Developing a Uniform Monitoring Network for the Chesapeake Bay Watershed

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Cooperating Agencies

- USGS
- USEPA
- Virginia DEQ
- Maryland DNR
- Delaware DNREC
- West Virginia DEP
- Pennsylvania DEP
- New York State DEC
- D.C. Department of Health
- Susquehanna River Basin Commission
Problem
Chesapeake Bay impaired due to nutrients (N & P) and suspended sediment. If bay is not removed from 303d list by 2010, a TMDL will be implemented over the entire watershed.

Solution
Attain bay-wide nutrient and suspended sediment levels allowing the bay to be removed from the list of impaired waters prior to 2010.
General Approach

- Determine criteria to define a clean bay
  - Water Clarity
  - Dissolved Oxygen
  - Chlorophyll A

- Develop basin specific nutrient (N & P) and suspended sediment load caps

- Develop tributary strategies to meet load caps

- Implement tributary strategies

- Monitor and assess success

Develop a Uniform Monitoring Network
Uses for Monitoring Network

- **Load calculation**
  - Monthly + 8 storms

- **Trend analysis**
  - 5 years of monthly data

- **Watershed modeling**

- **Monitor success of Bay restoration**
Design Site Locations for Best Case Scenario Monitoring Plan

- As many sites as possible
- Spatially distributed
  - Tributary strategy basins
- Representative of geographic characteristics
  - Stream characteristics
    - Hydrologic / biological / chemical
  - Basin characteristics
    - Geology / land use
- Sources
  - High loading areas
Establish Uniform Sampling Regime

Constituents
- TN, TP, TSS, SS

Sample frequency
- Monthly base flow samples
- Storm samples

Sample technique
- Depth integrated
- Horizontally integrated
Compile Characteristics of Existing Monitoring Programs

- Map existing sites
- List existing monitoring regime
  - Constituents
  - Frequency
  - Technique
Compare Existing Monitoring with Best Case Scenario

- Identify spatial data gaps
- Identify sample regime gaps
- Rank data gaps
  - Recognizing jurisdictional and watershed needs
- Reallocate existing resources where possible
  - Relocating existing sites
  - Reallocating existing funding
- Determine remaining gaps
  - New sites
  - Additional sampling
  - Additional parameters
- Allocate additional funding as available
Final Pieces

- Develop QA plan
- Develop laboratory split sampling program
- Develop MOU between agencies
- Implement monitoring plan
- Seek additional funding for gaps