



# Delta Wetlands Project

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In-Delta Surface Water Storage  
In-Delta Habitat  
South of Delta Groundwater Storage  
User Financed

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# Today's Topics

- Project Overview
- Public Benefits
- Climate Change
- Adaptability
- Status & Financing
- Lessons Learned/Observations



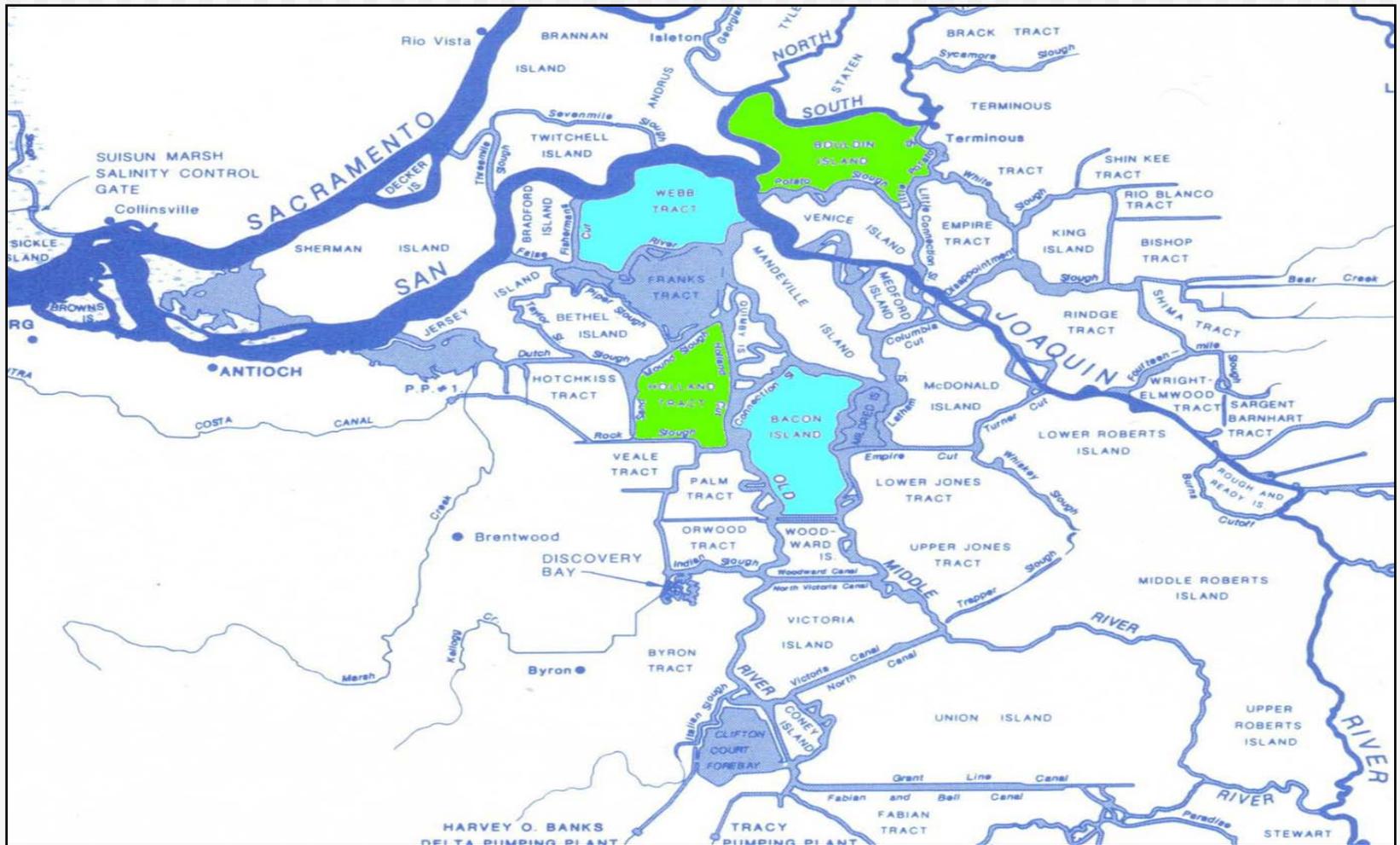
# Project Overview

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# Project Overview

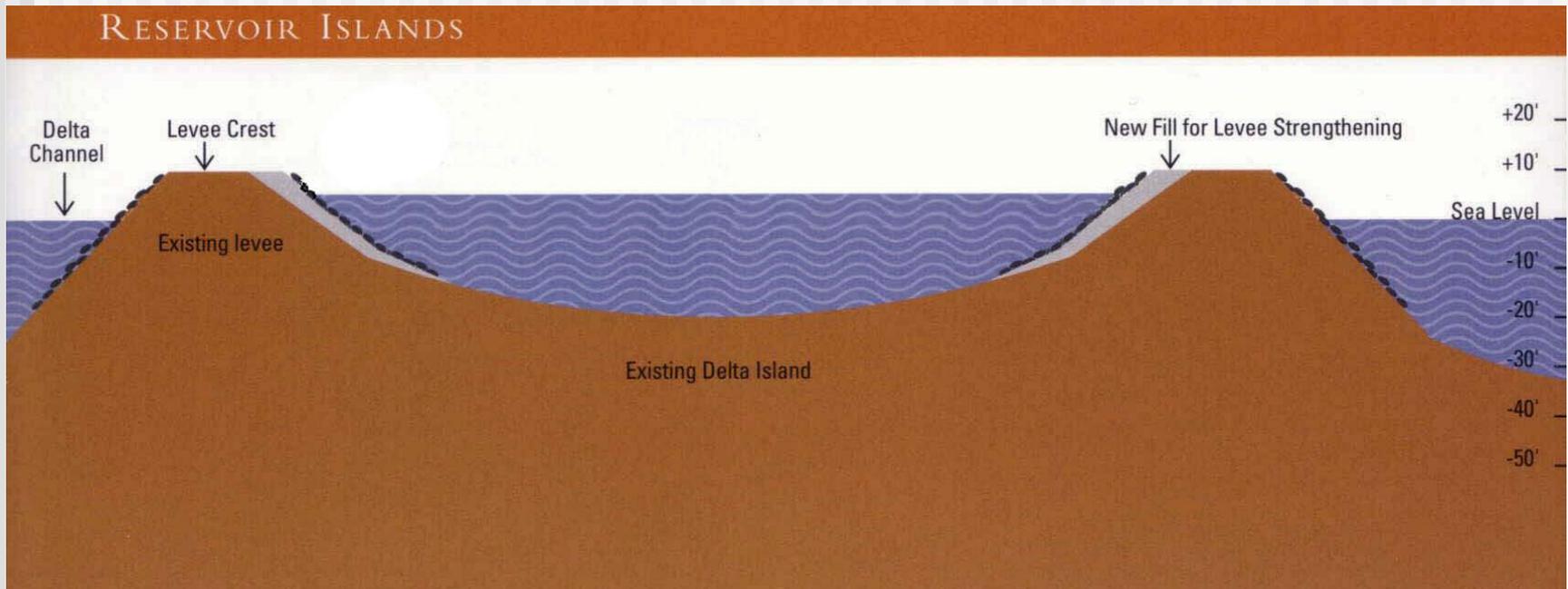
## 4 Lowland Islands become 2 Water Storage + 2 Habitat





