

San Diego Integrated Regional Water Management Project #9

Northern San Diego County Invasive Non-Native Species Control Program



Mission Resource Conservation District

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Project Partners



Project Overview

- Eradication of over 600 acres of invasive, non-native plants from four target watersheds
- Target Species Include:
 - *Arundo donax* (giant reed)
 - *Cortaderia selloana* (pampas grass)
 - *Lepidium latifolium* (perennial pepperweed)
 - *Tamarisk ramosissimum* (salt cedar)



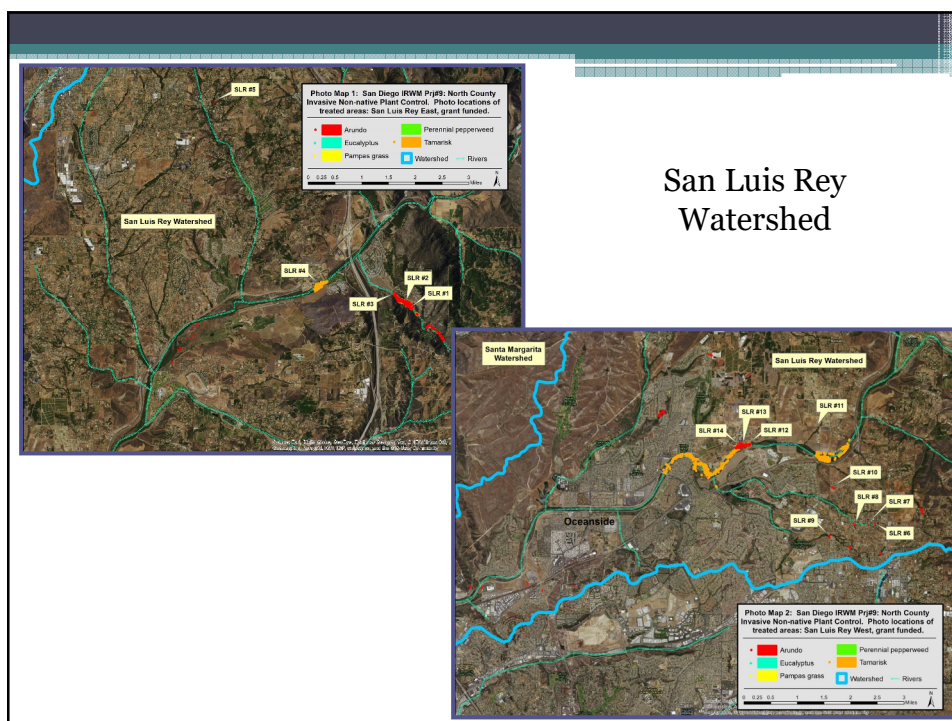
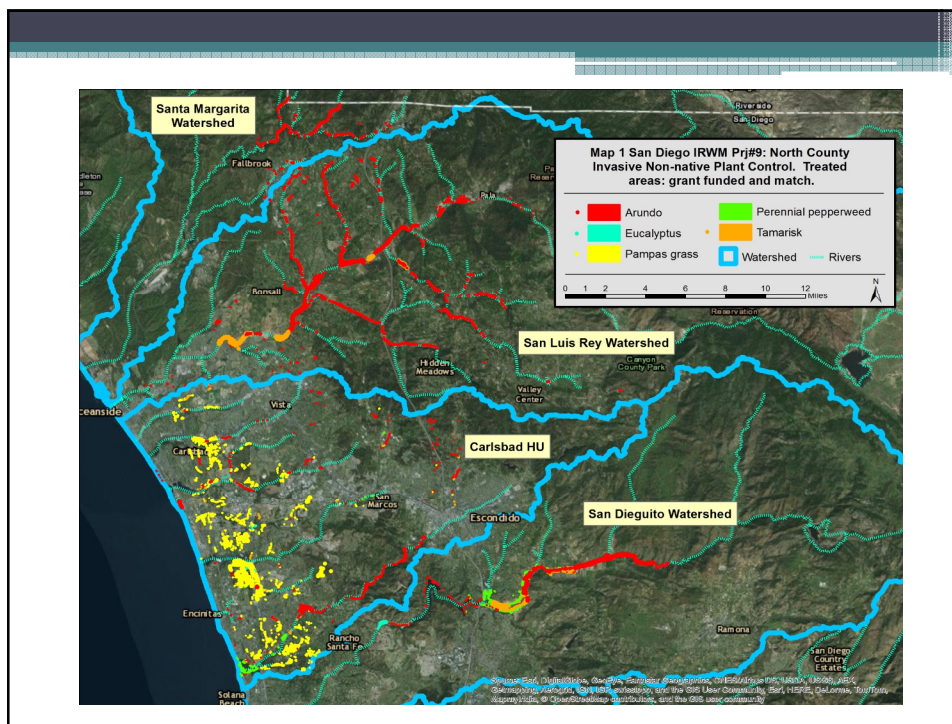
Arundo, San Dieguito River

