

**Factors Affecting Water Quality Changes  
In the Chesapeake Bay Watershed: Implications for Restoration**  
*Science and Tools for Prioritizing Local Restoration Activities and  
Communicating Bay Progress with the Public*

Northern Virginia Regional Commission  
3060 Williams Drive, Suite 510  
Main Conference Room  
Fairfax, Virginia

**AGENDA**

10:15 Sign in, coffee

10:30 Welcome and Introductions

**PROGRAM**

**Introduction: Factors affecting water quality and relationship to the tributary strategies**, Scott Phillips, Chesapeake Bay Coordinator, U.S. Geological Survey

- How are we using models and monitoring for the tributary strategies?
- What are the general factors affecting N, P, and S and delivery and trends?

The following questions will be addressed during each of the presentations:

- How can we use the information on watershed properties, nutrients and sediment transport, and lag times to better target management actions?
- What types of streams, watersheds could be targeted for maximum water-quality benefit and cost-effectiveness?

**Trends in water quality – Interpreting and communicating water quality data**, Doug Moyer, Hydrologist, USGS

- What are the trends in nutrient and sediment concentrations in the watershed?
- All is not what it seems: The importance of adjusting trends for variations in flow
- N, P, and S trends for the Potomac River
- What other types of monitoring are available to assess management actions?

**Sources of N and P and watershed properties affecting their transport**, John Brakebill, Geographer, USGS

- What are the types and distribution of nutrient in the watershed?
- Impact of in-stream loss of nitrogen: Where is in-stream loss of N likely to occur in our watersheds?

- What are the other watershed properties that affect nutrient transport?
- What types of streams are likely to deliver more nitrogen to the Bay?

**The impact of groundwater on nitrogen delivery and ability to meet target water quality results, Scott Phillips**

- How much does groundwater contribute to the flow of our streams?
- How much nitrogen is delivered via groundwater?
- How long until it surfaces? What is the residence time of groundwater and how does it vary by stream and watershed?
- What is the influence of ground water on the “lag time” between implementing management actions and water-quality response in rivers?

**Addressing sediment sources and loadings, Allen Gellis, Hydrologist, USGS**

- Where are the sediment high yield areas?
- What are the sediment sources? – Using fingerprinting of S to pinpoint sources.
- What the watershed properties that affect sediment transport?

**Wrap Up and Discussion: Prioritizing local programs and implementation activities for cost-effective results, Round table discussion, with opening comments from Scott Phillips and NVRC**

- Summarizing lag times for nutrients and sediment: How long does it take to see a response water quality and living resources in the Bay?
- What are the implications for water quality management actions?
- What are the additional types of information needed by local governments to better implement and assess tributary strategies?

**ACKNOWLEDGEMENTS**

Many thanks to our presenters: Scott Phillips, Chesapeake Bay Coordinator, USGS; Allen Gellis, Hydrologist USGS; John Brakebill, Geographer, USGS; and Doug Moyer, Hydrologist, USGS

This program is funded in part by the Virginia Coastal Resources Management Program of the Department of Environmental Quality through a grant of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resources Management, under the Coastal Zone Management Act of 1972, as amended.