San Francisco Estuary Invasive Spartina Project
Why is Invasive Spartina a Problem?

Degrades endangered species habitat over the long-term
Dominates mudflats and changes hydrology
Potentially endangers native Pacific cordgrass
Reduces flood control capacity
Creates mosquito breeding areas
Causes failed tidal marsh restoration
ISP: Built on Partnerships
Invasive Spartina Project Eradication Program

Goal: Eradicate non-native Spartina from the San Francisco Estuary through a regionally coordinated effort

Regional Approach: All infested areas Estuary-wide require simultaneous non-native Spartina control

Coordinate regional partners: Enable treatment work in a variety of settings through grants, permit and technical assistance, volunteers, whatever is needed

Scope: Treatment on over 24,000 acres of marshland Estuary-wide. 188 sub-sites as of 2012

Cost: $28 million to date in state and federal funding
Treatment Methods: Ground and Water-based

- Backpack/truck
- Airboat
- Amphibious Vehicles
Rapidly establish habitat features to benefit California clapper rail at strategic locations where recent eradication of non-native Spartina has caused decreases in local populations.

Reintroduce Spartina foliosa where locally extirpated or radically reduced by spread of invasive Spartina.
Spartina foliosa propagation beds at the Watershed Nursery
• reduces marsh impacts from large-scale direct transplants
Single Species Management Doesn’t Work

Hybrid Spartina impacts marsh structure and biodiversity

Short-term impacts versus long-term species and habitat goals

Coordinated approach needs to be implemented bay-wide

Partial treatment will not succeed in the long-term
Clapper Rails and Hybrid *Spartina*

- Reduced macroinvertebrates
- Displaced native *S. foliosa*
- Dominated native marshes
- Filled in channels

- Created new tidal marsh
- Provided excellent cover

→ Clapper rail populations expanded and grew

Slide courtesy of Jen McBroom (ISP)
Treatment Authorization 2011

- **yes**
- **no**

Site Boundaries

New Restoration Ponds

- **Open**
- **Soon**

Imagery: Bing Maps, MS
Three Regions Combined

- Clapper Rail Detections
- Spartina Inventory (HA)

Spartina Inventory (HA) and Clapper Rail Count over the years 2004 to 2011.
Deploy Artificial Floating Islands

Construct High Tide Refuge Islands

Implement Rapid Intensive Revegetation

Coordinate or assist predator control actions

Continue and complete Bay wide eradication of invasive *Spartina*
Outlook Going Forward

2012 Biological Opinion: down to 9 no sites
Implementing restoration to get to full treatment

Continued treatment and restoration efforts
Fundraising with multiple partners as state budget declines
Integration of efforts with CA Clapper rail recovery planning
Close coordination with agency partners
Arundo donax
Distribution and Impact Report

March 2011

Agreement No. 06-374-559-0
State Water Resources Control Board

Prepared by: California Invasive Plant Council
Arundo on San Luis Rey River
Arundo donax
Santa Ana River Bridge, 2004
Process Recommendations

Establish MOU early on to identify main impacts and goals

Secure commitment by partners, permitting agencies, executives

Involve regional experts and use current science in decision-making

Establish a process for addressing endangered species issues

Collaborative planning is critical to develop innovative restoration approaches
Thank you!