Delta Science Fellow 2020

Madison Mathers

Project

My research aims to characterize and quantify where detrital material (decaying plant matter) originates within wetlands, the composition of that material, and how export of detrital particles occurs. This project will combine powerful characterization tools and techniques that scale from molecules to ecosystems to assess spatial and temporal trends in particle sources, species and composition.

Timeline

2020-2021 Conduct field work and data collection of suspended sediment particles at ~20 sites in the Delta.

2021-2022 Continue particle characterization. Data analysis and presentation of findings.

Impacts

Because restoration in the Delta will fundamentally alter particle distribution and food availability for aquatic organisms, this study will inform habitat restoration efforts and the revival of native fish populations. The tools developed and adapted for this project may inform management response during extreme conditions and climate events by helping to identify areas that may act as refugia for species.

Doctoral Fellow *University of California, Davis*

Focus Environmental geochemistry and tidal wetland support of pelagic food webs

Award $129,800

Research Mentor
Dr. Peter Hernes, *UC Davis*

Community Mentor
Dr. Brian Bergamaschi, *United States Geological Survey*

"This project aims to provide guidance for future wetland restoration activities in the Delta so they can be implemented in a way that maximizes support for pelagic aquatic habitats."

Delta Stewardship Council
Delta Science Program

Sea Grant California