

**San Diego Regional Habitat Enhancement  
SANDAG *TransNet* Grant Agreement  
FINAL REPORT  
September 2015**

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**Contractor Name:** San Diego River Conservancy (SDRC)

**Project Director:** Michael Nelson/ Kevin McKernan

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## 1.0 EXECUTIVE SUMMARY

The San Diego River Watershed contains approximately 440 square miles, consists of numerous native plant and wildlife species and an estimated 900 acres of invasive non-native plants have been mapped. Stretching from the Pacific Ocean at Mission Bay to the headwaters near Julian, California, the San Diego River Conservancy (SDRC) has regional jurisdiction to partner with other governmental agencies and nonprofit organizations to preserve, protect, restore and



**Figure 1.** Stands of giant reed (*Arundo donax*) cause sediment buildup and create flood hazards potentially destroying property and putting lives at risk. Cal-IPC estimated one acre of giant reed can consume more than 20 acre feet of water a year (2011).

conserve lands as well as natural and cultural resources within the watershed. Throughout the watershed, invasive non-native plants such as giant reed (*Arundo donax*), castor bean (*Ricinus communis*), saltcedar (*Tamarix spp.*) and Mexican fan palm (*Washingtonia robusta*) have displaced native riparian vegetation, degraded sensitive species' habitats, depleted water resources, impeded infrastructure and altered fire risks putting the public health and properties at risk.

SDRC started the San Diego River Watershed Invasive Non-Native Plant Control and Restoration Program

in 2009 with the goal of improving these conditions. Since then, more than 50 acres have been biomassed and with funding from SANDAG's *TransNet* Environmental Mitigation Program FY 2010, SDRC expanded these project areas to restore more riparian habitats.

Additional grant funds supplemented SDRC's invasive plant removal and control program efforts. The San Diego Regional Habitat and Enhancement project works by maintaining native habitats and promoting natural ecosystem processes. The *TransNet* Environmental Mitigation Program FY 2010 funded this project for four years. Target invasive non-native plant species in Santee (approximately 200 acres), Carlton Oaks Golf Course (approximately 27 acres) Lakeside/El Monte Valley (approximately 15 acres) were removed and controlled. Other treated sites included, Mast Park West (Santee) and Sycamore Creek (Santee). Focus areas were located downstream of El Capitan Reservoir, with giant reed being the main concern (see **Table 1**). Rapid growth, high water usage, the ability to invade habitats with increased fire and flood risks, causing damage to life and property warranted this species primary target.

Control of invasive non-native plant species requires many management aspects such as removing vegetation with machinery, hand tools, re-planting native vegetation and monitoring areas for success. Key objective criteria included 98% reduction of invasive non-native plants, reporting project area acreage, re-planting native vegetation and licensed applicators who treat re-sprouts with herbicide approved by the Environmental Protection Agency (EPA) for aquatic habitats. Other management activities included removing encampments and maintaining fencing to prevent site access. Aerial maps were used as measurable results (see **Figure 5**). Other measures were taken to allow for authorized entry onto private lands through right of entry (ROE). The Conservancy holds a suite of permits for invasive plant removal:

1. Streambed Alteration Agreement (Fish and Game Code Section 1600)
2. Army Corp of Engineers (Clean Water Act Section 401)
3. Informal Consultation (United States Fish and Wildlife Service)
4. Property Owners Consent (Right of Entry)

Permits for the San Diego Regional Habitat Enhancement grant were obtained by SDRC prior to the start of this project in order to use mechanized equipment in riverbeds, and directives were taken to avoid threatened and endangered species.

During this project, SDRC conducted the following activities:

**A. Partnered with a Broad Range of Private, Nonprofit and Governmental Agencies**

A number of local and non-profit organizations participated in responsible river stewardship by volunteering time, contributing knowledge and expertise as well as extending efforts to accomplish the four tasks listed below (See **4.0 LIST OF SUB-CONTRACTORS** and **5.0 PROJECT DESCRIPTION**).

**B. Obtained Right of Entry (ROE) from Land Owners**

Through the outreach and education program, Lakeside's River Park Conservancy (LRPC) was able to involve up to 180 interested stakeholders. That was 90% of the anticipated participation target goal. There were an estimated 800 parcels along the river.

