

# A Protocol for Monitoring Best Management Practices

USDA Forest Service  
Northeastern Area  
State and Private Forestry



**Description:** The term *Best Management Practice* (BMP) was originally defined in the 1987 Clean Water Act (CWA) and refers to precautionary measures and practices designed to protect water resources during timber harvesting. The silvicultural exemption allows harvesting activities to proceed without a permit when BMP's are used. The Environmental Protection Agency (EPA), which is required to show evidence of CWA enforcement, has long sought a standard BMP monitoring protocol that will provide reliable, measurable data that is comparable among states.

Individual state monitoring to date has been sporadic, qualitative, and a generally unreliable as a measure of effectiveness. State Forestry agencies have cited a number of barriers to a common protocol, including staff, time, cost, differences between voluntary, regulatory, and quasi-regulatory authorities, and a desire to retain existing BMP specifications or the makeup of their monitoring teams.

The Northeastern Area Association of State Foresters (NAASF) in cooperation with the Maine Forest Service and Northeastern Area has initiated an effort to create a regional BMP monitoring protocol. The protocol focuses on water crossings and riparian areas because they have a greater potential to adversely affect water resources. The project is designed to evaluate BMP principles, incorporate a quality control system, use Global Positioning System (GPS) technology, and provide geographic flexibility in interpreting data. This will overcome state-cited barriers and enhance evaluation of data by watershed, political, or other boundaries. Quantitative data will allow statistical analysis and computer modeling; provide a meaningful foundation for risk and impact analysis, and a more defensible measure of the impact of forest management activities on water resources.

## Key Issues:

- The Clean Water Act identified BMP's as a primary means to control non-point source pollution.
- Research has shown that BMPs can be effective if applied correctly and in a timely manner.
- The CWA requires use of BMP's in lieu of the permitting process
- EPA needs measurable, site specific, quantitative, comparable data to demonstrate that the BMP program effectively complies with Clean Water Act.
- Most states do not collect data continuously and much of their information is anecdotal.
- A standardized monitoring protocol will set a common foundation for reliable information.

## Accomplishments to Date:

- Developed a draft Protocol and conducted a review with the NASF Water Resources Committee, EPA and various industry and green certification organizations in meetings and field reviews between June 2002 and December 2003.
- Developed and programmed the protocol, a data dictionary of nearly 400 questions, into Trimble GEO 3 Global Position System units for field use.
- Developed a detailed field guide to accompany the data dictionary and GPS units.
- Trained foresters in IN, MD, ME, NH, NY, OH, PA, VA, WI, WV to gather sample data and perform quality control, and to upload data to a central data base.
- Conducted a preliminary Phase I Test of the Protocol, evaluating 120 data samples and 30 quality control samples to determine the reliability of the data and assess the validity of the individual questions.
- Convened a workshop in May 2003 with participating states to evaluate results and receive inputs from state participants and technical specialists in fish passage and large woody debris.
- Issued a report on progress including statistics and examples of data results.
- Revised protocol questions in response to problems identified and input received.

- Converted the protocol for use by more efficient and less costly data gathering units such as personal digital assistants.
- Field tested the revised questions and equipment in the original states plus VT and MA.
- Initiated work on a field instruction manual including statistical sampling design techniques.
- Hosted a technical review workshop in January, 2004 to finalize protocol questions in preparation for final testing in the spring of 2004 on a statistically valid scale.

### **Budget History:**

Focus Funding Grants to the NAASF Water Resources Committee along with a grant from EPA have provided funding for the project.

<b>BMP Monitoring Protocol</b> ( <i>\$ Thousands</i> )				
	<b>FY 2001</b>	<b>FY 2002</b>	<b>FY 2003</b>	<b>FY 2004</b>
Forest Stewardship Program	\$0	\$68	\$50	\$150
US EPA	\$0	\$0	\$50	0
<b>Totals</b>	<b>\$0</b>	<b>\$68</b>	<b>\$100</b>	<b>\$150</b>

### **Future Direction:**

- Six States will fully implement the protocol in FY 2004 as a final Phase II using the revised data dictionary and field procedures-- resulting in sufficient data to test the Protocol questions and the analysis and reporting of data.
- Develop computer code to generate automated reports.
- Draft risk assessments based on a combination of site factors and operator attitude.
- Complete a scientific review of the protocol guidance and reports.
- Complete and publish a BMP Monitoring Protocol Guidance Manual to direct implementation in the Northeastern Area.
- Share the protocol through presentations and training with states and organizations in other parts of the country.
- Identify an organization and procedures needed to oversee implementation and manage the collection and interpretation of data on a continuing basis.
- Seek adoption of the protocol by NAASF, USFS and EPA for use in the Northeastern Area and other appropriate states.
- Identify mechanisms to fund the implementation and continued use of the protocol.
- Serve as catalyst for other regional approaches across the nation.
- Reduction of regulatory threat for forestry activities through consistent documentation of monitoring data

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