

CITIZEN'S GUIDE TO CLEAN WATER



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South Carolina Department of Health and Environmental Control

ACKNOWLEDGEMENTS

Palmetto Conservation Foundation

Rebecca D. Ramos

Suzanne Morrison

Yon Lambert

SCDHEC Bureau of Water

Alton Boozer

Sally Knowles

Kathy Stecker

Anne Marie Johnson

Andy Miller

SCDHEC Legal Department

Kelly D. H. Lowry

SCDNR

Bill Marshall

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INTRODUCTION

About This Guide

*Learning how we
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Many of our daily activities at home, work, or play have the potential to affect water quality in our watersheds. Runoff from lawns, roads, and parking lots eventually drains into our waterways, carrying with it nutrients, oil, gas, bacteria, and other pollutants. Rain can cause fertilizers, pesticides, bacteria and sediment from land activities to wash into creeks and lakes. Numerous industries and cities discharge treated waste water to rivers and streams.

At the same time that we unconsciously pollute our water resources, we rely on clean water drinking water supplies for recreational activities such as fishing, boating and swimming, and for industrial uses. Aquatic plants and animals as well as terrestrial wildlife also depend on clean waterways for food and habitat.

Many people believe that the most effective way to protect water quality is through watershed protection. That's exactly why you are holding "Citizen's Guide to Clean Water."

This is a layperson's manual to the laws and agencies supervising our watersheds, plus the kinds of pollution you'll encounter in the field and legal tools you can use to fight pollution. We hope you can use this guide to identify potential problems and navigate official channels if – and when – you decide to act.

First, however, you'll need to understand some basic terms. A watershed is a complex, interconnected network of tributaries, streams, wetlands, estuaries and the physical area in which they exist. By examining the creeks, rivers or lakes in your community, you can determine whether a watershed is healthy – because if one element is polluted, it may impact the entire system.



That's why we use the term watershed; it involves a complete ecosystem and innumerable activities. If, for instance, you are a recreational kayaker concerned about river protection, you must attend to the health and integrity of an entire watershed, not just your favorite river. Of course, you could just as easily use this guide to explore the workings of individual programs affecting a river.

Learning how we protect watersheds involves understanding many disconnected laws and programs. In South Carolina and most of the United States, there is not one law designed to specifically protect watersheds. In addition, our state has some non-regulatory programs whose purpose is to protect and improve watersheds. This guide identifies those programs, so you can put them to good use.

“Citizen's Guide to Clean Water” contains six interconnected parts. Each explains an independent component of watershed protection and points out how you and others in your community can become involved. Inside, you will encounter:

- A brief overview of **watersheds**
- Programs **designed to protect watersheds**
- Types of pollution such as “**point source**” and “**nonpoint source**”
- **Wetlands and the regulations designed for their protection**
- **Legal tools for protecting watersheds**
- **Your responsibilities as a citizen and the manner in which you can become involved**

In the Pollution Control Act – South Carolina’s major environmental law – our legislature determined that it was the State’s responsibility to “maintain reasonable standards of purity of air and water resources.” This, in a nutshell, is our water quality policy. To this end, the Department of Health and Environmental Control (DHEC), other state agencies, local governments and communities implement regulatory programs, volunteer programs, plus educational and grant programs to improve and maintain reasonable standards of purity in our water resources. It is a complex and occasionally confusing system. But through education and involvement, you too can learn to navigate the bureaucratic process behind water quality and assist in protecting South Carolina’s water resources for years to come.

CHAPTER ONE

Watersheds: Nature's boundaries for water resources

A watershed is the entire land area that delivers water, sediment, and dissolved substances to a stream, lake, or estuary. Watersheds are nature's boundaries for water resources. When rain falls or when snow melts, water flows downhill over land to rivulets, brooks, wetlands, drains, and ditches into streams, rivers, and lakes, and eventually into the ocean. Water may also percolate through soil to become ground water. As it flows, water picks up pollution, sediment and debris.

As a result of this movement, physical, chemical, and biological processes – including human activities within a watershed – affect the quantity and quality of water when it eventually collects. Watersheds are significant because the water quality at any point in the system determines the quality for the entire watershed.

Watersheds are a crucial part of the Earth's water system. Yet less than two percent of the rivers and streams in the contiguous 48 states remain in pristine condition, suggesting that our watersheds are not in such great condition. More than half of the nation's major watersheds are moderately to severely polluted.

Watersheds come in differing sizes, depending on your area of interest. The U.S. Geological Survey has divided the states and territories into 2,149 basic hydrologic units, the smallest of which are approximately 700 square miles. South Carolina can be divided into eight major watersheds: Savannah, Salkehatchie, Saluda, Edisto, Catawba, Santee, Pee Dee, and Broad. However, for reasons related to the permitting process, the S.C. Department of Health and Environmental Control (DHEC) has combined these into five groups. See Figure 1.

See Figure 1.



Importance Of Watersheds

Watersheds perform three main functions in order to maintain clean and healthy water: Catch, store, and safely release water.

In order for a watershed to perform properly and efficiently, its land area must also be in a healthy state. A healthy watershed is one that performs numerous functions outside of its actual physical boundaries, such as recharging aquifers and emptying healthy, viable water and biota into larger bodies of water for other life to use. Healthy watersheds should also be resilient to disturbances such as floods, fire and drought and should be capable of absorbing certain amounts of human activity such as low-impact forestry or construction. Healthy watersheds can also prevent people from drinking contaminated water and getting sick. If the watershed is working correctly and efficiently, it will assimilate or filter out most of the pollutants and the water will be safe to drink.

Watershed Protection In South Carolina

Much energy and research has gone into improving water quality. But nearly all of the research has resulted in one conclusion: In order to maintain healthy and viable water quality, there must be a healthy and viable watershed. When putting this idea into practice, it is called the "watershed approach to water quality protection." This holistic planning approach looks at the entire geographic area of a watershed and how its land is being used.

South Carolina uses the watershed approach to protect its water quality. In theory, this approach targets water quality problems by looking at all types of pollution. But to decipher this process, it's probably best to understand some interconnected parts.

First, all watersheds are monitored to assess their water quality. DHEC maintains almost 1,000 stations throughout South Carolina to monitor both water chemistry and biology. The data collected from these monitoring stations is used in the creation of a watershed report, the Watershed Water Quality Assessment (WWQA), which details the watershed health for each individual river basin. (Before 1997, these reports were referred to as Watershed Water Quality Strategies.) These reports provide insight into understanding the needs of a watershed. They describe the condition of a body of water, why these conditions exist, and provide clues to how the conditions can be improved. The WWQAs are updated every five years.

Another important part of DHEC's watershed approach is work performed by the Watershed Managers. There are four Watershed Managers and each one oversees protection efforts in two major watersheds. They work with local citizens and government by using the WWQA to identify areas of concern. For instance, if it is discovered that bacteria is the primary culprit when water quality drops in some area, the Watershed Manager may work with a local government agency such as the National Resource Conservation Service (NRCS) to reduce pollution from agricultural sources. The Watershed Managers also provide information to citizens in the hopes of promoting two-way communication between DHEC and individuals concerned about their watersheds.

The public has an important role in the creation of the Watershed Water Quality Assessment. During its creation and update, DHEC holds public workshops to solicit public comment about improving the watershed's water quality. DHEC will use the information acquired during the workshops in the development of water quality improvement plans.

South Carolina's Unified Watershed Assessment and FY 1999-2000 Watershed Restoration Priorities

In 1998, the U.S. Department of Agriculture and the Environmental Protection Agency released the Clean Water Action Plan in an attempt to refocus government and community efforts for the protection of our water resources. Specifically, the plan suggested identifying watersheds that have critical water quality concerns, and then working

A healthy watershed is one that performs numerous functions outside of its actual physical boundaries, such as recharging aquifers and emptying healthy, viable water and biota into larger bodies of water for other life to use.

together to implement strategies to solve these problems.

To that end, DHEC and the NRCS produced the Unified Watershed Assessment (UWA) and FY 1999-2000 Watershed Restoration Priorities (WRP). The Unified Watershed Assessment required that all watersheds in South Carolina fall into one of four categories:

- Category I - Watersheds in need of restoration;
- Category II - Watersheds meeting goals, including needing action to sustain water quality;
- Category III - Watersheds with pristine/sensitive aquatic system conditions on lands administered by Federal, State or Tribal governments
- Category IV - Watersheds with insufficient data to make an assessment.

After reviewing available data, considering public notice and review, 25 watersheds in South Carolina eventually fell into Category I while seven fell into Category II. There were no watersheds listed in Category III or Category IV.

Then, using the results from the Unified Watershed Assessment, DHEC and NRCS staff selected five watersheds from Category I to receive Watershed Restoration Priorities (WRP). After stakeholder review, participation, public notice and comment, the watersheds picked for restoration priorities for fiscal years 1999-2000 were: Pee Dee, Waccamaw, Catawba, Saluda, and Seneca-Keowee. Since these watersheds seemed to be in the greatest need for water quality protection, nonpoint source pollution projects (this type of pollution is described later) in these watersheds receive special priority for grant funding.

Because these projects receive special funding treatment, citizens and communities interested in watershed protection should participate during the public comment and notice period. You should also remember that local governments, non-profit organizations, and other entities are eligible to receive grants for projects that improve water quality.

Total Maximum Daily Loads (TMDL)

Even though TMDLs have existed since the creation of the Clean Water Act in the 1970s, they have been largely overlooked. However, as water quality protection moves toward the “watershed management” approach, TMDLs are becoming much more important and useful.

Section 303(d) of the Clean Water Act presents a watershed cleanup program designed to deal with pollution from point and nonpoint sources. Under this provision, DHEC is required to identify waters that are not meeting state water quality standards even after complying with water pollution controls. This document is called the Impaired Water List or 303(d) list, and is used to target those bodies of water in the greatest need of protection. DHEC also indicates possible causes and sources of pollution and eventually develop a clean-up plan for each impaired body of water. The clean-up plan includes determining how much pollution the water body can handle and still remain healthy. This is the “total maximum daily load” (TMDL). TMDLs incorporate regulatory requirements such as permits and plans required by law, and non-regulatory tools, like “best management practices,” currently available to state and local governments.

Every two years, the state must update its 303(d) list. During this process, DHEC solicits public input when developing its list. There are several opportunities for public input. DHEC solicits water quality data to use to develop a draft list. Then the public may comment on this draft list. Citizens have 30 days to issue comments. The public comments are taken into consideration before the finalized list is submitted to EPA for approval.

Best Management Practices

Best Management Practices (BMPs) are techniques found to be effective in reducing NPS pollution to insure waters meet desired water quality standard levels. Best Management Practices are aimed at preventing pollutants from ever entering the water source. While most BMPs are implemented on a voluntary basis, sometimes their use has become mandatory. For example, some construction sites must implement BMPs to control storm water runoff. However, other than in the area of land application of manure and animal waste management, BMPs are not mandatory for agricultural and silvicultural activities.

BMPs have been developed for almost any type of activity that can impact water resources. There are BMPs for professions such as foresters and farmers. But individual citizens can also use BMPs around their home to help improve water quality. See Chapter 10 for more information. Below are some of the most useful documents concerning BMPs.

■ *“Farming for Clean Water in South Carolina”* is a guide that uses the “whole farm” approach for farming. The whole farm approach means making decisions based on the effects on the entire farm and the surrounding area. Essentially, it recognizes that decisions made on one particular farm will affect not only that farm but also ones in the surrounding area as well as the watershed encompassing the farm. To obtain a copy of the guidebook, contact Clemson University Cooperative Extension Service at (864) 656-1550.

■ *“South Carolina’s BMP for Forestry”* guidebook helps landowners and the professional forestry community to develop strong stewardship practices for silvicultural activities. Proper stewardship will protect the water quality of nearby streams, lakes and ponds. For more information about the BMPs, please contact the South Carolina Forestry Commission at (803) 896-8800.

■ *“Coast-A-Syst”* is a guidebook targeting homeowners along the coast. Due to the growing coastal population, there have been increases in fecal coliform bacteria; oxygen demanding substances and pH upsets in bodies of water. The guidebook teaches watershed residents and users responsible practices for protecting water quality, with the ultimate goal to reduce fecal and nutrient input from urban/suburban activities and land development into nearby water bodies. To obtain a copy of the guidebook, contact Clemson University Cooperative Extension Service at (864) 656-1550.

■ *“Home-A-Syst”* is a handbook that teaches homeowners methods of protecting surface and groundwater near the home and throughout the community. These methods enable the homeowner to identify pollution sources and health risks in the home and around the yard, and take proactive measures to improve water quality. To obtain a copy of the guidebook, contact Clemson University Cooperative Extension Service at (864) 656-1550.

CHAPTER TWO

Water Quality: How water quality is protected in South Carolina

When discussing protection of watersheds, the proper place to begin is an overview of the two major environmental laws protecting waters and water quality in South Carolina. They are the federal Clean Water Act (CWA) and the South Carolina Pollution Control Act (PCA).

Clean Water Act and Pollution Control Act

The federal Water Pollution Control Act, most commonly known as the CWA, was created to deal with discharges of pollutants into the waters of the United States. Its goal is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” The CWA gives the EPA a broad range of authority over all types of pollution impacting surface waters. For instance, the EPA is required to develop water quality criteria for contaminants and to protect waters from toxic pollutants. Individual states must then adopt these as water quality standards or EPA will do so for them.

