



Lynches Scenic River **MANAGEMENT PLAN**

Lynches Scenic River Management Plan



Prepared by:
The Lynches River Advisory Council

in cooperation with
the South Carolina Department of Natural Resources

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EXECUTIVE SUMMARY

A 54-mile segment of the Lynches River from US 15 near Bishopville to the eastern boundary of Lynches River State Park in Florence County was officially designated as a State Scenic River in March 1994. Subsequent to the designation, the Executive Director of the Department of Natural Resources (DNR) appointed a locally-based advisory council to develop a plan for long-term management of the river's natural, scenic, and cultural/historic resources. Chaired by the DNR, the Lynches River Advisory Council is composed of river-bordering landowners, recreational users, business and environmental interests, local government representatives, and natural resource managers.

From December 1994 through November 1996, the advisory council worked on development of a management plan. The first step was to define river-related issues. Six issue categories were identified including water quality; recreational opportunities; maintaining the scenic quality of the river corridor; the fisheries; wildlife and habitat management; and community involvement in the project. The next step was to study each issue in detail. Based on its findings, the council developed management goals and proposed responsive, workable means for dealing with the issues. This was accomplished through a consensus-building process that allowed input from all council members and the general public.

Lynches Scenic River Management Plan presents the results of the advisory council's intensive, two-year study of the river. The first two chapters of the document outline project history, selection of the advisory council, the study process, and public participation. The third chapter provides an assessment of land use in the river corridor and a description of the river's natural, scenic, and cultural/historic resources. Forming the core of the management plan, the fourth chapter presents six issue-specific management goals; an in-depth discussion of the respective issues; and 65 management recommendations. The fifth and final chapter provides a look to the future with details on the short- and long-term implementation strategy.

The management plan is supplemented by two appendices. Appendix A summarizes the available water quality data for the Lynches Scenic River. Appendix B provides information on the South Carolina Scenic Rivers Stewardship Program, a voluntary land management program for river-bordering landowners.

Issues addressed by the management recommendations are as follows:

- Stewardship/Community Involvement (9 recommendations)
- Water Quality (21 recommendations)
 - General recommendations (5)
 - Point source pollution (9)
 - Nonpoint source pollution (7)
- Fisheries (5 recommendations)
- Wildlife and Habitat Management (6 recommendations)
- Maintaining Aesthetic Appeal/Scenic Values (8 recommendations)
- Recreation/Public Access (16 recommendations)
 - Public access (5)
 - Litter (4)
 - Navigation (3)
 - Law enforcement (2)
 - State Parks (2)

Dominant themes in the management plan include the need for increased water quality monitoring; strict enforcement of point source discharge permits to protect water quality; protection of the riparian zone; personal/corporate responsibility; and public education/involvement as a key management tool.

Project recommendations will be implemented utilizing management programs in a voluntary, non-regulatory framework. The advisory council will remain in place permanently to guide management of the Lynches as a State Scenic River. On a regular basis, the council will re-visit and update the plan to address current issues.

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FOREWORD

When I first moved to South Carolina almost six years ago, my first outdoor adventure was a walk on the nature trail at Lynches River State Park. It was a Sunday morning in early January, and the riverside forest was dusted with a light layer of snow. A native of the mountains, I was awed and intrigued by the landscape – the clear, brown water; cypress trees with swollen trunks; and the mysterious Spanish moss. As I stood on the riverbank and admired the scenery, I had no idea that I would become involved in an effort to keep the Lynches River a special place.

The Lynches Scenic River Project was initiated in March 1994 with the official designation of a 54-mile segment of the Lynches as a State Scenic River. Since that time, the local community has worked with the South Carolina Department of Natural Resources (DNR) through the Lynches River Advisory Council to develop a plan for long-term management of the river's natural, scenic, and cultural/historic resources. I have had the wonderful opportunity to serve as the DNR chairperson for the advisory council.

After more than two years of diligent work, we are proud to present the *Lynches Scenic River Management Plan*. The core of the plan is contained in 65 management recommendations that address issues specific to the Lynches River including water quality; recreation/public access; fish and wildlife; maintaining the natural scenery; and community involvement.

While developing the management plan, the advisory council dealt with some controversial and potentially divisive issues. The atmosphere in council meetings was always cordial, and all members showed respect for one another and for each point of view. As a result, the council was able to build a consensus-based plan that is comprehensive in scope. The *Lynches Scenic River Management Plan* will serve as a model for future projects across the State of South Carolina.

The next step in the project will be to prioritize the recommendations and put the plan into action. The advisory council has already taken several initial steps toward implementation including the formation of a Policy and Procedures Committee; sponsorship of the First Annual Lynches River Festival; working with a local industry to obtain funding for a wastewater recycling system; and submittal of a grant proposal for funding to implement measures to control nonpoint source water pollution. All of these are important steps, but they are only the beginning.

Development of the plan is a great accomplishment for the Lynches River community. However, in many respects, the easiest part of a scenic river project is constructing the management plan. True success depends on the ability of

the local community to work together over the long-term to implement the plan. Needless to say, this will require a high level of enthusiasm underlain by a serious commitment to protect the resource. On behalf of the Lynches River Advisory Council, I invite YOU to get involved in this project. I encourage YOU to read this plan carefully, reflect on the river, and think about how YOU can get involved in this unique opportunity to work with others in your community to protect YOUR special resource – the Lynches Scenic River.

While working on this project, I became enamored with the Lynches River and the local people. It was truly my privilege to work with such a dedicated and fun-loving group of volunteers. Now, when I drive across the river on Interstate 20 or have an occasion to be on the river, I feel a sense of pride and belonging. This is MY river, too!

Becky Rideout
Former Project Manager
Lynches Scenic River Project

ACKNOWLEDGEMENTS

The designation of the Lynches River as a State Scenic River is largely attributable to the Lynches River Council (LRC), a local citizen's group based in Florence County. Recognizing the outstanding resource values of the river and perceiving potential threats to those values, the LRC mobilized support and sought special protection for the Lynches River. Special credit is due to Alex Kelley and Kenneth Strickland of the LRC for their vision and leadership.

The county councils of Darlington, Florence, Lee, and Sumter counties passed unanimous resolutions supporting scenic designation for the Lynches River. In the South Carolina General Assembly, the Lynches River Scenic River bill was championed by former Representative Hicks Harwell. He has continued to be a strong supporter of the designation. Thanks are also due to Representative Grady Brown for his active and public support of the project.

To progress to this point, the Lynches Scenic River Project has required the involvement and assistance of numerous individuals. First and foremost, the Lynches River Advisory Council (see Table 1, page 3) deserves recognition for a job well-done. Serving in a volunteer capacity, the members of the advisory council contributed significant amounts of time and energy to the development of this management plan. The council is committed to long-term protection of the Lynches Scenic River through implementation of the plan.

Special thanks are due to the South Carolina Department of Parks, Recreation, and Tourism (SCPRT) for providing meeting facilities at Lee, Lynches River, and Woods Bay state parks. We are also grateful for the use of SCPRT canoes for council field trips. Mike Mathis, Superintendent of Lee State Park, provided invaluable assistance for council meetings and field trips. He enthusiastically made the park available for other project functions including the 1995 Public Meeting and the First Annual Lynches River Festival. Harold Pate, Superintendent of Lynches River State Park, and Dennis Hart, Superintendent of Woods Bay State Park, were also extremely helpful with meeting arrangements.

We appreciate the generosity of the Bishopville Fire Department; Clemson University Pee Dee Research and Education Center; Lamar American Legion; Sardis Woodmen of the World; School House Bar-B-Que; and Charles and Edrie Truluck in providing meeting facilities.

An important part of the planning phase of this project was a ten-month study of water quality. The South Carolina Department of Health and Environmental Control conducted a seminar on the basics of water quality and provided valuable information/data. Bishopville Wastewater Treatment Plant and National Dye Works, Inc. provided tours of their respective

facilities.

Several council members and others displayed outstanding culinary skills in providing meals for the advisory council. We are grateful to Kenneth Strickland for a delicious catfish stew; Tom Gosski and Mickey McDowell for a delectable BBQ; Hybert Hancock for his grilled hamburgers; and Jim Rideout for numerous cooking forays. We are also thankful to Jim for his help with field trip and meeting logistics.

Finally, thanks is extended to Diane S. Kennedy of the Department of Natural Resources Graphics Section for layout and design of this document and the cover photograph. Malynn Fields of DNR's Water Resources Division created the maps. Some photographs were provided by *South Carolina Wildlife* magazine.





INTRODUCTION

The Lynches River begins at the confluence of two small, unnamed streams in Union County, North Carolina and flows unimpounded for almost 175 miles to join the Great Pee Dee River in southeastern Florence County, South Carolina. Along its winding course, the river passes through a varied landscape of pine uplands, farms, rural crossroads, and deep swamp forest. Small towns dot the horizon from Bethune to Bishopville to Lynchburg. The surrounding land is devoted to traditional uses such as farming, raising livestock, hunting, and managing timber for harvest.

A central feature of the pastoral setting, the river winds by farms, fields, and forests. The landscape is molded by the river as it floods, undercuts streambanks, and creates new channels. In turn, the river is affected by activities that occur on the land from the immediately adjacent floodplain to the farthest reaches of the watershed. The Lynches Scenic River Project focuses on the interaction between the land and the river, between man and nature. It emphasizes the need for a community-based land ethic — a set of values for wise use of the land and water to safeguard the river and its valuable resources while protecting the interests of private property owners.

Project History

In March 1992, the South Carolina Water Resources Commission* received a request from the Lynches River Council (LRC), a local citizen's group, to designate a segment of the Lynches River as a State Scenic River. Concerns about declining water quality motivated LRC to seek the designation. Many members of LRC were born and raised on the Lynches, and they perceived undesirable changes over time. In particular, the group was concerned about the impacts of industrial and municipal wastewater discharges.

To determine the eligibility of the Lynches as a State Scenic River, the Water Resources Commission initiated a study in May 1992. The study focused on a

57.4 mile stretch of river from US Highway 15 near Bishopville to US Highway 52 just south of Florence. Major components of the study included an assessment of the natural, scenic, and cultural resources of the river as well as an evaluation of landowner and community support. As part of the eligibility process, the proposed designation was unanimously approved by the county councils in the four affected counties of Darlington, Florence, Lee, and Sumter.

Completed in November 1992, the eligibility study recommended that the Lynches River from US 15 to the eastern boundary of Lynches River County Park be designated as a Type II State Scenic River. The classification of a river as Type I, II, or III depends on the level of development in the river corridor. The shoreline of a Type II river may be somewhat developed with limited road access. Activities such as farming and timber management are common on Type II rivers.

The 3.9-mile stretch from the park to US 52 was excluded from the designation because it is more developed than the remainder of the area under consideration. Due to the narrow floodplain, river-bordering land is more suitable for residential development, and the shoreline is carved into numerous small parcels. As a result, the character of this segment differs markedly from that upstream.

After determining the river's eligibility, the next step was to gain the approval of the South Carolina General Assembly and the Governor. On March 24, 1994, Governor Carroll Campbell signed the Lynches River Scenic River bill officially designating the stretch between US 15 and the eastern boundary of Lynches River County Park as a State Scenic River. With this designation, the Lynches gained statewide

**As of July 1, 1994, the South Carolina Water Resources Commission, the Land Resources Conservation Commission, and the South Carolina Wildlife and Marine Resources Department combined to form the South Carolina Department of Natural Resources. Some references in this document refer to the agencies prior to the merger.*

INTRODUCTION

recognition as an outstanding resource. It became only the fifth river in South Carolina to achieve this special status joining the Broad, Little Pee Dee, Lower Saluda, and Middle Saluda rivers. Most importantly, the designation created a forum for the 260 river-bordering landowners, recreational users, and local officials to come together and build a vision for the future management of their river.

The South Carolina Scenic Rivers Program is charged to protect unique and outstanding river features. Through a community-based planning approach, the program identifies and prioritizes river-related resources for protection including plant and animal life, wildlife habitat, wetlands, scenic views, geologic formations, recreation areas, and cultural or historic features. The designation of the Lynches as a State Scenic River set the planning process into motion.

In October 1994, the Executive Director of the South Carolina Department of Natural Resources (DNR) appointed the Lynches River Advisory Council to develop and implement a community-based plan for long-term management of the river's natural, scenic, and cultural resources. Chaired by the DNR, the original council included ten voting and 16 ex-officio members representing landowners, local government, public agencies, business and industry, environmental interests, and the general public (see Table 1). Members of the current advisory council are presented in Table 2. Selection of voting members is based on geographic considerations as well as the personal qualifications of applicants. The scenic stretch of the Lynches River passes through four counties. The number of voting representatives on the council from each county was based on an equal weighing of number of river miles and number of riparian landowners in the respective county. The result is four representatives for Florence County, three for Lee, and one each for Darlington and Sumter. Term limits for voting members range from three to five years. Active members (based on meeting attendance) may serve more than one consecutive term.

Ex-officio council members serve by virtue of technical expertise or a position held in the river-bordering community. The ex-officio members of the Lynches River Advisory Council represent local government, business interests, environmental

interests, river users, riparian landowners, and a federal natural resources agency. Term limits for ex-officio members range from three to five years.

The advisory council met initially on November 15, 1994, at Lee State Natural Area near Bishopville. Over the next two years, the council met on a monthly basis at locations throughout the project area. The primary focus of the council during this time was to define river-related issues and to propose a recommended course of action for dealing with each issue. A number of outings provided council members and others with the opportunity to learn about the river through first-hand experience. Canoe trips allowed council members to observe land use, evaluate public access, and watch wildlife while enjoying a popular recreational activity. Other field trips included a visit to a local industry and a tour of a wastewater treatment plant.

This document represents the culmination of the initial stage of the Lynches Scenic River Project. It outlines the local community's vision for the river. The advisory council acknowledges that this vision may change over time as contemporary issues are resolved and new ideas and issues move to the forefront. On a regular basis, the advisory council will re-visit and update the plan to reflect the current situation. With continuing input and support from the local community, this plan can be responsive to change.

Project recommendations will be implemented on a priority basis in a voluntary, non-regulatory framework. In many cases, implementation will depend on independent decisions reached and actions taken by landowners, residents of the Lynches watershed, river users, local governments, state agencies, corporations, and/or environmental organizations. The Lynches River Advisory Council will work with each of these groups to provide information and guide decision making.

After publication of the initial management plan in 1997, the advisory council began working toward implementation of the recommendations. Several recommendations, including two which required major effort on the part of the advisory council, establishment of the Lynches River Festival and production of a brochure describing stewardship programs, were implemented in 1997 and 1998, respectively. In 1999, the advisory council reviewed all 65 recommendations

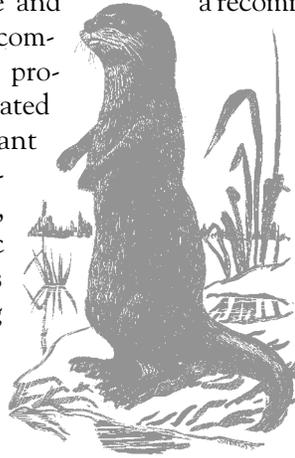


Table 1: The Lynches Original River Advisory Council

Voting Members

Rebecca R. Rideout, Chair SC Department of Natural Resources	William Kelley Florence County landowner
Thomas Gosski, Vice-Chair Lee County landowner	Gary Nye, Sonoco Products Darlington County landowner
Ray Alexander ¹ Lee County landowner	Kenneth Strickland Florence County landowner
Stan Hutto SC Department of Parks, Recreation, & Tourism	Charles Truluck Sumter County landowner
Tres Hyman Florence County landowner	Howard Vincent Lee County landowner

Ex-officio Members

Anne Carraway ² Sumter County landowner (Alternate)	John Rae Francis Marion University Biology Dept.
Brian Fox Georgia Pacific	Rivers Scarborough ¹ Lee County landowner (Alternate)
Betty Hancock Florence County landowner (Alternate)	Alex “Buz” Shaw Darlington County Council
Alex Kelley President, Lynches River Council	George Singleton National Dye Works, Inc.
Mitchell Kirby Florence County Council	Roy Todd Natural Resources Conservation Service Wateree-Santee RC & D District
Rosalind McClam Lynches River Coalition/Clean Water	Glenn Trofatter SC Department of Health & Env. Control
Edward “Mickey” McDowell representing Lee County Council	Frank Williams, Jr. Sumter County Council
Wylie Owens Natural Resources Conservation Service Pee Dee RC & D District	Vacant ³ Darlington County landowner (Alternate)

¹Ray Alexander and Rivers Scarborough exchanged seats in February 1995.

²Anne Carraway replaced Bill Butler, her father, as Sumter County Alternate in November 1995 following his death.

³Will Jordan resigned from the Darlington County Alternate position in October 1996.

Table 2: The Current Lynches River Advisory Council¹

Voting Members

Lynn Quattro, Chair SC Department of Natural Resources	Mike Mathis, SC Parks Recreation & Tourism Lee County landowner
Kenneth Strickland, Vice-Chair Florence County landowner	Rosaland McClam Florence County landowner
Anne Carraway Sumter County landowner	Edward “Micky” McDowell Lee County landowner
Waldo “Tres” Hyman Florence County landowner	Robert Peebles Lee County landowner
David Kelly Lee County landowner	Vacant ² Darlington

Ex-Officio Members

Lori Bataller Darlington County landowner (Alternate)	Alex Kelly Lynches River Council
Gordon Eckley Lee County Council	Mitch Kirby Florence County Council
Charles Edens Sumter County Council	Wylie Owens Pee Dee RC&D District
Nathan Fowler Community Interest	John Rae Francis Marion University Biology Dept.
Thomas Gosski Lee County landowner (Alternate)	Tom Randolph SC Parks Recreation & Tourism
Mark Giffin SC Department of Health & Env. Control	Joe Ross Florence County Recreation Department
Betty Hancock Florence County landowner (Alternate)	Alex “Buz” Shaw Darlington County Council
Stan Hutto SC Parks Recreation & Tourism	Charles Truluck Sumter County landowner (Alternate)

¹The members identified in this table are current as of March 1, 2003.

