Integrating Science into Project and Regional Restoration Planning

Stuart W. Siegel, Ph.D., P.W.S.

Wetlands and Water Resources, Inc.

Delta Independent Science Board Meeting
17 January 2013, Sacramento, CA

Topics Covered Here

Getting to Yes with Science Integrated

Policy Drivers for Restoration

- Understanding what drives restoration helps to determine how to incorporate scientific understanding and adaptive management principles

Example of Applying Science Integration to a Restoration Project

- Where can science integration happen?

Example of Applying Science Integration to Regional Restoration Planning

- Where can science integration happen?

Getting the Science Right at the Outset

- Update Delta Plan key science issues that influence implementing its policies

Where the Rubber Hits the Road: Project "Approvals"

- What really has to happen to "get to yes"? How can science be integrated into all those steps?

Policy Drivers for Restoration

Varying Mandates

Water Projects Biological Opinions and Incidental Take Permit

- 8,000 acres of tidal restoration and other actions required
- ***FAST crediting required***
- Funded by water projects

Bay Delta Conservation Plan

- 65,000 acres of ecosystem restoration and other actions required
- ***FAST crediting required***
- Funding dependent on future voter bonds

Suisun Marsh Plan

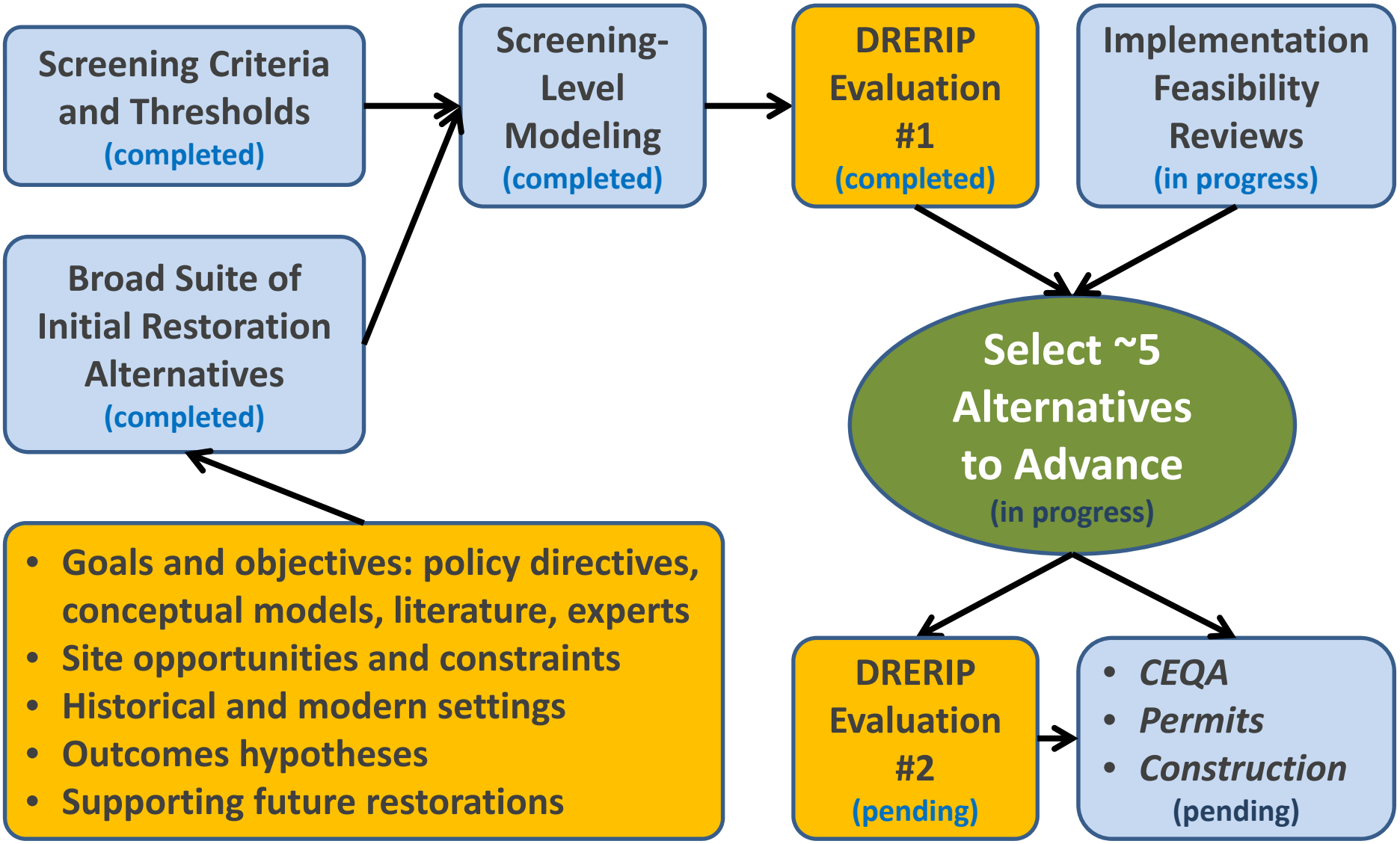
- 5,000 – 7,000 acres of tidal restoration called for
- No restoration implementation strategy nor explicit obligations
- Funding mechanisms not identified

