

Outline

Central Delta

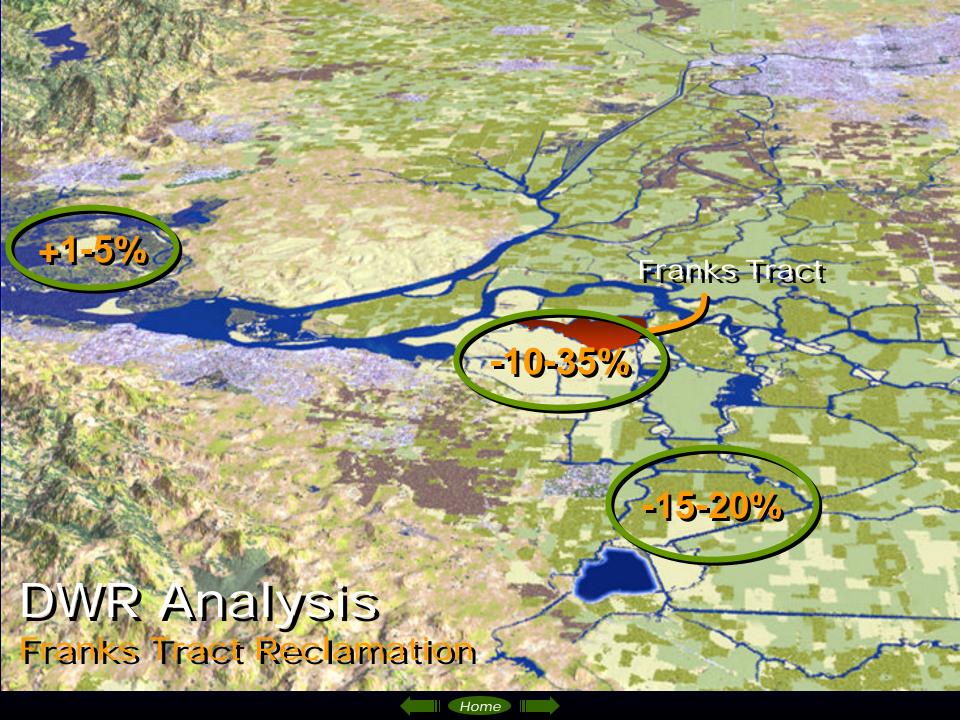
Motivation - Modeling of Franks Tract Conceptual Model - "Pool of fresh water" Field Data - Salt flux (How it works) Management Scenarios

South Delta

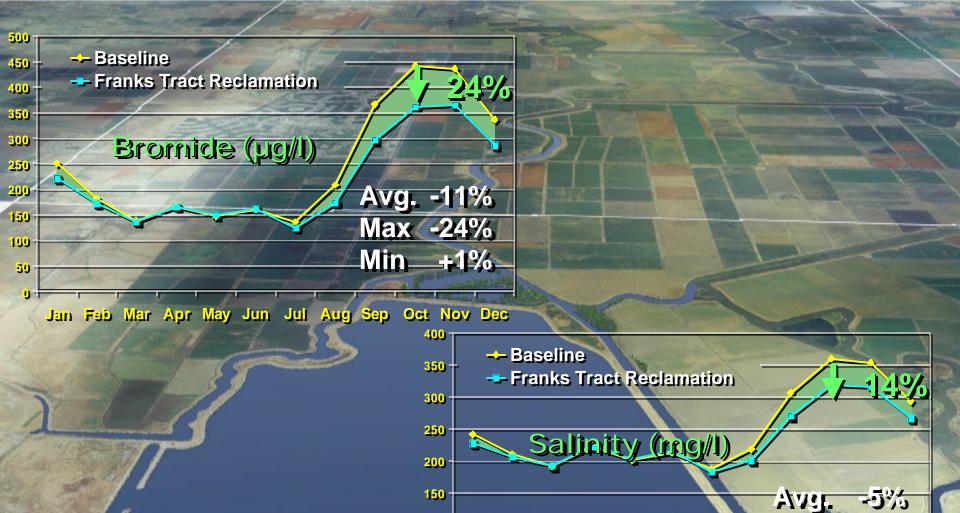
Reducing Salvage through changes in withdrawal timing

- Control the zone of influence?
- Take water during day?
- Bypass flows?









