Department of Forestry
Implementation of the 1993 Silvicultural Water Quality Act
December 2004

Abstract: Since 1993 the efforts of the Department of Forestry and public / private organizations have trained approximately 4,752 loggers in Water Quality Techniques known as BMP's; inspected over 4,000 harvesting operations per year and has utilized the Silvicultural Water Quality Act to protect water quality.

Background:

- The Department of Forestry (DOF) developed Best Management Practices (BMP's) in response to requirements of the Federal Clean Water Act in 1979. These were later revised in the late 1980's, again in 1997, and most recently in July, 2002.

- Inspection program begun in 1987 by DOF on all timber harvesting operations greater than 10 acres for BMP implementation and to educate operators on the uses of BMP's to protect water quality.

- A Water Quality Task Force was created in 1988 by the State Forester to monitor water quality progress and to provide program guidance on water issues relating to silvicultural activities. This Task Force continues to be active and is composed of forest industry, landowners, consultants, state and federal government, and various environmental groups.

- DOF hired two (2) forest engineers in 1992 to provide technical assistance to forest operators in BMP implementation and harvest planning.

- In 1992 the Water Quality Task Force recommended and supported the Virginia General Assembly to pass the Silvicultural Water Quality Act of 1993 (Article 12, §10.1-1181.1-7) which authorized the DOF to act to prevent pollution of state waters from silvicultural activities.

- In 1994, DOF began monitoring of BMP implementation and effectiveness under the direction of the forest hydrologist.

- The Task Force supported the Amendment of the Silvicultural Water Quality Act in 1998 to require prior notification of all timber harvesting operations. DOF implemented a 1-800-telephone number to facilitate notification.

- The Silvicultural Water Quality Act was again amended in 2002 to allow for the issuance of a civil penalty against the operator for failure to notify the Department of Forestry of a commercial timber harvesting operation. This change allows the DOF to track history of notifications by individual operators. The DOF inspected

92% of the harvests where notification was received within 15 days of notification exceeding the agency standard of 85%.

Program Administration:

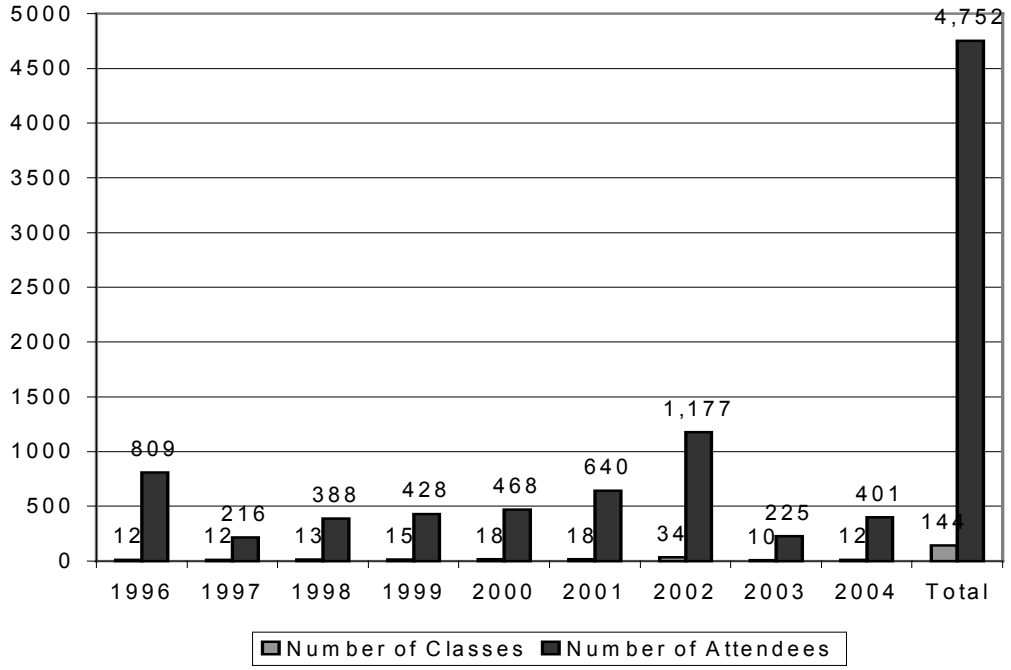
- In 1999 the State Forester formed a Water Resources Unit.

- Unit consists of a Program Manager and six (6) Environmental Compliance Engineers, one of these positions is currently vacant. These seven (7) positions along with the forest hydrologist are positions within the agency, which are dedicated full-time to the Water Resources Program.

