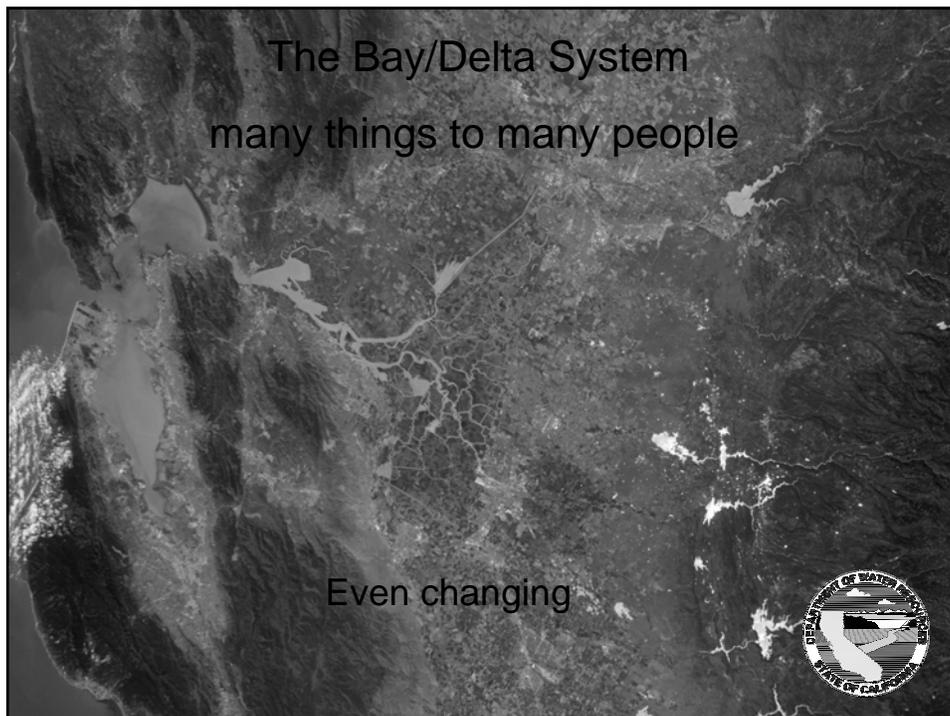


**Alternative Delta Conveyance as part
of a comprehensive
Bay-Delta Conservation Plan**

Delta Vision Committee
July 31, 2007

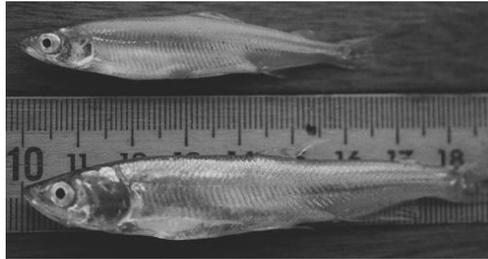
Jerry Johns
Deputy Director
Department of Water Resources



Threats to Delta Uses

- Seismic issues
- Sea Level rise
- Subsidence
- Random levee failure
- Drinking water quality concerns
- Fishery concerns and water supply reliability - focus of this presentation