²As of this writing, the advisory council was in the process of appointing a new member.

in order to prioritize implementation over the next several years. The management plan was reviewed and tasks required to implement each recommendation were identified. When reviewed separately, the number of recommendations and the tasks required to implement each of them became overwhelming. Many of the recommendations within the management plan overlap between issues. It is important that recommendations are repeated within the management plan when looking at all the issues affecting the Lynches River; however, it became apparent that combining these recommendations, where possible, would make implementation of the plan less complicated.



Therefore, it seemed reasonable to develop a management program to facilitate implementation of the management plan. The advisory council worked to determine how best to combine some of the major issues of the management plan. Our goal was to develop program areas through which the advisory council can focus activity on critical tasks that address multiple recommendations. This approach gave us a clear sense of our tasks as an advisory council and will simplify our message to other landowners and the community.

After completing our review of the management plan, the following three areas were identified as critical components:

- **Outreach/Education:** Every issue category within the management plan contains recommendations to provide the Lynches River community with information and/or assistance.
- **Water Quality:** Water quality is a huge issue category within the management plan; almost one third of the recommendations are contained in the water quality portion of the plan. Additionally, the tasks required to implement these recommendations will be quite labor intensive.
- **Recreation:** Recreational use of the Lynches River is a recurrent issue throughout the management plan. After insuring that the river is as healthy as it can be, people are going to want to USE this resource. Whether canoeing, kayaking, boating, swimming in the river or hunting, fishing, hiking, bird watching, picnicking from the banks of the river, people will desire recreational benefits from

Having identified these three critical elements, the advisory council will begin developing a management program in order to implement the management plan. The management program will include action plans for each of these critical elements. The action plans will identify specific tasks, deadlines for completing these tasks, and will identify responsible parties for completing these tasks. The advisory council is currently working on projects associated with each of these critical issue areas.

As stated above, some recommendations have been implemented since the management plan was originally published in 1997. Those recommendations that have been implemented are identified in this edition of the plan with dates of implementation. Where work is currently being done to implement a recommendation, “In Progress” appears after the recommendation. Work that has begun and must continue overtime is identified with “Ongoing” after the recommendation.

Hopefully, this process will unite the Lynches River community in an effort to keep the river a viable and valuable natural resource for the enjoyment of present and future generations.





CREATING A VISION

River corridors consist of complex and interacting systems. Too often, land and water use decisions are made by local officials, planners, developers, or landowners based on a single purpose or goal. Through the Lynchess Scenic River Project, the river community created a common vision for future management of the river and its resources. The *Lynches Scenic River Management Plan* outlines that vision within the context of the South Carolina Scenic Rivers Program.

The management plan focuses on the 54-mile stretch of the river from US 15 near Bishopville to the eastern boundary of Lynchess River County Park in Florence County (see Figures 1 and 2). Key elements of the management plan include:

- An inventory of existing land use along the river;
- An assessment of the river's natural, scenic, and cultural/historic resources;
- An overview of specific issues that may affect management of the river;
- Recommended courses of actions for dealing with particular issues.

The Study Process

The first step in developing this management plan was to assemble an advisory council of local landowners and community leaders. The mission of the council was to shape the plan, form an implementation strategy, and put the plan into action. Council membership was tailored to reflect the many and diverse interests of the river community. Represented on the council are river-bordering landowners (business and private); recreational users; various land use interests from agriculture to residential use to timber management; environmental interests; local government; natural resource managers; and the general public. Guidance for development of the management plan was provided by the Department of Natural Resources in accordance with the South Carolina Scenic Rivers Act of 1989 (Section 49-29-10 *et seq.*, 1976 *South Carolina Code of Laws*).

From December 1994 through November 1996, the Lynchess River Advisory Council focused on river-related issues. Six issue categories were identified: water quality; recreational opportunities (including access and navigation); maintaining the scenic quality of the river corridor; the fisheries; wildlife management; and community involvement in the project. For each issue category, the council identified specific issues, developed a management goal, and proposed solutions. This was accomplished through a consensus-building process that allowed input from all council members and the general public.

Water quality was selected as the top priority is-



The initial meeting of the Lynchess River Advisory Council at Lee State Natural Area.

sue because many landowners and river users believe that the water quality of the river has declined over time. Also, water quality was the major issue that prompted the Lynchess River Council to seek scenic designation for the river. In March 1995, the advisory council launched a ten-month study on water quality that included a seminar on the basics presented by the South Carolina Department of Health and Environmental Control (SCDHEC); a review of existing water quality data; and identification of potential point and nonpoint pollution sources. The final step was to develop reasonable recommendations for dealing with the identified water quality issues. The council formed two committees with one committee

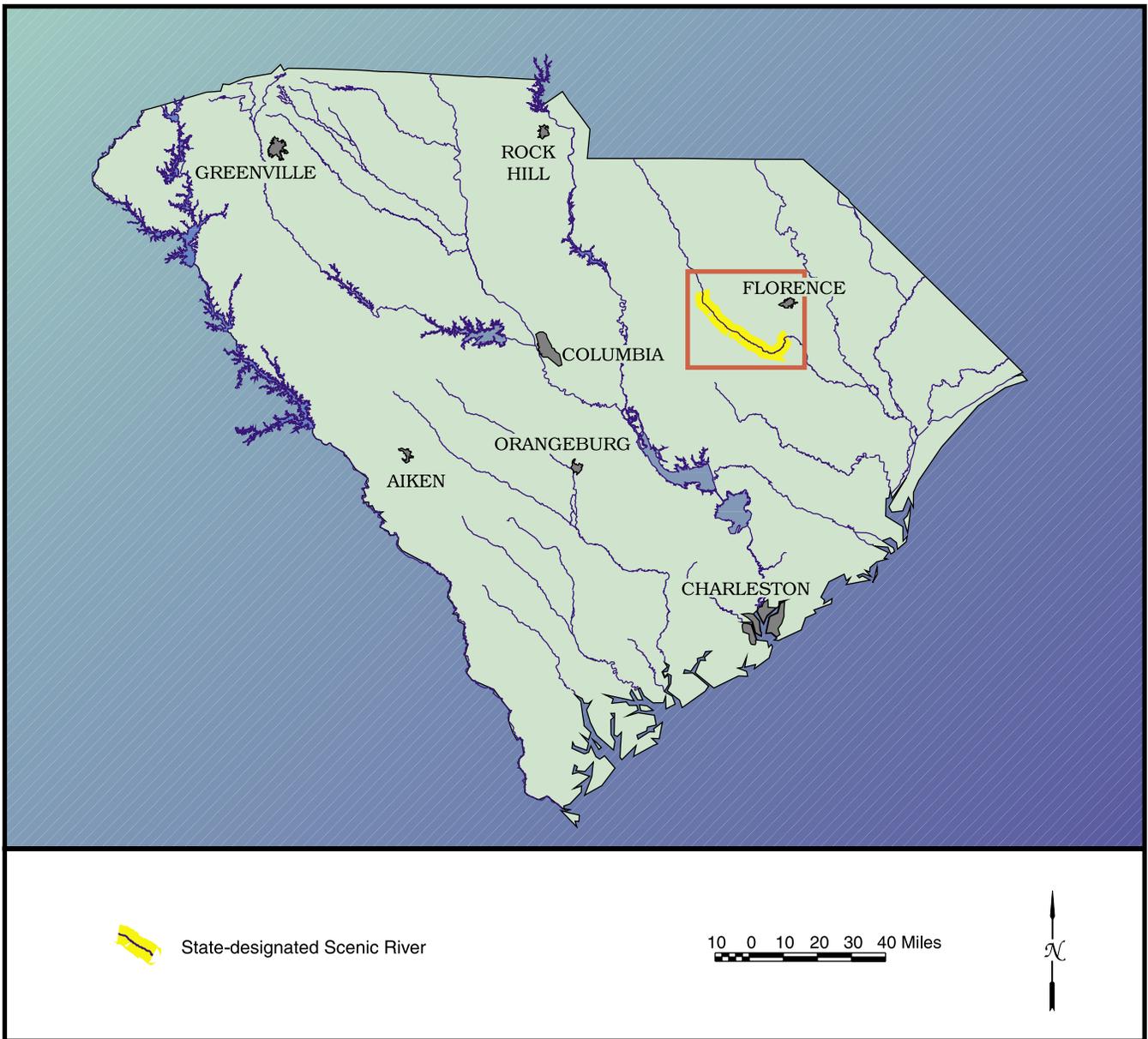


Figure 1. Lynches Scenic River Project: Location Map

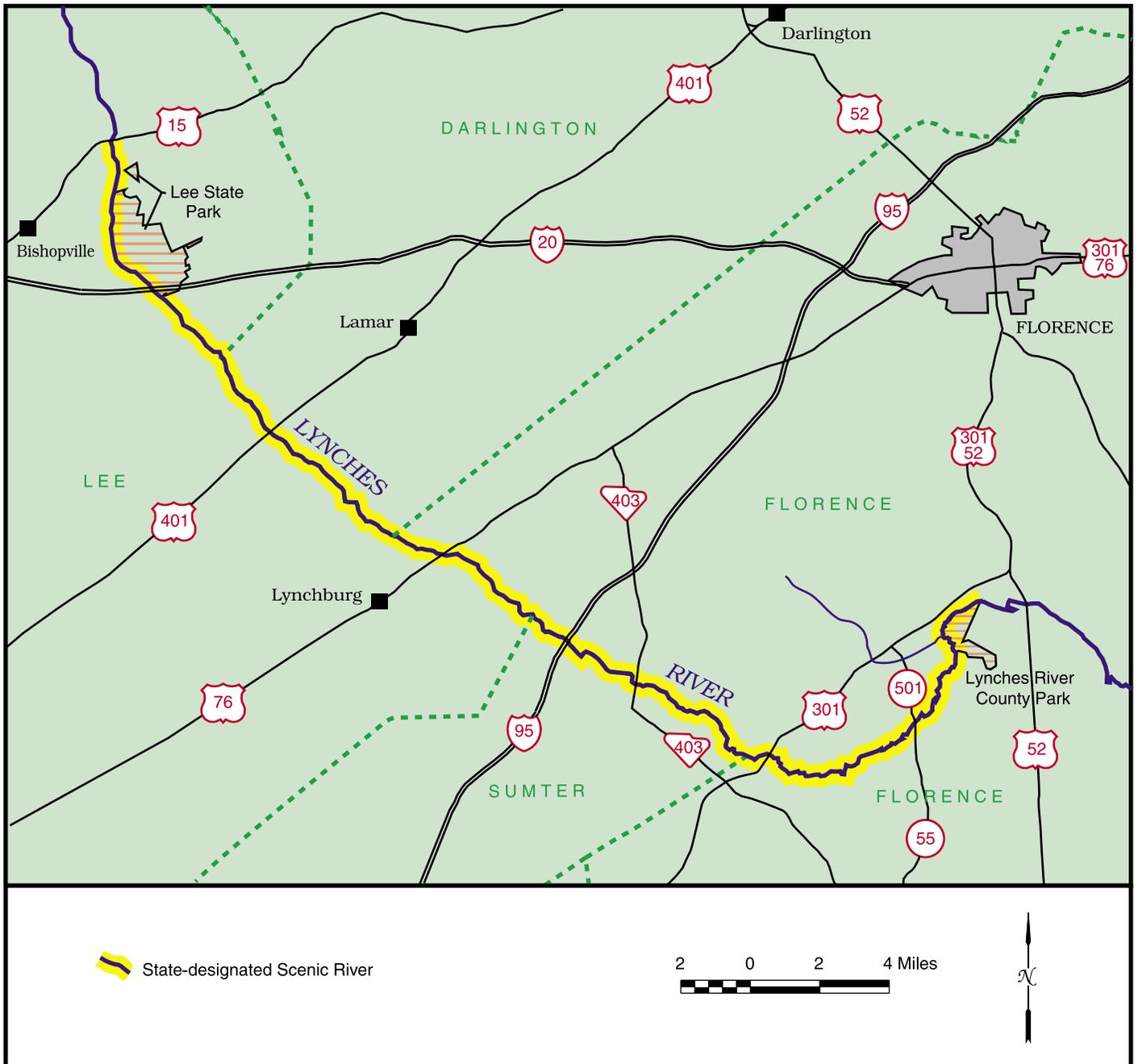


Figure 2. Lynchies Scenic River Project Study Area

I have enjoyed working on the Lynches River Advisory Council. I must admit that my initial reason for working on the council was due to my distrust of our government. I was afraid that there was a long range plan for the government to attempt to condemn all riverfront property under the guise of “protecting our water”.

After taking part in the project I am well pleased with the progress and the support of our Department of Natural Resources. Now it is up to everyone (landowners, industry, river users, and government) to work together to clean up water quality and continue to make this effort worthwhile.

— Tom Gosski
Lee County landowner

addressing point source issues and the other working on nonpoint source issues.

After completing the water quality recommendations, the council identified specific issues, developed management goals, and proposed solutions for the other identified issue categories including recreation/public access; fish and wildlife management; maintaining the river’s scenic values; and stewardship/community involvement. To address these issues, the advisory council drew upon its members’ considerable familiarity with the river. The council also worked with resource experts from SC DNR, SCDHEC, and the South Carolina Department of Parks, Recreation, and Tourism (SCPRT). The segment of the management plan dealing with these issues was worked on from January to November 1996.

Public Participation

South Carolina’s process of designating and managing state scenic rivers is firmly grounded in local support and participation. The development of a sound and workable management plan requires the involvement of those most familiar with the resource – the people of the river community. Through the citizen-based process, the local community takes the lead in producing and implementing the plan. The role of the DNR and other government agencies is to provide guidance and technical expertise.

From the onset, the Lynches Scenic River Project encouraged the active involvement of riparian landowners, local government, and the river community. Public participation efforts included the establishment of the 26-member Lynches River Advisory Council. All landowners and other interested community members were invited by letter to apply for membership on the advisory council.

During the early phases of the project, DNR staff compiled a 350-person mailing list. Over the course of the project, the mailing list grew to include more than 450 people. Regular mail-outs provided information to the local community on project progress, upcoming meetings, and opportunities for participation. All meetings and field trips were open to the public. The field trips included canoe outings where participants were able to experience the river first-hand.

A community meeting was held on June 3, 1995 at Lee State Natural Area. The program included a short history of the project, introduction of advisory council members, a project update, and a look to the future. The presentations were followed by a question-and-answer session.



Local youth clean the US 15 boat landing during Beach Sweep/River Sweep '95.



Scenic River sign at US 76 crossing denotes the river's special status.

To raise public awareness of the river's special status, signs were erected at all road-crossings of the Lynches Scenic River in March 1996. A public ceremony was held to dedicate the signs.

During September 1995 and 1996, the advisory council sponsored cleanups of the public access sites on the river as part of the statewide Beach Sweep/River Sweep. Groups participating in the cleanups included boy and girl scouts, a church, a school group, a local business, a local chapter of the Sierra Club, a local chapter of Wildlife Action, the Lynches River Coalition/Clean Water, and the advisory council. As a result of these efforts, more than 2,500 pounds of litter and debris were removed from the river.

Project information was made available to the public through the local press and the DNR. Articles on the project appeared in *The State*, *The Morning News*, and *The Lee County Observer*. The DNR produced four editions of *Lynches Scenic River*, the project newsletter.

In cooperation with the DNR and SCPRT, the Lynches River Advisory Council sponsored a river

festival to build an appreciation of the river and its resources through hands-on involvement. The First Annual Lynches River Festival was held on May 3, 1997, at Lee State Natural Area. Activities included seminars on birding and redbreast fishing, a nature photography workshop, canoe trips, and nature walks. The festival also featured programs on beavers, aquatic macroinvertebrates, the Lynches River fishery, and water quality monitoring.

The Lynches River Advisory Council will continue to encourage public participation through an annual river festival; regular public meetings; publication of the newsletter; and implementation of various project recommendations. In addition, membership on the council will change periodically to allow for the participation on the council of as many interested community members as possible.



Rudy Mancke leads a nature walk at the Lynches River Festival at Lee State Natural Area.







RESOURCES OF THE LYNCHES RIVER CORRIDOR

Looping through pine forests and moss-draped cypress swamps, the Lynches Scenic River is an exceptional resource worthy of protection. Special features include numerous small islands and sloughs, intermittent bluffs, bottomland hardwood wetlands, and artesian springs. Along the 7.5 miles of riverfront protected as part of South Carolina's parks, trees soar to impressive heights untouched by timber harvest. The river corridor provides excellent habitat for fish such as redbreast sunfish and wildlife including otters, white-tailed deer, and wood ducks. Recreation opportunities abound. The river also holds historic significance as a hideout for slaves during the Civil War and as the site of the state's last duel.

The Lynches River ranked highly among 1,400 river segments evaluated by the SC Water Resources Commission as part of the 1988 South Carolina Rivers Assessment (see Table 2). The river rated "superior" in two categories: recreational boating and undeveloped. These categories take the river's natural and scenic qualities into account. The river rated "outstanding" for inland fisheries, recreational fishing, timber management, and water supply.

