

Maine Forestry Best Management Practices Use and Effectiveness 2005-2009



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Executive Summary

The Maine Forest Service (MFS) has worked closely with Maine's professional forestry community for many years to develop and refine forestry Best Management Practices (BMPs) to protect water quality. MFS BMPs stress a strong understanding of water quality protection principles needed to use the "toolbox" of BMP practices effectively. MFS prefers a flexible, voluntary BMP approach over prescriptive regulation. Voluntary BMPs based on water protection principles allow loggers to select efficient practices that result in the desired outcome; protection of water quality. For an outcome based BMP system to be successful, a strong training program must be in place as well as a monitoring system to ensure that BMPs are working on a statewide basis. MFS's key partners in training development and delivery have been Maine's Sustainable Forestry Initiative and the Certified Logging Professional and Qualified Logging Professional programs. This public-private partnership has advanced Maine's BMP educational efforts far beyond what they would be if they were solely a government effort.

Forestry operations do not have permitting requirements under the Clean Water Act because there is a "silvicultural exemption" given in that law, as long as best management practices (BMPs) are used to help control non-point source pollution. The MFS is statutorily responsible for the development of forestry BMPs 38 MRSA §410-J in Maine and has issued a BMP manual as required by EPA. As part of this mandate, MFS also monitors and reports on the use and effectiveness of BMPs on harvest operations across the state.

The MFS publishes reports on BMP use and effectiveness annually on its website, the current report looks at progress over the last five years. This report presents an analysis of data collected during the five-year period beginning in 2005 and ending in 2009. The objective of this ongoing effort is to assess the use and effectiveness of BMPs in Maine.

Data in this report was collected and analyzed using the "Best Management Practices Implementation Monitoring Protocol," an original project of the Northeastern Area Association of State Foresters' (NAASF) Water Resources Committee. This protocol assesses the overall effectiveness of the suite of BMPs used rather than monitoring the simple installation of prescribed, individual practices, which do not necessarily guarantee success in protecting water quality.¹ Having data collected using a consistent protocol over a five-year period from a total of 500 timber harvests allows for examination of trends in BMP effectiveness. It also allows for examination of data items that have too small a sample size to yield meaningful results in any one year.

MFS uses BMP monitoring to focus educational outreach efforts to loggers, foresters, and landowners and identify trends for targeting technical assistance. Trainings include indoor and field sessions and hands on activities such as

¹ Welsch D., R. Ryder, T. Post. 2007. Best Management Practice (BMP) Manual –Field Guide: Monitoring, Implementation, And Effectiveness for Protection of Water Resources: U.S. Department of Agriculture, Forest Service, NA-FR-02-06, 129 pp.

skidder bridge construction and bottomless culvert installation workshops. Since 2004 approximately 2500 loggers, foresters, and landowners have attend MFS sponsored BMP related classes and workshops and 10,000 copies of the BMP manual have been distributed.

As BMPs are voluntary measures to protect water quality, MFS does not use BMP monitoring to assess compliance with nor enforce laws and rules. When monitoring staff observe concerns or minor issues during BMP monitoring, MFS works closely with the landowner in a non-regulatory manner to seek corrective measures. Education and intervention usually result in quick corrective action, thereby avoiding lengthy regulatory processes that may prolong erosion problems and result in greater negative environmental impacts. Dealing with minor issues in this manner also increases landowner willingness to cooperate with the BMP monitoring process, resulting in a more comprehensive picture of BMP use.

Assessing the overall effectiveness of the suite of BMPs used rather than monitoring the installation of prescribed individual practices allows assessment of whether BMPs effectively protected water quality. For example, simply finding that waterbars were installed does not indicate whether they were effective in directing water into the filter area and keeping sediment out of the waterbody. This approach supports MFS's desire to pursue outcome-based forest policy, a science-based voluntary process that achieves mutually beneficial economic, environmental, and social outcomes in the state's forests. Outcome-based policies are an alternative to prescriptive regulation. They demonstrate measurable progress towards achieving statewide sustainability goals and allow landowners to use creativity and flexibility to achieve objectives, while providing for the conservation of public trust resources and the public values of forests.

MFS has conducted random, statewide monitoring of BMPs on timber harvesting operations since March 2000. MFS continues this monitoring effort as a part of regular field activities and expects to generate subsequent reports.

Key findings of this report include:

- **From 2005-2009 BMPs were effective in preventing sedimentation is 84% of cases.**
- **Sediment entering a waterbody has decreased from 17% of cases in 2005 to 10% in 2009.²**
- **Harvests that had BMPs assigned contractually to a logger or forester were more likely to prevent sediment from entering a waterbody.**
- **The percentage of stream crossing structures evaluated that span the stream has increased over the evaluation period. Structures that span the channel rather than constricting it are more likely to**

² Note: Due to year to year differences in sampling intensity relative to the total number of harvests movement of percentages up or down by 5% or less between years is considered insignificant.

- maintain ecological stream function and permit the passage of fish and other organisms.
- The number of sample units harvested by dragged wood systems such as grapple skidders has increased from 75% in 2005 to almost 90% in 2009.
 - There was no evidence of chemical spills on 94% of harvests evaluated.

Acknowledgements

MFS obtained landowner permission prior to conducting BMP surveys. Landowners, loggers, and foresters often accompany MFS field staff during site evaluations. With a 90% positive response to MFS survey requests, it is evident that Maine landowners are sincere about responsible timber harvesting practices that protect and enhance water quality. MFS is grateful to landowners for such a high rate of positive responses and active landowner participation, without which this comprehensive report would not be possible.

MFS also extends appreciation to Pat Sirois, Kirby Ellis, Andy Shultz, Ethel Wilkerson, Tim Post and Dick Morse, and staff from Massachusetts DC&R, UNH cooperative extension and New York City's Watershed Agricultural Council, who acted as quality control teams, assuring consistent application and interpretation of the monitoring protocol by MFS field staff.

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Additional appreciation is expressed to David Welsch for assistance and training in running the standardized reporting system.

Absent significant changes in staffing levels or bureau priorities, MFS expects to continue BMP monitoring indefinitely and to report periodically on the most recent data utilizing the USDA Forest Service - Northeastern Area, Best Management Practices Protocol: Monitoring Implementation and Effectiveness for Protection of Water Resources.

Note: The data in this document were generated using the procedures outlined in the two volumes of the **Best Management Practices (BMP) Monitoring Manual: Implementation and Effectiveness for Protection of Water**

Resources:

Field Guide (NA-FR-02-06) **Desk Reference** (NA-FR-02-07) Both documents were published by:

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Online versions are available at: <http://na.fs.fed.us/watershed/bmp.shtm>