

# Chapter 6

## Forestry and Water Quality

### Forestland Ownership

Approximately 75 percent of the forestland in the basin is privately-owned, with the remaining 25 percent largely in public ownership. Most of the public forestland is found within the Pisgah and Nantahala National Forests, managed by the USDA-Forest Service. The DuPont State Forest, managed by the North Carolina Division of Forest Resources (DFR, also called the North Carolina Forest Service) consists of approximately 10,000 acres of actively managed forestland. DuPont State Forest hosts in excess of an estimated 100,000 visitors annually, many of whom seek out its numerous waterfalls. A streambank restoration project and other nonpoint source pollution projects have been completed at the State Forest and are described later in this chapter. Holmes Educational State Forest is also situated in the basin and serves as an outdoor educational center by hosting several classes from area schools. For more information about forestland ownership or a copy of the most recent statistics for North Carolina, visit the [\*USDA Forest Service Southern Research Station webpage\*](#).

### Forest Water Quality Regulations

Forestry operations in North Carolina are subject to regulation under the Sedimentation Pollution Control Act of 1973 (Article 4-GS113A, referred to as “SPCA”). However, forestry operations may be exempted from specific requirements of the SPCA if the operations meet the compliance performance standards outlined in the Forest Practices Guidelines Related to Water Quality (15A NCAC 1I .0100 - .0209, referred to as “FPGs”) and General Statutes regarding stream and ditch obstructions (GS 77-13 and GS 77-14).

The FPG performance standard rule-codes and topics include:

- .0201 Streamside Management Zone (SMZ)
- .0202 Prohibition of Debris Entering Streams and Waterbodies
- .0203 Access Road and Skid Trail Stream Crossings
- .0204 Access Road Entrances
- .0205 Prohibition of Waste Entering Streams, Waterbodies, and Groundwater
- .0206 Pesticide Application
- .0207 Fertilizer Application
- .0208 Stream Temperature
- .0209 Rehabilitation of Project Site

NC-DFR is delegated the authority to monitor and evaluate forestry operations for compliance with these aforementioned laws and/or rules. In addition, the NC-DFR works to resolve identified FPG compliance questions brought to its attention through citizen complaints. Violations of the FPG performance standards that cannot be resolved by the NC-DFR are referred to the appropriate State agency for enforcement action. During the period January 1, 2004 through December 31, 2008, there were 286 FPG inspections conducted on forestry-related sites in the basin; 74 percent of the sites were in compliance upon the initial site inspection.

### Trout Stream Buffers

Forestry activities are primarily regulated by the FPGs, and as long as a forestry site is in compliance with the FPGs, there is no additional requirement to install or maintain a designated trout stream buffer. This interpreta-

tion is developed from referencing Article 4, GS113A-52.01(2). In lieu of requiring a mandatory trout stream buffer, the FPG rule .0201 describes those situations in which a Streamside Management Zone (SMZ) (ie: stream buffer) is required during forestry activities. As a note of emphasis, the FPG rules are required across North Carolina, including the requirement of a SMZ. The NC-DFR works with the state's water quality and land resources agencies to develop and distribute information about the importance of protecting trout waters from sediment and potential temperature fluctuations.

### Other Water Quality Regulations

In addition to the State regulations noted above, NC-DFR monitors the implementation of the following Federal rules relating to water quality and forestry operations:

- The Section 404 silviculture exemption under the Clean Water Act for activities in wetlands;
- The federally-mandated 15 best management practices (BMPs) related to road construction in wetlands;
- The federally-mandated BMPs for mechanical site preparation activities for the establishment of pine plantations in wetlands of the southeastern U.S.

### Christmas Tree Production

It should be noted that the NC-DFR does not oversee activities or regulations relating to land clearing for Christmas tree production nor the associated BMPs for Christmas tree farming operations. These activities are deemed to be an agricultural-horticultural practice, and therefore come under the oversight of the N.C. Department of Agriculture and Consumer Services and N.C. Division of Soil & Water Conservation, with their recommended agriculture BMPs applying to these activities. The N.C. Cooperative Extension Service has developed extensive guidelines and recommendations for Christmas tree farming operations, available online on the [\*N.C. Cooperative Extension Service's Christmas tree production webpage\*](#).