## Project Overview 2 Water Storage Islands

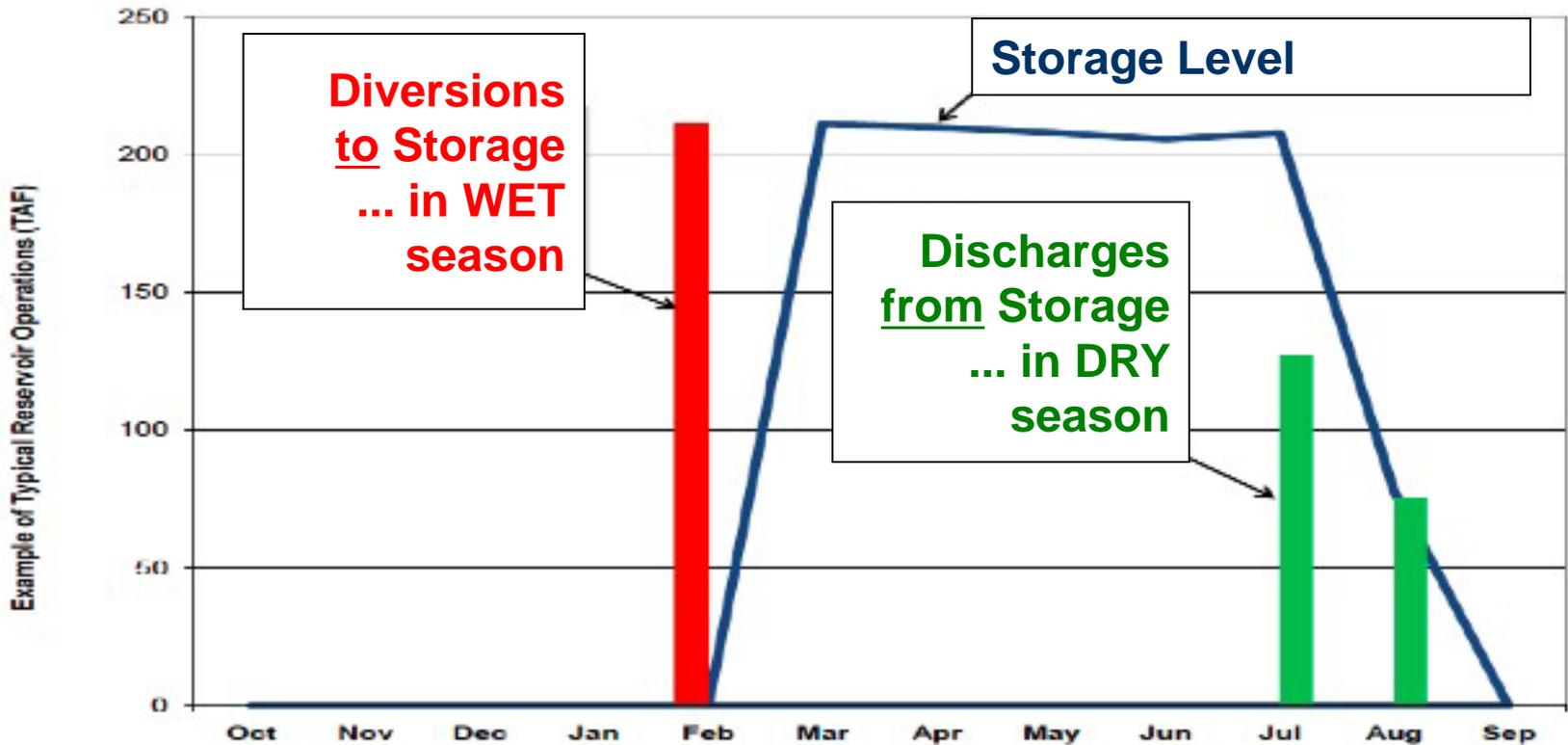
- Webb Tract & Bacon Island become Water Storage Islands  
*... strengthened levees + fish-friendly screened diversions*
- Capture a fraction of available water - *in high-flows ... wet months*
- Release new water - *when needed ... dry months*





## Project Overview Seasonal, Short-term In-Delta Storage

- When water available (high-flow periods, wet months), store a *fraction*
- When needed in dry months, release stored water

