# **RECLANATION** Managing Water in the West

# Real Time Salinity Visualization & Management (RTM) Tool

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U.S. Department of the Interior Bureau of Reclamation

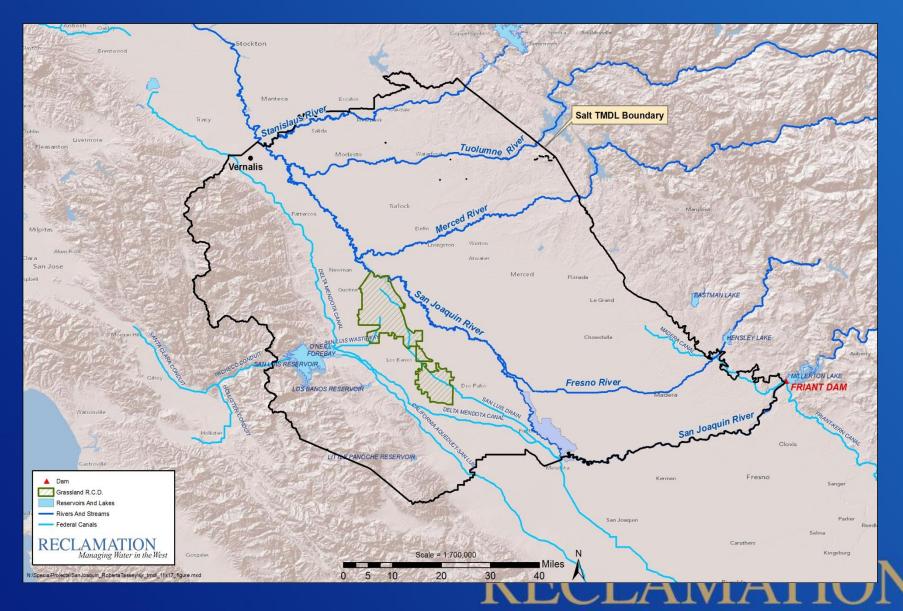
# Outline

- Study Site (GWD)
- Overview of the Real Time Salinity Visualization and Management Tool

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- The Tool Demonstration
- Acknowledgement
- Questions

#### **Grassland Water District**



# **Grassland Water District**

 ~ 51,537 acres, majority of this land is wetland habitat, Los Banos, CA.

Primary function - Deliver water

Canal system -- ~110 miles

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#### **The RTM Tool Overview**

- Desktop tool, GIS Based, Coded in C# .net and ArcObject programming
- Five Components:
- Retrieve and Parse Real Time Data Canal, station, date & time, EC, flow, stage, etc.
   Load and Parse Historical data
   Visualizing Spatial-Temporal data Animation of EC, Flow, Salt Load of canals in user selected time period, time steps (hourly or daily)

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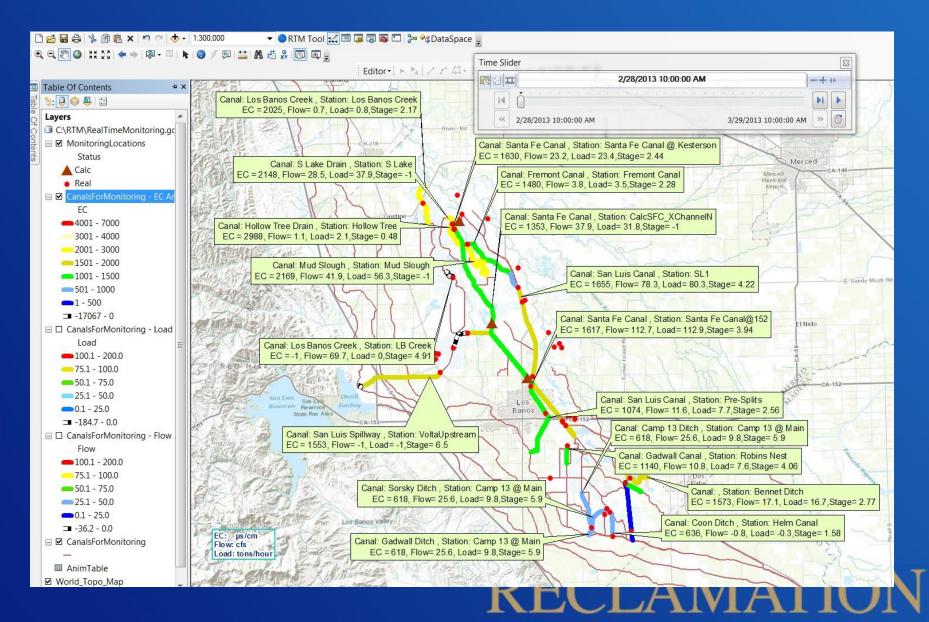
#### The RTM Tool Overview (cont.)