### Water Quality Foresters

The majority of the basin falls within the coverage area of a Water Quality Forester. Statewide, there is a Water Quality Forester position in 10 of 13 NC-DFR operating districts. Water Quality Foresters conduct FPG inspections, survey BMP implementation, develop pre-harvest plans, and provide training opportunities for landowners, loggers and the public regarding water quality issues related to forestry. These foresters also assist County Rangers on follow-up site inspections and provide enhanced technical assistance to local agency staff.

### Forestry Best Management Practices

Implementing forestry Best Management Practices (BMPs) is strongly encouraged to efficiently and effectively protect the water resources of North Carolina. In 2006, the first revision to the North Carolina forestry BMP manual was completed. This comprehensive update to the forestry BMP manual is the result of nearly four years of effort by the NC-DFR and a DENR-appointed Technical Advisory Committee consisting of multiple sector stakeholders, supported by two technical peer-reviews. The forestry BMP manual describes measures that may be implemented to help comply with the forestry regulations while protecting water quality. Copies of the forestry BMP manual can be obtained at a County Ranger or District Forester office, or online: [\*DFR's Water Quality BMP Manual\*](#).

In the basin during this period, the NC-DFR assisted or observed over 900 forestry activities in which BMPs were either implemented or recommended, encompassing a total area of nearly 52,000 acres.

From March 2000 through March 2003, the DFR conducted a statewide BMP Implementation Survey on 565 active forest harvest operations to evaluate the usage of forestry BMPs. This survey evaluated 39 sites in this river basin,

with a resulting BMP implementation rate of 64 percent. The problems most often cited in this survey across the state relate to stream crossings, skid trails, and site rehabilitation. A copy of this report is available from the DFR Raleigh Central Office or on the [DFR water quality webpage](#). A subsequent 2nd round of BMP Implementation Surveys was conducted on additional logging sites statewide from 2006 to 2008. A report documenting the results from this survey can be found online: [NC Forestry BMP Implementation Survey Results 2006-2008](#). These periodic, recurring BMP surveys serve as a basis for focused efforts in the forestry community to address water quality concerns through better and more effective BMP implementation and training.

## Protecting Stream Crossings with Bridgemats

The NC-DFR provides bridgemats on loan to loggers for establishing temporary stream crossings during harvest activities in an effort to educate loggers about the benefits of installing crossings in this manner. Temporary bridges can be a very effective solution for stream crossings, since the equipment and logs stay completely clear of the water channel. Since 2005, all District Offices in the basin have had bridgemats available for loan-out. While exact figures specific to this basin are not recorded, the bridgemats assigned to the Asheville District Office were used on 9 logging jobs, protected 11 stream crossings, and provided access to 370 acres of timber harvest from 2004 through 2008. Periodic status reports, a list of bridgemat suppliers, and additional information are available on the [DFR's bridgemats webpage](#).

## Forest Management

Over 2,400 acres of land were established or regenerated with forest trees across the basin from January 1, 2004 through December 31, 2008. During this same time period, the DFR provided over 970 individual forest plans for landowners that encompassed almost 57,850 acres in the basin.

## Stream Restoration

Approximately 600 feet of river bank were stabilized and restored in 2007 along two sections of the right-bank on the Little River at DuPont State Forest. This project included reconstruction of a public access area and restoration of the river bank above and below Hooker Falls. This area along the Little River was damaged during successive floods in 2004, 2005 and 2006 resulting from remnants of tropical storms that moved through western North Carolina. Several tons of soil was washed away by the floods. The Little River is a designated trout fisheries and is stocked annually by the N.C. Wildlife Resources Commission. The project enhanced safe public access to the river, reduced sediment loading and protected the river bank from further degradation and scouring. A pair of interpretive sign kiosks is installed at each restoration site that explains the project and includes several photographs taken before and during restoration. Cooperative funding was provided by state and federal water quality grants. Future stream restoration opportunities exist on DuPont State Forest, given the abundance of water resources on the Forest. The NC-DFR will pursue restoration as funding and personnel time allow.

## Education & Outreach

A self-guided interpretive Forestry BMP Demonstration Trail was installed at DuPont State Forest during 2006/2007. This USEPA Nonpoint Source 319-Grant funded project demonstrates practical, 'on the ground' implementation of forestry BMPs. There are several exhibit stations established along existing roads and trails at the State Forest, with a full color interpretive sign installed at each station to explain the concept and utilization of each forestry BMP.