The PCA is South Carolina’s oldest and most important environmental law. Most of the PCA was enacted in the 1950s and gives DHEC broad authority over almost any type of discharge or release into every segment of the environment. The PCA states that it is illegal for any person to “throw, drain, run, or allow to seep or otherwise discharge into the environment” any type of pollutant.

The PCA and CWA work together to regulate almost all types of discharges into the state’s waters. The CWA requires states to establish water quality standards that are at least as stringent as those required by the EPA. Under the authority of the PCA, DHEC created standards providing the foundation for the protection of our rivers and watersheds. They are found in South Carolina Regulation 61-68, which establishes a system of rules for managing, protecting, and classifying the quality of South Carolina’s surface and ground water.



The classification of specific bodies of water (or its segments) is printed in South Carolina Regulation 61-69. This is where you can find the classification for a specific river or other water body of interest. If a particular surface water is not listed, then apply the use classification and standards of the stream to which it is a tributary. You can obtain a copy of this publication from the South Carolina Department of Health and Environmental Control, Bureau of Water, in Columbia by calling (803) 898-4300.

Regulations 61-68 describe waters' desired uses and specific standards for protection. The regulation applies to both surface and ground waters. Surface waters are those waters that appear above ground and include estuaries, lakes, ponds, creeks, rivers, and wetlands. Surface waters move more rapidly than ground waters and are both easier to pollute and easier to clean. Ground waters are defined as the water below the land surface in a zone of saturation. Much of South Carolina's drinking water comes from ground water. Since intermittent streams and ephemeral streams are considered waters of the state, the standards also apply to them.

Water Quality Standards

Water quality standards are used as in stream water quality goals to maintain and improve water quality. They are used to define permit limits for treated wastewater dischargers and any other activities that may impact water quality. These standards serve as the guiding principles of all pollution related decisions made by any governmental department. The South Carolina Water Quality Standards are found in Regulation 61-68.

As required by the PCA, when DHEC adopts standards they considered the following factors:

- Character of the body of water;
- Character of the land bordering the body of water, including encouraging the most appropriate use of the land;
- Current or future use of the waters;
- Current water quality; and
- Information about the above items obtained from government agencies, interested groups, and the public.

NUMERIC STANDARDS

How a body of water is classified determines its "numeric standards." Numeric standards are quantifiable, and are used in permits to define the limits of allowable pollution. Numeric standards have been created for approximately 150 constituents or pollutants that are categorized into seven types of water pollution. These include:

- Refuse including cinders, ashes, oil and sludge.
- Treated wastes, toxic wastes, deleterious substances, colored or other wastes.
- Toxic pollutants listed in Section 307 of the CWA, ammonia, and chlorine.
- Dissolved oxygen (DO). DO measures the amount of oxygen dissolved in water and is affected by oxygen-demanding wastes found in water. Without sufficient oxygen, aquatic life may die.
 - Fecal coliform. These bacteria are found in the digestive systems of warm-blooded animals and are indicators of possible human sewage contamination.
 - pH. This is the measure of the acidity of a water body. The pH for most waters should stay above pH 6. When below this pH, many aquatic animals cannot reproduce.
 - Temperature. Usually, elevated temperature means the effluent being discharged contains excessive amounts of heated water. Heat can lower dissolved oxygen content and make aquatic organisms more susceptible to disease and parasites.

Water quality standards are used as in stream water quality goals to maintain and improve water quality.

Specific limits for certain toxic pollutants to protect aquatic life and human life, as well as standards related to the prevention of undesirable taste and odor, are detailed in Appendix 1, Appendix 2 and Appendix 3 of the regulation.

SITE-SPECIFIC STANDARDS

Site-specific standards for surface waters may be established by DHEC to replace the numeric standards discussed above. When DHEC creates site-specific standards for a body of water, public notice and comment periods are required. However, if the agency adopts site-specific standards, they do not apply to tributary waters or downstream waters unless specifically described as such.

NARRATIVE STANDARDS

Narrative standards are general descriptions of water quality that are not quantifiable. There are a few areas in the regulations that are referred to as narrative standards with examples in Section E (4), Section E (8), Section E (11), and Section F (1-6).

The narrative standards found in Section E (4) are referred to as the “free-froms” because all waters in South Carolina must be “free from” certain types of pollution. Specifically, this includes: Sewage, industrial waste or other waste that settles to form sludge deposits. Narrative standards also prohibit floating debris, oil, and grease attributable to sewage, industrial wastes or other wastes in amounts that create a public nuisance. Sewage, industrial, or other waste that produce taste odor or change the existing color or physical, chemical, or biological conditions in the receiving waters as to create a nuisance are also not allowed. And, finally, narrative standards also disallow high temperature, toxic, corrosive, or deleterious substances that interfere with classified uses, existing water uses, or are harmful to human, animal, plant or aquatic life.

Section E (8) prohibits discharges that will negatively impact the water quality standards or uses of the water. It also allows DHEC to address nutrient loading into water on a case-by-case basis. Section E(11) adopts the criteria established by the EPA for certain toxic pollutants.

The final section – Section F (1-6) – includes narrative biological criteria. Narrative biological criteria are statements that define how we should maintain water quality. This section identifies places in the regulations where narrative biological criteria are contained. A good example of narrative biological criteria is found in the Purpose and Scope Section: “It is the goal of the Department to maintain and improve all surface waters to a level to provide for the survival and propagation for a balanced indigenous aquatic community of flora and fauna and to provide for recreation in and on the water.”

Adoption Of Standards

The South Carolina Administrative Procedures Act sets out the process by which DHEC drafts, amends, adopts or repeals regulations. The process begins when DHEC decides it must draft regulations to manage an environmental problem that currently is not covered by regulations. This is a public process with several opportunities for citizen involvement. First, DHEC will notice in the State Register that it is planning to draft regulations on a particular subject to solicit input from interested citizens during the creation of the regulations. This is called the drafting period and the notice in the register will give a synopsis of what DHEC plans to draft and an address to send written comments.

South Carolina government uses the State Register to notify the public about governmental actions. It is maintained by the South Carolina Legislative Council and updated at least once each month. The Office of the Legislative Council (located on the fourth floor of the Rembert Dennis Building in downtown Columbia) provides the State Register for public inspection. Also, each county’s Clerk of Court and the South Carolina

Department of Archives and History have a copy of the State Register for public review.

Once DHEC drafts regulations, it will publish another notice in the State Register that either provides the entire text of proposed regulations or a summary of the text. It will also establish a time and place for a public meeting. Regulations state that DHEC will only hold a public meeting if it receives 25 written requests for the hearing from separate individuals. However, the EQC automatically has a meeting known as Staff Informational Forum. DHEC is required to consider fully all written and oral submissions respecting the proposed regulations.

The DHEC Board of Directors will conduct the public hearing, with the chairman presiding. The chairman will ensure that all individuals are treated fairly and impartially. He also has the ability to limit repetitive or immaterial statements or questions. Only the chairman or DHEC staff may request for the preparation of transcripts of the hearing. The comment period ends at this hearing and the Board will publicize its regulations that day. However, the chairman has the authority to extend this time period for receiving comments for a total of 20 days.

All regulations, except those specifically required by federal law, must be submitted to the General Assembly for review and approval. After receiving a request for review by DHEC, the President of the Senate and Speaker of the House will send the regulations to the appropriate committees. The committees then have 120 days from the date of the request to consider and act on the proposed regulations. However, if the committee chairs take no action within the first 60 days, the regulations then go to the full committee. If the General Assembly does not either approve or disapprove the regulation by joint resolution in the allotted time, the Legislative Council will promulgate the regulations in the State Register. Once published, the regulations are effective.

DHEC is required to conduct a formal review of the regulations it administers to determine if any should be repealed or amended. If DHEC decides it wants to appeal or amend a regulation, it must follow the same procedure outlined above.

Surface Water Classification

All the surface waters of South Carolina have classifications based on the desired use for each body of water. These classifications were developed by DHEC and approved by the South Carolina General Assembly and EPA. It is important to remember that these classifications are based on desired uses and not on natural or existing water quality. They are the legal means used to obtain the necessary treatment of discharged wastewaters to protect designated uses. A body of water may be reclassified if desired or existing public uses justify the reclassification and the water quality necessary to protect these uses is attainable. All waters must be fishable and swimmable. And no water may be used solely for wastewater transport or treatment.

There are six types of classification for surface waters and each classification has different standards of protection:

CLASS OUTSTANDING RESOURCE WATERS

Outstanding Resource Water (ORW) is fresh or salt water that receives the highest level of protection. They constitute either an outstanding recreational or ecological resource, or they are freshwaters suitable for drinking water supply with minimal treatment. "Outstanding recreational or ecological resource waters" is defined to mean "waters with exceptional recreational or ecological importance or of unusual value." These types of waters include waters in national or state parks or wildlife refuges, waters supporting endangered or threatened species, waters known to be significant nursery areas for commercially important species or waters which are used for scientific value or study. Approximately 17 percent of South Carolina's bodies of water are protected as ORW.

CLASS FRESHWATERS

Freshwater (FW) is comprises the majority of our water. This classification means water is suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of DHEC. "Primary contact recreation" means any activity with the intended purpose of direct water contact by a person to the point of complete submergence, such as swimming or diving. "Secondary contact recreation" means any activity occurring on or near the water that does not produce direct contact by a person to the point of complete submergence, including fishing, canoeing, and boating.

These waters are suitable for fishing and the survival and propagation of a balanced indigenous aquatic community. A "balanced indigenous aquatic community" is a "natural and diverse biotic community characterized by the capacity to sustain itself through seasonal changes, the presence of necessary food chain species, and the lack of dominant pollutant tolerant species."

CLASS TROUT WATERS

Trout Waters are comprised of three types of water:

■ Trout Natural (TN) water is freshwater suitable for supporting reproducing trout populations and a cold water balanced indigenous aquatic community of fauna and flora.

■ Trout Put, Grow and Take (TPGT) water is freshwater suitable for supporting the growth of stocked trout populations and a balanced aquatic community of fauna and flora.

■ Trout Put and Take (TPT) waters are freshwaters suitable for supporting stocked trout populations only in the cooler months and are protected by the standards of Class FW.

CLASS SHELLFISH HARVESTING WATERS

Class Shellfish Harvesting Waters (SFH) is tidal saltwater protected for shellfish harvesting. Shellfish are oysters, clams and mussels. This class has the strictest bacteria standard since people often eat shellfish raw. These are also suitable for uses listed in Class SA and Class SB.

CLASS SA WATERS

Class SA waters is tidal saltwater suitable for primary and secondary contact recreation, crabbing, and fishing, except harvesting of clams, mussels, or oysters for market purposes or human consumption. These waters are also suitable for the survival and propagation of a balanced indigenous community of marine fauna.

CLASS SB WATERS

Class SB water is tidal saltwater suitable for primary and secondary contact recreation, crabbing, and fishing, except harvesting of clams, mussels, or oysters for market purposes or human consumption. These waters are also suitable for the survival and propagation of a balanced indigenous community of marine fauna. The difference between Class SA and SB concerns the limitations on dissolved oxygen. For Class SA waters, the daily average for dissolved oxygen must not be less than 5.0 mg/l, with a minimum of 4.0 mg/l, and for Class SB waters, the daily average for dissolved oxygen must not be less than 4.0 mg/l.

Groundwater Classifications

It is the goal of DHEC to maintain or restore ground water quality so it is suitable as a drinking water source without any treatment. There are three types of classifications for ground waters: GA, GB, and GC.

CLASS GA

DHEC established Class GA for exceptionally valuable ground water. In order to be classified as Class GA, the groundwater must be highly vulnerable to contamination due to hydrological characteristics and they must be either irreplaceable or ecologically vital. "Irreplaceable" water is water for which there is no reasonable alternative source of drinking water available. "Ecologically vital" groundwater provides the base flow for a sensitive ecologically system, and if polluted, would destroy a unique habitat. At this time, there are no ground waters classified as GA.

CLASS GB

All ground waters in South Carolina are classified as class GB. Class GB means that the ground water in the aquifer is of such quality and quantity that it could or does supply water to a public drinking water system.

CLASS GC

Class GC was established for groundwater that has little potential as an underground source of drinking water. Class GC groundwater is believed to have little beneficial use or are contaminated beyond levels practical to cleanup. Before groundwater can be classified as GC, DHEC must ensure that there is no potential of migration to Class GB, Class GC, or surface water that could cause some type of degradation. At this time, there are no ground waters classified as GC in the state of South Carolina.

Special Designations Within A Classification

Within these classified bodies of water, there are areas with special designations.

NO DISCHARGE ZONES

A "No Discharge Zone" is an area where no discharging of marine sanitation devices (MSDs or marine toilets) is allowed from boats or other vessels.

