

Project Title: Lower San Antonio Creek Arundo Eradication.

Introduction:

The Ojai Valley Land Conservancy (OVLC) will implement the Lower San Antonio Creek Arundo Eradication project. The project will achieve the removal and ongoing herbicide treatments of 16 acres of invasive *Arundo donax* (Arundo) and restoration of 10 acres of riparian habitat along lower San Antonio Creek, a tributary of the Ventura River in Ventura County.

An invasive plant Arundo reduces habitat value by utilizing large quantities of water, reduces habitat quality by outcompeting native plants and by impairing the natural stream hydrology resulting in excessive bank failure and erosion. San Antonio Creek is critical habitat for southern steelhead, a federally listed endangered species. Arundo is an invasive non-native plant that has formed large infestations in watersheds throughout southern California, including San Antonio Creek. The project is part of a larger effort to eradicate Arundo from the Ventura River Watershed. Biological monitoring for sensitive species will occur during Arundo removal and herbicide treatments as required by state and federal permits. Once Arundo has been removed, 10 of the 16 acres will be replanted with native riparian vegetation. The restoration efforts will address habitat needs of fish and wildlife, and will re-establish habitats that are more resistant to infestation by other non-native species.

Permit Disclosure: The Grantee shall not proceed with on the ground implementation until all necessary permits, consultations, and/or Notice to Proceed are secured.

All habitat improvements will follow techniques in the California Stream Habitat Restoration Manual Volume I and Volume II, Chapter XI.

Objective(s):

The specific objective of this project is to eradicate Arundo and re-vegetate 10 acres of riparian habitat along lower San Antonio Creek, a tributary of the Ventura River, in Southern California. Three methods will be used for Arundo removal and herbicide treatment: cut and daub, foliar application, and mastication. Arundo biomass will be mulched onsite or properly disposed of at a waste facility. Arundo re-sprouts will be treated with herbicide for a minimum of three years. This project is part of a larger multi-agency effort to eradicate Arundo from the Ventura River Watershed as a top-down approach.

The goal of this priority action eradication of Arundo from all of San Antonio creek, which is important spawning and rearing stream for southern California steelhead and other listed species. This project will address limiting factors for steelhead in San Antonio Creek as called out in the National Marine Fisheries Service (NMFS) recovery plan for Southern California steelhead. Additionally, the newly released "Ventura River Watershed Management Plan" lists Arundo removal as a tier 1 project for the watershed

(Walter, 2015). This project will remove an estimated 95% of Arundo from of San Antonio Creek, and a multi-agency effort is underway to complete the removal of Arundo in the creek.

Location:

The proposed project site boundary extends within the San Antonio Creek floodplain at the downstream extent of Camp Comfort in Ojai and follows Creek Road south to Casitas Springs to the confluence with the Ventura River. The project site encompasses 4.75 miles from the San Antonio Creek Confluence to the upstream end of the San Antonio Creek Preserve. The downstream extent of the project site is 955 feet from the Highway 33 bridge, which is just south of Old Creek Road. The upstream extent of the project site is 1,792 feet downstream from the Creek Road bridge located at the upstream end of Camp Comfort. The river mouth of the Ventura River is 7.96 miles from the San Antonio Creek Confluence, 34.42496400 latitude, -119.26104800 longitude at the upstream; and 34.38073200 latitude - 119.30747400 longitude at the downstream of the Quad Name 7.5 Minute U.S. Geological Survey (USGS) Quadrangle map as depicted in the Project Location Map, Attachment 1, which is attached hereto and made a part of this agreement by this reference.

Project Set Up:

The Grantee's Executive Director and Project Manager will provide project management including acquisition of all permits, contracting, rentals, reporting and invoicing. Grantee will oversee the work performed by the subcontractor and crew, the purchase of herbicide to eradicate invasive weeds and all other operational crew materials; Additionally the Project Manager Stewardship Director, and Restoration Field Crew (Labor I and Labor II) will implement the revegetation component of the project. This includes maintaining re-vegetated sites and implementing remedial actions in areas where site success standards are not being met.

The Grantee will hire subcontractors to perform the Arundo removal, biological monitoring, a photographer and nursery manager to oversee all nursery operations necessary to grow plants for this project.

The Arundo removal subcontractor (supervisor and laborers) will implement the removal of the Arundo biomass, apply herbicide and chip the arundo on-site.

