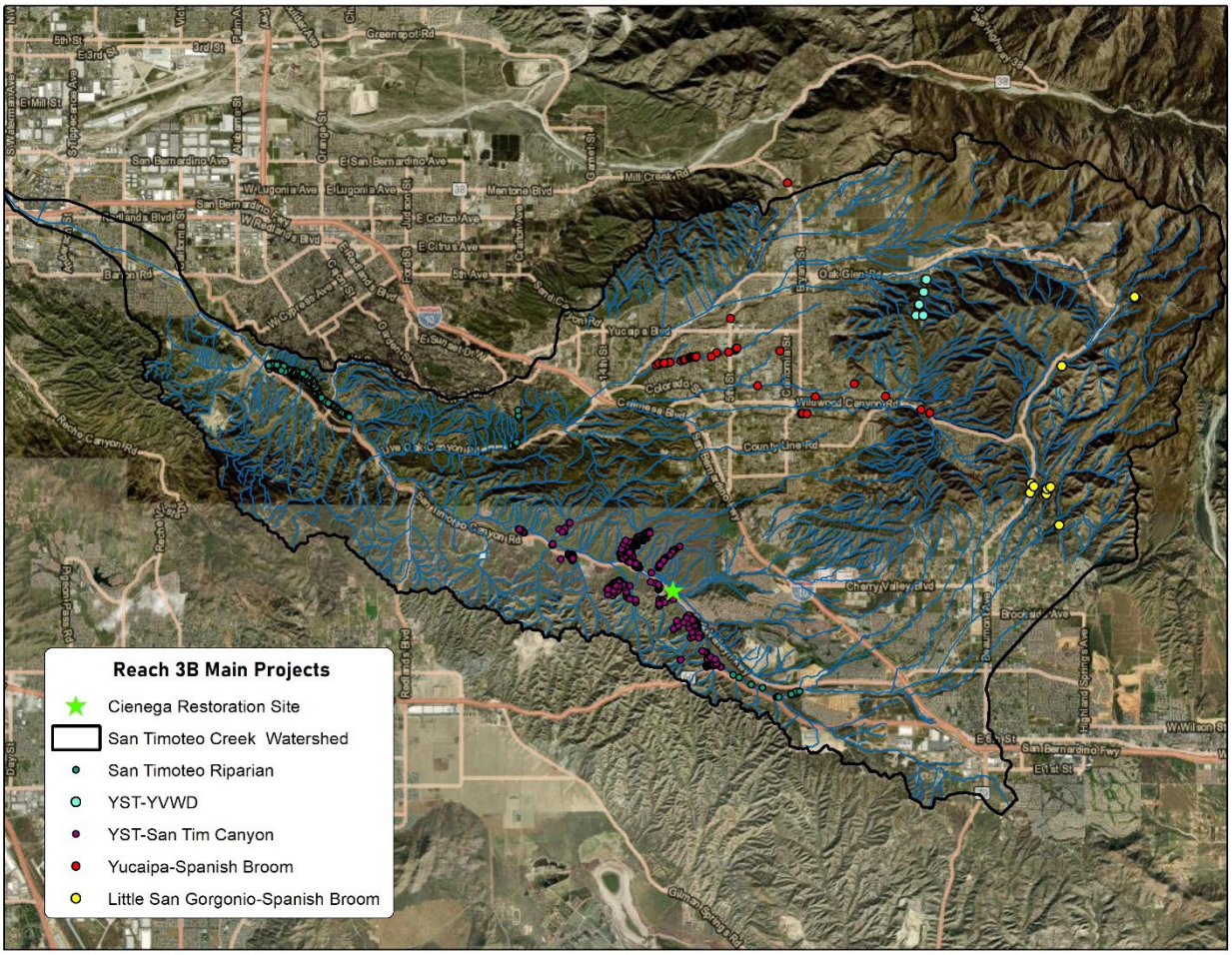
REPORT AREA IV: NON-NATIVE PLANT AND ANIMAL SPECIES REMOVAL

The frequency and timing of removal/treatment:

- All populations of yellow star thistle were treated in the months of April, May, and June
- Woody invasive species including tree of heaven, Spanish broom, Arundo, and tamarisk among others were removed in late fall from riparian areas of San Timoteo Creek and tributaries
- All known Spanish broom populations within the San Timoteo Watershed were targeted for removal in a systematic approach in an effort to extirpate this species from the watershed. Mature plants were removed and treated during the fall followed by monitoring and foliar retreatments of seedlings and re-sprouts in the spring.

Disposal specifics: All annual biomass was left on site to decompose, while biomass from larger woody vegetation removal was transported offsite to an appropriate greenwaste facility.

Removal Areas: The following maps show treatment and removals that occurred in 2023-24:



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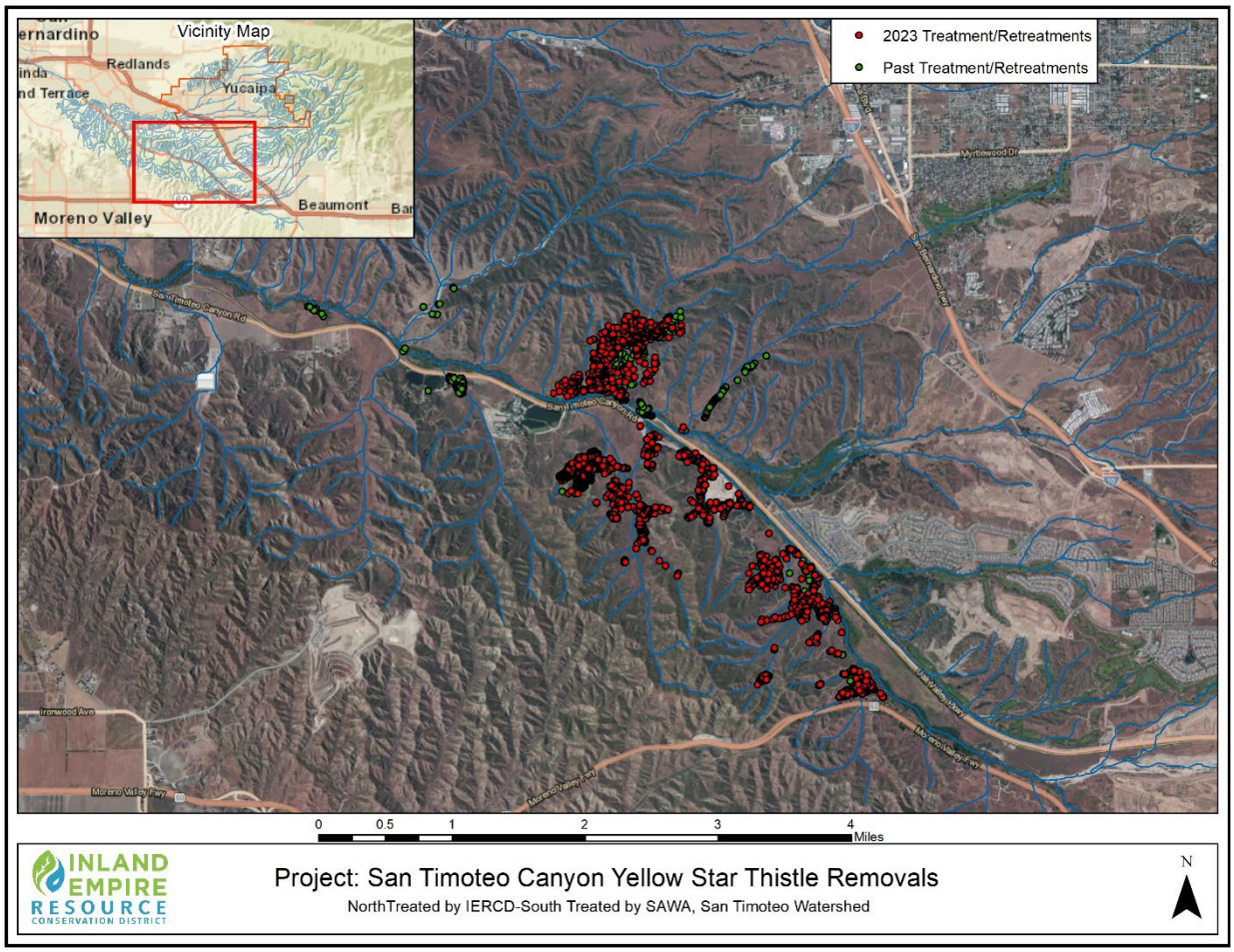