SURFACE WATER MIXING ZONES

On surface waters, a "water-mixing zone" is the area immediately surrounding a discharge pipe where the pollutant undergoes its initial dilution. "Water-mixing zones" allow for the assimilation of discharged wastes into the water. In these mixing zones, water quality standards can be exceeded as long as acutely toxic conditions are prevented and the public health and welfare are not endangered. Also, a surface water mixing zone can not interfere with or impair existing recreational uses, existing water supply uses, existing industrial or agricultural uses, or existing classified shell fish harvesting uses. A "water-mixing zone" cannot be an area of actual waste treatment.

The size of a mixing zone is determined by DHEC on an individual project basis, but should be kept to a minimum. When determining its sizes, DHEC considers biological, chemical, engineering, hydrological and physical factors.

ZONE OF INITIAL DILUTION

Within a mixing zone, the "zone of initial dilution" is the area that immediately surrounds the point where some waste has been discharged. In this zone, water quality standards do not have to be met provided that public health and welfare is not endan-

gered and drifting organisms are not impacted by acute toxicity.

GROUND WATER MIXING ZONES

DHEC may permit a mixing zone into groundwater if certain conditions apply. The applicant must show that the mixing zone will be contained within the boundaries of the applicant's property. The applicant must demonstrate that reasonable measures have been taken to minimize the addition of contaminants to groundwater; the contaminants are not dangerously toxic, mobile or persistent; and the ground water in question is shallow or has little potential of being an underground source of drinking water.

The primary goal of the Antidegradation Rules is to maintain or improve existing water quality.



Antidegradation Rules

The Antidegradation Rules are an important piece of South Carolina's regulations dealing with water quality because they provide much-needed additional protection. In simple terms, these rules prevent people from allowing water quality to degrade below the level needed for existing uses.

The primary goal of the Antidegradation Rules is to maintain or improve existing water quality. Existing water uses and the level of water quality necessary to maintain these uses must be protected regardless of the water classification. For example, if the existing water use is shellfish harvesting for human consumption, it would violate the Antidegradation Rules to allow the river's water quality to deteriorate below the point where shellfish could not be harvested for human consumption.

DHEC protects high quality waters by requiring potential dischargers to demonstrate that lowering the water quality is necessary. For example, on surface waters – where water quality *exceeds* levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water – that quality can be allowed to degrade only if DHEC finds that lowering water quality is necessary to important economic or social development. The discharger must provide an alternative analysis to DHEC explaining why the discharge to high quality water is necessary. If this happens, water quality can be lowered, but only to the point where existing uses are still maintained and not below the protective standards.

Reclassification

On surface waters where the current classified use is not being attained, DHEC may choose to reclassify the waters due to:

- Natural conditions.
- Natural, ephemeral, intermittent, low flow conditions or water levels.
- Human conditions that cannot be remedied or will cause more environmental damage to correct than to leave in place.
 - Dams, diversions, or other types of modifications.
 - Physical conditions related to water's natural features
 - Controls more stringent than those required by Sections 301(b) and 306 of the CWA would result in substantial and widespread economic and social impact.

DHEC has never changed a water classification to a less protective class.

DHEC will consider reclassification of any water upon petition. If an applicant can demonstrate that some use exists that would require greater protection than the present class affords, a body of water may be reclassified to a higher, protective class. Before DHEC can reclassify surface or ground waters, it must provide an opportunity for a public hearing, obtain board approval, and ultimate approval by the South Carolina General Assembly and EPA. A water reclassification is an amendment to a regulation, and must follow the same process described earlier for setting standards.

CHAPTER THREE

“Point Source” Pollution: Waste we can see

Have you ever walked along the bank of a river or stream and seen a pipe coming from an industry dumping some type of fluid into the water? If so, although you may not have realized it, you were looking at a “point source” discharge. A point source is a type of water pollution released from a discrete location.

Some examples of point source pollution are discharges from a city’s sewage treatment plant or a wastewater discharge from a factory. This type of discharge may contain various pollutants – even toxic pollutants – but is perfectly legal as long as the discharger has a permit, and is operating in accordance with the permit.



National Pollutant Discharge Elimination System

One of the main operative mechanisms of the federal Clean Water Act is the application of effluent limitations to individual point source discharges. The CWA makes it illegal to have a point source discharge of any pollutant into waters of the United States unless the discharge is permitted under the CWA. The South Carolina Pollution Control Act has the same provision.

The permit program established by Section 402 of the Clean Water Act is called the National Pollutant Discharge Elimination System (NPDES). The EPA administers this program and may delegate its permitting authority to individual states if the state creates a permitting program that accomplishes the goals of the CWA. The EPA allows South Carolina to issue permits under the NPDES program for waters within the state. DHEC runs the program through its Office of Environmental Quality Control (EQC) and the Bureau of Water (BOW). By issuing permits, the BOW sets the limitations applicable to each facility that has a point source. A violation of those limitations is a violation of the South Carolina Pollution Control Act, the federal Clean Water Act, as well as the permit itself.

The NPDES permit program is divided into two different areas: Wastewater Permitting and Stormwater Permitting. Until 1990, only wastewater was covered. But by 1990, storm water from certain industries, land disturbances, and large cities was included.

Wastewater NPDES Permit

DHEC requires a Wastewater NPDES permit for the discharge of pollutants from any point source into waters of the state and into waters of the United States. The term "pollutant" has been interpreted very broadly, and includes almost any type of industrial, agricultural, or municipal waste. Other types of pollutants are dredged spoil, munitions, biological materials, heat, wrecked or discarded equipment, rock, cellar dirt, and radioactive materials. These may also be regulated through permits other than NPDES.

However, there are some discharges that are not required to obtain a Wastewater NPDES permit. Discharges from vessels operating in a transportation capacity are exempt. Other types of vessels, like those used for offshore mining and seafood processing must obtain a permit. Some forestry and agricultural discharges are also exempted.

Stormwater NPDES Permitting

The NPDES Stormwater Permits are the latest addition to the NPDES program. These permits regulate runoff pollution or nonpoint source pollutants. For certain activities, nonpoint source pollutants are discussed in greater detail in the next chapter. This was Congress' first step toward dealing with nonpoint source pollution in a regulatory manner. By requiring NPDES permits for dischargers previously considered nonpoint source pollution, the activities can be regulated as point sources.

DHEC requires this type of permit for storm water discharges that are: 1) associated with industrial activity; 2) municipalities with a population greater than 100,000; and 3) a construction site with five acres or more disturbed. These three areas are referred to as Phase I. Phase II is scheduled for the fall of 1999 and fills some of the gaps left in Phase I. These include smaller municipalities and construction sites less than five acres.

Stormwater permits can be fairly simple or complex depending on the facility they are used for. Most industrial activities and construction sites are covered by General Permits. The central operating feature of the Stormwater permits is the Stormwater Prevention Plan. In an effort to be proactive when dealing with storm water, the plan sets out the following requirements:

- Steps to be taken for preventive maintenance.
- Steps to be taken for spill prevention.
- Established response procedures.
- Procedures for sediment and erosion control.
- Management for runoff.

How The Permitting System Works

In general, the NPDES permit system works quite simply.

Someone who wishes to directly discharge wastes into a body of water must apply to DHEC for a discharge permit. After researching the information and accepting public comments (discussed below), DHEC will issue a permit to the applicant if it finds that the discharge will not "reduce the quality of the receiving waters below the classification established for them and will not violate any applicable provisions of state or federal laws or regulations."

An NPDES permit authorizes discharges for up to five years. The permit requires the permittee to keep records of its discharge, install and use monitoring equipment, take samples of the effluent and report the results of the samples to DHEC. The permittee uses a standardized form called a Discharge Monitoring Report (DMR) to transmit the

The CWA makes it illegal to have a point source discharge of any pollutant into waters of the United States unless the discharge is permitted under the CWA.

results of the samples to the state.

The NPDES permit system is a self-reporting system. The permittees are required by law to provide information that is representative of the monitored activity. If the permittee provides false information on its monitoring reports, it is subject to civil and criminal penalties. Since DHEC officials have the right to perform inspections and can take their own samples to check the reported activity on any particular day, the threat of criminal penalties for false information is real.

A violation of a NPDES permit can result from a breach of any of the provisions of a particular permit. Actions that can cause a violation typically include discharging wastes that exceed the specific effluent limitations in a permit, failing to install or properly maintain treatment equipment, or falsely reporting or failing to report information regarding a discharge.

Issuing Permits

Any person who is interested in discharging pollutants into the waters of South Carolina must apply for the permit by filling out a permit application.

DHEC is required to provide public notice for every permit that is prepared.

After the application has been completed with the required information, DHEC will review the application. Then the staff creates a "draft permit," the tentative decision of DHEC staff to issue or deny the permit. DHEC is required to prepare a fact sheet for every draft permit. The fact sheet is a summary of the principal facts and the significant factual, legal, and policy questions considered when creating the draft permit. If DHEC decides to issue the permit, the draft permit will indicate the appropriate pollutant limitations to adequately protect water quality and human health. At this point, a copy of the draft permit is provided to the proposed discharger and EPA for review and comment. After this is completed, the public notice and comment period begins. This period lasts for 30 days and is discussed in greater detail below. The draft permit will constitute a final agency decision within 30 days after issuance unless it is timely appealed.

NOTICE OF PROPOSED PERMITS

DHEC is required to provide public notice for every permit that is prepared. Notice of the permit application is provided through posting at the public places near where the discharge would occur, through the legal notices in the local newspapers, and through the mail for potentially interested citizens. The best way to ensure that you will be informed of all permit applications in South Carolina or your basin of interest, is to call or write to the BOW and ask them to put your name on the mailing list for all NPDES permit applications. DHEC even has a mailing list for individuals interested in specific dischargers. The public notice will inform you of the pertinent information about the proposed permit. It will also include DHEC's tentative decision to grant or deny the application, and it should explain the public involvement process offered.

WRITTEN PUBLIC COMMENTS

Once DHEC publishes notice of the proposed permit, a 30-day period will begin to run during which anyone can comment on the tentative decision made by the state. Where to send written comments is included in the public notice.

DHEC does seriously consider all written comments. The most persuasive comments are ones that focus on how the proposed permit will affect a river's water quality, and whether or not the new permit will cause the river's water quality to fall below the assigned classification. A river falls below its assigned classification if it no longer supports the uses assigned to the relevant classification. Thus, you should refer to the designated uses specifically and comment on how you believe the uses will be affected.

While your comments do not have to be technical, scientific, or legally based, comments of these sorts are the most appropriate and helpful. Comments conveying how you know the river and its uses and whether those uses are compatible or incompatible with the proposed discharge are particularly persuasive. Comments can also focus on the effect that the discharge will have on the aquatic life in the river.

PUBLIC HEARINGS ON PROPOSED PERMITS

Public involvement in the decision to grant or deny the permit application is not limited to a written comment period.

DHEC may decide that it needs a public hearing to discuss the permit application. If the state does not decide to hold a hearing, citizens can request one. During the 30-day comment period that follows public notice of a proposed permit decision, interested citizens can petition DHEC to hold a public hearing. If there are significant issues or significant public interest, DHEC may hold a public hearing.

DHEC staff will conduct public hearings, though anyone can participate. Time limits may be set for oral comments. DHEC will also accept written comments from anyone who does not wish to speak publicly. Again, the most persuasive comments that can be made at a hearing are ones that focus on what effect the proposed permit will have on the ability of the receiving river to support its designated uses.

FREEDOM OF INFORMATION ACT AND RESEARCHING THE FILES

If you are interested in researching the files, you need to call the South Carolina Freedom of Information Office and request a Freedom of Information Form to write out your request for information.

The Freedom of Information Act gives citizens the right to access information by requiring the government to make available copies of documents, files, and other records. When filling out the form, be as precise as possible when describing the type of information you seek. This may mean that you may need to talk to the BOW staff. They should be able to advise you on the type of files, forms, and records you should request.

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Enforcement Of Permit Violations

Since South Carolina is a delegated state (a state authorized by the federal government to run a program required by federal legislation) the NPDES program is operated under both state and federal laws.

A violation of an NPDES permit is a violation of both federal and state laws. As a consequence of this regulatory overlap, there are two different enforcement programs. The main difference between the state and the federal program is that, under the federal law (the Clean Water Act) a citizen can take the permit violator to court to enforce the permit, while under state laws, he or she cannot.

Under the state laws, DHEC's legal office or the Attorney General must bring the enforcement action.

STATE ENFORCEMENT

If a permittee is violating his permit conditions or specific effluent limitations, the BOW will first send the permittee a Notice of Violation (NOV). The NOV specifies the alleged violations and allows the party to respond within a specified time period as to the measures he has taken or will take to address the violations.

If the corrective actions are not adequate or the party does not respond to the NOV, BOW will issue an order that includes a schedule of compliance and possibly an assessment of civil penalties.

The next step of enforcement is the enforcement conference. During the enforcement conference, BOW will review the actions taken by the permittee to correct the

violation. The BOW will then negotiate a Consent Order with the permittee. A Consent Order is an agreement between the state and the permittee that sets a course of action for the permittee to alleviate the cause of noncompliance and assesses appropriate penalties. It is a settlement document that must be signed by both parties. Once signed, the Consent Order becomes a legally binding agreement. If a settlement is reached, then the enforcement action is concluded upon satisfaction of the terms of the Consent Order.

