

Water Quality Synthesis Update

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GCDAMP Technical Working Group Meeting

October 13, 2022

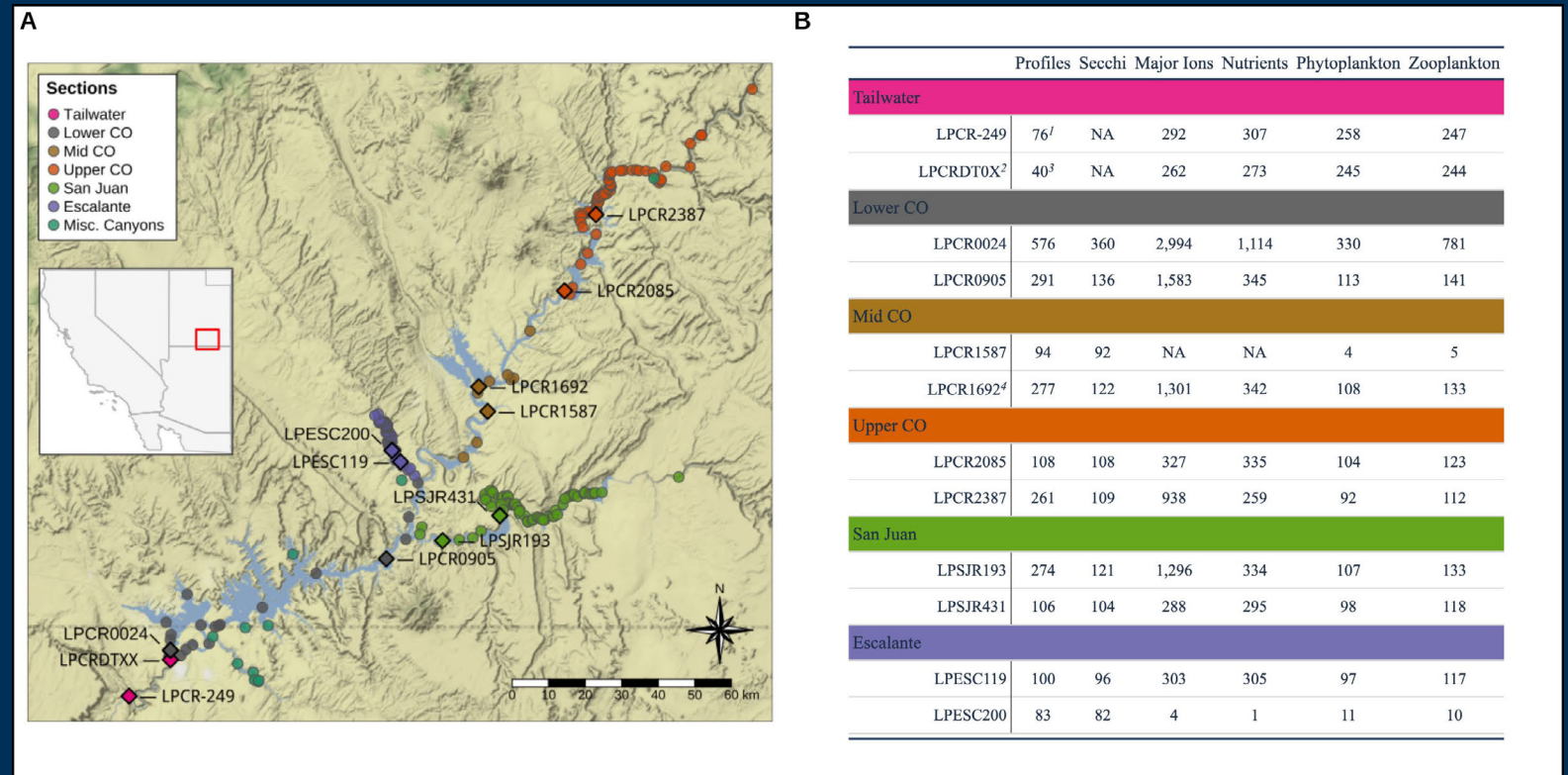
¹U.S. Geological Survey, Southwest Biological Science Center