Delta Plan

- Follows ERP Stage 2 Conservation Strategy in part
- Funding needs to be identified

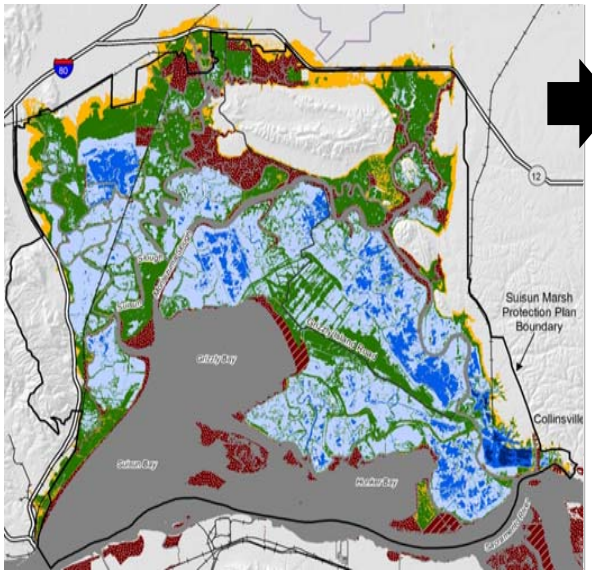
Science Applied to Restoration Projects

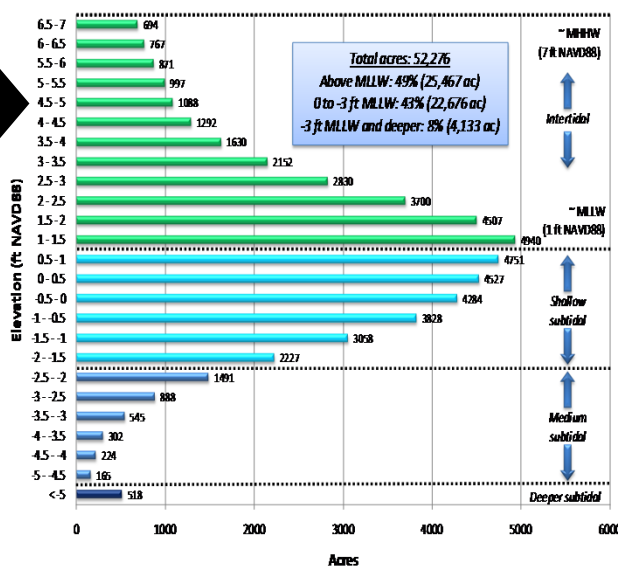
Prospect Island Restoration Project

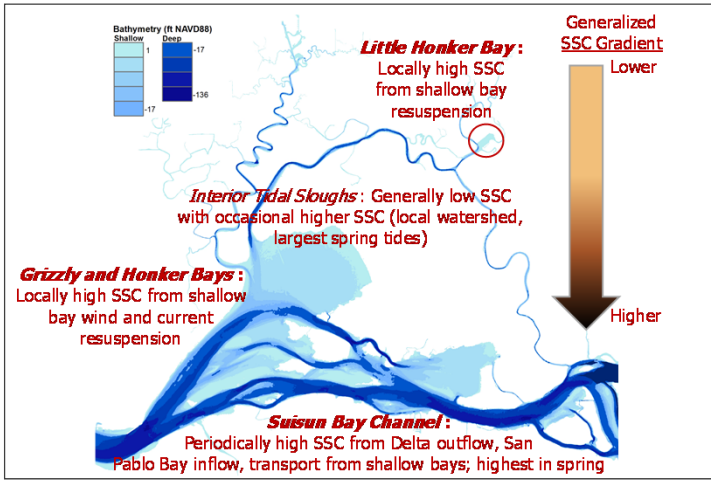


Science Applied to Regional Restoration Strategies

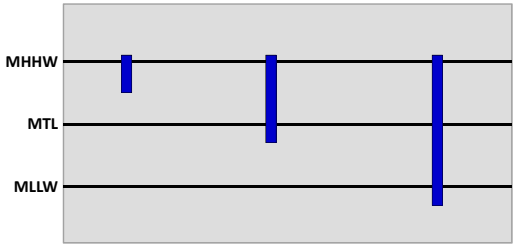
Suisun Marsh Conservation Assessment (approach being applied to Cache Slough Complex Conservation Assessment)