Physical Description

Evenly divided between the Middle and Lower coastal plains of South Carolina, the Lynches Scenic River could almost be described as two rivers. The upper segment from US 15 to Interstate 95 is characterized by long, straight stretches bordered by seasonally flooded forested wetlands. In undisturbed areas, the riverbank is graced by swamp chestnut oak, river birch, gum, overcup oak, red maple, laurel oak, and various other bottomland hardwood species. Around Interstate 95, at the approximate latitude of South Lynchburg, the Middle Coastal Plain grades into the Lower Coastal Plain, and the river takes on a braided character. The vegetation also changes with the addition of numerous cypress and willow trees. A few miles above Lynches River County Park, the river resumes a more direct course through pine forests.

The hydrologic characteristics of the Lynches River are typical of a coastal plain river with a trellis drainage pattern. Tributaries include Cousar Branch, Mill Branch, Lake Swamp, and Sparrow Swamp. Cousar Branch carries runoff from the City of Bishopville. There are also several drainage ditches that empty into the river.

The only streamflow gauging station on the Lynches is about three miles below Lynches River State Park at Effingham (US 52). There was a gauging station at Bishopville through 1971. Based on data from these stations, average annual streamflow in the Lynches varies from 781 cubic feet per second (cfs) at Bishopville to 1052 cfs at Effingham. Due to the influence of the Upper Coastal Plain, the river exhibits better sustained base flows in the upper portion of the scenic segment (South Carolina Water Resources Commission, 1983).

According to a 1995 US Geological Survey report, the lowest daily mean flow of record was 95 cfs measured at Effingham during the drought of October 1954. The highest daily mean flow of 24,500 cfs occurred on September 22, 1945, following a tropical storm. Flood stage on the river at Effingham is 14 feet with major flooding at 18 to 20 feet.



Springtime is heralded by a wild azalea on the Lynches Scenic River.

Table 3: River Use Classifications for the Lynches River*

(from *The South Carolina Rivers Assessment*, 1988)

As part of the 1988 South Carolina rivers assessment, 1,400 river segments were rated by value class for 14 different river use categories. Value classes ranged from one (highest value) to four. Value class one rivers were considered “superior”, with resources of statewide or greater significance. Value class two rivers were considered “outstanding”, with resources of regional significance. Value class three rivers were considered “significant,” with resources of local significance. Value class four rivers were “unknown”, but important enough to require further research and documentation.

River Use Category	Value Class
Agriculture	3
Historic and Cultural	–
Industrial	3
Inland Fisheries	2
Natural Features	4
Recreational Boating	1
Recreational Fishing	2
Timber Management	2
Undeveloped	1
Urban	–
Utilities	–
Water Quality	–
Water Supply	2
Wildlife Habitat	3
(– represents category falling outside of class ranks)	

*The Lynches River from US 1 in Chesterfield/Kershaw County to the Great Pee Dee River was evaluated as part of the rivers assessment. The 54-mile Lynches Scenic River is included in this segment.

An Overview of Land Use

At the May 13, 1874, session of the Convention of Granges of Darlington County, the Lynches area was described in this way:

“Lynches Creek, the Southwestern boundary of the County, this stream, like Black Creek, deserves the name of River. In its course along our boundary it forms an arc with a gentle bend. If, at a distance of six miles from the Creek, you draw a line parallel with it, between this and the Creek will be included what is now the most prosperous portion of the County. The lands are mostly divided into small farms of about 100 acres each; ... Churches and School Houses are numerous; and the people, honest, intelligent, and industrious, as a general rule raise their provisions, and make, besides, fine crops of cotton.”

The Lynches River watershed is still agrarian with almost a third of the land devoted to crops and pastureland. All four counties adjacent to the scenic segment are intensely agricultural with lands considerably higher than the state average (24.6%) in farmland – Florence has 40.7%, Darlington has 43.2%, Sumter has 35.8%, and Lee has 50.8%. For 1995, they ranked 4th, 6th, 7th, and 17th respectively in the state for cash receipts from crops and livestock (South Carolina Agricultural Statistics Service, 1996). Major crops include cotton, soybeans, hay, tobacco, corn, and wheat.

Other land covers in the Lynches River watershed are forested land, scrub/shrub, wetlands, urban areas, and water. Approximately 40% of the land is forested including wide areas of bottomland hardwoods. Scrub/shrub covers about 25% of the watershed. This land cover is comprised of fallow farmland, sparse pines, regenerating forest lands, and recently harvested timber lands.

Less than one percent of the land area in the Lynches watershed is in urban use. Bishopville (population 3,700) is the largest and closest town to the scenic segment. Lynchburg (population 460) is the next closest town.

Currently, there is little development in the immediate river corridor. There are a few houses, cabins, and trailers on the river. However, there is a potential for more residential development, especially on the lower end of the scenic segment where the floodplain is narrower.

Natural Resource Values

Integrity of the Riparian Zone

The health and viability of the river are dependent on several factors with one of the most important being the condition of the riparian zone. At the smallest scale, the riparian zone would be the immediate water's edge where specialized plants and animals form a distinct community. At a larger scale, it would be the area periodically inundated by high water; i.e., the banks and floodplain of the river. Finally, on the largest scale, it would be the band of forest that has a significant influence on the river ecosystem, or conversely is significantly influenced by the river (Hunter, 1990). In the context of this management plan, the riparian zone should be considered as the banks and floodplain of the river.

Activities on river-bordering land have a direct and immediate impact on the river. An undisturbed, vegetated area along the river can serve as a buffer between intensive land uses and the river providing benefits such as streambank stabilization, erosion and flood control, filtration of runoff, scenic beauty, recreation areas, stream shading, and wildlife habitat. In the best case scenario, the buffer would include the entire riparian zone; however, this is not always possible or practical. The South Carolina Scenic Rivers Program recommends a minimum riparian buffer of 100 feet on both sides of the river with the first 50 feet being undisturbed. A riparian buffer of this width allows for the protection of multiple resource values including water quality, scenic values, and wildlife.

Along most of the Lynches Scenic River, there is an intact riparian buffer of native vegetation. The width of this buffer varies from a thin line of trees along the riverbank to several hundred feet of undisturbed forestland. In general, the buffer is excellent on the upper end of the scenic stretch where the floodplain is wide and much of the land is too wet to develop. As one moves down the river, however, the floodplain narrows and development encroaches on the river at a greater frequency.



An aerial view of the upper six miles of the Lynch Scenic River and surrounding land including the City of Bishopville and Lee State Natural Area.

There are locations along the entire length of the river where the riparian buffer is extremely narrow or nonexistent. In several instances, logged sites and farm fields extend to the riverbank. Although there is very little residential development along the river, there are a few permanent and vacation homes located directly adjacent to the river with little or no buffer.

Water Quality

The Lynches River is classified by SCDHEC as Freshwaters (FW) protected for several uses including drinking water, after treatment; recreation; the survival and propagation of a balanced aquatic community; and industrial and agricultural uses (SCDHEC, 1993). This classification reflects the goals of SCDHEC rather than instream water quality. To determine whether the river is capable of meeting the desired uses, SCDHEC regularly collects and analyzes water samples. There are six monitoring stations on the scenic segment of the Lynches River (see Figure 3). Samples are collected once per month at primary stations including US 15, US 401, SC 403, Florence County Road 55, and Sparrow Swamp. Sampling is conducted from May through October at a secondary station on Cousar Branch. Data are also available for a currently inactive station located at the I-20 crossing of the Lynches River.

Parameters measured on a monthly basis include temperature, dissolved oxygen (DO), pH, turbidity, five-day biochemical oxygen demand (BOD₅), nutrients (nitrogen and phosphorus), and fecal coliform bacteria. Primary stations are sampled for total organic carbon and metals quarterly. SCDHEC does not sample for other pollutants such as



Over Cup Oak

pesticides and organic compounds on a regular basis due to the high cost for analysis. Appendix A contains a summary of the available water quality data for the Lynches Scenic River.

Based on data from DHEC's monitoring stations, water quality in the Lynches River is relatively good. Recreational uses are fully supported along the entire scenic segment. However, there are some



Prothonotary Warbler

water quality problems that merit attention.

At US 15, aquatic life uses are threatened by low pH levels and a significantly increasing trend in BOD₅. pH is a measure of the water's acidity. The pH levels measured at US 15 are typical of coastal plain rivers with high organic matter content. The increasing BOD₅ also indicates a high volume of organic material. This is of concern because the decomposition of organic matter can rob the water of dissolved oxygen which is critical to aquatic life.

At Cousar Branch, recreational uses are only partially supported due to fecal coliform bacteria, and aquatic life uses are threatened by a declining trend in pH, an increasing trend in turbidity, and low DO levels. Normally harmless to humans, fecal coliform bacteria are found in the digestive tracts and feces of all warm-blooded animals including humans, pets, livestock, poultry, and wildlife. The presence of high levels of these bacteria in a water sample indicates the potential presence of untreated sewage (human and/or animal) which may contain disease-causing bacteria and/or viruses. A decreasing trend in fecal coliform bacteria at this site suggests improving conditions.

Aquatic life uses are threatened at SC 403 due to elevated levels of copper and zinc as well as a statistically significant increasing trend in BOD₅.

Sparrow Swamp enters the Lynches River on the lower end of the scenic segment just north of US 52. The swamp drains more than 148,000 acres of land in Darlington, Florence, and Lee counties. Recreational uses are fully supported at Sparrow Swamp but may be threatened by an increasing trend in fecal coliform bacteria. Aquatic life uses are fully supported at this site but may be threatened by a decreasing trend in pH and an increasing trend in turbidity. Sediment samples have revealed a high

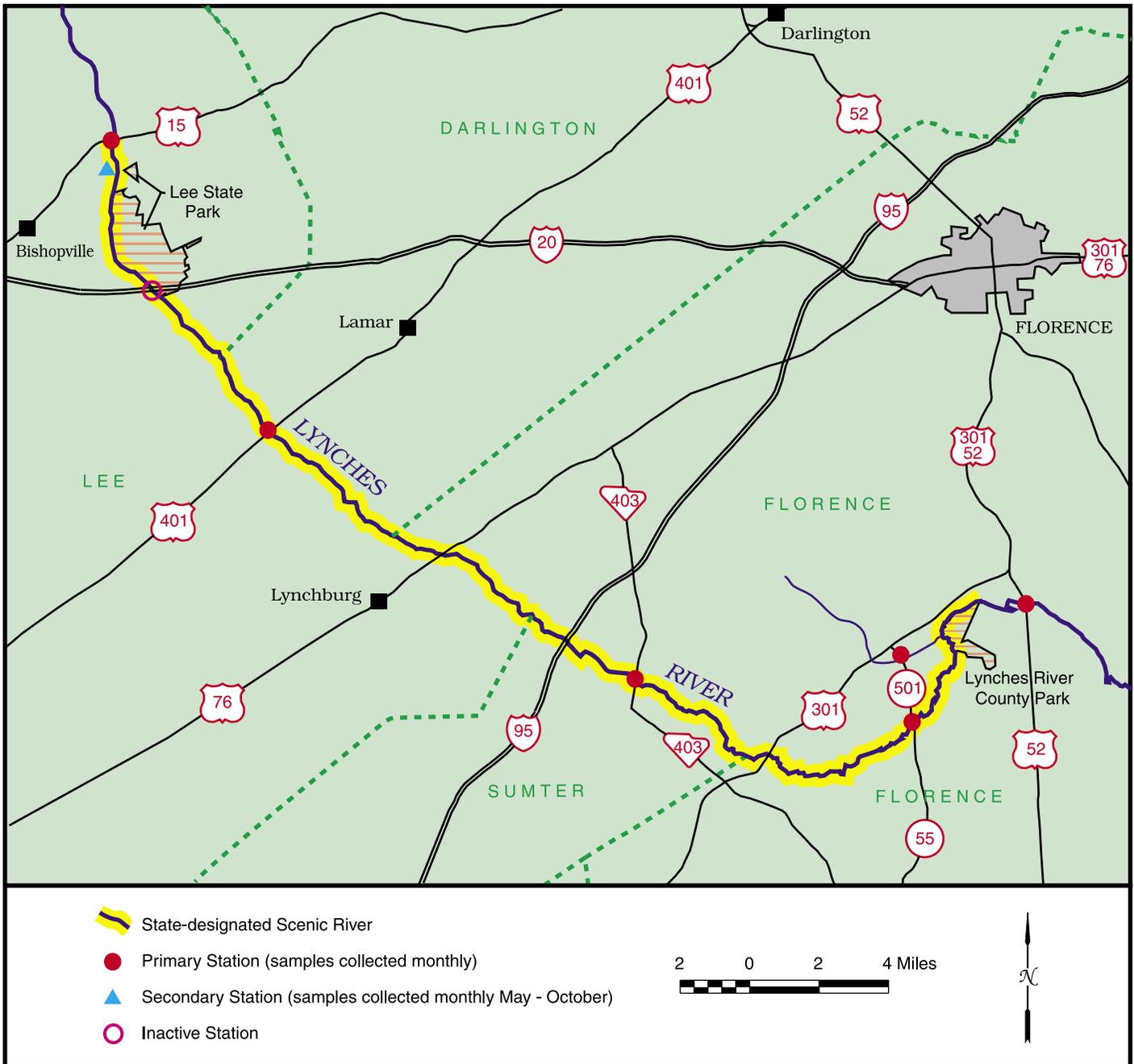


Figure 3. SCDHEC Water Quality Monitoring Stations

concentration of zinc as well as measurable levels of two DDT derivatives: O,P'DDD and P,P'DDT. Although the use of DDT was banned in 1973, it is very persistent in the environment.

Upstream of the scenic segment at Road 15 near Bethune, aquatic life uses may not be supported due to a combination of factors including elevated copper and zinc, decreasing DO levels, and increasing turbidity. Downstream of Lynches River County Park at US 52, aquatic life uses may not be supported due to a very high concentration of zinc measured in 1993, compounded by decreasing DO levels and increasing turbidity.

Fish and Wildlife

Characterized by large blocks of naturally vegetated uplands and wetlands, the Lynches River corridor provides outstanding habitat for many game and nongame species. Common wildlife species include beavers, foxes, grey squirrels, opossums, otters, raccoons, turkey, white-tailed deer, a variety of amphibians and reptiles, waterfowl, and numerous songbirds. The Carolina heelsplitter (*Lasmigona decorata*) is a rare freshwater mussel that is known to inhabit the Lynches River upstream of US 15. The DNR lists four species of concern within the confines of Lee State Natural Area: the fox squirrel, pickerel frog, spotted turtle, and the federally endangered red-cockaded woodpecker.

The river's riparian zone provides basic necessities for wildlife including cover, food, and water. The relatively intact riparian zone also serves as a travel corridor for forest species moving across the fragmented landscape between natural areas. Other valuable wildlife habitat includes riparian wetlands as well as the edges of agricultural fields and pine plantation stands. Both of these habitat types are particularly noteworthy for their abundance and diversity of wildlife.

In addition to supporting wildlife, the Lynches River corridor provides excellent physical habitat for a variety of game and nongame fish species. Critical elements of the fishery habitat include riffles, pools, undercut streambanks, downed trees, the lack of impoundments, and the forest canopy. The streamside forest is particularly important because

it furnishes cover and nutrients as well as spawning and nursery areas. The major nutrient input to the river is the autumn leaf fall which provides food for macroinvertebrates which, in turn, provide food for the fish. In addition, the forest provides shade which helps to keep the water temperature at acceptable levels. Clean water is also essential to the survival and reproduction of fish species in the Lynches River. As noted above, water quality is generally good from US 401 to Lynches River County Park. Aquatic life uses are threatened at US 15, Cousar Branch, SC 403, and Sparrow Swamp due to a variety of concerns.

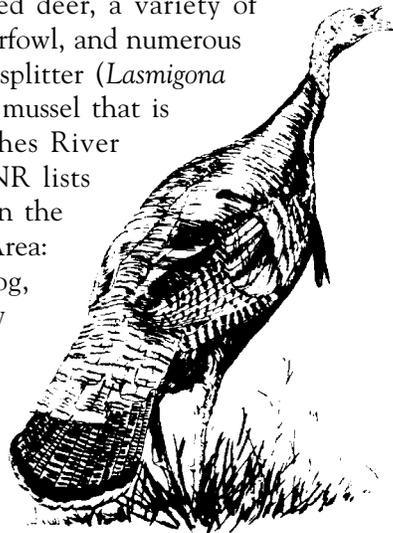
Although there has never been a study to document fisheries information, data from three industry-related fish kills during the 1970s and 1980s indicate good species diversity along the entire river. Common species include game fish such as the much-coveted redbreast sunfish and bluegill as well as numerous nongame species. DNR will initiate a three-year fisheries study on the Lynches River in 1997.

SCDHEC has recorded elevated mercury levels in fish taken from the Lynches River. Mercury contamination of fish is a common problem in waterbodies across South Carolina and the eastern United States. The source for the mercury is unknown, although the prime suspect is air emissions. When mercury enters the water, it settles to the bottom. If the mercury is in organic form, small fish and other aquatic life can absorb it from the water and sediment. The mercury accumulates in fish tissue. Bigger fish, such as bass, that eat other fish are more likely to have high mercury levels.

There is a fish consumption advisory for the Lynches River in Lancaster, Chesterfield, Kershaw, Lee, Darlington, Sumter, and Florence counties. The advisory applies to largemouth bass, bowfin (mudfish), and channel catfish. Fishermen should limit their consumption of these types of fish to no more than 0.75 lb./month for bowfin; 1 lb./month for largemouth bass; and 1.5 lbs./month for channel catfish. To minimize risk, pregnant women, infants, children, and people with neurological disorders should not eat any fish from this area.