MWD Analysis

SWP Pumping Plant

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

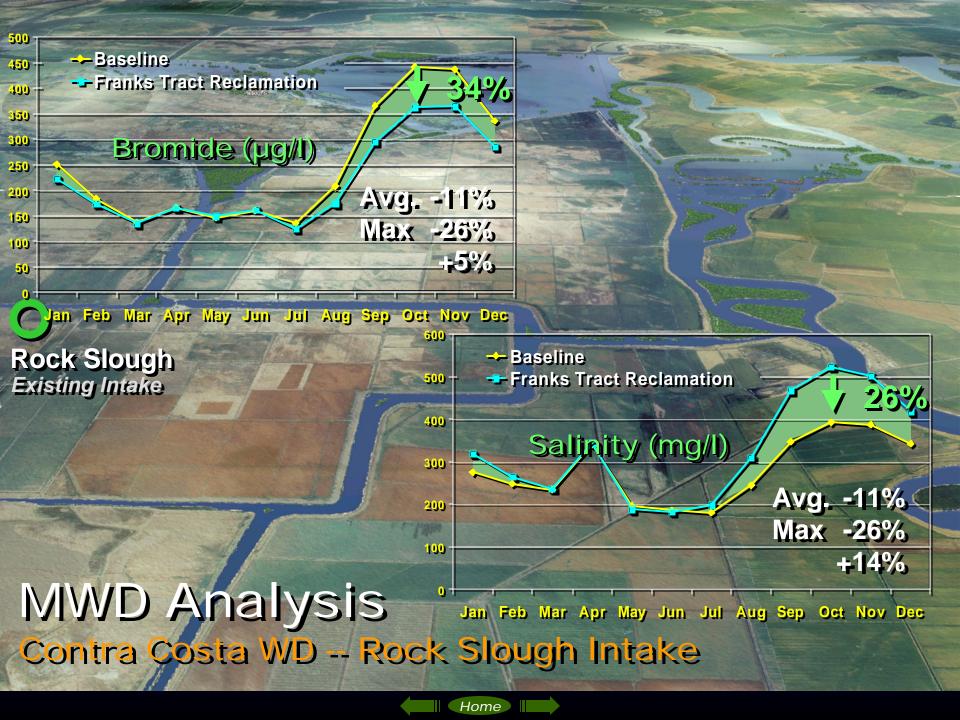
Max -14%

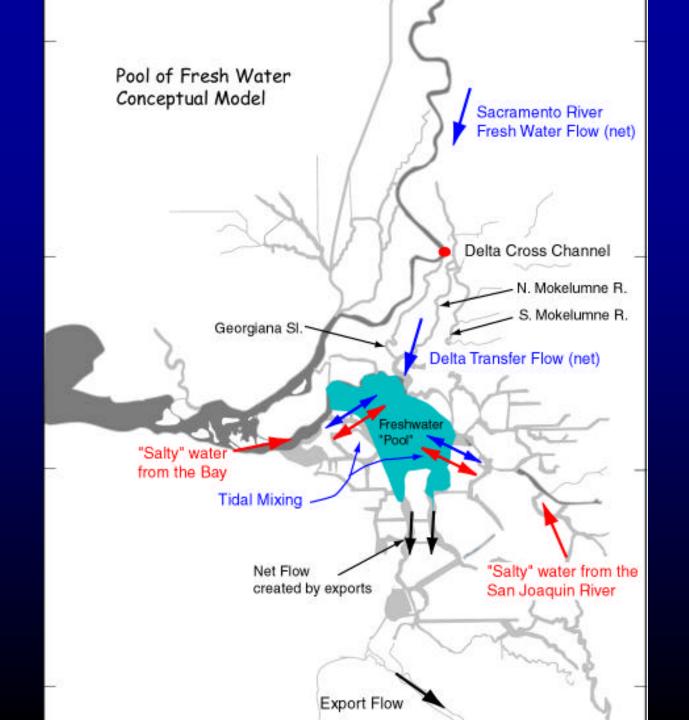
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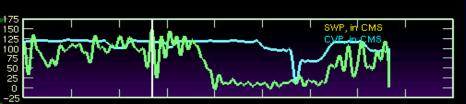
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P.I. -- Jon Burau Software --John Donovan Production --Jay Cuetara

