

DWR Comments on SWRCB SED

March 20, 2013

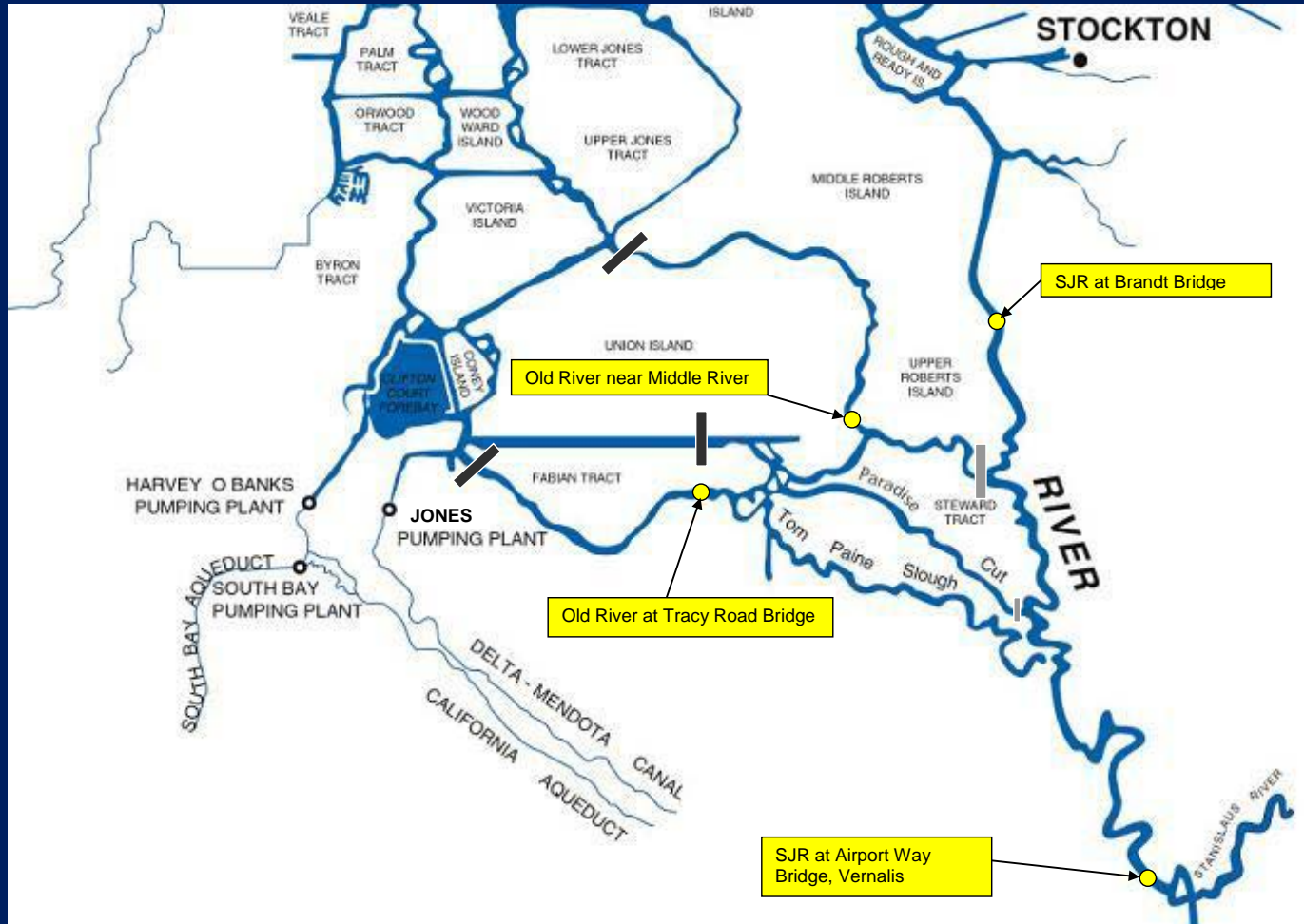
Katherine Kelly and Mark Holderman
Bay-Delta Office
California Department of Water Resources



Outline

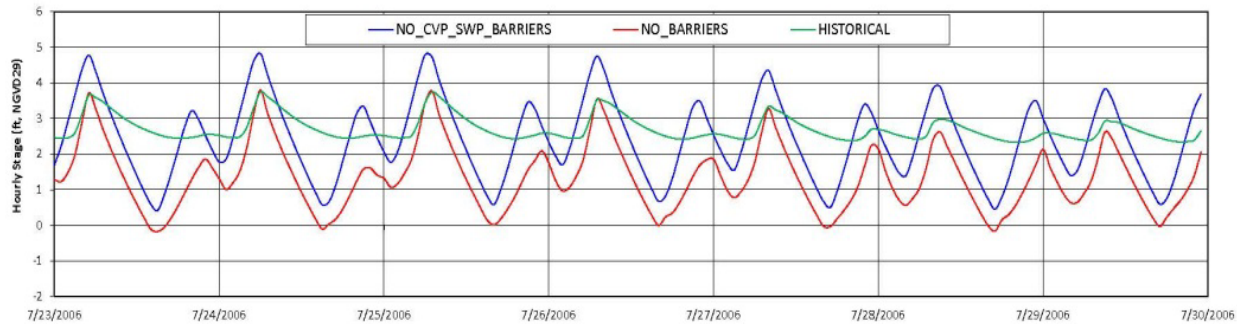
- Temporary Barriers Project
- Circulation and null zones
- Sources of water in the south Delta
- Salinity changes during high flows
- Summary

