Comparison of Forest Harvesting Best Management Practice Guidelines

In Maryland, Pennsylvania and Virginia

By Judy Okay

The states of Maryland, Pennsylvania and Virginia have developed guidelines for those engaged in the harvest of forests in these state. Although the focus states consider their recommended forest harvest best management practices to be voluntary, each of the states must comply with federal laws and regulations that govern the harvest of forests. But they also have unique sets of state and local laws and regulations for harvesting. In as much as the state guidelines can be compared, this review is meant to show the effort that is being made to protect water quality during forest harvest activities particularly in the Chesapeake Bay watershed. This review is intended to inform the Chesapeake Bay Forestry workgroup . The information could be useful as methods are developed to track state program progress toward TMDL and WIP goals. Forestry and the wood products industry are of economic importance in Maryland, Pennsylvania and Virginia. All three states have **A Right to Practice Forestry Act.** This Act prevents local governments from enacting ordinances that unreasonably restrict the harvest of trees. It is understood that in each state there are a number of guiding documents for the control of stream pollution and forestry is included in some of them. This review considers the primary guides or handbooks that professional forest managers would use to guide their forest harvest operations.

The issuance of the Total Maximum Daily Load (TMDL) by the Environmental Protection Agency (EPA) for the Chesapeake Bay estuary has given more significance to the use of best management practices (BMPs). It is of interest to consider what forest harvest best management practices are being promoted in the Bay states. It is also of interest to consider the enforcement of the use of forest harvest best management practices. In the context of this review, best management practices are actions most likely to succeed in the reduction of soil erosion and control of sediment and other pollutants reaching waterways from forest harvest operations. Maryland and Virginia have forestry BMP manuals that are very direct about the need to use best management practices. Pennsylvania has two different publications used for guidance of forestry activities.

**The Virginia** *Best Management Practices Guide* is a substantial publication with 176 pages of text, diagrams and tables to aid in the implementation of forest harvest BMPs. It covers the spectrum of tools to use for site analysis, how to approach a site analysis, and how to develop a Comprehensive Plan for harvesting. Federal and state laws are presented and forestry practitioners are reminded to check local ordinances. The Chesapeake Bay Act and ordinances related to it are featured. Agencies overseeing the regulations are listed with contact information. There are fines, penalties and enforcement of pollution control from forest harvest activities in Virginia. The Department of Forestry is the authorized agency to inspect forest harvest operations. Virginia Department of Forestry has the authority to stop action on a forest harvest until there is a correction to the water quality violation cited.

**Maryland** forest harvest operations are directed primarily by *Maryland’s Guide to Forest Harvest and BMP Plan for Forest Operations.* This guide was published 1992 and has been followed by an update in 2001. The updated document addresses all forestry related practices and laws enacted after 1992. There is also a separate BMP Implementation and Inspection Form that is quite thorough in addressing all aspects of site planning and BMP implementation. The BMP guide has very thorough definitions and diagrams to explain individual BMPs. Tables are included for implementation aspects of the various BMPs (culvert sizing, road grade etc). The Soil and Water Conservation Districts published a guide in 2005. The guide entitled *Maryland Erosion and Sediment Control Standards and Specifications For Forest Harvest Operations* does duplicate other forest harvest information available. It has the SWCD perspective of erosion control and gives definitions, diagrams, tables and regulatory agency information in great detail (197 pages).  Maryland has a Forest Conservation Act that regulates any tree removal. The purpose of this Act is to maintain a high level of forest cover throughout the state. Afforestation and reforestation are important elements in the application of the Forest Conservation Act. The Critical Area Law pertains to the protection of the Chesapeake Bay and its tributaries. Enforcement is undertaken by the Critical Area Commission along with local government. The Soil and Water Conservation Districts provide assistance with the required Standard Plan for forest harvesting. The Districts are also the approving authority for the plans. A copy of the plan must be given to the Department of Natural Resources before the harvest begins. Failure to comply with site specific appropriate BMPs can result in a stop work order. If failure to comply continues a lawsuit may ensue. The only financial penalties mentioned in Maryland forest harvest guidance documents is in regard to the trespass laws. A landowner can claim 3 times the value of the timber if an unauthorized removal occurs. Maryland Department of the Environment is the legal authority for this action.

