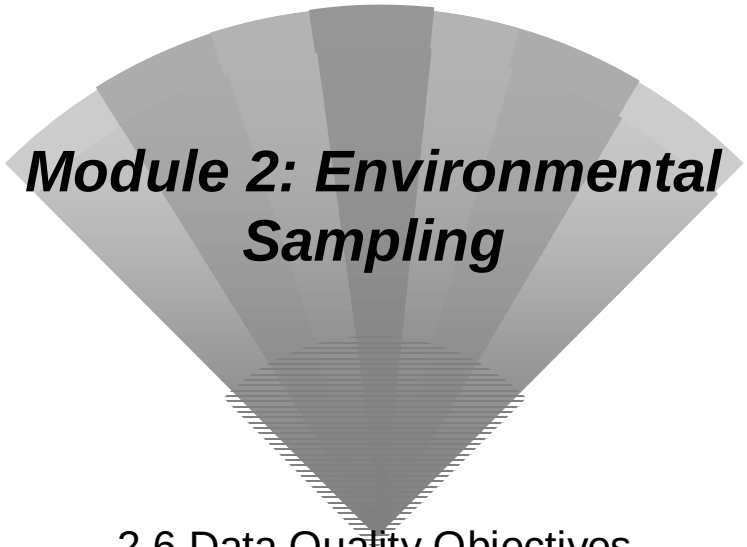
Module 2: Environmental Sampling



2.6 Data Quality Objectives

Data Quality Objectives

- Data quality objectives are a planning tool to help ensure that data collected for a study are
  - the right amount
  - the right kind
  - the right quality

Data Quality Objectives

- Too often, data are collected based on
  - what's been collected in the past
  - what's easy to collect
  - what's affordable
  - what's familiar
- rather than focusing on what needs to be done

Data Quality Objectives

- The U.S. Environmental Protection Agency developed the data quality objectives process to help organizations plan data collection activities to effectively and efficiently address environmental contamination issues

Data Quality Objectives

- State the problem
  - Understand exactly what is being studied and why
  - Often different stakeholders have different views of the problem
  - The time to come to a common understanding is prior to the data collection, not later

Data Quality Objectives

- Identify the decision
  - Determine what decisions will be made based on the data

Data Quality Objectives

- Identify inputs to the decision
  - Decide what data is needed to make the decisions that need to be made
  - This involves thinking about
    - what variables need to be measured

Data Quality Objectives

- Define the study boundaries
  - What is the timeframe for the study
  - What are the spatial boundaries of the study area
    - Three dimensions: length, width, depth

Data Quality Objectives

- Develop a decision rule
  - Decide on the action limit by deciding how the data will be analyzed and what result will result in which management actions

Data Quality Objectives

- Specify limits on decision errors
  - Two types of decision errors can exist
    - Do nothing when a problem exists
    - Do something when no problem exists
  - Decide what probability of each type of error is acceptable

Data Quality Objectives

- Optimize the design