Water Laws and Restoration Programs

4.0

Question 3:

What laws, policies, and programs for the protection of water quality, streams, wetlands, and riparian areas are in place? How does the implementation of these laws and policies affect aquatic resources, other natural resources, and human uses (both land and water) within the assessment area?

The laws and policies for protection of aquatic resources provide a legal mandate to ensure that all human activities are conducted with consideration for protection, preservation, and restoration for our nation's water resources. The Clean Water Act (CWA) (1987) clearly stated an objective to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Further legislation enacted for other purposes address the protection of water quality. Examples include the Safe Drinking Water Act; the Coastal Zone Management Act; and executive orders for the protection of floodplains and wetlands. Numerous federally funded programs exist to protect, restore, or improve aquatic resources within the Southern Appalachian Assessment (SAA) area. Additionally, many citizen and volunteer groups have been formed to focus on the cleanup of local streams, with many counties and local governments providing support for these efforts.

Section 4.1 discusses and summarizes many of the laws and policies that are in effect and reviews the success of these regulations to date. Topics specifically addressed include the National Pollutant Discharge Elimination System (NPDES); Nonpoint Source Pollution control; nationwide permits; and section 404 of the CWA that require permits for dredge-and-fill operations. Best Management Practices (BMPs) for control of nonpoint source pollution are also discussed.

Section 4.2 discusses and summarizes many of the federally funded programs that exist for the protection and or restoration of aquatic resources within the SAA area.

4.1 LAWS AND REGULATIONS

Introduction

In recent years, the nation and Congress have shown increased concern about the protection and restoration of aquatic resources by giving greater attention to the goals of the CWA. Passage of the Water Quality Act of 1987 over President Reagan's 1986 veto is an example of this commitment. The 1977 act had expired in 1982, and for 5 years Congress, the U.S. Environmental Protection Agency (EPA), industry, environmentalists, and the Administration struggled to produce an acceptable document. President Reagan's veto of the act in 1986 was arguably the result of the inclusion of $18 billion in grants and loans for the construction of sewer and wastewater treatment plants (Liebesman 1988). Override of the Presidential veto in 1987 is testimony to strength of the environmental movement and has set the stage for the future course in water legislation and the nation's water pollution control efforts.

The Water Quality Act of 1987 continued the basic structure set forth in the 1972 and 1977 acts but strengthened existing mandates and created new programs to protect water resources. Programs were established to control nonpoint sources of pollution and tighter controls were established for toxic pollutants (sec. 304). Nonpoint source pollution is that which originates from diffuse sources, such as runoff from construction activities. Additionally, other legislation, such as the Safe Drinking Water Act of 1986 and the development of Superfund

programs, have interacted with the CWA to provide even greater protection for aquatic resources. A number of statutes have been enacted for other purposes, yet address the protection of water quality, as referenced in table 4.1.1.

The purpose of this report is to briefly discuss and summarize some of the laws germane to the protection of aquatic resources. Sections of the CWA addressed in this report include the NPDES; nonpoint source pollution control; nationwide permits; and section 404 permits for dredge-and-fill operations. BMPs, developed for the prevention and control of nonpoint source pollution, will also be discussed as they pertain to states within the SAA area. Application of these regulations resulted in the data and information discussed in chapter 5.

The Clean Water Act Legal Background

The protection of aquatic resources is governed by the Federal Water Pollution Control Act (FWPCA), which dates back to 1948. Now known as the CWA, the FWPCA was largely shaped by the comprehensive 1972 amendments, which are often viewed as the starting point for modern water pollution control law (Fogarty 1988). The 1972 amendments established a regulatory system for point sources of pollution – from an identifiable point such as a pipe from a facility – and set as a national goal that all streams should be fishable and swimmable by 1983. Section 208 of the 1972 law also recognized water quality problems associated with nonpoint source pollution and required states to develop management plans for the control of nonpoint source pollution. The CWA has undergone several amendments with the most recent passage of the Water Quality Act of 1987.

The clear objective stated in the CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters" (CWA 101[a]). The CWA of 1987 explicitly reaffirmed the national goal to eliminate discharges of pollutants into navigable waters of the United States and to achieve wherever attainable, water quality that provides for the protection and propagation of fish, shellfish, and wildlife. Propagation speaks to the full range of biological conditions necessary to support reproducing populations of all native forms of aquatic life (EPA 1990). The CWA of 1987 further states as a national goal that programs be developed and implemented for the control of nonpoint source pollution. The primary mechanism for controlling nonpoint source pollution is through the adoption and implementation of BMPs.

Reauthorization of the 1987 CWA plus a number of other bills is currently being considered in Congress. Considerable debate and concern continue over the implications of making changes in current water resource legislation. Water pollution issues often become polarized, as opposing interest groups advocate fewer or greater environmental controls.