Over half a century record of limnology data from Lake Powell, desert southwest USA: from reservoir filling to present day (1964-2021)

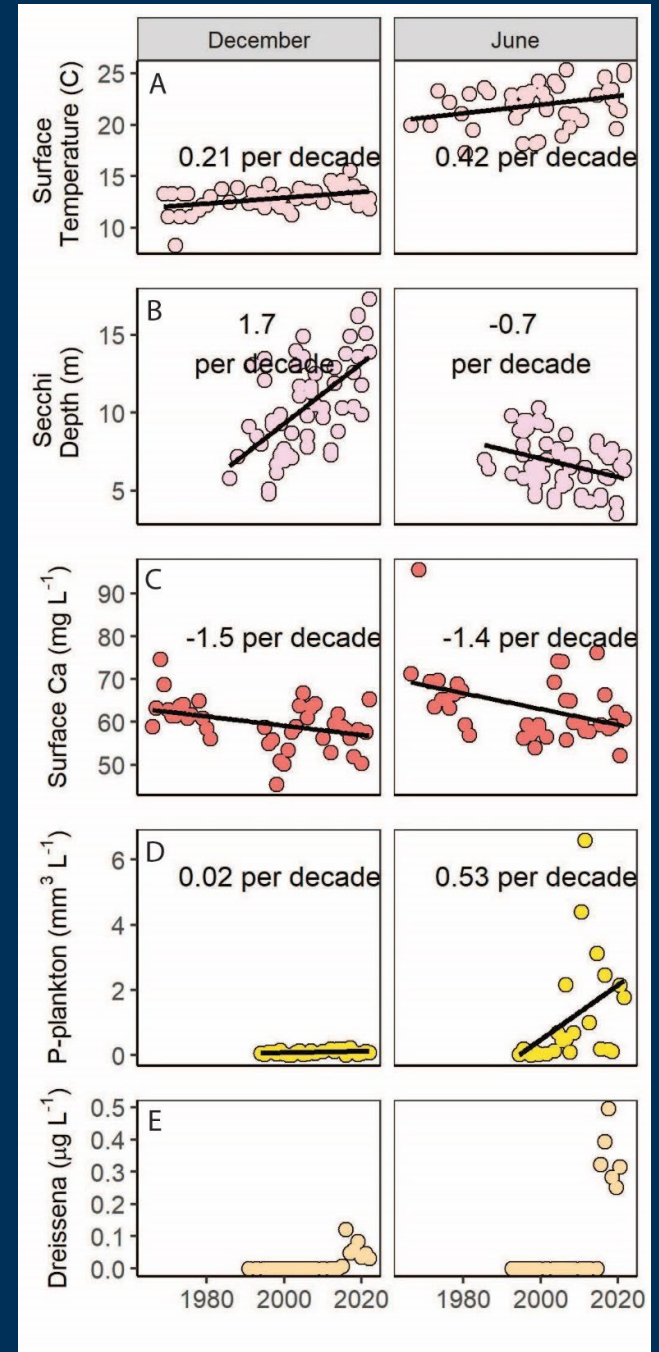
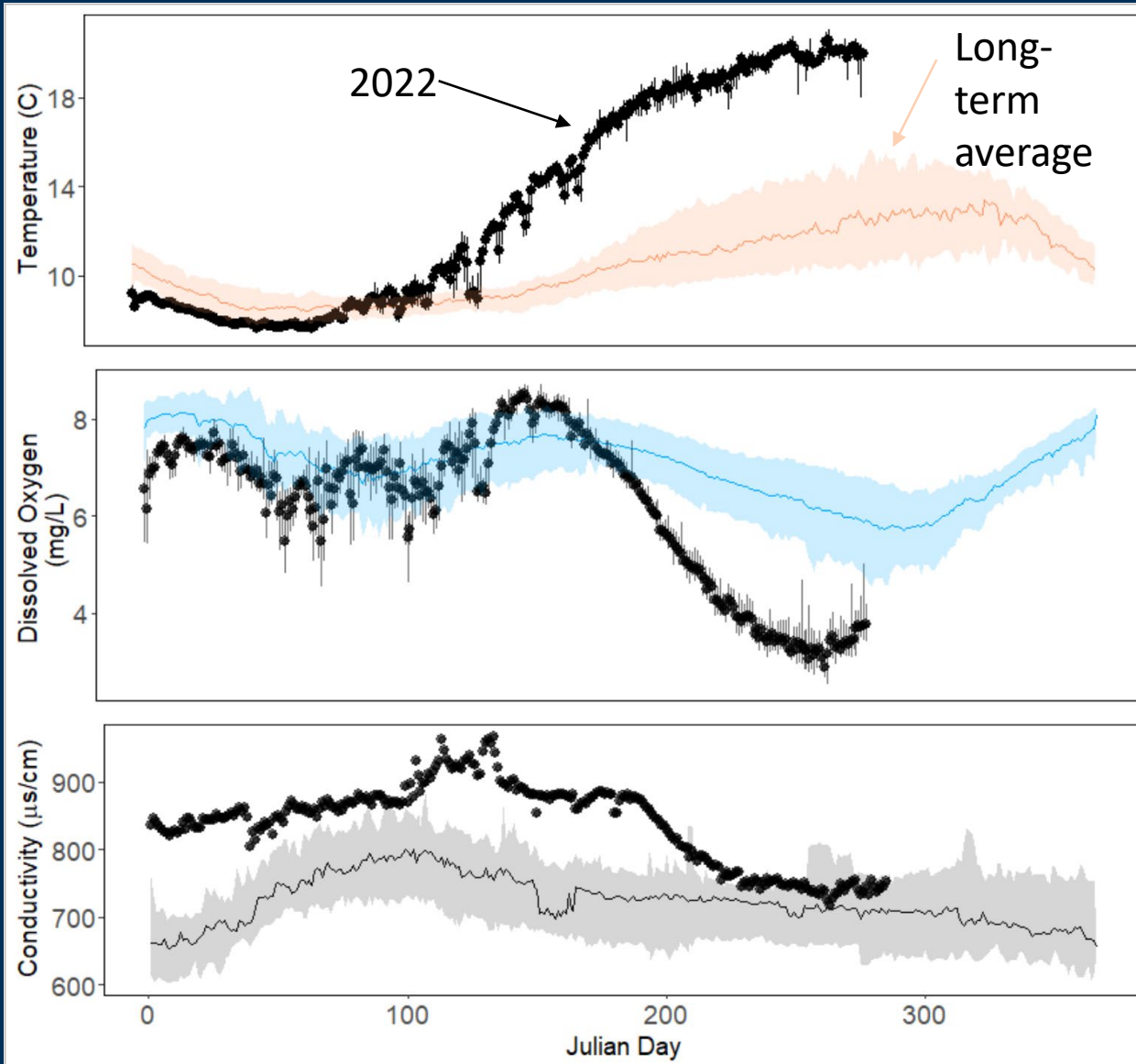
Data paper submitted to L&O Letters in August 2022, currently in revision.