Delta smelt



Longfin smelt

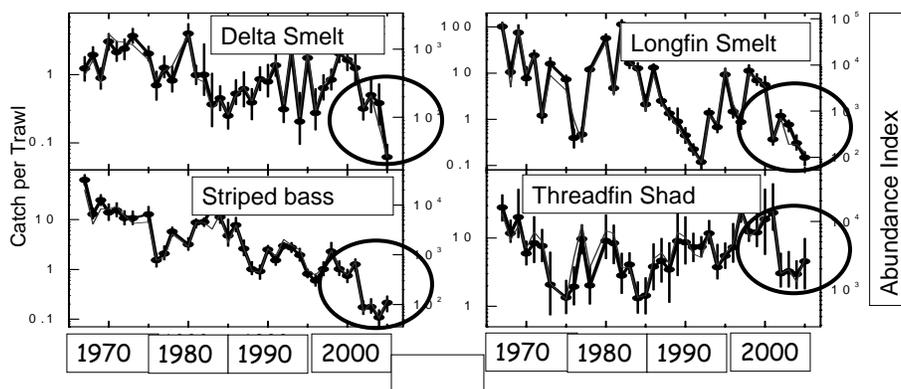


Threadfin shad

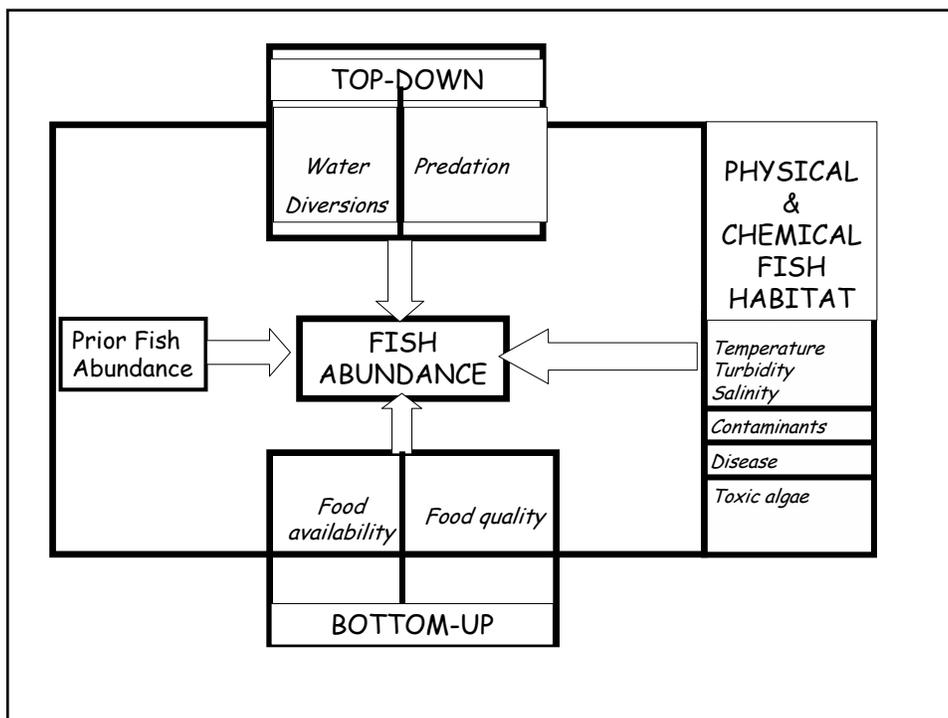


Striped bass

Exhibit D The Pelagic Organism Decline



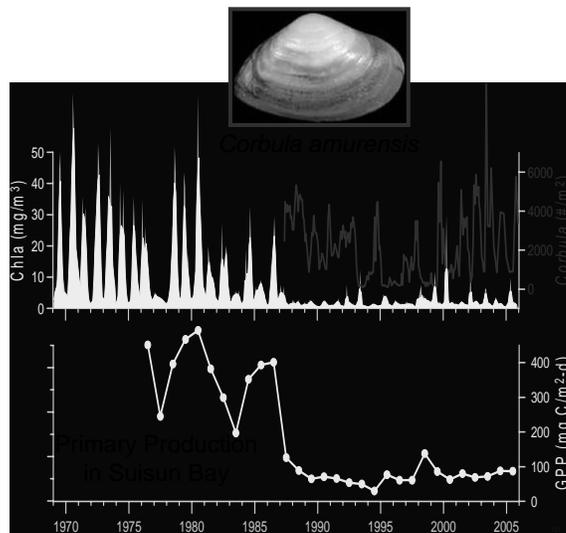
Source: Kimmerer and Nobriga (2005); Sommer et al. (In Press, Fisheries 32(6))



Invasive species

Phytoplankton Primary Production

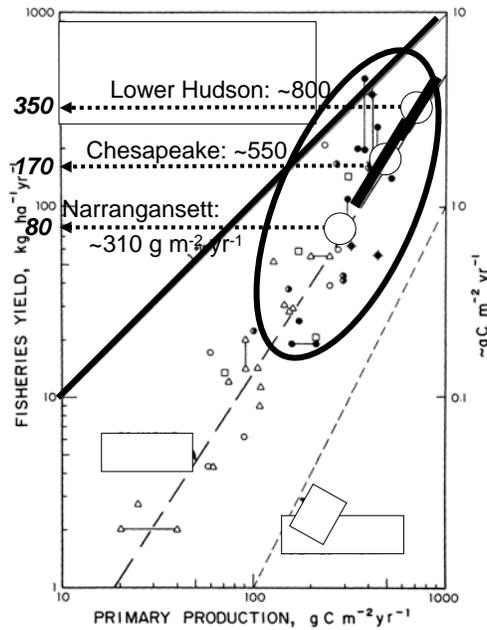
... CRASHED in
Suisun Bay right
after the 1987
Corbula invasion



Source: J. Cloern (USGS): Oral presentation at the 2007 Annual IEP Workshop, Asilomar, CA