Under the mandate of the current CWA, water quality standards and a system of permit requirements serve largely to regulate water pollution. The predominant mechanism is the NPDES.

National Pollutant Discharge Elimination System

At the heart of the CWA is the NPDES, which regulates both direct and indirect discharges of pollutants into U.S. waters. The act makes unlawful the discharge of any pollutant from a point source into U.S. waters without a permit. Thus, the pollution of water is not a right and is not allowed, except as provided by the act. Therefore, the bulk of the CWA can be viewed as a highly regulated exception to the no discharge rule as set forth in section 301 (Fogarty 1988).

Under the CWA, two types of regulations control the discharge of pollutants–those that are "water quality-based" and those that are "technology-based". Water quality-based requirements limit permissible amounts of pollutants allowed in a defined water body or segment of a water body. The amount of allowable pollution is based on the capacity of a receiving water to accept or absorb a pollutant and varies according to beneficial use of the water. A beneficial use is defined as use for recreation, industrial, or public drinking water (CWA sec. 303[c]). The ability of a receiving water to accept pollution is a function of the size and flow of a stream, existing water quality condition, the type of pollutant, and other factors related to a particular stream.

Technology-based standards tend to dominate the CWA's regulatory system. These

Table 4.1.1 A summary of statutes that have included provisions for the protection or maintenance of water quality.

Popular Name/General Cite	Specific Cite/Topic	Purpose With Respect to Water Quality
Federal Insecticide, Fungicide, and Rodenticide Act Sec.2 [7 U.S.C. 136]	1499 [7 U.S.C.5506] Water Policy with Respect to Agrichemicals	To develop programs for the users and dealers of agrichemicals to insure that agrichemical users, dealers and the general public understand the implications of their actions and the potential effects on water.
Clean Air Act Sec. 101 [42 U.S.C. 7401]	103[42 U.S.C. 7403] Air Pollutant Monitoring, Analysis, Modeling and Inventory Research	To conduct a research program to improve understanding of the short-term and long-term causes, effects, and trends of ecosystem damage from air pollutants on ecosystems. Part of this program will include an evaluation of the effects of air pollution on water quality with an assessment of the ecological effects of acid deposition and other atmospherically derived pollutants on surface water, (including wetlands and estuaries) and groundwater.
Federal Water Pollution Control Act Sec. 101 [33 U.S.C. 1251]	101 [33 U.S.C. 1251] Declaration of Goals and Policy	To restore and maintain the chemical, physical, and biological integrity of the nation's waters.
Resource Conservation and Recovery Act Sec. 1001 [42 U.S.C. 6901]	Sec.1003 [42 U.S.C. 6902(10)] Research Grant Program	To promote the protection of health and the environment and to conserve valuable material and energy resources by promoting the demonstration, construction, and application of solid waste management, resource recovery, and resources conservation systems which preserve and enhance the quality of water and land resources.
Safe Drinking Water Act Sec. 1401 [42 U.S.C. 300f]		To maintain the quality of the nation's drinking water supply by setting water quality standards.
Soil and Water Resources Conservation Act Sec. 2 [16 U.S.C. 2001 (4)]	Sec. 2 [16 U.S.C. 2001]	To indentify and evaluate alternative methods for the conservation, protection, environmental improvement, and enhancement of soil and water resources, in the context of alternative time frames and a recommendation of the preferred alternatives and the extent to which they are being implemented.
Surface Mining Control and Reclamation Act Sec. 101[30 U.S.C. 1201]	Sec. 102 [30 U.S.C. 1202] Statement of purpose	To establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations and to assure that surface coal mining operations are so conducted as to protect the environment.
Coastal Zone Management Act Sec. 302 [16 U.S.C. 1451]	Sec. 303 [16 U.S.C. 1452] Congressional Declaration of Policy	To protect natural resources, including wetlands, floodplains, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife and their habitat, within the coastal zone.
Wild and Scenic Rivers Act Sec. 1 [16 U.S.C. 1271]	P.L. 90-542, Sta. 906 Declaration and Purpose	To preserve in free–flowing condition, certain select rivers of the Nation which possess outstandingly remarkable, scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.

Table 4.1.1 (cont.) A summary of statutes that have included provisions for the protection or maintenance of water quality.