- Focus of the Unit is to provide:
  1. Guidance to DOF employees in uniform enforcement of the Silvicultural Water Quality Act.
  2. Provide technical assistance to landowners and operators in implementation of various forest practices.
  3. Provide education on BMP's and water quality protection to forestry operators. This is done in conjunction with the American Forest & Paper Association's (AF&PA) Sustainable Forestry Initiative (SFI) program. The logger education component of which is called the "Sustainable Harvesting and Resource Professional" or SHARP Logger Program.

- Education under SFI has allowed DOF to train 4,752 individual loggers and foresters on harvest planning and BMP's since 1996. *See figure 1.*

Figure 1: Water Resources Unit Logger Training Sessions – 1996 to Present



- Field personnel within each of the six (6) administrative regions accomplish harvest Inspections. Figure 2 shows the number of harvesting inspections by the Department of Forestry annually through November of 2003.

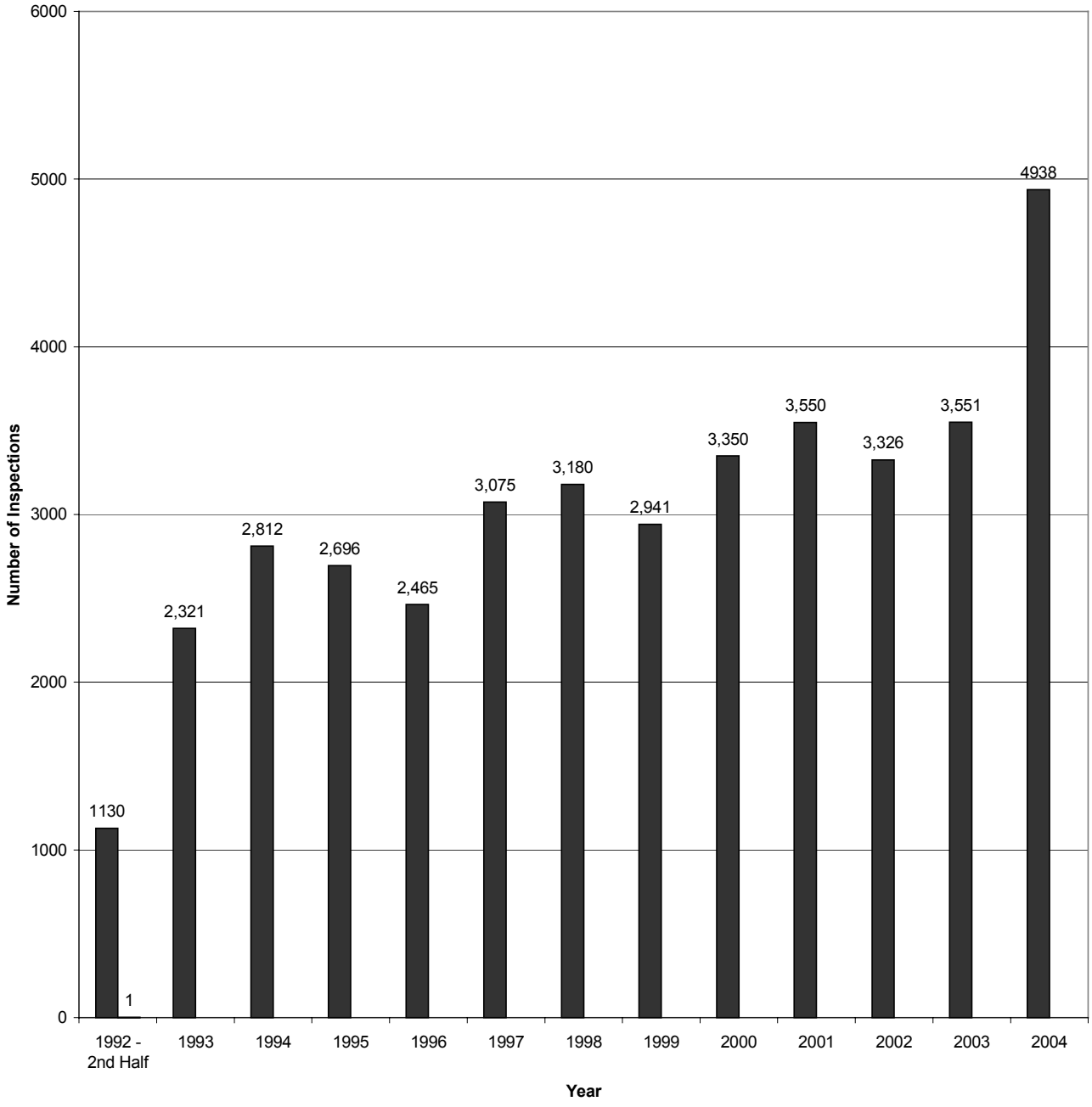


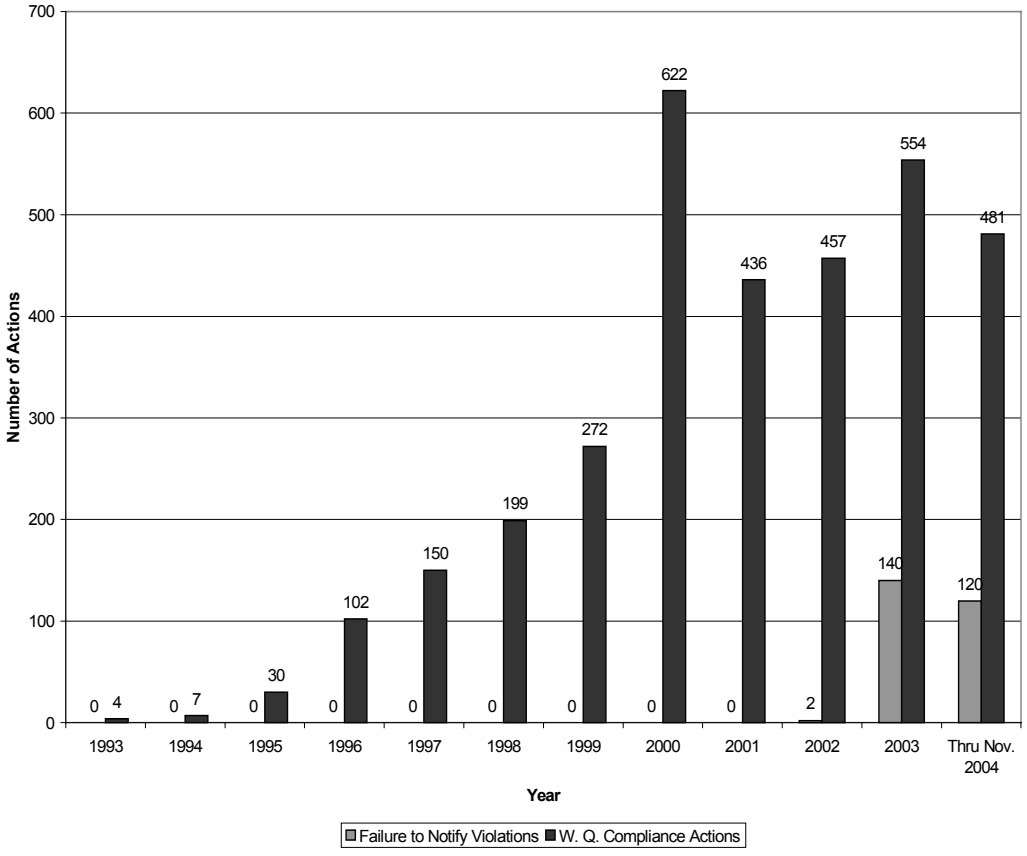
Figure 2 – Number of Harvesting Operations Inspected by DOF by Year

- The purpose of these inspections is to make recommendations on the implementation of Best Management Practices and for enforcement of the Silvicultural Water Quality Act.

Compliance Actions:

In 1999, a record keeping and tracking mechanism was created by the Water Resources Unit to be able to better follow the progress of individual cases and persistent violators of the law. *Figure 3* shows the number of Compliance Actions for each year since the Act was passed.