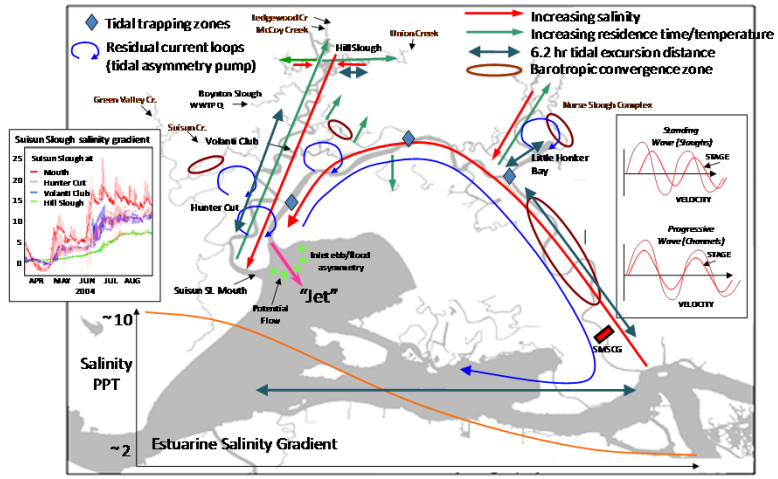


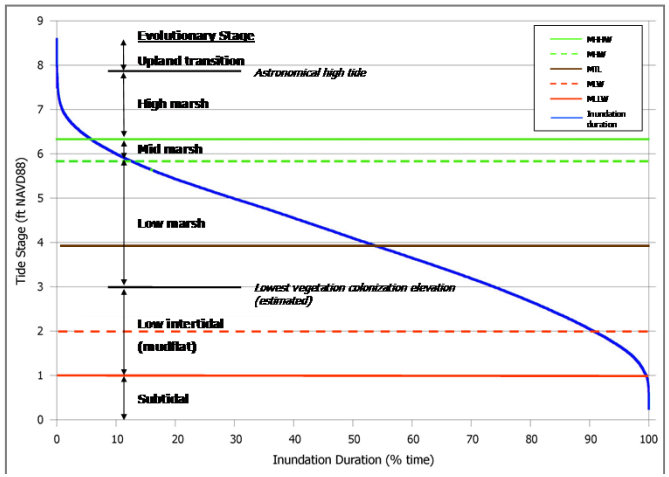


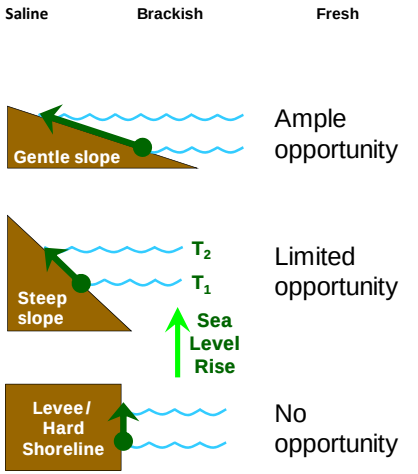


- Founded on conceptual models (developed for Suisun Marsh Plan)
- Generated a regional landscape-scale conceptual model