The photographer will photo document the removal efforts as part of the Grantee's effort to educate the public about the impacts of non-native species on San Antonio Creek as well as document the recovery of the riparian plants.

Biological monitor will conduct pre-project monitoring, provide sensitive species and permit compliance training for staff removing Arundo, perform implementation and sensitive species monitoring, submit monthly monitoring/permit compliance reports, and a final report.

Materials: Materials required for subcontracted Arundo removal and herbicide treatment include chain saws, loppers, ropes, portable restrooms, Tyvek/safety gear, herbicide, backpack sprayers, surfactant, dye, trucks, tractors, masticator, and chipper. Materials required for revegetation are those typically used for riparian planting and may include shovels, loppers, mulch, irrigation supplies, and weed whackers. Approximately half of the plants used for revegetation will be grown in the OVLC plant nursery, which will require the acquisition of dirt, pots, and fertilizer.

Tasks: The Grantee will complete the following tasks:

Task 1 - Landowner Coordination

OVLC Restoration Program Manager will notify all landowners of pre-project surveys, Arundo removal activities, herbicide retreatment activities, and revegetation activities at least one week in advance.

Task 2 - Project Documentation

OVLC Restoration Program Manager will establish photo points in at least five locations along the project site to provide pre- and post- project photos. Photos will be taken once a year for five years after project implementation. Photo point photography will be included in annual and final reports.

Task 3 – Request for Proposals (RFP)

OVLC Restoration Program Manager and the Executive Director will develop and release two RFPs on a yearly basis (1-year contracts); one RFP for biological monitoring and a second RFP for Arundo removal and herbicide treatment.

Task 4 – Pre-project Implementation

A subcontracted biological firm will conduct pre-project biological surveys for sensitive species within the project area. The subcontracted biological firm will provide sensitive species and permit condition training to the employees of the subcontracted firm hired for removal and herbicide treatment of Arundo. The training will include sensitive species awareness, how to report the presence of sensitive species, and a briefing concerning the conditions of federal, state, and local permit conditions. The subcontractor will be responsible for submitting a pre-project sensitive species report as per federal and state permits.

Task 5 – Arundo Eradication

A subcontractor will be hired for Arundo removal and herbicide treatment. The subcontractor will have appropriate experience and permits to monitor and perform herbicide application. The subcontractor will be given the option of cut and daub, foliar application, and/or mastication. Mastication will only be allowed in areas where Arundo density exceeds 50% relative cover or as described in the Federal 404 permit. The subcontractor will, prior to any herbicide application, provide to the OVLC and the Ventura County Agricultural Commissioner, a written pesticide recommendation signed by a currently licensed Pest Control Advisor. The written recommendation will include, but not be limited to, all herbicide and chemical names, application rates, equipment

utilized, and detailed treatment procedures and locations where applications will occur. Arundo biomass will either be mulched onsite, relocated to a staging area to be mulched, or brought to a refuse facility for appropriate disposal. After the initial biomass removal, new Arundo growth will be treated with herbicide by foliar application or cut and daub. Herbicide treatments will occur over a span of four years after the initial biomass removal. Arundo regrowth will be monitored by the OVLC. Herbicide retreatment will occur when Arundo has reached 3 to 4 feet in height. The subcontractor will be responsible for monthly progress reports and a final construction report.

The OVLC will hire a subcontractor with appropriate experience and permits to perform biological monitoring and permit compliance for sensitive species during Arundo removal and herbicide treatment. The subcontracted biological monitoring firm will be responsible for pre-project monitoring, sensitive species training for staff removing Arundo, implementation monitoring, sensitive species monitoring, monthly biological monitoring/permit compliance reports, and final biological monitoring report. Sensitive species include southern steelhead (*Oncorhynchus mykiss*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), and two-striped garter snake (*Thamnophis hammondi*). The subcontracted biological firm will ensure and monitor for permit compliance during Arundo removal and herbicide treatments.

All subcontractors will be required to follow CDFW Aquatic Invasive Species Decontamination protocol throughout the duration of the project. The Restoration Program Manager will make site visits every one to four weeks to assess project progress, productivity, and monitor for Arundo regrowth. OVLC Executive Director will make quarterly site visits to provide project oversight to the Restoration Program Manager.