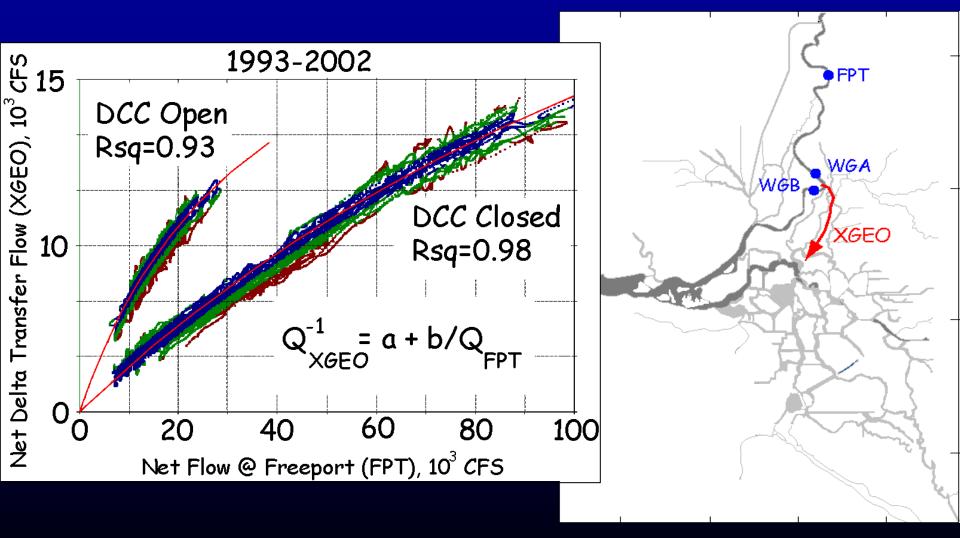
Sep. 23, 2001 at 09:30 PM



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Pumps do not "suck" water from North Delta

Delta Transfer flow is "mostly" a function of Sac river flows

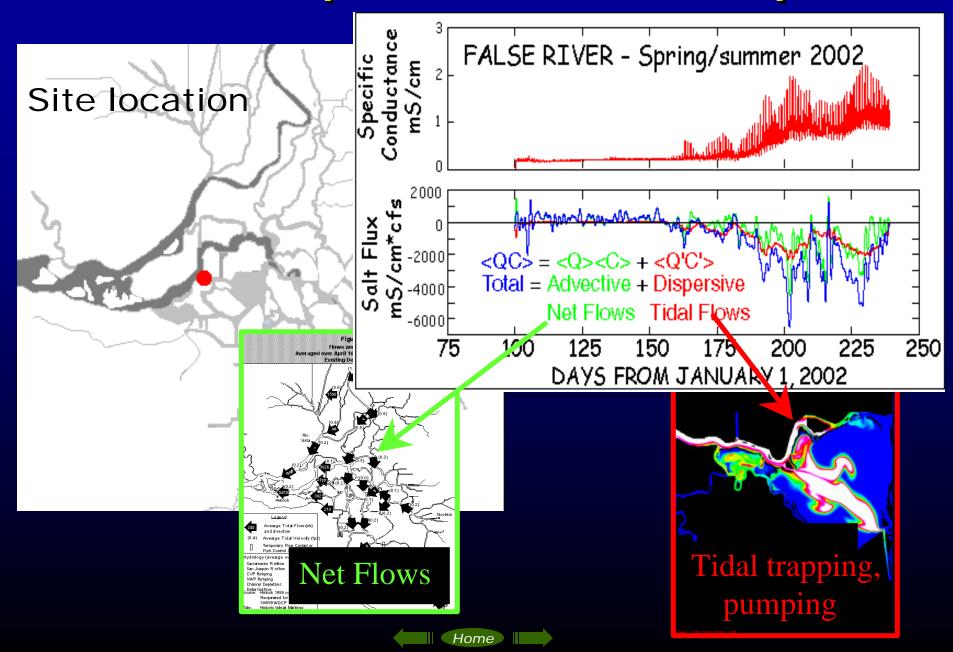


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Modes of Transport - Salt Flux Decomposition