Wetlands

The Lynches River corridor contains significant acreage of wetlands including biologically diverse



bottomland hardwood forests. These wetlands serve as a transition zone between the river and adjacent uplands. They are characterized by a high water table, anaerobic soils, and vegetation adapted to wet soil conditions.

Throughout the history of the United States, wetlands have often been viewed as wastelands. In reality, wetlands perform many vital functions. For example, wetlands provide valuable wildlife habitat. Numerous fish and wildlife species depend on wetlands for spawning, breeding, nesting, and/or feeding. Between 25 and 50 percent of threatened and endangered species rely on wetlands habitat for survival. Other important wetlands values include storage of floodwater, reduction of floodwater velocity, groundwater recharge, removal/conversion of water pollutants, timber production, aesthetics, and recreational hunting and fishing opportunities. Wetlands also play a critical role in global cycling of nutrients (Mitsch and Gosselink, 1993).

Wetlands management in South Carolina has been driven by the general dictate that wetlands should be drained and filled. This philosophy is still common among many landowners. As a result, much of the wetlands acreage in the state has been converted to other uses such as crop and timber production resulting in the loss of important wetlands functions (South Carolina Department of Parks, Recreation, and Tourism, 1988). To some degree, this is also the case in the Lynches River corridor.

Aesthetic and Scenic Values

Traversing two distinct physiographic regions, the Lynches River offers a remarkable variety of natural scenery. The upper 30 miles, from US 15 to just south of US 76, falls within the Middle Coastal Plain and is characterized by a mixed hardwood forest. Huge oak trees arch over the clear, brown water. A high bluff graces the west bank across from Lee State Natural Area. From the vantage point of the river, this segment shows few signs of human intrusion. Almost six miles of the east bank are completely undeveloped, falling within the protective confines of Lee State Natural Area.

Just north of US 76, the river begins to meander with sweeping twists and turns. In places, the forest canopy closes over the river creating a living tunnel. A few miles further downstream, the river takes on a more braided character as it makes the transition

It has been rewarding to see the Lynches River Advisory Council come about, a diverse group of people with a vision. The council is taking responsibility for studying the Lynches River in an effort to maintain and protect the resource – a resource that we will pass on to future generations.

The section of the river in the study is still undeveloped and offers many recreational choices. A leisurely float will provide great fishing and a chance to observe the inhabitants of the river and its floodplain – waterfowl, herons, Canada geese, deer feeding in the hardwood forest, beavers busy at work, and many other small mammals, frogs, turtles, and snakes.

The Lynches River: unspoiled beauty, unlimited experiences, for all to enjoy. . . as it should be!

— Mike Mathis, Superintendent
Lee State Park

to the Lower Coastal Plain. On the lower end of the segment, there are notable cypress stands and numerous small bluffs. The last two miles along the west bank are part of Lynches River County Park.

Long stretches of the river have contiguous wetlands characterized by bottomland hardwood species. The song of the prothonotary warbler, referred to by locals as the “swamp canary”, adds to the aesthetic appeal of the swamp as does the soft splash of turtles sliding into the water and the sudden, unexpected whirring of wood ducks’ wings. Fishing shacks, almost hidden by the vegetation, also lend character to the river.

The Lynches River has an overall wild character, but the sights and sounds of civilization are intrusive in some locations. There is evidence of extensive silvicultural activities and some agricultural activities

in the Lynches corridor. In some cases, these traditional land uses add to the scenic value of the river, while in others, they detract from the river's beauty. Road and railroad crossings occur at an average of every five to six miles including two interstate crossings. There are also five power transmission line crossings.

Particularly scenic locations on the Lynches Scenic River include the upstream view from US 15; the undeveloped shoreline within adjacent parks; the meandering segment of the river from just north of US 76 to US 301; and the SC 403 boat landing on the Florence/Sumter County line.

Recreation and Public Access

Recreational Values

The Lynches Scenic River provides exceptional recreational opportunities. Current uses include fishing, canoeing/boating, camping, swimming, nature study, photography, and birdwatching. These activities are concentrated at public access points, high points along the river, and at the state parks. Hunting and trapping are common on the river and adjacent land.

The entire length of the scenic segment from US 15 to Lynches River County Park is considered navigable waters of the State under South Carolina Code of Laws Reg. 19-450 et seq., 1976, as amended, and

under Section 10 of the national Rivers and Harbors Act of 1899 (33 U.S.C. 403). Depending on the water level, navigation can be somewhat difficult due to fallen trees. In general, the river is not navigable for anything larger than a jonboat.

Lee State Natural Area and Lynches River County Park anchor the scenic segment. Lee State Natural Area is located on the upper end of the scenic stretch in Lee County. Lynches River County Park is located approximately 50 miles downstream in Florence County. The parks provide access to the river. Traditionally, however, park activities have not focused on the river and its resources. Instead, high ground in the parks has been developed for a variety of recreational activities including camping, equestrian use, lake and pool swimming, and picnicking. Lynches River County Park had a riverside picnic area and a short nature trail along the river prior to transfer of ownership to Florence County. Fishing in the river is a popular activity at Lee State Natural Area.

During 1995, SCPRT modified the mission of Lee State Natural Area to reflect the dominant importance of the river and its resources. To this end, the agency developed the Lee State Natural Area Improvement Plan. According to the plan, the new purpose of the park is to protect the natural and cultural resources in the park while emphasizing the Lynches River and the adjoining floodplain hardwood



The old Field's Bridge landing.

About 20 members and guests of the Lynches River Advisory Council met at Lee State Park for our fall canoe trip on October 10th. The purpose of the day-long meeting was to explore, by canoe, the upper eight miles of the 54-mile Scenic Lynches River.

After a brief lecture on water safety, the council travelled to the Highway 15 boat landing near Bishopville. It was a bright and warm day with just a hint of fall in the October air-- ideal for boating. There was one ominous sign on this beautiful fall day. Recent rains had caused the river to rise and the water was a little swift.

The trip leader took extra care to advise everyone to wear a life jacket. This proved to be an excellent precaution. Our excursion down the Lynches was less than ten minutes old when two paddlers ended up in the water after turning their boat crosswise to the current. Before the trip ended, there were two more spills. Obviously, this section of the river proved challenging for beginners! Other than some embarrassment by those taking the plunge, the trip was informative and ended safely.

During the paddle down the Lynches, we saw many different forms of wildlife and vegetation. Protected as part of Lee State Park, most of the east bank of the river was forested. Some of the trees, which had missed the woodman's axe, were tremendous and stretched skyward to impressive heights. Raccoon and white-tailed deer were observed along the shore. Several people reported spotting a bald eagle.

We stopped briefly for a delicious picnic lunch near the loop road in Lee State Park. Due to the flooding it was difficult to find a dry spot, but everyone ate heartily and enjoyed great fellowship.

After getting back on the river, we paddled by nice bluffs and then slipped under the Interstate 20 bridge toward our final destination of the old Field's Bridge landing. There was evidence of man and his activities along the way such as the few places where trees and shrubs had been clear cut all the way to the river bank. We also saw a couple of unobtrusive cabins. However, Council members all concurred that the Lynches River is truly wild and scenic-- the perfect place to spend a fall day!

—Ray Alexander,

Lee County landowner

Excerpted from the Winter 1996 edition of South Carolina River News.

forest. The park will encourage and facilitate safe, enjoyable access to these resources in a manner which creates understanding and support for the land and the river. The plan proposes environmental education, especially for school children. The scenic designation of the river was a key factor in the decision to focus park activities on the river.

Public Access

There are four official public access points to the Lynches River: US 15 boat landing, US 401 boat landing, Lee State Natural Area, and Lynches River County Park (See Figure 4). Private landowners allow access to the river at the old Field's Bridge Landing, US 76, and SC 403. In general, access is adequate on the upper 33 miles of the 54-mile scenic segment from US 15 to SC 403. Access is limited on the lower 20 miles from SC 403 to Lynches River County Park, especially for motor boats.

US 15 Boat Landing

The US 15 boat landing is located just northeast of Bishopville in Lee County. It is on the east bank of the Lynches River. The state-designated Lynches Scenic River begins at this point and extends 54 miles downstream to the eastern boundary of Lynches River County Park. The landing has a paved boat ramp and a large parking area.

Lee State Natural Area

The Lee State Natural Area loop road provides access to the Lynches River at four different points. The road is impassable during wet periods because it is built in a floodplain.

Old Field's Bridge Landing

The old Field's Bridge landing is located on the east bank of the Lynches in Lee County approximately eight miles below US 15. Access is via a long, dirt road off of County Road 22. The landing is not officially designated as a public boat landing, so use is restricted primarily to locals who are familiar with the river. Currently, access is allowed by a private landowner. The landing has a dirt ramp suitable for launching small boats or canoes.

US 401 Boat Landing

The US 401 public boat landing is located on the west bank of the Lynches in Lee County at the US 401 road crossing (approximately four to five miles

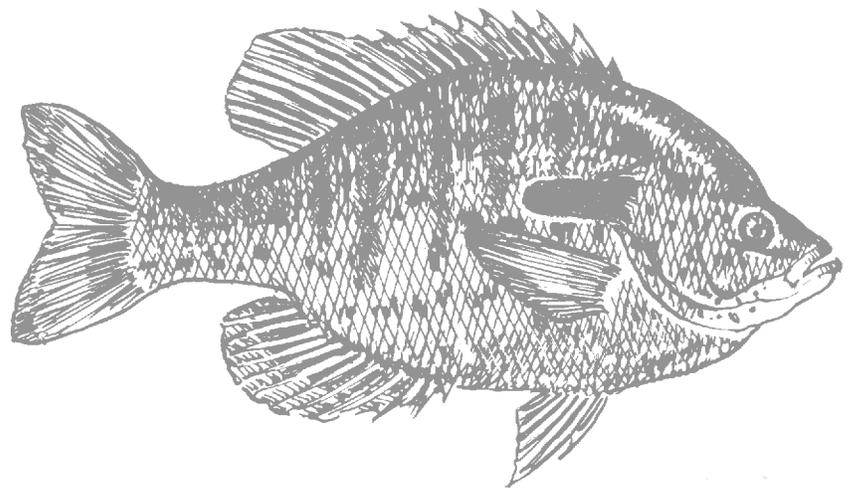
below Field's Bridge and 12 to 13 miles from US 15). At this point, the river forms the boundary between Lee and Darlington counties.

A paved road leads down to the landing which includes a paved boat ramp. The parking area is extremely small with most of the parking space under the US 401 bridge.

US 76 Boat Landing

The US 76 boat landing is located on the west bank of the Lynches in Lee County (just outside of Lynchburg) at the US 76 road crossing approximately 11 miles below US 401 and 24 miles downstream from US 15. The landing is not an official public boat landing. It is in private ownership. At this location, the river forms the boundary between Lee and Florence counties.

The boat ramp is unimproved with a small, gravel parking area. Most parking is under the US 76 bridge. There are numerous trails along the river allowing for fishing access.



SC 403 Boat Landing

The SC 403 boat landing is located on the east bank of the Lynches in Florence County approximately nine miles below US 76 and 33 miles below US 15. The river forms the boundary between Florence and Sumter counties at SC 403. The landing is not a public facility – the property is owned by Sardis Baptist Church. The landing has a large, vegetated parking area built into the trees. The boat ramp is unimproved and very steep. It is difficult to launch or take-out a boat on a trailer.

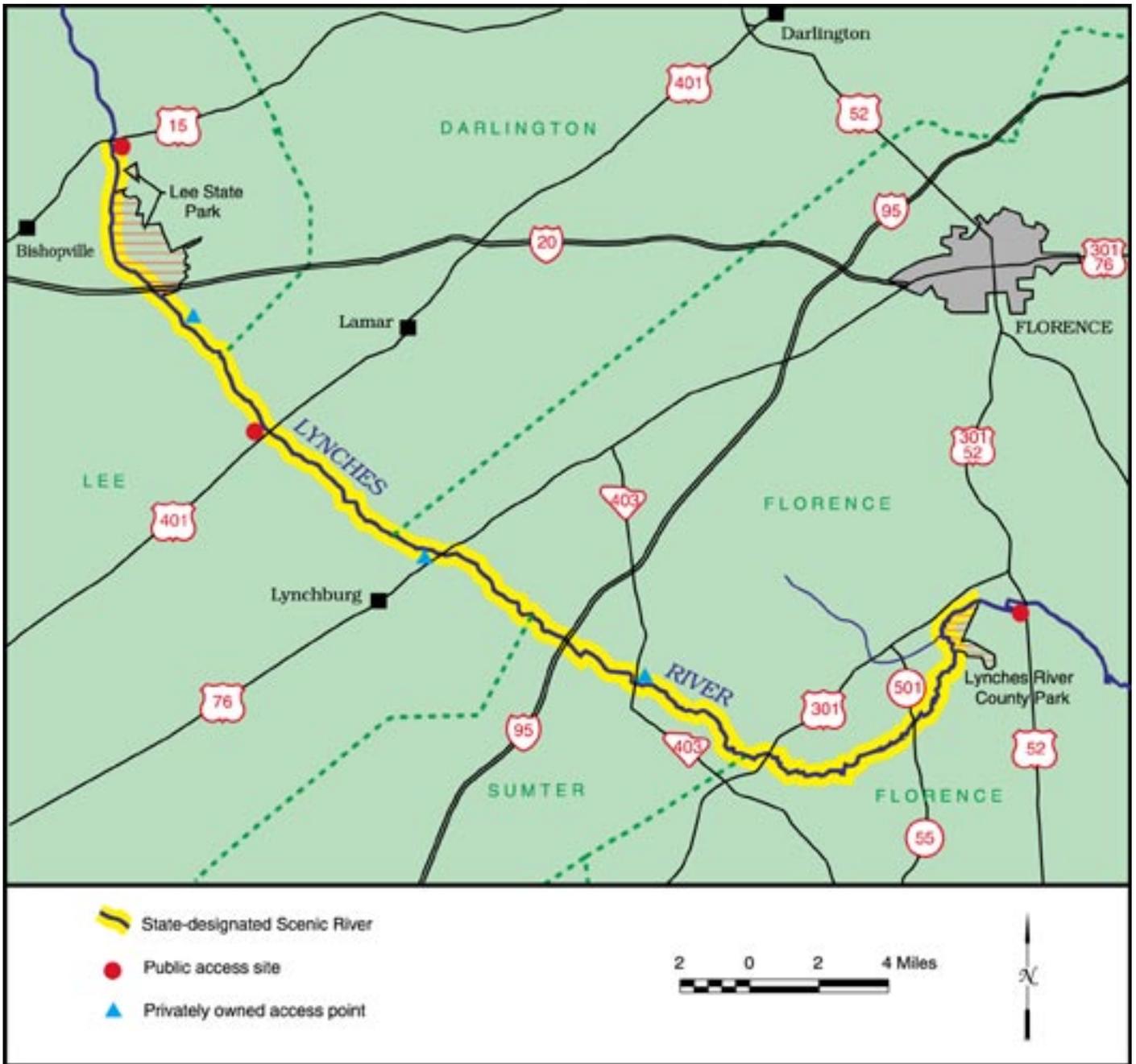


Figure 4. Public Access Points on the Lynchies Scenic River

US 301

US 301 is located approximately seven miles below SC 403 and 40 miles below US 15. The river is not easily accessible at this point because the banks are fairly steep and there is not a road down to the river. To access the river at this point requires permission from the river-bordering landowner(s).

Florence County Road 55

At Florence County Road 55, there is another unofficial boat landing referred to by locals as “Little Myrtle Beach”. This “landing” is a particular problem spot on the river in terms of trash and congregating. The bridge is covered with graffiti. The shoreline is extremely eroded. In late 1995, the South Carolina Department of Transportation erected a guardrail to cut off vehicle access to the landing. As such, there is no longer access for motorized boats at this landing. This former access point is located eight miles downstream of US 301 and 48 miles below US 15.

Lynches River County Park

Lynches River County Park is located approximately 20 miles downstream from SC 403 and 54 miles downstream from US 15. The park provides excellent access to the river via a canoe/kayak launch area that was constructed in 2002. The launch is handicapped accessible. That park also has a riverside picnic area and nature trail adjacent to the river. The next boat landing is located approximately three miles downstream at the US 52 road crossing. The scenic segment terminates at the eastern boundary of Lynches River State Park.

Cultural and Historic Values

The Lynches River corridor is rich in history, some of it regionally or nationally significant. Over the course of time, the river has assumed many different roles in its relationship with man — it has been an obstacle, a provider, and a refuge. The people of the river have included prehistoric man, the Wateree and Santee Indians, English planters, and slaves as well as present-day farmers and recreators.

The Institute of Archeology and Anthropology of the University of South Carolina has reported

five periods of prehistoric occupation between 6,000 B.C. and 1,000 A.D. within the confines of Lee State Natural Area. No other significant archeological sites have been identified in close proximity to the river, probably because surveys are conducted only when development is imminent.

One battle of the Revolutionary War can be documented near present day Lee State Natural Area. A battle between General Thomas Sumter, the Gamecock, and Major Thomas Fraser took place between Scape Hoar Creek and Ratcliff’s Bridge. Sumter lost and retreated across the river at this bridge. British prisoners of war were held in this area under Lieutenant Colonel Hamilton. General Francis Marion, the Swamp Fox, was active throughout the Pee Dee region and had his headquarters on the Lynches River at Snow Island.

During the Civil War, the river and its swamps sheltered runaway slaves. When Sherman stormed through South Carolina on his march to the sea, landowners drove cattle and chickens into the swamp hoping to avoid their slaughter.

