

Statistical Design and Analysis of Monitoring Programs
(with emphasis on 305(b) and 303(d) preliminary listing process),
Part 1 & 2

Moderators: Tony Olsen, Steve Paulsen, Bob King, USEPA

This is a short course focused on providing the background required to select a statistical survey design and subsequent statistical analysis appropriate for monitoring streams, rivers, lakes, estuaries, and wetlands. Course includes an overview of survey design options available, illustrated with actual examples from state 305(b) monitoring. We give the steps involved in the survey design process, the site evaluation process, data management, and statistical analysis. Course content will go beyond standard stratified sampling to more complex designs that are more relevant to states' 305(b) and 303(d) monitoring needs.

This workshop: (1) Reviews approaches for designing monitoring programs, highlighting the strengths and weaknesses of each; (2) Emphasizes the concept and implementation of complementary monitoring programs; (3) Discusses survey design approach for monitoring aquatic ecosystems; (4) Develops associated response designs for the monitoring network; (5) Considers the role of data management and STORET in monitoring, and (6) Discusses statistical analyses associated with statistical survey designs, and (7) Uses examples to illustrate their application to monitoring questions raised by stakeholders and the public. Survey designs implemented in all EPA Regions and over 20 states will be used as examples

Part 1

10:45-11:15

Developing a Monitoring Strategy and Assessment Questions (Steve Paulsen, USEPA)

11:15-12:15

Monitoring Program Indicators, Indices, and Response Designs (Steve Paulsen, USEPA)

Part 2

1:30-2:15

Probability Survey Design for 305(b) and 303(d) (Tony Olsen, USEPA)

2:15-2:45

Implementing a Probability Survey Design (Tony Olsen, USEPA)

2:45-3:15

STORET and Information management - (Bob King, USEPA)

3:15-3:45

Statistical Analysis of Probability Survey Designs (Tony Olsen, USEPA)

4:00-4:30

Reporting and Communication (Steve Paulsen, USEPA)