Evaluating Effects of the Delta Corridors Plan on South Delta and Export Salinity (EC)

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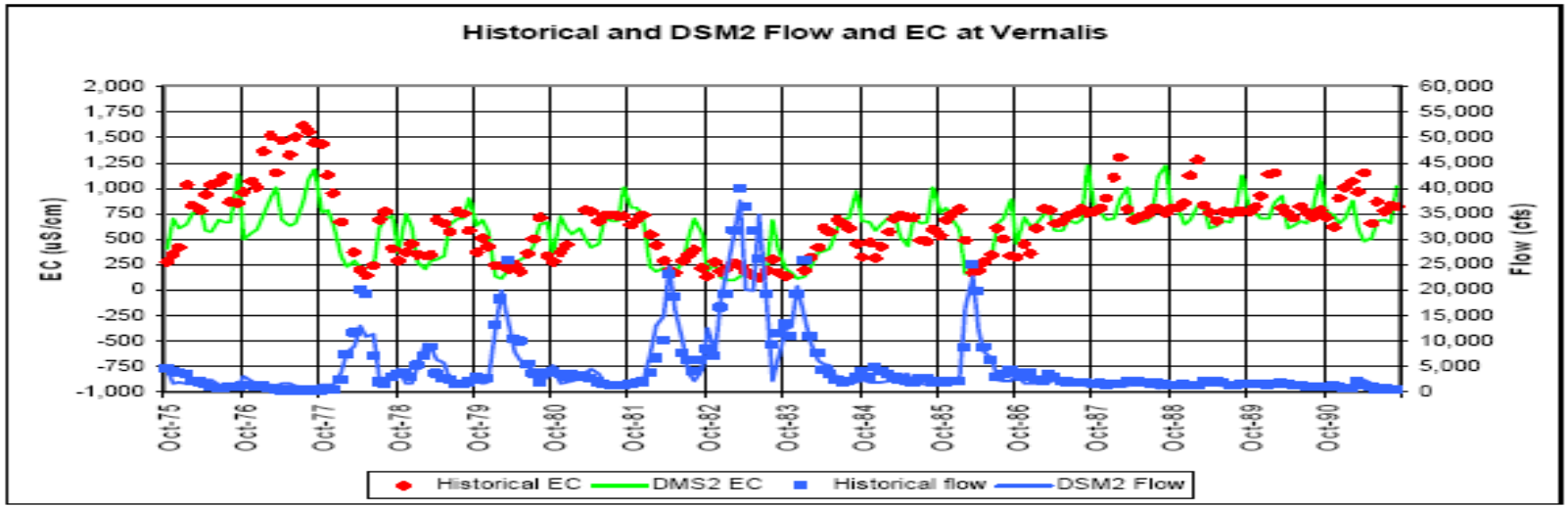
Flow and Salinity Relationships

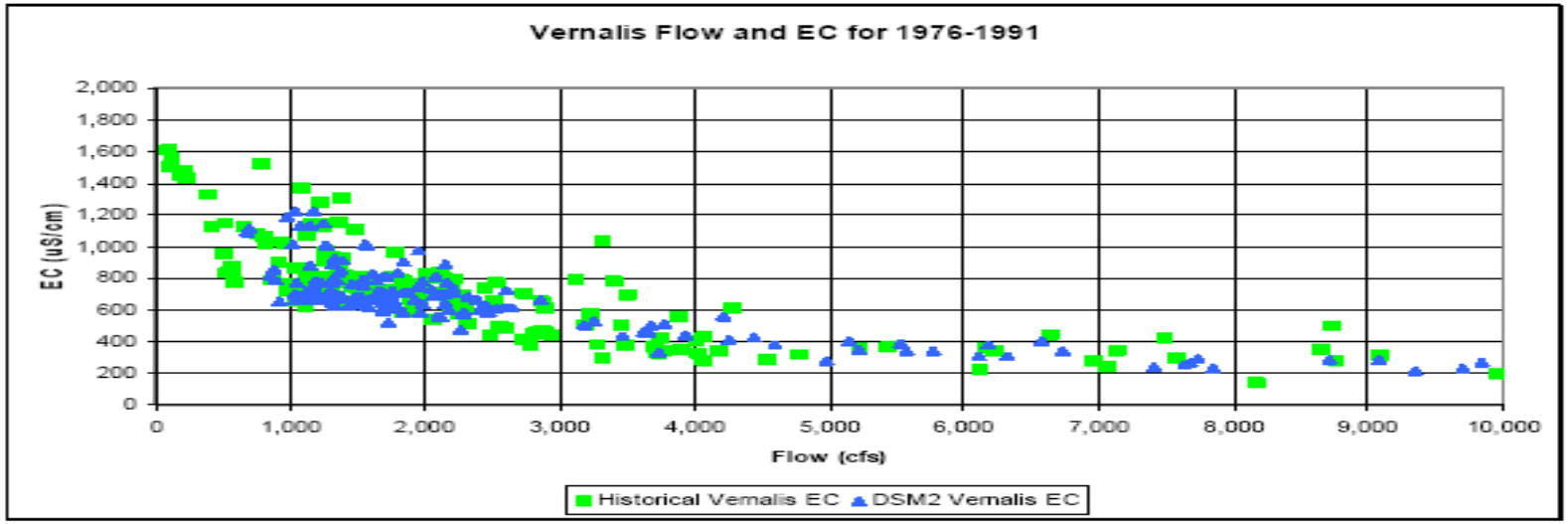
- Load (tons/day) = 0.00175*flow(cfs)*EC(uS/cm)
- SJR salt load = 500,000 to 1,500,000 tons/year
- Ag diversion/return effect on EC = Upstream EC *flow/(flow-diversion) if all salt returned to river
- Wastewater EC effect = Discharge* (Effluent EC-River EC)/(Discharge + River Flow)

