United States Environmental Protection Agency

Bioassessment and Biological Criteria Webinar Series:

Advancing environmental DNA for management applications

Presenter

Susanna Theroux

Principal Scientist

Southern California Coastal Water Research Project

Date

Thursday

March 12, 2026

Time

1 PM Eastern
12 PM Central
11 AM Mountain
10 AM Pacific

The meeting room is open 10 minutes prior to start time. Please enter meeting room early to avoid delays.

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Purpose

The purpose of this webinar series is to highlight and share innovative approaches to biological assessments and criteria that are being implemented or explored across the country, including the latest developments in environmental DNA (eDNA) research and the implications for biomonitoring and bioassessment. Environmental DNA is being used to track invasive and endangered species as well as to develop novel DNA-based approaches to bioassessment. This webinar showcases California's efforts to advance eDNA methods for informing management action

Presenter

Susanna Theroux is a principal scientist at the Southern California Coastal Water Research Project (SCCWRP). Her research focuses on developing molecular (DNA and RNA), approaches to biomonitoring and bioassessment. In addition to research, Dr. Theroux leads the California Molecular Methods Workgroup and is a co-lead of the Marine Technology Society eDNA Technology Workgroup. Dr. Theroux received her BA in geology and biology from Williams College, and a MS and PhD in Geological Science from Brown University. She joined SCCWRP in 2016.

Presentation Overview

Environmental DNA methods are transforming how we monitor and assess biological communities. In recent years, eDNA tools have expanded rapidly and are now used for invasive and endangered species surveillance, as well as community-based profiling for fish and harmful algal bloom populations. However, the speed of eDNA tool development has outpaced the development of frameworks for integrating eDNA tools into routine decision making. Many eDNA tools have been developed in the absence of standardized field and lab protocols, hampering adoption by management agencies. This presentation will discuss a roadmap for eDNA tool development that includes DNA method standardization, demonstration studies to optimize methods, and integration into routine monitoring. We will discuss challenges that we face scaling eDNA methods from pilot scale to routine implementation, and how California is investing in DNA reference libraries, automated sampling, and intercalibration programs to advance molecular methods.

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