If the state cannot successfully negotiate a Consent Order, they may issue an Administrative Order mandating specific actions to be taken by the permittee and assessing penalties. The permittee receiving the Administrative Order can request a contested case hearing. An Administrative Law Judge (ALJ) at the Administrative Law Judge Division will conduct a hearing. The ALJ will listen to arguments, hear testimony, and issue a written decision. The decision of the ALJ is then appealable to the DHEC Board of Directors.

Another option available to DHEC is the termination of a permit.

There are several situations that may cause the revocation of a permit: 1) the permittee is in noncompliance of the permit; 2) the permittee misrepresented or did not fully disclose relevant facts; 3) a determination that the permitted activity endangers human health or the environment; or 4) there is a change in the conditions that requires a temporary or permanent reduction or elimination of the permitted discharge. Before DHEC can terminate a permit, it must provide notice and opportunity for a public hearing. At the public hearing, citizens in favor of or against the revocation will have a chance to voice their concerns.

The first role of the citizen in state enforcement of permit violations is the ability of the average member of the public to monitor a permit file for violations.

Role of the Public in Enforcement by the State

Citizens in South Carolina play two important roles in the enforcement of discharge permit violations. Citizens can monitor discharge permit files and notify the state of violations, and citizens can petition the state to bring an enforcement action against permit violations. While the BOW diligently monitors all permit files for potential violations, this does not preclude citizens from monitoring the files as a back up. If a person notices a potential violation in a permit file, they should notify the BOW. DHEC, however, conducts this same monitoring itself.

MONITORING PERMIT FILES

The first role of the citizen in state enforcement of permit violations is the ability of the average member of the public to monitor a permit file (or a group of permit files) for violations. The typical violations are:

■ Discharge violations:

Under the NPDES program, every permit has particular effluent limitations or standards that the discharge must not exceed. A permit will have limits for conventional pollutants such as phosphorous or pH, non-conventional pollutants such as chlorine or color, and toxics such as heavy metal and PCB's.

■ Monitoring violations:

The NPDES program requires a permittee to monitor the levels of specific effluents in the waste that they discharge. To comply with this requirement, the permittee must take samples of its discharge and have it tested by a certified laboratory on a scheduled basis. The frequency (i.e. monthly, weekly, or daily) and type of sample (i.e. grab sample or continuous monitoring) are established in the permit. If a permittee fails to take a sample on schedule, or does not take the correct type of sample, then it is in violation of its permit.

■ Reporting violations:

The NPDES program requires that all permittees report the results of monitoring

activity and laboratory tests of samples to the South Carolina Bureau of Water. The frequency of this reporting activity varies and is established in the permits. Permittees use a standardized form to both monitor and report their discharge activity. If they fail to report the results of their monitoring activity, or submit false information, they violate the permit, the CWA and PCA.

REPORTING POSSIBLE PERMIT VIOLATIONS

Contacting the BOW or a DHEC District Office and reporting what you suspect may be a discharge permit violation will be met with one of three responses. (The phone numbers and addresses of the district offices are located in the back of this publication)

If DHEC's response to your reporting of a permit violation is that there is no enforcement action being taken by the DHEC, you may inquire as to why. There may be several valid reasons why the state is not pursuing an enforcement action. However, if the state is not pursuing an enforcement action against what appears to be a bona fide permit violation, citizens may petition the state to pursue an enforcement action.

PETITIONING FOR STATE ENFORCEMENT OF PERMIT VIOLATIONS

You may petition the state to pursue action against discharge permit violators in one of two ways.

Since both DHEC and the Attorney General of South Carolina are authorized by the legislature to enforce NPDES permit violations, citizens can petition either requesting enforcement. Petitions should be drafted to include all of the relevant information, which includes:

- Who is petitioning?
- Why they are petitioning?; and
- What action is being requested?

Petitions to DHEC should be directed to DHEC's Commissioner and petitions to the Attorney General's office should be directed to the Attorney General of South Carolina.

South Carolina state government is not required to enforce against every discharge permit violation. The decision of which permit violations to spend government resources and money on to enforce is within the discretion of the government. Further, since there is no citizen standing in South Carolina environmental statutes, only the state government can bring an enforcement action against a discharge permit violator in South Carolina State Courts. In the rare case where interested citizens cannot persuade the state to bring an enforcement action against a permit violation, those interested citizens should consider the opportunities for citizen enforcement available under federal law.

FEDERAL ENFORCEMENT

Under the CWA, any citizen can bring suit in federal court against a person in violation of any effluent standard or limitation established in an NPDES permit issued under the Act or DHEC. Under the CWA, the term "citizen" is defined to mean any person or persons having an interest that is or may be adversely affected by the alleged illegal behavior.

A citizen suit to enforce a NPDES permit involves a full-scale lawsuit. A citizen interested in river protection should learn the major requirements of a suit. These requirements include: What types of violations are needed to bring a suit; who can bring a suit; what prevents a suit from going forward; and what penalties are available as an outcome of a citizen suit.

To bring a citizen suit to enforce an NPDES permit, there must first be a violation

of a permit or order. Additionally, for the court to be able to hear the case, the violation of the permit must not be “wholly past” and must be a continuous violation. Lastly, it must be a violation that DHEC is not “diligently prosecuting” on its own accord.

There are two ways for a court to establish an on-going violation. First, if the permit is violated again after the date that the citizen suit is filed, there is an on-going violation. If there are no permit violations after the complaint is filed, the plaintiff must be able to prove that there is a reasonable likelihood of future violations because the permittee has not alleviated the cause of the illegal discharge.

Without either of these elements, the courts cannot hear a citizen suit under the Clean Water Act.

WHO CAN FILE A CITIZEN SUIT

In order for a citizen to file a suit, the citizen must have “standing” to sue. Standing is a legal doctrine that means the plaintiff has a sufficient stake in the outcome of the case. The rules that govern whether an individual has standing to sue require that a person show that: (a) he or she personally has suffered some actual or threatened injury as a result of the alleged illegal activity; (b) the injury is fairly traceable to the challenged action of the defendant; and (c) the injury is redressable by the suit.

If an organization wishes to bring the suit, the organization must have members who could otherwise bring the suit on their own.

Appeals

Any person or party aggrieved by a decision made by DHEC staff on water pollution control issues can request a contested case hearing by petitioning the clerk of the DHEC Board. The clerk of the Board will transmit the matter to the Administrative Law Judge Division (ALJ). Decisions for which a contested case hearing are appropriate include decisions to grant or deny an NPDES discharge permit, decisions relating to conditions in an NPDES discharge permit, decisions relating to mixing zones, and decisions or acts in the enforcement of permit violations. The appeal must be filed no later than 15 days after DHEC’s decision or action.

It is important to note that the filing of a petition prevents the decision from being effective during the appeal process, unless the ALJ lifts the automatic stay. Thus, a permittee may not proceed with the activity for which the permittee acquired the permit.

When the ALJ receives the case from DHEC, the ALJ determines who the people or parties in interest are. These people (or their lawyers) will present arguments at a hearing to the ALJ. The ALJ considers the matter under a “de novo” standard of review. This means he will consider the matter as if no decision had been made by DHEC. It also means that they will make an independent decision since they are not obligated by DHEC’s interpretation of facts or its position.

The ALJ will issue a written decision on the matter within a reasonable time after the hearing. The ALJ’s decision may affirm DHEC’s decision, it may reverse it, or it may modify it. In any event, the decision of the ALJ is binding, unless DHEC or any person or party in interest aggrieved by the ALJ’s decision appeals the decision to the DHEC Board within 30 days of the date of the decision.

Parties appealing to the DHEC Board must submit briefs to the Clerk of the Board at least 10 days before the date of the hearing. At the hearing, each side will have between five and 15 minutes to present oral arguments. The board will make its decision based on the record below and new evidence is not allowed into the record unless good cause is shown, which rarely happens. Upon completion of oral arguments, the board normally votes immediately and the decision is the final administrative decision.

APPEALING A DECISION MADE BY THE DHEC BOARD

If you remain aggrieved by a water pollution control action after the DHEC Board decision, you can still appeal. Such an appeal must be filed with the circuit court of any county in which the affected waters are located no later than 30 days after the board issues its decision. The board's decision will remain effective during the court appeal process unless the court issues an injunction to block the effectiveness of the decision.

The circuit court considers the appeal issue by reviewing the record of the proceedings used by the board when it made its decision. A record of proceedings from a Board of Directors hearing would consist of transcripts of the ALJ hearing and the board hearing, evidence introduced during the ALJ hearing and to the board, the ALJ's written decision and the board's written decision. Since the court only considers the record of proceedings, the parties on appeal cannot bring in new evidence or facts to support their position; they can only make arguments based on the information in the record.

The court cannot substitute its judgment for that of the agency. However, the court may reverse or modify the decision if substantial rights of the appellant have been prejudiced. This could happen if the court finds that DHEC's actions were in violation of constitutional or statutory provision, were made upon unlawful procedure, clearly erroneous, or arbitrary and capricious.

Basically, the court is trying to determine whether the board acted in a wholly inappropriate manner when it issued its decision. If there is any rational basis to support the board's decision, most likely it will be upheld by the circuit court. After reviewing the matter, the circuit court will issue a decision. That decision can be appealed to the South Carolina Court of Appeals, and then to the South Carolina Supreme Court.

Other Point-Source Controls

Besides the NPDES permitting program, South Carolina has other regulations that protect water quality.

THE SC STORMWATER MANAGEMENT AND SEDIMENT REDUCTION ACT

These regulations require that applicants submit a sediment and soil erosion control plan to DHEC for approval for any land-disturbing activities of two or more acres. During construction, 80 percent of sediment must be retained on site. Any post-construction runoff quantities must return to "pre-development" levels.

LAND APPLICATION PERMITS

Land Application Permits (LAP) play an important role in DHEC's protection of water quality. DHEC developed LAP regulations to control discharges that NPDES did not cover, including discharges onto land which may affect groundwater or surface water.

Part of the Land Application Permit is the information requirements regarding the location where the activity will take place, a description of the type of waste to be applied, volume, quality and frequency of application. The regulations require that if there is harmful impact to groundwater due to permitted use or a significant adverse trend occurs, then the permittee must conduct an investigation to determine the extent of groundwater contamination and take remedial steps if required.

DHEC drafted these regulations to protect both surface and ground waters. For example, land application must be at least 200 feet from surface waters. DHEC may decrease the application rate due to excessive rainfall at the application site and a dike or berm may be required to be built around a spray field as necessary to prevent potential surface runoff from entering or leaving the site.

CHAPTER FOUR

“Nonpoint Source” Pollution: Pollution with an ambiguous point of origin

Nonpoint source (NPS) pollution is the main source of water pollution both in South Carolina and in the United States. Nonpoint source pollution has an ambiguous point of origin and results when water from irrigation or rain falls and carries contaminants into streams, lakes, rivers, and coastal waters polluting surface and ground waters.

Water flowing across streets and parking lots picks up dirt, trash, oil, grease, bits of rubber tires, animal waste and other things left behind by motor vehicles, people and animals. Rain falling on bare earth, such as construction sites and freshly plowed fields, becomes muddy with sediment. Golf courses, agricultural fields, home gardens and lawns often add fertilizers and chemicals to storm water runoff. Septic tanks in waterlogged areas can contribute sewage to the runoff. All of that mixes together and flows away as nonpoint source pollution.

Some of the adverse effects of NPS pollution include physical destruction of aquatic habitat, fish die-offs, interference with or elimination of recreational uses of a water body (particularly lakes), closure of shellfish beds, reduced water supply or taste and odor problems in drinking water, and increased potential for flooding because water-bodies become choked with sediment.

NPS pollutants occur in both the natural environment and local human community. For example, when a site is cleared of existing vegetation and adequate measures for erosion control have not been taken, sediment moves off-site during a rain event to nearby streams and creeks. Excessive sedimentation can have several negative impacts on an aquatic system. Spawning beds can become buried, fish gills become abraded lowering respiratory capacity, and cloudy water reduces sunlight penetration decreasing aquatic plant's production. In addition, certain pesticides and other harmful compounds can bind to sediment particles, thus becoming an unwanted component of the aquatic environment.

The process of identifying NPS is time consuming, very expensive and sometimes unsuccessful. This is part of the reason, historically, why there has been a lack of research and attention paid to NPS pollutants. A significant characteristic of NPS pollution problems is its lack of regard for political boundaries and physical barriers between cities and states. It can cross all types of jurisdictional borders and it can even go as far as to contaminate other states' surface and ground water before it is found. Because the polluter is unknown, it is difficult to find who is responsible to clean up the contamination.

Sources Of NPS

NPS pollution derives from land use. It originates from a variety of land-use activities, including agriculture, forestry operations, construction, urban areas, hydrologic modification, landfills, mining, and removal of vegetation, resource extraction, and stream bank destabilization. In the United States, the main cause of NPS pollution is agriculture due to its surface application of pesticides, fertilizers, and manure. It has been estimated by the U.S. Environmental Protection Agency that agricultural runoff is responsible for approximately 50 to 70 percent of surface water affected by NPS pollution.

NPS Pollution Management In South Carolina

When the Clean Water Act was re-enacted in 1987, the United State Congress gave new direction and significant federal financial assistance toward the implementation of state NPS programs. Under Section 319 of the Clean Water Act, each state is required to create a NPS Assessment Report and then, using this information, develop a NPS Pollution Management Program.