Phytoplankton Primary Production

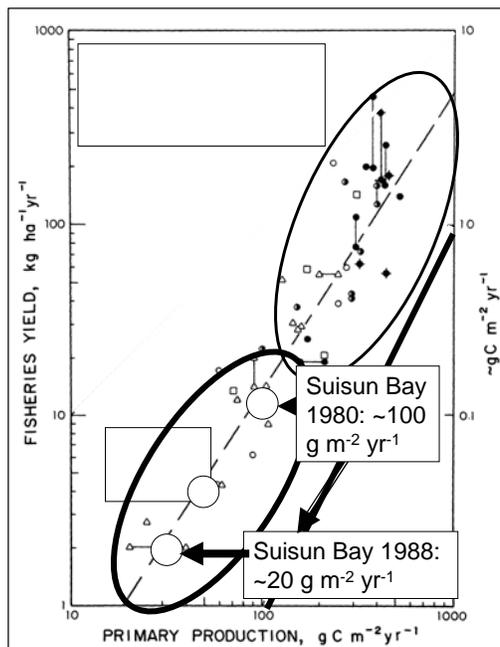
... in Estuaries is typically very HIGH



Source: S. Nixon, *Limnology and Oceanography* 1988

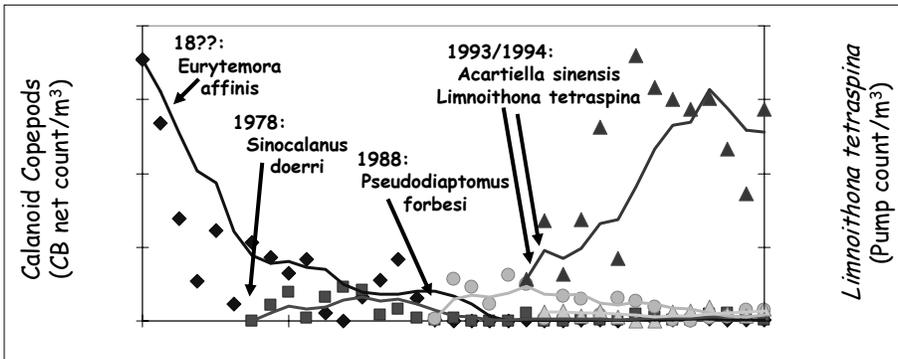
Phytoplankton Primary Production

... CRASHED in Suisun Bay right after the *Corbula* invasion



Sources: J. Cloern (USGS) & A. Jassby (UCD): Oral presentations at the 2007 Annual IEP Workshop, Asilomar, CA

Zooplankton Species Invade in "Waves"

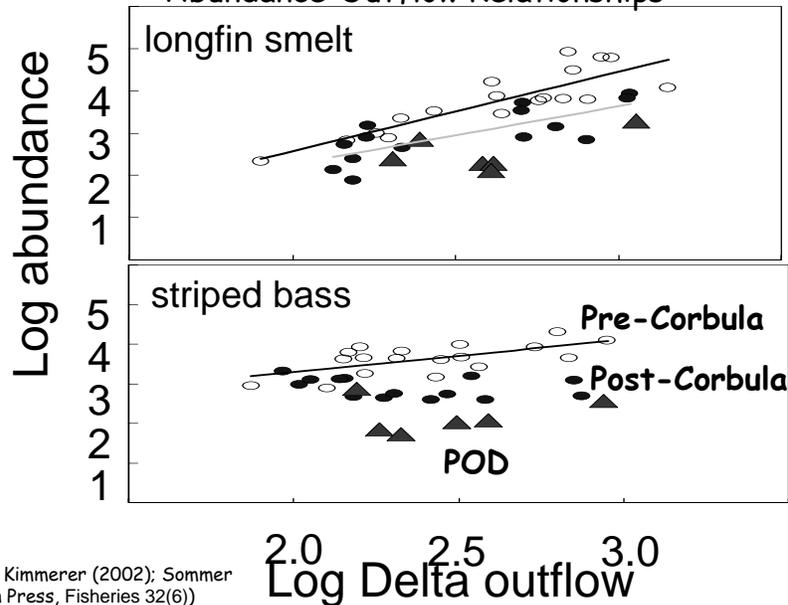


Adult copepods at Chippis Island, yearly average densities with 5-year moving average lines

Source: A. Mueller-Solger, DWR; IEP data



POD Has Further Shifted Abundance-Outflow Relationships



Source: Kimmerer (2002); Sommer et al. (In Press, Fisheries 32(6))