**C. Controlled Invasive Plants and Re-vegetated Native Plants**

- Invasive plants that were spread across project sites were biomassed as needed and treated with herbicide approved by state and federal regulatory agencies for use in aquatic habitats.
- Native riparian plants were re-planted using 15 different native plants (**Table 2**). Extra care was taken to avoid already established native vegetation. Meticulous care for collecting seeds and re-planting stumps ensured growth by hand-watering.
- Up to 2,160 native plantings were installed at different project areas.

**D. Treated and Re-treated Invasive Non-native plants with EPA Approved Herbicide**

Re-growth of previously biomassed invasive non-native plants were monitored and sprayed with herbicide twice a year as a follow up to ensure exotic plants did not overcrowd recently and existing native vegetation.

#### **E. Monitored Project Sites for Re-growth**

Sites were frequently monitored by a professional biologist and project manager to avoid sensitive plant and animal species and migratory bird nesting season, minimizing potential of encounter.

#### **F. Mapped and Presented Information**

Agri Chemical and Supply (Agri-Chem), and LRPC staff personnel submitted progress reports to SDRC to monitor and report on project milestones.

## **2.0 INTRODUCTION**

San Diego hosts a moderate Mediterranean climate in coastal areas and experiences more semi-arid climates further inland to the east. The environment supports critical habitat for sensitive plants and wildlife. Non-native plants alter ecosystems and respond differently to climates, but may not encounter as many natural predators. As a result they have adapted to out-compete native vegetation.



**Figure 2.** Castor bean (*Ricinus communis*) has been documented to contain a toxic chemical – ricin – which is fatal a certain dosages to organisms when consumed (Cornell University, ).

Vegetative communities for this project, especially in riparian zones adjacent to developed land and paved surfaces, tended to be disturbed non-native riparian habitat. In some locations Arundo-Dominated Riparian or Tamarisk Scrub occurred with more than 50% vegetative cover. Human activities in the form of encampments and user trails further prevented native re-vegetation. Also, interesting research has expanded

knowledge of biological factors unique to certain introduced species which are indicators of detrimental effects to the public and other organisms.

Certain species such as salt cedar (*Tamarix* spp.) alter soil chemistry while other species such as giant reed (*Arundo donax*) are known to consume high volumes of water (under the right conditions one square foot of giant reed can consume a half gallon of water and grow 2.5 inches in a single day) reducing surface water and lowering groundwater

tables (Cal-IPC, 2011). Leaf litter contributes to heightened fire frequency and often



**Figure 3.** Saltcedar (*Tamarix* spp.) can withstand high alkaline soils, of which native species cannot, thus displacing substrate and habitat for sensitive species which rely on natives for nesting and foraging.

invasive plants serve as poor habitat for many California wildlife species.

With relation to dispersal and concerns of spreading, giant reed exhibits a unique reproductive stage. Through rhizomal growth (underground stems that produce roots and shoots) this plant is able to grow asexually, even after being cut and treated with herbicide. Multiple applications are likely necessary to control this species and prevent it from invading new territories. Consequently, often with giant reed (*Arundo*) infestations, native plant species are displaced and biological community interactions becomes altered making management more challenging.

Other examples of ecosystem changes from ornamental plant introductions are palm trees (*Washingtonia* spp.), which pose a fire hazard because of the potential to ignite rapidly and spread distances from loose or falling fronds (Escondido Fire Department). Dense stands of palm canopy shown in **Figure 4** often block out light for lower vegetation such as native shrubs or ground cover including mugwort (*Artemisia douglasiana*) or hoary nettle (*Urtica holosericea*), giving them little chance to succeed. Even Canary Island date palms (*Phoenix canariensis*) when replacing arroyo willow (*Salix lasiolepis*), alters invertebrate community abundance and diversity by removing native food source for insects (Talley et al., 2012).