The last duel in South Carolina was fought on a sand ridge near the US 15 bridge crossing on July 5, 1880. Colonel Ellerbe Cash killed Colonel William Shannon believing that Shannon had wrongfully accused his wife of fraud. As a result of the ensuing public outrage, the South Carolina General Assembly outlawed duels.



Historical marker near the US 15 crossing of the Lynches Scenic River.





THE LYNCHES SCENIC RIVER MANAGEMENT PLAN

The *Lynches Scenic River Management Plan* presents the results of an intensive, two-year study of the river. The *Lynches Scenic River Management Plan* presents the results of an intensive, two-year study of the river. Through this study, the Lynches River Advisory Council identified several issues that will affect the future management of the river and proposed responsive, workable means to deal with those issues. At the same time, the council looked for opportunities to protect the river and its resources through advocacy, cooperative efforts, education, research, and/or implementation of sound management practices. The study resulted in the development of 65 management recommendations. These recommendations form the core of the management plan.

The advisory council faced a challenging task to develop a plan that acknowledges and protects the unique and outstanding resources of the river while safeguarding the rights of private property owners. All of the plan's recommendations are guidelines or suggestions. They do not create any new regulations. Instead, the plan urges the river community to work together in a voluntary framework to protect the river. Participation in the plan's implementation is at the discretion of each individual, group, or governmental entity.

Built around the concept of stewardship, the management plan promotes a community land ethic. Aldo Leopold, a wildlife biologist and conservation writer during the 1940s, defined land ethic in his classic book, *A Sand County Almanac*:

“A land ethic, of course, cannot prevent the alteration, management, and use of resources, but it does affirm their right to continued existence, and, at least in spots, their continued existence in a natural state. In short, a land ethic changes the role of Homo Sapiens from conqueror of the land-community to plain member and citizen of it.” (Leopold, 1949).

Other dominant themes in the management plan include the need for increased water quality monitoring; strict enforcement of point source discharge permits to protect water quality; protection of the riparian zone; personal/corporate responsibility; and public education/involvement as a key management tool.

Management plan recommendations address six issue categories: stewardship/community involvement; water quality; recreational opportunities (including access and navigation); the fisheries; wildlife management; and maintaining the scenic quality of the river corridor. For each issue category, the council identified specific issues and opportunities, developed a management goal, and proposed a management strategy. The remainder of this chapter looks at each issue category in turn.

Stewardship/Community Involvement

To be successful, the Lynches Scenic River Project must have the full support of the local people. Important management decisions rest in the hands of the riparian landowners, other residents of the Lynches watershed, river users, local governments, businesses, and local environmental organizations. For this reason, the primary focus of the management plan is stewardship and community involvement. All recommendations in the plan were developed with this caveat in mind.

Management Goal:

The Lynches River Advisory Council will take the lead as advocate for the river, and council members will serve as model stewards. The council will raise community awareness of the river and its valuable resources through targeted education efforts and sponsorship of hands-on activities ranging from an annual river festival to best management practice (BMP) demonstrations to water quality sampling. Through these efforts, the council will build a strong land ethic in the Lynches River community.



Advisory council member Ray Alexander presents information on the Lynchies Scenic River Project at the 1995 public meeting at Lee State Natural Area.

Issues:

The advisory council identified two major issues that must be dealt with in order to attain the aforementioned management goal:

- The first and most important step in the implementation of this management plan is to gain the full confidence, support, and participation of the local community.
- The land and water use activities of each riparian landowner, river user, and watershed resident can have positive or negative effects on the Lynchies River. Every person with the potential to impact the resource needs to understand the relationship between his/her actions and the health and viability of the river.

Opportunities:

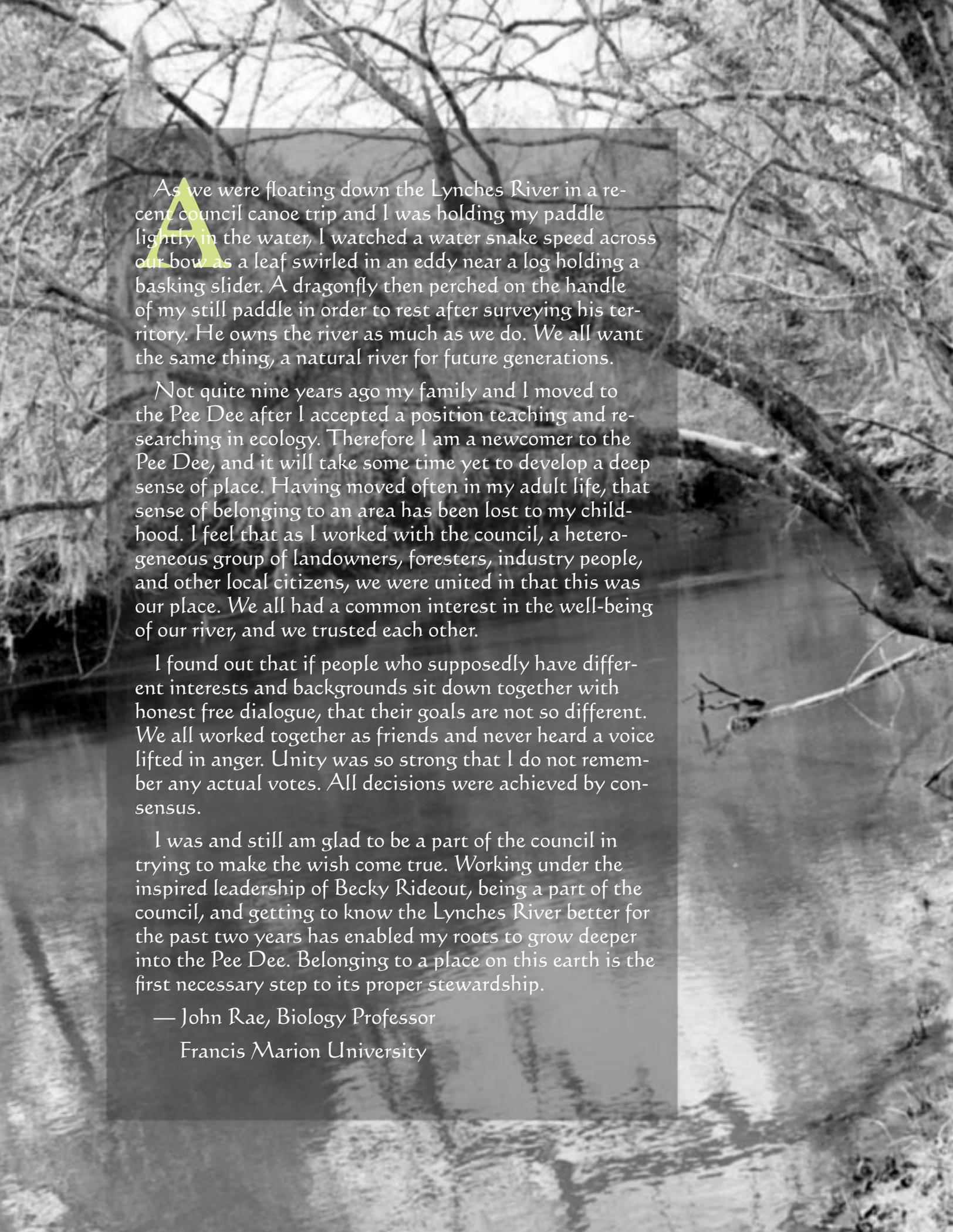
There is a great deal of enthusiasm in the local community for protecting the special values of the Lynchies Scenic River. This enthusiasm is exemplified by the hard work and dedication of the Lynchies River Advisory Council in developing this management plan. Now, that energy must be converted into action. By taking the lead as stewards of the river while encouraging the full and active participation of the river community, the advisory council can spearhead an effective and lasting effort to protect the river.

Recommendations:

1. The Lynchies River Advisory Council should form a Policy and Procedures Committee for the purpose of organizing council response to river-related issues. This committee will be the advocacy arm of the advisory council. Functions will include reviewing issues for relevance, proposing a course of action, and following through. For example, the committee will draft letters to express council

opinions and members may be called upon to represent the council at hearings, meetings, or other public forums. (Implemented in 1996)

2. The Lynchies River Advisory Council should establish the Lynchies River Land Registry, a voluntary stewardship program for river-bordering landowners based on the Scenic Rivers Stewardship Program. To join the registry, the landowner enters a voluntary land management agreement with the SC Scenic Rivers Program. There are four options for membership in the registry: land registration, a memorandum of agreement (MOA), a conservation easement, or donation of land. A detailed overview of the stewardship program is included in Appendix B. (In progress)
 - a. The long-term goal for landowner participation in the registry is 100 percent. Interim participation goals are set at 25 percent within three years (2000) and 50 percent in five years (2002). After five years, the success of the registry should be evaluated.
 - b. At a minimum, all riparian landowners should join the registry through land registration. Land registration involves a simple, written agreement between the landowner and the Scenic Rivers Program whereby the landowner pledges to manage his/her land in concert with scenic river goals, give notice of any change in land ownership or major change in land use, and report any known threats to the resource.
 - c. The advisory council should encourage riparian landowners to consider other stewardship options (memorandum of agreement, conservation easement, land donation) which include specific management guidelines and provide for long-term resource protection. (Ongoing)
 - d. Initial implementation efforts for the Lynchies River Land Registry should focus on advisory council members who own river-bordering property. By participating in the registry, council members can set a good example for other landowners. (Ongoing)
 - e. Large land holdings are a top priority for inclusion in the registry. Initial implementation efforts should target landowners with more than 2,500 feet of riverfront.
 - f. Areas of special significance (outstanding natural features, scenic vistas, historic sites, etc.) should be identified by the advisory council and



As we were floating down the Lynches River in a recent council canoe trip and I was holding my paddle lightly in the water, I watched a water snake speed across our bow as a leaf swirled in an eddy near a log holding a basking slider. A dragonfly then perched on the handle of my still paddle in order to rest after surveying his territory. He owns the river as much as we do. We all want the same thing, a natural river for future generations.

Not quite nine years ago my family and I moved to the Pee Dee after I accepted a position teaching and researching in ecology. Therefore I am a newcomer to the Pee Dee, and it will take some time yet to develop a deep sense of place. Having moved often in my adult life, that sense of belonging to an area has been lost to my childhood. I feel that as I worked with the council, a heterogeneous group of landowners, foresters, industry people, and other local citizens, we were united in that this was our place. We all had a common interest in the well-being of our river, and we trusted each other.

I found out that if people who supposedly have different interests and backgrounds sit down together with honest free dialogue, that their goals are not so different. We all worked together as friends and never heard a voice lifted in anger. Unity was so strong that I do not remember any actual votes. All decisions were achieved by consensus.

I was and still am glad to be a part of the council in trying to make the wish come true. Working under the inspired leadership of Becky Rideout, being a part of the council, and getting to know the Lynches River better for the past two years has enabled my roots to grow deeper into the Pee Dee. Belonging to a place on this earth is the first necessary step to its proper stewardship.

— John Rae, Biology Professor
Francis Marion University

targeted for inclusion in the Lynch River Land Registry.

3. The Lynch River Advisory Council should develop a program to recognize individuals or groups who exemplify the stewardship ethic.
4. The Lynch River Advisory Council should develop a slide show to describe the outstanding resources of the Lynch River (justification for the scenic designation); provide a basic overview of the SC Scenic Rivers Program; outline recommendations in the *Lynch Scenic River Management Plan*; and provide information on opportunities for landowner involvement through the Lynch River Land Registry. (Implemented in 1999)
5. The Lynch River Advisory Council should develop a project display for exhibit at festivals and other events in Darlington, Florence, Lee and Sumter counties. (Implemented in 1997; Ongoing)
6. The Lynch River Advisory Council should sponsor an annual river festival to celebrate the resource and provide an opportunity for increased landowner/community involvement in the Lynch Scenic River Project. The festival could feature activities including river trips, canoe instruction, camping, nature hikes, river education, contests for school children, issue forums, music, food, and other events. Other major purposes of the festival should be to provide project updates, highlight accomplishments, and recognize participants. A landowners' meeting should be a regular feature of the festival. The festival should be held at one of the state parks on the scenic segment. Key partners for the festival might include SCPRT, local governments, local businesses, and civic/environmental organizations. (Implemented in 1997; Ongoing)
7. The DNR should continue to publish the Lynch River insert to *South Carolina River News* on a quarterly basis. (Implemented in 1996; Ongoing)
8. The DNR should pursue designation of the Lynch River from Lynch River County Park to the confluence with the Great Pee Dee River as a State Scenic River. This would allow a consistent management approach on the river.
9. An important element of river advocacy/stewardship is to recognize the value of the many different types

of river resources and to take action to protect those resources. To this point, the Lynch River Project has focused primarily on natural and scenic resources; however, there is a strong potential for significant cultural and historic resources in the Lynch River corridor. The advisory council should work with the appropriate agencies and organizations to document and protect these resources.

Water Quality

From the very first meeting of the Lynch River Advisory Council, it was clear that the top priority of the landowners and local community is to restore and maintain good water quality in the Lynch River. The council soon realized that this seemingly simple task requires a thorough understanding of many complex concepts including pollution sources (where does pollution come from?); types of pollutants and their potential effects on the river; the existing laws and programs to control water pollution; and the collection, analysis, and interpretation of water quality data. To get a handle on this complicated



Bishopville wastewater treatment plant.

issue, the council conducted a ten-month study of the present water quality of the Lynch River.

The council found that the notion of quality is relative: Quality depends on the desired use for the water. For example, drinking water and swimming require extremely pure water whereas other uses such as boating and irrigation are feasible on somewhat polluted waterbodies. All rivers in South Carolina have been evaluated and classified to determine desired uses. SCDHEC manages each waterbody to meet its desired uses. The Lynch River is classified as Freshwaters suitable for drinking water, after treatment; recreation; the survival and propagation of a balanced aquatic community; and industrial and agricultural uses.

Management Goal:

The Lynches River Advisory Council has identified water quality as the primary issue of concern on the scenic segment of the Lynches River. In addressing this issue, the council seeks to maintain or enhance existing water quality in the river. Desired uses for the river include swimming and fishing, both of which require high levels of water quality. To provide for the desired uses, the river should consistently meet or exceed established biological, chemical, and physical standards for Freshwaters of South Carolina.

Issues:

Based on the water quality study, the advisory council identified seven major issues that must be dealt with in order to attain the aforementioned management goal:

- Many landowners and river users believe that the water quality of the Lynches River is declining over time. Anecdotal evidence includes “poor fishing success,” discolored water and fish, and odors. Heavy sediment loads have been observed following rain events.
- Based on existing data, water quality in the Lynches River is good within the scenic segment.

In 1996, when the plan was originally written, the following water quality conditions existed. At US 15, aquatic life uses are threatened by low pH levels and a significantly increasing trend in BOD₅. At Cousar Branch, recreational uses are only partially supported due to fecal coliform bacteria, and aquatic life uses are threatened by a declining trend in pH, an increasing trend in turbidity, and low DO levels. Aquatic life uses are threatened at SC 403 due to elevated levels of copper and zinc as well as a statistically significant increasing trend in BOD₅. At Sparrow Swamp, recreational uses are fully supported but may be threatened by an increasing trend in fecal coliform bacteria. Aquatic life uses are fully supported at this site but may be threatened by a decreasing trend in pH and an increasing trend in turbidity. Sediment samples from Sparrow Swamp have revealed a high concentration of zinc as well as measurable levels of two DDT derivatives: O,P’DDD and P,P’DDT.

Upstream of the scenic segment at Road 15 near Bethune, aquatic life uses may not be supported due to a combination of factors including elevated copper and zinc, decreasing DO levels, and increasing turbidity. Downstream of Lynches River State Park at US 52, aquatic life uses may not be

supported due to a very high concentration of zinc measured in 1993, compounded by decreasing DO levels and increasing turbidity.

At this writing, conditions at all monitoring locations within the scenic segment have improved. Aquatic life and recreational uses are fully supported within the scenic segment.

- The sampling frequency (once per month for primary stations; once per month from May to October for secondary stations) and methods utilized by SCDHEC may not detect acute water quality problems caused by pollution pulses to the river such as a sewage treatment plant malfunction, an industrial discharge that is temporarily out of compliance, or rainfall runoff from a farm field or logging site.
- Sampling location is also an important consideration. A twenty-mile stretch of the river from US 401 to SC 403 does not have a sampling site. This is of particular concern because three of the six point source discharges to the scenic segment are located between the two sampling points. Sampling at the downstream site (SC 403) might not detect problems associated with these discharges.
- At this time of scenic designation, there were six point source discharges to the Lynches River between US 15 and Lynches River County Park including three municipal wastewater treatment facilities, a potable water treatment plant, and two dye and finishing plants (see Figure 5). The dischargers are permitted to release a combined total of 5.4 million gallons of treated wastewater per day (mgd). Accounting for more than 90 percent of the wastewater discharged to the river, the Bishopville wastewater treatment plant (2.5 mgd) and Reeves Brothers Finishing Plant (2.5 mgd) are major discharges. The other facilities are considered minor discharges: Town of Lamar (0.25 mgd), Town of Lynchburg (0.10 mgd), and National Dye Works (0.054 mgd). Since designation, Reeves Brothers and National Dye Works have closed down. However, they continue to be considered point source discharges because their permits are still active.