ASSESSMENT OF NPS POLLUTION FOR THE STATE OF SOUTH CAROLINA

The NPS Assessment Report describes existing and potential NPS problems for over 300 bodies of water in South Carolina. The NPS Assessment Report identifies the types of pollutants contributing to water quality, how the pollutant impacts water quality and the potential source of some pollutants. Most of these NPS pollutants stem from land use activities, including agriculture, silviculture, construction, and urban runoff.

Once officials completed the first NPS Assessment report, they created a NPS Management Program. This document describes the state's strategy for addressing the NPS problems described in the NPS Assessment Report discussed above. The EPA approved DHEC's NPS Management Plan in 1990. The plan addresses NPS pollution through education, technical assistance, demonstration projects, monitoring efforts and regulatory programs. The NPS Pollution Management Program develops and implements a strategy to control and abate NPS pollution problems and to ensure protection, prevention, restoration, and clean up of a state's watershed from NPS water pollution impacts.

The South Carolina NPS Management Program was updated and approved by EPA in 1999. It describes a framework for agency coordination and cooperation and sets a strategy for employing effective management measures and programs to control NPS pollution statewide. Further, it incorporates nine key elements iterated in EPA guidance documents. Through the use of a framework that encompasses these key elements, DHEC will have a NPS program designed to achieve and maintain beneficial uses of water.

The nine key elements include:

- Explicit short-term and long-term goals, objectives and strategies to protect surface and ground water.

- Strengthening its working partnerships to state, interstate, tribal, regional, and local entities, private sector groups, citizen groups, and federal agencies.

- Using a balanced approach that emphasizes both statewide NPS programs and on-the-ground management of individual watersheds where waters are impaired or threatened. This entails monitoring, evaluations and assessments, and tracking of NPS pollution problems as well as BMP implementation and TMDL development.

- Abating known water quality impairments from NPS pollution and preventing significant threats to water quality from present and future NPS pollution activities.

- Identifying waters and their watersheds impaired by NPS pollution or waters threatened by NPS pollutants or otherwise at risk. Further, the state NPS program establishes a process to progressively address these waters by more detailed watershed assessments and developing watershed implementation plans followed by implementation. We can use Section 305(b) Water Quality Assessment and Section 303(d) together to identify those waters not meeting water quality standards. This information is used as a guide in the development of strategies and the prioritization of watersheds.

- Reviewing, upgrading, and implementing all program components required by Section 319 of the Clean Water Act, and establishing flexible and targeted approaches to achieve and maintain beneficial uses of water as expeditiously as practicable. Regulatory, voluntary, financial assistance, technical assistance, information/education and public awareness programs are identified for each category of NPS pollution in the categorical

action plans.

- Identifying Federal lands and activities that are not managed consistently with the South Carolina NPS Management Program.
- Managing and implementing its NPS program efficiently and effectively, in-



cluding necessary financial management.

- Reviewing and evaluating NPS management program using environmental and functional measures of success, and revising its NPS Assessment Report and its NPS Management Program at least every five years.

There is a role for the public during future updates of the NPS Management Program. Before the plan is sent to the EPA for approval, DHEC provides a public notice and comment period. Interested citizens can provide important input to update the NPS Management Program.

COASTAL ZONE REAUTHORIZATION AMENDMENTS

In 1990, Congress enacted the Coastal Zone Act Reauthorization Amendments (CZARA) to address many environmental concerns, including NPS pollution in coastal waters.

At the federal level, the National Oceanic and Atmospheric Administration (NOAA) and the Environmental Protection Agency jointly administer and fund such programs. DHEC's Office of Ocean and Coastal Resource Management and the Bureau of Water are responsible for developing and implementing the programs in South Carolina. Each state with an approved coastal zone management program develops and submits to the EPA and NOAA a Coastal Nonpoint Pollution Control Program (CNPCP). This program should restore and protect coastal waters with the cooperation of state and local authorities. Presently, the CNPCP has conditional approval from NOAA and the EPA.

DHEC based South Carolina's NPS Statewide Pollution Management Program on current voluntary and regulatory programs implemented by the agency and others to protect water quality from NPS pollution.

It relies on the "watershed approach" and the implementation of recommended BMP's and other control strategies for NPS pollution; this includes permits for construction and storm water management. Priority watersheds programs address NPS pollution problems concerning impaired waters as listed in the State's 303(d) list. The NPS Man-

agement Program also incorporates the SC Coastal Nonpoint Pollution Control Program Implementation Strategy, the SC Watershed Water Quality Management Strategy, and the state's strategy for developing and implementing Total Maximum Daily Loads (TMDLs).

Agricultural And Silvicultural NPS Pollution Programs

In South Carolina, a large percent of the NPS pollution impacting our waterways begins with agricultural and silvicultural practices. Both of these activities are exempt from the South Carolina Storm Water and Sediment Reduction Act. This means there is minimal regulatory control over farming and forestry practices which contribute to NPS pollution.

However, both industries use voluntary best management practices. The federal government and DHEC also recognize the necessity of protecting our water quality from these types of land use activities and have educational programs in the effort to reduce NPS pollution.

Below is a brief overview of these programs:

Agricultural NPS Pollution Program

Typical sources of agricultural NPS pollution include agricultural wastes (such as barnyard wastes, milk house effluent, and animal manure), cropland soil erosion, and field nutrient runoff. These sources cause severe nutrient overloads to water bodies, increased pathogens, and increased sedimentation and turbidity. Both the federal government and South Carolina are working to reduce agricultural NPS pollution.

FEDERAL PROGRAMS FOR NPS POLLUTION

The federal NPS reduction effort involves a program based on voluntary participation by farmers.

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) oversees this program using funds provided by various sources, including the 1996 Farm Bill. The thrust of the USDA's efforts to reduce NPS pollution caused by agriculture focuses on targeting a specific watershed and entering into agreement with the particular farmers to reduce NPS pollution. These programs use a cost-sharing approach. It serves as an incentive for the farmer to make changes to either the physical structures of the farms or to the types of farming being practiced.

An example of a cost-share program would include a farmer agreeing to implement BMPs that will prevent stream bank erosion from occurring on a farm. The farmer can share the cost of stream bank stabilization with the federal government and benefit by reducing soil loss. The river also benefits because such a program can reduce sedimentation.

NRCS has other programs available to farmers who wish to protect water quality. The Conservation Reserve Program (CRP) promotes the use of grass strips and riparian buffers to prevent chemical runoff from washing into waterways. The Environmental Quality Incentives Program (EQIP) fosters the establishment of animal waste management facilities and BMPs to reduce nutrient runoff. Other programs that indirectly reduce agricultural-based polluted runoff include the Wetlands Reserve Program and the Flood Risk Reduction Program.

These programs are not regulatory since they only apply to farmers who voluntarily enter into the agreements. However, this does not completely prevent public involvement in the federal program. Nine of South Carolina's 17 watersheds have experienced attention from these federal programs. You can contact the USDA to discuss federal efforts to reduce agricultural NPS pollution in your watershed. If a particular watershed has received attention from these programs, a you could track the status and success of

In South Carolina, a large percent of the NPS pollution impacting our waterways begins with agricultural and silvicultural practices.

those efforts to better inform their river protection decisions. If a particular watershed has not received any federal attention for its agricultural NPS pollution problems, you could inquire as to why this is so, and then gather support for requesting the implementation of one of the federal programs in your watershed.

SOUTH CAROLINA PROGRAMS FOR AGRICULTURAL NPS POLLUTION

South Carolina also focuses its efforts on land-based practices to improve water quality with regard to agricultural NPS pollution. South Carolina has had a permit program for animal agricultural facilities for more than thirty years. DHEC developed these guidelines, initially calling them Agricultural Facilities Permit Requirements within the Bureau of Water Pollution Control. However, in June of 1998 the guidelines were replaced by regulations: Standards for the Permitting of Agricultural Animal Facilities.

South Carolina passed the Confined Swine Feeding Operations Act (CSFO) in 1996 after watching North Carolina wrestle with public outcry stemming from environmental degradation attributed to several large hog facilities. The CSFO attempts to control cumulative impacts, odors and lagoon designation by creating public notice and input, setbacks from property lines and setbacks from waters of the state. The act also allowed for the creation of new regulations, which went into effect in June 1998.

Today, there are approximately 500 poultry facilities, 200 turkey facilities, 360 swine facilities, 150 dairy and cattle facilities, and 90 facilities for various types of animals and agricultural activities.

DHEC's standards only cover animal facilities that produce at least 30,000 pounds of animal live weight. Facilities that produce less do not need a permit, but must still maintain and implement a Waste Management Plan (WMP). Although facilities with fewer than 10,000 pounds of animal live weight do not have to submit a plan to DHEC for review, they must still comply with DHEC regulations. Facilities between 10,000 and 30,000 pounds of animal live weight, must submit a plan to DHEC for review and compliance. DHEC has the prerogative to require a permit on a case-by-case basis for any facility.

Forests are a necessity in the protection of water quality: They prevent excessive sediment, nutrients, organics, and pesticides from entering the water system, as well as preventing water temperatures from elevating to nonviable levels.

Silvicultural Nonpoint Source Pollution

Forests comprise a major portion of South Carolina's land base. Roughly 66 percent, or 12.6 million acres, of the state's total land area is timberland. Private landowners own over 90 percent of the forests in the state and some 2.2 million acres (or about 18 percent) are forested wetlands. Nonindustrial private landowners control 72 percent of the state's forest area, while the forestry industry controls only 19 percent.

Forests are a necessity in the protection of water quality: They prevent excessive sediment, nutrients, organics, and pesticides from entering the water system, as well as preventing water temperatures from elevating to nonviable levels. Road access and building, harvesting, and regeneration of timber present the most significant potential for NPS pollution to South Carolina waterways. We must take proper steps to avoid NPS pollution since forests comprise a major portion of South Carolina's land base. Improper forestry practices can have long-term impacts on the health of the watershed.

To ensure that forests remain abundant and their watersheds in good health, the SC Forestry Commission (SCFC) has developed an NPS program for forestry. It works in cooperation with the United States Department of Agriculture's Forest Service (USFS) to abate and control NPS pollution from forestry activities. SCFC developed BMPs for forestry activities and published them in a book available to foresters, loggers, and other interested individuals. It ensures BMP activity compliance through outreach and compliance monitoring programs. The SCFC's manages forestry practices in State Forests and provides technical assistance to nonindustrial private landowners. The USFS deals primarily with silviculture on a national level and maintains National Forests within



the state.

FEDERAL PROGRAM FOR NPS FROM SILVICULTURAL ACTIVITIES

The USFS manages the two National Forest located within South Carolina: Sumter National Forest in the Piedmont and Mountain regions and the Francis Marion National Forest in the Coastal Plain region. The USFS recognizes the need for BMP utilization for the protection of water quality and thus advocates their use.

The voluntary BMPs contained in the SC BMPs Manual are incorporated as performance standards into the Forest Standards and Guidelines in the Forest Plans to address NPS pollution. These standards and guidelines also address the need for the management of other resources including soil productivity, wildlife, and recreation. Silviculture and other related activities include a site-specific evaluation for environmental effects, NPS pollution impacts and monitoring. Training of personnel and coordination with others is advocated within each site.

STATE PROGRAM FOR NPS FROM SILVICULTURAL ACTIVITIES

Since there are no forestry regulations, the Forestry Commission has no regulatory authority over privately owned lands. However, the Forestry Commission has promoted voluntary BMPs since the early 1970's. On a regulatory level, the Forestry Commission applies the practices of the Erosion, Sediment, and Stormwater Management Plan to state-owned forested lands. They also recommend – as required by the Stormwater Management and Sediment Reduction Act – these same practices to other state agencies that own forest land.

South Carolina's Best Management Practices for Forestry manual includes many other programs and practices open to individuals such as the Forested Wetland Program. Management measures incorporated are Preharvest planning, Streamside Management Areas (SMAs), Road Construction/Reconstruction, Road Management, Timber Harvesting, Site Preparation and Forest Regeneration, Fire Management, Revegetation of Disturbed Areas, and Wetlands forests. Chemical management such as pesticide use is regulated under the South Carolina Pesticide Control Act and the Chemigation Act.

Stormwater Management and Sediment Reduction Act

The Stormwater Management and Sediment Reduction Act (SMSRA) requires that builders must submit a sediment and soil erosion control plan to DHEC for approval for any land disturbing activities of two or more acres. There must be a minimum standard for both quality and quantity of runoff. The regulations require that during construction 80 percent of sediment must be retained on site. Quantities of runoff prior to construction must remain at the same level after construction is completed.

For any project that is two or less acres in size, the property owner must submit a simplified storm water management and sediment control plan to DHEC or the delegated agency. Even if DHEC does not issue a permit, it has the authority to enforce the plan and inspect the site.

There is a South Carolina Stormwater Management and Sediment Control Handbook for Land Disturbing Activities available through DHEC that provides further direction and explanation of the requirements for specific projects. The objective of the handbook is to create a comprehensive reference for individuals who will be submitting a storm water management and sediment reduction permit application of approval to DHEC.