**Pennsylvania’s** forest harvest guidance comes from two documents. The first is *Best Management Practices for Pennsylvania Forests: promoting forest stewardship through education, cooperation and voluntary action.* The title of this document gives insight into the Pennslyvania voluntary approach to forest harvesting guidance. It is a rather short document, 52 pages. The premise stated in the document is that voluntary compliance reinforced with education will serve the community better both socially and economically. In this guide there is a reference to earth moving in forest harvesting. The Conservation Districts have authority for permitting soil moving activities with volume greater than 200 cubic feet. The Department of the Environment performs inspection and enforcement. The Fish and Boat Commission handles the Fish & Boat Code. The Clean Water Act is enforced in Pennsylvania by the Army Corps of Engineers in the same manner as it is supported in the other states. The second guide is *The Pennsylvania Pocket Guide for Foretsers, Loggers and other Forest Land Managers,* published by the PA Cooperative Extension*.* This paper was compiled in 1993, it has a description of forestry best management practices. It is primarily intended for forested wetland harvesting and activities. There are no graphics to reinforce implementation.

The following spread sheet comparison is intended to highlight the elements from Maryland, Pennsylvania and Virginia forest harvest oversight relevant to the TMDL, Watershed Improvement Plans and water quality of the Chesapeake Bay and its tributaries.

**Virginia**

**Pre- Harvest Plan**

The BMP manual includes an extensive pre-harvest plan and also a comprehensive plan. The form for this is found in the Appendices. The plan must be done by a certified forester from the state, or a consulting forester. Items included in the plan are: type of cut, terms of sale, topography, soils, hydrology, boundaries, easements, right of ways, volume of timber, truck type being used.

**Pennsylvania**

**Pre- Harvest Plan**

This is not addressed in the Non- technical BMP Manual. It is however included in the 1993 PA Pocket Guide for Foresters ( Brown, 1993).

Instead of a pre-harvest plan, it is referred to as a pre-harvest evaluation with a focus on wetland forests.

**Maryland**

**Pre- Harvest Plan**

The Maryland BMP Manual presents a Standard Plan which has similar criteria to the Virginia pre-harvest plan. A form is found in Appendices 3 & 4 of the manual. Maryland Department of the Environment approves this plan. There are three areas of concern addressed in the Standard Plan.

1. The entrance to the harvest site
2. Haul and skid trails and Landings
3. Watercourses on the site

**Virginia**

**Laws and Regulations**

-Harvest Notification (law?)

The landowner or operator notifies local VDOF office no later than 3 days after starting the harvest. Penalty - $250 up to $1,000

-Water Quality Law

The State Forester is the designated authority according to the Code of Virginia. Civil penalties up to $5,000 are applied.

-Chesapeake Bay Protection Act

The protection of tidal perennial streams an

d the vegetation in a 50 ft width along both sides of the stream are protected from removal and disturbance. This is enforced by the local government (county). Fines and mitigation are used as penalties for violations.

-Clean Water Act 1972

Regulates stream pollution. This is enforced by the Army Corps of Engineers and state Department of Environmental Quality

-Endangered Species Act

Habitat protection for rare, threatened and endangered species. This is a Federal Law that is enforced locally by the Virginia Department of Game and Inland Fisheries. The protection of aquatic habitats as well as terrestrial are covered by this law.

-Stream Debris Law

The stream crossing design and construction are regulated by this law. Culverts, bridges, fords are crossing types considered in permits. The Virginia Marine Resources Commission, Army Corps of Engineers, and local government guide and issue permits and enforce this law in Virginia.