Pipe discharges of treated wastewater require a permit from SCDHEC. The permit is based on a wasteload allocation model that determines the river’s ability to assimilate particular pollutants. The permit specifies the types and amounts of pollutants

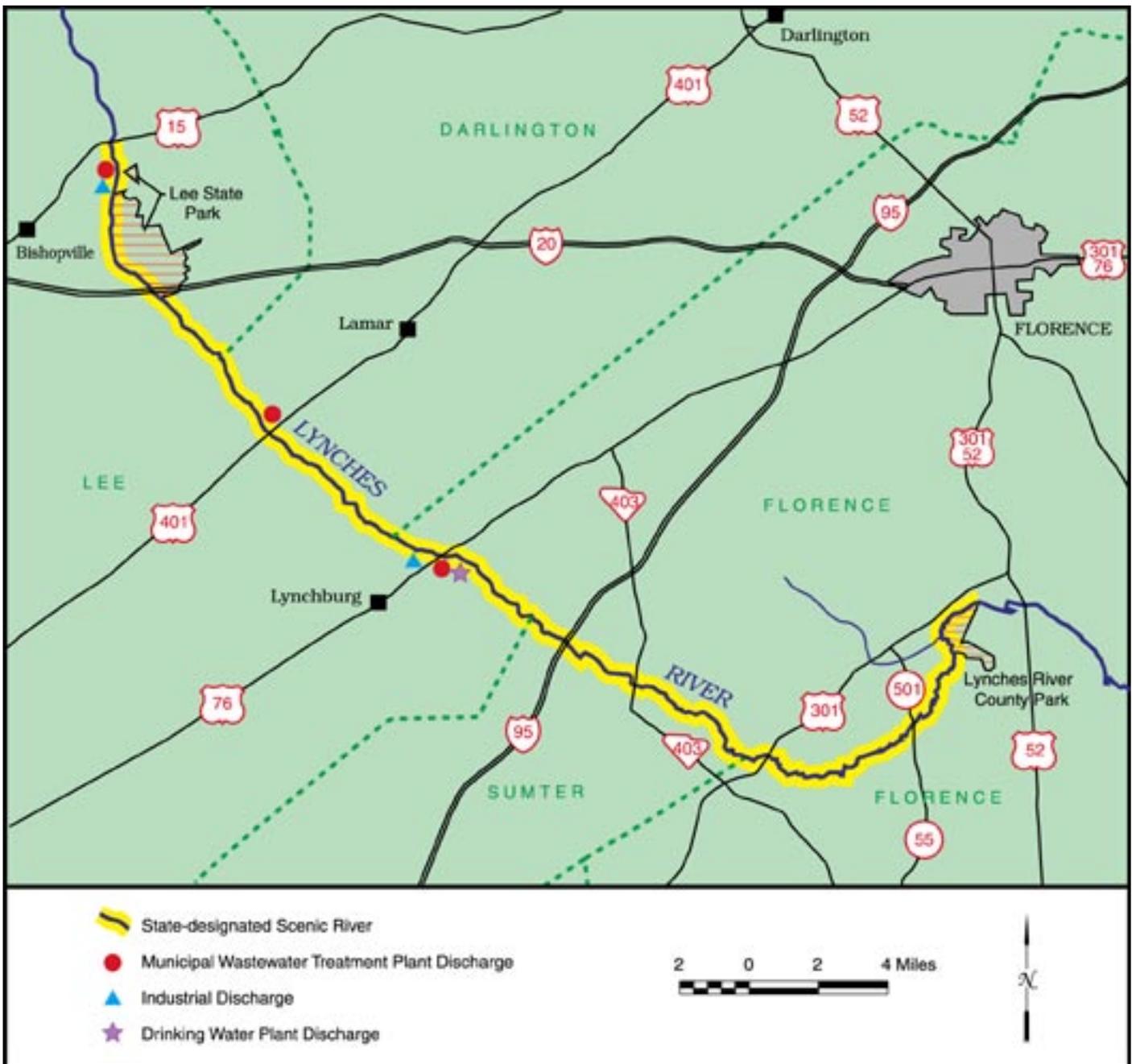


Figure 5. Point Source Discharge Locations

that can be released to the river by each respective discharger. Based on the permit limitations placed on the facilities, the primary pollutants of concern include biochemical oxygen demand, dissolved oxygen, fecal coliform bacteria, and pH. Other potential pollutants associated with these facilities are sulfides, phenols, sediment, oil and grease, and various metals.

The dischargers are required to perform self-monitoring to determine permit compliance. This could represent a conflict of interest for the dischargers since their continued operation depends on their respective abilities to dispose of wastewater in compliance with their NPDES permit in a timely and cost-effective manner. SCDHEC also performs periodic water quality monitoring and facility inspections. In many cases, the facilities have advance warning of the impending inspections. Random, surprise inspections would provide the inspector with a more accurate picture of the day-to-day operation of each facility.

Major discharges (> 1.0 mgd) are monitored more closely by SCDHEC than minor discharges. However, a minor discharge in constant noncompliance could cause equal or greater damage to the resource than a major discharge that is temporarily out of compliance.

When water quality violations are noted, the enforcement process can be lengthy and cumbersome. Until a resolution is reached, the discharger may continue to be in noncompliance. During the process, numerous concessions may be granted to the discharger. As a last resort, SCDHEC imposes monetary penalties. After negotiations, these penalties may be too small to make a lasting impression.

A review of the permit compliance histories of the six respective dischargers revealed several scattered permit violations. Each of the facilities has had permit violations over the past three years (1994 - 1996). In most cases, the violations were not deemed significant by SCDHEC. The only exception is chronic water quality violations by National Dye Works, a dye and finishing plant located just east of Lynchburg in Lee County. In 1997, National Dye was required to pay \$15,000 in penalties. In addition, the company was required correct all deficiencies.

- There are twelve point source discharges located upstream of the scenic segment which could

potentially affect water quality.

- Nonpoint sources for water pollution are closely tied to land use – when it rains, pollutants are washed off the land into surrounding waters. Land use activities on river-bordering land and along tributaries can have a direct and immediate impact on the river. It is important to remember that water quality may also be affected by activities occurring throughout the watershed. SCDHEC has identified the Lynches River as a priority waterbody for nonpoint source pollution control efforts.

Primary land uses in the Lynches watershed include agriculture (crops and livestock); timber management; urban/residential development; roads/highways; recreation; and undeveloped forestland. Row crop production is the predominant land use in the Lynches River watershed. Potential pollutants associated with crop production include soil, nutrients, and pesticides. At this time, animal production is not a major land use. However, there is the potential for an increasing number of animal production facilities dependent on several economic and political factors. Potential pollutants associated with livestock production include nutrients, oxygen-demanding substances, and bacteria.

Timber management is a significant land use along the Lynches Scenic River on both private and corporate holdings. Potential pollutants associated with this land use include soil, oxygen-demanding substances, oil and grease, nutrients, and pesticides. Water quality impacts can result from harvesting during wet soil conditions, removal of riparian vegetation, improper road construction, and disposal of woody debris in streams.

Currently, there is little residential development in the immediate river corridor. There are a few houses, cabins, and trailers on the river. There is the potential for more residential development, especially on the lower end of the scenic segment where the floodplain is narrow. This is of concern because common residential activities can contribute to nonpoint source pollution (NPS). Pollution sources include fertilizer and pesticides from lawns and gardens, improper disposal of household and other chemicals, leaking septic systems, and improper disposal of pet wastes. Most people are unaware that they contribute to NPS.

- Under Section 303(d) of the Federal Clean Water Act, each state is required to provide a comprehensive inventory of waters that do not

National Dye Works, Inc. began attending the Lynches River Advisory Council because we were having difficulty with our wastewater discharge in the past and, although we had made improvements, we felt that we were misunderstood as to our intentions and responsibilities. Honestly, we attended to provide an avenue of communication with the community and with DHEC. We also attended because it said, “Look at us, we are good corporate citizens!”, and that kind of publicity could do nothing but help. Sounds a little calculating? It is.

This is difficult to explain, but important to [our] participation in the group. I have always believed that a company has a responsibility to its employees and to the community—the responsibility to do the “right” thing. I just stopped believing that it made any difference. I would guess that many of us have stopped believing – it comes from disappointments and disillusionment over the years – and this hurts participation in programs. Example: We, as a company, pick up the road every month. The very next day, someone throws their garbage out on the road side. What difference did our efforts make?

National Dye Works, Inc. is a small company and our discharge to the river probably has little to no impact in the big scheme of things. When we first attended the council

meet the state water quality standards or the Federal Clean Water Act goals. The list generated from this inventory is prepared biennially and is referred to as the “303(d) list.” The 303(d) list is used to identify those waterbodies that need additional management actions. Waterbodies are included on the 303(d) list by point locations (identified by the sampling station number); however, the impairment most likely extends for some distance upstream and/or downstream from the point location listed.

SCDHEC must develop a Total Maximum Daily Load (TMDL) for each specific contaminant exceeded within a specific waterbody identified on the 303(d) list. A TMDL represents the maximum pollutant load allowed for a specific waterbody so that water quality standards can be maintained. Further, a TMDL is made up of two main components, a load allocation and a waste allocation. A load allocation is the portion of the receiving water’s loading capacity attributed to existing or future NPS contamination or to natural background sources. The waste load allocation is the portion of the receiving water’s loading capacity allocated to an existing or future point source. Although TMDLs were historically developed for a particular portion of a watershed or for a particular point source, broad watershed-based TMDLs are now being developed to address the combined cumulative impacts of all sources. For example, if concentrations of fecal coliform bacteria have resulted in a waterbody being placed on the 303(d) list at one or two sampling locations, a TMDL will be developed specifically for fecal coliform bacteria for the entire waterbody. Each point source within that waterbody will be allocated a specific waste load that is allowed to contribute to the waterbody through is effluent.

Currently, there are no sites within the scenic segment listed on the 2002 SCDHEC’s 303(d) list.

Opportunities:

While addressing the water quality issue, the Lynches River Advisory Council forged cooperative relationships with three groups that are key to the control of water pollution in the Lynches River: SCDHEC, the Lynches River Coalition/Clean Water, and National Dye Works. The Lynches Scenic River Project created a forum for potentially competing interests (government, citizens, and a business) to

work together to solve environmental problems.

Through the project, the advisory council has the opportunity to work with point source dischargers located along the river to identify and implement measures to protect water quality. There is also the opportunity to work with the Lynches River Coalition/Clean Water, a citizen's "watchdog" group based in Lake City, to monitor water quality on the Lynches River from the headwaters to the confluence with the Great Pee Dee River.

The success of these efforts will depend on the active involvement of SCDHEC, the state agency responsible for monitoring water quality and enforcing permit limits. Through membership on the advisory council, SCDHEC is already involved in the project. During the planning phase, SCDHEC provided invaluable assistance to the council in supplying water quality information. Hopefully, during the implementation phase, this relationship will mature even further to allow for a true public-private partnership to keep the river clean.

Recommendations:

1. Based on the existing and future information, the advisory council should track changes in water quality over time. This tracking, in turn, will allow future assessment of the effectiveness of the water quality recommendations.

The advisory council should obtain water quality data from SCDHEC's monitoring network, special studies, and other sources on a continuing basis. These data should be used to assess the success of the council in maintaining/improving water quality over time. (Ongoing)

2. The Lynches River Advisory Council should form a standing committee to address water quality issues and spearhead implementation efforts. (Implemented in 1996)
3. The advisory council should work with SCDHEC and business/civic/environmental groups to educate citizens in the Lynches watershed about water quality and sources for water pollution. The council should initiate an education campaign through cooperation with schools, local governments, and the media. This education effort should stress the role of individual landowners and river users as well as point source dischargers in causing and preventing pollution. (In Progress)
 - a. The education effort should dispel the misconception that most water quality problems

meetings, we went because we applaud your intentions, but we really didn't believe that a handful of people could make a difference.

I can remember the first meetings – trepidation is probably a good word. I attended just in case I was sending George and Jane [my employees] into a firing range. I was wrong. The Council welcomed us from the beginning, although probably with the same reservations we had. That's not to say there were not some tense moments – communication means listening, and each of us had to voice our misunderstandings and beliefs before we could begin to work together. What I was wrong about was that it didn't take that long. Everyone truly wants to believe in the best and when the avenue is available to promote the best, everyone moves in the same direction. It was the landowners' ability to look at themselves first that allowed us to do the same thing without apology or embarrassment. No one cast stones. We began to identify problems and solutions recognizing that nothing would change overnight. What I never expected was reasonableness and logic and, for that, I owe each of you an apology.

What has National Dye Works, Inc. Gained from attending the Lynches River Advisory Council? Pride. I have watched the change in George and Jane [my employees]- in

(continued on page 36)

their pride in our environmental efforts and in the support and praise we have received from the Council and landowners. I wish that I could transfer that pride to each individual in the company and hope, with time, to do so. Our community image has changed because we have become a part of the community. I believe that someday National Dye Works, Inc. will be a leader in environmental concerns and, in believing, it has a chance to come true.

What is the biggest challenge we have to face? Keeping morale up when we see little change. Maintaining the belief that what we do makes a difference. Frustration and disappointment are hard to combat, especially when reality tends to support their existence. I don't think any of us believed that individuals, community, business, and government could work together. We each thought that they should so we pretended to believe, and somewhere along the way it actually happened. For myself, thank you for bringing back to my awareness that it is from belief that things happen and change. Without belief, there is no effort, and without effort, there is no change. However we can help, we will try.

— Karen Bircher, President,
National Dye Works, Inc.

- are caused by point sources. Rather than assigning blame, the community (landowners, dischargers, river users) must work together as a team to keep the river clean.
 - b. The education effort should address the issue of discoloration of the river from dyes. Local citizens and river users should be informed that the color of the discharge has no direct relationship to the toxicity of the discharge. A colored discharge can be toxic as can a clear and odorless discharge. Discoloration should be dealt with as an aesthetic issue.
 - c. The advisory council should stress to the local municipalities (City of Bishopville, Town of Lamar, Town of Lynchburg) the importance of funding to maintain their wastewater treatment facilities.
 - d. Appropriate educational materials should be distributed to landowners and other watershed residents including *Turning the Tide: A Citizen's Guide to Nonpoint Source Pollution* and *South Carolina's Best Management Practices for Forestry*. (Ongoing)
4. The Lynch River Advisory Council should identify and recruit local citizens' groups to "adopt" segments of the river for water quality monitoring (from simple observations to the actual collection of samples) and litter control.
 - a. The advisory council should seek funding to conduct basic water quality monitoring for the purpose of educating landowners/river users and to help document suspected water quality problems.
 - b. The advisory council should investigate the possibility of involving local schools in water quality monitoring through the Pee Dee Science Education Hub. This would allow project education in the larger watershed.
 - c. Project staff should coordinate with the DNR Law Enforcement Division to enlist help in tracking water quality conditions on the river. The conservation officers are very familiar with the resource and spend significant time on the river.
 5. The advisory council should promote cooperation between groups working to keep the river clean. (Ongoing)

To address point source pollution:

6. Due to the special status of the Lynch River,

the number of point source discharges should be limited to current (1995) levels for protection of water quality and preservation of the river's scenic character.

- a. In the long-term, point source dischargers to the river and its tributaries should seek to achieve zero discharge where technologically and economically feasible.
 - b. In the long-term, the wastewater treatment facilities in Lamar and Lynchburg should be upgraded to allow new industries to tie in rather than discharging directly to the river.
 - c. New industries locating in the Bishopville area should utilize the Bishopville wastewater treatment plant.
 - d. Through the permitting and regional planning processes, the advisory council should encourage dischargers to utilize constructed wetlands for waste treatment.
 - e. Recommendation six and subparts should be promoted through the Section 208 regional planning process by the local councils of government and SCDHEC.
 - f. For all permitting decisions pertaining to the Lynches Scenic River, SCDHEC should take the recommendations in this management plan into account.
7. The Lynches River Advisory Council should establish a working relationship with each NPDES permit holder. At a minimum, the permit holders should be informed of the project and its goals. They should be contacted on a regular basis to keep them up-to-date and to encourage active participation in the project.
 8. The advisory council should work with National Dye to obtain funding and/or a low interest loan for construction of a wastewater recycling system. Other dischargers to the river should be encouraged to implement similar systems, where feasible.
 9. The Lynches River Advisory Council should formally request that SCDHEC inform the council of all proposed NPDES permit modifications as well as any new NPDES permit applications for the Lynches River including the scenic segment, upstream, and downstream. As necessary, the advisory council should participate in the public comment process on permits. (Implemented in 1997)

10. The Lynches River Advisory Council should maintain ongoing relationships with the SCDHEC district offices in Florence and Sumter. Designated council members should visit the district offices on a regular basis (2 to 3 times per year) to review NPDES permit compliance information. Findings should be reported back to the advisory council for consideration and further action, if necessary.

11. In cases of permit non-compliance, the advisory council encourages SCDHEC to address swiftly the infraction such that the problem is corrected and/or monetary fines are imposed. (Ongoing)

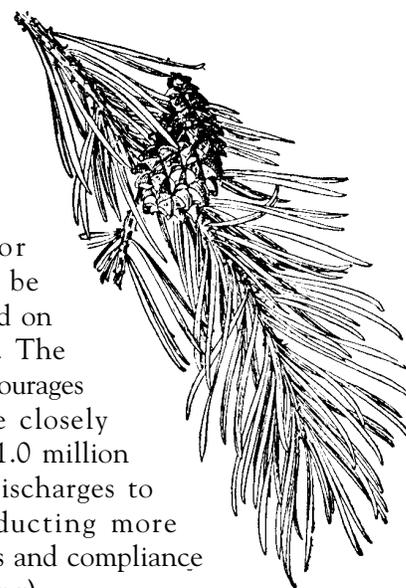
12. Major and minor discharges should be rigorously monitored on a continuing basis. The advisory council encourages SCDHEC to more closely monitor minor (< 1.0 million gallons per day) discharges to the river by conducting more frequent inspections and compliance monitoring. (Ongoing)

13. The existing point source discharges to the scenic segment are clustered on the upper end (above US 401). To better assess water quality of the Lynches River, SCDHEC should establish a permanent, primary monitoring station at the US 76 bridge crossing. SCDHEC should also establish a monitoring station (primary or secondary) at Lee State Natural Area to replace the inactive station at I-20.