Major Delta Salinity Factors

- Sacramento River EC (200 uS/cm)
- SJR EC
- CVP and SWP Exports
- Tidal flows and tidal flow splits
- Agricultural Drainage flows and EC
- Wastewater flows and EC
- Delta outflow and seawater intrusion

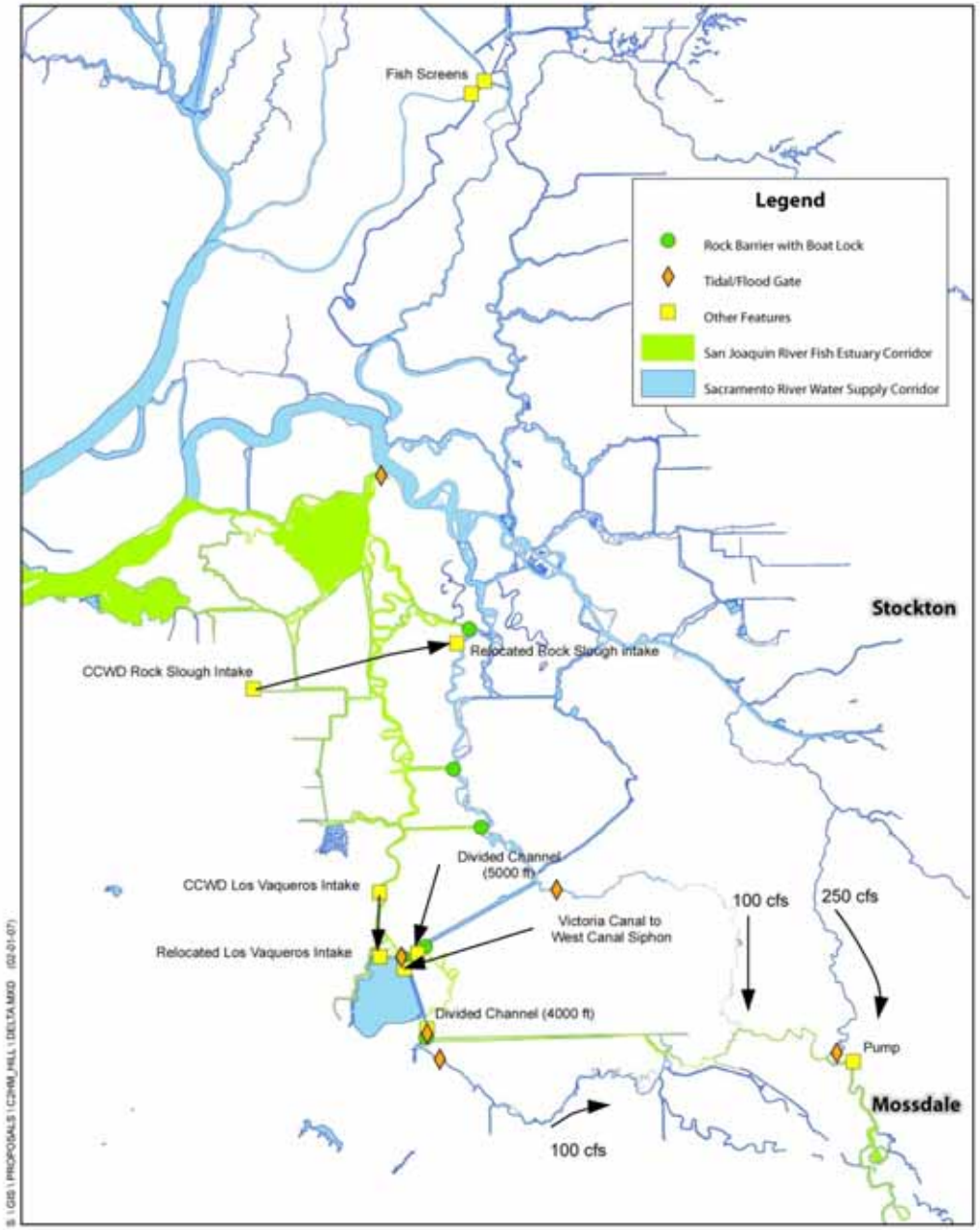
San Joaquin River Vernalis EC





Delta Corridors Plan

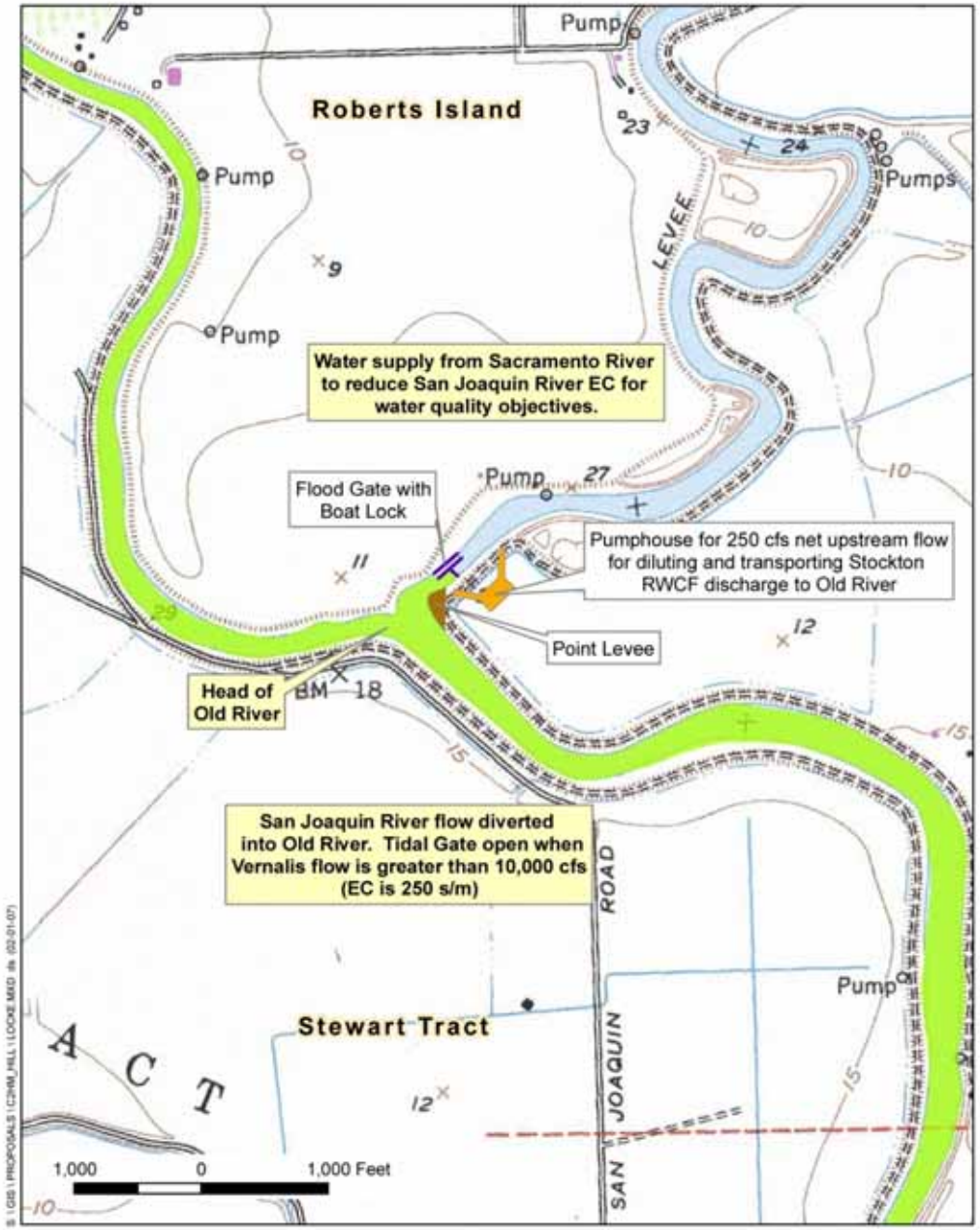
- Head of Old River gate moved to divert all SJR into Old River with 250 cfs pumped upstream (from Stockton)
- Old River channel divided between Grant Line Canal and Coney Island and at Victoria Canal with “River Bridge” to separate SJR and water supply
- Four barriers separate Old River from Middle River- with Middle River dredging
- DCC opened with fish screens on DCC and Georgiana Slough