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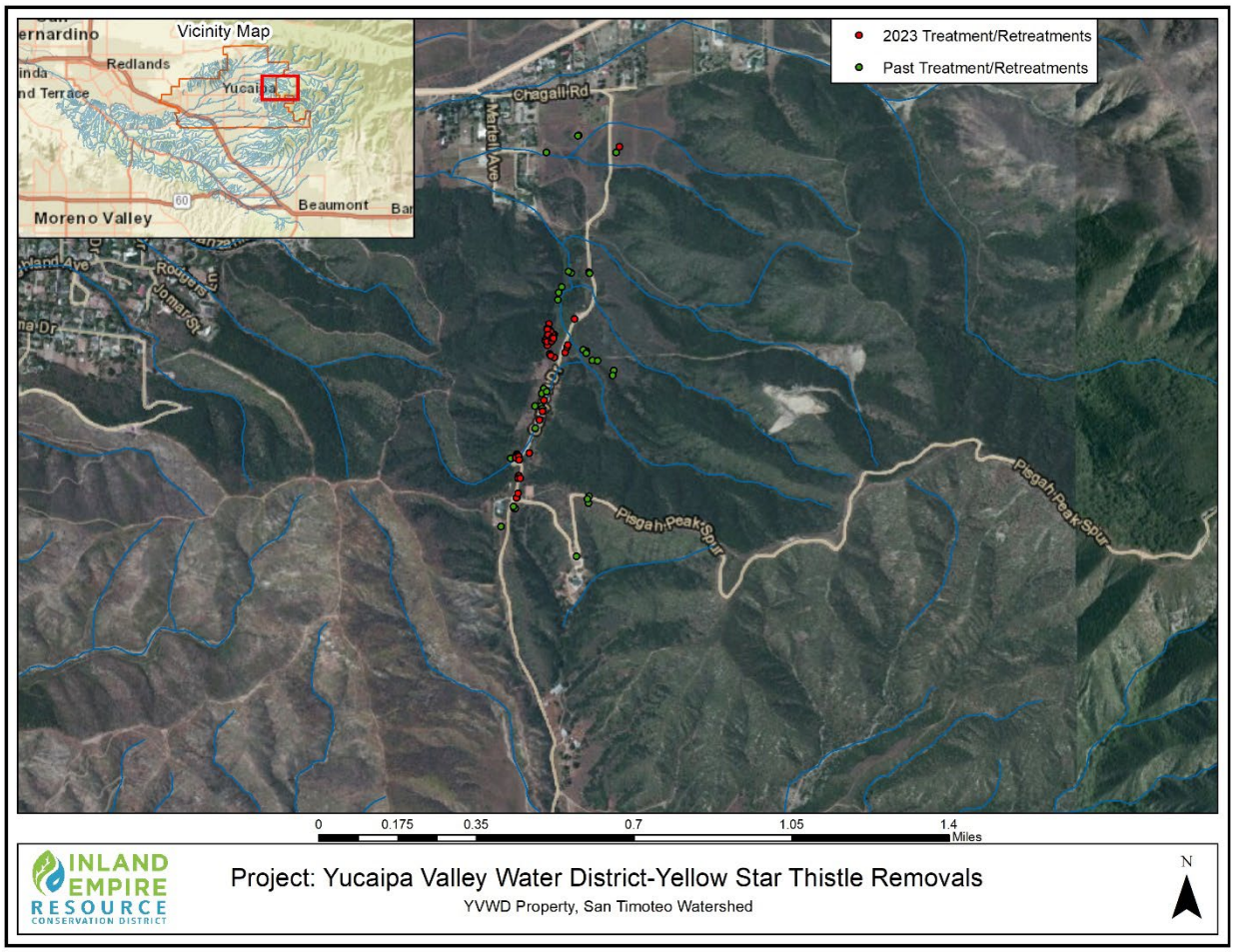

