Understanding the Effectiveness of BMPs: Synthesizing Lessons Learned from Water Quality Monitoring Studies

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April 9, 2012

Water Quality Goal Implementation Team Conference Call

Outline

- Background on the project
- Summary of lessons learned
- Next steps
- Feedback

Background

- Synthesizing the state of knowledge from monitoring studies that look at the effectiveness of BMPs
  - 2009 MRAT recommendations
  - April 2011 STAR topical meeting with WQGIT
  - WIPs and verification of practices
  - Aid in the decision framework

Potential products

- Detailed report
  - Conclusions will include information gaps and ways to apply the lessons learned from past studies to improve future BMP implementation
- Newsletters (executive summaries)
  - For targeted audiences

Process

Literature Review

- Tidal Chesapeake Bay studies
- Nontidal Chesapeake Bay studies
- National and international large ecosystem studies

Interpreting the findings

- “Synthesis” workshop
- Summary document of “overarching lessons learned”

3 main questions

- How are BMPs improving water quality?
- How can we apply what we've learned about BMPs to improve water quality?
- How can we use adaptive management to reduce uncertainty and improve the implementation of BMPs?

How are BMP practices improving water quality?

- Significant improvements can be attributed to reductions in point source nutrient discharges
- Results from the implementation of nonpoint source (NPS) BMPs vary in the extent of reduction and improvements
- The majority of NPS BMPs will take years to improve water quality in both the watershed and the estuary

How can we apply what we've learned about BMPs to improve water quality?

- BMPs must be focused (both type and location) to address the main sources of water quality impairment
- The amount of BMPs implemented should be sufficient to match the scale of the problem
- Improvements in water quality as a result of BMPs may be offset by increasing nutrients in other sources

How can we use adaptive management?

- Enhance models for targeting of BMP implementation
- Enhance monitoring of BMPs and water quality and habitat responses
- Better understanding of lessons learned from past BMP projects and the application of those lessons through adaptive management

Next Steps

TODAY: Feedback from WQGIT on summary document

- Write report and determine communication strategy (April-May)
- Review process (May-June)
- Release (July-August)

Study locations

CBW Nontidal Stories	CB Tidal Stories	Stories outside of the CB Watershed
Anne Arundel Co. stream restoration (MD)	Back River (MD)	Boston Harbor (MA)
Bald Eagle Creek (PA)	Baywide synthesis (MD & VA)	Everglades (FL)
Big Spring Run and Mill Creek (PA)	Choptank (MD)	Great Lakes (Midwest)
Brush Run Creek (PA)	Corsica (MD)	Kanahoe (HI)
Cullers Run (WV)	Gunston Cove (VA)	Lake Champlain (VT)
German Branch (Choptank, MD)	Mattawoman Creek (MD)	Neuse River Estuary (NC)
Little Conestoga Creek (PA)	Patuxent (MD)	Tampa Bay (FL)
Lower Monocacy River/Lake Linganore (MD)	Potomac (MD)	Denmark
Minebank Run (MD)	Susquehanna Flats (MD)	Spain
Muddy Creek/ Lower Dry River (VA)	Wye (MD)	
Occoquan River (VA)		
Owl Run (VA)		
Sawmill Creek (MD)		
Silgo Creek (MD)		
Spring Branch (MD)		
Spring Creek (PA)		
Stephen Foster Lake (PA)		
Trap pond (DE)		
Upper Pocomoke River (MD)		
Wetlands (MD)		
Willis River (VA)		