Delta Corridors Project Components

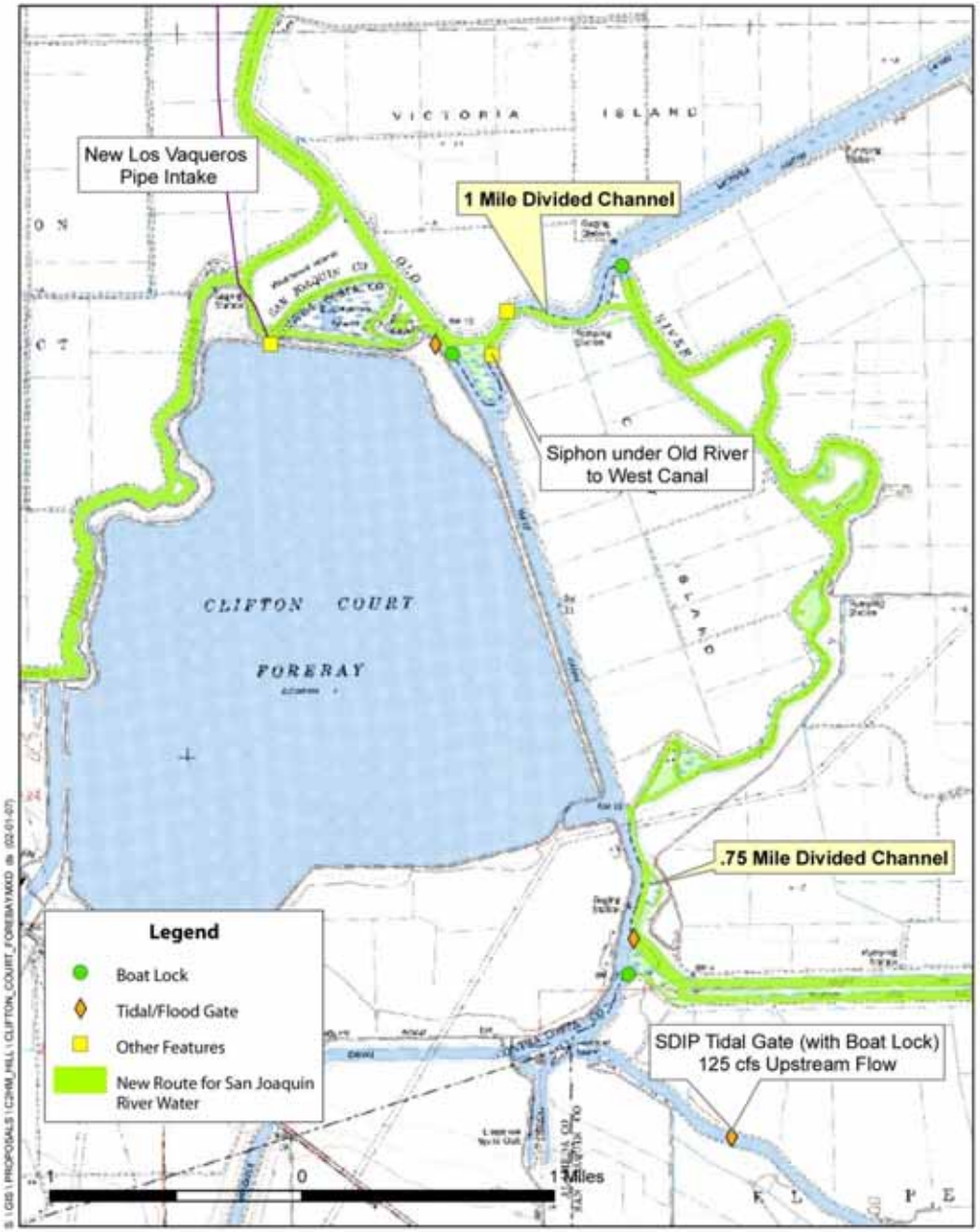
Major Delta Management Issues

- Estuary habitat & fish abundance
- Salinity & drinking water quality (TOC)
- Water supply risk (salinity) from levee failure
- Agriculture & urban development
- Boating & recreation facilities



Relocate Head of Old River Gate to Divert all of the SJR Flow into Old River

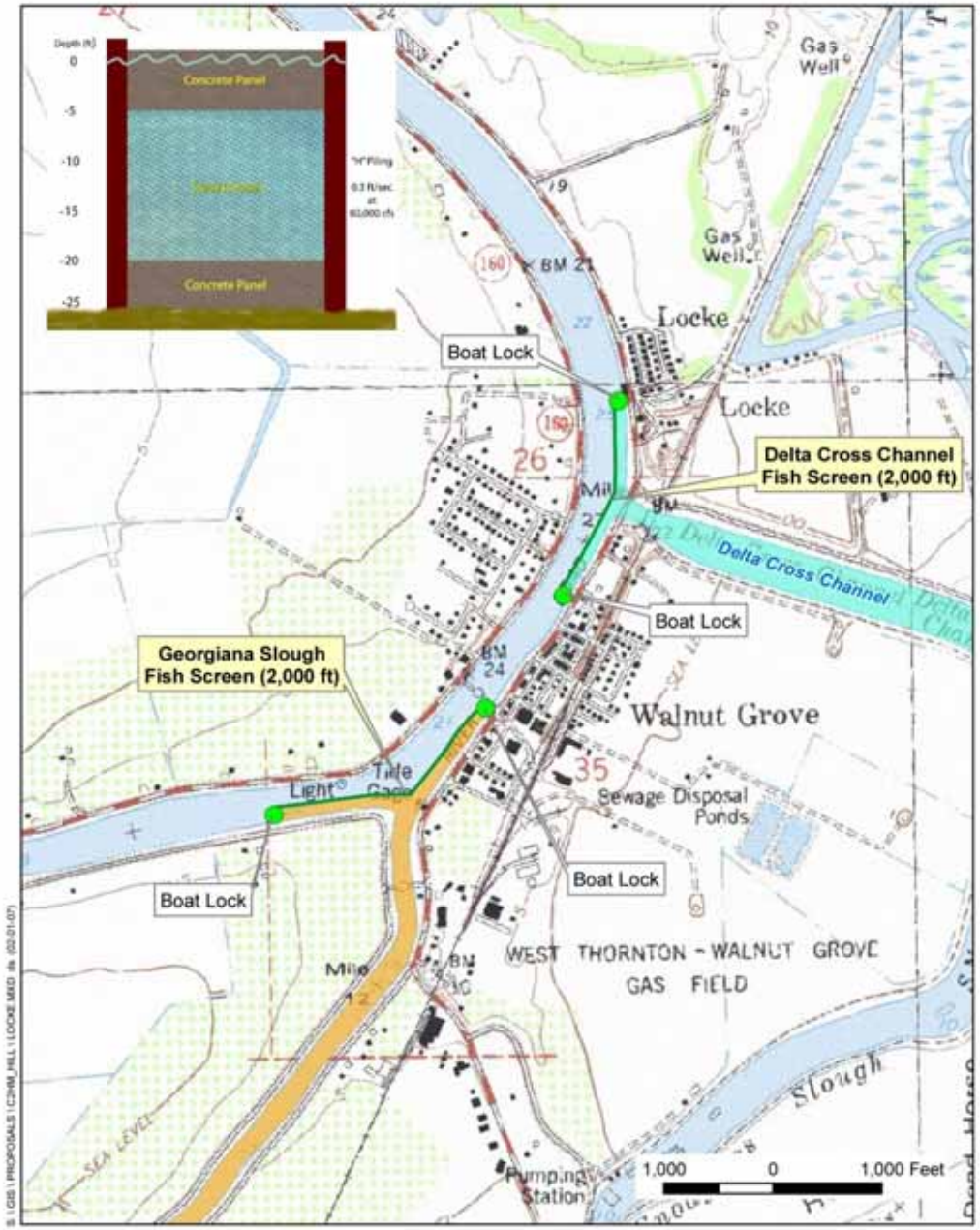
- Flood gate and boat lock
- Open flood gate at 10,000 cfs
- Pump 250 cfs flow upstream from Stockton DWSC to discharge wastewater and provide salinity reduction in Old River