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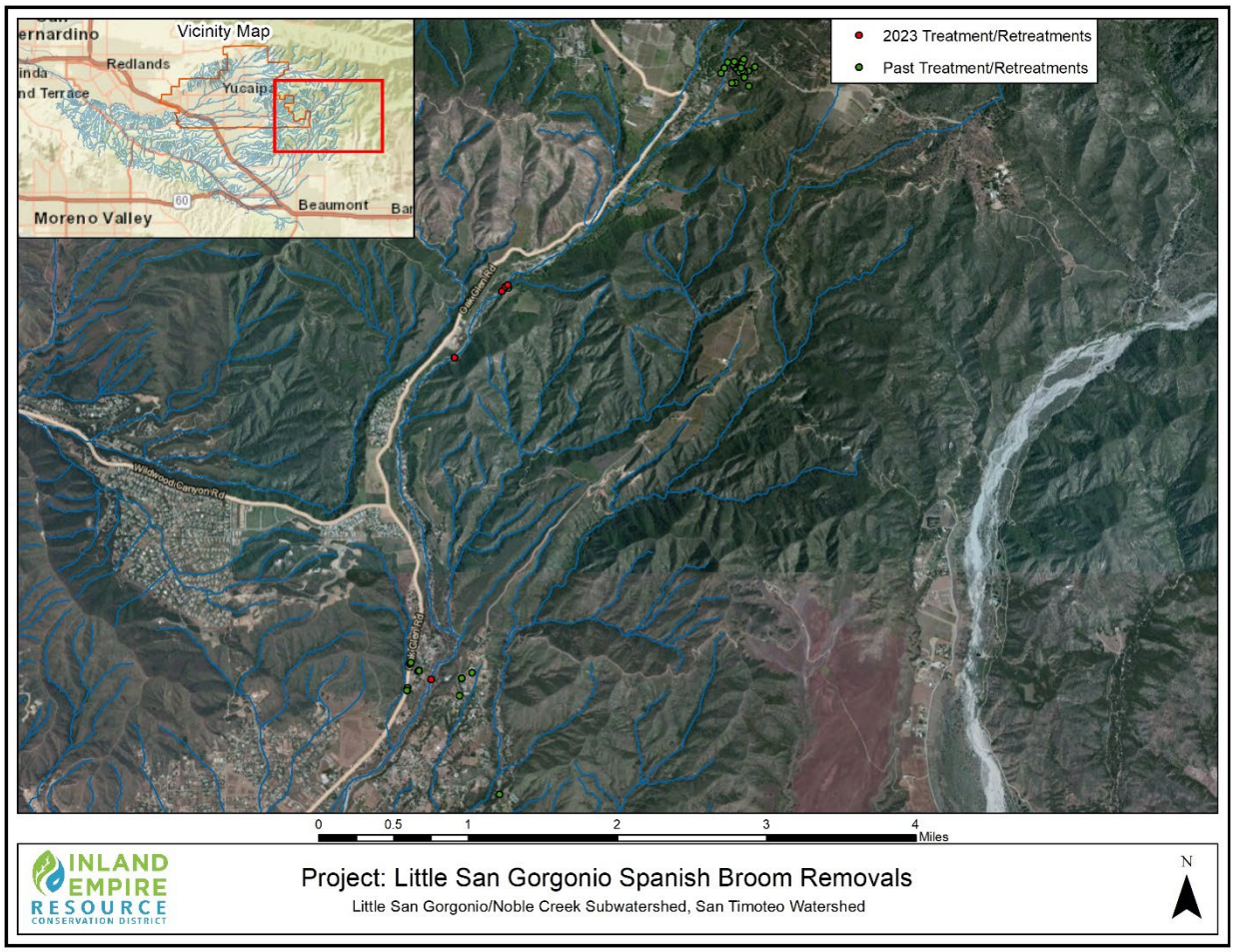

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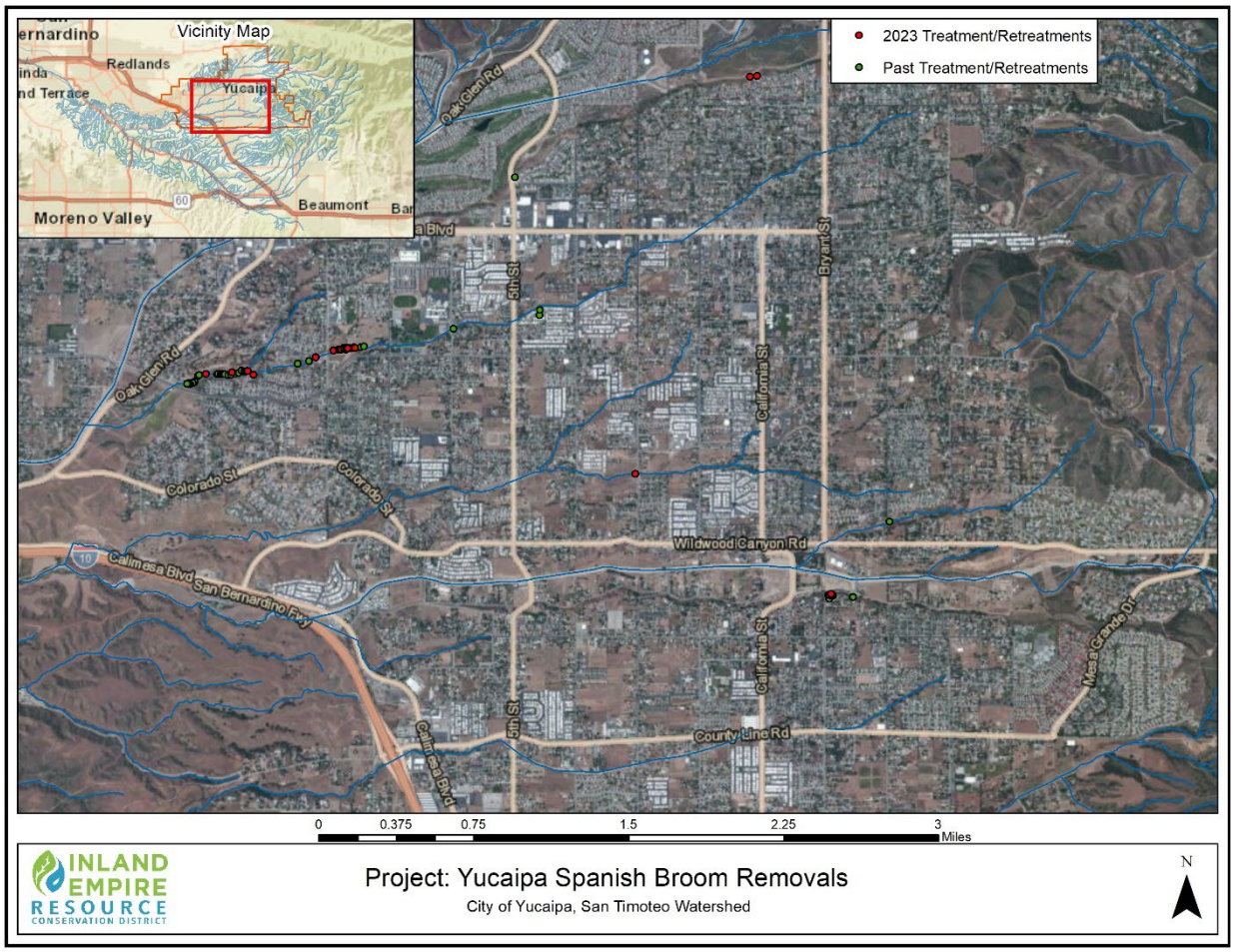