Task 6 – Revegetation

The Grantee's Program Manager, Stewardship Director, and Restoration Field Crew (Labor I and Labor II) will implement the revegetation component of the project. Ten acres of the 16 acres of Arundo will be revegetated with willow species (*Salix* spp.), mulefat (*Baccharis salicifolia*), California sycamore (*Platanus racemosa*), coyote brush (*Baccharis pilularis*), black cottonwood (*Populus trichocarpa*), blue elderberry (*Sambucus nigra*), mugwort (*Artemisia douglasiana*), bush mallow (*Malacothamus fasciculatus*), Buckwheat (*Eriogonum fasciculatum*), wild rose (*Rosa californica*), and giant wild rye (*Elymus condensata*). The planted native species will consist of 1 gallon nursery stock and cuttings. Approximately 3,000 plants will be grown at the OVLC Native Plant Nursery by the subcontracted Native Plant Nursery Manager. 1,000 plants will be purchased from a local native plant nursery. Revegetation sites will occur throughout the project area where removed Arundo leaves large open areas void of any vegetation. The planting sites will be prepared by OVLC staff by controlling non-native species, installing irrigation systems, and trucking in mulch in the form of wood chips. Weed management will occur in all revegetated areas. Irrigation will be accomplished by hand watering. Water will be provided by private landowners and in some cases

where municipal water is unavailable, trucked in by the OVLC. Temporary irrigation infrastructure (PVC line with hoses) will be installed where necessary. All planted stock will be mulched to improve soil moisture retention and suppress weed growth. The planted stock will be watered and maintained for at least 3 years by the OVLC. The planted stock will be monitored annually. Remedial actions will occur if the project is not performing to the standard of success of 80% survival of plantings. Funding for the 3 years of maintenance that extends past the FRGP award period will be covered by an IRWM Prop 84 Drought Round Grant that has been awarded to the OVLC.

Task 7 – Grant administration and Reporting

Grantee's Program Manager and Executive Director will provide administration of the grant including, but not limited, to personnel oversight, preparing and submission of invoices, progress reports, and the draft and Final Grant Report to the Grantor's Project Manager.

Deliverables:

- Project Documentation: Photo points will be submitted with annual and final reports. Time-lapse documentation (digital) will be submitted with the final report.
- Pre-project Implementation: A pre-project biological survey report will be submitted in October or November 2017.
- Arundo Eradication: Monthly progress reports from both the biological firm and firm removing and treating Arundo. Quantifiable result: 16 acres of Arundo removed and treated with approved herbicide for 3 years.
- Revegetation Quantifiable result: 10 acres of revegetation of native riparian plants maintained for 3 years. 4,000 native riparian plants planted.
- Submission of invoices with progress reports, and final billing and grant report.

Timelines:

Task 1: June 1, 2017- May 31, 2020

Task 2: Photo points will be taken May-June of each calendar year (2017, 2018, 2019, 2020). Time-lapse cameras will be gathering photos for the duration of the project term. Time-lapse cameras will be maintained quarterly.

Task 3: July - September of each calendar year (2017, 2018, 2019)

Task 4: September – December of each calendar year (2017, 2018, 2019)

Task 5: September 2017- May 2020. Initial biomass removal will be complete by February 2018. Herbicide treatments will occur throughout each calendar year.

Task 6: October 2017- May 2020. Initial revegetation efforts will be between October through February of 2017 and 2018. Maintenance of the site will occur throughout the project term. Annual vegetation monitoring will occur in May or June of each calendar year after the site has been planted for at least one year.

Task 7: Monthly: submission of Invoices and progress reports;
February 1, 2020 (Draft Grant Report) and
February 28, 2020 (Final Grant Report).

Additional Requirements:

1. The Grantee will not proceed with on-the-ground implementation until all necessary permits and consultations are secured. Work in flowing streams is restricted per the Army Corps of Engineers Regional General Permit. Actual project start and end dates, within this timeframe, are at the discretion of the Grantor.
2. No equipment maintenance will be performed within or near the stream channel where pollutants (such as petroleum products) from the equipment may enter the channel via rainfall or runoff. Appropriate spill containment devices (e.g., oil absorbent pads, tarpaulins) will be removed from the streambed and floodplain areas at the end of each work day.
3. New Zealand Mudsnails (NZM) has been documented to be present in the Ventura River watershed. As a consequence all equipment and gear will be brushed with a stiff brush prior to leaving each stretch of stream to avoid the transport of NZM. When transporting traps out of the area, each numbered trap will be bagged in its own bag to avoid cross contamination during transport in and out of the work area. All crew members will decontaminate equipment and shoes for NZM according to the standards detailed in the pamphlet "New Zealand Mudsnails – How to Prevent the Spread of New Zealand Mudsnails through Field Gear" Second Edition (Feb. 2010) by Oregon State University.
4. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings. Unless otherwise specified by permits and irrigation will be provided by the Grantee.
5. The Grantee will acknowledge the participation of the Department of Fish and Wildlife, Fisheries Restoration Grant Program and NOAA fisheries funds on any signs, flyers, or other types of written communication or notice to advertise or explain the Project.



