Basic Elements to a Citizen Monitoring Program

• Monitoring Plan
• Quality Assurance Project Plan (QAPP)
• Data Base
• Field/Training Manual
• Safety Plan
• Aquatic Invasive Species Hazard Analysis Critical Control Point Plan (AIS-HACCPP)
• Permits (i.e. Scientific Collection Permit)
• Access Permission(s)
Attributes of a Well Designed Monitoring Program

- Up-front stakeholder buy-in
- Clear objectives
- Scientifically sound design
- Uses available information
- Comparable methods
- Indicates environmental condition
- Timely data evaluation
- Regular program evaluation and refinement
- Regular reporting
Monitoring Plan

Develop Monitoring Objectives

• Problem description
• Watershed description
• Summary of existing data
• Summary of ongoing monitoring efforts

Monitoring Objectives- Examples

• Identify changes in water quality
• Identify water quality problems
• Gather information on pollution prevention
Monitoring Objectives

Examples of Questions

• Did the project reduce nutrient loads to the waterbody?

• Did the project reduce sedimentation?

• What are the baseline water quality conditions?
Potential Data Users

- Citizens
- Legislators
- Regulators
- Resource Managers
- Local Government
- Environmental Groups
- Scientists
Designing a Monitoring Plan

• Where will monitoring occur?
• What parameters or conditions will be measured?
• How will the parameters be measured?
• When will the monitoring occur?
• How will the samples be collected?
Site Selection

- Census
- Probabilistic site selection
  - Random
  - Stratified
- Targeted site selection
Approaches to Water Quality Assessment

- Toxicity
- Chemistry
- Biological Assessments

Indicator Selection
1. Scientific validity
2. Practicality
3. Program considerations
What are Indicators?

“….A measurable feature that provides managerially and scientifically useful evidence of environmental and ecosystem quality or reliable evidence of trends in quality.”
Quality Assurance

• Methods

• Data Quality Objectives

• Performance Audits

• Corrective Action

• Data Validation
Data Management & Reporting

• Who will use the data?
• How will the data be used?
• How will the data be managed?
• How will the data be summarized/analyzed?
• How and to whom will the data be reported?
Data Assessment

• Are the data credible?
  • QA
  • Technical review

• What do the results mean?
  • Were the questions answered?
  • Does the program need adjustment

• Are we done?
  • Does the monitoring plan need revision?
  • Does the QAPP need revision?
“Our mission is to preserve and enhance the quality of California’s water resources and ensure their proper allocation and efficient use for present and future generations”

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