Barriers and Compliance Sites

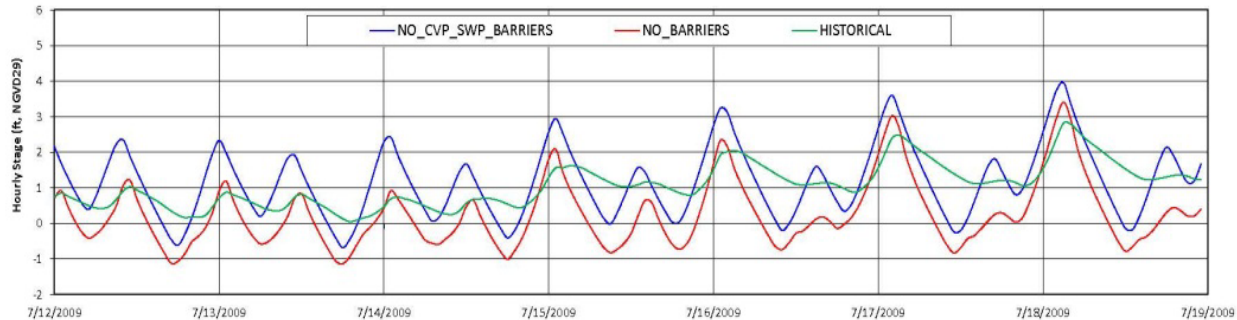


Water Level Improvements with Barriers on Old River

2006 Wet Year

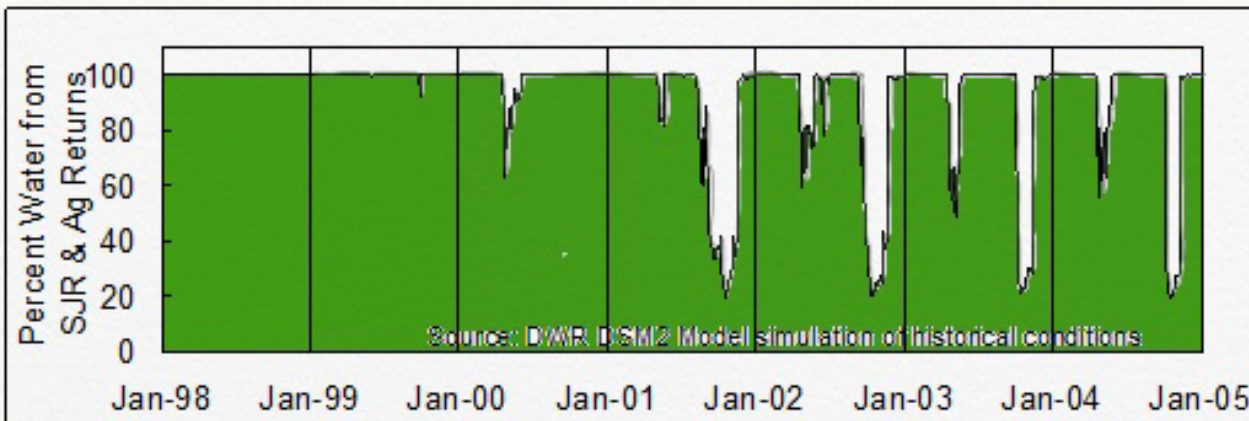
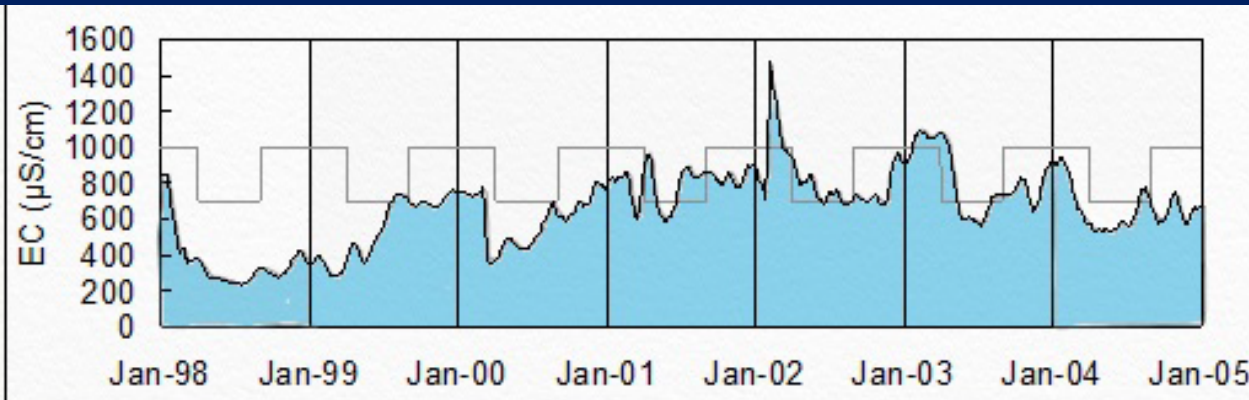