Introduced plants have also caused infrastructure and property damage; their ability to complement each other, often multiplies negative effects. Reductions in upland native vegetation on alluvial fans may cause sediment runoff during storm events. Sediment in turn accumulates downstream in floodplains by giant reed infestations – which were introduced in California ironically for sediment control. For over one hundred years, this problem has increased flash floods; sewer and storm drains in San Diego County often reach capacity during storm events causing floods, ruining property and equipment. Emerging management plans recommend removal of non-native plants as well as incorporating wetland treatment areas and permeable



pavement adjacent to riparian habitat. This technique allows stormwater runoff to penetrate riparian buffer soil and recharge groundwater basins.

Marked reductions in native plant species also makes it difficult to sustain native wildlife populations, corridors and habitat because of long evolutionary ecosystem interactions. For example, reduction in least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow

**Figure 4.** Mexican fan palms (*Washingtonia robusta*) have a number of ecosystem-changing factors when introduced to new territories. The above figure provides an example of how dense these trees are clumped together, shading sunlight and often excluding other plants from establishing.

flycatcher (*Empidonax traillii extimus*) habitat resulted in decreased population estimates since the mid 1990s. Only until recently have their numbers begun to rebound, which correlate with habitat restoration.

Restoration activities were conducted for native plant community types: Southern riparian forest, mulefat scrub (*Baccharis salicifolia*), coast live oak (*Quercus agrifolia*), and black willows (*Salix goodingii*). Other notable species that have potential of being present on site include arroyo toad (*Anaxyrus californicus*), Diegan coastal sage scrub, chamise chaparral. Although species varied on geographic location floodplain areas experienced the most restoration by the close of this project.

### 3.0 PROJECT GOALS

There were nine primary targeted invasive non-native plants on SDRC’s list and 15 secondary target invasive non-native plants (see **Table 1**). SDRC, along with three sub-contractors, four partnerships, and 10 volunteer groups led a successful habitat enhancement project. The goal was for native trees, shrubs, vines and ground cover to replace the invasive plant species found at the various project locations.

**Table 1.** Target Invasive Non-Native Plants (May be adjusted based on species present on site)

Common Name	Latin Name
<b>Primary Target Plants</b>	
Acacia species	<i>Acacia</i> spp.
giant reed	<i>Arundo donax</i>
pampas grass	<i>Cortaderia selloana</i>
Eucalyptus (blue gum)	<i>Eucalyptus</i> spp.
Canary Island date palm	<i>Phoenix canariensis</i>
Brazilian pepper tree	<i>Schinus terebinthifolius</i>
saltcedar (tamarisk)	<i>Tamarix</i> spp.
Mexican fan palm	<i>Washingtonia robusta</i>
Chinese elm tree	<i>Ulmus parvifolia</i>
<b>Secondary Target Plants</b>	
bridal creeper	<i>Asparagus asparagoides</i>
ice plant (highway Hottentot)	<i>Carpobrotus edulis</i>
ice plant (sea fig)	<i>Carpobrotus chilensis</i>
artichoke thistle	<i>Cynara cardunculus</i>
cape ivy	<i>Delairea odorata</i>
fennel	<i>Foeniculum vulgare</i>
English ivy	<i>Hedera helix</i>
perennial pepperweed	<i>Lepidium latifolium</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
tree tobacco	<i>Nicotiana glauca</i>
smilo grass	<i>Piptatherum miliaceum</i>
castor bean	<i>Ricinus communis</i>
milk thistle	<i>Silybum marianum</i>
nasturtium	<i>Trapaolum majus</i>
periwinkle	<i>Vinca major</i>

## **4.0 LIST OF SUB-CONTRACTORS**

- San Diego State University –Soil Ecology and Restoration Group (SDSU-SERG)
- Lakeside’s River Park Conservancy (LRPC)
- Agri Chemical and Supply, Inc. (Agri-Chem)

### **4.1 PARTNERS**

- B&H Photo
- Shields Fence Company
- Dendra
- Recon Native Plants, Inc.