Popular Name/General Cite	Specific Cite/Topic	Purpose With Respect to Water Quality
National Forest Management Act of 1976 [16 U.S.C. 1600]	P.L. 93-378, Sec. 6 National Forest System Resource Planning Findings	Provides for protection of streams, streambanks, shorelines, lakes, wetlands, and other waterbodies during timber harvest operations to the extent that detrimental changes do not occur in water temperatures, blockage of water courses and sediment that would adversely affect water conditions or fish habitat.
Marine Protection, Research, and Sanctuaries Act Sec. 2 [33 U.S.C. 1401]	Sec. 2 [33 U.S.C. 1401] Finding, Policy, and Purpose	To regulate the dumping of all types of materials into ocean waters and to prevent or strictly limit the dumping into ocean waters of any material which would adversely affect human health, welfare or amenities, or marine environment, ecological systems, or economic potentialities.
Solid Waste Disposal Act 42 U.S.C. 6901	42 U.S.C. 6902 (10) Objectives and National Policy	To promote the demonstration, construction, and application of solid waste management, resource recovery, and resource conservation systems which preserve and enhance the quality of air, water, and land resources.
Executive Orders for Floodplain and Wetland Management 11988 and 11990	E.O. 11988 and 11990	Insures that wetlands and floodplain values are considered during the planning and implementation of all federal actions and potential effects are evaluated. Alternatives will be considered to avoid adverse impacts and if no practical alternative is available, mitigation measures will be implemented to minimize impacts.
National Environmental Policy Act 42 U.S.C. 4371-4375	NEPA 42 U.S.C. 4321–4370d Declaration of Purpose	Declares a national policy to promote efforts which will prevent or eliminate damage to the environment and biosphere. Requires analysis and disclosure of environmental impacts for all federal proposed actions. Impacts on soil and water resources must be considered.
Endangered Species Act 50 CFR PART 17		The ESA requires the Secretary of the Interior, through the Fish and Wildlife Service and National Marine Fisheries Service, to identify endangered and threatened species and to develop plans for recovering such species. It requires that all Federal agencies work in cooperation with State and local agencies to resolve water resource issues in concert with the conservation of endangered and threatened species. The ESA also provides a mechanism for providing Federal assistance to States and foreign countries to assist them in implementing conservation activities for endangered and threatened species, and species likely to become endangered or threatened.

standards focus on the treatment of a pollutant before it is discharged into a stream and define a level of effluent quality that is achievable using the best available pollution control technology. All dischargers must meet minimum treatment requirements. Additionally, toxics, a recognized harmful class of pollutants, are singled out for special treatment by the CWA and regulated by the EPA.

Water quality standards (designated beneficial uses and the criteria to protect those uses) are implemented and enforced through compliance with the NPDES permit system as administered by the EPA. Under section 402 of the CWA, a discharger must obtain an NPDES from the EPA or from a state that has an EPA-certified program (CWA sec. 402 [b]). Water quality standards (both water quality-based and technology-based) are written into permits according to the particular situation that exists at a given site. The standards consider the type of pollutant and the condition and beneficial use of the receiving waters. NPDES permits are issued for 5 years and may include requirements for monitoring and reporting of discharge effluents. Discharging of pollution without a permit or violation of the terms or standards of an issued permit may result in civil and criminal penalties.

Compliance with the terms of an NPDES permit is deemed in compliance with almost all of the CWA's regulatory provisions and may be accomplished under state authority. A delegated state program is bound by many of the same statutory requirements applicable to the federal program. There is a goal to turn over to the states the authority to administer and enforce the NPDES program in its entirety. All of the states within the SAA area have NPDES permitting authority.

Specific requirements for issuance of a NPDES permit are described in CWA 402(a) 1. The NPDES permit system is an effective means of controlling point source discharge wastes such as those from a discrete point that are easily identifiable. The most common point discharges are industrial facilities, municipal treatment plants, and combined sewers.

Even though the CWA recognizes that states have authority to set their own water quality standards, standards must be reviewed by EPA, which has the authority to supersede standards that do not meet minimum requirements. For example, waters of the states must have a use designation such as fishable/swimmable that is consistent with criteria established in the CWA. Furthermore, state water quality criteria must be shown to be protective of the designated uses, and the criteria must be at least as stringent as federal guidelines. An antidegradation policy must also be included which includes a provision that designated uses cannot be removed to allow greater discharge of pollutants. States are allowed to designate Outstanding National Resource waters, which prohibit a lowering of existing water quality (Antidegration policy 40 CFR, Part 131).

While the requirements for use designations and water quality criteria result in fairly uniform water quality standards among states, actual implementation of standards varies considerably. This is due to provisions in some state standards for mixing zones to dilute pollution, variances from standards, and results in considerable variability between states. This can result in variability in NPDES permit limit requirements, as well.

Nonpoint Source Pollution Control

Nonpoint source pollution is defined as diffuse sources of pollution not regulated as point sources (EPA Nonpoint Source Pollution Guidance 1987). Nonpoint sources of pollution include atmospheric deposition, contaminated sedimentation, and many land-disturbing activities that generate polluted runoff. Examples are agricultural activities, logging operations, and onsite sewage disposal. The control of nonpoint source pollution is somewhat more difficult than point sources regulated under the NPDES system. Nonpoint source pollution is less visible and thus more difficult to control through pre-established criteria.