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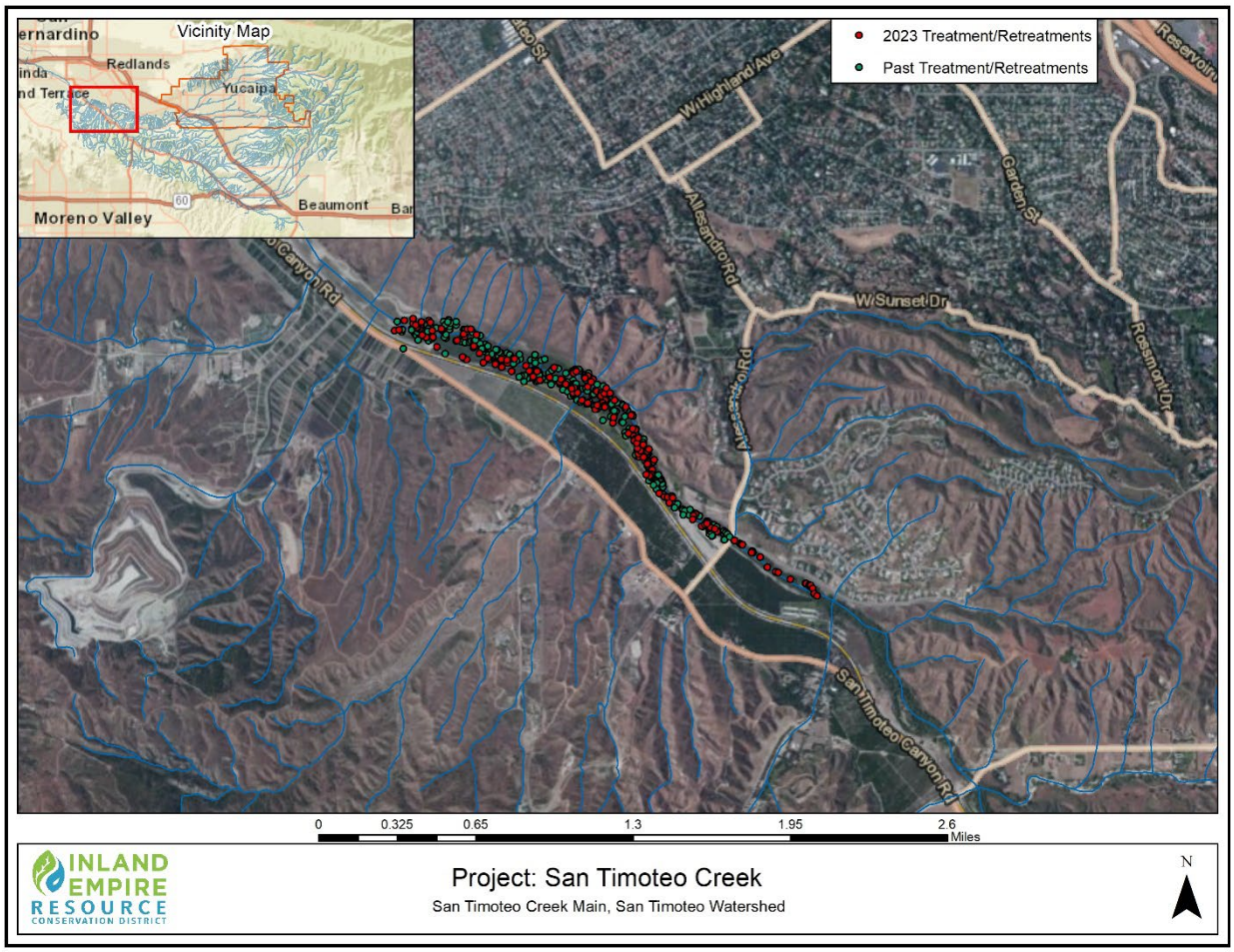
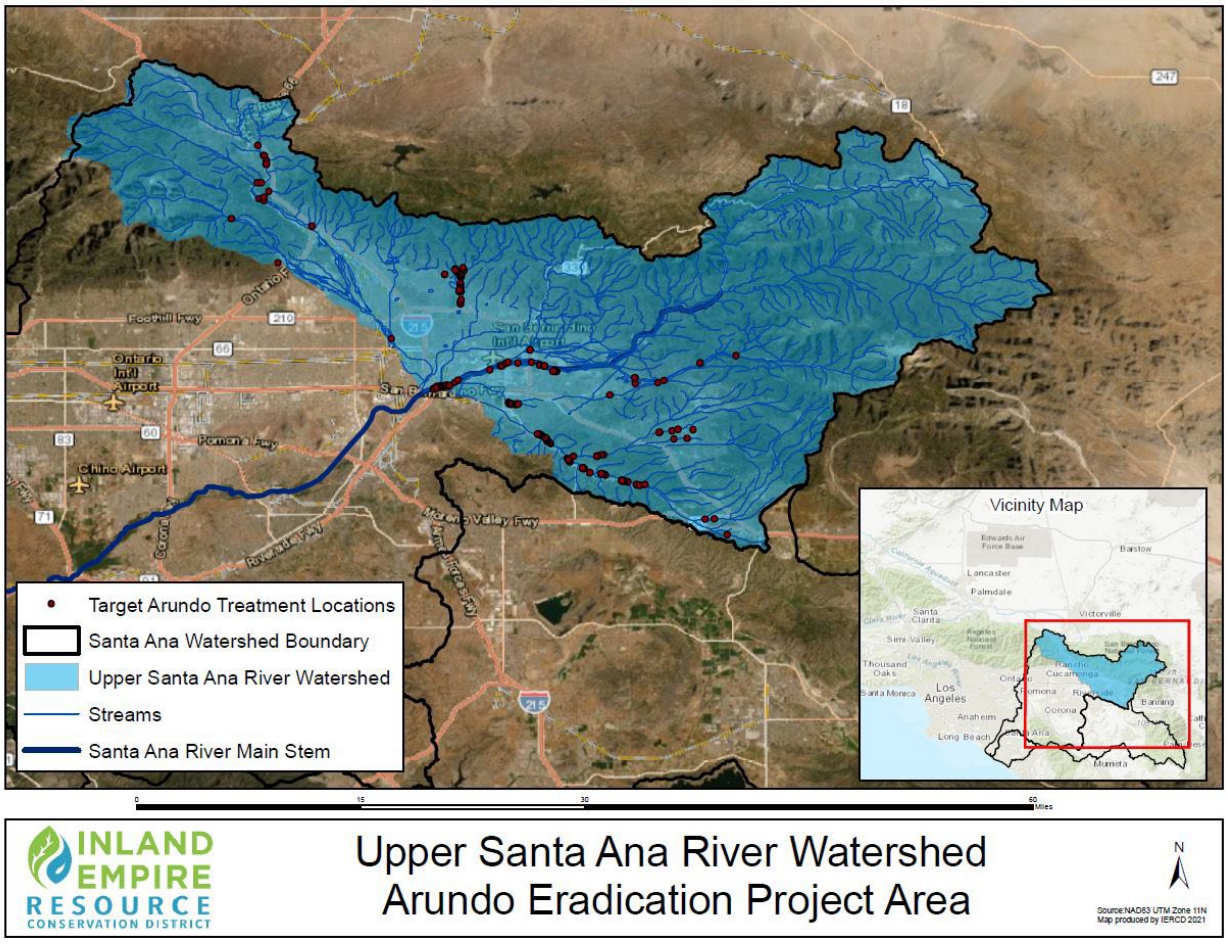