Penalties applied are a range of $100-500, 1 yr imprisonment or both.

**Pennsylvania**

**Laws and Regulations**

-The Clean Stream Law June 22, 1937 is within Chapter 102 of State Law. E& S plans must be developed and implemented. Department of Environmental Policy enforces this law for timber harvests. Chapter 105 of State Law contains The Clean Streams Laws which include Dam Safety and Encroachment Acts. These laws cover the following harvest activities: road design, bridges, culverts, fords and any land disturbance over 25 acres. A permit is required after the 25 acre threshold. Less than a 100 acre drainage basin area can have the permit waived. The Fish and Boat Commission must be notified before any work on the harvest structures begins.

-Fish and Boat Code Act 175

No substance deleterious to fish may run, flow, wash or be emptied into waters of the Commonwealth of PA.

-Chapter 441 Act of June 1, 1945 PL 242 No 428, 36 PS Section 670-420 regulates access to state highways. A permit is required if a hauling road

will abut a state highway.

-Chapter 189 Road Bonding RegulationsTitle75 Section 4902-6103 Vehicle Code. Hauling weight in excess of the highway posted weight requires a permit.

-Municipal Notification

DEP permit Act 14(HB682) an applicant must notify the municipality regarding the harvest. The municipality has 30 days to respond or forfeit right to comment.

-Timber Trespass Law Act 10 1994 PS 8311. Landowners use a civil suit to get 3x value of cut or removed timber in an intentional

trespass. For negligent trespass 2x the market value and for trespass with a reasonable basis actual, market value of timber can be received.

-Clean Water Act 1972 regulates road construction, maintenance and the BMPs used for this.

**Maryland**

**Laws and Regulations**

Disturbing 5,000 sq ft or moreof soil, an erosion and sediment permit is required. The state has given counties jurisdiction over these activities. The Soil and Water Conservation Districts and County foresters are the contacts for enforcement.

-Critical Area law

A 100ft buffer must be maintained around all waterways or tidal wetlands. Harvest areas,< one acre do not need a permit to harvest in a critical area. Greater than one acre requires approval by Local Forestry Board. To cross the buffer in a Critical Area a variance must be obtained. The percent of forest that can be harvested in the CA is dependent on type of cut, species in the buffer, the slope and soil map unit.

-Non-tidal Wetland Protection Act

The SWCD must identify extent of wetlands. A Standard Plan by a licensed forester must be approved by DNR. A 25ft buffer must be maintained around the designated wetland. A mitigation plan must be submitted and implemented.

-Endangered and Threatened Species Protection

Special Protection must be noted in Stand Plan. Other habitats that are protected are Forest Interior Dwelling Species, Riparian

**(Maryland Laws cont)**

Forest Buffers> 100 ft, and Colonial Waterfowl habitat.

-Water crossings

DNR issues Waterway permits through the Water Resources Administration. It takes 4 weeks for approval.

-Clean Water Act

BMPs designed and implemented in accordance with the state process will be compliant with the CWA.

-County Notification

An inspection of the harvest site must be scheduled 2 days prior to starting the harvest.

-Anadromous Fish Spawn Habitat Protection

Streams on site supporting rockfish, yellow perch, white perch, shad or river herring must be identified and addressed in Stand Plan.

**Virginia**

**BMPs**

The prescribed BMPs relate to water quality, habitat protection, stewardship of natural and community resources. Road design and maintenance, skid trail placement, use, and maintenance, waterway crossings (streams, rivers wetlands), Endangered, Threatened and Rare species, Wetlands (Seeps, Karst topo, Springs).and Resource Protection areas. All BMPs are well described in this manual. The designs are represented in well labeled diagrams. There are tables with specifications for Implementing BMPs. There are Stand Plan

approvals, BMP inspections and enforcement

penalties both financial and in kind mitigation.