Separation of the San Joaquin River Estuary Corridor from the Sacramento River Water Supply Corridor

Connecting the SJR to the Estuary

- Route SJR water down Old River past CVP and SWP exports
- Prevent entrainment of all SJR fish (fall-run and spring-run Chinook and splittail)
- Deliver river plankton (food) and suspended sediment (protection) to estuary at Frank's Tract

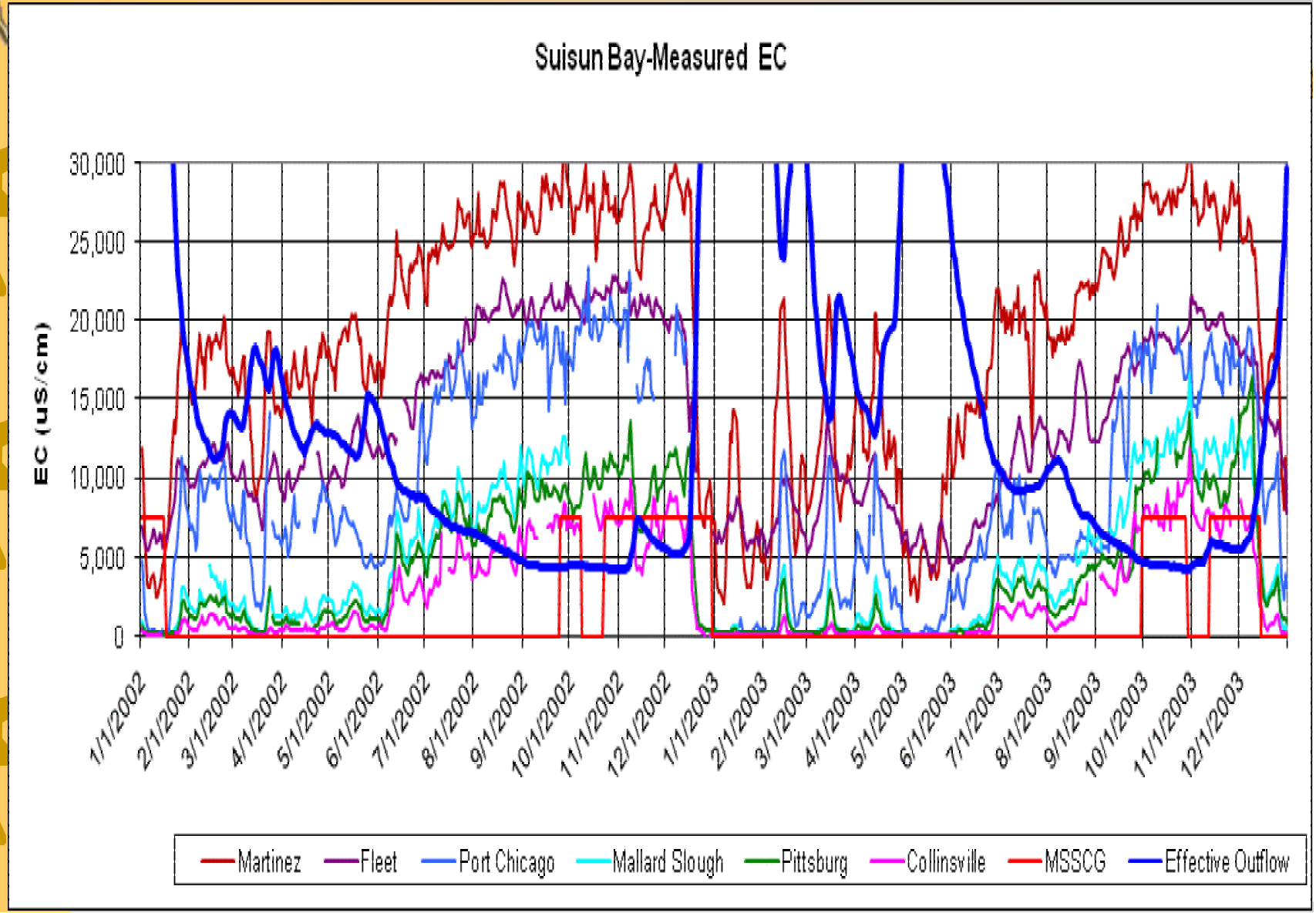