### **4.2 VOLUNTEERS**

- AmeriCorps
- National Civilian Community Corps
- The Church of Christ in El Cajon
- Cub Scouts Pack 164 from Alpine
- Volunteer San Diego
- Lakeside Fire Protection District
- Eucalyptus Hills Fire Protection Council
- El Monte/ Wildcat Fire Safe Council
- Garden Wildlife, Inc. CHIRP
- County of San Diego Parks and Recreation Department

## **5.0 PROJECT DESCRIPTION**

The San Diego Regional Habitat Enhancement project was broken into four different tasks with multiple components spread across four separate project areas. Over the span of the project, infestation of invasive non-native plant species were reduced, fire hazards and water quality issues improved and sensitive species habitat and wildlife corridors increased.

Activities conducted by SDRC, sub-contractors, partners and volunteers were consistent with regulatory agencies and city of San Diego polices. For example, work was conducted in areas where mapped invasive non-native plants accounted for 50% or more of the vegetative cover. Bird breeding season was avoided and hand tools were used when necessary. Herbicide treatment was applied at appropriate times of the year to most effectively reduce multiplication, spreading and invasion of non-native plant species.

In general, riparian ecosystems are noted by the California Water Action Plan (2014) as an important ecosystem because they contribute to actions such as increased flood protection, expanded water storage capacity and improved groundwater management. Key indicators of ecosystem health are measured through monitoring plans and include multiple taxa levels.

The focus of habitat restoration efforts are outlined in federal state and local planning documents (San Diego River Water Watershed Monitoring and Assessment Program – SDRWMAP etc). From seasonal maintenance to frequent checkups, the San Diego Regional Habitat Enhancement project has increased the value of the watershed by improving existing conditions and providing benefits to the public and wildlife.

**TASK 1. Invasive Control/Re-Treatment/Planting**

All invasive work was lead by The San Diego River Conservancy (SDRC). Environmental documents were obtained prior to the start of this project, which were part of the requirements of the original project entitled San Diego River Watershed Invasive Non-native Plant Control and Restoration Program; the San Diego Regional Habitat Enhancement is an extension of this program.

While SDRC managed and oversaw the grant, SDSU-SERG and Agri-Chem provided services for removal, control of non-native plants and re-vegetation within watershed areas. Services included biomass removal, initial treatment with aquatic approved herbicide, and re-treatment of herbicide on re-sprouts at project sites (**Figure 5**). Furthermore, these two sub-contractors had specific objectives to support **TASK 1**:

- Native vegetation planting at a density of 200-400 plants per acre, depending on site.
- Re-treat invasive non-native plant re-sprouts at the Carlton Oaks Project Area (Site A) for up to three years (see **Table 2**).
- An additional 1,660 1-gallon plants used as fill-in planting.
- A total of 2,160 native plants planted across the entire project scope.



**Figure 5.** Additional follow up re-treatment was implemented and evidence of successful application is apparent for re-vegetation of willows.

All project areas contain invasive plants that needed maintenance and control. A more detailed depiction of the four sites is found in **Figures 6-9** as follows:



**Figure 5.** Carlton Oaks Project Area (Site A) located north of Highway 52 in the city of Santee, CA.

#### Site A: Carlton Oaks

Approximately 52 acres of the Carlton Oaks Project Area was biomassed and treated with herbicide in 2009. In March 2010 the first pole cuttings were installed in open areas of the site. Installation of native out-plants continued through March 2011, and maintained (hand irrigation and weeded) through March 2012. All species of willow present on the site

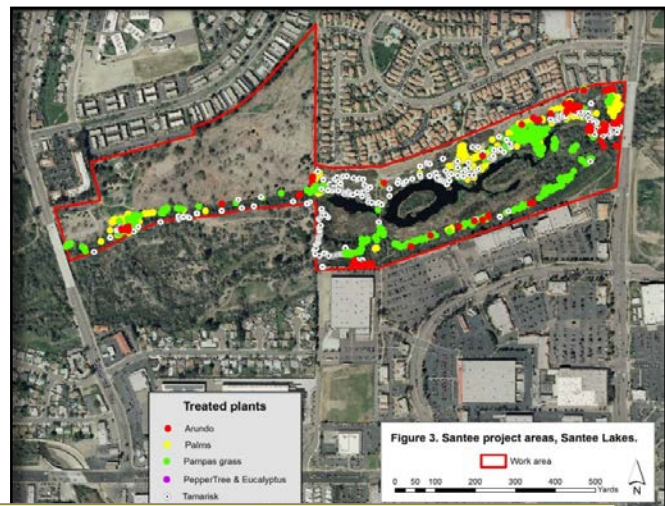
were used for pole cuttings. Cuttings were taken from a large number of trees

to prevent undo harm to any individual donor trees.