#### 4. Time Series Graph

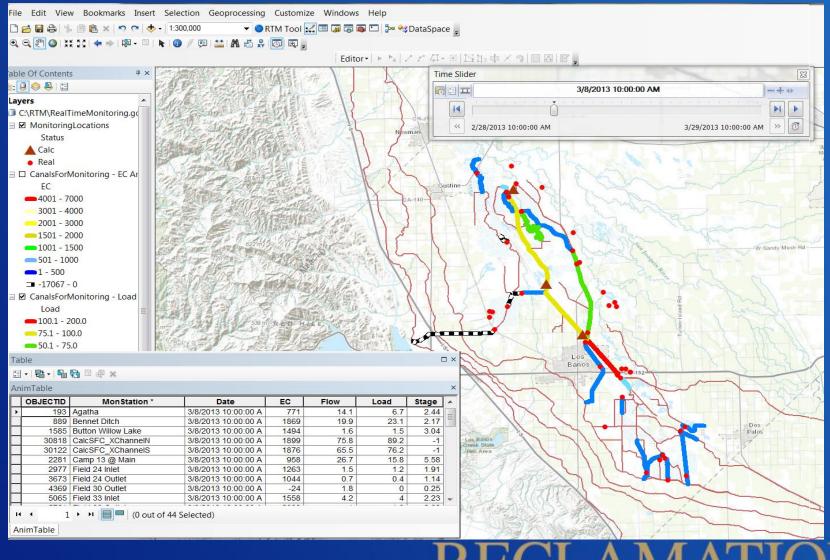
- Visualizing time series EC, load, flow & stage for selected canal(s) at hourly or daily time step
- Calculate and visualize sum of time series load of selected canals at hourly or daily time step
- Export data and graph

5. Visualization of Flow, Water Quality at a Canal/Location Without Monitoring Station RECLAMATIO

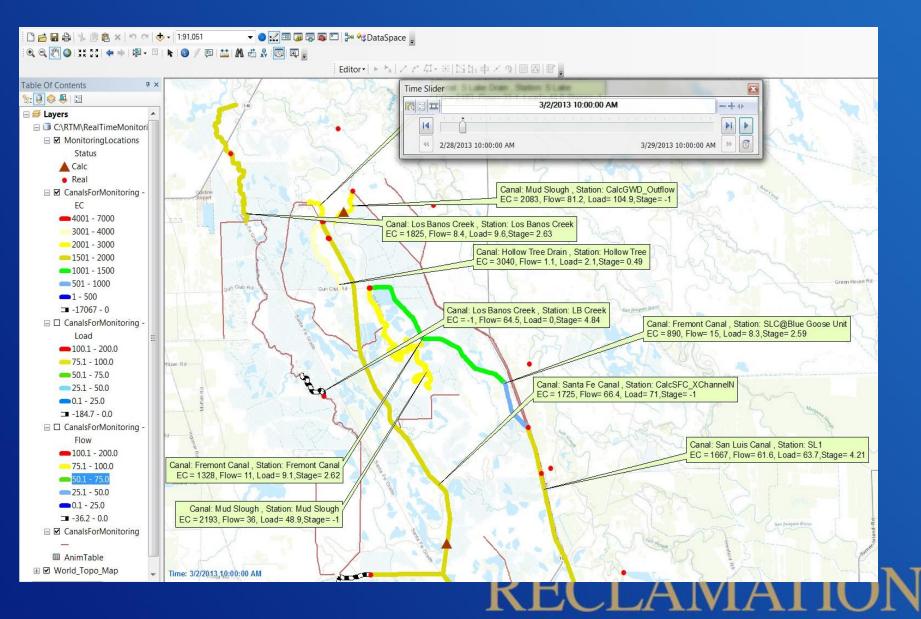
## **Visualizing Spatial-Temporal Data**