- 58-year water quality dataset
- 8 research ready flat files
- 5,208 unique site visits
- 9 sites with long-term quarterly to monthly scale data



Deemer et al. In Revision

Water Quality is Dynamic



CE-QUAL W2 Model Improvements



-Bryce Mihalevich began a Post Doc in June 2022.

-Constructing a new grid with updated bathymetry from Jones and Root 2021

-Examining options for different weather inputs

-AR5

-Bullfrog Marina Weather Data

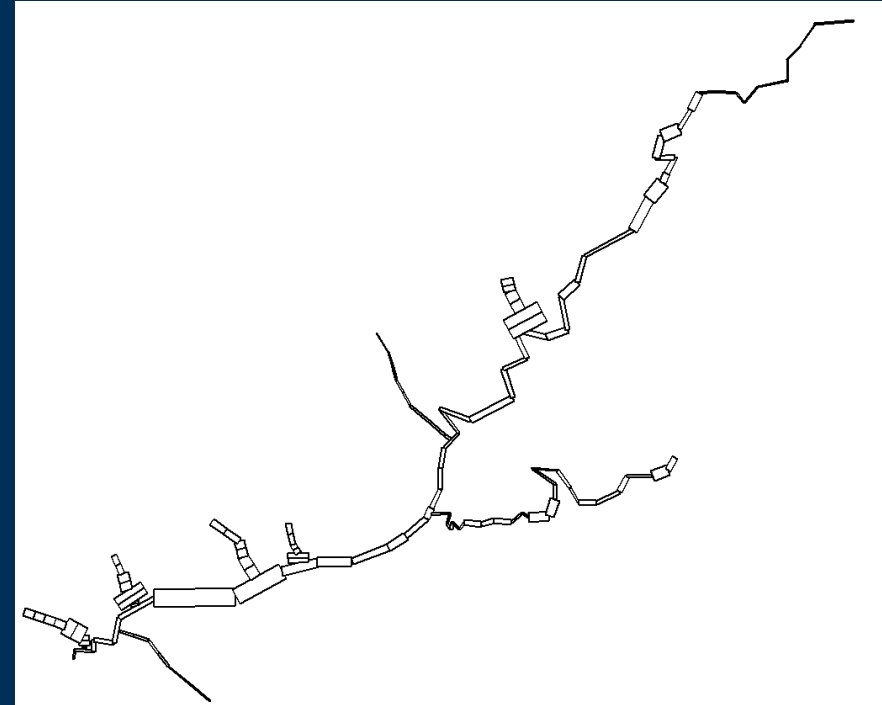
-Page Airport

-Dryland Research Institute/BOR

-Incorporate information from long term monitoring program on:

-Wind sheltering

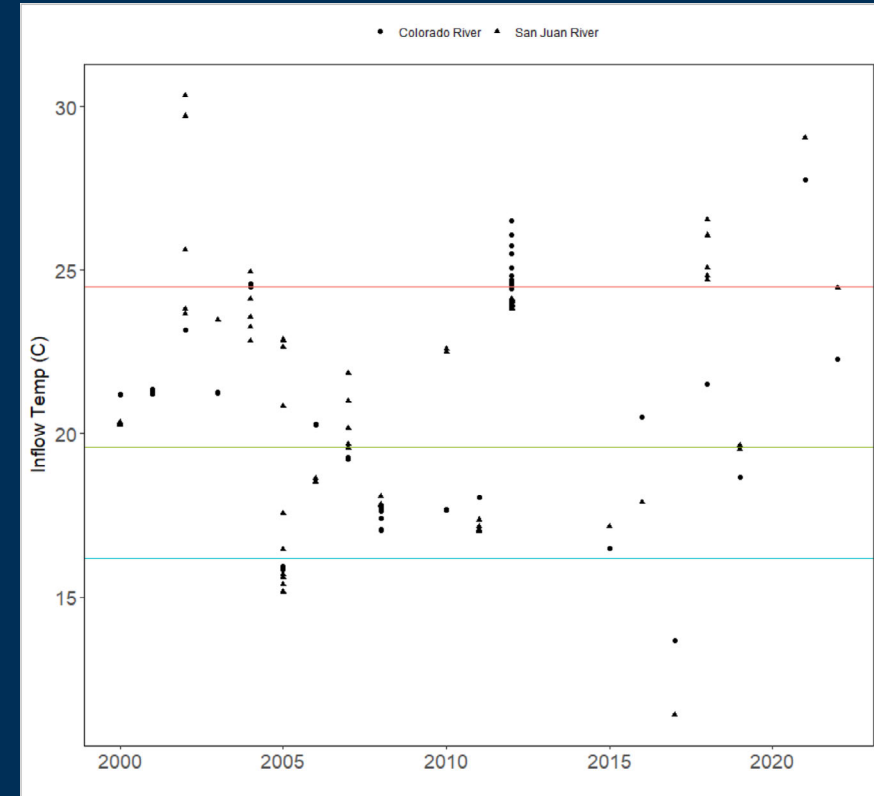
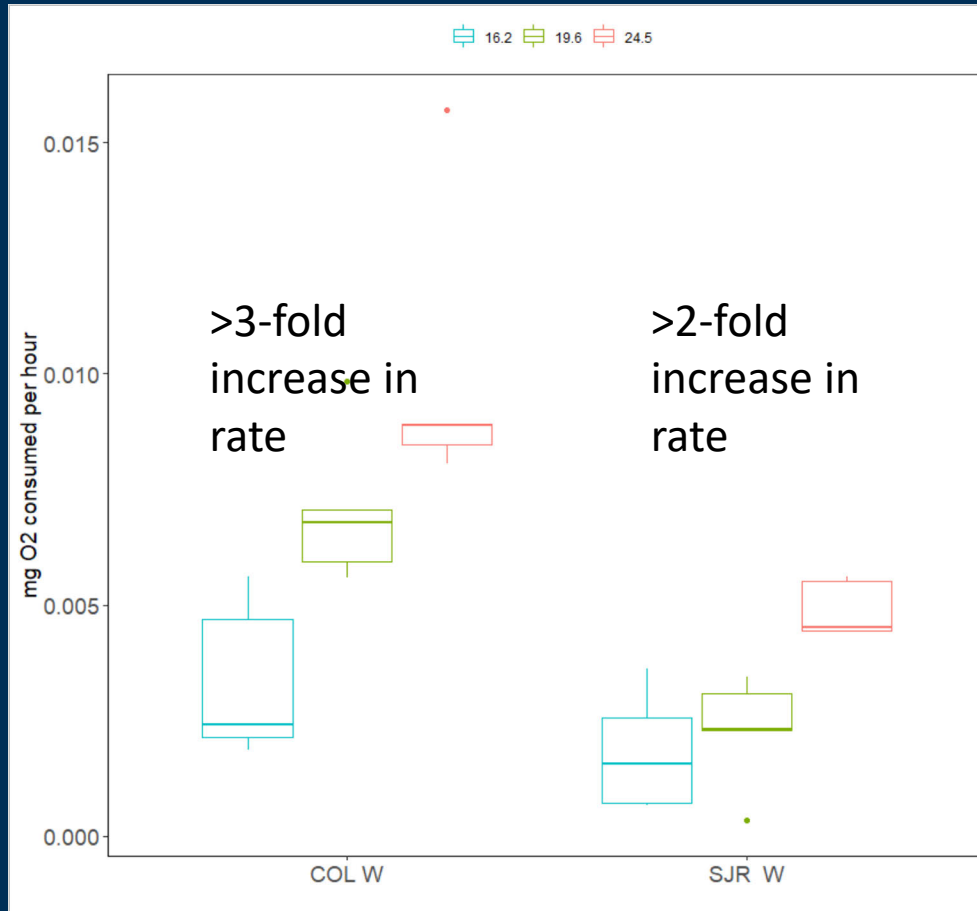
-Water clarity



