

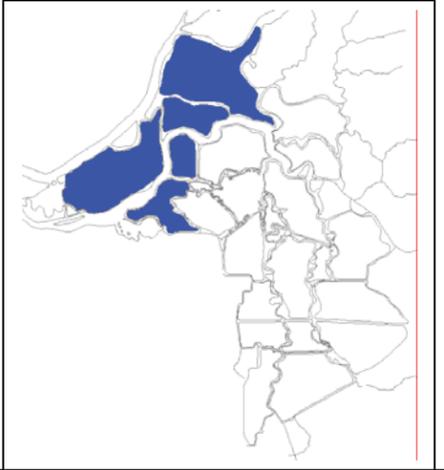
Analysis Approach

- RMA Bay-Delta Model -- examine salinity (EC) impact of pre-flooding groups of Delta Islands
- Simulation period April 2002 through December 2004 with historic boundary conditions
- Islands left open to tidal filling and draining
- Delta inflows and exports are kept the same as the base (no flooded islands) case.
- Initial flooding of the islands (and associated salinity intrusion) was not simulated – initial EC concentrations in islands were set equal to neighboring channels EC of April 1, 2002
- No breach event (e.g., earthquake) is simulated

Pre-flooded Island Groups

Set 1 – Western Islands

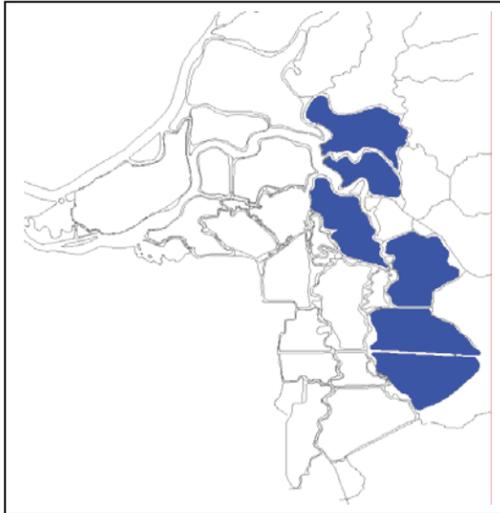
- Brannan-Andrus
- Sherman
- Jersey
- Bradford
- Twitchell



Pre-flooded Island Groups

Set 2 – Eastern Islands

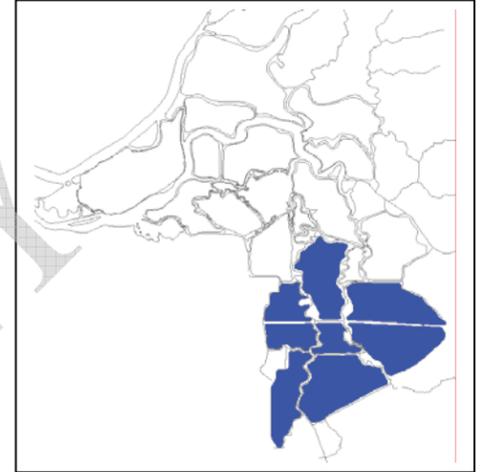
- Jones
- McDonald
- Mandeville
- Venice
- Bouldin