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USGS Analysis

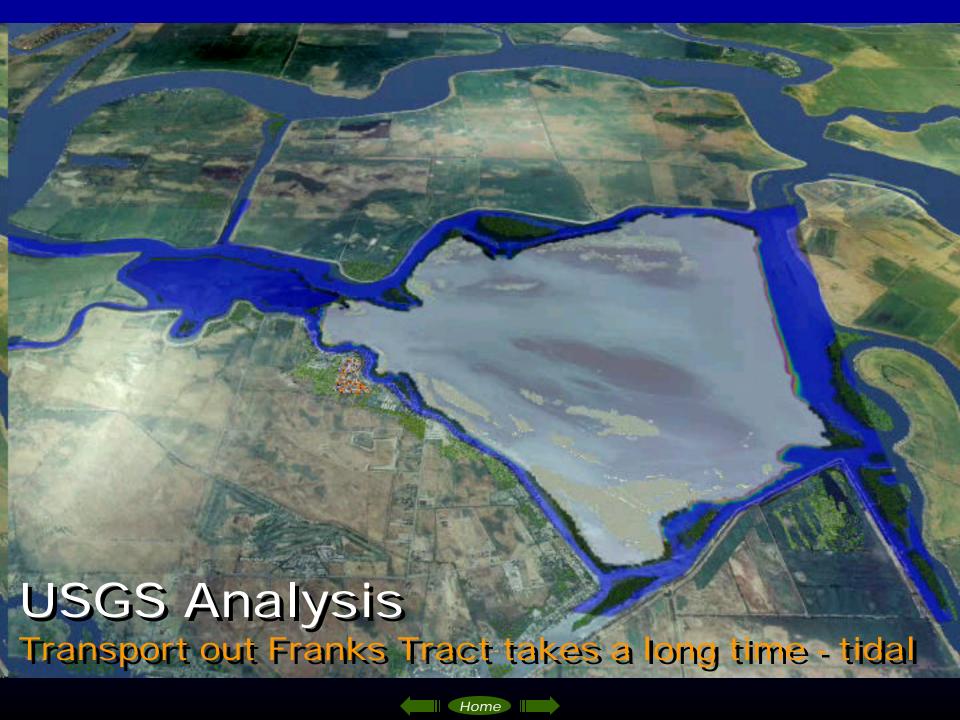
Seawater Transport into Franks Tract



Numerous levee breaches (nozzles) in Franks Tract







Concepts/Scenarios

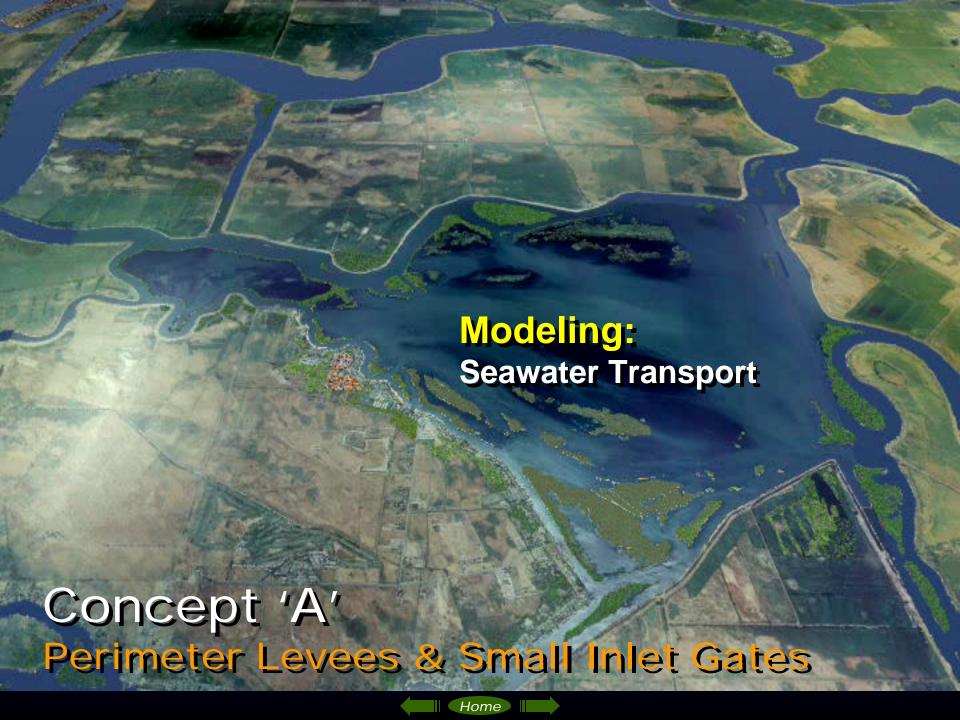
- Passive
 - A) Enclose Franks Tract
 - **B) Repair North & East levees**
- Active
 - C) Tide gate: West-end of Little Franks Tract