2009 Dry Year



Sources of Water in The South Delta

Observed EC and Sources of Water at Old River at Tracy Road Bridge

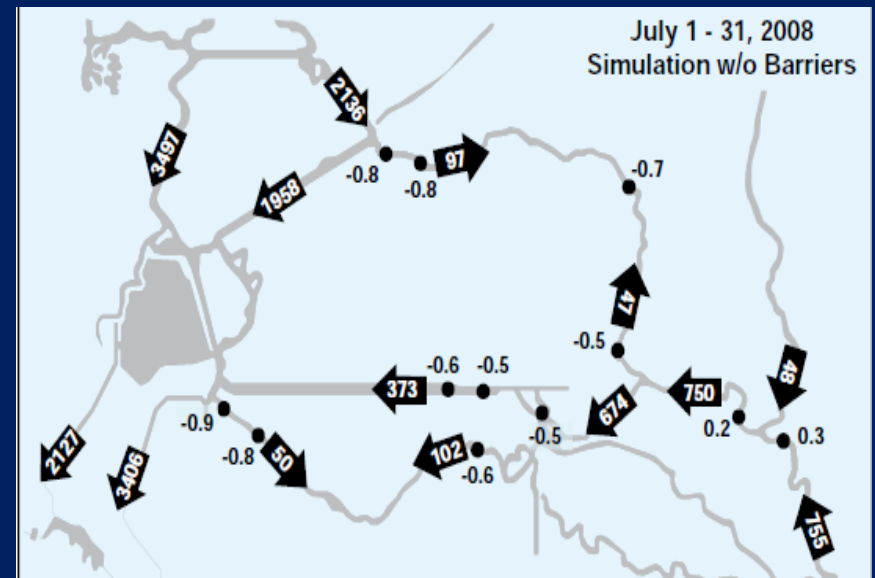
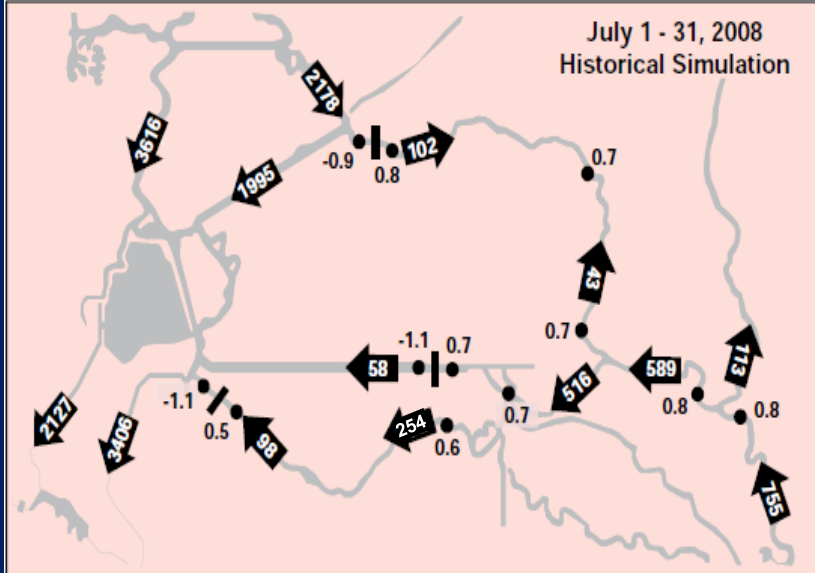


Source of EC data: DWR Central District
— 2005 Agriculture Standard

Circulation and Null Zones in the South Delta

Circulation and Null Zones

- Temporary Barriers Improve Circulation
 - Source: South Delta Temporary Barriers Project Monitoring Reports