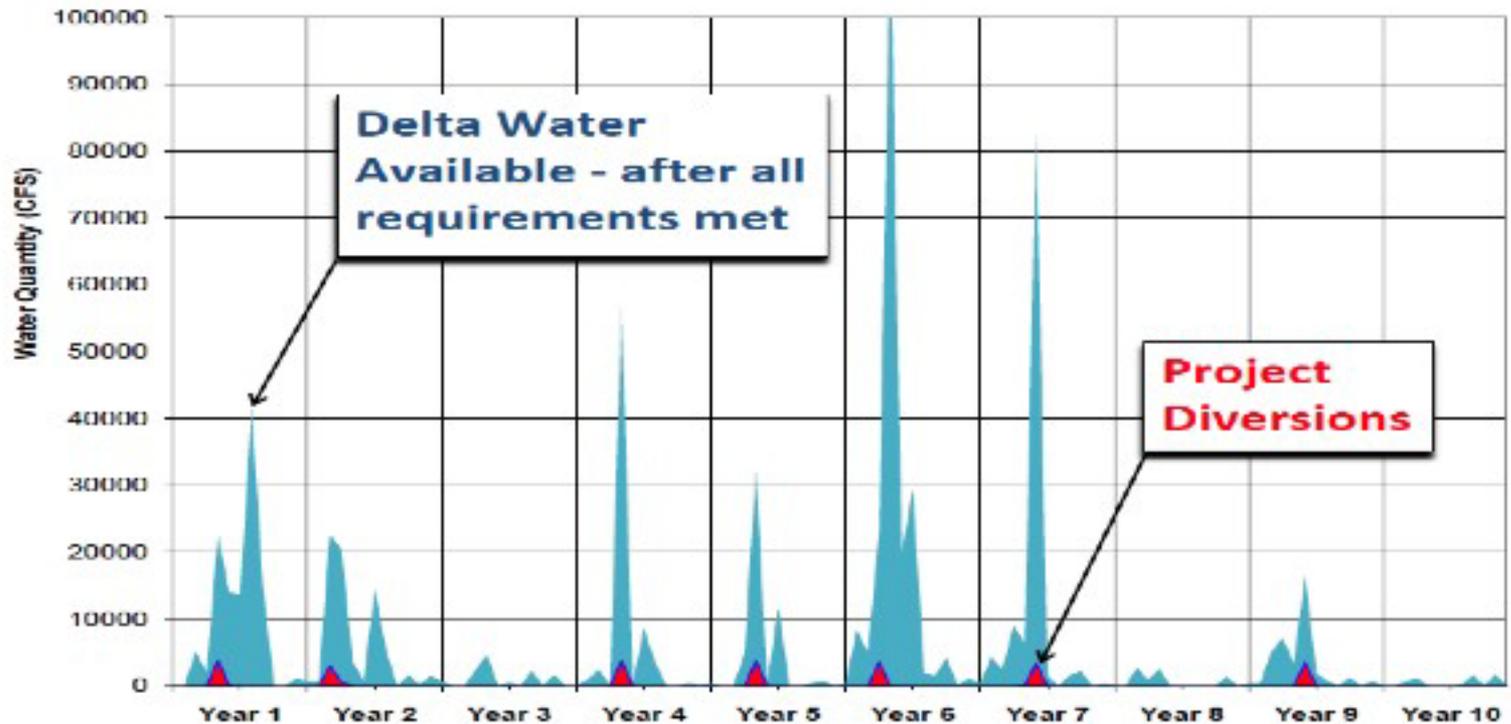




## Project Overview

# Only Diverts Small Fraction of Available, High-Flow Water

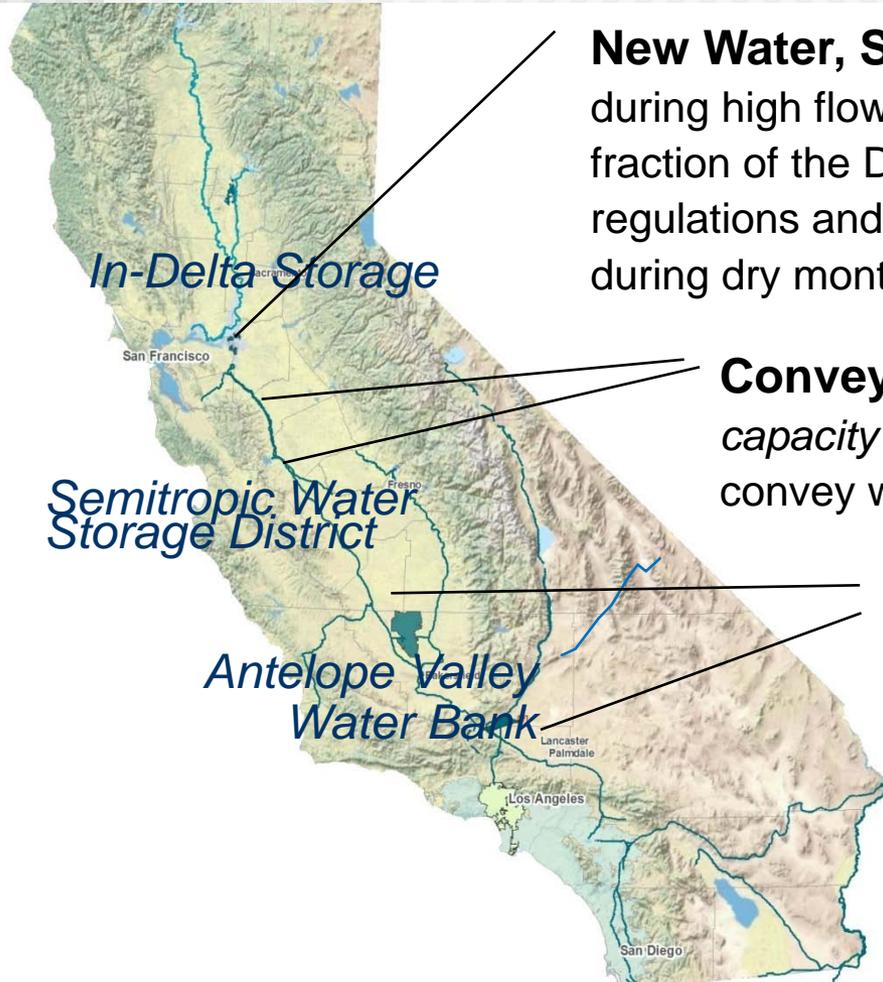
- **Project diverts 2.4% of Delta water available (avg) ... *after all environmental regulations & existing water rights are met***
  - During high flows only





## Project Overview

# In-Delta Storage integrated with Groundwater Banking



**New Water, Seasonal In-Delta Storage.** In wet months during high flows, Water Storage Islands capture a small fraction of the Delta water available after all environmental regulations and existing water rights are met. When needed during dry months, that stored water is released.

**Conveyance Infrastructure.** Utilizes *unused capacity* in existing state and federal infrastructure to convey water south to users and groundwater banks.

**Partnership with Semitropic ... Groundwater Banking.** Project water will be stored in “wet years” at approved South-of-Delta underground water banks at SWSD (CA’s most experienced, which is connected to both state & federal infrastructure) and AVWB (south of the Tehachapi Mountains).



# Public Benefits

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# Public Benefits Consistent with State's Coequal Goals for Delta

## State Goals:

- “more reliable water supply for California”
- “protecting, restoring, and enhancing the Delta ecosystem”

- [SB X7 1; PRC 29702]

## The Project:

- ✓ New water storage (215,000 acre-feet)
- ✓ In-Delta & S-of-Delta storage
- ✓ Habitat Islands (9,000 acres)
- ✓ Ecologically sound water diversion:
  - ✓ State-of-art fish screens
  - ✓ During high flows only
  - ✓ Captures a small fraction of outflow available *after* all environmental regulations & senior water rights have been met



