

Forestry Operations and Water Quality in Virginia

By: Bill Lakel, Virginia Department of Forestry

Editor's note: In my March e-newsletter I wrote about the new Farm Bill and its provisions which would affect forest owners. I made the comment "Perhaps the biggest win for forestry in the Farm Bill is the provision preserving the U.S. Environmental Protection Agency's (EPA) nearly four-decade-old approach to treating forest roads and other forest management activities as nonpoint sources under the Clean Water Act". This comment elicited questions and concerns as to why this is a positive thing for forest owners and water quality. Bill Lakel, Water Quality Program Supervisor for the Virginia Department of Forestry, addresses these questions and concerns in this article. Citations for peer-reviewed papers which demonstrate the science on which his comments are based are listed at the end of the article and are also available at: <http://forestupdate.frec.vt.edu/newsletter/current/index.html>.

The Federal Clean Water Act (CWA) and Amendments generally consider water quality pollutants (e.g., sediment, temperature, chemicals) from normal forestry and agricultural operations as non-point source pollutants (NPSP) under Section 319. This means that agricultural and forestry operations are not easy to define, locate, and evaluate, unlike many industrial operations. For example, a large factory that discharges pollutants through a ditch, pipe, or channel, is relatively easy to locate and evaluate, because the source is in a fixed location and operates in a predictable fashion. These identifiable and fixed location types of polluters are considered point source pollution (PSP) and are regulated through permits from the Environmental Protection Agency (EPA). Although regulation and permitting processes do not totally stop pollution, they do attempt to evaluate and minimize the problems. Additionally, the costs of satisfying the permitting requirements can be substantial. As a result, in many cases applicants will find an alternative mechanism to reduce pollution to avoid the permitting cost, so permitting can have a secondary positive impact on water quality.

Forestry operations, however, are transient, ephemeral, and widespread, and as such do not lend themselves to an intensive and costly permitting program administered by EPA. This is why section 319 of the CWA administers these activities with a much broader approach in cooperation with state and local governments, which are better suited to address NPSP sources across the landscape. It is also important to note that, under most circumstances, normal ongoing forestry and agricultural operations which follow Best Management Practices (BMPs) are also exempt from CWA wetlands permitting under section 404 for the same reasons.

The current CWA approach to NPSP under section 319 includes the development of BMPs in cooperation with state governments that will help operators minimize pollution to Virginia's waterways. The CWA also established a system that allows state and local governments to apply for federal grants in order to fund positions and projects that directly address NPSP locally. Both the BMP and local water quality programs are very active in Virginia through both the Department of Conservation and Recreation and the Department of Forestry (VDOT).



In Virginia, Best Management Practices can help minimize sedimentation resulting from forestry operations. Practices include the use of temporary bridges (left) and geowebbing (right) for stream crossings during logging operations. Photos by: Mike Aust, Virginia Tech.

It is important to understand that forestry operations are particularly well-monitored in Virginia by the VDOF; this is especially true for active harvesting operations. All forest harvesting operations must, by law, be reported to the VDOF within days of the start of harvest operations. Virginia also has a Silvicultural Water Quality Law which provides the State Forester of Virginia broad authority to monitor timber harvesting in the commonwealth and take decisive action against any owners and operators who allow forestry operations to contribute sediment pollution to the waters of Virginia. This includes the ability to issue remedial recommendations, hold administrative hearings, issue stop work orders, and assess and levy financial penalties up to \$5,000 per day of violation. This law enforcement program is carried out by as many as 90 VDOF inspectors. A much smaller and specially trained group of water quality inspectors also audits 240 completed harvests per year to monitor BMP implementation and water quality controls.

It is also important to recognize that forestry operations in general do not apply chemicals or concentrated fertilizers and that the rates of such applications, when they do occur, are much lower than those used in agricultural or urban activities. Furthermore, forest operations generally do not expose large areas of bare soils. Typically, ongoing normal forestry operations almost always include replanting, reseeding, or natural regrowth strategies to reforest stands of timber that have been harvested; these reduce NPSP potential. The revegetation of the site also causes hydrologic impacts resulting from forestry operations to be minor and short-lived compared to other more intensive and less vegetated land uses such as agriculture and urban development. The scientific research and literature is clear and well-established on these points. Severe impacts to streams, such as has often been measured downstream of agriculture and urban development, is simply not the norm for forestry operations.

The general consensus of the research regarding protection of water quality is that forest operations are compatible with good water quality. This does not mean forestry operations never cause environmental degradation, because in some cases they clearly do. However, evaluations of the current Virginia BMP program indicate that around 90% of forest operations comply with water quality BMPs and the state program is very effective. The relatively low occurrence and severity of major problems does not warrant a federally administered expensive point source permitting approach. With all that being said, it is important that the federal government continue to vigorously pursue reductions in NPSP

through cooperative efforts with the commonwealth and other states and localities by encouraging sound best management practices on the ground for both forestry and agricultural operations.

In short, forestry BMPs work!

To review the research on forestry practices and water quality, visit the Virginia Forest Update website for a list of peer-reviewed publications:

<http://forestupdate.frec.vt.edu/newsletter/current/index.html>

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Close to ninety percent of forestry operators in Virginia comply with Virginia's Best Management Practices. Photo by: Mike Aust, Virginia Tech.

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