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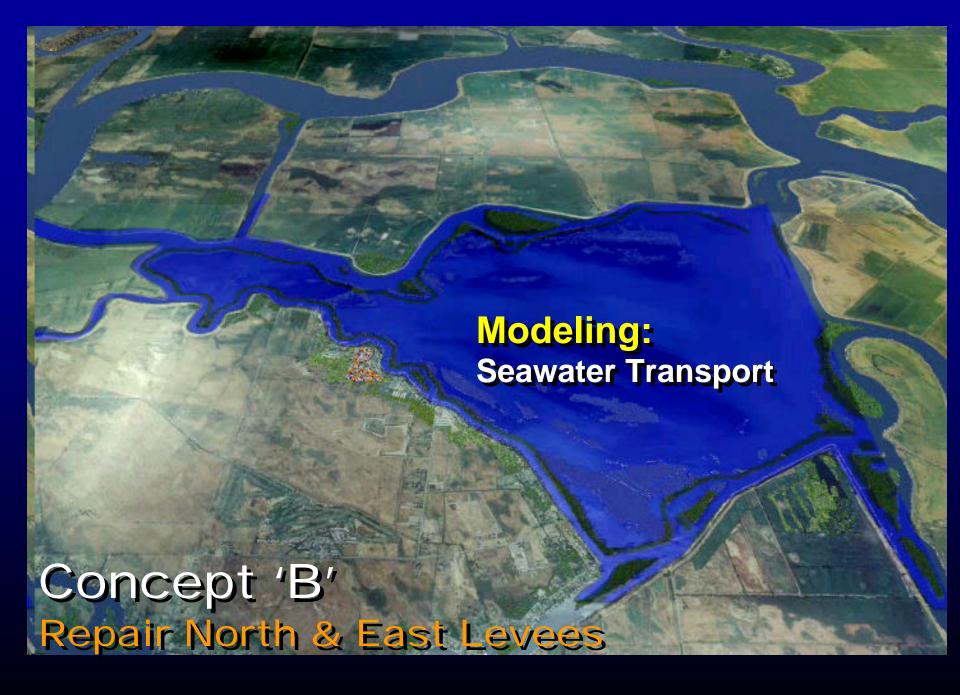
D) Tide gate: False River East-Side