CHAPTER FIVE

Wetlands: The heart of our watersheds

A “wetland” is an area within a watershed where water is permanently or temporarily stored long enough to control the development and survival of specific plant and animal communities. South Carolina has over 4.5 million acres of wetlands. And even though it has not been well documented, some estimates suggest we have lost over 27 percent of our wetlands since the 1800s.

A more specific definition of a wetland – and the one found in the regulations of the Clean Water Act – looks for three characteristics:

- Hydrology – The area is inundated by or saturated with water for varying periods of time during the year.
- Hydric Soils – The area contains soils saturated long enough during the growing season to develop anaerobic conditions in the upper part of the soil.
- Hydrophytic Vegetation – Those areas dominated by plant species already adapted to life in saturated soil conditions.

For our purposes, we can classify the state’s wetlands in three categories.

COASTAL WETLANDS

Of the 4.5 million acres of wetlands in South Carolina, just 10 percent is coastal wetland. This type of wetland is also known as a salt marsh and can serve as an important transition zone between freshwater rivers and saltwater oceans.

Unlike other wetlands, it is tidal flooding – not rain, surface runoff or flooding – that saturates coastal wetlands. The vegetation of the coastal wetland filters pollutants from inland rivers and creeks, thus playing an important role in protecting the shoreline and buffering Atlantic storms. Coastal wetlands also serve as critical nursery habitat for many diverse and economically important species of fish and shellfish, including oysters, shrimp, bluefish, flounder, clams, sea trout and striped bass.

UPLAND FORESTED AND BOTTOMLAND RIVERINE WETLANDS

There are between 2.5 and three million acres of forested and riverine wetlands in South Carolina, with a majority found in the central and lower part of the state. They are some of the wetlands found along the sides of slow-moving rivers and comprise 18 percent of the forested land in South Carolina. Forested and riverine wetlands are important habitat for plants and animals, but they also aid communities downstream by serving as buffers for floods. Examples of these types of wetlands are cypress swamps and bottomland hardwood forests.

ISOLATED INLAND WETLAND

There are over one million acres of isolated inland wetlands in South Carolina. This type of wetland is not connected to a constantly flowing water source, such as a river. Inland wetlands support their own plants and animals, in addition to serving as a habitat for certain endangered species. These wetlands are important because they help to prevent flooding by absorbing rainwater, and by filtering pollutants from the surrounding lands.

Wetlands: A Valuable Resource

Wetlands are a valuable component of watersheds and a valuable asset to our ecosystems, economy, culture and human health. But aside from a wetlands' function and value, it's important to remember one fundamental fact: Wetlands are an integral part of a complex, dynamic, and interrelated ecological system.

Wetlands perform many functions, central among them is flood control. They also offer shoreline stabilization through the dissipation of erosive forces. Wetlands contribute to groundwater in the form of a stream-flow sources such as springs or seeps. Other wetland functions include:

Wetlands are a valuable component of watersheds and a valuable asset to our ecosystems, economy, culture and human health.

- Water quality protection through the filtering of sediment, nutrients and man-made pollution

- Fisheries habitat such as spawning grounds and nursery areas

- Habitat for wildlife and rare and endangered species. In South Carolina, 45 percent of animals and 26 percent of plants on federal threatened or endangered species list depend on or are found exclusively in wetlands.

Wetlands are also valuable to society because they offer recreation benefits such as hiking, hunting, fishing, bird watching, and photography. The economic benefits include \$10 billion spent nationally each year by observers and photographers of wetland dependant birds, \$600 million spent annually to hunt wetland dependent waterfowl, and the incalculable dollars saved from reduced flood damage and water quality protection. Students from kindergarten to college enjoy researching the natural science of a wetland. Lastly, wetlands add to the open space and aesthetic quality of a landscape.

Wetland Regulatory Program In South Carolina

South Carolina's basic tool for wetlands protection is the Section 404 Corp Permit, including the Section 401 Water Quality Certification program issued by DHEC. This permitting program involves various players, including DHEC, DNR, the United States Fish and Wildlife Service (FWS), the National Marine Fisheries Service (NMFS), the Corps and EPA.

Section 404 requires entities to obtain a "dredge and fill permit" from the Corps before filling a wetland. Both the Corps and the EPA administer this permitting program. The Corps decides whether a permit should be issued and has the primary responsibility for enforcement. EPA participates in the permitting process, and has the ability to veto certain permits issued by the Corps. Also, the EPA wrote guidelines the Corps must follow when making decisions on applications.

Part of the permitting process includes a review by other state and federal agencies. The FWS and the NMFS are required to review all relevant 404 permit applications to minimize the impact of projects on fish and wildlife habitat, and coastal resources, respectively. The Corps must also comply with the National Environmental Policy Act (NEPA) for applicants other than federal agencies by performing an environmental assessment, and/or an environmental impact statement.

Once the Corps receives a permit application, it will issue a Joint Public Notice of the pending application to DHEC, other appropriate state and federal agencies, its mailing list, and adjacent landowners. At this point, citizens may submit comments on the proposed application to the Corps or DHEC and, if interested, request a public hearing. After the 30-day comment period, DHEC prepares the staff assessment of water quality and wetlands impacts.

DHEC looks at three areas that impact water quality when assessing whether to grant a 401 Water Quality Certification. These include:

- Whether there are feasible alternatives to the activity.

- Whether the activity is water dependent and its intended purpose.



- All potential water quality impacts over the life of the project.

This last element is particularly important. To insure that water quality will be protected, DHEC considers the impact on:

- Existing and classified water uses
- Physical, chemical, and biological impacts, including cumulative impacts
- The effect on circulation patterns and water movement
- The cumulative impacts of the proposed activity and reasonably foreseeable similar activities of the applicant and others.

DHEC has the ability to waive, issue with conditions, or deny 401 Water Quality Certification under certain conditions such as whether:

- The aquatic ecosystem will be permanently altered in the vicinity of the project such that its functions and values are eliminated or impaired;
- There is a feasible alternative to the activity, which reduces adverse consequences on water quality and classified uses;
- The proposed activity adversely impacts water containing state or federally recognized rare, threatened or endangered species;
- The proposed activity adversely impacts special or unique habitats, such as National Wild and Scenic Rivers, National Estuarine Research Reserves, or National Ecological Preserves, or designated State Scenic Rivers.

The Corps cannot issue a 404 permit without state certification from DHEC. This is called "water quality certification." If DHEC decides to issue certification, it will then mail a Notice of Proposed Decision to the applicant, adjacent landowners, other interested state or federal agencies and citizens. If nobody appeals, DHEC's decision becomes final after a 15-day period.

The water quality certification becomes a condition of the Corps' 404 permit, and is subject to enforcement by DHEC. DHEC may also conduct inspections to insure compliance with certification conditions.

DHEC's Ocean and Coastal Resource Management (OCRM) office is directly involved in the 404 permitting process if the permit application impacts wetlands in the Coastal Zone. OCRM has a permitting program for alterations to the critical area, which includes salt-water wetlands. This critical area includes everything *seaward* of the line marking the limit of salt tolerant vegetation. In other words, the critical area includes coastal waters, tidelands, beaches, and primary ocean front sand dunes.

CHAPTER SIX

Watershed Stewardship: Some “tools” for protection

South Carolina is growing faster than ever before. That means more people, cars, houses, roads, buildings, grocery stores, and restaurants. Such development takes an exacting toll on our natural resources, especially our water. And since we use water to dispose of our waste, enjoy ourselves and drink, we must acknowledge that we are all responsible for the health of this resource.

To that end, there are other laws and programs which promote involvement for the protection of our watersheds, and there are things that you can do to ensure the long-term protection of our rivers and watersheds.

DHEC Watershed Related Outreach Programs

SOUTH CAROLINA WATER WATCH

South Carolina Water Watch is intended to involve the state's citizens in water quality protection by encouraging local communities to become stewards of our lakes, streams, rivers, and wetlands. Water Watch groups first choose a body of water (or portion of a watershed) on which to focus. The program then suggests that groups proceed through three levels of achievement:

Awareness: Becoming aware of the problems within the watershed is the beginning of water quality improvement. Citizens projects that have been completed in the past include watershed, streambank and macroinvertebrate surveys. DHEC can provide watershed maps and general water quality monitoring data.

Protection, Restoration, and Enhancement: These hands-on activities provide a group with the opportunity to make a difference in their community and watershed. Included are litter pickups, storm drain stenciling and tagging programs, erosion control and streambank restoration projects.

Outreach and Education: Passing on their knowledge to others within the watershed and community is important to making a change. Groups have published brochures and newsletters about local water quality issues, and have held festivals, fair and summer camps focusing on water quality issues.

Individuals and groups of all ages are encouraged to participate. For more information, call (803) 898-4211.

NONPOINT SOURCE POLLUTION EDUCATION

The Bureau of Water's nonpoint source education program provides information and resources on nonpoint source water pollution issues to professionals and the general public. Publications, educational resources, presentations, and demonstration using an interactive watershed model are available for professionals, citizen groups, and educators. A quarterly newsletter, *Turning the Tide*, is produced for professional and interested citizens. It focuses on current nonpoint source programs and issues in South Carolina. A classroom curriculum supplement on nonpoint source pollution is available in DHEC's *Action for a Cleaner Tomorrow*. For more information, call (803) 898-4187.

DRINKING WATER EDUCATION

The Drinking Water Education Program provides the public and drinking water professionals in South Carolina with information and technical assistance concerning drinking water issues. Available programs include school presentations, presentations for community groups, a variety of free literature, K-12th grade lessons on drinking water in DHEC's Action for a Cleaner Tomorrow curriculum supplement, technical workshops for drinking water professionals, technical assistance with Consumer Confidence Reports and help for the public with questions about drinking water quality. For more information, call (803) 898-3552.



SOURCE WATER ASSESSMENT AND PROTECTION PROGRAMS

The Source Water Assessment and Protection (SWP) Program is a community-based, proactive approach to protecting public drinking water supply sources from contamination. DHEC is currently conducting assessments of all federally-identified surface and ground water public drinking water systems. These assessments include: 1) delineation of a protection area surrounding the public water supply, 2) identification of potential contaminant sources in the protection area, and 3) determination of the susceptibility of public water resources to such contaminants. Creation of a plan for current and future management for the protection area will be done at the local level with assistance from DHEC. Communities are encouraged to form a SWP planning team to aid in initial plan development and in the creation of a continuing management plan. Educational materials and technical assistance are available to help with adoption and management of a SWP program in your community. For more information, call (803) 898-3542.

DNR's Watershed Related Outreach Programs

RIVER CONSERVATION PROGRAM

The Water Resources Division of the South Department of Natural Resources (DNR) created the River Conservation Program (SCRCP) to educate people and the community about the values of our river resources. It encourages people to share care-taking responsibility. The River Conservation Program includes three areas: the Scenic Rivers Program, Watershed and River Corridor Planning, and River Education.

SOUTH CAROLINA SCENIC RIVERS PROGRAM

In 1989, the General Assembly passed the South Carolina Scenic Rivers Act (SCSRA) to protect rivers that possess unique or outstanding values. It specifically protects rivers that have "unique or outstanding scenic, recreational, geologic, botanical, fish, wildlife, historic or cultural values."

Three types of rivers qualify for the Scenic Rivers Act:

■ **Natural Rivers**

These are free-flowing rivers generally inaccessible except by nature trail or by another waterway. The adjacent lands and shorelines of a natural river must be essentially undeveloped and its water must be unpolluted.

■ **Scenic Rivers**

These are free-flowing rivers with limited development along shorelines and limited road access. In this case, adjacent lands can be used for agriculture, forestry or similar purposes.

■ **Recreational Rivers**

These are accessible by road with a developed shoreline and adjacent lands. However, Recreational Rivers provide outstanding river-related recreational opportunities.

DNR manages the Scenic Rivers Act through its Scenic Rivers Program. This program was developed so landowners and other community members could connect to discuss issues about rivers and develop a Scenic River Management Plan. The plan would recommend long-term strategies for preserving significant rivers and their traditional uses.

As well as assessing the river's resources and conditions, a Scenic River Management Plan addresses ecological, cultural, recreational and environmental attributes of a river corridor. It determines problems in the river corridor and provides strategies to address them. Certain strategies include land management practices that protect the nature and character of the river, including promotion of high water quality. A Scenic River Advisory Council (composed of landowners who live along the river and other interested individuals) would prepare a river's Management Plan. The law requires that landowners comprise a majority on the advisory council. DNR plays a technical role by assisting the advisory council in developing the plan.

To have a river, or part of a river, designated as an official State Scenic River, landowners or other interested individuals must petition DNR for designation. Once this occurs, staff will determine whether the river is eligible. There are no concrete measures to determine eligibility, but DNR is looking for communities seriously interested in and committed to long-term protection of their rivers, and whether the river has the qualifying characteristics discussed above.

If DNR determines the river is eligible, it will notify all landowners along that segment of the river up for designation (and the general public) of a proposal to designate the river as Scenic. Each county council affected by the designation must approve the proposal. Once this occurs, the DNR Board will review the proposal. If it agrees, it will introduce a bill into the General Assembly to designate the river as a new State Scenic

SC Scenic Rivers Act specifically protects rivers that have "unique or outstanding scenic, recreational, geologic, botanical, fish, wildlife, historic or cultural values."