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Lion Canyon (3411952) OR Matilija (3411943) OR Ojai (3411942) OR Old Man Mountain (3411954) OR Pitas Point (3411934) OR Saticoy (3411932) OR Ventura (3411933) OR Wheeler Springs (3411953) OR White Ledge Peak (3411944))

Possible species within the Matilija Quad and surrounding quads for 725178 Lower San Antonio Creek Arundo Eradication, T04N R23W S14, Ventura County

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abrams' oxytheca <i>Acanthoscyphus parishii</i> var. <i>abramsii</i>	PDPGN0J041	None	None	G4?T1T2	S1S2	1B.2
American badger <i>Taxidea taxus</i>	AMAJF04010	None	None	G5	S3	SSC
aphanisma <i>Aphanisma blitoides</i>	PDCHE02010	None	None	G3G4	S2	1B.2
arroyo chub <i>Gila orcuttii</i>	AFCJB13120	None	None	G2	S2	SSC
arroyo toad <i>Anaxyrus californicus</i>	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Baja navarretia <i>Navarretia peninsularis</i>	PDPLM0C0L0	None	None	G3	S2	1B.2
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
California condor <i>Gymnogyps californianus</i>	ABNKA03010	Endangered	Endangered	G1	S1	FP
California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California satintail <i>Imperata brevifolia</i>	PMPOA3D020	None	None	G3	S3	2B.1
California Walnut Woodland <i>California Walnut Woodland</i>	CTT71210CA	None	None	G2	S2.1	
chaparral nolina <i>Nolina cismontana</i>	PMAGA080E0	None	None	G3	S3	1B.2
coast horned lizard <i>Phrynosoma blainvillii</i>	ARACF12100	None	None	G3G4	S3S4	SSC
Coast Range newt <i>Taricha torosa</i>	AAAAF02032	None	None	G4	S4	SSC
coastal whiptail <i>Aspidoscelis tigris stejnegeri</i>	ARACJ02143	None	None	G5T5	S3	SSC
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	PDAST5L0A1	None	None	G4T2	S2	1B.1
Coulter's saltbush <i>Atriplex coulteri</i>	PDCHE040E0	None	None	G3	S1S2	1B.2
Crotch bumble bee <i>Bombus crotchii</i>	IIHYM24480	None	None	G3G4	S1S2	



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Davidson's bush-mallow <i>Malacothamnus davidsonii</i>	PDMAL0Q040	None	None	G2	S2	1B.2
Davidson's saltscale <i>Atriplex serenana</i> var. <i>davidsonii</i>	PDCHE041T1	None	None	G5T1	S1	1B.2
Dulzura pocket mouse <i>Chaetodipus californicus femoralis</i>	AMAFD05021	None	None	G5T3	S3	SSC
foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050	None	None	G3	S3	SSC
globose dune beetle <i>Coelus globosus</i>	IICOL4A010	None	None	G1G2	S1S2	
hoary bat <i>Lasiurus cinereus</i>	AMACC05030	None	None	G5	S4	
late-flowered mariposa-lily <i>Calochortus fimbriatus</i>	PMLIL0D1J2	None	None	G3	S3	1B.3
least Bell's vireo <i>Vireo bellii pusillus</i>	ABPBW01114	Endangered	Endangered	G5T2	S2	
Lemmon's jewelflower <i>Caulanthus lemmonii</i>	PDBRA0M0E0	None	None	G3	S3	1B.2
mesa horkelia <i>Horkelia cuneata</i> var. <i>puberula</i>	PDROS0W045	None	None	G4T1	S1	1B.1
Mexican long-tongued bat <i>Choeronycteris mexicana</i>	AMACB02010	None	None	G4	S1	SSC
Miles' milk-vetch <i>Astragalus didymocarpus</i> var. <i>milesianus</i>	PDFAB0F2X3	None	None	G5T2	S2	1B.2
monarch - California overwintering population <i>Danaus plexippus</i> pop. 1	IILEPP2012	None	None	G4T2T3	S2S3	
Nuttall's scrub oak <i>Quercus dumosa</i>	PDFAG050D0	None	None	G3	S3	1B.1
Ojai fritillary <i>Fritillaria ojaiensis</i>	PMLIL0V0N0	None	None	G2?	S2?	1B.2
Ojai navarretia <i>Navarretia ojaiensis</i>	PDPLM0C130	None	None	G1	S1	1B.1
Orcutt's pincushion <i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	PDAST20095	None	None	G5T1T2	S1	1B.1
pale-yellow layia <i>Layia heterotricha</i>	PDAST5N070	None	None	G2	S2	1B.1
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SSC
Palmer's mariposa-lily <i>Calochortus palmeri</i> var. <i>palmeri</i>	PMLIL0D122	None	None	G3T3?	S3?	1B.2
Plummer's mariposa-lily <i>Calochortus plummerae</i>	PMLIL0D150	None	None	G4	S4	4.2