Toxics

Exhibit J Synopsis of Toxicity Test Findings Four Dates Feb through April 2007

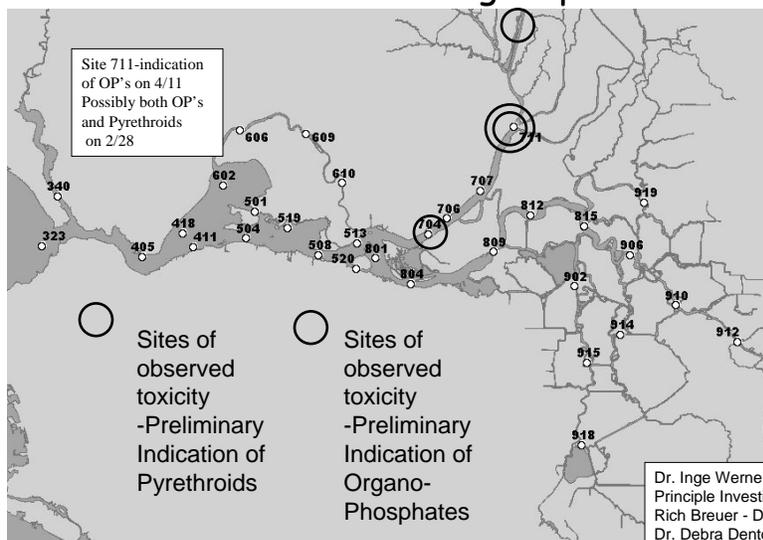
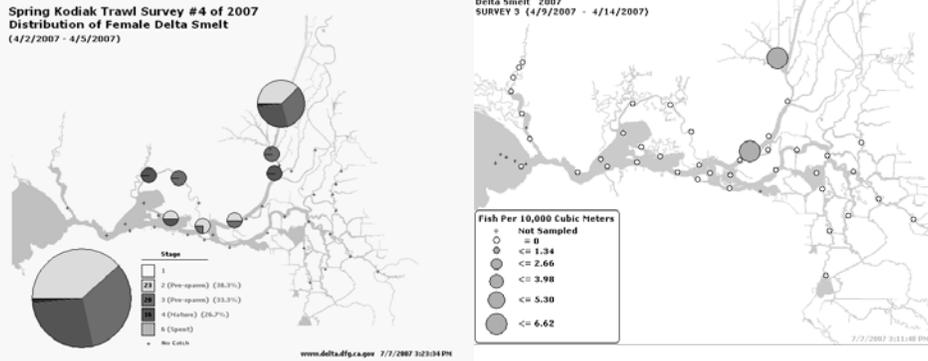
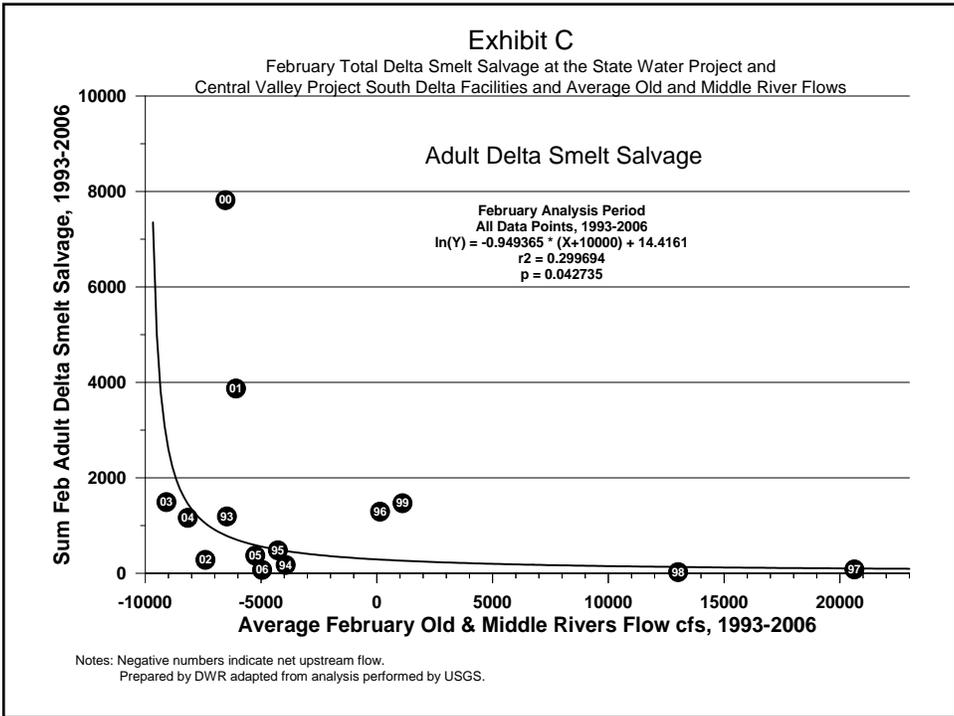
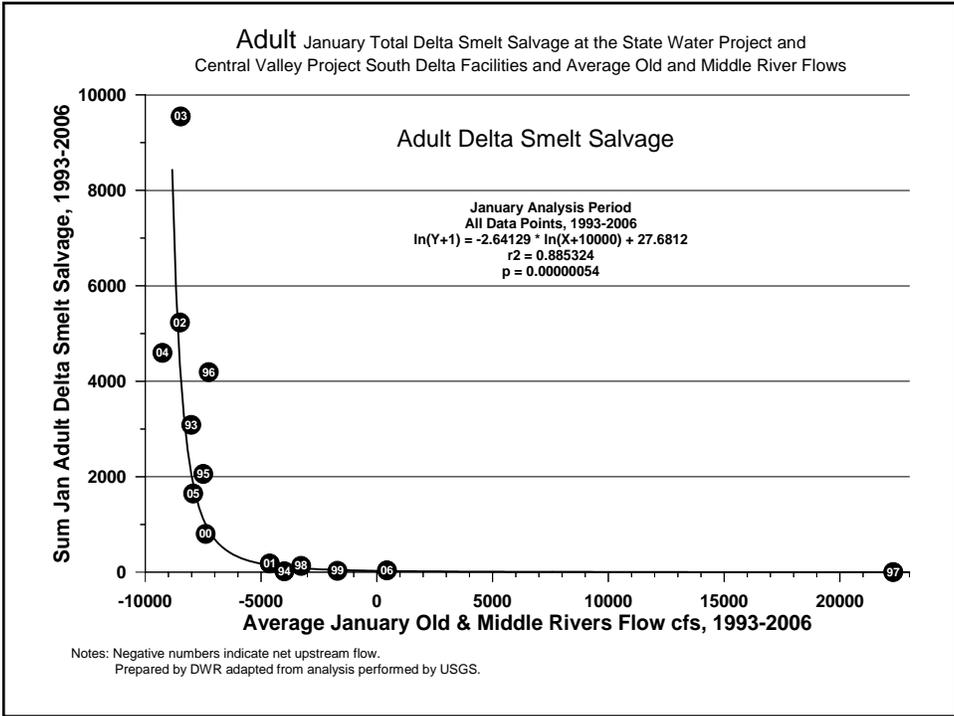