Circulation and Null Zones

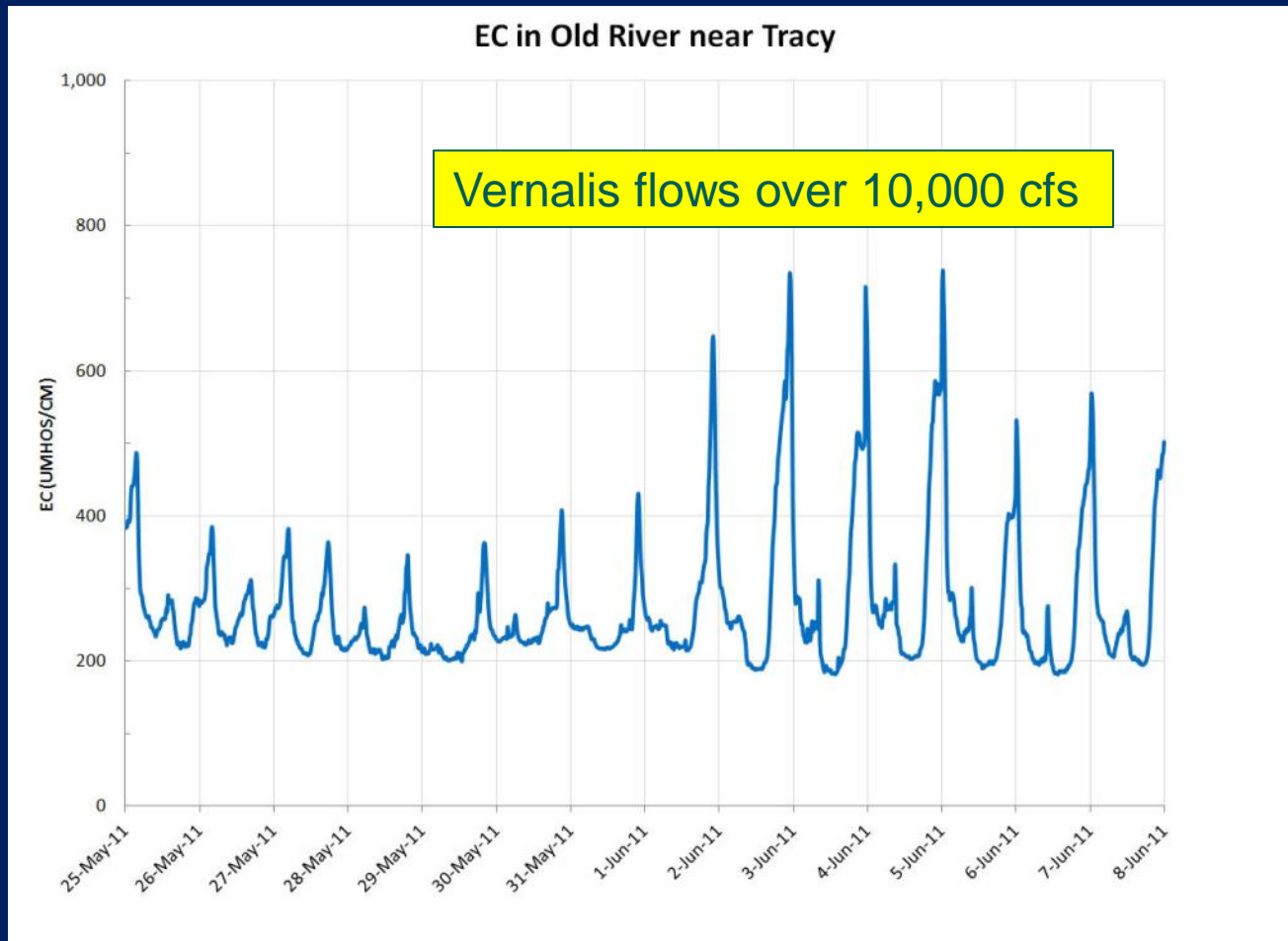
- Null zones occur without exports and barriers
- Locations of null zones can change with exports and barriers
- Total number of null zones not significantly different
 - Source: 33rd Annual Progress Report to the SWRCB (Methodology for Flow and Salinity Estimates in the Sacramento-San Joaquin Delta 2012)
- Null zones do not equal poor water quality

