



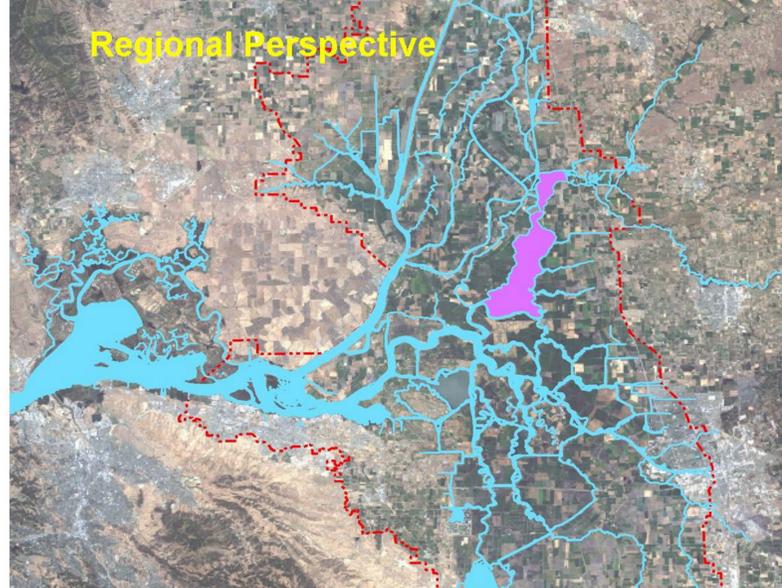
Sandhill Cranes
Sacramento Bee photo

1986 Flood

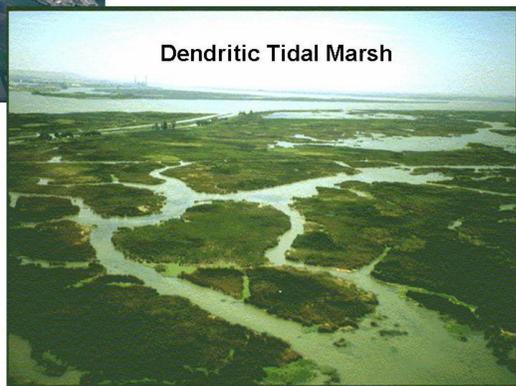


North Delta Ecological and Flood Planning

Identification of objectives, conceptual model development, scientific outreach, targeted research and iterative modeling and conceptual alternative development.

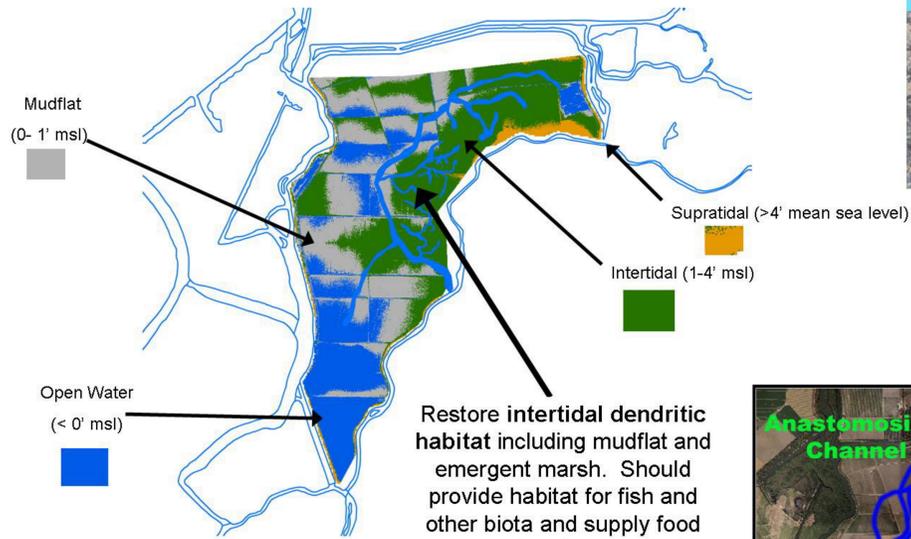


Regional Perspective



Dendritic Tidal Marsh

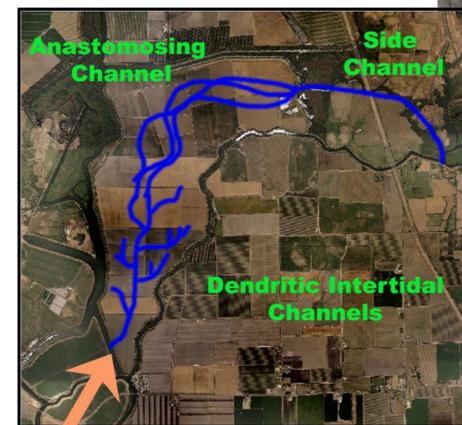
McCormack-Williamson Tract



Restore intertidal dendritic habitat including mudflat and emergent marsh. Should provide habitat for fish and other biota and supply food resources to estuary. Restore upland habitat along levees.



1929 Aerial Photo Showing Historic Waterways



Mokelumne River Side Channel through property east of McCormack-Williamson Tract. Provide riparian and channel habitat. Design side channel for seasonal (winter/spring) wetting.