Siltation and nutrients are most often associated with nonpoint source impacts to water resources. In 1992 the EPA reported, currently, less visible nonpoint sources of pollution are more widespread and introduce vast quantities of pollutants into our nation's waters (EPA 1992). As shown in figure 4.1.1, reporting states pointed out that siltation and nutrients affected 45 percent and 35 percent of impaired stream miles, respectively. Figure 4.1.2 shows that the originating source was predominantly agriculture, accounting for 72 percent of the nation's rivers that were impaired. Silviculture and hydrologic modification each were shown as

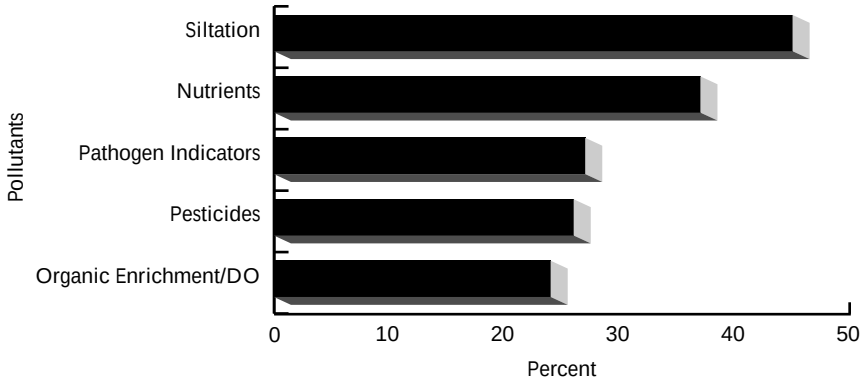

Figure 4.1.1 The percent of assessed river miles impaired by pollutants based on 222,370 assessed river miles impaired. (Source: Based on 1992 state section 305 (b) reports from National Water Quality Inventories 1992 Report to Congress, EPA, 841-R-94-001, March 1994 Washington DC 20460, Appendix A, Table A-1)

causing approximately 8 percent of the rivers to be impaired by nonpoint source pollution.

Such a national survey obscures regional differences where there may be considerable variability in land-use activities. For example, a region that is predominantly industrial and urban would produce a much different type of nonpoint source pollution than one dominated by agricultural or forestry activities. Furthermore, because it is impractical for states to report on the quality of all streams, only 18 percent of the nation's 3.5 million miles of rivers were assessed. Notwithstanding the limitations of such a survey, it is generally recognized by the scientific community and regulatory agencies that nonpoint source pollution is one of the major water pollution issues to contend with in the future (EPA 1989b). In contrast, point sources of pollution are more easily recognized and regulated under state water standards and the NPDES system.

As early as 1972, Congress recognized the need to establish a nationwide program to control nonpoint sources (section 208 FWPCA), and in 1987 enacted section 319 of the CWA. The following language was added to CWA section 101(a) 7: "It is the national policy that programs for the control of nonpoint sources be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and *nonpoint sources of pollution*" (emphasis added).

Section 319 requires states to assess their waters and to develop nonpoint source pollution management programs to control and reduce specific nonpoint source pollution. The nonpoint source pollution action program further authorizes federal loan and grant funds to assist states, units of local government, conservation districts, individuals, farmers, and foresters to manage nonpoint source pollution. Consistent with section 319, states are completing their assessments and management programs which, after review by EPA, will serve as the cornerstone for the national nonpoint source pollution program well into the future (EPA 1989b). All states within the SAA area have implemented or are designing programs to implement BMPs to control nonpoint source pollution.

Nationwide and Section 404 Permits

Established under the FWPCA of 1972, the section 404 regulatory program makes it unlawful to discharge dredged or fill material into waters of the United States without first receiving a permit from the Corps of Engineers. The term "waters of the United States" defines the extent of geographic jurisdiction of the section 404 program. The term includes such waters as rivers, lakes, streams, intermittent streams, mud flats, and wetlands (33 CFR sec. 328.3, 1995).

A discharge of fill material involves the physical placement of soil, sand, gravel, dredged material, or other material into these