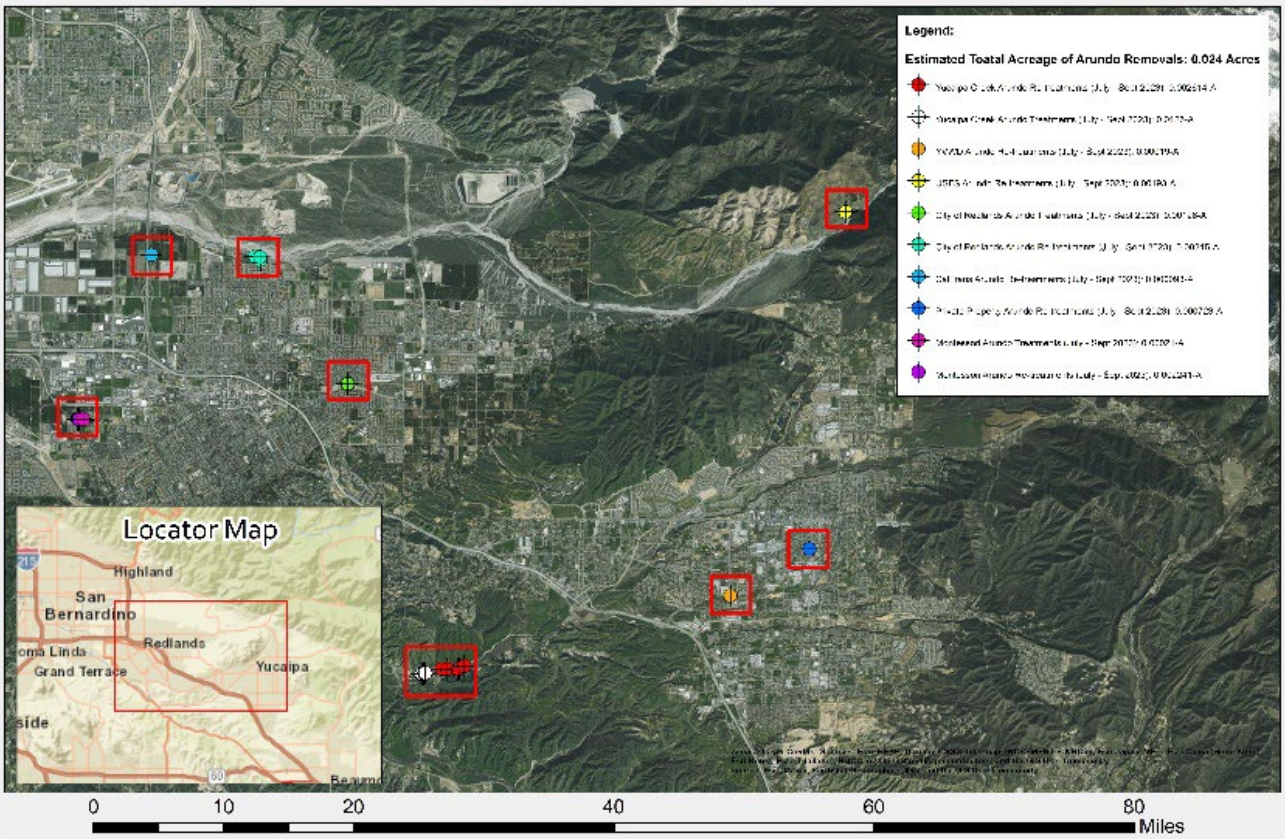
Summary of the general successes and failures or overall failure of the nonnative removal plan: The management approach to control target invasives in San Timoteo Canyon consists of scouting new populations while working to retain control over existing treatment areas. In recent years, invasive species control efforts have been focused on watershed or subwatershed wide extirpation. IERCD and SAWA have been focused on extirpation of Spanish broom and Arundo donax from the San Timoteo subwaterhsed. Sparse known populations of Spanish broom have been identified and targeted. This species has the potential to heavily invade sandy washes and critical corridors of San Timoteo Canyon, making it a high priority. Identification of Spanish broom populations and removals have been very successful. IERCD has been able to secure right of entry agreements with all relevant property owners, with the exception of one mobile home park in Yucaipa which will be a focus in future years.

Brown-headed Cowbird *(Molothrus ater):* Six *Molothrus ater* traps were deployed throughout the San Timoteo Creek project area in 2023, using SAWA protocols and under permit and authorization from the U.S. Fish and Wildlife Service (permit # TE839480-4). In 2023-24, 59 *M. ater* individuals were trapped and removed from the subwatershed using an established protocol implemented by permitted biologists.