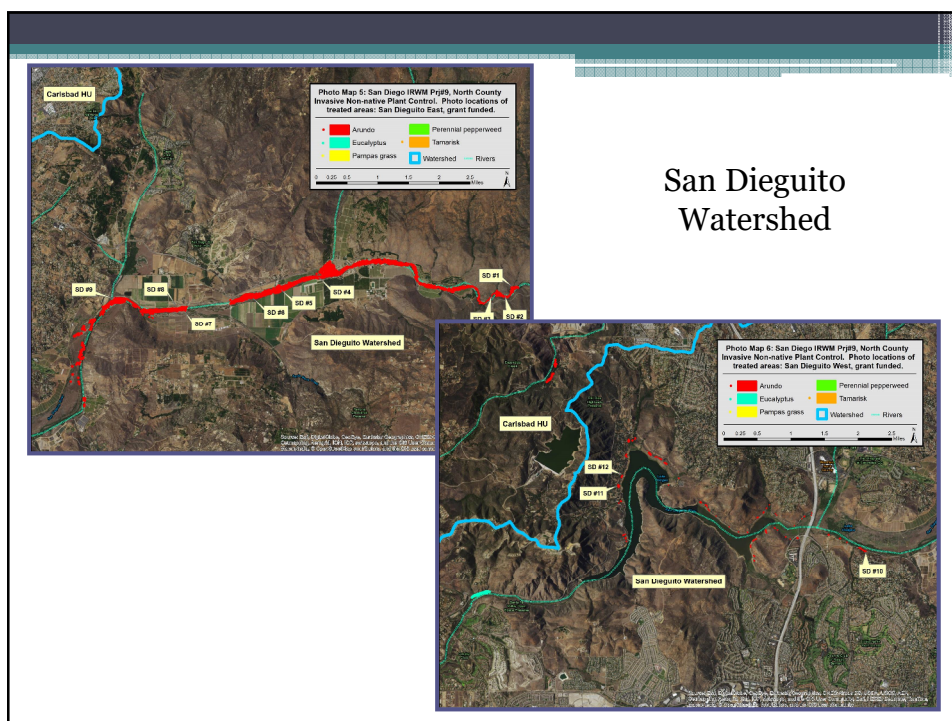
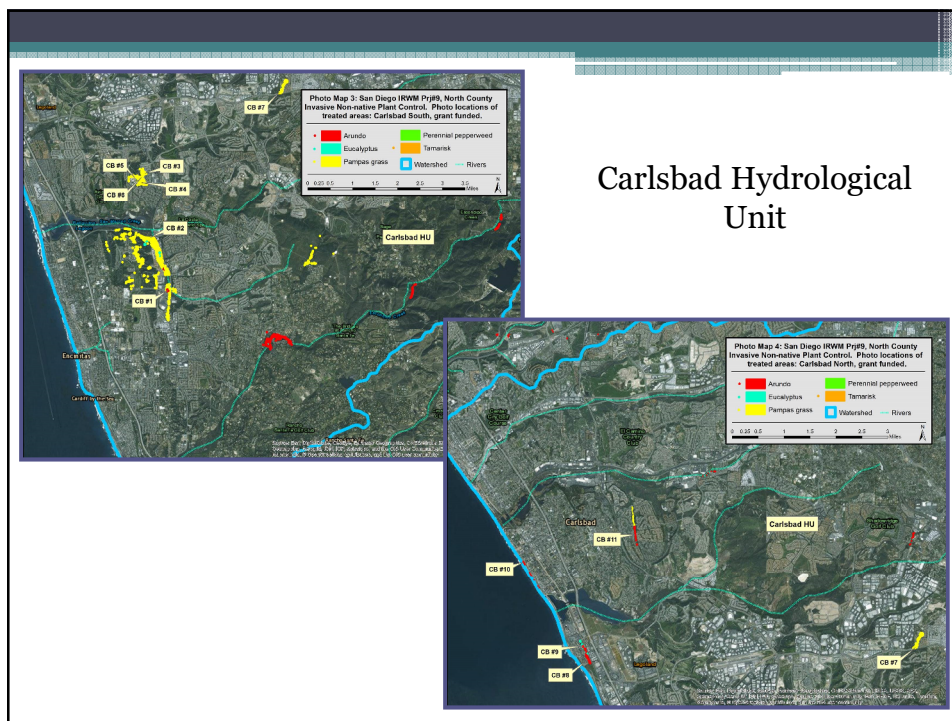