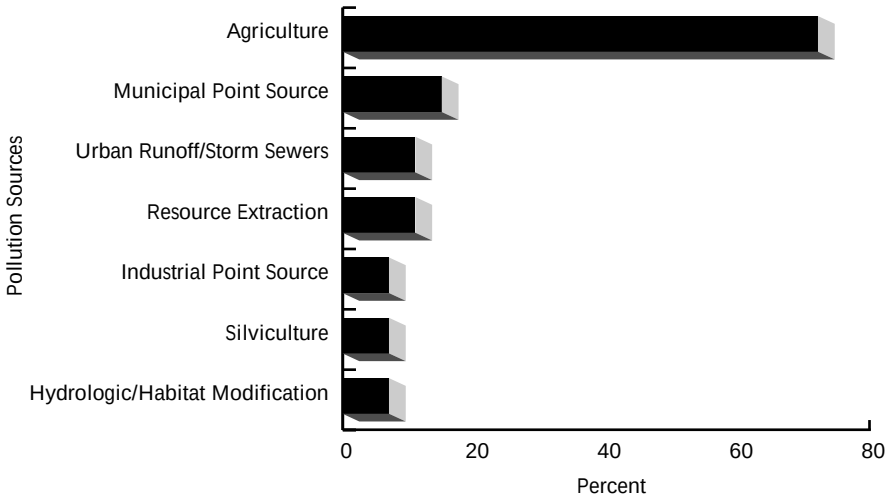

Figure 4.1.2 The percent of river miles impaired by sources of pollution based on 221,877 assessed river miles impaired. (Source: Based on 1992 state section 305 (b) reports from National Water Quality Inventories 1992 Report to Congress, EPA, 841-R-94-001, March 1994 Washington DC 20460, Appendix A, Table A-1)

waters. Exemptions were added to section 404 in 1977 to exclude normal farming activities, ranching, and forestry activities that have been active and "ongoing" (33 CFR 323.4, 1995). For example, if a farmer has been plowing, planting, and harvesting in wetlands, he or she can continue to do so without the need for a section 404 permit so long as the wetland is not converted to dry land. Activities which convert a wetland that has not been used for farming or forestry or are not part of an ongoing program are not exempt from section 404 permit requirements. The conversion of a bottomland hardwood wetland to crop production, for example, would not be exempt. Activities that do not involve discharge of dredged or fill material into U.S. waters never require a permit. However, excavation of materials may require a permit.

Nationwide permits are a general type of permit authorized by the U.S. Army Corps of Engineers for activities on a nationwide basis unless they are specifically restricted (33 CFR 330.2 [b]). Nationwide permits are designed to regulate, with little delay, certain activities that have little or minimal impact on water resources. For example, a bank stabilization activity that is less than 500 feet in length, and does not exceed an average of 1 cubic yard of material per running foot of bank, may be accomplished without a specific permit. Minor road crossings, fill material, and minor discharges are also permitted under the provisions of the nationwide permit system (33 CFR app.[b]). Activities that are not specifically authorized under the nationwide permit system may require an individual permit, regional general permit, or a dredge-and fill permit under section 404 of the CWA.

Debate continues on the definition of "wetlands" and activities that fall under the section 404 exemptions. Currently, jurisdictional wetlands are defined by the Corps of Engineers as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soils". Wetland identification methodology is outlined in the current approved 1987 Corps delineation manual on the basis of the above criteria.

Most silvicultural activities are exempt from section 404 permit requirements provided they meet BMP requirements for activities related to road construction and other impacts that may cause degradation of water quality or impair aquatic habitat. Specific requirements for BMP application are outlined in 33CFR, section 323.4. For example, the design, construction,

Table 4.1.2 A summary of Southern Appalachian Assessment area state water quality laws including Best Management Practice (BMP) programs.

State	Type of BMP Program	Lead Agency	Water Quality Statutes	Special Rules
AL	Voluntary	ADEM Alabama Dept. of Environmental Management	Alabama Water Pollution Control Act	No
GA	Voluntary	GDNR–EPD Georgia Dept. of Natural Resources, Environmental Protection Division	Georgia Water Quality Control Act[1]	Yes–Georgia Comprehensive Planning Act
NC	Mandatory	NCDEHNR North Carolina Dept. of Environmental Health and Natural Resources	North Carolina Water and Air Resources Act, Sediment Pollution Control Act, and North Carolina Stream Obstruction Statutes	No
SC	Voluntary– (limited Regulations for Silviculture)	SCDHEC South Carolina Dept. of Health and Environmental Control	South Carolina Pollution Control Act	No
TN	Voluntary	TDEC Tennessee Dept. of Environment and Conservation	Tennessee Water Control Act, Scenic Rivers Act	No
VA[2]	Voluntary	Virginia Water Control Board	Virginia Water Control, Erosion and Sediment Control, Forest Water Quality, Debris in Streams and Scenic Laws	No

[1]Georgia Comprehensive Planning Act of 1989 has formulated a series of special rules for environmental planning criteria, four of which have been formulated for the protection of water supply watersheds, wetlands, river corridors, and mountains. These rules are intended as minimum planning standards and procedures to be adopted by local governments.

[2]Although Virginia has no special rules, there are very specific laws to address special resource areas. No other state in the SAA has as many specific water quality statutes under the umbrella of the main water protection statute.

and maintenance of a road crossing shall not disrupt the migration or other movement of those species of aquatic life inhabiting the water body (33 CFR 323.4 [6 vii]). BMPs have been developed for silvicultural activities in all states within the SAA area.