River. Once this bill is passed, the river officially becomes State Scenic River and DNR will create its Scenic River Advisory Council and prepare the Scenic River Management Plan.

Once the plan is complete, the Advisory Council (with technical assistance from DNR staff) will begin to seek management rights along the designated river corridor. It can acquire management rights through the donation of conservation easements, acquisition or just the purchase of the adjacent land. It is voluntary for landowners to participate in Scenic River Management.

Watershed and River Corridor Management Planning

DNR staff also work with communities to develop river corridor and watershed management plans that promote good water quality and ensure protection of wildlife habitat. DNR's central goal in these plans is to balance human needs while maintaining the natural assets of a river or watershed.

Developing a management plan can happen in various ways and have interesting results. The first plan created was the Edisto River Basin Project in 1988. By 1993, the project became a community-based planning process promoting sustainable land use and development in the Edisto Basin. By 1996, a group of local citizens, with the help of DNR staff, created a plan with recommendations to protect and promote the Edisto's ecological, cultural, recreational and economic resources. This organization has become Friends of the Edisto, a non-profit organization dedicated to protecting the Edisto Basin, partially by implementation of the management plan.

River Education

To raise awareness of the importance of rivers and to promote stewardship of these resources, DNR's River Conservation Program created two programs centered on community and individual involvement.

On every third Saturday in September, DNR holds its annual Beach Sweep/River Sweep. Thousands of people participate, cleaning up beaches and rivers all across South Carolina. DNR uses this clean-up program as an educational opportunity allowing people to become invested in their water resources. Anyone or any organization is welcome to join in. To do so, contact DNR.

Another river education program is Adopt-a-Landing, which was created to address the amount of litter accumulating around public boat landings, especially during summer months. To adopt a boat landing, interested individuals can agree to clean up the site three times a year: Winter, June and September. For your efforts, DNR will erect a sign at the landing stating that your organization has committed to keep this landing clean.

Federal Wild and Scenic Rivers

The federal Wild and Scenic Rivers Act (WSRA) of 1968 designates segments of America's rivers as National Wild and Scenic Rivers. (The South Carolina Scenic Rivers Act is based upon this federal legislation.) Rivers or river segments that can be protected must be free flowing with "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values." The WSRA protects designated rivers from dams, diversions, and other on-river development. It also restricts development on public lands of a quarter-mile wide corridor along these rivers.

When the WSRA first passed, Congress established the National System of Wild and Scenic Rivers. At that time, it designated were eight inaugural rivers, mainly in the West. There are two methods of designating a river "Wild and Scenic." The first, and most common, is the by Congressional act. However, state may also nominate rivers. The Secretary of the Interior or the Secretary of Agriculture may study specific rivers to deter-

mine whether they meet the legislative criteria. Afterwards, the appropriate Secretary will make recommendations to Congress, which will then decide if the river should be allowed into the National System

The process for designation by state initiative begins when a state has already protected a river through a similar state system, like South Carolina's Scenic Rivers Act. Once the river is protected, the state must then apply to the Secretary of the Interior for inclusion into the National System. Before the Secretary will grant inclusion, the state must ensure the river will remain free flowing and the significant values protected.

Once a river is designated as Wild and Scenic and is a part of the National System, there are a host of protections that follow. For example, the river must remain free flowing, which means the Federal Energy Regulatory Commission is not allowed to license the construction of dams or other work projects on, or which may directly affect, the river. Other federal agencies are not allowed to participate in any water resource project that will have an direct and adverse effect on the values for which the river was designated. The Chattooga River in Oconee County has this designation.



Individual Stewardship

Whether you live in urban Columbia or rural Hickory Grove, you are part of a watershed and your actions have an impact on them.

Urban areas, for instance, contain many impervious surfaces such as concrete and asphalt. These surfaces increase the flow and volume of runoff, sometimes causing stream channel erosion and flooding. Similarly, residential areas with single and multi-family housing can contribute to increased nutrients and pesticides from eroded lawns and gardens. Sediment, pet waste, motor oil and other household items can also contaminate runoff. But there are many things that you and your family can do to lessen polluted runoff and improve water quality to protect watersheds.

- Apply lawn and garden chemicals sparingly, according to directions, and, when possible, try alternative pesticides and fertilizer and other organic methods of gardening.
- Stabilize areas of your yard that are erosion-prone by planting groundcover, mulching trees, and other plants. Planting also promotes infiltration of water into the soil.

- Do not sweep or blow excess fertilizers, leaves, or yard debris into the street.
- Do not hose spilled oil, grease or anti-freeze into the street. These liquids will seep into storm drains that flow directly into streams and creeks. Recycle used oil.
- Clean up pet wastes, and dispose of properly by burying, flushing, or use a commercial pet waste composter.
- Take unwanted household chemicals to waste collection centers. Do not pour them down the drain. Use less chemicals, and try non-toxic varieties.
- Use low-phosphate or phosphate-free detergents and use water-based products whenever possible.
- When landscaping, use plants that require small amounts of fertilizer, water and pesticides, and leave lawn clippings on the lawn – it adds nutrients back into the soil.
- If you have a septic system, inspect it annually, and pump it out every two years.
- Participate in clean-up activities in your neighborhood.
- Walk more and drive less. If you drive, keep your car well-maintained and stop oil leaks.
- Get to know your local government officials, encourage them to protect watersheds, and get involved in local planning and zoning decisions.
- If you live along a lake, stream or wetlands, avoid planting lawn all the way to the water's edge. Leave trees and other vegetation along the banks as a buffer.
- Report occurrences of flooding, contamination, and illegal dumping to your local DHEC district office. See the references chapter for the office nearest you.
- Determine what watershed you live in, the rivers nearest to you, and what creek your storm drains flows into.
- Start a river or watershed group, and actively monitor water body conditions, improve wildlife habitat, and involve the community to keep the river clean. Contact DHEC's Water Watch Coordinator for assistance.

For more information about what you can do to reduce nonpoint source pollution, call DHEC for the books "Turning the Tide: A Citizen's Guide to Reducing Nonpoint Source Pollution" or the "South Carolina Home-A-Syst: An Environmental Risk-Assessment Guide for Protecting Water Quality."

Business and Industry Stewardship

Business and industry also play a role in protecting our water resources. They can contribute to urban runoff and other types of nonpoint and point source pollution. Below are a few examples of how the business community can participate in promoting clean water.

- Do not dump wash water, cleaners, or paints into parking lots or stormdrains.
- If you are constructing on a new development site, properly control sediments through erosion control techniques.
- Promote carpooling and public transportation among employees to reduce runoff associated with roads, bridges, and parking lots.
- Avoid washing spilled industrial materials into stormdrains.
- Provide financial support to watershed groups.
- Let your business participate in the Water Watch Adopt-a-Stream or Adopt-a-Landing cleanup programs.
- If you are a farmer, manage animal waste to minimize contamination of surface water and ground water. Also use conservation practices and other best management practices, especially near riparian areas.

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- Reduce levels of pesticides and fertilizers on landscaping.
- If you are a forester, use proper erosion control practices along riparian areas.
- If you have horses, cattle or other livestock, keep them away from streams and wetlands. Store wastes away from waterbodies.

Local Government Participation

Most local governments are slow to understand that they – not state or federal government – can do the most towards protecting the water quality in our watersheds. Nonpoint source pollution is the greatest concern from a watershed perspective, and land uses can generate nonpoint source pollution. Local governments regulate land use, so the connection is obvious.

Most local governments are slow to understand that they – not state or federal government – can do the most towards protecting the water quality in our watersheds.

Unfortunately, many actions by local governments negatively impact our watersheds. Our current planning mechanisms for growth and development usually do not adequately address watersheds. Local governments and state governments do not always work together, and conflicting policies at each level prohibit or confuse actions that can protect watersheds and promote stewardship.

Local policy makers are necessary for the success of the long-term protection of our water resources. There are many areas in which their participation is essential. Some of the most important opportunities include:

BARRIERS TO PROTECTION

One of the first steps local governments can take to address water quality involves taking an inventory of existing ordinances, policies, and procedures that either inhibit or are a barrier to watershed protection.

ENFORCE CURRENT LAND USE LAWS FAITHFULLY

Many local governments have comprehensive plans premised on watersheds and watershed protection. Yet they lack the political will to enforce the plan faithfully and ensure the city or county's long-term health. Your local government must acknowledge its responsibility in protecting water resources and commit to do so by enforcing a land use plan.

ADOPT ORDINANCES THAT PROTECT WATER QUALITY

Local governments may craft ordinances to promote the health and welfare of citizens within their jurisdiction. This means they have the ability to pass different types of ordinances that can protect the watersheds. Some include:

- Wetlands Protection Ordinance
- Tree Ordinance
- Wildlife Corridor Protection Ordinance
- Stream Corridor Ordinance
- Land-use Planning Ordinance partially based on the Watershed Approach
- Open Space Ordinance

TRAIN STAFF TO CONSIDER IMPACTS OF PROJECTS ON WATERSHEDS

The local government's staff should consider the impacts of new and current projects on our watersheds and rivers. This is a part of the watershed approach to watershed protection. If it seems that a current project may have negative impacts on the watershed, determine alternatives or provide voluntary best management practices to lessen the impact.

Local governments should be aware of the Nonpoint Source Education for Municipal Officials (NEMO) program. This three year project of the SC Sea Grant Education Program, Clemson Cooperative Extension Service and the Waccamaw Regional Planning and Development Council educates municipal officials about the impacts of land use on water quality and about the options for managing those impacts. For more information, call (843) 722-5940.

FUNDING PROTECTION

Provide grants and other funding opportunities to organizations working on watershed protection. There are many local groups monitoring water quality, repairing riparian corridors, and creating wildlife habitat. These organizations can also use funding to continue to provide these services.

CONTROL RUNOFF FROM ROADS, BRIDGES, AND PARKING LOTS

Roads and bridges contribute to nonpoint source pollution. As rainwater washes off roads, bridges, and other impermeable surfaces, the water picks up dirt, tire particles, cigarette butts, pet waste, fast food bags, oil and antifreeze and other pollutants. Local governments can control these pollutants to some degree by incorporating a runoff pollution control plan and by establishing best management practices, such as permanent storm water retention ponds, slope protection, or vegetation buffers with all new road projects.

Other management ideas include:

- Identify areas for protection that provide the most important water quality benefits.
- Limit land disturbances, natural drainage features, and vegetation.
- Dispose and store toxic materials properly.
- Develop and implement runoff pollution controls for existing road systems.
- Avoid highway locations that require numerous river or wetland crossings.
- Repair potholes.

CHAPTER SEVEN

References Laws, Regulations and Organizations

Laws

Federal Water Pollution Control Act of 1972
(Clean Water Act) 33 U.S.C. 1251 et.seq

South Carolina Administrative Procedures Act (APA)
SC Code Ann Section 1-23-10

South Carolina Scenic Rivers Act of 1989 (SCSRA)
SC Code Ann, Section 49-29-10

South Carolina Litter Control Act 44-67-10

South Carolina Confined Swine Feeding Operations 47-20-10

South Carolina Stormwater Management and Sediment Reduction Act 43-14-10

South Carolina Coastal Zone Management Act 48-39-10

Regulations

61-9 Water Pollution Control Permits

61-72 Procedures for Contested Cases

61-43 Standards for the Permitting of Agricultural Animal Facilities

61-68 Water Classifications and Standards

61-69 Classified Waters

61-101 Water Quality Certification

Organizations

Palmetto Conservation
Foundation
1314 Lincoln Street
Suite 213
Columbia, SC 29201
(803) 771-0870
www.palmettoconservation.org

South Carolina Department of Health
and Environmental Control
Bureau of Water
2600 Bull Street
Columbia, SC 29201
(803) 898-3900
www.state.sc.us/dhec
975 N. Church Street
Spartanburg, SC 29303
(864) 596-3800

DHEC Emergency Response
1-888-481-0125

SOUTH CAROLINA
DEPARTMENT OF NATURAL
RESOURCES
Land, Water & Conservation Division
2221 Devine Street
Suite 222
Columbia, SC 29205
(803) 734-9100
www.water.dnr.state.sc.us/water/
envaff/river

DHEC District Offices
Appalachia I
Anderson & Oconee
2404 Noth Main Street
Anderson, SC 29621
(864) 260-5569

Appalachia II
Greenville & Pickens
301 University Ridge, Suite 5800
Greenville, SC 29601
(864) 241-1090

Appalachia III
Spartanburg, Cherokee & Union
975 North Church Street
Spartanburg, SC 29303
(864) 596-3800

Catawba
Lancaster, Chester & York
2475 DHEC Road
Lancaster, SC 29720
Mailing Address:
PO Box 100
Fort Lawn, SC 29714
(803) 285-7461

Central Midlands
Richland, Lexington, Newberry, &
Fairfield
Bldg #5/PO Box
State Park, SC 29147
(803) 935-7015

Lowcountry
Beaufort, Jasper, Colleton & Hampton
1313 Thirteenth Street
Port Royal, S. C. 29935
(843) 522-9097

Lower Savannah
Aiken, Orangeburg, Barnwell, Bamberg,
Allendale & Calhoun
206 Beaufort Street, NE
Aiken, SC 29801
(803) 641-7670