14. The advisory council should devote its immediate attention to activities on the scenic segment. As time allows, however, the council should work with SCDHEC to learn more about point source discharges upstream of US 15 and downstream of Lynches River County Park.

To address nonpoint source pollution:

15. Recognizing that activities on river-bordering land can have a direct and immediate impact on the river, the council should work with riparian



landowners to control nonpoint source pollution through voluntary implementation of best management practices (BMPs) and participation in the Scenic Rivers Stewardship Program. (Ongoing)

The following best management practices are critical to the protection of water quality in the Lynches River and are recommended for voluntary implementation by river-bordering landowners:

a. Forest Management BMPs

The Lynches River Advisory Council recommends that all forest management activities in the Lynches watershed be conducted according to SC Forestry Commission guidelines as outlined in *South Carolina's Best Management Practices for Forestry*.

The following BMPs are emphasized as essential to the protection of water quality:

- Land adjacent to perennial, intermittent, and ephemeral streams requires special attention during forestry operations. A streamside management zone (SMZ) should be identified and protected. At a minimum, the SMZ should be 40 to 80 feet in width (dependent on slope) on each side of the stream. Where possible, the advisory council advocates a more extensive SMZ to allow for additional protection of water quality and preservation of other important values such as aesthetics and wildlife habitat.
- Forestry operations should be limited in the SMZ. Clear-cuts should never extend to the bank of perennial or intermittent streams.
- Forestry operations should be timed to avoid wet weather and wet soil conditions.
- Forest roads should be designed to minimize the amount of sediment leaving the site and entering stream channels. Road construction in sensitive sites such as the SMZ should be avoided.
- There should be no broadcast application of fertilizer or pesticides in the SMZ.
- River-bordering landowners are encouraged to consult a registered forester for help in long-term forest management planning.

b. Agricultural BMPs

The Lynches River Advisory Council recommends that all agricultural activities in

the Lynches corridor be carried out according to well-established best management practices. Farmers should consult the Natural Resources Conservation Service (NRCS) for case-by-case guidance.

The advisory council encourages NRCS, Clemson University Cooperative Extension Service, and/or DNR's Land Resources Division to develop and distribute a user-friendly BMP guide for agriculture similar to the existing guide for forestry.

The following BMPs are recommended as essential to the protection of water quality:

Row Crop Production:

- There should be a naturally vegetated riparian buffer of at least 40 feet in width on both sides of all perennial and intermittent streams. Where possible, the advisory council advocates a more extensive buffer to allow for additional protection of water quality and preservation of other important values such as aesthetics and wildlife habitat. Farm fields should never extend to the bank of a stream or drainage ditch.
- To help keep agricultural chemicals such as fertilizers and pesticides out of the river, a no-till filter strip of at least 15 feet in width is encouraged along both sides of all drainage ditches.
- New drainage ditches should not be constructed in the riparian corridor. Landowners should be made aware that new ditches require a Section 404 permit from the Army Corps of Engineers. In maintaining existing ditches, care should be taken to minimize sediment loading to the river.
- The application of pesticides to farm fields should be according to the principles of integrated pest management:
 - Pesticides should be applied only when the economic benefit of spraying exceeds the cost of spraying.
 - Pesticides should be applied as efficiently as possible and at times when runoff losses are unlikely.
 - Pesticide containers should be triple rinsed and disposed of properly. They should never be discarded on a ditch bank, along the stream, or in a wetland.
- When pesticide applications are necessary

and a choice of registered materials exists, the landowner should consider the toxicity, runoff potential, and leaching potential of the products in making the selection.

- Due to the potential for drift, aerial spraying of pesticides should not be allowed within 100 feet of the Lynches River and its tributaries.
- All steps necessary should be taken to control erosion/sedimentation including establishment of perennial vegetative cover to protect the soil; establishment of cover crops that generate nutrients; practicing conservation tillage; and construction of sediment control structures.
- Highly erodible soils should be removed from production.
- With the aid of NRCS and/or extension personnel, farmers should develop and implement nutrient management plans. It is very important

to test soil annually and apply nutrients/lime based on the results of the testing.

Livestock/Poultry Production:

- As required by law, any new or expanded animal waste treatment lagoons should not be located within 1/4 mile of waters of the State including the Lynches River, major tributaries, and adjacent wetlands. In addition, all waste treatment lagoons should have a synthetic liner.
- Animal waste treatment lagoons should not be located within 200 feet of drainage ditches.
- Care should be taken to dispose of waste from confined animal facilities in such a manner as to prevent contamination of surface or ground water.
 - Pastured or free-roaming animals should not be allowed uncontrolled access to the river, tributaries, or adjacent wetlands. The animals should be fenced out to prevent destruction of

The whole effort to protect the river started out with the Lynches River Council, with folks like Alex Kelley, the Vauses, Ned Moore, and other landowners along the river. I've been in on this thing from the beginning.

What we want is to keep the river free from pollution – pure and clean like the good Lord made it.

Really, we would like to see every pipe that is pouring wastewater into the river removed forever. But we know that people have to get rid of their waste, and jobs are important. At the very least, we want the industries and towns that use the river to make sure that they are doing everything possible to keep it clean, and we want DHEC to watch them closely and make sure that they do.

I think that the advisory council needs to work with landowners to protect the area along the river. People shouldn't be clearcutting down to the riverbank and throwing tree tops into the river. I'm not after pushing anything down anybody's throat or telling anybody what to do with their land. But I do think that we all need to work together.

This is from my heart. I grew up on the Lynches River, and I love it. I want my grandchildren and their children to be able to enjoy it as I have.

— Kenneth Strickland, Florence
County landowner

the streambank/riparian zone and to prevent contamination of the water from pollutants associated with fecal waste.

c. Urban/Residential Development:

The Lynch River Advisory Council recommends that all urban/residential development activities in the Lynch River watershed be conducted according to best management practices developed by the Environmental Protection Agency and South Carolina Department of Health and Environmental Control. In particular, the council urges riparian landowners to follow BMPs outlined in *Turning the Tide: A Citizen's Guide to Preventing Nonpoint Source Pollution*.

The following BMPs are emphasized as essential to the protection of water quality:

- A minimum 40 to 80 foot riparian buffer should be established and maintained along both sides of the Lynch River. The buffer should be characterized by native vegetation. Development should be limited in this buffer area. Where possible, the advisory council advocates a more extensive buffer to allow for additional protection of water quality and preservation of other important values such as aesthetics and wildlife habitat.
- New homes (permanent or vacation) should be set back at least 100 feet and lawns should be set back at least 40 feet from the river.
- Septic systems should be set back at least 50 feet from the river as required by existing DHEC guidelines.
- The following practices are encouraged along roads and their right-of-ways:
 - Adequate culverts should be installed to manage drainage/runoff.
 - The area around culverts should be stabilized.
 - Proper erosion and sediment control measures should be implemented at all times.
 - Paved parking lots should not be allowed within 40 feet of the river if a natural, vegetated buffer is present. In the absence of a buffer, paved parking lots should not be allowed within 100 feet of the river.
 - New roads should be set back 100 feet from the river.
 - Runoff from parking lots and roads should

be filtered before entering the river.

- Mowing along roads is preferable to the use of herbicides.

16. The advisory council should sponsor informational seminars on land use and water quality for river-bordering landowners. The seminars should address common land uses in the Lynch River corridor including forest management and agriculture. As part of the educational seminars, the advisory council should educate landowners regarding the value of wetlands in protecting water quality as well as provide information on current wetlands regulations. The advisory council should seek corporate and governmental partners to provide financial support and technical expertise for the seminars. (Implemented in 1999; Ongoing)
17. The advisory council should work with the forestry and agriculture communities to identify funding to support willing river-bordering landowners to demonstrate selected best management practices such as maintenance of streamside buffers.
18. A (Several) conveniently located disposal/recycling facility(ies) for used pesticide containers should be developed in the Lynch River watershed.
19. Through the study of 1994 aerial photography and field work, the advisory council should characterize the state of the Lynch River riparian zone. Examples of outstanding riparian management should be noted as well as cases where the riparian zone has been degraded. This information should be utilized to target areas for protection and restoration.
 - a. To minimize land disturbance, landowners are encouraged to allow natural regeneration of degraded buffer areas.
 - b. The advisory council should encourage local planning commissions and county councils to consider means of maintaining riparian zones in their comprehensive plans.
20. Public and private entities (e.g. the State of South Carolina, local communities, the Lynch River Advisory Council, the agriculture and timber industries) should promote individual efforts to protect sensitive areas and reduce nonpoint source pollution by granting incentives such as community recognition, a steward awards program, technical assistance, and financial support.

21. To define more clearly the impact(s) of nonpoint source runoff on water quality, DHEC should conduct wet weather monitoring on the Lynches River. The information gained should help fill the gap between existing data and the level of information needed to make sound management decisions.

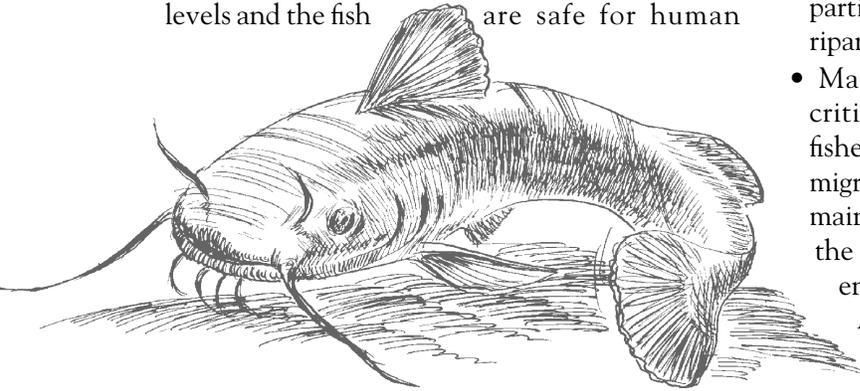
Fisheries

In addressing management issues, the advisory council focused on the Lynches River fisheries because fish are a key element of the river from several viewpoints – ecological, recreational, and aesthetic. To put it simply, what is a river without fish?

The advisory council worked with DNR and SCDHEC to define fisheries issues. Other sources of information included the advisory council and local sportsmen. Several members of the council are avid fishermen and, thereby, have valuable insight into present and potential future issues.

Management Goal:

The goal of the Lynches River Advisory Council is to maintain or improve fish habitat such that the fish populations and species composition are at optimum levels and the fish are safe for human



consumption. This should be accomplished through improved scientific knowledge; public education on stewardship of fish habitat; control of water pollution; protection of the riparian zone; and maintenance of the river's natural features.

Issues:

The advisory council identified six major fisheries issues that must be dealt with in order to attain the aforementioned management goal:

- Historical fisheries data for the Lynches River are extremely limited. There has not been any sampling or other studies to document fisheries information.
- Methylmercury is a known problem in the Lynches River and many other rivers across South Carolina. The source for the mercury is unknown. The mercury accumulates in fish tissue. Consumption of the fish from the river should be limited according to guidelines provided by SCDHEC. The consumption advisory applies to largemouth bass, bowfin (mudfish), and channel catfish. Fishermen should limit their consumption of these types of fish to no more than 0.75 lb./month for bowfin; 1 lb./month for largemouth bass; and 1.5 lbs./month for channel catfish. To minimize risk, pregnant women, infants, children, and people with neurological disorders should not eat any fish from this area.
- There have been three documented fish kills on the Lynches River in the past 15 years. Each of these fish kills was attributed to point source pollution. One of the kills occurred upstream of the scenic segment while the other two happened at downstream locations.
- One of the greatest barriers to protecting the fisheries resource is insufficient public education concerning responsible development practices, particularly with respect to the preservation of the riparian zone.
- Maintenance of appropriate instream flow is critical to the protection of the Lynches River fisheries. Dams and obstructions pose barriers to migratory fish and modify fish habitat. Currently, the main stem of the Lynches River is free-flowing from the headwaters in North Carolina to the confluence with the Great Pee Dee in South Carolina. As such, the Lynches stands as one of the few undammed major rivers in the state.
 - Many fishermen have the misconception that stocking of fish is a cure-all for perceived poor fishing success. This de-emphasizes the critical importance of habitat protection.
- The flathead catfish is present in the Great Pee Dee River and lower Lynches River. It could migrate upstream. The exotic flathead preys on game fish including redbreast sunfish.

Opportunities:

The Lynches River Advisory Council has the opportunity to be involved in fisheries management issues of local, regional, and national prominence. By

addressing tough issues such as the mercury contamination of the Lynches River, the advisory council can make an impact well beyond the Pee Dee region of South Carolina.

Recommendations:

1. In 1997, the DNR will initiate a three-year fisheries study on the Lynches River. The study will include fish sampling to determine species composition, fish size, age groups, and the growth rate of the fish. The DNR will also conduct a creel survey to estimate total weight of fish harvested by species and to rate fishing success. The Lynches River Advisory Council is supportive of this study and would like an opportunity to provide input/direction to the study. The council encourages the DNR to focus special attention on the status of the redbreast fishery and to evaluate the threat of the exotic flathead catfish. When the study is completed, the advisory council should work with the DNR to identify fisheries issues and make appropriate recommendations for action. (Ongoing)
2. Regardless of the source, the mercury contamination of the fish in the Lynches River is of utmost concern to the advisory council because it poses a health risk for the local community. The advisory council recommends that SCDHEC post signs at the public access areas warning fishermen of the mercury contamination. The signs should include the latest advised consumption limits and a telephone number for more information. It is especially important that the signs contain a special warning for pregnant women, young children, and people with neurological diseases.
 - a. While the fisheries study is being conducted, SCDHEC should work with the DNR to collect and analyze fish tissue for mercury contamination. Based on the information from this in-depth study, SCDHEC should re-evaluate the risks associated with eating fish from the Lynches River and post fish consumption advisories, if necessary.
 - b. The mercury contamination of fish is a widespread phenomenon in the eastern United States. The advisory council should investigate the level of current knowledge concerning the health risks of eating contaminated fish, sources for the contamination, potential solutions, and ongoing research. If necessary, the council should utilize the political process to urge more research and/or quicker action.
3. The advisory council should work with the DNR and the river community to protect natural features (the natural drainage system, oxbows, bends, lack of channelization) that are critical elements of fish habitat.
 - a. The free-flowing nature of the river should be maintained. The advisory council should initiate a study of dams on tributaries to the river and the impact of those dams on the fisheries.
 - b. Instream flow should be kept at historic levels to maintain quality fish habitat.
 - c. Through the Scenic Rivers Stewardship Program, the advisory council should work with river-bordering landowners to restore and preserve native riparian habitat.
 - d. The removal of fallen trees and other debris from the river to aid in navigation should be limited. The trees fall into the water as the river floods and banks erode. They provide excellent habitat for aquatic organisms such as fish and insects. When it is necessary to move trees to facilitate navigation, the trees should be anchored to the bank to provide fish habitat.
4. The advisory council should work with the DNR to educate the public about their role in maintaining the Lynches River fisheries. Specific issues to be addressed are as follows:
 - a. The integrity of the riparian and littoral zones are crucial to healthy, productive fisheries. These zones provide cover, nutrients, spawning and nursery areas, and protection from erosion and siltation. Activities such as logging, farming, grazing, and/or residential use in the riparian zone can negatively affect fisheries. Impacts associated with land use can be minimized or avoided through the conscientious application of best management practices.
 - b. The best tool for maintaining/increasing the fish population for sport fishing is protection of fish habitat. Although put-and-take stocking is popular with fishermen, it is not a panacea solution to perceived "poor" fishing success. The idea that "putting more fish in the river means more fish to catch" is not always valid. The survival rate of stocked fish is usually low because the stocked fish are out-competed by native fish or they fall prey to larger fish. An

example of an appropriate time for stocking would be after a fish kill in order to give the fish population a “jump-start” toward recovery (this assumes good water quality).

- c. Fishermen should resist the temptation to move favorite fish species from other waterbodies to the Lynches River to avoid the introduction of exotic species such as the flathead catfish. Exotic species frequently have negative impacts on the natural system.
5. The DNR should manage the Lynches River as key redbreast sunfish habitat. All efforts should be made to avoid the introduction of the flathead catfish to this system.

Wildlife and Habitat Management

The Lynches River Advisory Council worked with the DNR to identify wildlife and habitat management issues on the Lynches River. Other key sources of information included landowners and sportsmen. To learn more, the advisory council also consulted the considerable body of literature.

From a wildlife and habitat management viewpoint, the Lynches River and surrounding land should be treated as a system rather than managed on a parcel-by-parcel basis. This is especially critical to the maintenance of biodiversity in the river corridor. However, given the fact that the responsibility for management of this ecological system is divided among many landowners, most management recommendations are targeted toward the individual property owners. The recommendations are designed to serve as guidelines to landowners on how they can contribute to the maintenance and enhancement of wildlife abundance and diversity in the Lynches River corridor.

Management Goal:

To assure a continued abundance and variety of wildlife, the advisory council will work with the river community to investigate, characterize, restore, and maintain the biological diversity of the river corridor; educate landowners on the stewardship of wildlife habitat; protect the riparian zone; maintain or increase the acreage of natural habitats; restore critical habitat; and enhance the connectivity of natural habitats.



The Lynches Scenic River supports numerous wildlife species including the furtive river otter.