Best Management Practices in the Southern Region

The primary mechanism for regulating nonpoint source pollution is through the adoption and application of BMPs for forestry activities. The EPA describes BMPs as follows: "Methods, measures, or practices selected by an agency to meet its nonpoint control needs." BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutant into receiving waters.

Specific examples of BMPs include stabilization and treatment of disturbed ground during road construction or the proper placement of waterbars on skid trails during timber harvesting operations. State water quality agencies may certify BMPs for federal agencies conducting land-disturbing activities. This can lead to delegation of responsibility to federal agencies to protect and restore those waters under their jurisdiction. The Forest Service has memoranda of understanding or letters of certification with all states within the SAA area which confirm that Forest Service management practices meet current requirements of respective state BMPs. Forest Service Standards and Guidelines for management activities are designed to meet or exceed all state BMPs.

The implementation of forestry BMPs is voluntary in all states within the SAA area, with the exception of North Carolina. The implementation of BMPs has been largely successful through education, training, and guidance provided by the state forestry programs. All forestry activities must comply with water quality regulations, and implementation of BMPs has been shown to be an effective means of controlling and preventing nonpoint source pollution.

Table 4.1.2 summarizes information regarding nonpoint source pollution control for the states within the SAA.

In a 1994 study of regional BMPs for the South, it was found that as a whole, forestry represents a relatively minor source of nonpoint source pollution compared to other nonpoint source pollution sources, such as agriculture, urban development, hydrologic alterations such as dams, and mining activities (NCASI 1994b). A caveat to this generalization, however, is that forestry activities can be a significant source of nonpoint source pollution if BMPs are not properly implemented. Two examples of BMP compliance programs are Virginia and South Carolina. A study of BMP effectiveness in South Carolina found that during 1990 and 1991 silvicultural BMPs were implemented on 84.7 percent of the harvesting operations (Adams 1993). A survey of BMP implementation in the state of Virginia during 1994 indicated that BMP implementation averaged 91 to 96 percent on related timber harvest activities (Austin 1994). Both studies concluded that improper implementation of BMPs or a lack of awareness of sensitive areas were the major problems with the implementation and effectiveness of the BMP programs.

Both knowledge and technology are available to apply BMPs that can curtail nonpoint source pollution. For example, Swift (1988) found that proper design of forest roads can reduce sediment input into streams by more than 90 percent. Swift has pointed out that guidelines are available for road design which minimize the impacts of construction and use of roads on water quality. It is important that technology transfer from researchers reaches those involved in forest management as well as those in industrial, urban, and rural development (Hackney and others 1992).

Summary

In the last 8 years, the nation has witnessed a significant turning point in water resource legislation and pollution control. With the passage of the 1987 Water Quality Act, Congress acknowledged the need, on a national basis, to strengthen existing laws and create new programs in order to address protection of our nation's most precious resource. Programs specifically designed to deal with such problems as nonpoint source pollution, toxics, and other point sources and the protection of national treasures such as the Chesapeake Bay and the Great Lakes are examples of this newfound emphasis on protecting aquatic resources.

The water pollution regulatory program as administered by EPA has been largely successful in reducing pollution and destruction of our nation's aquatic resources. Many of our streams and lakes have gradually recovered from years of abuse and now support abundant aquatic life and provide for swimming and recreation–the ultimate goal of the CWA. However, recent evidence shows that we have much work to do in protecting and enhancing aquatic resources.

Ultimately, responsibility for meeting the mandates of the Clean Water Act through pollution control and needed improvement programs falls on our society as a whole. Private citizens, various levels of state and federal government, and private businesses must all share in this important endeavor.

4.2 AQUATIC RESTORATION PROGRAMS

INTRODUCTION

Numerous federally funded programs exist to protect, restore, or improve the aquatic resources of the SAA area. Some programs have a long history of application in the area; others are still in the planning stage. A variety of agencies are involved, including the USDA Forest Service (FS), Natural Resource Conservation Service (NRCS) and Farm Services Agency (FSA), the National Park Service (NPS) and U.S. Fish and Wildlife Service (FWS), EPA, Tennessee Valley Authority (TVA), and the U.S. Army Corps of Engineers (COE).

Each program is unique and is oriented toward improving specific aspects of the aquatic resource. Some involve specific non-federal partners and state cooperators; others are available to the general public. All are nonregulatory.

A brief synopsis of these programs follows, as well as a summary on table 4.2.1 at the end of this section. More detailed information is available from sources listed as points of contact, as well as individual national forest and state headquarters offices of the respective agencies.