## Public Benefits Major Habitat Restoration in Core of Delta

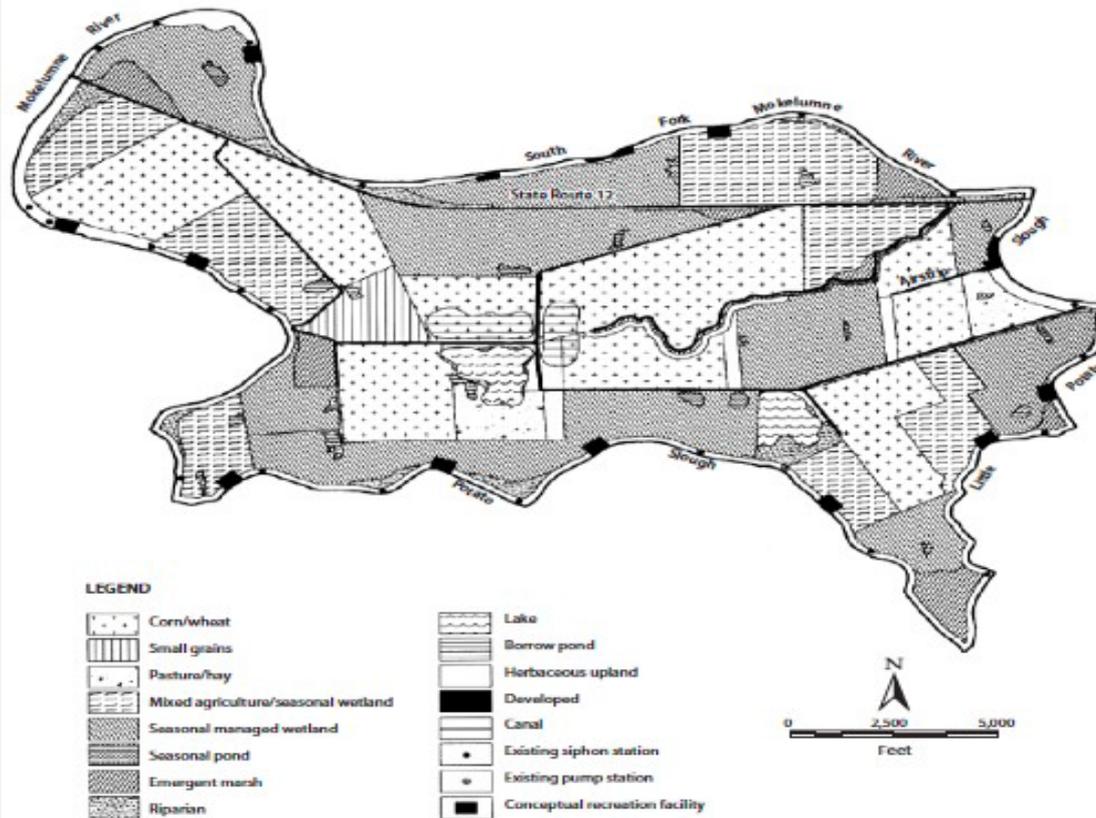
### **Bouldin Island & Holland Tract become**

... **9,000 acres** of protected wetlands & wildlife habitat

- 14 square miles ... *two-thirds the size of Manhattan*
- Larger than Vic Fazio Yolo Wildlife Area & Stone Lakes National Wildlife Refuge combined
- Designed/managed with CA Fish & Game
  - Seasonal & permanent wetlands, riparian woodlands, grasslands, ponds, lakes & sustainable farming
    - 10 Ecosystem Restoration Program priority habitat types
  - *Benefits for multiple species*
- Significant support for BDCP conservation measures



