

Delta Drainage Water Quality Model (DeltaDWQ)

Purpose: DeltaDWQ is a mass balance model used in conjunction with the RMA hydrodynamic model of the Delta to evaluate effects of the Delta Wetlands Project on island drainage and Delta channel water quality.

CALFED Potential: DeltaDWQ could be used to describe typical island drainage water quality under alternative CALFED actions.

Approach: Mass balance.

Input Data: Input includes data on initial monthly Delta hydrologic and water quality characteristics for 1967-1991 from DeltaSOS model: estimated island water applications, consumptive use, losses, soil moisture, drainage, and salt and dissolved organic carbon budget terms.

Methods: Channel flows are estimated with "flow-split" equations based on RMA hydrodynamic model results. Incremental changes in exports are calculated to satisfy specified gate, diversions, outflow, and export objectives. This is a "Lotus spreadsheet" model with code and subroutines in linked macro format.

Results: Output includes data on monthly values for Delta channel and export pump electrical conductivity and dissolved organic carbon concentration.

Applications: The model is used to describe water quality impacts from in-Delta storage operations for Delta Wetlands Project on Bouldin, Bacon, Webb Tract, and Holland Tract Islands.

Documentation: Appendix C3 "Delta Drainage Water Quality Model" in Delta Wetlands Project Draft EIR/EIS (SWRCB & COE 1995).

Source: Free-access, Russ T. Brown, Jones & Stokes Associates, (916) 737-3000.