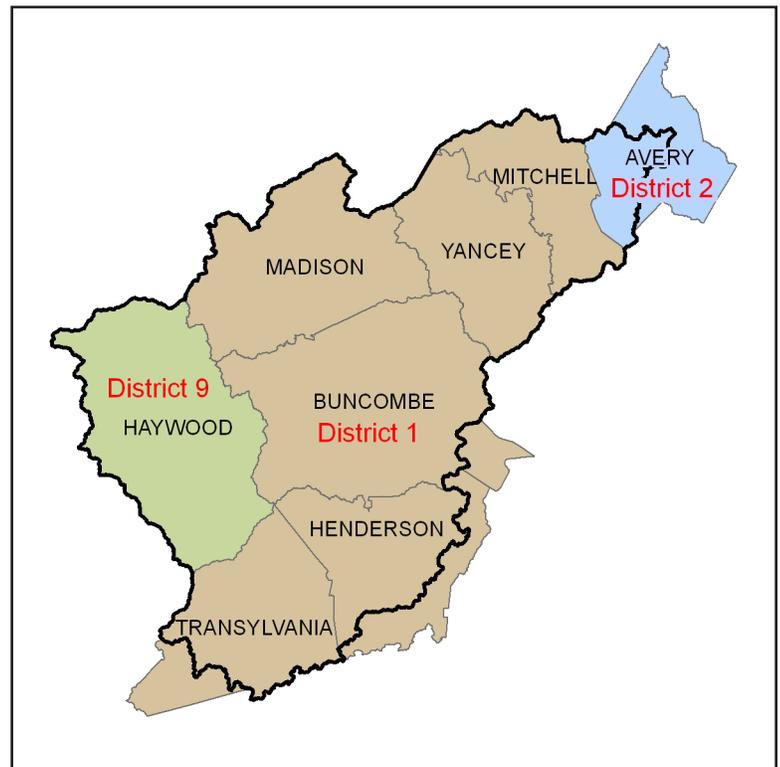
Holmes Educational State Forest in Henderson County has a "Soil & Water Demonstration Trail" that highlights the value of protecting wetlands, streams and conserving soil resources. A standard course of instruction called

“Water Investigation” is conducted for school groups at the Educational State Forest, in which students sample for and identify aquatic insects in the stream. A segment of Crab Creek and two of its perennial tributaries are protected at Holmes. Visit [www.ncesf.org](http://www.ncesf.org) to learn more.

Additional forestry BMP, water quality, and nonpoint source accomplishments are highlighted in the annual *“Year In Review” color brochure*.

The North Carolina Forestry Association, in cooperation with forest industry, NC-DFR, and NCSU Forestry & Environmental Outreach Program, conducts two educational programs annually at different locations in the North Carolina. Most often, at least one of these programs is offered in Asheville. The first program is called the Forestry and Environmental Camp, and is for middle and high school aged children. These 3-day long camps introduce children to the basic science and math skills needed when practicing forestry. The second program is the Sustainable Forestry Teachers Academy/Tour, and educates school teachers about forestry practices and how forest products are manufactured. For more information about these two educational programs, visit the [North Carolina Forestry Association’s website](#).

**FIGURE 6-1: FRENCH BROAD FORESTRY DISTRICTS**



**TABLE 6-1: FORESTRY CONTACTS FOR THE FRENCH BROAD RIVER BASIN**

OFFICE LOCATION	CONTACT PERSON	PHONE	ADDRESS
Asheville District 1	Water Quality Forester	(828) 667-5211	220 Sardis Road Asheville, NC 28806
Lenoir District 2	Water Quality Forester	(828) 757-5611	1543 Wilkesboro Blvd. NE Lenoir, NC 28645
Sylva District 9	Assistant District Forester	(828) 586-4007	133 Glenn Cabe Road Sylva, NC 28779
Regional Office - Region III	Assistant Regional Forester	(828) 251-6509	14 Gaston Mountain Road Asheville, NC 28806
Raleigh Central Office	Nonpoint Source Branch - Forest Hydrologist	(919) 857-4856	1616 Mail Service Center Raleigh, NC 27699-1616
Griffiths Forestry Center	Water Quality & Wetlands Staff Forester	(919) 553-6178 ext. 230	2411 Old US Hwy 70 West Clayton, NC 27520