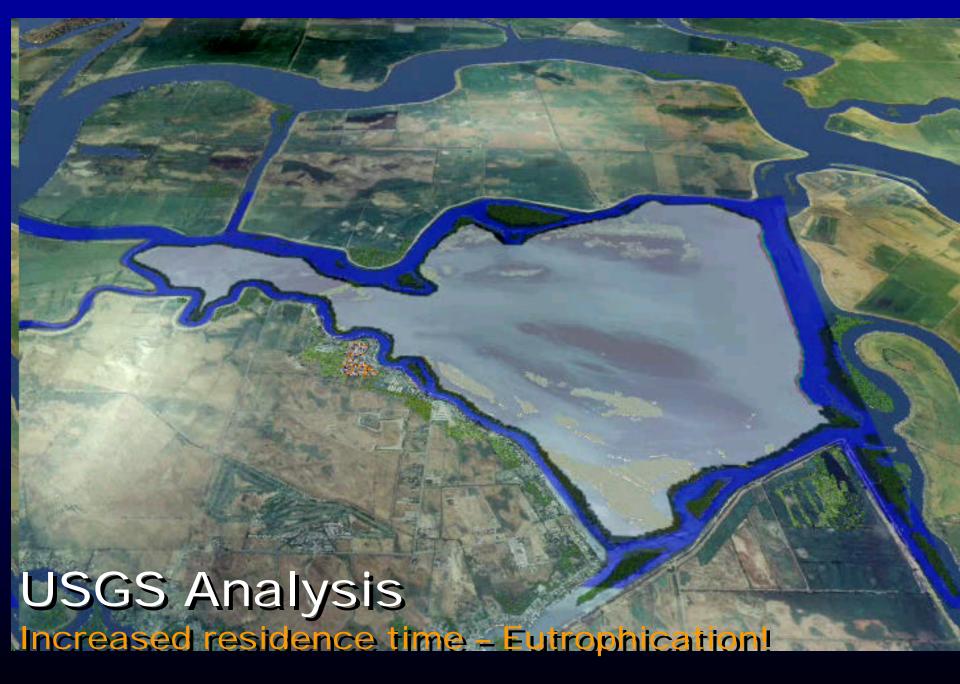






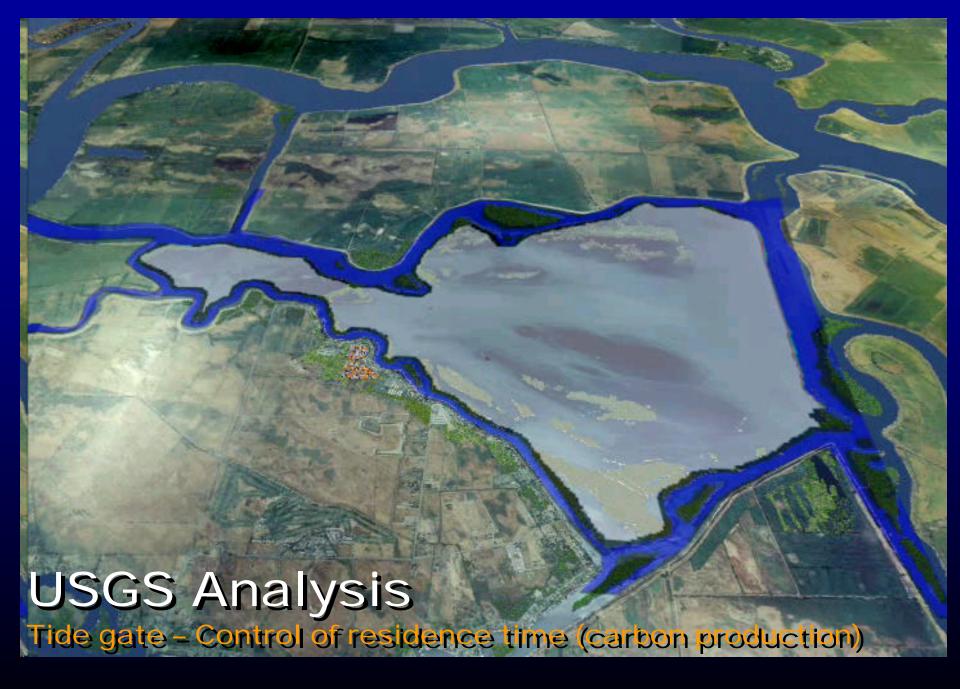








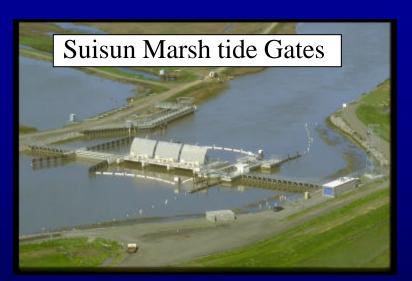




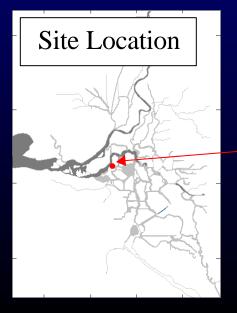


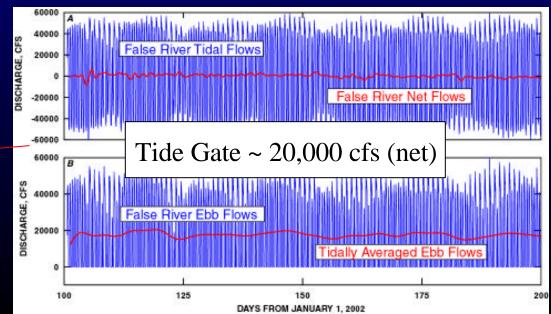


Power of Tide Gates Working in synchrony with Natural Processes









South Delta Reducing salvage through Clifton Court Gate Operations





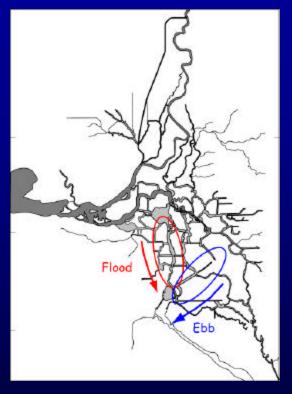
The South Delta in NOT a dead end slough Strongly Tidal!



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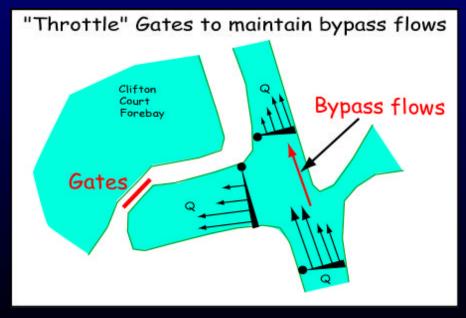
Three possible operations that could reduce salvage at SWP

(1) Control the Zone of Influence?



(2) Take water during day?

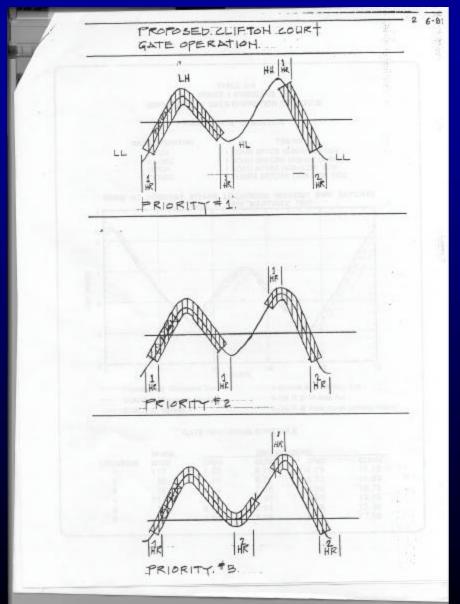
(3) Bypass Flows?