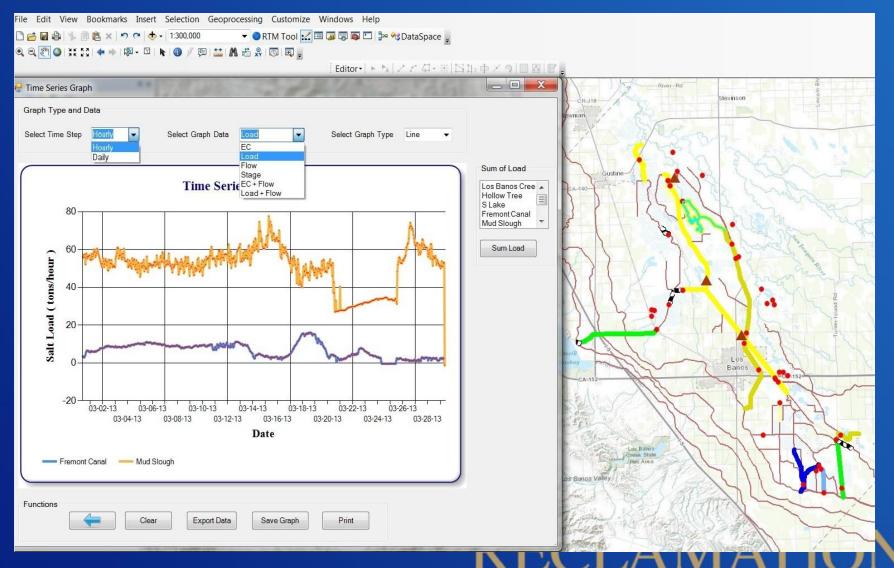
#### Full Extent Animation of All Canals – With Table



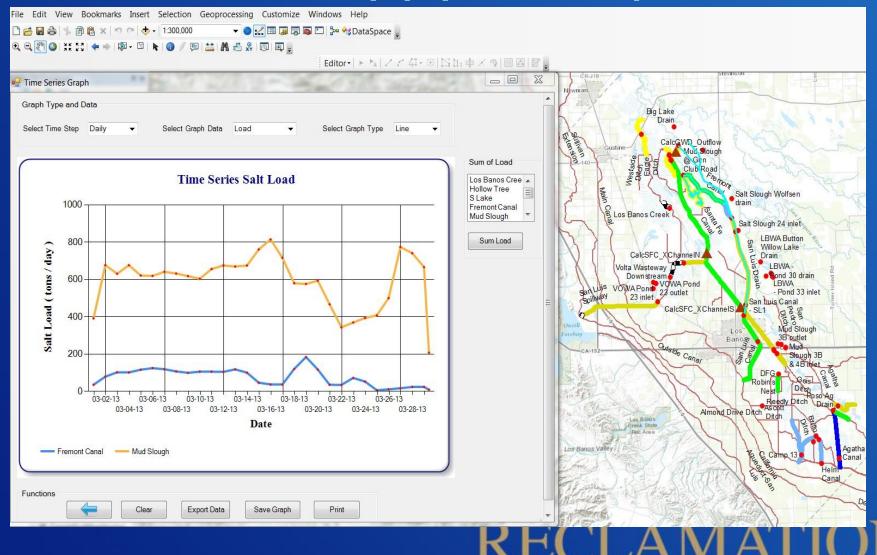
#### **Animation of Canals – Area North**



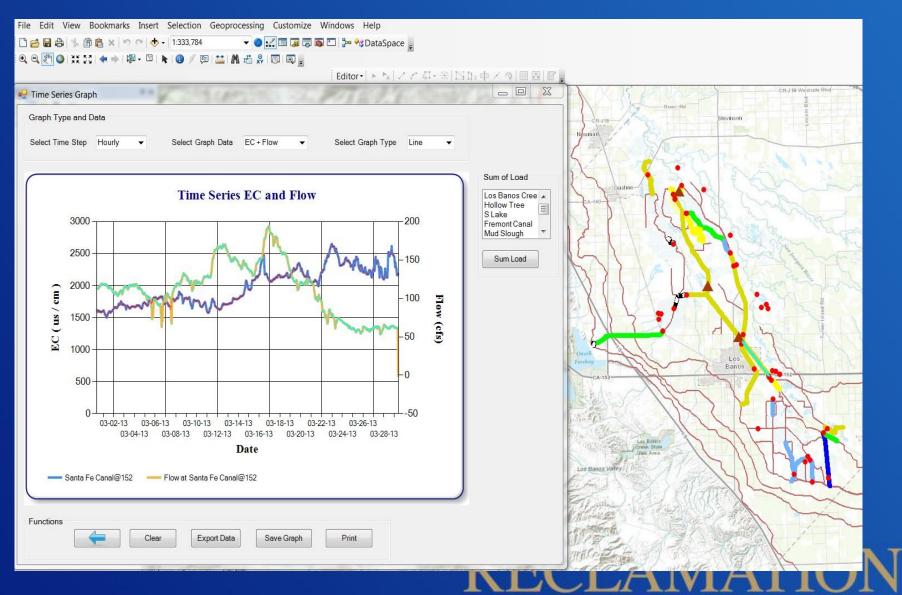
### Hourly Time Series Graph of any Selected Canal(s) (Mschart)