Pee Dee
Florence, Dillon, Marion, Marlboro,
Darlington & Chesterfield
145 E. Cheves Street
Florence, SC 29506
(843) 661-4825

Trident
Charleston, Berkeley & Dorchester
1362 McMillan Ave., Suite 300
Charleston, SC 29405
(843) 740-1590

Upper Savannah
Greenwood, Abbeville, Laurens, Saluda,
Edgefield, & McCormick
613 South Main St.
Greenwood, SC 29646
(864) 223-0333

Waccamaw

Horry, Georgetown & Williamsburg
1705 Oak St. Plaza/Suite #2
Myrtle Beach, SC 29577
(843) 448-1902

CLEMSON UNIVERSITY COOP-
ERATIVE EXTENSION SERVICE
Dr. Dan B. Smith, Director
Clemson Univ., Clemson SC 29634
(864) 656-3382
www.virtual.Clemson.edu/

Wateree

Sumter, Kershaw, Lee & Clarendon
counties
1705 Magnolia St.
Sumter, SC 29150
Mailing:
PO Box 1628
Sumter, SC 29151
(803) 778-6548

CONSERVATION DISTRICT
OFFICES
Abbeville Conservation District
Rt. 5, Box 354-A
Abbeville, SC 29620
(864) 459-5419

DNR Land Resources Regional Offices

Moncks Corner Office

223 North Live Oak
Room A-8
Moncks Corner, SC 29461
(803) 761-8340

Aiken Conservation District
1555 Richland Ave., East Suite 400
Aiken, SC 29801
(803) 649-4221

Allendale Conservation District
James Brandt Building, Rm. 111
Allendale, SC 29810
(803) 584-4234

Greenville Office

Greenville County Square
301 University Ridge
Suite 4800
Greenville, SC 29601
(864) 467-2770

Anderson Conservation District
1521 N. Pearman Dairy Road
Anderson, SC 29625
(864) 224-4201

Dillon Office

411 West Hampton St.
P.O. Box 609
Dillon, SC 29536
(803) 774-9577

Bamberg Conservation District
Rt. 2, Box 400
Bamberg, SC 29003
(803) 245-2555

United States

Environmental Protection Agency
401 M Street, SW
Washington, DC 20460-0003
(202) 260-2090

Barnwell Conservation District
County Ag. Building, Main Street
Barnwell, SC 29812
(803) 259-7144

EPA REGION 4

Environmental Protection Agency
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-3104
www.epa.gov/region04/
Phone (404) 562-9900
Fax (404) 562-8174
(800) 241-1754

Beaufort Conservation District
281 Parris Island Gateway
Burton, SC 29902
(803) 521-0302

Berkeley Conservation District
223 North live Oak, Rm. A-5
Moncks corner, SC 29461
(803) 761-8340

Clean Water

Calhoun Conservation District
111 Courthouse Annex
St. Matthews, SC 29135
(803) 874-3337

Charleston Conservation District
2420 Mall Drive, Suite 102
North Charleston, SC 29406
(803) 727-4671

Cherokee Conservation District
P.O. Box 399
Gaffney, SC 29342
(864) 489-7150

Chester Conservation District
744 B Wilson Street
Chester, SC 29706
(803) 581-1908

Chesterfield Conservation District
106 Scotch Road
Chesterfield, SC 29709
(803) 623-2187

Clarendon Conservation District
9B West Rigby Street
Manning, SC 29102
(803) 435-2612

Colleton Conservation District
531 Robertson Blvd., Suite B
Walterboro, SC 29488
(803) 549-1824

Darlington Conservation District
P.O. Box 232
Darlington, SC 29532
(803) 393-0483

Dillon Conservation District
P.O. Box 609
Dillon, SC 29536
(803) 774-9577

Dorchester Conservation District
Rt. 1, Box 645
St. George, SC 29477
(803) 563-3412

Edgefield Conservation District
304 Gray Street
Edgefield, SC 29824
(803) 637-3340

Fairfield Conservation District
414 B S. Congress Street
Winnsboro, SC 29180
(803) 635-4831

Florence Conservation District
P.O. Drawer 2028
Florence, SC 29503
(803) 662-4535

Georgetown Conservation District
719-C Front Street
Georgetown, SC 29440
(803) 546-7808

Greenville Conservation District
301 University Ridge, Suite 4500
Greenville, SC 29601
(864) 467-2756

Greenwood Conservation District
120 Main St., Suite B10
Greenwood, SC 29646
(864) 229-2805

Hampton Conservation District
1005 Elm Street, E
Hampton, SC 29924
(803) 943-2367

Horry Conservation District
1202 First Avenue
Conway, SC 29526
(803) 365-7923

Jasper Conservation District
P.O. Box Drawer K
Ridgeland, SC 29936
(803) 726-8148

Kershaw Conservation District
632 W. Dekalb St., Rm. 210
Camden, SC 29020
(803) 432-2576

Lancaster Conservation District
P.O. Box 2108
Lancaster, SC 29721
(803) 286-4455

Laurens Conservation District
218 W. Laurens St., Box 348
Laurens, SC 29360
(864) 984-6921

Lee Conservation District
P.O. Drawer 726
Bishopville, SC 29010
(803) 484-6325

Lexington Conservation District
123 Park Road
Lexington, SC 29072
(803) 359-3165

McCormick Conservation District
P.O. Box 126
McCormick, SC 29835
(864) 465-2594

Marion Conservation District
Rt. 5, Box 651
Marion, SC 29571
(803) 423-1742

Marlboro Conservation District
County Ag. Center,
Parsonage Street Ext
Bennettsville, SC 29512
(803) 479-4552

Newberry Conservation District
1512 Martin St., Box 434
Newberry, SC 29108
(803) 276-0032

Oconee Conservation District
301 West South Broad St.
Walhalla, SC 29691
(864) 638-2415

Orangeburg Conservation District
550 Henley St., NE, Rm. 103
Orangeburg, SC 29115
(803) 534-2732

Pickens Conservation District
P.O. Box 245
Pickens, SC 29671
(864) 878-6155

Richland Conservation District
2020 Hampton St., Box 192
Columbia, SC 29202
(803) 929-6080

Saluda Conservation District
201 E. Church Street
Saluda, SC 29138
(864) 445-8110

Spartanburg Conservation District
201 Magnolia St., Rm. 102
Spartanburg, SC 29306
(864) 583-0281

Sumter Conservation District
101 South Main St., Rm. 101
Sumter, SC 29150
(803) 773-9222

Union Conservation District
226-A South Gadberry Street
Union, SC 29379
(864) 427-9412

Williamsburg Conservation District
208 Short Street
Kingstree, SC 29556
(803) 354-9621

York Conservation District
13 South Congress St., Rm 5
York, SC 29745

South Carolina Forestry Commission
5500 Broad River Road
Columbia, SC 29212
(803) 896-8800
www.state.sc.us/forest

APPENDIX

Governmental entities involved in watershed issues

In our endeavor to understand the laws, regulations, and programs set up to protect our rivers and watersheds, it is important to understand the governmental entities involved in these decisions. Below is a description of the central players.

S.C. Department of Health and Environmental Control

In 1973, the Legislature merged the State Board of Health and the Pollution Control Authority to create the **South Carolina Department of Health and Environmental Control (DHEC)**. DHEC is the primary state agency responsible for environmental protection. Its responsibilities are many, but those relevant to rivers and watersheds include: Planning, permitting, compliance, monitoring, enforcement of permits, promotion of grants, reporting and providing public information. DHEC has 12 district offices around the state that provide direct support to the general public by working on emergency response activities, environmental monitoring, and customer service. A list of the district offices telephone and addresses are located in the previous chapter.

A **Board of Directors** oversees DHEC. A seven-member board chosen by the governor and confirmed by the Senate, each board member represents a congressional district and serves a four-year term. The governor also appoints one, at-large board chairman. Two of the major responsibilities of the Board are to publicize regulations and render the final agency decision for contested cases.

The **Office of Environmental Quality Control (EQC)** is the primary DHEC entity involved with the protection of the environment. It is responsible for enforcing state and federal environmental laws, including the Clean Water Act and the Pollution Control Act. This office has four program areas, one of which deals specifically with water: DHEC's **Bureau of Water (BOW)**. BOW regulates all wastewater treatment and drinking water systems in the state. It is especially worth noting that BOW is responsible for development of water quality standards, issuing permits for discharges into surface and ground waters, monitoring of water quality, and assessment of aquatic conditions. BOW also manages grants related to water quality protection and various community and educational programs promoting watershed and river protection.

Another important entity at DHEC for environmental protection is the **Office of Ocean and Coastal Resource Management (OCRM)**. Until 1993, OCRM was a separate agency called the South Carolina Coastal Council. However, the South Carolina Legislature eventually transferred the Coastal Council to DHEC. OCRM's major responsibility is the enforcement of South Carolina's Coastal Zone Management Act to protect coastal resources. The **Coastal Zone Appellate Panel** oversees appeals of issues arising under the authority of OCRM, instead of DHEC's Board of Directors.

South Carolina Department of Natural Resources

The South Carolina Department of Natural Resources is another agency concerned with the protection of South Carolina's natural resources. In the area of watershed protection, DNR has three divisions whose programs involve the protection of water resources. The first is the Land, Water, and Conservation Division (LWCD) which provides a range of information and technical assistance in the areas of climatology, land and

water resource planning, surface and groundwater hydrology, geographic information systems and mapping, aquatic-pests management, flood-hazard mitigation, and geological survey. Two programs are directly related to watershed protection. The first is the River Conservation Program which is devoted to river education, river and watershed planning, and the scenic rivers program. The second is the Conservation Districts program which works in partnership with the United States Department of Agriculture to provide technical assistance to landowners, especially foresters and farmers, to reduce erosion and sedimentation and to create watershed conservation plans. The Wildlife and Fresh Water Fisheries Division (WFWF) of DNR provides information and technical assistance for the protection and management of wildlife (including wetland and aquatic species) and fish species and related habitats, they develop management plans for DNR lands and they offer programs to assist private landowners as well. As a large landowner in South Carolina, it is important that DNR create management plans that incorporate measures that ensure water quality and watershed protection. Finally, the Marine Resources Division (MRD) of the DNR concerned with research, management, and protection of South Carolina's coastal fish and shellfish species and related habitats (coastal waters and estuaries) and provides information and technical assistance in these areas.

South Carolina Administrative Law Judge Division

Any party aggrieved by a DHEC staff decision (such as a new permit or administrative order), may appeal the decision and request a contested case hearing. The hearing takes place before an Administrative Law Judge Division (ALJ). This contested case hearing is a formal process where each party is allowed to present evidence and examine witnesses subject to the South Carolina Rules of Civil Procedure and the South Carolina Rules of Evidence. The ALJ will consider the facts and laws presented and issue a written decision. Any party aggrieved by the ALJ's decision may then appeal to the DHEC Board or the Coastal Appellate Panel (CAP) – whichever entity originally issued the permit. Either panel will further review an ALJ decision and issue a final agency decision. If a party remains unsatisfied with the results, they may appeal that decision to South Carolina Circuit Court and ultimately the South Carolina Supreme Court.

United States Army Corp of Engineers

The United States Army Corps of Engineers (Corps) has jurisdiction over Section 404 of the Clean Water Act, which involves depositing dredged areas or other fill into wetlands. The Corps district with regulatory authority in South Carolina is located in the Federal Building in Charleston.

United States Environmental Protection Agency

Created in 1970, the United States Environmental Protection Agency (EPA) is the federal agency responsible for enforcing most federal environmental laws. The EPA has a broad range of programs in every area of environmental protection. Besides providing technical assistance, scientific research, and information to state agencies and individuals, it has programs set up to fund and research pressing environmental issues. EPA oversees DHEC's entire water program. For example, EPA has the authority to veto a state-issued permit and issue its own. EPA also provides funding for many of DHEC's environmental programs. EPA's Region IV office in Atlanta, Ga. oversees environmental programs in Tennessee, Georgia, Kentucky, North Carolina, Alabama, Mississippi, Florida, and South Carolina.

United States Department of Agriculture

The United States Department of Agriculture (USDA) oversees the Natural Resource Conservation Service (NRCS). Historically, the NRCS has been the entity that works locally with farms and other landowners in the protection of natural resources by creating conservation plans. These plans incorporate measures to reduce stream sedimentation, soil erosion, polluted run off, and waste management. The NRCS works in partnership with state and local organizations, particularly the S.C. DNR. The NRCS also implements incentive-based conservation programs created in the 1996 Farm Bill.

South Carolina Forestry Commission

The South Carolina Forestry Commission is the state agency dedicated to protecting and developing the forest resources of South Carolina. It provides all types of forest management services. This includes creating forest management plans to incorporate “best management” practices for protection of water resources, urban forestry, and environmental education.

Clemson Cooperative Extension Service

The Clemson Cooperative Extension Service works together with Conservation Districts to help promote stewardship of our natural resources. Every county has an extension office, and the Clemson Extension Agents help local landowners, farmers, and foresters in land conservation techniques by providing technical assistance, including the creation of conservation plans. The Extension Service also provides important research and projects concerning natural resources.