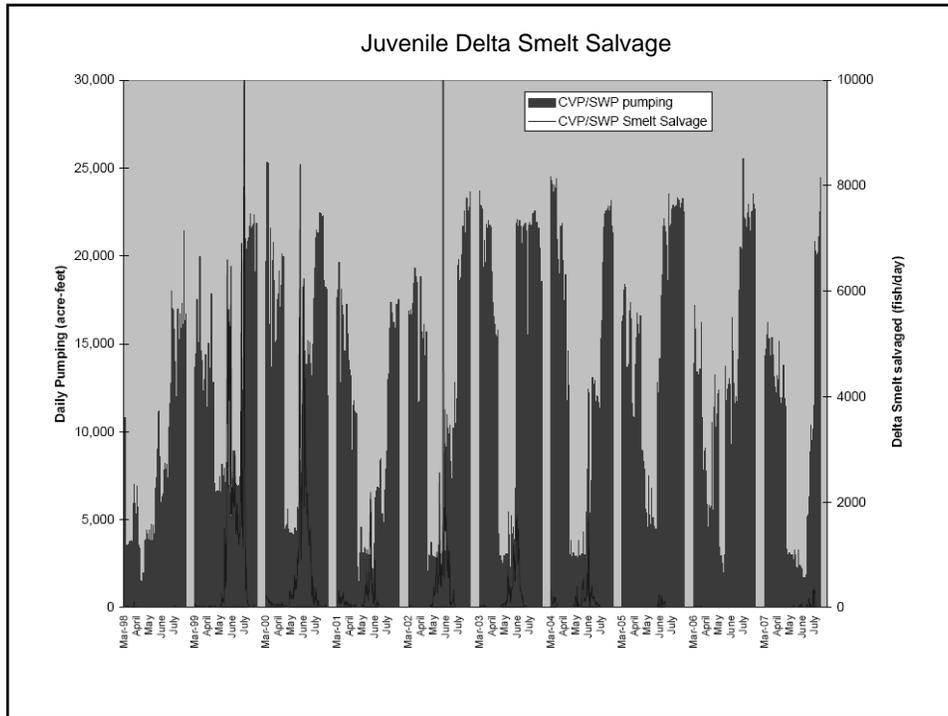
EXHIBIT K
Distribution of Adult and Young
Smelt in April 2007
In areas with Toxicity Events



2007 Early Adult Delta Smelt abundance a little higher than 2006
2007 Juvenile abundance about 1/10 of 2006 -- Toxicity ?

