Chapter 17
Forestry in the Roanoke River Basin

17.1 Forestland Ownership

Approximately 80 percent of timberland in the Roanoke River basin is privately-owned by individual landowners (Figure 24). This ownership estimate comes from the most recent data published by the USDA-Forest Service (*Forest Statistics for North Carolina, 2002.* Brown, Mark J. Southern Research Station Resource Bulletin SRS-88. January 2004).

It is estimated that forest industry owns nearly 10 percent of the timberland in the basin, while the remaining 10 percent is divided among other corporate ownership and public ownership. While there are no State Forests, Educational State Forests, or National Forest lands within the basin, there are large tracts of timberlands dedicated as State or National wildlife refuges and gamelands.

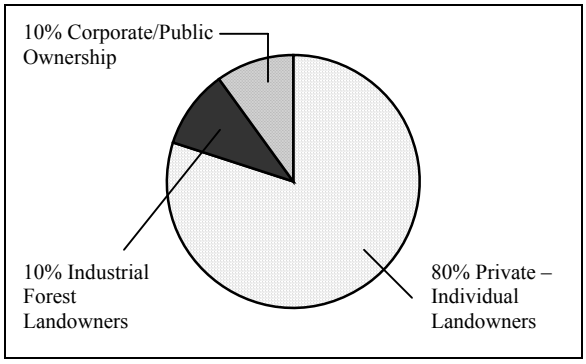

Figure 24 - Ownership of Forestland in the Roanoke River Basin

17.2 Forestry Water Quality Regulations in North Carolina

17.2.1 Forest Practices Guidelines for Water Quality (FPGs)

Forestry operations in North Carolina are subject to regulation under the Sedimentation Pollution Control Act (SPCA) of 1973 (reference NCGS Ch.113A Art.4). However, forestry operations may be exempted from the permit and plan requirements of the SPCA, if the operations meet the compliance standards outlined in the *Forest Practices Guidelines Related to Water Quality* (referred to as "FPGs", reference 15A NCAC 1I .0101 - .0209) and N.C. General Statutes regarding stream obstruction (G.S.77-13 & G.S.77-14).

The FPGs are nine standards that are, in essence, codified performance-based practices that are required on forestry-related, site-disturbing activities. While the specific use of Best

Management Practices (BMPs) is voluntary, measures must be taken to comply with the standards defined in the FPGs.

The North Carolina Division of Forest Resources (DFR) is delegated the authority to monitor and evaluate forestry operations for compliance with these aforementioned laws and/or rules. In addition, the 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 DFR are referred to the appropriate State agency for enforcement action.

During the period September 1, 1999 through August 31, 2004 the Division of Forest Resources conducted 1,697 FPG inspections of forestry-related activities in the Roanoke River basin; 93 percent of the sites inspected were in compliance.

17.2.2 Other Forestry Related Water Quality Regulations

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

- the Section 404 Dredge and Fill exemption under the Clean Water Act;
- the US Army Corps of Engineers 15 mandatory BMPs related to road construction in wetlands; and
- the US Army Corps of Engineers mandatory BMPs for mechanical site preparation activities for the establishment of pine plantations in the southeast.

17.2.3 Water Quality Foresters

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. They also participate in DFR-supported aerial reconnaissance flights to help locate potential water quality problems, as schedules and aircraft availability allows.

The DFR has an assigned Water Quality Forester in each of its Districts that cover the entire Roanoke River basin. The four foresters are based in the DFR's Lexington, Hillsborough, Rocky Mount, and Elizabeth City District Offices. The Lexington and Elizabeth City positions were added in 2005 as a result of new appropriations.

The DFR currently has a Water Quality Forester located in ten of its thirteen Districts across the State. Assistant District Foresters or Service Foresters handle water quality issues in the remaining Districts, along with other forest management and fire control responsibilities. See Appendix VIII for contact names and telephone numbers.

17.2.4 Forestry Best Management Practices

While using BMPs for forestry operations are voluntary in North Carolina, their usage is strongly encouraged in order to efficiently and effectively protect our water resources. It is interesting to note that while the state laws do not require using BMPs, several forestry and timber companies require BMPs to be used when timber is harvested to supply their manufacturing mills. This

requirement is typically a component of the forest certification program(s) adopted by the forest products company.

The *North Carolina Forestry Best Management Practices Manual* describes recommended techniques that can be used to help comply with the State's forestry laws and help protect water quality. This manual is currently undergoing its first revision since adoption in 1989. This revision, led by the DENR-appointed Technical Advisory Committee (TAC) has undertaken over three years' of effort.

BMP Surveys

From March 2000 through March 2003, the DFR conducted a statewide BMP Implementation Survey to evaluate Forestry BMPs on active harvest operations for forest management purposes.

This survey evaluated 34 sites in the basin, which amounts to six percent (6 percent) of the total number of surveys conducted. The BMP implementation rate was 90 percent, placing these sites within the upper quartile from across the state during this survey.

The problems most often cited from the survey results across the state relate to stream crossings, skid trails, and site rehabilitation. This BMP survey, and additional periodic surveys to be conducted, will 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.