Selected Elements by Common Name
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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Robinson's pepper-grass <i>Lepidium virginicum var. robinsonii</i>	PDBRA1M114	None	None	G5T3	S3	4.3
Salt Spring checkerbloom <i>Sidalcea neomexicana</i>	PDMAL110J0	None	None	G4	S2	2B.2
San Bernardino ringneck snake <i>Diadophis punctatus modestus</i>	ARADB10015	None	None	G5T2T3Q	S2?	
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Sanford's arrowhead <i>Sagittaria sanfordii</i>	PMALI040Q0	None	None	G3	S3	1B.2
silvery legless lizard <i>Anniella pulchra pulchra</i>	ARACC01012	None	None	G3G4T3T4Q	S3	SSC
south coast saltscale <i>Atriplex pacifica</i>	PDCHE041C0	None	None	G4	S2	1B.2
Southern California Coastal Lagoon <i>Southern California Coastal Lagoon</i>	CALE1220CA	None	None	GNR	SNR	
Southern California Steelhead Stream <i>Southern California Steelhead Stream</i>	CARE2310CA	None	None	GNR	SNR	
Southern Coast Live Oak Riparian Forest <i>Southern Coast Live Oak Riparian Forest</i>	CTT61310CA	None	None	G4	S4	
southern jewelflower <i>Streptanthus campestris</i>	PDBRA2G0B0	None	None	G3	S3	1B.3
Southern Riparian Scrub <i>Southern Riparian Scrub</i>	CTT63300CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland <i>Southern Sycamore Alder Riparian Woodland</i>	CTT62400CA	None	None	G4	S4	
southern tarplant <i>Centromadia parryi ssp. australis</i>	PDAST4R0P4	None	None	G3T2	S2	1B.1
steelhead - southern California DPS <i>Oncorhynchus mykiss irideus</i>	AFCHA0209J	Endangered	None	G5T1Q	S1	
tidewater goby <i>Eucyclogobius newberryi</i>	AFCQN04010	Endangered	None	G3	S3	SSC
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	None	G2G3	S1S2	SSC
two-striped gartersnake <i>Thamnophis hammondi</i>	ARADB36160	None	None	G4	S3S4	SSC
umbrella larkspur <i>Delphinium umbracolorum</i>	PDRAN0B1W0	None	None	G3	S3	1B.3
unarmored threespine stickleback <i>Gasterosteus aculeatus williamsoni</i>	AFCPA03011	Endangered	Endangered	G5T1	S1	FP
Ventura Marsh milk-vetch <i>Astragalus pycnostachyus var. lanosissimus</i>	PDFAB0F7B1	Endangered	Endangered	G2T1	S1	1B.1