Sacramento River Fish Screens at Delta Cross Channel and Georgiana Slough

Sacramento River Fish Screens for DCC and Georgiana Slough

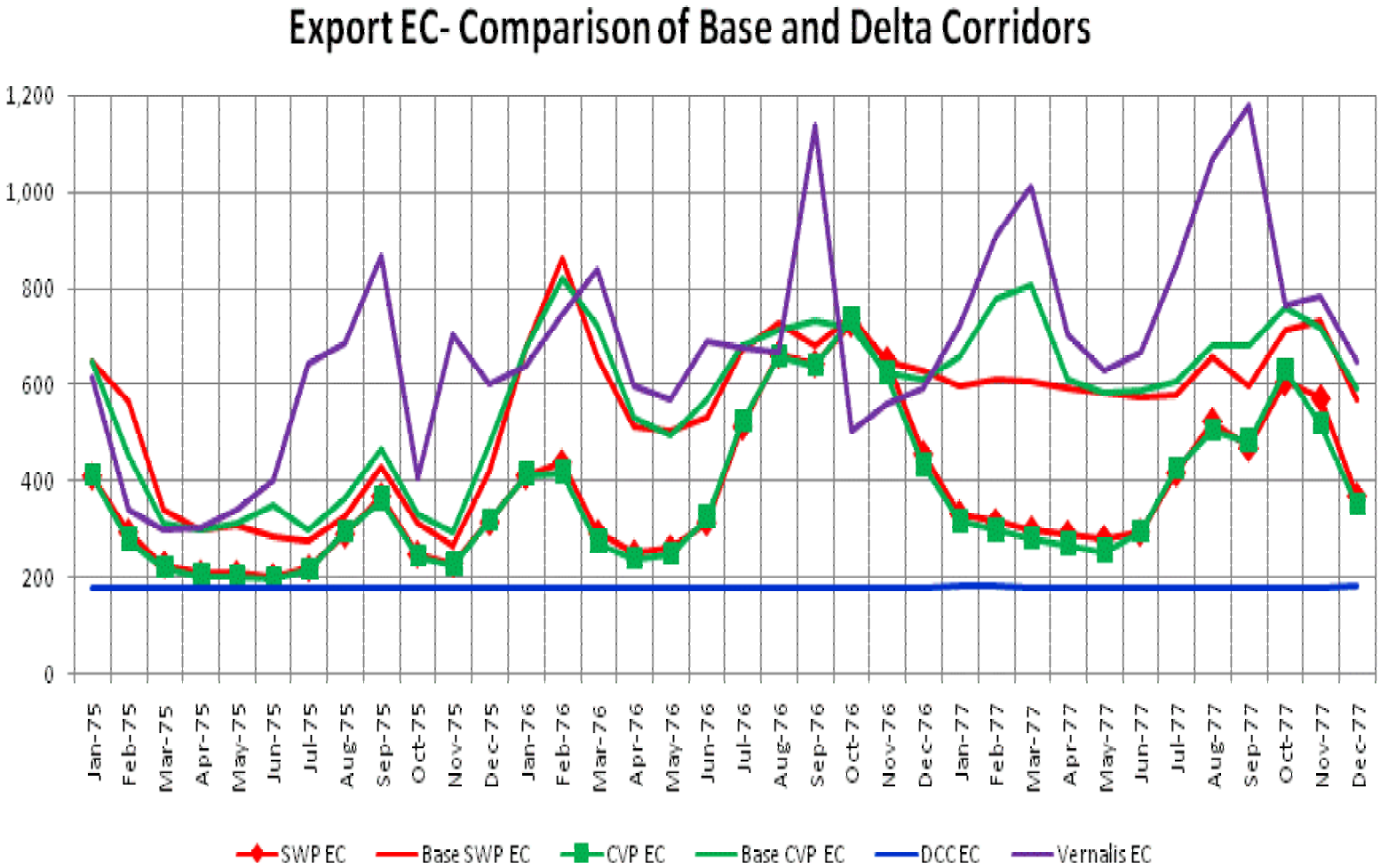
- Open DCC to provide more flow to water supply corridor
- Walls at bottom and surface to reduce lateral flow of bottom fish & sediment, of surface fish, floating debris & boats
- Exports should be limited to DCC + Georgiana Slough diversions to prevent SJR recycle into Middle River