Pampas grass, Carlsbad HU



Arundo, San Luis Rey





Project Overview

- Permit Compliance
- Landowner Outreach & Coordination
 - Worked directly with local, state, federal and private landowners to obtain Right of Entry Permission
- Herbicide Treatments
 - Systematic, top down approach to minimize re-infestation potential
- Biomass Reduction and Re-vegetation



Agua Hedionda Watershed
(Carlsbad HU), 2012 (L),
spring 2016 (R)

Cumulative Project Treatment Totals

Target invasive non-native plant species	Grant funded acreage	Match acreage	Project total	Goal Ex A-2
<i>Arundo donax</i> (giant reed)	113.7	96	209.7	201.75
<i>Cortaderia selloana</i> (pampas grass)	24.5	75	99.5	9
<i>Eucalyptus camaldulensis</i> (red river gum)	5.4	21	26.4	-
<i>Lepidium latifolium</i> (perennial pepperweed)	-	172	172	98
<i>Tamarisk ramosissimum</i> (salt cedar)	12.3	87	99.3	98
Total:	155.9	451	606.9	406.75

Watershed Treatment Totals

San Luis Rey & Santa Margarita Watersheds

Target invasive non-native plant species	Grant funded acreage	Match Acreage	Project total
<i>Arundo donax</i> (giant reed)	39.4	68	107.4
<i>Tamarisk ramosissimum</i> (salt cedar)	12.3	12	24.3
Total:	51.7	80	131.7

Carlsbad Hydrological Unit

Target invasive non-native plant species	Grant funded acreage	Match Acreage	Project total
<i>Arundo donax</i> (giant reed)	5.4	12	17.4
<i>Cortaderia selloana</i> (giant reed)	24.5	75	99.5
<i>Eucalyptus camaldulensis</i> (red river gum)	0.4	-	0.4
<i>Lepidium latifolium</i> (perennial pepperweed)	-	36	36
<i>Tamarisk ramosissimum</i> (salt cedar)	-	5	5
Total:	30.3	128	158.3

San Dieguito Watershed

Target invasive non-native plant species	Grant funded acreage	Match Acreage	Project total
<i>Arundo donax</i> (giant reed)	68.9	16	84.9
<i>Lepidium latifolium</i> (perennial pepperweed)	-	136	136
<i>Eucalyptus camaldulensis</i> (red river gum)	5.0	21	26
<i>Tamarisk ramosissimum</i> (salt cedar)	-	70	70
Total:	73.9	242	316.9

Project Benefits

- Maximize stakeholder/community involvement and stewardship
- Develop and maintain a diverse mix of water resources
 - Water Supply Reliability
 - Imported Water
 - Groundwater Management
 - Groundwater recharge is increased by removing *Arundo* and pampas grass.
 - Potential savings of 5,738 acre feet per year for the 606.9 acres of invasive plant control under this project. This is a net savings per acre (4 ac-ft/yr/ac of native replacement vegetation was subtracted from each acre of controlled vegetation)

Project Benefits

Net water savings associated with targeted invasives control.

Target invasive non-native plant species	Project acreage total	Net water savings ac-ft/yr/ac	Net water savings ac-ft/yr
<i>Arundo donax</i> (giant reed)	209.7	20	4,194
<i>Cortaderia selloana</i> (pampas grass)	99.5	10	995
<i>Eucalyptus camaldulensis</i> (red river gum)	26.4	2	53
<i>Lepidium latifolium</i> (perennial pepperweed)	172	-	-
<i>Tamarisk ramosissimum</i> (salt cedar)	99.3	5	496
Total:	606.9	-	5,738

Project Benefits

- Reduce the negative effects on waterways and watershed health caused by hydromodification and flooding
 - Flood Management
 - Stormwater Capture and Management
- Effectively reduce sources of pollutants and environmental stressors
 - Water Quality Protection and Improvement
 - Reduced erosion and siltation, increased biofiltration, increased groundwater recharge, and reduced the likelihood of sewage/delivery infrastructure failure. Water temperature regimes and flow patterns critical to sustain high quality habitat were also restored.