Bridgemat Loan Project

To help address some of these issues, the DFR has been providing bridgemats on loan out to loggers for establishing temporary stream crossings during harvest activities. Temporary bridges are usually the best solution for stream or ditch crossings, instead of culverts, hard-surfaced 'fords', or pole-timber crossings. Bridgemats have been available for use in the middle portion of the Roanoke River basin for three years.

Additional mats are being purchased by DFR for the lower Roanoke basin, to be based in Martin and Bertie counties. Bridgemats have been funded through US-EPA Section 319 Grants and from the Albemarle-Pamilco National Estuary Program (APNEP). More information about using bridgemats, and the above noted BMP survey, is available on the 'Water Quality' section of the DFR's website *http://www.dfr.state.nc.us./.*

Hurricane Isabel

In September 2003, Hurricane Isabel damaged several thousand acres of timberland across the lower Roanoke basin and elsewhere, with an estimated 186,000 acres impacted in Bertie County alone, which accounts for over one-quarter of all Isabel timber damage.

A short period of widespread salvage logging operations occurred after the storm in an effort to salvage damaged timber. The DFR sent foresters from outside the region to the impacted area to perform the additional FPG inspections warranted by this increased level of timber harvesting activities.

17.3 Forest Resources

17.3.1 Forest Products Industry

The economic value of the forest industry is evident across the Roanoke River basin. Twenty-eight (28) different businesses in the basin are considered "Primary Processors" of forest products raw material, which represents twelve percent (12 percent) of the total number of primary processors located in the state.

Two of the five pulp & paper mills that operate in North Carolina are located within the Roanoke basin. Other examples of primary processors in the basin include sawmills, pallet mills, and engineered lumber mills.

These forest product manufacturing facilities are foundations of the economy across the basin and its surrounding counties by providing not only direct employment, but also ancillary employment from service sectors, forestry occupations, and manufacturing support industries.

In addition to their employment value, all primary processors in North Carolina pay an assessment to the state, which is then combined with legislative appropriations, to fund the "Forest Development Program - FDP", which provides cost-shared reforestation assistance for forest landowners.

17.3.2 Forest Management

Some of the best-quality hardwood sawtimber in the eastern United States grows within the lower sections of the Roanoke River, which has been an important source of renewable timber resources for over two centuries.

In order to provide the raw materials used by the forest industry, the management of working forests is a vital component of the basin's landscape. This is evident from DFR records that indicate at least 54,000 acres of land were established or regenerated with forest trees across the basin from September 1, 1999 through August 31, 2004. Almost 70 percent of these reforested acres were partially funded through the FDP.

During this same time period the DFR provided over 2,600 individual forest management plans for forest landowners that encompassed nearly 154,000 acres in the basin.

17.3.3 Urban and Community Forestry

While the Roanoke River basin in North Carolina is relatively rural when compared to other river basins in the state, there are still opportunities for smaller communities to undertake Urban & Community Forestry projects that provide value for its citizens.

Two such towns, Eden and Yanceyville, are recognized as a "Tree City USA" by DFR's Urban & Community Forestry Program. Since 2001, seven Urban & Community Forestry Program Grants have been awarded to various groups in the basin, amounting to over $53,000 in project funding.

Urban forestry grant projects may include tree inventories, ornamental and streetscape tree planting, or the development of educational and training resources. Urban forestry, and an associated field known as Agroforestry are becoming increasingly important components in reducing NPS runoff by integrating 'working green space' into urbanized areas.

17.3.4 Forestry Accomplishments

Since the previous basinwide plan was produced, the DFR accomplished the following tasks in an ongoing effort to improve compliance with forest regulations and, in turn, minimize nonpoint source (NPS) pollution from forestry activities:

1. provided bridgemats for loaning to loggers for the first time across the western and central portions of the Roanoke River, and are purchasing additional bridgemats for the lower Roanoke section;
2. established a Forestry NPS Unit that develops and oversees projects throughout the state that involves protection, restoration and education on forestry NPS issues;
3. revised and produced 10,000 copies of a pocket field guide outlining the requirements of the FPGs and suggested BMPs to implement;
4. created and published 15,000 copies of a new informational brochure for landowners entitled "Call Before You Cut" promoting pre-harvest planning to insure water quality issues are addressed prior to undertaking timber harvesting; and
5. continued to assist with workshops in cooperation with the N.C. Forestry Association's "ProLogger" logger training program. As of 2005, this program requires at least 6 credit hours of continuing education every 3 years focused exclusively on water quality topics.

DFR continues its efforts to protect water quality through various protection, restoration, and education projects statewide. This includes monitoring studies, stream restoration, in-woods exhibits, and integration of NPS topics through the DFR's network of Educational State Forests as well as other public venues. One notable example included the first-ever "Forestry Festival" hosted in part by the DFR at Plymouth, NC in May 2005.

Progress reports and summaries are posted in the 'Water Quality' section of the DFR's Web site http://www.dfr.state.nc.us/ as they are completed.