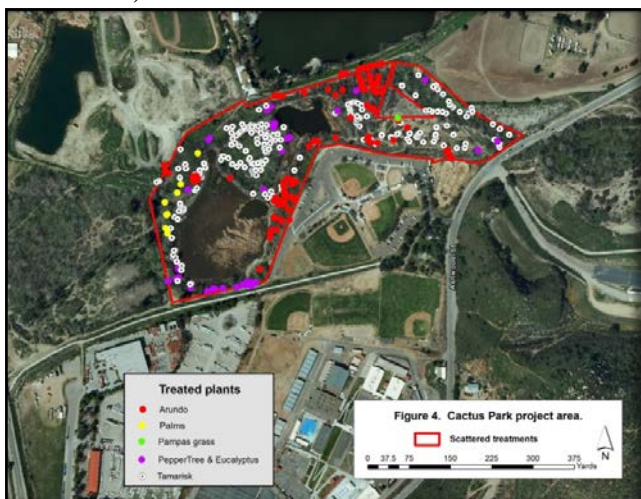
#### Site B: Santee Project Area

Target non-native plants were controlled. Biomass reductions in select locations were required and follow up re-vegetation in the subsequent years after re-treatment of exotic re-sprouts ensured successful native plant establishment. Nearly 500 1-gallon plants were planted in treatment areas (see **Table 5**) Notice the developed land to the north of this project area. Proximity to pavements and residents made riparian areas vulnerable to flooding and user trails.

Specific objectives for this grant included (160 mulefat in 1-gallon containers)



**Figure 7.** Santee Project Area (Site B) located south east of Santee Lakes and north east of Carlton Oaks project area (Site A).



#### Site C: Cactus Park Project Area

This site is approximately 11 acres of scattered non-native plants. Two re-treatments per year were required to maintain control of exotic plant growth. No re-vegetation was needed at this site, although saltcedar and giant reed were abundant. Native vegetation re-grew shortly

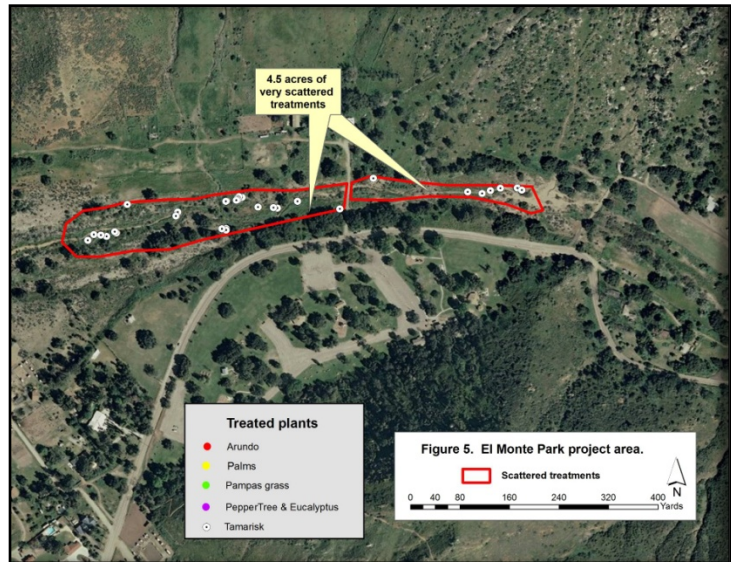
**Figure 8.** Cactus Park Project Area (Site C) north of the Lakeside community and east of Highway 67 half mile southwest of Willow Road and Ashwood Street intersection.

after biomass removal.

Site D: El Monte Park Project Area

This site primarily needed biomass reduction and initial treatment – re-treatment was implemented as necessary. Different methodologies such as drill and kill (**Figure 10**) were species specific. Throughout the project timeline, this site was visited frequently following the terms of agreement to inhibit invasive non-native plant growth.