Project Benefits

- Protect, restore and maintain habitat and open space
 - Wetlands Enhancement and Creation
 - Environmental, Habitat Protection and Improvement
 - Ecosystem Restoration
- Optimize water-based recreational opportunities
 - Recreation and Public Access
 - Cost Effectiveness and Benefit



Buena Vista
Watershed
(Carlsbad HU),
2012 (L), 2016 (R)

San Luis Rey Watershed, Keys Creek



08/2014



04/2016

San Luis Rey Watershed, San Luis Rey River



08/2010

03/2016



Carlsbad HU, Batiquitos Watershed

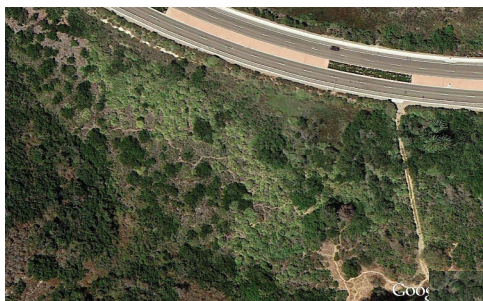


12/2011

04/2016



Carlsbad HU, Batiquitos Watershed



08/2010

03/2016



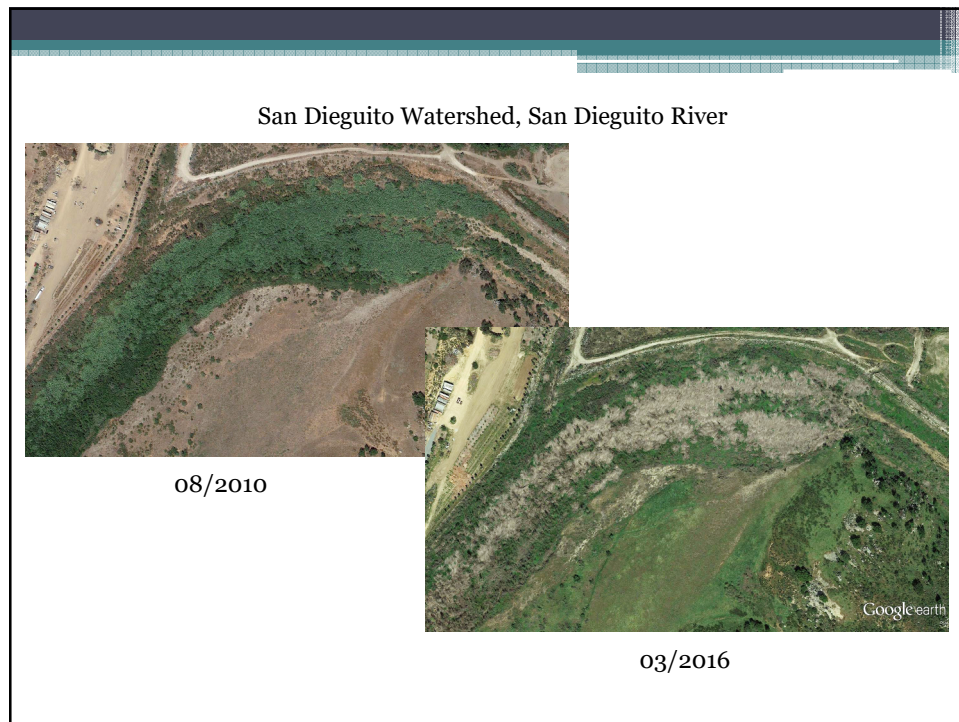
San Dieguito Watershed, San Dieguito River



2012



2016



Project Future

- The project will monitor and re-treat target invasive non-native plants at project sites primarily using regional Natural Community Conservation Planning (NCCP) funds dispersed through the SANDAG TransNet program.
- The watershed programs are also supported by grants, including federal, state and local sources.

Questions?



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