Water Project Operations



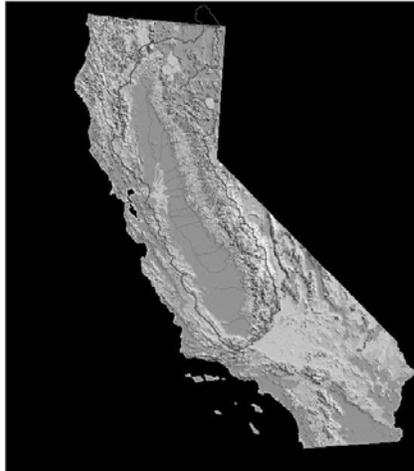


The Bay/Delta System

- Biologically Complex
 - Changing
 - Invasive species - Prevent, adapt and create new habitat opportunities
 - Toxics - Address aggressively at source
 - Water Project - Location of operations
-
- Need a Holistic Approach
 - Bay/Delta Conservation Plan (BDCP)

What's the Purpose of the BDCP?

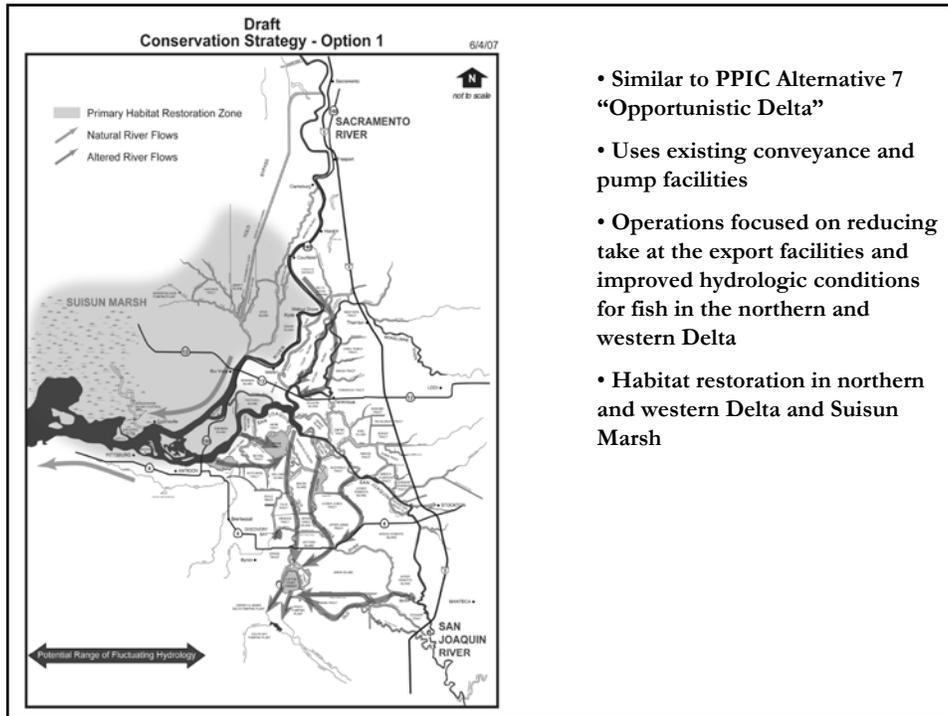
- Provides a plan to restore and protect water supply, water quality, and ecosystem health within a stable regulatory framework.
- FESA/CESA Compliance
- Long-term Incidental Take Permits for water project operations
- Assurance that future ESA listings will not result in additional environmental regulation and mitigation.