Agriculture Conservation Program

Administered by the FSA, this program provides cost-sharing and technical assistance to private agricultural landowners chiefly for erosion control and water pollution prevention. Cost-share rates are set by local county committees established by the FSA, as are activities that are eligible for funding. Contact: county FSA office.

Wetlands Reserve Program

The Wetlands Reserve Program (WRP), administered by the NRCS, funds the purchase of permanent easements on private wetlands and follow-up wetland restoration and revegetation. Eligible lands include altered but restorable wetlands and adjacent, critical non-wetlands. Management plans are developed by the NRCS and FWS, and agreed to by the landowner. Landowners are responsible for 25 percent of the restoration cost and maintenance. Land use is restricted to activities compatible with maintaining wetland functions. All 50 states are eligible for the program. Contact: NRCS area offices.

National Riparian Strategy

Provides FS assistance to state foresters servicing private landowner riparian area management requests, as well as the inventory and restoration of degraded riparian areas on the national forests. The inventory of all riparian areas was to be completed by 1995 and 75 percent of the degraded areas restored by 2000. Funds appropriated for national forest watershed improvement and operations programs are utilized for this purpose. Contact: individual national forests.

Rise to the Future

Initiative utilizes national forest fisheries funding to encourage partnerships between the national forests and others for the purpose of managing and improving fish habitat on forest streams. Activities can also include riparian and wetlands restoration. Contact: national forest supervisor's offices.

Table 4.2.1 Federal assistance programs for aquatic resource improvement in the Southern Appalachian Assessment area.

Program Name	Lead Federal Agency	Type of Program	Applicable Lands/Streams	Sample/Eligible Activities
Agricultural Conservation Program (ACP)	USDA Farm Services Agency	Cost–Share (variable rate) and Technical Assistance	Private	Streambank Stabilization Livestock Exclusion from Streams Stream Crossing Construction Buffer Strip Planting
Wetlands Reserve Program	USDA Natural Resources Conservation Service	Cost–Share (75–25) Technical Assistance	Private	Wetland Restoration and Reforestation– Riparian Area Restoration
National Riparian Strategy	USDA Forest Service	Initiative	National Forests	Riparian Area Improvement
Rise to the Future	USDA Forest Service	Initiative	National Forests	Riparian Restoration Wetlands Restoration Fish Habitat Improvement
Stewardship	USDA Forest Service	Technical Assistance and Cost–Share (variable)	Private	Forest Stewardship Plans Wetland Improvement Riparian Improvement Erosion Control
Conservation Technical Assistance Program	Natural Resources Conservation Services	Technical Assistance and Planning	Private	Soil and Water Conservation Plans
Clean Water Initiative	Tennessee Valley Authority	Technical Assistance, Planning and Cost-Share (variable)	Public and Private	Agriculture, Best Management Plan Installation
Section 1135 Program	U.S. Army Corps of Engineers	Cost–Share (75–25)	Public or Private	Fish Ladders Channel Restoration Streambank Plantings
Bring Back the Natives	USDA Forest Service USDI Bureau of Land Management & National Fish and Wildlife Foundation	Challenge Cost–Share (50–50)	Public	Stream Habitat Restoration for Native Fish
Fisheries Across America	U.S. Fish and Wildlife Service	Cost–Share (50–50)	Public	Aquatic Habitat Improvement/ Information and Education
Partners for Wildlife	U.S. Fish and Wildlife Service	Tehnical Assistance and Cost–Share	Private Farmer Home Administration Easement and Fee–Title Transfer of Lands	Wetland Restoration Channel and Riparian Restoration

Table 4.2.1 (cont.) Federal assistance programs for aquatic resource improvement in the Southern Appalachian Assessment area.

Program Name	Lead Federal Agency	Type of Program	Applicable Lands/Streams	Sample/Eligible Activities
Rivers, Trails, and Conservation Assistance Program	National Park Service	Planning and Technical Assistance	Public or Private	River Corridor Assessment Conservation Strategies Greenway Development
Section 319 Non-Point Source Program	Environmental Protection Agency	Grants (60–40)	Public or Private	Riparian Restoration Upland Runoff Control Pollution Prevention Streambank Restoration
P.L. 566 Small Watershed Program	USDA Natural Resources Conservation Service	Planning and Cost–Share (Variable Rate)	Private	Erosion Control Stream Restoration Riparian Area Protection
Emergency Watershed Protection Program Conservation Service	USDA Natural Resources (By Local Government)	Cost–Share	Public or Private	Stream Channel Restoration Flood Control Landslide Recovery
River Basin Planning Program	USDA Natural Resources Conservation Service	Planning	Public or Private	Watershed Analysis Identification of Treatment Needs/ Funding Sources

Stewardship

The Forest Stewardship program, administered by the FS but delivered at the state level by state forestry agencies, provides funds for the development of stewardship plans for private landowners. These plans provide for such activities as timber and wildlife management, recreational use, and water quality improvement. Landowners agree to carry out practices compatible with the plan and can receive cost-share assistance for approved practices. State forestry agencies establish most of the terms of the cost-shared practices. These can include such activities as wildlife habitat improvement, reforestation, and erosion control. An interagency stewardship committee guides the program statewide. Contact: local county forester.