**Pennsylvania**

**BMPs**

The Best Management Practices for Pennsylvania Forests, *promoting forest stewardship through education, cooperation and voluntary action, non-technical BMP Manual* describes the reasons for various BMPs. It also gives laws that are applied to forest harvests. There are descriptions of BMPS, but no diagrams or specifications. The PA Pocket Guide for Foresters, Loggers, and other Forest Land Managers produced by Pennsylvania State University Extension describes and lists BMPs. There are also a few specifications, but no diagrams to illustrate how to implement the BMPs. There are references for more information about the BMPs.

**Maryland**

**BMPs**

BMPs are described in detail in the Maryland Guide to Forest Harvest Operations and Best Management Practices. Guidelines for each BMP are established, diagrams, as well as specifications are supplied for implementation. Roads, trails, landings, buffer management and stabilization techniques are included in the list of BMPs. The *Maryland Erosion and Sediment Control Standards and Specifications for Forest Harvest Operations* is another source of guidance that gives BMP definitions, some very good diagrams of BMPs for implementation, as well as a list of regulating agencies. This publication also has tables with specifications for BMPs.

Summary

The forest harvest BMPs in Maryland Pennsylvania and Virginia are similar in intent and application, but different in the philosophy of compliance and enforcement. The real focus for each state is erosion and sediment control during and after forest harvest activities. Virginia has the strongest enforcement measures and they have it under the control of the Virginia Department of Forestry. Maryland forest harvest BMP enforcement is less rigorous without the financial penalties that Virginia uses. Pennsylvania oversight is based on an inherent level of stewardship for those working in the forestry industry. The focus in their guidance is to educate those providing services and depends on the practitioner’s professionalism and knowledge base to plan and use the best possible harvest methods and management practices. The federal Clean Water Act is the primary law that sets the bar for best management implementation and enforcement for all three states. Non-compliance with this law is not tolerated and does have federal and state repercussions. A second focus of importance is forest sustainability. Forest cover in the Chesapeake Bay watershed is the most important land use for protecting water quality.

Beyond erosion and sediment controls that keep sediment and pollutants out of streams during forestry activities, laws related to wildlife and fisheries habitat are enforced by state game and fisheries agencies. In each state there are strong expectations of social and natural resource protection responsibility by forest managers across all spectrums of ownership. For the Chesapeake Bay TMDL and implementation of State WIPs, the response to the Clean Water Act is most important. Keeping waterways drinkable, fishable and swimmable is a high bar. Each of the states has done monitoring of forest harvest operations. The Virginia Department of Forestry is the most prepared with documentation of forest harvest bmp implementation and maintenance throughout harvest activities. It is a good example of continual, complete record keeping that can stand up to the scrutiny needed for supporting progress in the Chesapeake Bay clean up. Maryland and Pennsylvania have records of some harvest locations and the degree of best management success reaching water quality goals. This information is the result of individual study projects.

This review could be used by the Chesapeake Bay Forestry Workgroup as they review and establish possible methods to track state progress toward TMDL and WIP goals. The most important aspects of a good bmp model are early notification of a harvest, inspection of the harvest in progress, enforcement of water quality violations. The information needed for the Bay TMDL and State WIP success is: How many harvests occur, how many water quality violations occur, and how well do BMPs function. To gather this information will take considerable changes to the Pennsylvania approach to BMP practices. Maryland already has a notification process, but the consequence of not notifying is not clear. Stop work orders are used in Virginia and Maryland when harvest conditions are not in compliance with local, state, or federal regulations. This should be a minimum requirement for states in the Bay watershed. It is suggested that the Virginia approach be considered as a model Forest Harvest BMP program. The positive aspects of all the states could be rolled into one model template for education, implementation and tracking of forest harvest BMPs throughout the Bay states.

Prepared for the Chesapeake Bay Forestry Workgroup by Judy Okay, PhD , J&J Consulting, Inc. January 2012. The information included is the perception of this reviewer and not meant as a criticism of any state’s approach to regulating forest harvest operations.