Salinity Changes during High Flow Periods

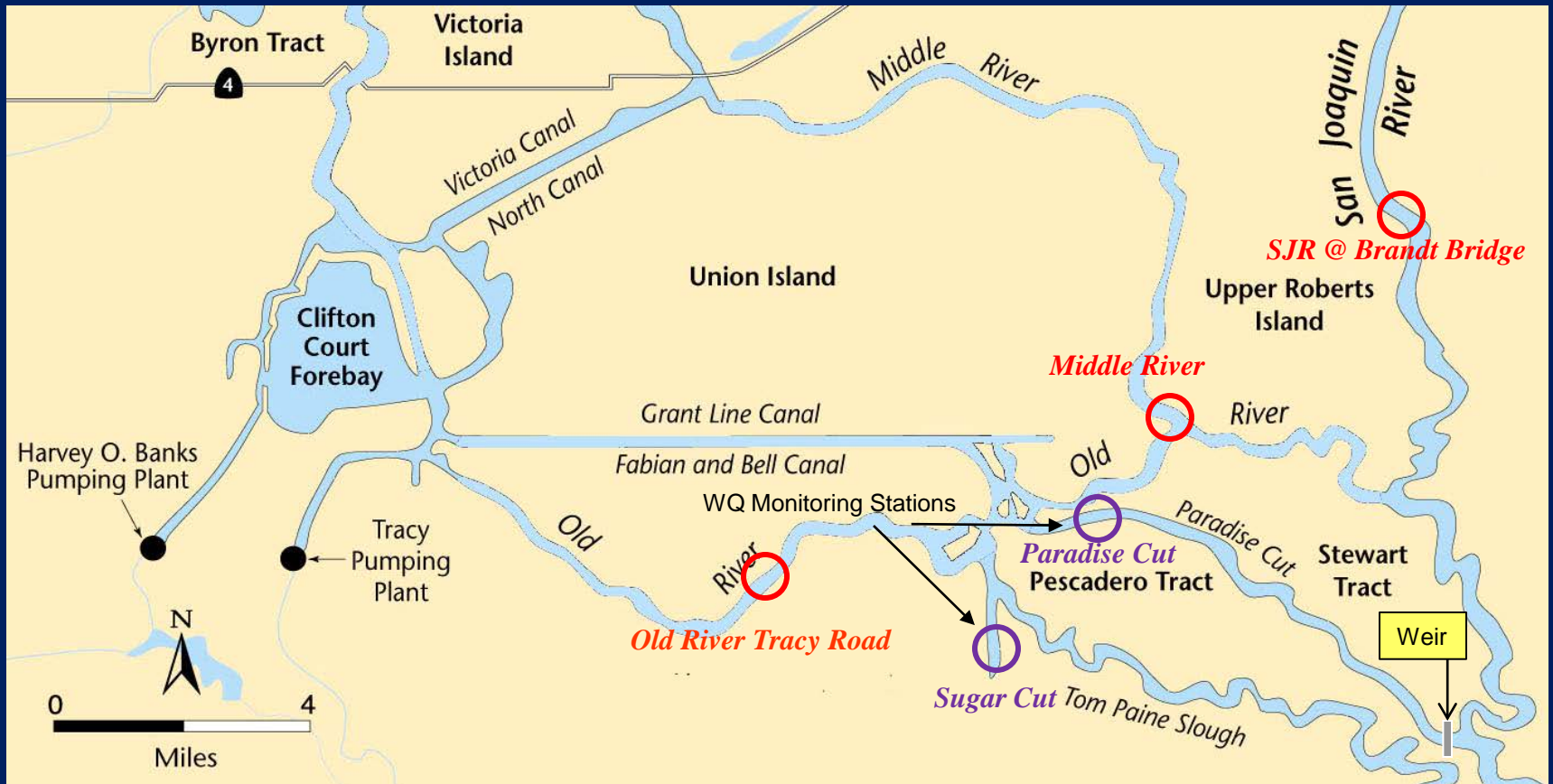
Background

- Salinity monitored at four compliance stations in south Delta—Vernalis, Brandt Bridge, Middle River, and Old River at Tracy Road Bridge
- Old River at Tracy Road Bridge has persistent salinity spikes, occasionally exceeding water quality objectives
- Why?

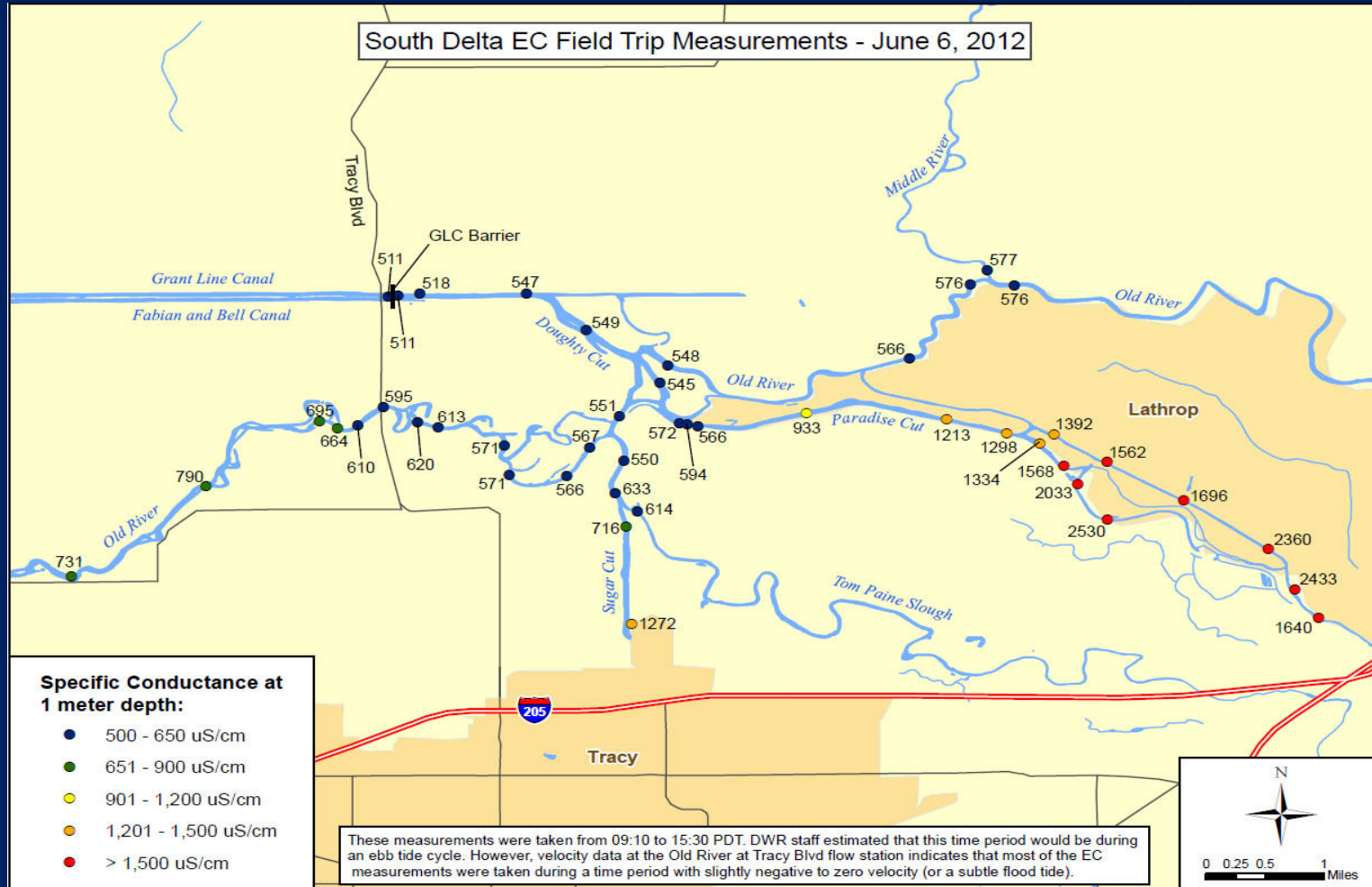
Salinity Spikes in Old River during High Flows at Vernalis in June 2011