Figure 3: Compliance Actions by Year



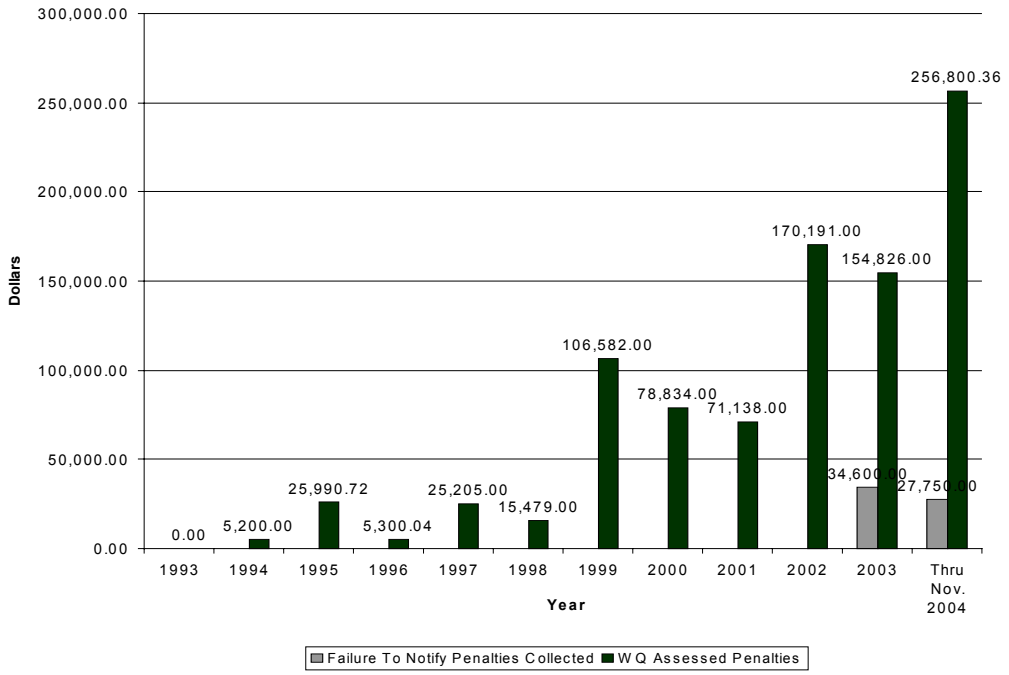


Figure 4: Civil Penalties by Year

These actions have resulted in the assessment of $170,191.00 in civil penalties in 2002, $154,826.00 in civil penalties in 2003, and $256,800.36 in 2004 (See *Figure 4)*. Civil Penalties of $34,600.00 have been collected for Failure to Notify violations in 142 cases in 2003 and $27,750.00 have been collected on 120 cases in 2004 under §10.1-1181.2(H) of the Code of Virginia. Penalties collected are placed in the Water Quality Penalty Fund. Penalties that have not been paid have judgements recorded against the responsible parties. By law, penalties collected are to be used for education, demonstration of water quality protection techniques and research only.

Audits:

- A statewide audit system has been in place since 1993 to track trends in BMP implementation and effectiveness.
- Seventeen (17) of these audits have occurred since the beginning.
- Have used the same methodology since the first audit to ensure consistency in trend data.
- New regional reviews were implemented in 2000 to randomly select tracts in each region to provide a quality control methodology for consistency in compliance actions and training of DOF personnel.

Water Quality Research:

The Virginia Department of Forestry began monitoring forest stream water quality in 1989. Six automatic stream monitoring stations were installed, and reference data collected upstream or downstream of one of three existing or anticipated private timber harvests in Virginia's mountains, Piedmont, and coastal plain. By 1991 instruments were in place at eight sites across Virginia.

Monitoring Forest Reference Streams:

In 1996 a new monitoring initiative began. Sophisticated water monitoring sondes were deployed to collect water quality measurements in seven undisturbed forest streams. Intensive surveys of the physical dimensions of each stream channel and its adjacent landscape were performed along with surveys of streambed particle size distribution. These data are beginning to reveal the conditions and tendencies associated with undisturbed forested stream systems.

Water quality measurements in undisturbed forest, essential to understanding the natural tendencies of forest streams, provide a benchmark documenting the reference condition or signature of each water quality constituent as it occurs naturally in an undisturbed forest ecosystem.

As more data is collected and analyzed, a useful collection of chemical and physical references with be available, allowing better understanding of our streams and rivers, and supporting informed management decision making and impacts which may occur due to disturbances from forestry operations.

Recent Program Accomplishments:

- Completion of the Fourth Edition of *Virginia's Forestry Best Management Practices for Water Quality* and the associated Field Guide in 2002.
- Changes to Department of Forestry procedures involving enforcement of the Silvicultural Water Quality Law to eliminate the Notice of Required Action and implement a mechanism for making recommendations prior to a Special Order being issued.
- Created and implemented procedures for the assessment of civil penalties for failure to notify of a forest harvesting operation as required due to a changes to the Silvicultural Water Quality Law enacted by the 2002 session of the Virginia General Assembly.
- Conducted 24 Logger Training Sessions in 2002 to educate forest operators to the changes that have occurred in the new BMP Manual and changes to the Silvicultural Water Quality Law.

- Completion of nine (9) demonstration areas across Virginia to be utilized for Forestry Water Quality Education, several of which incorporate the use of GeoWeb® material as a stream crossing structure that is new to forestry applications.
- Develop and man two (2) exhibits at the East Coast Sawmill and Logging Equipment Exposition in Richmond, Virginia dealing with Water Quality Education on Forestry Operations that reached an estimated 15,000 forestry professionals in a two-day period. This occurs in alternate years and will occur again in 2006.
- Performing studies on the use of PAM-12 Soil Amendment which is designed to reduce soil erosion from site disturbance.
- Will be undertaking and Pilot Project utilizing Mediation as a tool in dispute resolution involving enforcement actions under the Silvicultural Water Quality Law.
- Will be involved in participation on a Team of Program Reviewers looking at Water Quality Programs throughout the Southeast.