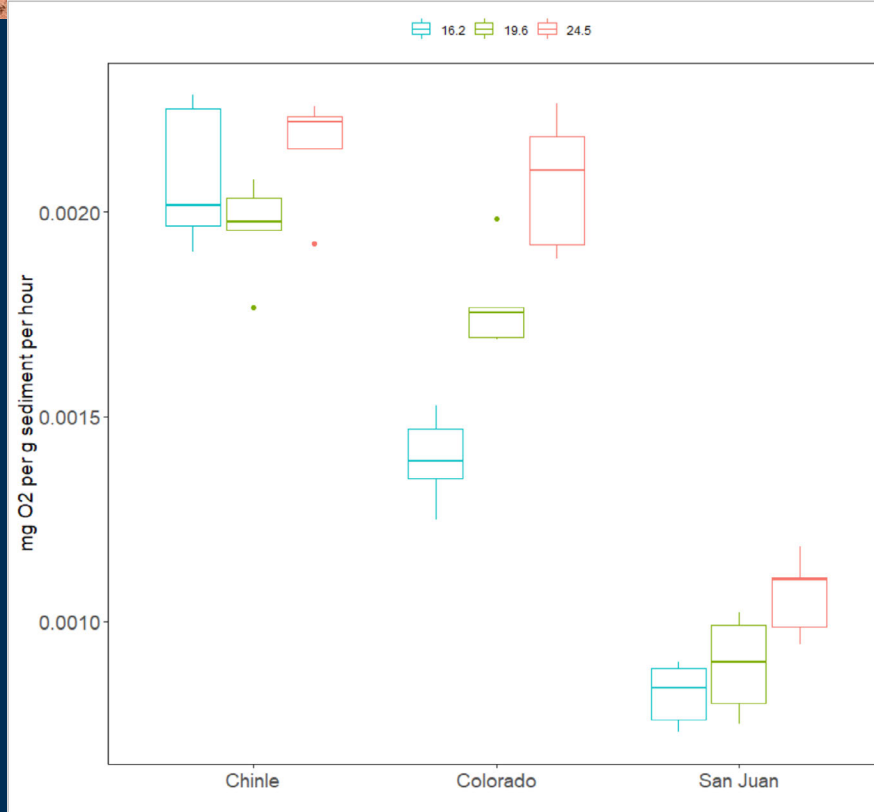
Example Lake Powell CE-QUAL grid structure

Dissolved Oxygen Demand in Inflow Plumes

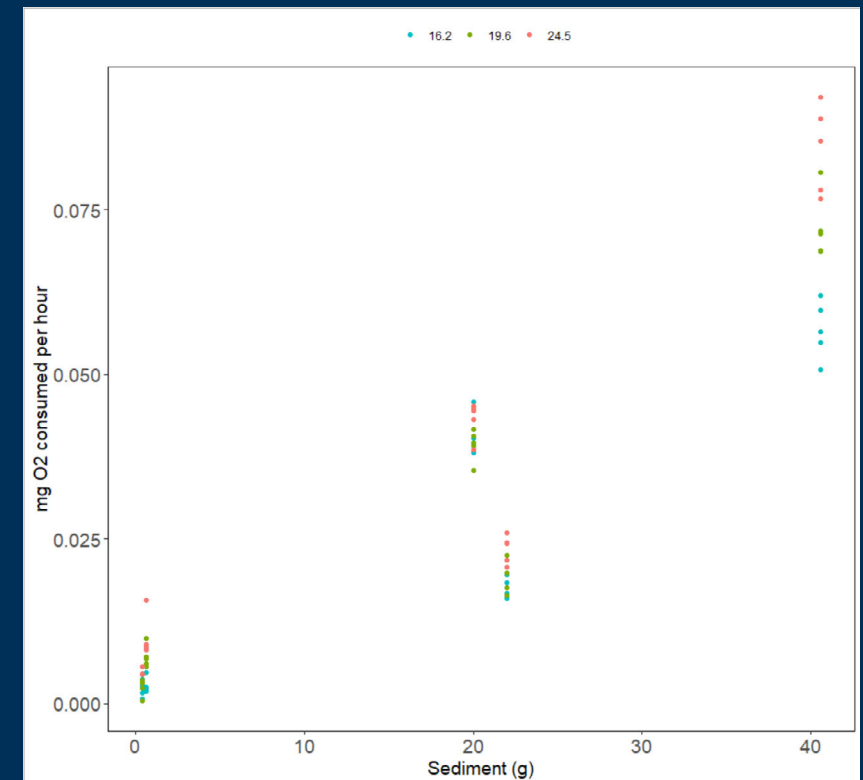
- 3 Temperature Treatments (16.2, 19.6, 24.5)



Dissolved Oxygen Demand in Inflow Plumes



Preliminary Data, Do Not Cite



Preliminary Data, Do Not Cite