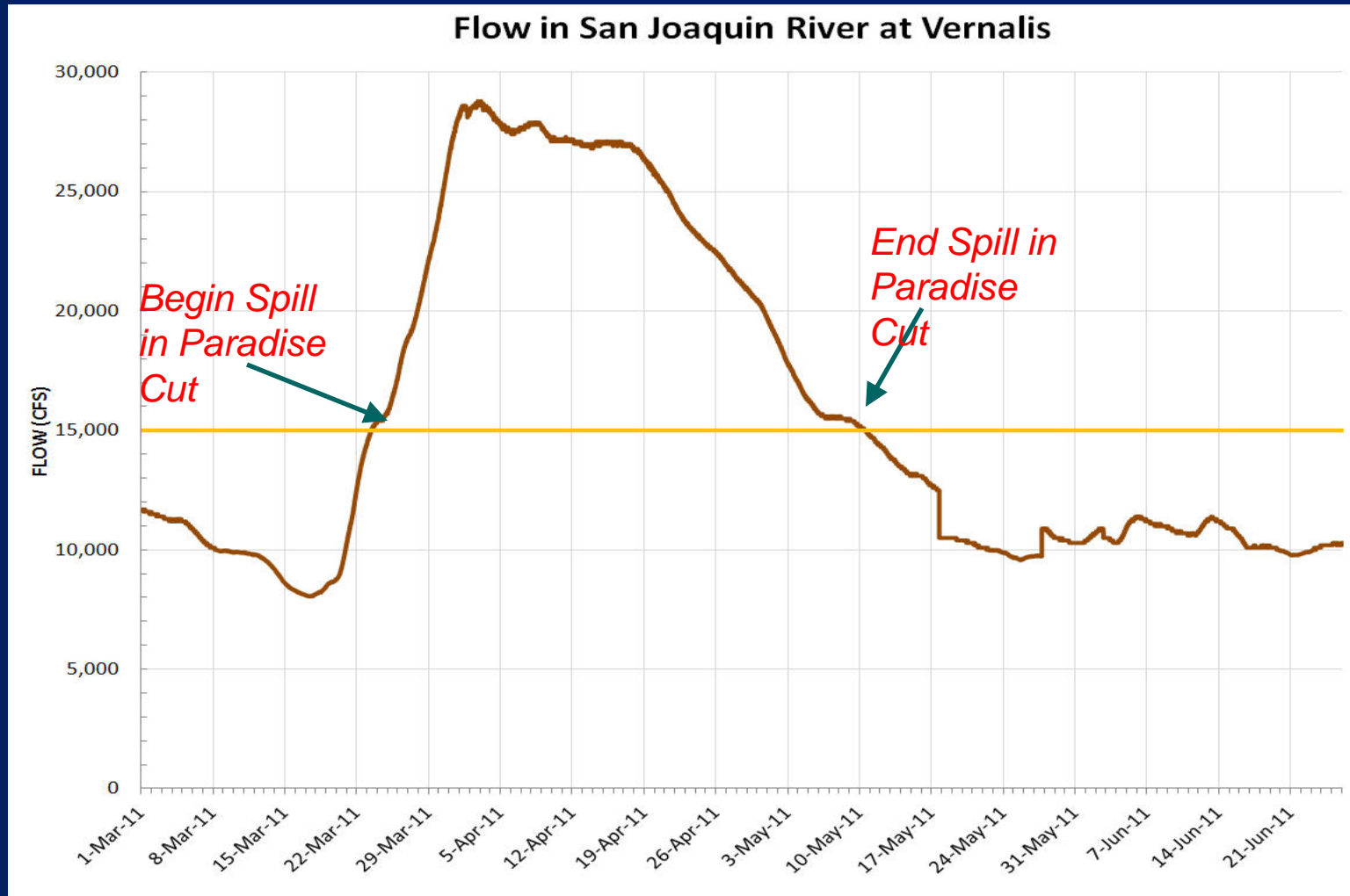
Paradise and Sugar Cut: Sources of High Salinity Water