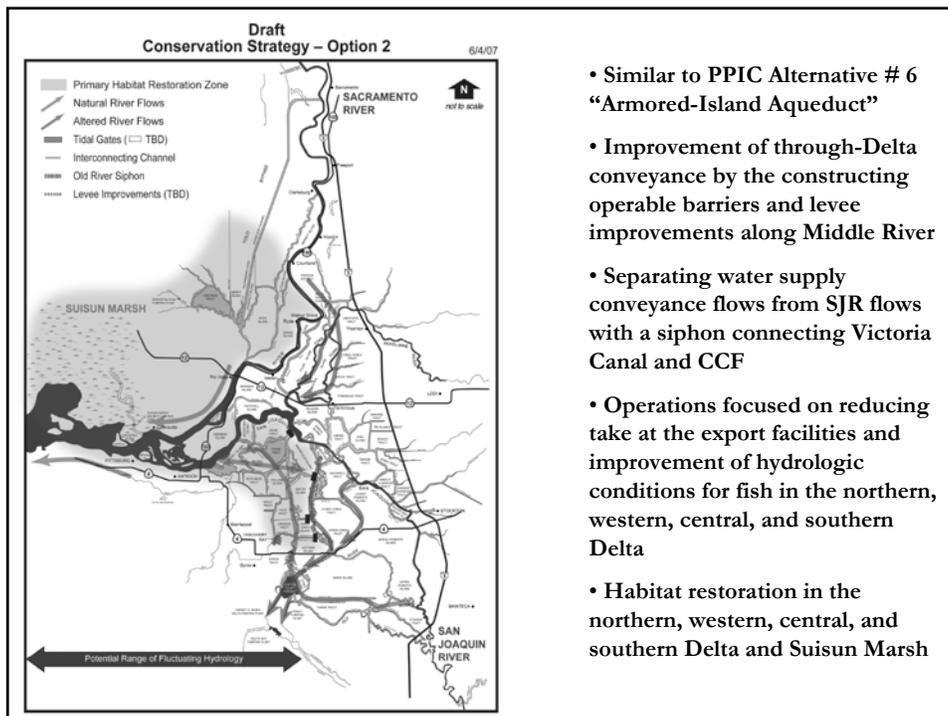
Early Question

- What is the one conservation measure that can improve Delta fisheries in the future?

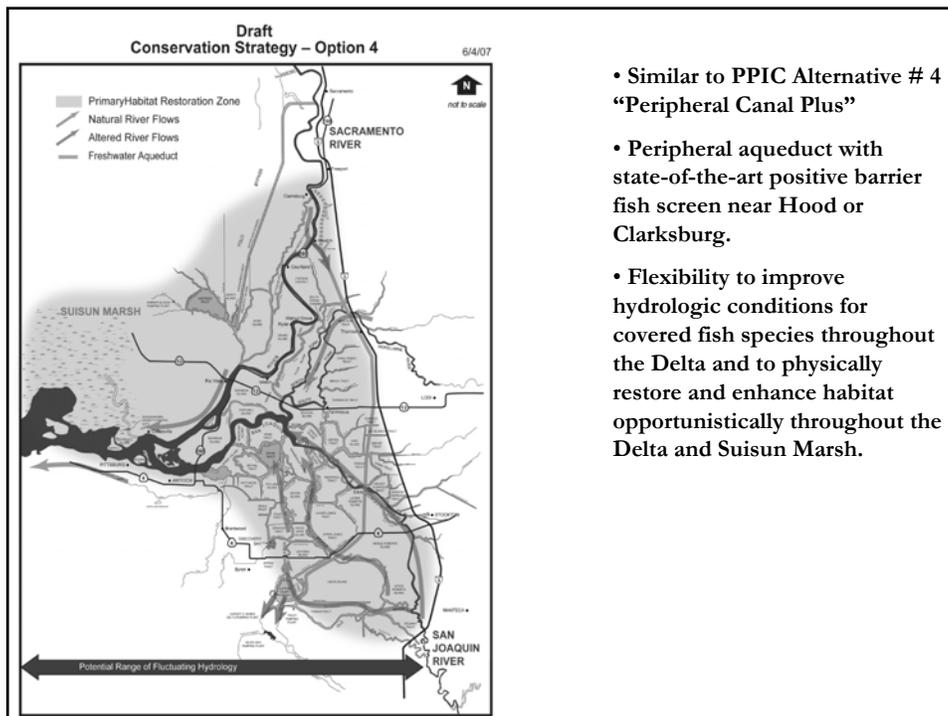
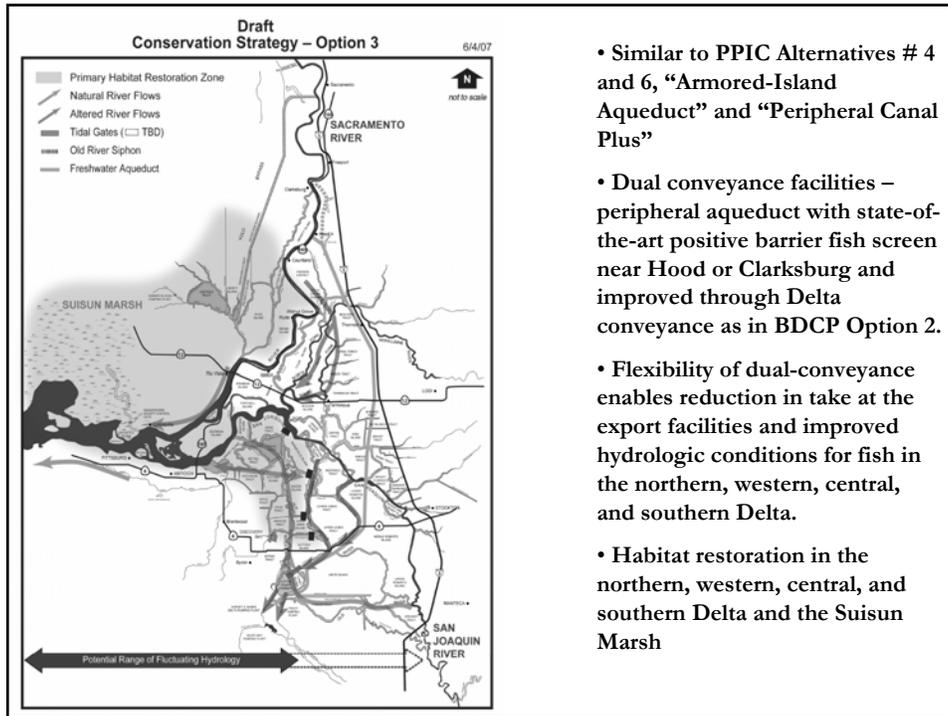
- “Change in Delta Water Conveyance Systems”
 - Current System Concept Developed in 1920’s
 - Designed with 1950-60’s Technology and Science
 - Location of facilities - not so much the operation
 - Flow alteration in the Delta
 - Fish Salvage facilities
 - Separate the fish from the water early