REPORT AREA V: REACH 3B FUND COORDINATION WITH OTHER FUNDED PROJECTS

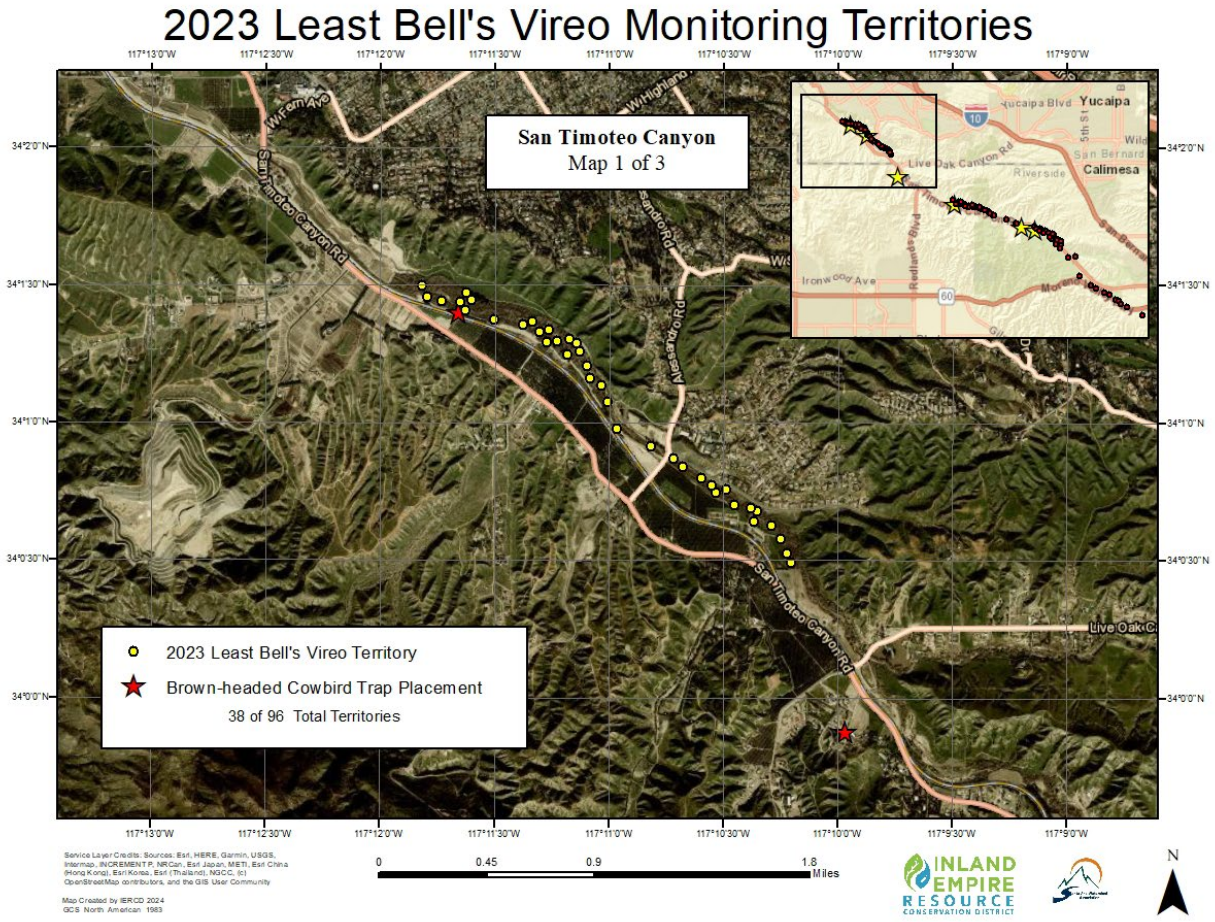
In 2022, IERCD partnered with the Santa Ana Watershed Project Authority (SAWPA) to initiate an effort to extirpate *Arundo donax* from the Upper Santa Ana River Watershed including all minor tributaries that ultimately drain into San Timoteo Creek throughout the City of Yucaipa, Beaumont, and unincorporated Riverside County. Under this separate funding arrangement, major Arundo removal work occurred within the Reach 3B project area in unison with other Reach 3B invasive species removal projects. With reference to the Plan area and treatment maps below, in 2023-24 major Arundo removals occurred within Live Oak Canyon and other small tributaries in Yucaipa. Continued monitoring and treatments will occur under the SAWPA Arundo eradication fund

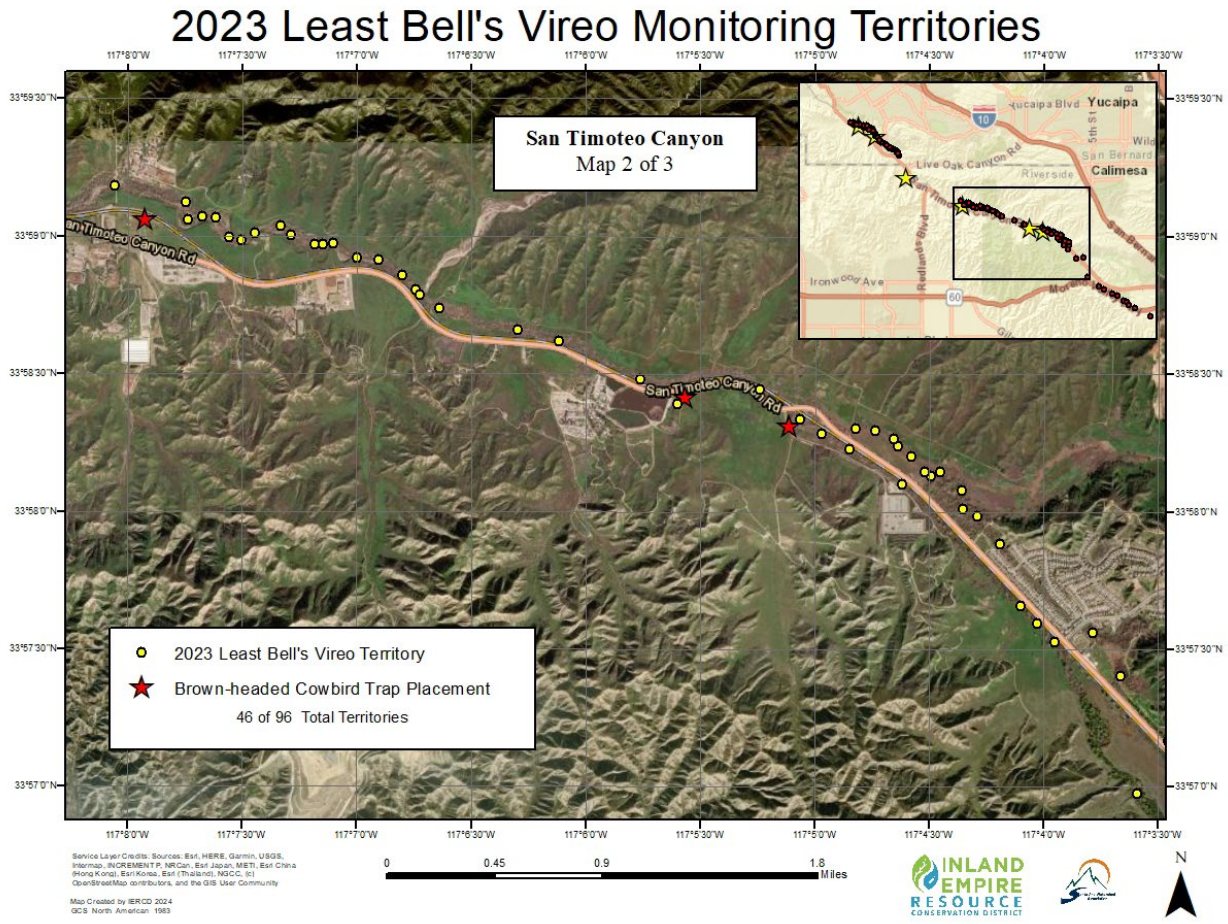



Legend:
Estimated Toatal Acreage of Arundo Removals: 0.024 Acres
Locator Map
Highland
San Bernardino
Redlands
Yucaipa
Grand Terrace
0
10
20
40
60
80
Miles
INLAND EMPIRE RESOURCE CONSERVATION DISTRICT
Upper SAR Arundo Removals (July - Sept 2023)
San Bernardino & Riverside County
Estimated Total Acreage of Removals: 0.024 Acres
N