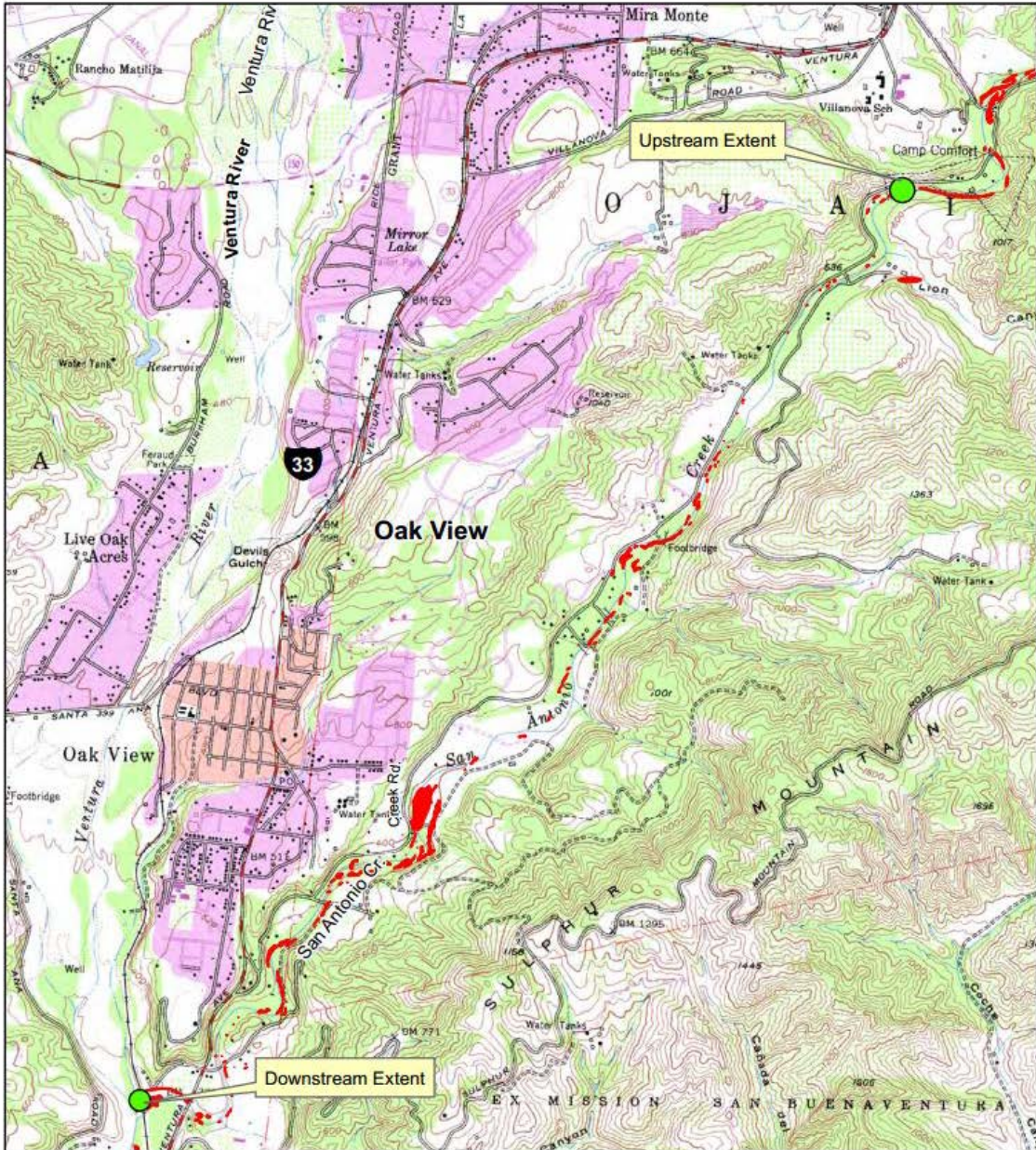
Selected Elements by Common Name
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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
western mastiff bat <i>Eumops perotis californicus</i>	AMACD02011	None	None	G5T4	S3S4	SSC
western pond turtle <i>Emys marmorata</i>	ARAAD02030	None	None	G3G4	S3	SSC
western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white rabbit-tobacco <i>Pseudognaphalium leucocephalum</i>	PDAST440C0	None	None	G4	S2	2B.2
white-veined monardella <i>Monardella hypoleuca ssp. hypoleuca</i>	PDLAM180A3	None	None	G4T2T3	S2S3	1B.3
yellow warbler <i>Setophaga petechia</i>	ABPBX03010	None	None	G5	S3S4	SSC

Record Count: 67

Lower San Antonio Creek Arundo Eradication
Project Location Map
T04N R23W S14, Matilija Quad, Ventura County



Lower San Antonio Creek Arundo Eradication
USGS 7.5 Minute Topographic Map
Matilija Quadrangle

 San Antonio Creek Arundo Infestation



OJAI VALLEY LAND
CONSERVANCY

0 0.25 0.5 1 Miles