# Public Benefits Bouldin Island: Proposed Habitat Management Plan

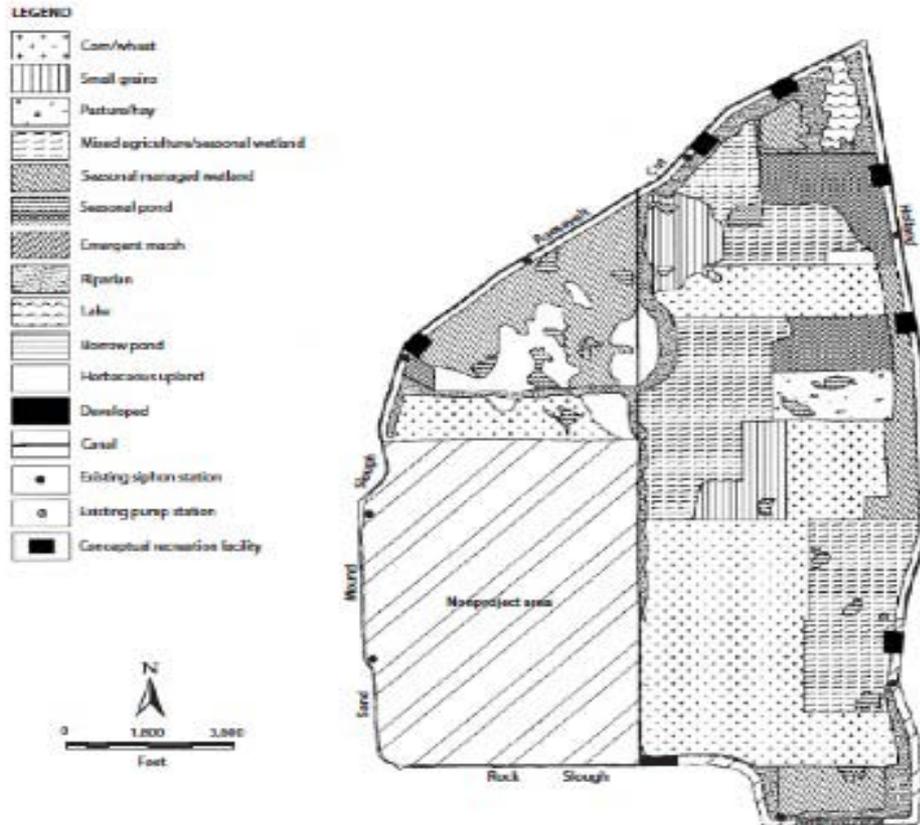


**Note:** Features are shown for conceptual purposes.  
Location and size are subject to detailed design.



# Public Benefits

## Holland Tract: Proposed Habitat Management Plan



**Notes:** Features are shown for conceptual purposes. Location and size are subject to detailed design.



## Public Benefits Habitat Islands Consistent with BDCP Goals

### **Habitat restoration ... consistent with BDCP goals**

- **Restore tidal marsh** in West Delta Restoration Opportunity Area (HRCM6)
- **Enhance channel margin habitats** to improve conditions for covered fish species (HRCM15)
- **Restore riparian forest & scrub** in Restoration Opportunity Areas (HRCM11/HRCM14)
- **Reduce agricultural pesticides/herbicides** entering Delta waterways (OSCM4)
- **Improve discharged water quality** from managed seasonal wetlands to prevent dissolved oxygen sags (OSCM8)
- **Screen/remove/relocate/consolidate/modify/alter diversions to reduce entrainment of covered fish species** (OSCM21)

Source: BDCP Proposed Conservation Measures, 1/14/10



# Public Benefits Water Quality & Fish

## **Protects & enhances Delta water quality & fish conditions**

- *Strict operational requirements* for flows, timing and rate of diversions & releases ... *to protect species & water quality*
  - Diverts only during high flows - and captures only a small fraction of water available after all environmental requirements are met
  - No operations during the April-June sensitive fish period
  - Agreements with CUWA, CCWD, EBMUD
- Eliminates 92 un-screened agricultural diversions
  - Uses *state-of-art fish screens* to prevent entrainment
- New water quality management tool
  - Can release low-salinity “winter water” during high-salinity / low-flow summer periods ... and for emergency response
- Aquatic Habitat Restoration (200 acres of shallow-water tidal habitat on Chipps Island)

*Previously approved by USFWS, NMFS, DFG*



# Climate Change

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# Climate Change Sea Level Rise