Conservation Technical Assistance Program (CTAP)

The NRCS offers technical assistance through district conservationist offices to private agricultural landowners. Farm plans are prepared with recommendations for erosion control, stream channel improvement, stream crossings, and riparian area protection. The NRCS identifies cost-share options and other programs that the landowner may wish to pursue to implement the plan. Contact: NRCS district conservationist.

Section 1135 Program

The COE program, aimed at cost-sharing with local sponsors to improve degraded fish and wildlife habitat, is associated with COE water projects, such as impoundments and channel maintenance activities. Reconnection of former oxbows and construction of fish ladders to facilitate migration above dams are examples of actions cost-shared with 1135 funds. Contact: COE district offices.

Bring Back the Natives

This 50-50 challenge cost-share program targets native fish habitat restoration. National forests match with cooperators, such as Trout Unlimited, to improve in-stream conditions for the restoration of native fish populations. The National Fish and Wildlife Foundation and the USDI Bureau of Land Management receive federal appropriations which it cost-shares with public and private partners for the same purpose. Contact: national forest supervisor's offices, Trout Unlimited chapters, and the Fish and Wildlife Foundation.

Fisheries Across America

This FWS cost-share program provides for aquatic habitat improvement with emphasis on information and education. Contact: regional FWS office in Atlanta.

Partners for Wildlife

Offers technical and financial assistance to private landowners of degraded wetlands or other wildlife habitat. The FWS provides the funds for restoration work administered under cooperative agreement with the landowner. Lands received by easement or fee-title transfer by the FSA are also eligible for habitat restoration using these funds. Contact: regional FWS office.

Rivers, Trails and Conservation Assistance Program

This NPS planning and technical assistance program is oriented toward local and state governmental agencies to assist in carrying out statewide river assessments, wild and scenic river studies, and river conservation strategies. Contact: NPS regional office.

Section 319 Nonpoint Source Program

This EPA program provides grants to state water quality agencies to carry out nonpoint source pollution planning and management activities. Approximately half of the grant is used to manage the overall nonpoint source program; the remainder is intended to demonstrate practices, termed BMPs on the ground. While grants are provided by EPA to states primarily, cooperators and subgrantees can include public agencies, universities, and private landowners. Practices must be oriented to nonpoint pollution prevention or abatement, and projects must include a technology transfer component. Contact: state water quality management agency.

P.L. 566 Small Watersheds Program

Authorizes the NRCS to initiate cooperative watershed studies in which both on-site and off-site soil and water resource impacts are analyzed and corrective actions recommended. Programs occur only in some watersheds having clearly identified needs and a local sponsoring organization. The FS provides technical assistance to NRCS for forestry analysis.

The lands involved are typically private, but public lands may be either treated or utilized to solve problems originating on private land. Flood control structures are an example of a measure taken, often on public land and for the public's benefit, to solve problems generated by upstream activities on private land. If recommended improvement measures are determined by NRCS to be cost-effective and if funding is secured, cost-sharing becomes available. Contact: local NRCS district conservationist.

Emergency Watershed Protection Program (EWP)

The EWP program is managed by NRCS in conjunction with other agencies to restore stream channels, remove blockages, stabilize landslides, and solve flooding problems caused by catastrophic natural events. Restoration of watershed conditions following hurricanes, tornadoes, fires, and other storm events is provided for both private and public lands, depending on the source of problems. These improvements can be cost-shared or fully funded, depending on the immediacy of the need for treatment. Contact: state conservationist.

River Basin Planning

This USDA program, coordinated by NRCS, is similar to the P.L. 566 Small Watersheds program in that it provides a mechanism for evaluating the overall watershed condition of an approved study area, but it is strictly a planning program. It can and often does precede a Small Watersheds study and in fact can identify the need for a P.L. 566 study. As in the latter, the FS provides forest resource input for river basin plans. Contact: state conservationist.

Clean Water Initiative

This TVA effort includes partnership agreements with public and private cooperators to solve aquatic resource problems. Cost-share agreements have been used in the past for implementation.

Effectiveness of Programs

Environmental effects of most of the above programs are not readily quantifiable and have not been evaluated over the SAA area. Some programs are preventative (BMPs), others are restorative (EWP), and still others combine restoration with long-term protection (WRP). This mix of purposes leads to different results and precludes definition declaration of their overall effectiveness in the SAA area. The responsible agencies track program implementation, but no overall conclusions can be drawn at this time.