Arundo Control and Restoration Program

Randy Mager
Delta Ecosystem Enhancement
FESSRO, DWR
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- Uses more water than other riparian species.
- Increases bank erosion during high flow events.
- Increases fire severity.
Hard to Kill – Need Persistence

Need a long-term program, NOT a project
Mapped Arundo within Legal Delta Boundary

365 mapped Arundo points within Legal Delta

Legal Delta Boundary

Arundo donor point locations digitized or GPS’d by CSTARS, CDFG, CDWR, EBMUD, C4 DD, Solano Water Agency, Sacramento Weed Warriors, Solano RCD, Sonoma Ecology Center, 2000 - 2007 Team Arundo d’el Norte
1,150 sq miles (738,000 acres)

Runoff from 40% of California

57 reclaimed islands

700 miles of waterways

1,100 miles of levees
The Delta

- 500,000 people
- $500 million farm economy
- 5 counties
- Over 70 RDs
- Multiple Federal and State agencies
Entered agreement in 2011 using Prop 84 funds to:

- Control Arundo along drainage ditch adjacent to Hastings Cut (4,300 ft).
- Revegetate ditch and surrounding area with appropriate native vegetation.
- Map arundo infestations in the Cache Slough Complex.
Spraying Arundo

- October 2012
- Habitat (3% Imazapyr)
- Aquamaster (3% Glyphosate)
HABITAT (3% IMAZAPYR)
Note pre-emergent soil properties

AQUAMASTER (3% GLYPHOSATE)
Note extensive regrowth
Purple needlegrass (*Stipus pulchra*)
Blue wildrye (*Elymus glaucus*)
Slender wheatgrass (*E. trachycaulus*)
Creeping wildrye (*Leymus triticoides*)
Meadow barley (*Horceum brachyantherum*)
SRCD staff and CCC crews
Cuttings of Willow, Cottonwood and Mulefat
Installed 4,000 Creeping wildrye plugs
Installed 450 native trees and shrubs
Installed 13,000’ of ¾’ drip irrigation
Shallow well drilled to provide alternate water source for cattle
WATER TROUGHS FOR CATTLE

- Keeps cattle away from waterway
- Less bank erosion
- Allows riparian vegetation to establish

BENEFITS TO LANDOWNER

- Less sediment buildup in ditch
- Improved water quality
- Healthier cattle
LANDOWNER WILLINGNESS

- Previously wanted to keep Arundo.
- Kept pheasants in hunter area
- Saw replanting efforts across the Cut
- Now wants to participate in the project
- Neighbor effect
Advantages of partnering with SRCD

- Boots on the ground
- Established and developing relationships with landowners.
- Expertise and equipment
- Cooperative relationship with other local entities (ie. NRCS)
- Access to alternate funding (EQIP)
<table>
<thead>
<tr>
<th>Name</th>
<th>Gross Area (acres)</th>
<th>Number of Patches</th>
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<tbody>
<tr>
<td>Barker Slough</td>
<td>0.001</td>
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<tr>
<td>Prospect Slough</td>
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<tr>
<td>Lindsey Slough</td>
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<td>Cache Slough</td>
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<tr>
<td>Ulatis Creek</td>
<td>4.322</td>
<td>21</td>
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<tr>
<td>Deep Water Channel</td>
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<tr>
<td>Hastings cut</td>
<td>8.616</td>
<td>10</td>
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<tr>
<td>Others</td>
<td>2.365</td>
<td>32</td>
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<tr>
<td><strong>TOTALS</strong></td>
<td><strong>22.93</strong></td>
<td><strong>153</strong></td>
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Approached DWR to fund Delta-wide Arundo control effort

Unclear of effort needed or cost involved

Need to develop a program rather than a project

DWR funding is from bonds and have time limit

Suggested an Arundo control pilot project in Cache Slough Complex
CSC Pilot Project

- CSC primary area for restoration
- Builds upon what is being learned under Yolano contract
- Continues landowner and RD contacts
- Establishes trust for future endeavors
- Neighbor effect – build upon success
- Opens possibilities for future projects
- Additional funding available through NRCS
- Delta Conservancy moving to larger role in weed abatement
Arundo Removal and Restoration Project

- Six year project
- Map Arundo infestations throughout the legal Delta
- Develop a prioritization model for future work in the Delta
- Initiate a pilot project to remove Arundo in CSC
Control Arundo on 90,000 linear feet of levee and channel margin in CSC

Revegetate 50 acres of levees and adjacent areas with native vegetation

Project will inform SSJDC of requirements, resources, expenditures and techniques needed to control Arundo

Assist SSJDC in developing, funding and successfully implementing a long-term Arundo control program
The End
(of the beginning)