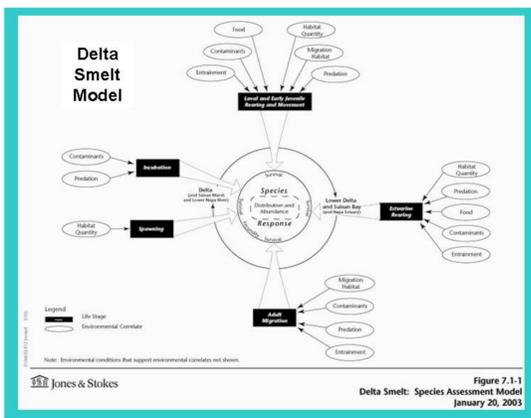


Figure 7.1-1 Delta Smelt: Species Assessment Model January 20, 2003

Conceptual Alternatives

Restoration Objectives:

- Restore ecological processes, including hydrologic, geomorphic and biologic processes
- Promote natural flooding processes, tidal action and appropriate salinity regimes
- Improve river floodplain connectivity
- Allow channel migration
- Promote sediment deposition, especially to increase elevations in areas of subsidence
- Promote foodweb productivity and water exchange with adjacent channels
- Restore self-sustaining habitats: freshwater tidal marsh, seasonal floodplain, and riparian
- Support special status species
- Limit exotic species establishment

Conceptual Models:

Habitats: Intertidal dendritic, Floodplain, Wildlife-friendly agriculture, Riparian, Intertidal plants

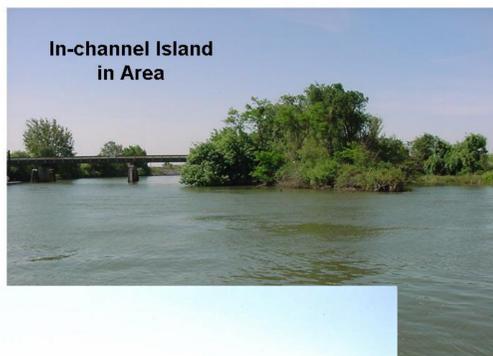
Species: Delta smelt, Chinook salmon, Sacramento splittail, Greater Sandhill Crane

Ecosystem Processes: Hydraulic, Geomorphic

Stressors: Mercury, Exotic species

Targeted Research Topics & Efforts :

- **Floodplain Processes:** Develop hydraulic models and use model runs to predict hydrology
- **Can we encourage bedload sediment deposition from the Mokelumne River onto floodplain at McCormack-Williamson Tract?**
- **Exotic Species:** Study presence of exotic species and correlation with habitat and other factors throughout Delta
- **Which factors limit the presence of exotic species?**
- **Methylmercury and Organic Carbon:** Mesocosm studies in different habitats (floodplain, wetlands, agriculture)
- **Which habitats promote mercury methylation and organic carbon production (disinfection byproduct precursors)?**



In-channel Island in Area

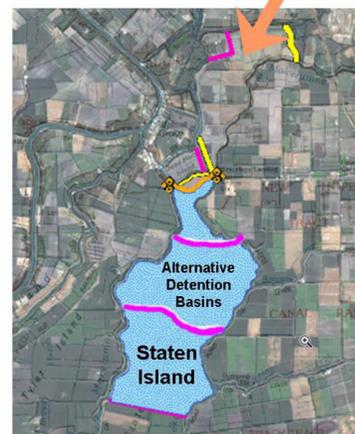
Potential to change flow split between North and South Forks Mokelumne River. May decrease stagnant areas, attractive to warmwater exotic fish, that prey on native fish species. Opportunities to create in-channel islands.



Delta Cross Channel under construction

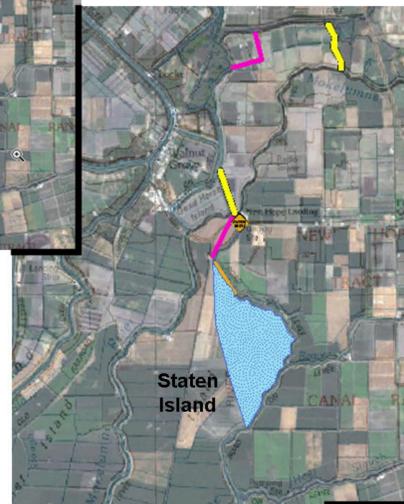
Sandbar at New Hope Landing Evidence of Sediment Deposition in Mokelumne River

Detention basins may serve as areas for sedimentation. Opportunities to reverse subsidence.



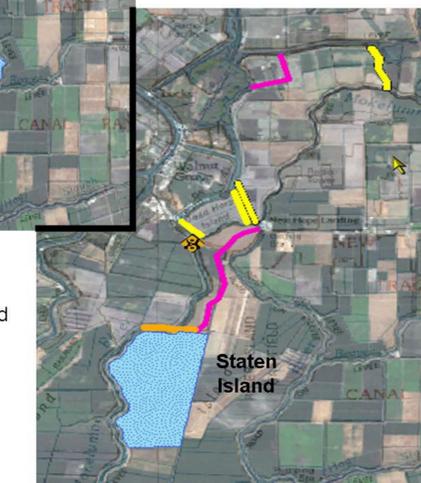
Alternative Detention Basins Staten Island

Fish salvage (perhaps using fish-friendly pumps) may be necessary if screens are not installed or land cannot be graded to allow natural drainage.



Staten Island

Smaller detention basins on Staten Island may serve as natural areas during the nonflood season. Could be wetlands, seasonal marsh or forest/floodplain complex.



Staten Island

Setback levees allow restoration of seasonally inundated mudflat, emergent marsh and riparian habitats. Channel migration and sedimentation on levee benches during flooding. Potentially increases area of shallow-water habitat which may be a concern regarding exotic species. Also, potential to create in-channel islands.

- KEY**
- New Levee
 - Breached/Degraded Levee
 - Detention Basin
 - Weir
 - Bridge Replacement



Staten Island

McCormack-Williamson Tract

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