Delta Outflow is the major factor controlling Delta salinity

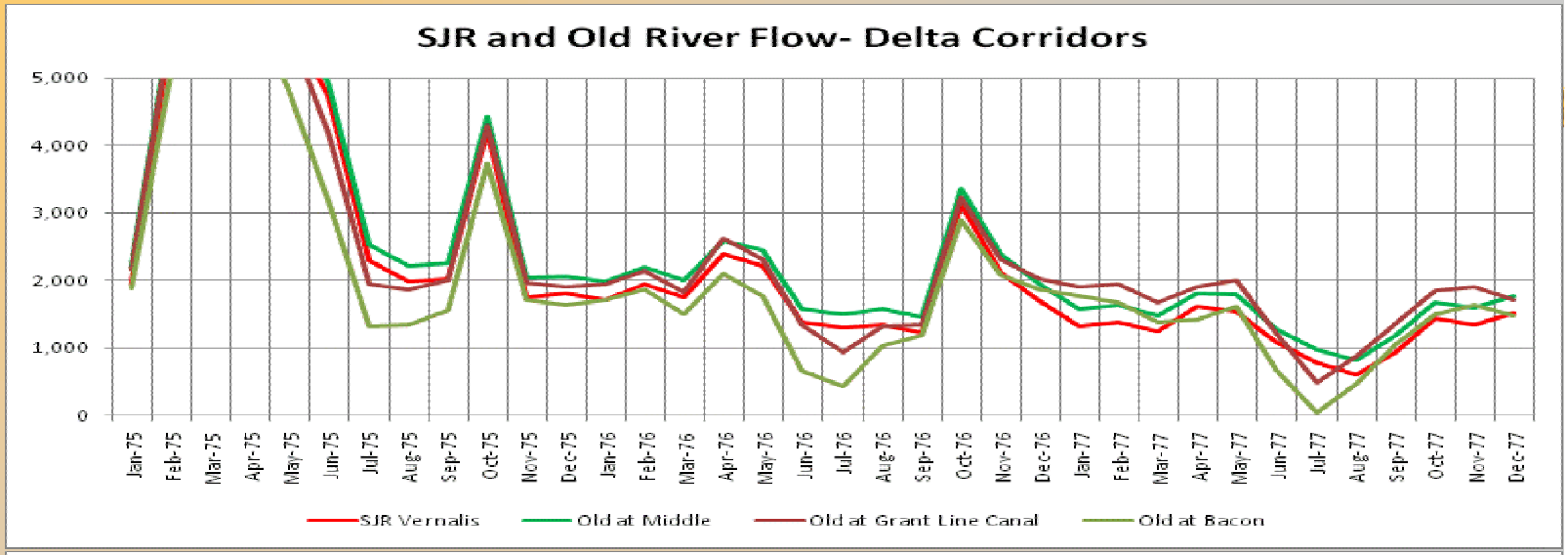


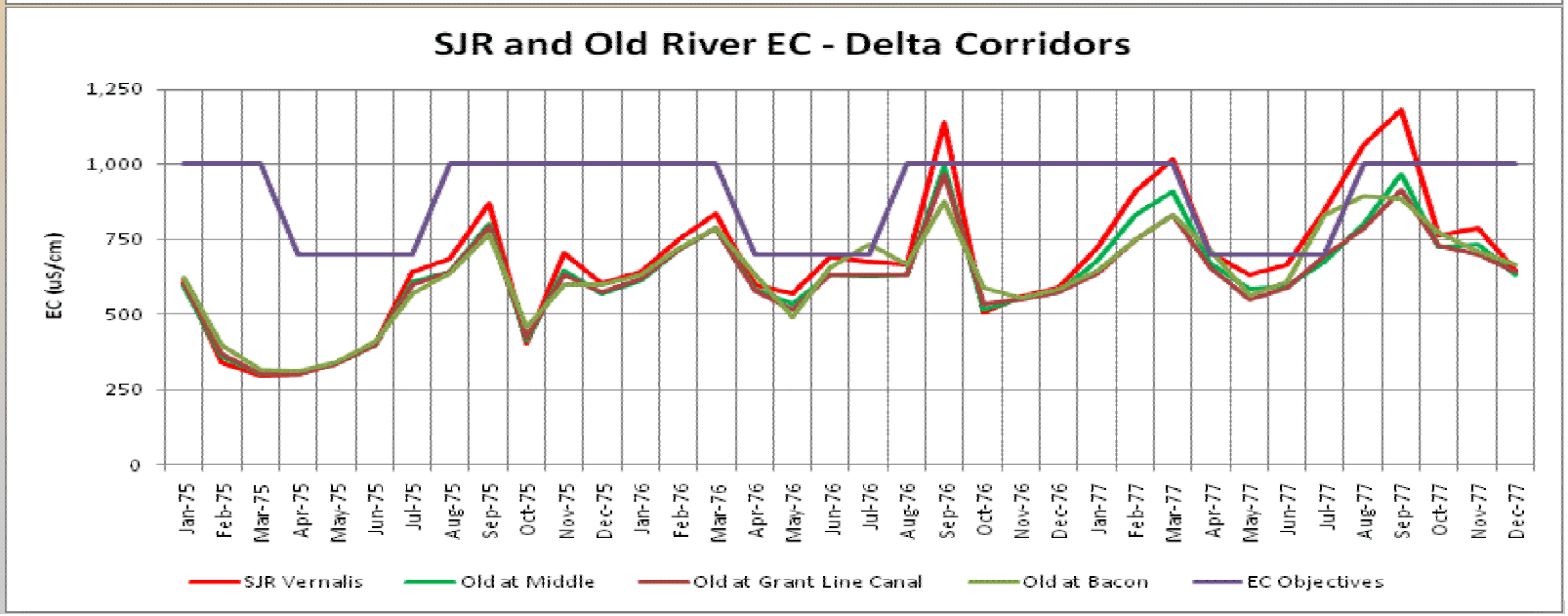
Delta Corridors reduces CVP and SWP EC by 35%

for 1975: 385 CVP/373 SWP to 265
for 1976: 659 CVP/667 SWP to 460
for 1977: 673 CVP/655 SWP to 385