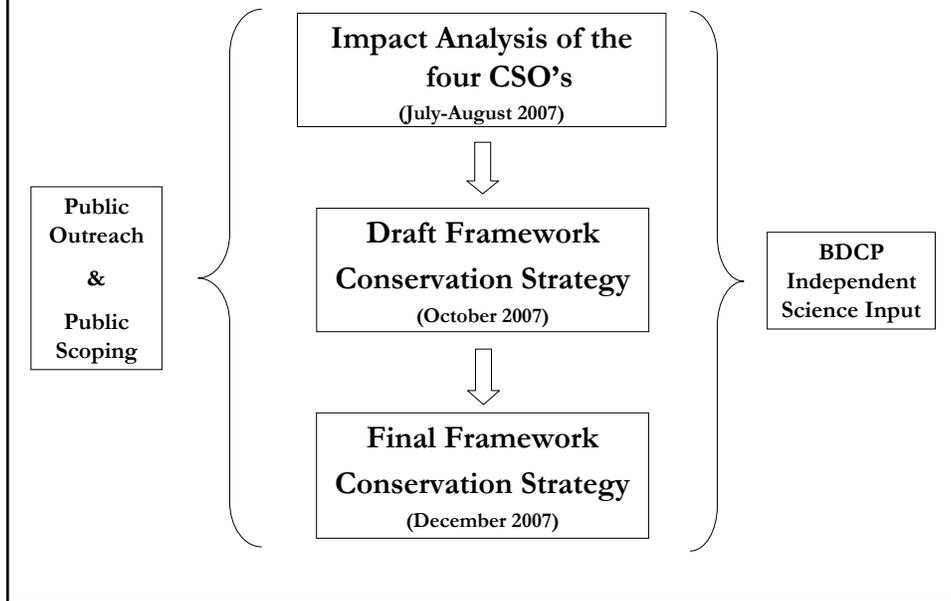
- Similar to PPIC Alternative 7 “Opportunistic Delta”
- Uses existing conveyance and pump facilities
- Operations focused on reducing take at the export facilities and improved hydrologic conditions for fish in the northern and western Delta
- Habitat restoration in northern and western Delta and Suisun Marsh



- Similar to PPIC Alternative # 6 “Armored-Island Aqueduct”
- Improvement of through-Delta conveyance by the constructing operable barriers and levee improvements along Middle River
- Separating water supply conveyance flows from SJR flows with a siphon connecting Victoria Canal and CCF
- Operations focused on reducing take at the export facilities and improvement of hydrologic conditions for fish in the northern, western, central, and southern Delta
- Habitat restoration in the northern, western, central, and southern Delta and Suisun Marsh



What's Next?



Questions?