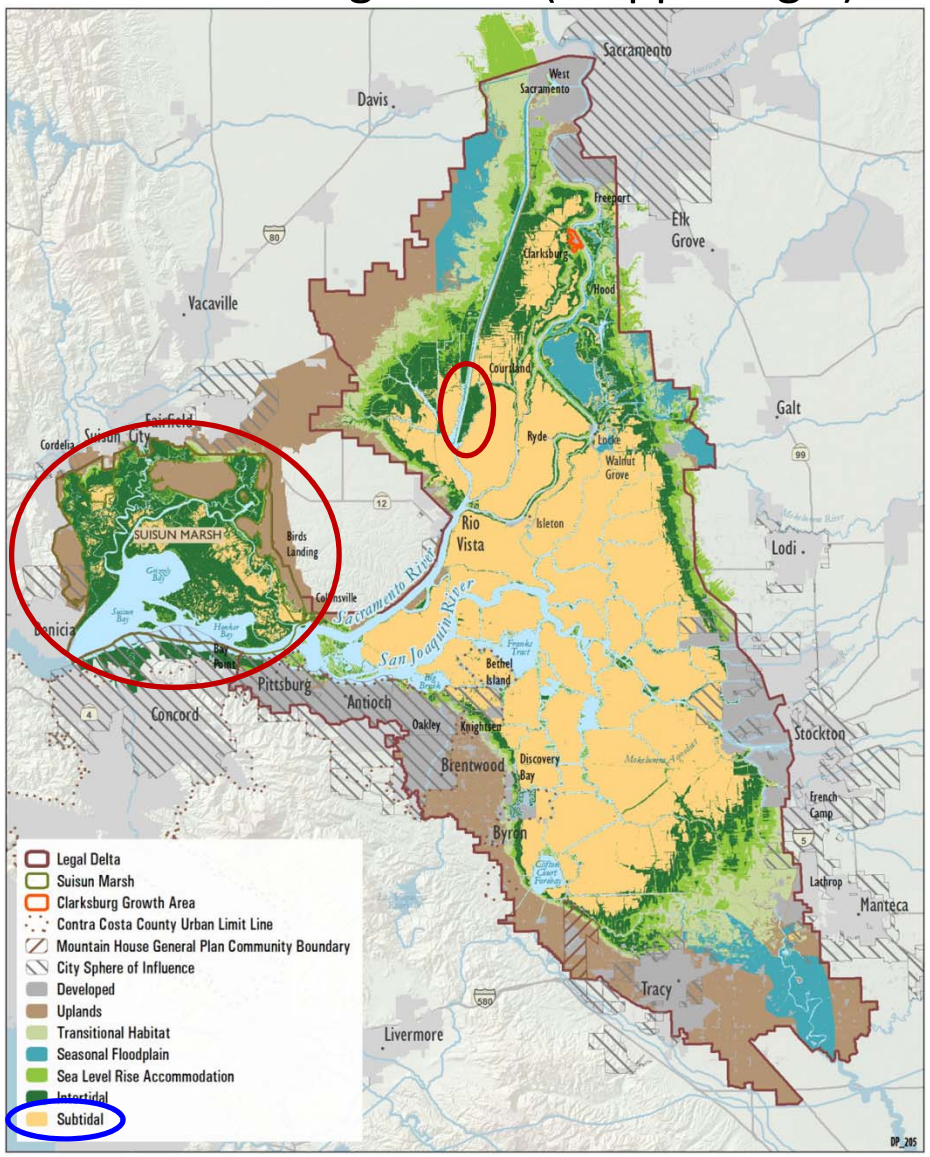




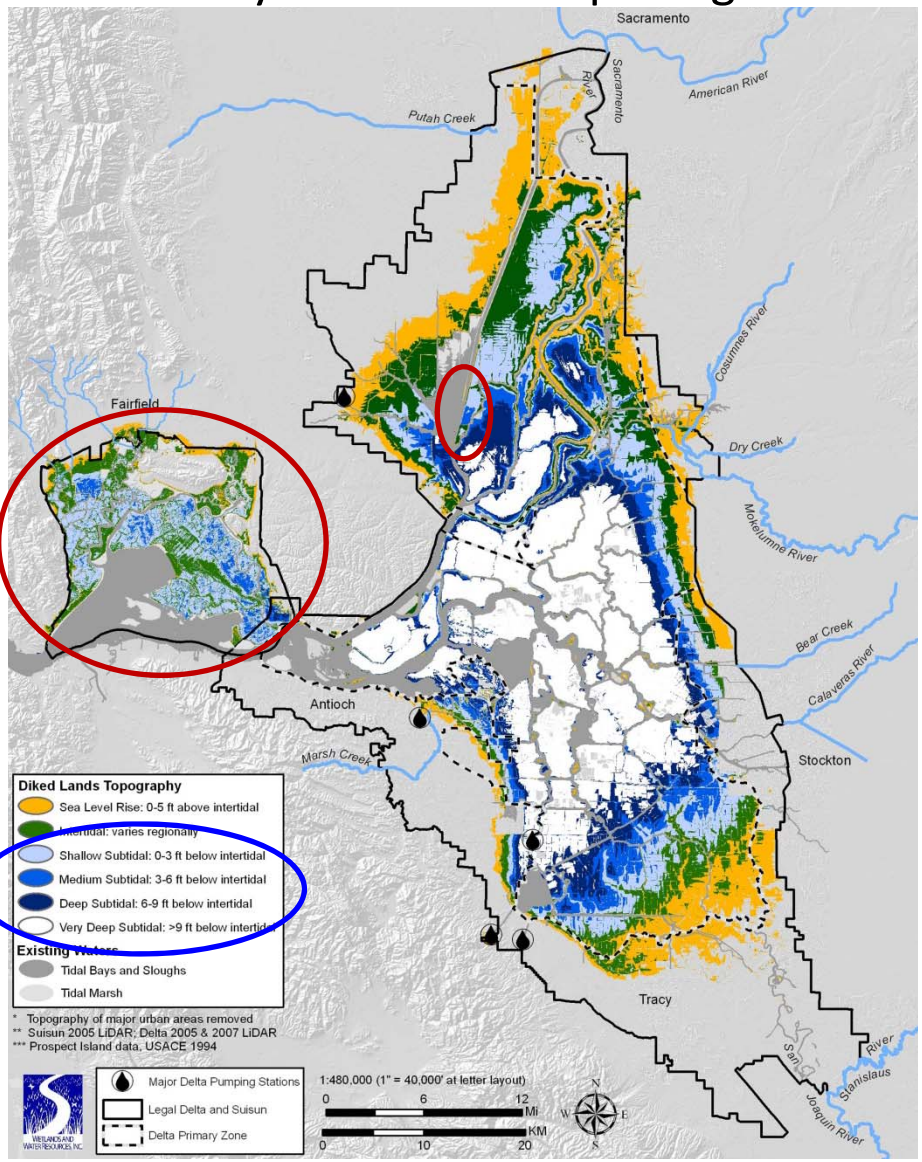
Using Science in the Delta Plan

Topo: Subtidal Merged, Wrong Suisun and Prospect Data

Delta Plan Figure 4-5 (≠ App H Fig 4)



