

## Presentation #7 - Development of next generation molecular tools for assessing stream ecosystem function

Wednesday, November 18, 2020 – 11:45 a.m.-12:15 p.m. PST

### PRESENTER

- Susanna Theroux, Southern California Coastal Water Research Project (SCCWRP)

### ABSTRACT

Existing assessment tools for wetlands and streams rely primarily on observable field indicators of biological community composition. However, these tools do not directly measure the multi-trophic and interactive ecosystem functional processes. As wetland restoration programs increasingly focus on protecting wetland function, there is a growing need to develop “next-generation” bioassessment indices that can evaluate the ability of restoration to support and restore ecosystem function. We will discuss our work to develop a functional bioassessment method using multi-trophic network models of stream macroinvertebrate, algal, and prokaryote communities. We will discuss our previous work on zeta diversity and co-occurrence networks as a measure of stream biological health, and our current efforts to expand these tools for use with molecular, or DNA-based, taxonomy. These tools will help us to better assess the activity of both the micro- and macro-benthos and will help build capacity to evaluate the success of restoration and protection programs.

### BIO



**Susanna Theroux** is an Ecologist at Southern California Coastal Water Research Project (SCCWRP), where she works on bioassessment and the use of molecular methods in biomonitoring. She is also the lead for the California Molecular Methods Workgroup. Dr Theroux earned her PhD in Geological Sciences at Brown University and was a Computational Biology Postdoc Fellow at the Department of Energy’s Joint Genome Institute.