As indicated in the Resource Management Plan for El Monte County Park San Diego County, saltcedar ranked “high” with increased wildfire potential. Partnerships with the El Monte/ Wildcat Fire Safe Council helped remedy this combustible invasive non-native



**Figure 9.** El Monte Park Project Area (Site D) was located the farthest east of the four project sites, two miles downstream of El Capitan Reservoir off El Monte Road.



**Figure 10.** Drill and kill herbicide treatment. Pictured above is a saltcedar trunk, which was drilled and filled with and herbicide, reaching the root system eventually leading to plant death.

plant.

Additional sites, before and after:



**Figure 11.** The figure on the left depicts a recent burn site (Mast Park West). Tree trunks were burned and ash left behind. The green sprouts in the foreground are invasive non-native giant reed prior to re-treatment. The figure on the right is Mast Park West (post fire) with nearly 100% native vegetative cover.



**Figure 12.** Sycamore Creek before (left) and after (right) biomass and treatment. The stream bed was not visible through the thick brush prior to removal.

Techniques employed were species and site dependent. Where larger trees were present, heavy machinery was used to cut down trees. Hand tools, in many cases were used to trim smaller perennials and avoid sensitive species. Two specific methodologies that were effective at management invasive non-native plants were cut stump (see **Cover Page** top left image) and drill and kill combined with herbicide applications.

Key objective criteria of the San Diego Regional Habitat Enhancement Project were to restore, some of which have previously been biomassed, re-vegetate and treat with herbicide approved for use in aquatic ecosystems.

**Table 2.** Native Plant Pallet (May be adjusted based on species present on site)

Common Name	Latin Name
<b>Trees</b>	
Sycamore	<i>Platanus racemosa</i>
cottonwood	<i>Populus fremontii</i>
coast live oak	<i>Quercus agrifolia</i>
large leaf willow	<i>Salix laevigata</i>
black willow	<i>Salix goodingii</i>
arroyo willow	<i>Salix lasiolepis</i>
<b>Shrubs</b>	
mulefat	<i>Baccharis salicifolia</i>
Christmas berry	<i>Heteromeles arbutifolia</i>
sandbar willow	<i>Salix exigua</i>
Mexican elderberry	<i>Sambucus meicana</i>
<b>Half-shrubs, vines, ground covers</b>	
mugwort	<i>Artemisia douglasiana</i>
California rose	<i>Rosa californica</i>
California blackberry	<i>Rubus ursinus</i>
hoary nettles	<i>Urtica dioica</i>
California grape	<i>Vitis girdiana</i>

**TASK 2.** Access Control (Fencing)

Lakeside’s River Park Conservancy (LRPC) led efforts for fencing to better focus the access control. LRPC installed up to 6,200 linear feet of lodge pole fencing and 3,500 linear feet of 9” gauge chain link fence to control access to habitat areas along the San Diego River. **Task 2** also included maintaining fencing in working condition for three years post installation.



**Figure 13.** Fencing installed at Santee, CA demonstrates how the project constructed fencing to prevent access by the public. The figure on the right is a location reference of the image on the left. Not only were there chain link fence, but in certain locations lodge pole fencing was installed as visual enhancements.

### **TASK 3. Park Patrol and River Cleanups**

Human disturbance has degraded much of the riverine habitat in the form of transient camps, unauthorized trails and trash buildup. In the San Diego River Watershed LRPC implemented Park Patrol to cover sections of the river that deserve attention and require cleanup to improve water and wildlife habitat quality. Project locations were spread along 2.7 miles of the San Diego River from the City of Santee to Ashwood Avenue.



**Figure 14.** River park patrol and cleanup at various sites were not limited to trash pickup, but also included moving encampments offsite. Participation of a broad range of participants from youth to adults addressed critical issues to restoring the riparian habitat such as land disturbance and human induced debris.

#### **Activities also included but were not limited to:**

- Graffiti removal
- Encampments removed to offsite locations
- Coordination and cooperation with local Sheriff's Department

#### **A Summary of objectives for Task 3 is as follows:**

LRPC's volunteer in-kind contributions included Riverbed Hikers, Mounted Monitors, Park Patrol and various LRPC volunteer events over the span of the project trained approximately 197

volunteers over a 4 year period. Their in-kind contributions exceeded 8776 hours (8,776 hrs X \$19.98 = \$175,344.48).