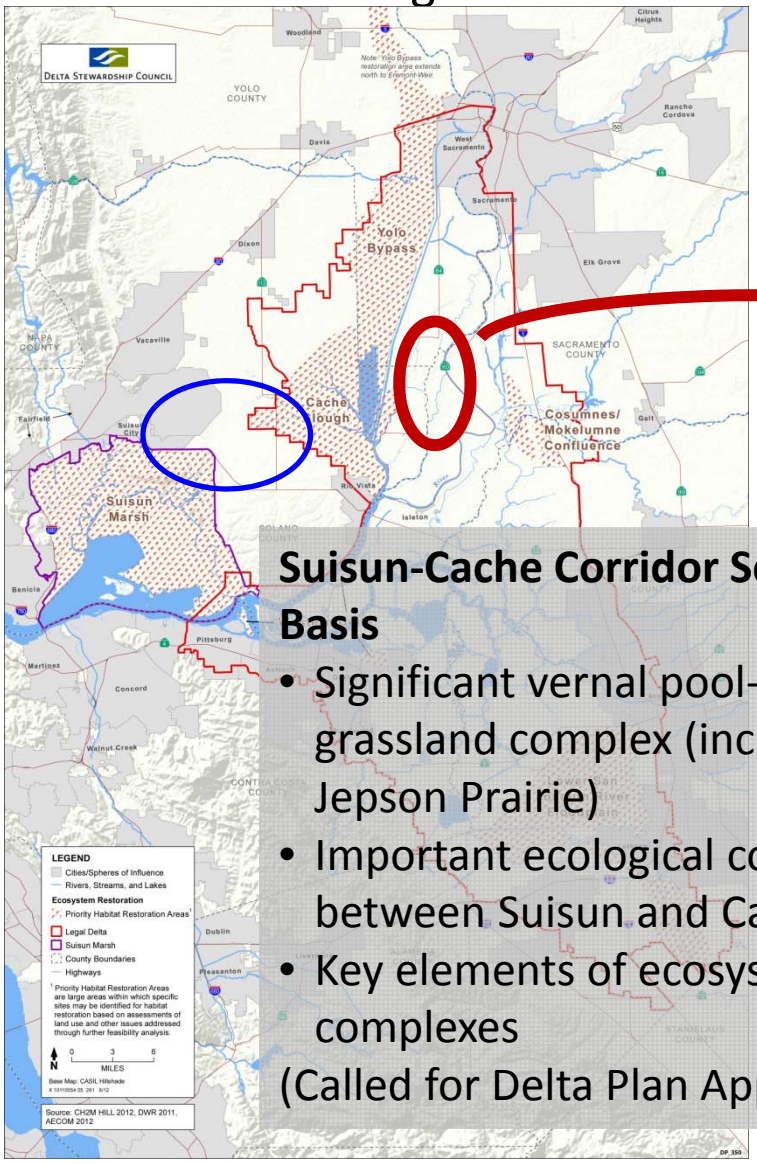
Delta Ecosystem White Paper Figure 4-4



Using Science in the Delta Plan

Suisun-Cache Vernal Pool-Grasslands Corridor, Sutter Island

Delta Plan Figure 4-6



Suisun-Cache Corridor Science Basis

- Significant vernal pool-grassland complex (includes Jepson Prairie)
- Important ecological corridor between Suisun and Cache
- Key elements of ecosystem complexes

(Called for Delta Plan App H)

Delta Ecosystem White Paper Figure 4-4

Sutter Island Science Basis

- In target elevation ranges
- 30-40% of migrating juvenile salmon use Sutter and Steamboat Sloughs
- Migratory route to Cache Slough Complex and future restored Prospect Island

Integrating Science into Project "Approvals"