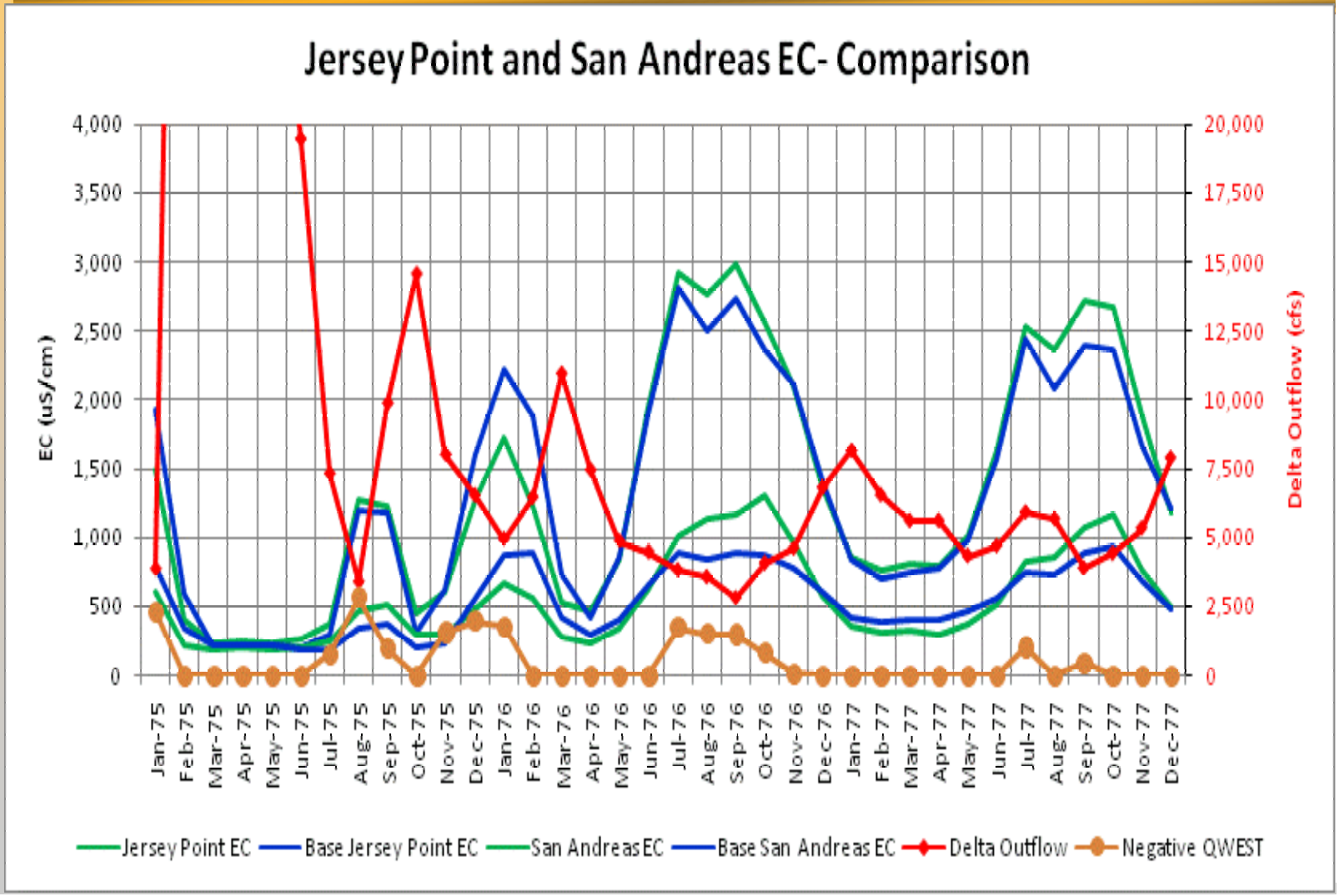


SJR/Old River EC is always less than Vernalis EC because of DC pumping flows





Seawater intrusion into the Middle River water supply corridor will still occur during periods of low Delta outflow- and is worse if QWEST <0



Managing Delta and Export EC with the Delta Corridors Plan

- Pumping 250-500 cfs from water supply corridor to SJR/Old River will reduce EC for agricultural diversions along the Old River corridor
- Agricultural drainage and wastewater discharges will increase EC along the Old River corridor
- Separating the SJR from the CVP and SWP pumps will reduce export EC by at least 25%. This will reduce the exported salt load from 2 million to 1.5 million tons/year