ARUNDO REMOVALS IN LIVE OAK CANYON, FALL 2023

REPORT AREA V: WILDLIFE DATA





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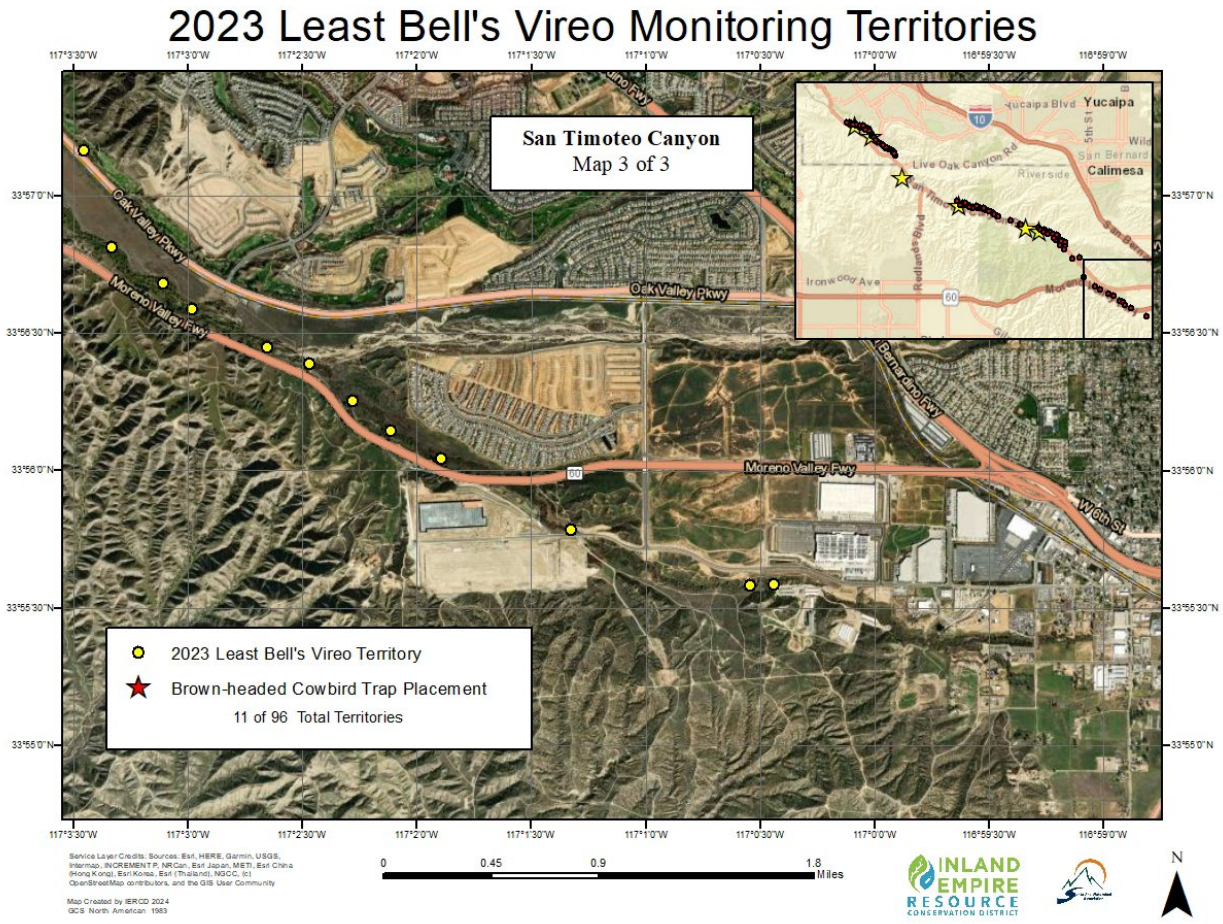

Table II - Least Bell's vireo (*Vireo bellii pusillus*) Data, 2004 – 2023		
Reporting Year	**Number of Documented Territories**	**Average Functional Riparian Area Required for Population Support**
2004	29	58 Acres
2005	43	86 Acres
2006	32	64 Acres
2007	56	112 Acres
2008	78	156 Acres
2009	105	210 Acres
2010	126	252 Acres
2011	116	232 Acres
2012	118	236 Acres
2013	131	262 Acres
2014	151	302 Acres
2015	176	352 Acres

Table II - Least Bell's vireo (*Vireo bellii pusillus*) Data, 2004 – 2023		
Reporting Year	**Number of Documented Territories**	**Average Functional Riparian Area Required for Population Support**
2016	173	346 Acres
2017	172	344 Acres
2018	156	312 Acres
2019	124	248 Acres
2020	139	278 Acres
2021	118	236 Acres
2022	98	196 Acres

REPORT AREA V: 2022-23 Reach 3B Wildlife Observation - AVIAN	
Common Name	**Scientific Name**
Mallard	*Anas platyrhynchos*
California Quail	*Callipepla californica*
Rock Pigeon	*Columba livia*
Band-tailed Pigeon	*Patagioenas fasciata*
Mourning Dove	*Zenaida macroura*
Greater Roadrunner	*Geococcyx californianus*
Black-chinned Hummingbird	*Archilochus alexandri*
Anna's Hummingbird	*Calypte anna*
Costa's Hummingbird	*Calypte costae*
Allen's Hummingbird	*Selasphorus sasin*
American Coot	*Fulica americana*
Killdeer	*Charadrius vociferus*
Double-crested Cormorant*	*Phalacrocorax auritus*
American White Pelican	*Pelecanus erythrorhyncos*
Great Blue Heron*	*Ardea herodias*
Great Egret	*Ardea alba*
Snowy Egret	*Egretta thula*
Black-crowned Night-Heron*	*Nycticorax nycticorax*
Osprey	*Pandion haliaetus*
White-tailed Kite*	*Elanus leucurus*
Cooper's Hawk*	*Accipiter cooperii*
Red-shouldered Hawk	*Buteo lineatus*
Red-tailed Hawk	*Buteo jamaicensis*