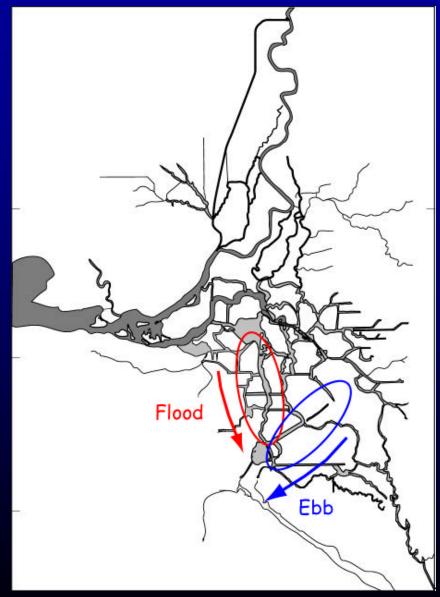




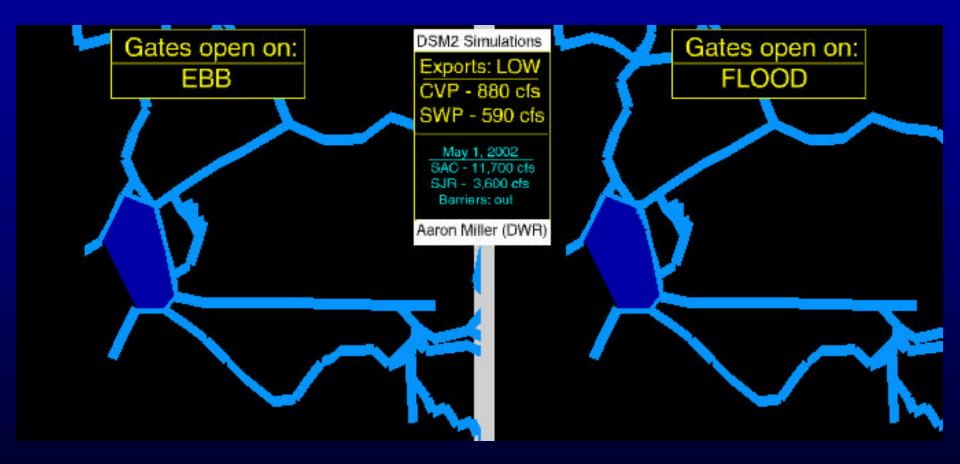
Can we alter the "zone of influence" by biasing gateops to a particular tidal phase (end of ebb vs end of flood)?

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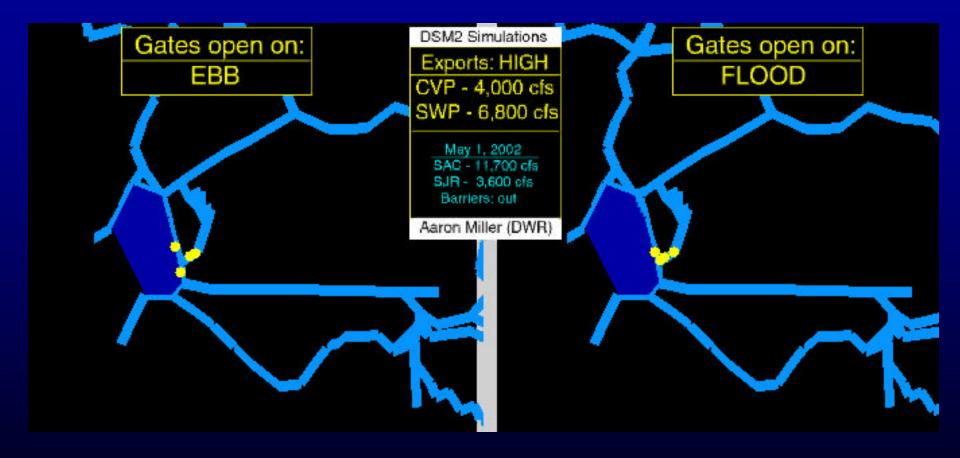