These efforts removed up to 10 encampments where transients often left behind trash including furniture, tents, bicycles, carts, clothes, personnel items, camp stoves, cooking areas and increased the potential of spreading fires to public parks and private residences.

#### **TASK 4.** Restoration Expansion through Outreach to Property Owners

The LRPC led outreach efforts to involve property owners from 800 parcels, gaining access to sites through right of entry (ROE) permits. Expectations were superseded by 100% when contacting and gaining the support of 180 willing land owners.

After securing right of entry (ROE) permits from land owners, access to sites were controlled with fencing. Trash clearing and removing other human induced debris (e.g. encampments, graffiti, etc.) invasive species control plans were developed and implemented by SDRC in conjunction with partner non-profits and contractors.

## **6.0 NEXT STEPS**

Follow up with land owners to encourage the facilitation of continued success of the San Diego Regional Habitat Enhance Project. Continued outreach and participation of landowners, non-profit organizations and volunteers made this project possible. Improved mapping techniques and more accurate monitoring protocols by incorporating California Rapid Assessment Method (CRAM) and Surface Water Ambient Monitoring Program (SWAMP) will help track the progress of restoration activities.



**Figure 15.** Site A after biomass removal and re-treatment. Native vegetation is present in the background with willows and shrubs thriving re-emerging in the foreground.

## 7.0 REFERENCES

- Al-Tamimi, F and Hegazi, A. A Case of Castor Bean Poisoning. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3087745/>. Accessed September 16, 2015
- California Department of Fish and Game (Now Wildlife hereinafter referred to as CDFW). Draft Vegetation Communities of San Diego County
- California Invasive Plant Council (Cal-IPC) *Arundo donax* <http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm@usernumber=8&surveynumber=182.php>. Access September 15, 2015.
- California Invasive Plant Council (Cal-IPC) *Tamarix* spp. <http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm@usernumber=81&surveynumber=182.php>. Access September 15, 2015.
- California Invasive Plant Council (Cal-IPC). Invasive Plants of California's Wildland <http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm@usernumber=69&surveynumber=182.php>. Accessed September 22, 2015.
- California Invasive Plant Council (Cal-IPC). 2011. *Arundo donax* distribution and impact report.
- California Invasive Plant Council (Cal-IPC) <http://www.cal-ipc.org/ip/research/arundo/4ImpactsWaterUse.pdf>. Accessed September 24, 2015.
- California Invasive Plant Council (Cal-IPC). 2007. Don't plant a pest, give them an inch and they'll take an acre...
- Cornell University, College of Agriculture and Life Sciences. Department of Animal Science, Plants Poisonous to livestock. <http://poisonousplants.ansci.cornell.edu/toxicagents/ricin.html>. Accessed September 22, 2015. Accessed September 22, 2015.
- Escondido Fire Department. Palm Trees as Fire Hazards. <https://fire.escondido.org/Data/Sites/3/media/pdfs/PalmTreesAsFireHazards.pdf> Accessed September 28, 2015.
- National Oceanic Atmospheric Administration (NOAA). Climate of San Diego, California, Technical Memorandum NWS WR-270. September 2004.
- Odero, D. et al. 2014. Giant reed (*Arundo donax*): biology, identification, and management.
- San Diego Chapter of the American Society of the Landscape Architects (SD/ASLA) and San Diego Chapter of the California Native Plant Society (CNPS). San Diego County Invasive Ornamental Plant guide.
- San Diego Habitat Conservancy. <http://www.sdhabitat.org/habitats/riparian.html>. Accessed September 14, 2015.
- California Water Board. 2014. San Diego River Watershed Monitoring and Assessment Program.
- Talley et al., 2012. Testing the effects of an introduced palm on a riparian invertebrate community in southern California.
- University of California Weed Research and Information Center (WRIC). 2010. Salcedar a non-native invasive plant in the western U.S. WRIC Leaflet #02-2