## Daily Time Series Graph of any Selected Canal(s) (Mschart)



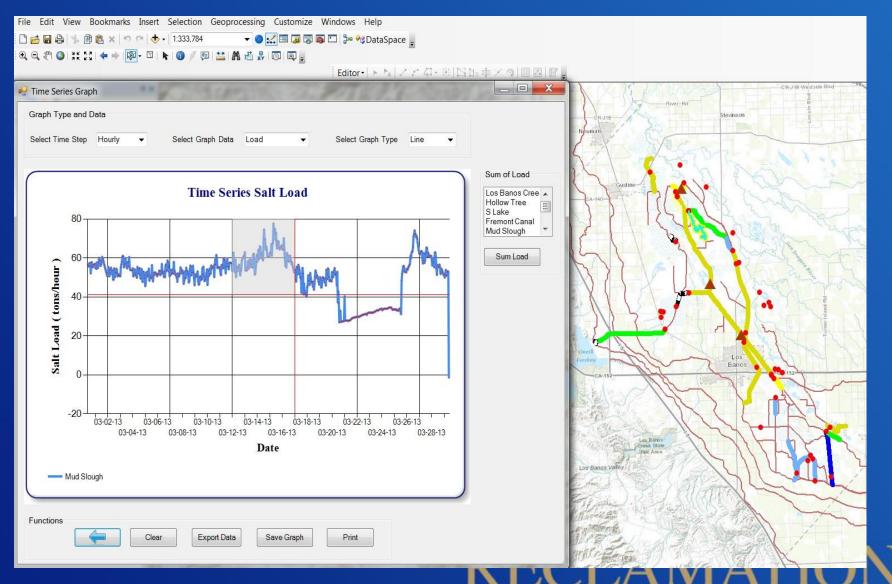
#### Add Flow to the Time Series Graph



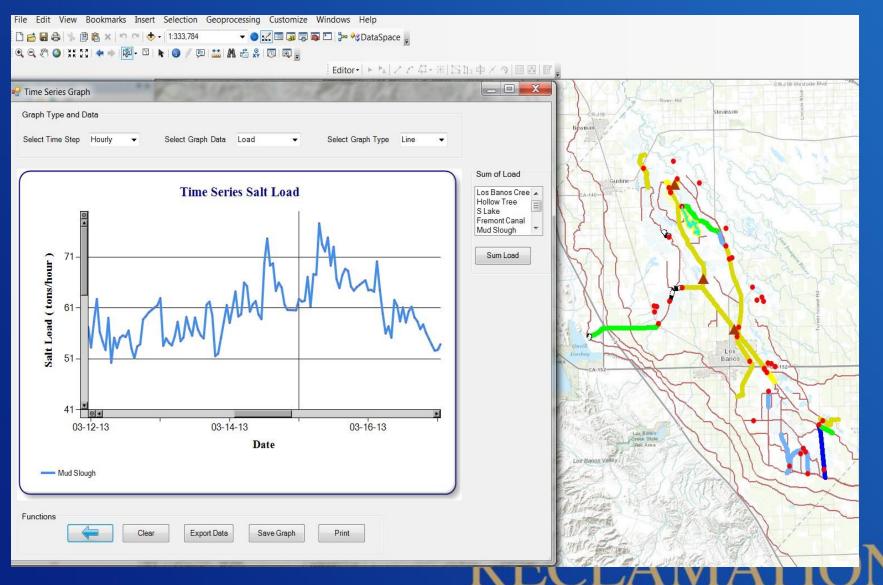
# Sum of Time Series Load of Selected Canals (Mschart)

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# **Graph Zoom in**



# Graph Zoom in (cont.)



#### Acknowledgement

- Thomas Heinzer, Mary Williams
   --- MPGIS
- Nigel Quinn, Roberta Tassey, Michael Mosley, Jobaid Kabir
   --- BOR