REPORT AREA V: 2022-23 Reach 3B Wildlife Observation - AVIAN	
Common Name	**Scientific Name**
Barn Owl	*Tyto alba*
Great Horned Owl	*Bubo virginianus*
Acorn Woodpecker	*Melanerpes formicivorus*
Downy Woodpecker*	*Dryobates pubescens*
Nuttall's Woodpecker	*Dryobates nuttallii*
Northern Flicker	*Colaptes auratus*
American Kestrel	*Falco sparverius*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Cassin's Kingbird	*Tyrannus vociferans*
Western Kingbird	*Tyrannus verticalis*
Western Wood-Pewee	*Contopus sordidulus*
Pacific-slope Flycatcher	*Empidonax difficilis*
Black Phoebe	*Sayornis nigricans*
Say's Phoebe	*Sayornis saya*
Hutton's Vireo	*Vireo huttoni*
Cassin's Vireo	*Vireo cassinii*
California Scrub-Jay	*Aphelocoma californica*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Bushtit	*Psaltriparus minimus*
House Wren	*Troglodytes aedon*
Bewick's Wren	*Thryomanes bewickii*
Ruby-crowned Kinglet	*Regulus calendula*
Wrentit	*Chamaea fasciata*
Western Bluebird	*Sialia mexicana*
Hermit Thrush	*Catharus guttatus*
California Thrasher	*Toxostoma redivivum*
European Starling	*Sturnus vulgaris*
Phainopepla	*Phainopepla nitens*
House Sparrow	*Passer domesticus*
House Finch	*Haemorhous mexicanus*
Lesser Goldfinch	*Spinus psaltria*
Lawrence's Goldfinch	*Spinus lawrencei*
American Goldfinch	*Spinus tristis*
Lark Sparrow	*Chondestes grammacus*

REPORT AREA V: 2022-23 Reach 3B Wildlife Observation - AVIAN	
Common Name	**Scientific Name**
White-crowned Sparrow	*Zonotrichia leucophrys*
Song Sparrow	*Melospiza melodia*
California Towhee	*Melozone crissalis*
Spotted Towhee	*Pipilo maculatus*
Yellow-breasted Chat*	*Icteria virens*
Hooded Oriole	*Icterus cucullatus*
Bullock's Oriole	*Icterus bullockii*
Red-winged Blackbird	*Agelaius phoeniceus*
Great-tailed Grackle	*Quiscalus mexicanus*
Orange-crowned Warbler	*Oreothlypis celata*
Common Yellowthroat	*Geothlypis trichas*
Yellow Warbler*	*Setophaga petechia*
Yellow-rumped Warbler	*Setophaga coronata*
Black-throated Gray Warbler	*Setophaga nigrescens*
Wilson's Warbler*	*Cardellina pusilla*
Western Tanager	*Piranga ludoviciana*
Black-headed Grosbeak	*Pheucticus melanocephalus*
Blue Grosbeak	*Passerina caerulea*

2022 Reach 3B Wildlife Observation: MAMMALS (tracks/other evidence used)	
Virginia Opossum	*Didelphis virginiana*
Desert Cottontail	*Sylvilagus audubonii*
Coyote*	*Canis latrans*
Striped Skunk	*Mephitis mephitis*
Raccoon	*Procyon lotor*
Mule Deer	*Odocoileus hemionus*
Feral Pig	*Sus scrofa*
Woodrat sp. (nest)	*Neotoma sp.*
California Ground Squirrel	*Otospermophilus beecheyi*
Western Gray Squirrel	*Sciurus griseus*

2022-23 Reach 3B Wildlife Observation: HERPETOFAUNA	
Baja California Treefrog	*Pseudacris hypochondriaca*
Belding's Orange-throated Whiptail*	*Aspidoscelis hyperythra beldingi*
San Diegan Tiger Whiptail*	*Aspidoscelis tigris stejnegeri*

2022-23 Reach 3B Wildlife Observation: HERPETOFAUNA	
Southern Alligator Lizard	*Elgaria multicarinata*
Western Fence Lizard	*Sceloporus occidentalis*
Side-blotched Lizard	*Uta stansburiana*
Red Racer/Coachwhip	*Coluber flagellum piceus*
Southern Pacific Rattlesnake	*Crotalus oreganus helleri*
California Kingsnake	*Lampropeltis californiae*
San Diego Gopher Snake	*Pituophis catenifer annectens*

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REACH 3B PHOTOS

Phase 3 restoration areas outside of alkali meadow planting were passively restored, through intensive invasive species control, with naturally occurring native herbaceous species. Featured are large patches of native saltscale (*Atriplex serenana*), recruited from seed free of invasive competition.

March 2015 – Installed Pole Cutting Leafing Out

September 2015 – Pole Cutting Growth. Foreground willow approximately 7 feet

July 2016 – Pole Cutting height exceeding 10 feet

August 2020 – Pole Cuttings providing a shaded understory and promoting leaf litter accumulation

Phase 2 Restoration: Prior to restoration, IERCD staff installed a permanent timelapse camera to document willow growth and restoration success. The four images above show the 5-year progress of the restoration pole cuttings.

Cienega Restoration Phases: Aerial photo taken in 2018 showing full riparian woodland

Alkali meadow restoration in depressional areas in the northern part of the phase 3 restoration. Featured species include salt grass (*Disticlis spicata*) and yerba mansa (*Anemopsis californica*).

San Timoteo Nature Sanctuary Restoration: Coast live oak/southern California walnut transitional restoration area. Depicted is southern California walnut (*Juglans californica*) three feet in height less than one year after being planted as a seed. October 2023.

San Timoteo Nature Sanctuary Restoration: Upland buffer restoration consisting of seeded 15'x15' seeded square plots. Due to an exceptional rainy season, brittlebush and buckwheat shrubs established filled in seeded plots over the course of a single year. July 2023.

San Timoteo Nature Sanctuary Restoration: Installation of 0.63 acre coast live oak/ walnut woodlands with Redlands Conservancy Volunteers. January 2024.

San Timoteo Nature Sanctuary Restoration Native forbs (*Salvia columbariae, Chaenactis glabrisculsa*) and brittlebush recruits in CSS restoration plots.

REACH 3B PROJECT MAPS

Source(s): ESRI County, U.S. State, and components of the ESRI USA Base Map

San Timoteo Project Area Map

Source(s): Base Map Imagery served online via ESRI Base Map Server.
Geographic Projection of each data frame = UTM, NAD 1983, Zone 11N.
Map created by Chad McKenna, GeoSystems Analysis, Inc.
October 20, 2014

Source(s): National Geographic served online via ESRI Base Map Server.

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