Getting to Yes: Regulatory and Resource Agency Processes

Regulatory Approvals (*Delta is Sac vs. SF District Corps, CV vs. SFB RWQCB*)

- Permitting agency staff need to know of and apply body of scientific knowledge
- At present, achieved project-by-project
- Delta Plan and Covered Actions will link projects to Delta Science Program
- Permits needed for regional baseline monitoring; need Plan to permit

Crediting under SWP/CVP Biological Opinions/Incidental Take Permit and BDCP

- FAST (Fish Agencies Strategy Team) must recommend for crediting: no formal technical input component; solely elective for individual members to seek input
- Risk of ESA-driven species focus

Suisun Marsh Plan

- Adaptive Management Advisory Team – forming, may or may not meet needs
- No explicit restoration mandate = no approvals needed beyond permits
- Some restoration fulfills mitigation obligations (dredging program, Suisun Marsh Preservation Agreement) and thus existing ESA-based approval mechanisms

***** No regional-scale monitoring plan in place *****


THANK YOU !
Browns Island Oct 2003
Photo: S. Siegel

Integrating Science into Project Planning

Technical Review: TAC or Jibe?

Fish Restoration Program Agreement (FRPA) Projects

- Collaborative input bringing science into early planning and design
  - Project planning team outreach to range of experts
  - Delta: Cache Slough Complex Habitat Restoration Technical Team
  - Suisun: potentially, Suisun Marsh Plan Adaptive Management Advisory Team, if it comes into viable existence
- Utilizing DRERIP evaluation process for intensive technical review

Other Projects

- **Cache Technical Team:** being used as coordination and brief input forum for Lower Yolo, Liberty, Calhoun Cut
- **Dutch Slough:** project-specific TAC
- **Putah Creek Realignment Project:** interagency project team, possible DRERIP
- **McCormack-Williamson:** project-specific TAC in past incarnation
- **Overlook Club Restoration Project:** interagency project team, DRERIP
- **Tule Red Restoration Project:** too early to be established
- **Hill Slough Restoration Project:** none

Past and Present Relevant Activities

Developing Restoration Science and Science Evaluation Frameworks

- **DRERIP:** Co-Lead Scientist (2002-2008)
- **Suisun Marsh Plan:** Science Advisor, Conceptual Models Coordinator, Lead Author for Tidal Marsh Model (2005-2010)
- **Delta Vision:** Ecosystem Workgroup Technical Lead (2007-2008)
- **Integrated Regional Wetland Monitoring Pilot Project:** Lead PI (2002-present)
- **Suisun Low DO/MeHg:** Lead PI (2007-2011)
- **Tidal Marsh Restoration Guidelines:** TAC Member (2002-2004)
- **EPA Climate-Ready Estuaries, San Francisco Estuary:** Panel Member (2008-2011)
- **Baylands Habitat Goals Project:** Hydrogeomorphic Advisory Team Member (1996-1999)
- **Subtidal Habitat Goals Project:** TAC member (2006-2010)

Past and Present Relevant Activities

Applying Science to Projects and Planning

Applying Science to Regional Restoration Planning

- **Fish Restoration Program Agreement:** Chief Project Consultant (ongoing)
- **Cache Slough Conservation Assessment:** Coordinator, Lead Author (ongoing)
- **Suisun Marsh Conservation Assessment:** Lead Author (ongoing)
- **Delta Plan:** Ecosystem White Paper Lead Author (2010)
- **BDCP Conservation Measures DRERIP Evaluation Team:** Member (2009)

Applying Science to Restoration Projects

- **Prospect Island Restoration Project:** Lead Design (ongoing)
- **Lower Yolo Restoration Project:** Design (2009-2011)
- **Dutch Slough Adaptive Management Work Group:** Member (2002-2006)
- **Putah Creek Realignment Project:** Lead Design (early stage)
- **Blacklock Restoration Project:** Lead Design (built 2006)
- **Overlook Club Restoration Project:** Lead Design (ongoing)
- **Montezuma Wetlands Project:** Lead Design (1989-1996)