Recent South Delta EC Grab Sampling Data



High 2011 Vernalis Flows Flushed Paradise Cut



Paradise Cut Weir Flow in March 2011

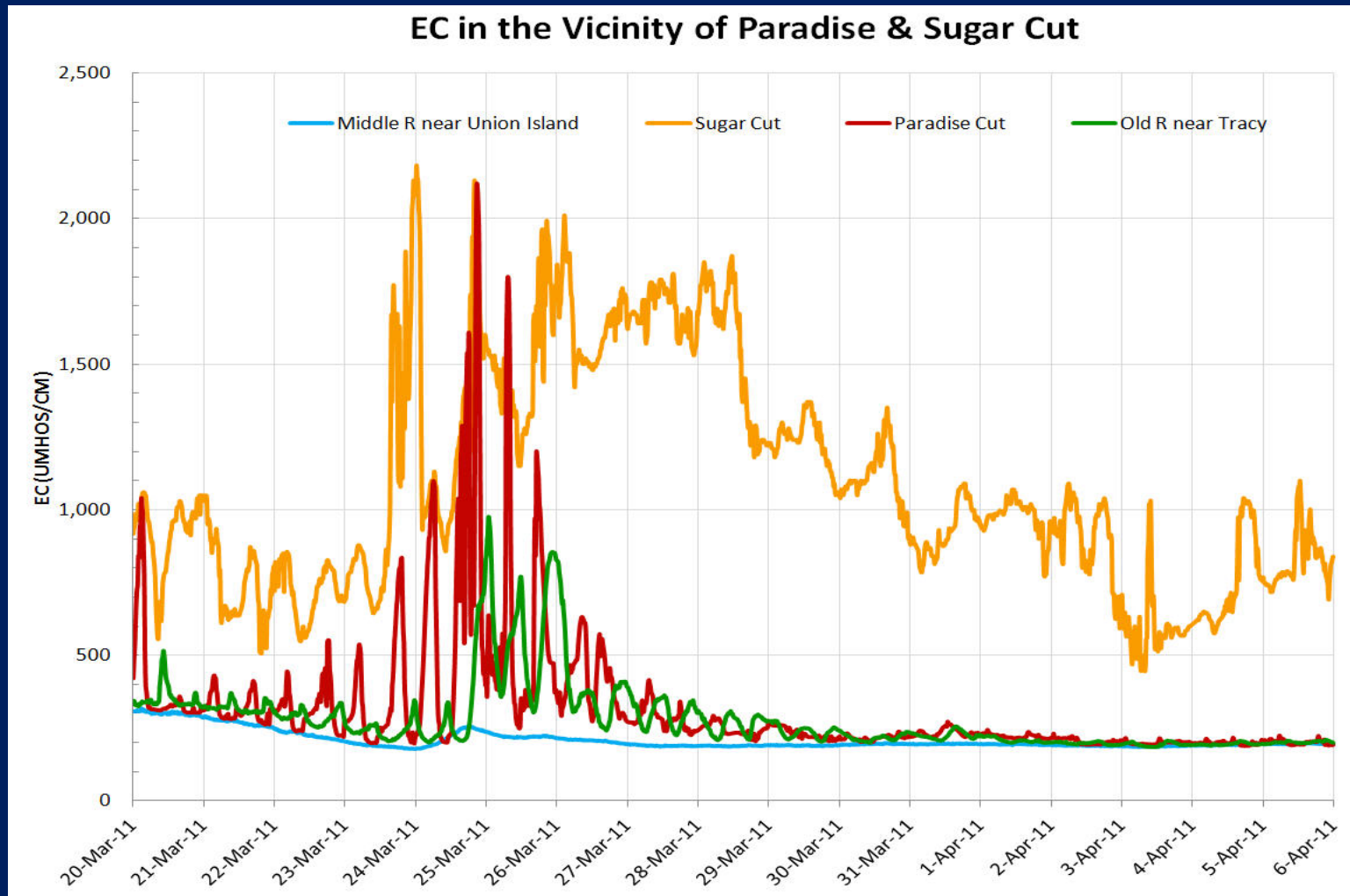


Normal

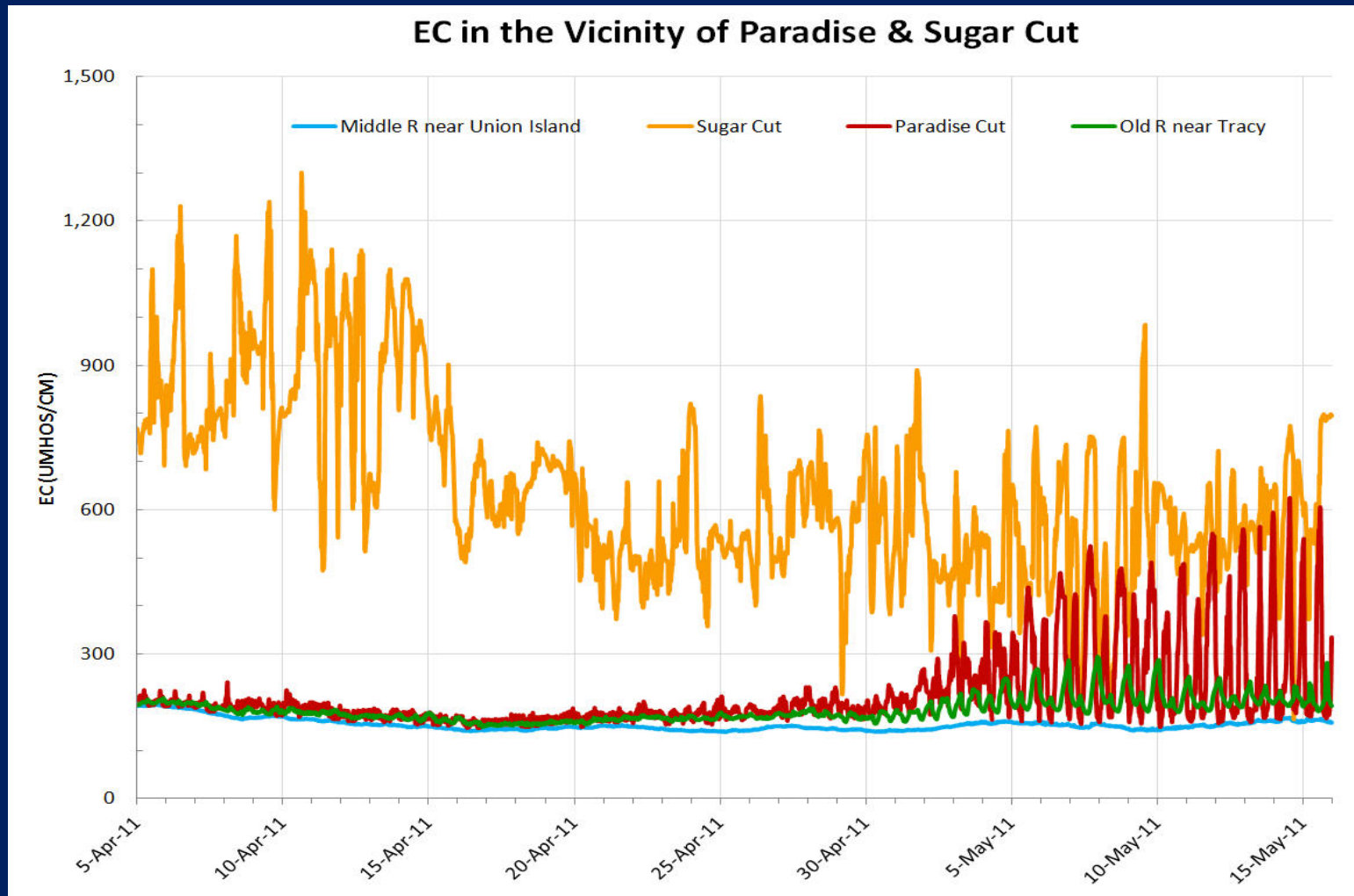


Spilling

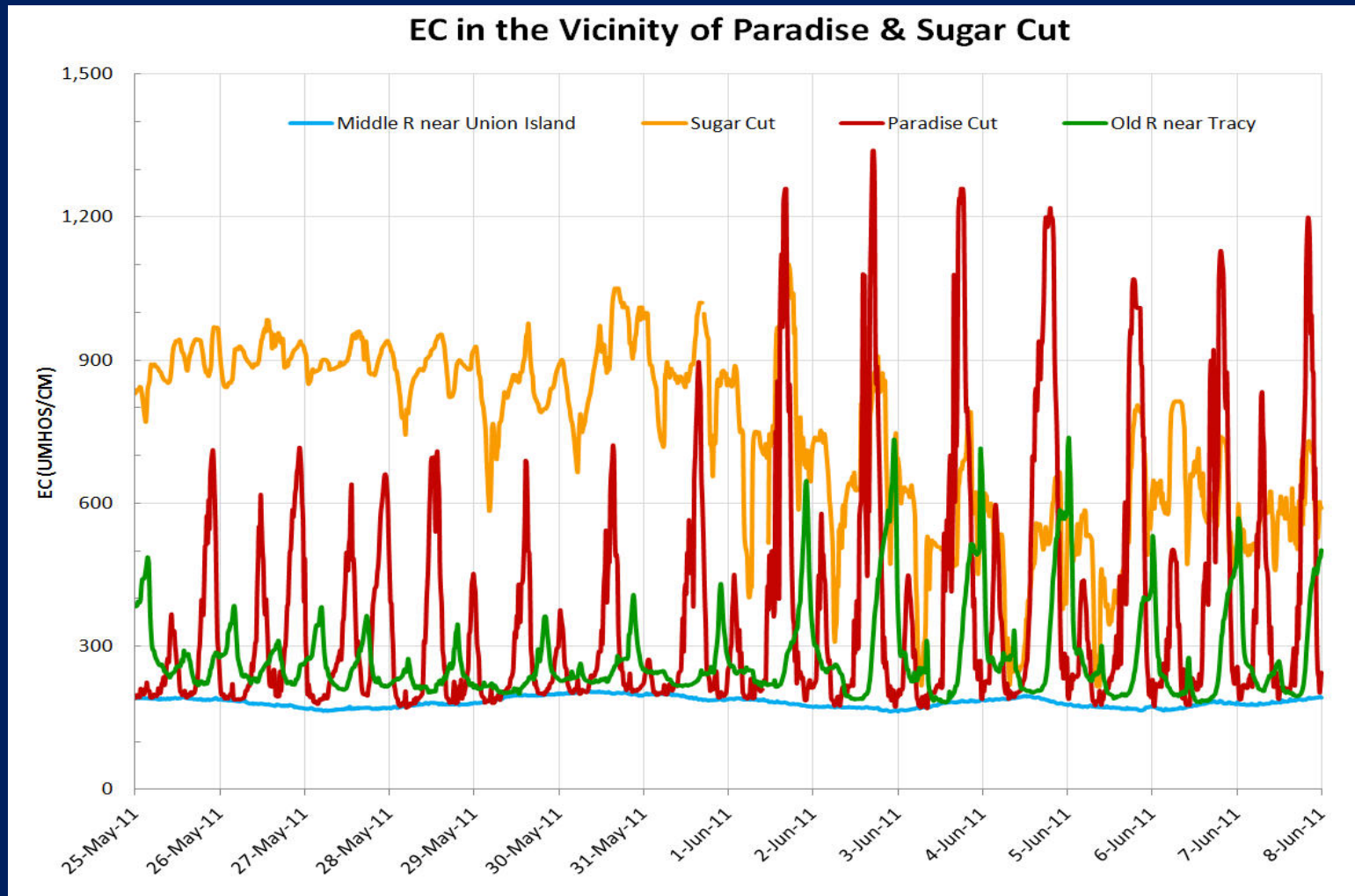
Weir Flow Causes High Salinity Plume from Paradise Cut



Salinity Increases in Paradise Cut After Flushing Ends



Paradise Cut Salinity Directly Causes Salinity Spikes at Old River



Summary

- TBP exceeds mitigation necessary for SWP impacts on water levels/circulation
- Salinity problems in south Delta are not caused by SWP operations
- Assign responsibility for water quality proportionate to parties whose actions cause degradation