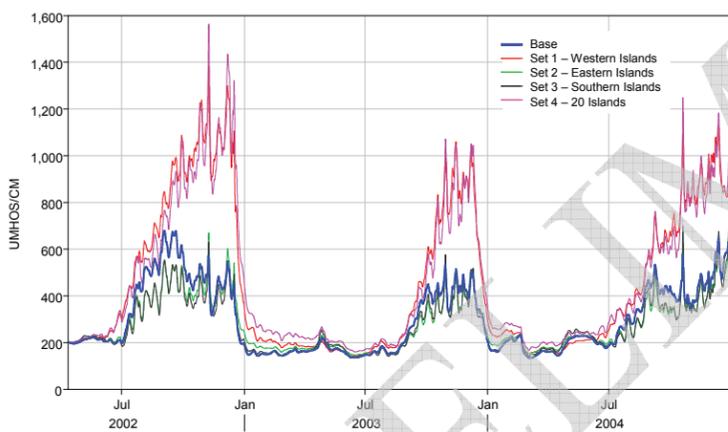
Pre-flooded Island Groups

Set 3 – Southern Islands

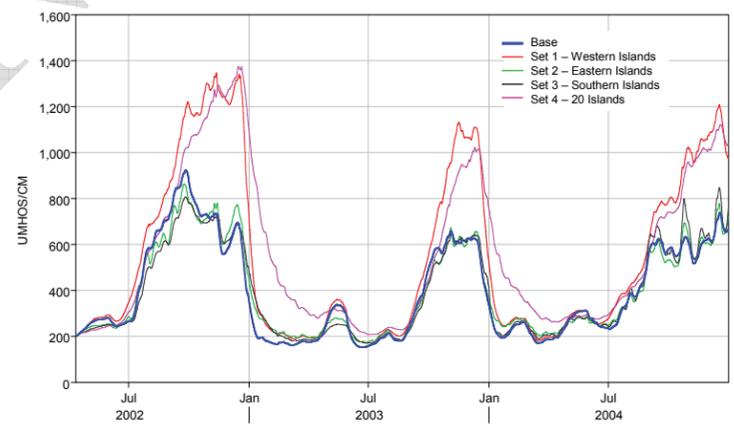
- Jones
- Victoria
- Byron
- Palm
- Orwood
- Woodward
- Bacon



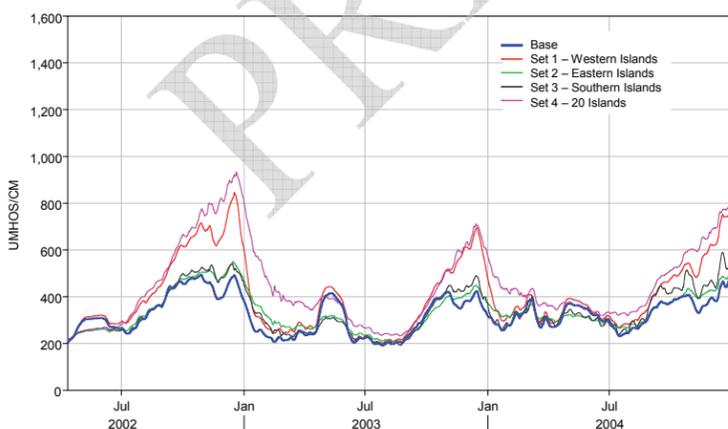
Tidally Ave EC at RSAN032 (San Joaquin River at Webb Tract)



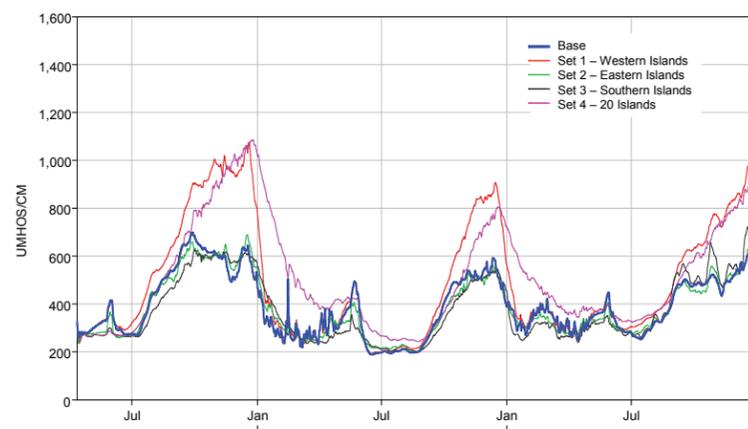
Tidally Averaged EC at ROLD024 (Old River at Bacon Island)



Tidally Averaged EC at RMID015 (Middle River at Jones Tract)



Tidally Averaged EC at SWP (Clifton Court)



Findings

- Pre-flooding western islands and allowing them to remain open to tidal action increases mixing of ocean salt into the Delta
- Pre-flooding selected islands in the southern or eastern Delta has minimal impact on mixing of ocean salt into the Delta
- For the period simulated, islands sets 1, 2, and 3 did not significantly accumulate salt over multiple years, while set 4 (20 Islands) does show signs of salt accumulation

- If 5 western islands are pre-flooded and left open to tidal exchange, increase in Net Delta Outflow will be on the order of several hundred thousand ac-ft annually to maintain water quality standards
- Pre-flooding sets of Delta islands will reduce the disruption of exports and the export deficit when exports are resumed associated with large scale failure events
- The most promising option appears to be selecting sets of islands in the south Delta and leaving those islands closed to tidal exchange