- Sea Level Rise is slow
  - ~.5” per year
  - vs. ~ 2” per year of subsidence
- Project will reduce or eliminate subsidence
  - improving levee stability and
  - providing a significant carbon benefit
- Levees will be improved
  - PL 84-99 for habitat islands
  - “Seismically Resilient” for reservoir islands



# Climate Change & Air Quality

## Greenhouse Gas Reduction

- CO<sub>2</sub> reduction of 150,000 tons/year - from land use changes on Water Storage Islands alone
  - ✓ *Equivalent to taking 30,000 cars off the road*
- More GHG reduction from new wetlands & wildlife-friendly agriculture practices on Habitat Islands
- Significant carbon sequestration potential

## Air Quality

- Reduces local emissions from current agricultural practices



# Adaptability

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# Adaptability Significant Investment in Delta Sustainability

## **Enhanced protections vs. earthquakes, floods & rising sea levels**

- Major upgrades to 56 miles of levees
  - Water Storage Islands - far exceeding Delta guidelines (three-fold improvement)
  - Habitat Islands - meeting Delta guidelines (PL 84-99)
- Substantial reduction in levee failure risk
- All-but eliminates subsidence on 20,000 acres (in key Central Delta)
- Emergency response tool for reducing salinity intrusion caused by Delta flooding

## **Major investment in sustainable economic value in heart of Delta**

- New environmentally sound water supply & storage
- Operational flexibility
- Habitat restoration & recreation
- Significant GHG reduction



# Adaptability Consistent with Visions for Sustainable Delta

**USGS**  
Delta Subsidence in California  
The sinking heart of the State

**The Great Delta Charrette**  
October 20-21, 2006  
A Report to the California Department of Water Resources

**Proposal to Reconnect the San Joaquin River to the Estuary**  
Description of Delta Corridors Project

**ReEnvisioning the Delta**  
Alternative Futures for the Heart of California

**Status and Trends of Delta-Suisun Services**

**ENVISIONING FUTURE FOR THE SACRAMENTO-SAN JOAQUIN DELTA**

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JAY LUND | ELLEN HANAK | WILLIAM FLEENOR  
RICHARD HOWETT | JEFFREY MOULTON | PETER MOYLE  
Public Policy Institute of California

**Pre-Event Alternative**  
**South Delta**  
**Post-Event Alternative**

**in 2015 - 2025**  
A. Continue BMPs to reduce/minimize subsidence.  
B. Continue investments in levees and channel habitat.

**Public Review Draft**  
March 2007

**Fits State & stakeholder goals for Delta**



# Status & Financing

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## Project Status CEQA

- FEIR certified - and project approved - by Semitropic (9/14/11)
  - Notices of Determination filed in Kern Co. (9/14/11) & San Joaquin and Contra Costa Counties (9/15/11)
- Responses to comments
  - Comment period on DEIR closed (6/28/10) ... 27 letters received
  - Many comments previously addressed ... few required more analysis
  - No comments from Central Delta Water Agency
  - Responses to public agency comments distributed July 2011
- DWR comments were generally constructive
- DFG comments
  - Delta Wetlands met with DFG staff during preparation of the DEIR
  - DFG previously issued permits for the project
  - Delta Wetlands is updating its Biological Assessments to address CESA-only listed species (i.e., longfin smelt and Swainson's hawk)



## Project Status Immediate Benefits

### Water Transfer Program (fallowing)

- 2009: 3,000 acre-feet of water made available
- *More can be made available in future years*

### Habitat Restoration

- Wildlife-friendly restoration can begin *before* final Project approvals



## User Financed

Public financing NOT required

Major habitat restoration  
+ new water supply  
*financed by water users*

# Delta Wetlands Project

## Habitat Restoration + Water Supply

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**User Financed ...**

**... Environmentally sound ...**

**... Immediate relief ...**

**... for California's water crisis**

*Consistent with any long-term vision for a sustainable Delta*

Contact

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