Zone of Influence of a single gate opening Low export rate – 1,470 cfs

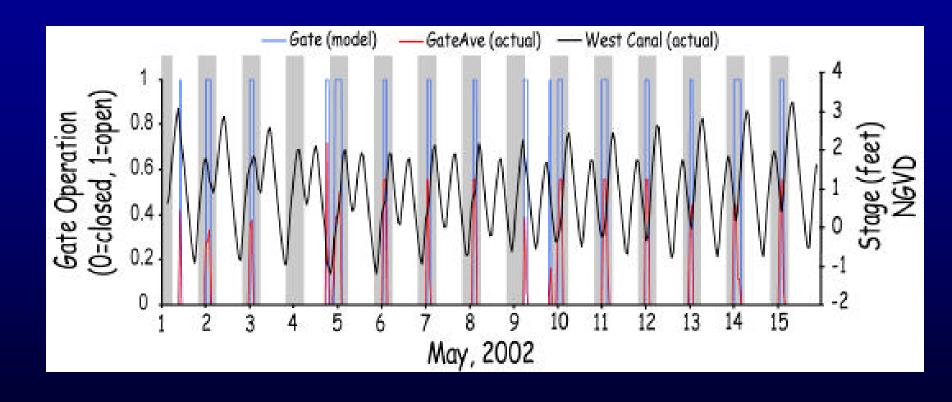




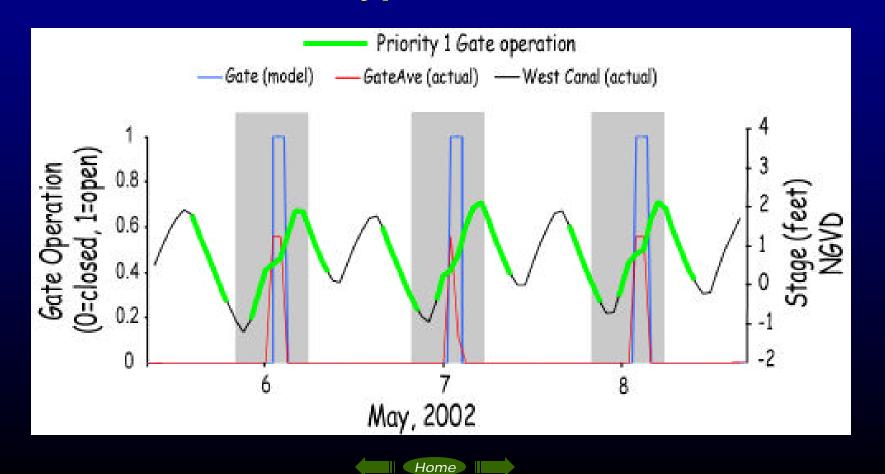
Zone of Influence of a single gate opening High export rate – 10,800 cfs



Clifton Court Forebay Gate operation During low SWP pumping – water taken at night



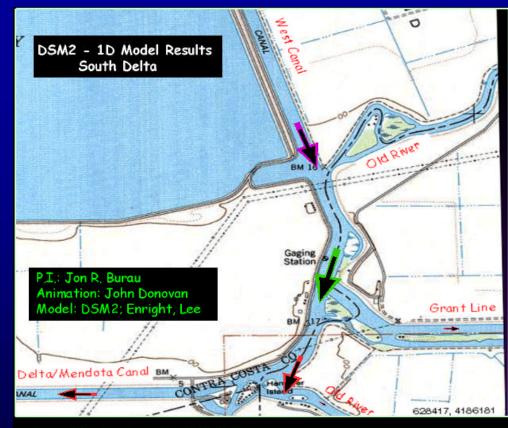
Clifton Court Forebay Gate operation Lots of flexibility during periods of low exports: (1) Take water during day? (2) Lower withdrawals over longer periods - Bypass flows



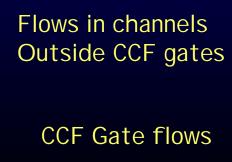
Bypass Flows are possible - even at fairly high export rates

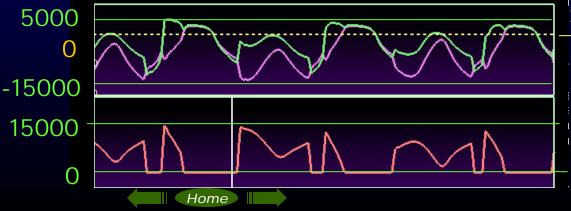
SWP pumping: 5,000cfs CVP pumping: 4,000 cfs Combined: 9,000 cfs

Model results courtesy of Enright and Lee, DWR



Apr. 10, 2000 at 09:55 PM





South

North

Thanks to:

Dave Osti – Franks Tract Graphics

Aaron Miller, Chris Enright – DSM2 modeling

Field Crew at USGS