Issues:

The advisory council identified six major wildlife/habitat issues that must be dealt with in order to attain the aforementioned management goal:

- The level of existing knowledge concerning the wildlife populations and species composition in the Lynches River corridor is very general in nature, especially with regard to plants and nongame animal species. This information is critical for the protection of biodiversity.
- The term “biodiversity” refers to the diversity of life in all of its forms and all of its levels of organization. Managing for biodiversity is essential to the ecological well-being of Earth and all of its inhabitants. Aldo Leopold described the importance of biodiversity in his 1949 classic, *A Sand County Almanac*:


“The last word in ignorance is the man who says of a plant or animal: ‘What good is it?’ If the land mechanism as a whole is good, then every part is good, whether we understand it or not. If the biota, in the course of aeons, has built something that we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.”


Many resource managers and landowners confuse managing for biodiversity with maximizing species diversity on a given parcel

of land. Biodiversity is achieved by managing for a diversity of diversity across the landscape.

- Wildlife habitat in the Lynches River corridor is somewhat fragmented, particularly in upland areas which are more susceptible to intensive land uses.
- One of the greatest barriers to protecting the wildlife/habitat resource is insufficient public education concerning responsible development practices, particularly with respect to the preservation of the riparian zone including wetlands.
- Many landowners are interested in single-species management rather than ecosystem management.
- Beavers are a particular management concern to river-bordering landowners due to their ability to change the hydrology and usability of large areas of land. The beaver population in the Pee Dee region of the state is increasing.

Opportunities:

There is an abundance of high quality habitat along the Lynches Scenic River. This provides the opportunity for proactive management to protect the resource and prevent future degradation.

Recommendations:

1. The DNR should conduct a thorough ecological assessment of the Lynches River corridor to set priorities for special management. The advisory council should work with the DNR and other entities such as the Francis Marion University Biology Department and local environmental organizations to conduct surveys (e.g. bird counts, macroinvertebrate surveys, botanical surveys, and/or endangered species surveys). To facilitate such surveys, the advisory council should work with landowners to gain access to the river corridor.
2. Through implementation of the Scenic Rivers Stewardship Program, the advisory council should encourage landowners to manage river-bordering land in such a manner as to maintain or enhance wildlife habitat and biodiversity. The following guidelines are recommended for the protection of wildlife values:
 - a. Maintain or establish a riparian buffer of naturally occurring vegetation at least 100 feet in width measuring from the ordinary high water mark. It is recommended that the riparian habitat buffer include the natural floodplain and the adjacent

bluff or encompass a 100 to 300 foot-wide zone along the banks of the river. The wider the buffer, the more benefits to wildlife, especially larger animal species.

- b. Timber management can occur within the riparian habitat corridor but should be designed to promote wildlife habitat and diversity with



assistance from a wildlife biologist or similar qualified professional. For example:

- Leave some groups of mature mast-producing trees such as oak, hickory, and dogwood.
 - Maintain stands of trees in a variety of size classes and ages.
 - Leave snags and old trees that provide hollow dens and cavities.
 - Provide wildlife travel corridors to connect tree stands that are separated by clearings.
 - Use prescribed burning to remove thick undergrowth, promote growth of valuable wildlife food such as legumes and hardwood sprouts, and perpetuate fire-dependent species.
 - Provide for the special habitat needs of sensitive species located in the area.
- c. Uplands adjacent to riparian habitats should be managed in a manner that sustains riparian habitat values.
 - d. Landowners should maintain the mixed or hardwood forest stands and other natural habitats that are native to the river corridor.

The native habitats should not be converted to short rotation monoculture forest stands, agricultural fields, or other intensive land uses.

- e. Intensively managed pine plantations and agricultural land should be irregular in shape and divided and interspersed with natural habitats.
 - f. Landowners with forested or woodland lots in the river corridor can enhance wildlife diversity on their property by maintaining an understory of native herbaceous and shrub plants, a multi-layered tree canopy, diverse tree sizes, and some standing dead snags and fallen trees.
 - g. Maintain large, contiguous blocks of natural habitats and avoid habitat fragmentation that can be caused by permanent land clearing. Enhance the connections between existing natural habitat blocks, particularly to those that are isolated, by establishing forest stands or habitat corridors.
 - h. Riparian areas that have been devegetated and degraded should be restored by reestablishing the naturally occurring vegetation, particularly where restoration can enhance connectivity between adjacent riparian habitats. Vegetated riparian buffers play an important role in providing natural strips to aid in the movement of wildlife along the river corridor. In addition, vegetated buffers help control water quality problems and fisheries habitat degradation associated with erosion and stormwater runoff, and they maintain the scenic character of the river corridor.
 - i. Landowners should reforest idle/marginal agricultural lands and harvested timberlands. Reforestation may be accomplished through natural regeneration or planting a variety of native species.
 - j. Fences or barriers which create a hindrance to the movement of wildlife should not be constructed in the riparian corridor.
 - k. The use of recreational vehicles in the river corridor should be controlled and managed to avoid degradation caused by the destruction of vegetation, erosion of soil, and disturbance of wildlife.
3. The advisory council should work with landowners to maintain the natural topography and

hydrological character of the Lynches River corridor.

4. The advisory council should sponsor informational seminars on wildlife/habitat management. The seminars should stress the value of the riparian zone, including wetlands, as wildlife habitat. The council should seek corporate and governmental partners to provide financial support and technical expertise for the seminars. (In Progress)
5. The advisory council should encourage landowners to participate in the Forest Stewardship Program, a landowner assistance program administered by the SC Forestry Commission, the DNR, and the US Natural Resources Conservation Service. Through this program, landowners with more than ten acres of land can utilize free technical assistance in developing a land management plan. This plan may be tailored for wildlife management. Once the land management plan is approved by the SC Forestry Commission, the landowner may be eligible for cost-sharing assistance in implementing the plan. (Ongoing)
6. The advisory council should look into beaver management and educate landowners on the options available to them for beaver control.

Maintaining Aesthetic Appeal/Scenic Values

A common reason given by riparian landowners and river users for getting involved in the Lynches Scenic River Project is “to keep the river scenic” or “to keep the river the way it is.” They are interested in maintaining the resource in an unspoiled, undeveloped, or natural state in order to preserve its aesthetic appeal or beauty. Unfortunately, the aesthetic appeal of a river is very difficult to evaluate because as the old cliché reminds us: “Beauty is in the eye of the beholder.” And the beholder may have difficulty describing what he/she finds appealing and why.

What makes a river aesthetically pleasing? Is it the sights, sounds, smells, tastes, touches, or a unique combination of stimuli to the senses? In developing management recommendations for maintaining the river’s scenic appeal, the advisory council delved into these questions.

Management Goal:

An integral component of the rural landscape of the Pee Dee region of South Carolina, the Lynches River

is relatively undeveloped and wild in nature. The natural character of the river enhances its aesthetic appeal. Noteworthy features include numerous riverside bluffs, the wooded shoreline, pastoral scenery, long stretches of contiguous wetlands, and diverse plant and animal life. A primary goal of the Lynches Scenic River Project is to maintain and/or enhance the aesthetic appeal and scenic values of the river.

Issues:

The advisory council identified a single, major issue that must be dealt with in order to attain the aforementioned management goal:

- Due to the subjective nature of defining aesthetic/scenic values, it is very difficult to manage the river and surrounding lands for the protection of these values.

Opportunities:

There is interest at the state level in developing an aesthetic standard for South Carolina’s rivers. The Lynches River would be an excellent case-study for this statewide project.

Recommendations:

1. The advisory council, with participation from the Lynches River community, should participate in the proposed joint study between the South Carolina Scenic Rivers Program and Clemson University’s Strom Thurmond Institute to develop an aesthetic standard for the state’s rivers. The methodology for the study will involve a three-step process. First, the council will inventory the visual resources of the river through photography. The next step will be to define the quality of the visual resource. Finally, the council will develop an aesthetic standard for the river based on community values. Utilizing the findings of this study, the advisory council will be better equipped to manage the river for aesthetic considerations.
2. The advisory council should identify specific locations on the river (points, stretches) with outstanding aesthetic appeal. These locations should be a top priority for protection through the Scenic Rivers Stewardship Program. (In Progress)
3. The advisory council should identify degraded areas for restoration of scenic values through landscaping, revegetation, establishment of wooded buffers, and/or other appropriate measures.

(In Progress)

4. Through implementation of the Scenic Rivers Stewardship Program, the advisory council should encourage all landowners to uphold a certain aesthetic standard and manage river-bordering land in such a manner as to maintain or enhance scenic values. The following guidelines are recommended for protection of scenic values:
 - a. Maintain or establish a riparian buffer of native vegetation at least 100 feet in width, measuring from the ordinary high water mark. Timber management can occur within the aesthetic buffer area but should be managed similar to a streamside management zone as described in the publication, *South Carolina’s Best Management Practices for Forestry*. (NOTE: The South Carolina Scenic Rivers Program recommends that the 50 feet adjacent to the river be left undisturbed to protect scenic quality.)
 - b. Pastoral scenery such as fields and pastures may add to the aesthetic appeal of the river. It is not necessary to establish a buffer for the protection of scenic values between such areas and the river. However, it is necessary to address the potential impacts of these areas on other resource values such as water quality.
 - c. Openings or thinnings in the aesthetic buffer to allow for a view of particular features or scenes should be established by selectively thinning underbrush, shrubs, and low-hanging limbs. Cutting and felling trees should be avoided when attempting to create views.
 - d. New structures, buildings, and developments should be set back at least 100 feet from the ordinary high water mark. In addition, consider setting back existing, readily movable structures and miscellaneous property from the riverbank (examples: small outbuildings, vehicles, equipment, discarded items/junk).
 - e. The exterior design and height of buildings and other structures should be compatible with and unobtrusive to the scenic, natural, and cultural qualities of the river corridor.
 - f. Signage should be allowed only when necessary to provide information for the safety and welfare of visitors and for awareness and protection of natural, historical, or cultural features of the corridor. All signs should be designed to be unobtrusive and blend with the surroundings. Commercial signs should be

prohibited and procedures for the removal of existing signage should be provided.

- g. Fences or barriers should not visually or physically obstruct natural or aesthetic features.
 - h. Docks, landings, and bulkheads require state and federal permits to be constructed in navigable rivers. Docks and landings should be designed to be compatible with and unobtrusive to the scenic qualities of the river corridor. Construction of bulkheads should be avoided unless a substantiated need to prevent erosion is demonstrated and no feasible alternative exists.
 - i. Restore the scenic quality of over-utilized and abused areas in the scenic river corridor by landscaping and revegetating eroded and abused areas, planting additional wooded buffers in areas where the buffer is thin, and by controlling access and specific uses (e.g. livestock, off-road-vehicles, heavy recreational use) that are causing degradation.
 - j. Sub-divided property developments should hold an undeveloped riparian zone in common to serve as a buffer and to provide access to the river for its residents.
5. The advisory council should identify the property owners for the land immediately upstream of the US 15 bridge crossing. These property owners should be added to the project mailing list. Further, the council should work with these landowners to protect the upstream view from the US 15 boat landing.
 6. The advisory council should work with the SC Department of Transportation to facilitate painting of the bridge at the Florence County Road 55 river crossing.
 7. For aesthetic considerations, all pipe discharges to the river should be located under the surface of the water. In addition, diffuser pipes are recommended to allow more rapid diffusion of colored wastewater.
 8. Excess turbidity is an aesthetic as well as a water quality concern. To prevent turbidity, the council should work with river-bordering landowners to implement voluntary best management practices as outlined in the water quality recommendations.

Recreation and Public Access

The Lynches River corridor provides numerous recreational opportunities from backcountry canoeing to fishing to nature photography. In developing a long-term management strategy, the Lynches River Advisory Council assessed current recreational use of the river; located and determined the condition of public access points; and identified contemporary recreation-related issues.



The advisory council also looked to the future. The designation of the Lynches as a State Scenic River raises the statewide profile of the river as a recreational resource. Furthermore, with the growth of nature-based tourism in South Carolina and the United States, a river such as the Lynches is certain to attract increased recreational use. The council tried to proactively address recreation-related issues through the management plan.

Management Goal:

The Lynches River is a public resource characterized by outstanding recreational values. As a State Scenic River, the Lynches should be reasonably accessible and navigable along its entire course to provide for the recreational use and enjoyment of private landowners and the general public. The Lynches River Advisory Council advocates continued use of the river for fishing, swimming, boating/canoeing, birdwatching, nature study, photography, and hunting/trapping. The council also encourages increased nonconsumptive use of the river for activities such as boating/canoeing and nature study. To foster a new generation that appreciates and respects the river and its resources, a special effort should be made to educate young people through hands-on activities including recreational pursuits. While encouraging recreational use of the river, the advisory council stresses the vital importance of managing that recreational use to prevent overcrowding, abuse of private property, or negative impacts on the river's outstanding natural, scenic, and cultural/historic resources.



Advisory council members Tom Goski and Mickey McDowell enjoy a canoe trip on the Lynches Scenic River.

Issues:

The advisory council identified five major issues that must be dealt with in order to attain the aforementioned management goal:

- There are four official public access sites on the Lynches River: US 15 boat landing, US 401 boat landing, Lee State Natural Area, and Lynches River County Park. Private landowners currently allow access to the river at old Field's Bridge, US 76, and SC 403. In general, access is adequate on the upper 33 miles of the scenic segment from US 15 to SC 403. Access is much more limited on the lower 20 miles from SC 403 to Lynches River County Park, especially with the 1995 closing of access at Florence County Road 55.
- The US 15 boat landing is the starting point for the 54-mile Lynches Scenic River. As such, the landing should be clean and picturesque.
- Litter is a problem on the Lynches River, especially at public access sites.
- Depending on the water level, navigation can be somewhat difficult for small jonboats and canoes due to fallen trees and other debris.
- The unpatrolled solitude of the remote riverfront affords the perfect opportunity for illicit activities such as trespassing, vandalism, underage drinking, and drug trafficking.

Opportunities:

The scenic segment of the Lynches River is anchored by two parks. Lee State Natural Area is located on the upper end of the scenic stretch in Lee County. Lynches River County Park is located approximately 50 miles downstream in Florence County. The parks provide access to the river. Traditionally, however, park activities have not focused on the river and its resources. Instead, high ground in the parks has been developed for a

variety of recreational activities including camping, equestrian use, pool swimming, and picnicking. Lynches River County Park does have a riverside picnic area and a short nature trail along the river. Fishing is a popular river activity at Lee State Natural Area.

The Lynches Scenic River Project provides an ideal opportunity for the local citizens to work with SCPRT and Florence County to promote recreational use of the Lynches River and to educate the public about the valuable natural, scenic, and cultural/historic resources of the river corridor. Largely as a result of the project, SCPRT re-evaluated the mission of Lee State Natural Area. The mission was modified to focus on the river. When Florence County assumed operations at Lynches River County Park, They emphasized the natural river environment. This continues to be evident in their ongoing park improvements.

Recommendations:

To address public access issues:

1. The access point located at the SC 403 road crossing is a key location on the scenic segment. Below SC 403, access to the river is limited. The landing is a popular spot for fishing, launching boats, and enjoying the river. The Lynches River Advisory Council encourages the landowner, Sardis Baptist Church, to keep this site open for public use. The council should work with the church to identify a local group to adopt the landing for litter control. In addition, the council should work with DNR Law Enforcement and Florence County officials to patrol the landing on a regular basis in an effort to limit illegal and/or undesirable activities. (Implemented in 1999; The advisory council co-adopted the landing with Sardis Baptist Church)
2. The advisory council should work with landowners to facilitate public use of existing private boat landings through mutual agreements. The users would need to be educated about their role in keeping the river clean and the need to respect private property. (In Progress)
3. The advisory council should work with the respective county councils to improve parking at the public access sites.
4. The Lynches River Advisory Council should work with Lee County, the City of Bishopville, local business sponsors, and/or local civic groups to improve and maintain the US 15 boat landing. Possible improvements might include gravel for

the parking lot, establishment of ground cover, planting of native vegetation (e.g. to line the entrance road), picnic tables, and a sign denoting the start of the scenic segment. (In Progress)

5. The advisory council should work with the DNR and SCPRT to develop and produce a brochure detailing public access to the Lynches River and describing recreational opportunities in the river corridor. (In Progress)

To address the litter problem:

6. Trash receptacles should be placed at all public access areas and maintained on a regular basis. To the extent possible, the trash receptacles should be designed and located to minimize abuse such as the disposal of household waste. The council should work with local governments and civic/environmental organizations to implement this recommendation.
7. An illegal trash dump has been identified on the road leading into the old Field's Bridge landing. The council should work with Lee County to clean up this site and keep it free from litter/debris.
8. The Lynches River Advisory Council should work with DNR's new Adopt-A-Landing program to identify local citizen groups (e.g. local businesses, school groups, scouts, or similar groups) to adopt public access areas and keep them clean on a year-round basis. The council should recognize participating groups through listing in the project newsletter and other special awards. To serve as a leader in the fight against litter, the advisory council should adopt a public access area and clean it at least three times each year. In conjunction with recommendation number 1 under public access, the advisory council should adopt the SC 403 landing. (Implemented in 1999)
9. The advisory council should encourage Plus-One boating among recreational users of the Lynches River through distribution of existing educational materials to landowners and river users. The idea behind Plus-One boating is for the recreator to bring back all the trash he/she generates, plus-one. In the long term, this should eliminate the need for trash receptacles at the landings.

To address navigation issues:

10. The scenic segment of the Lynches River should be navigable for canoes and small, motorized boats. The advisory council should identify and prioritize river stretches where navigation is



The US 15 boat landing, an area slated for improvement under the management plan.

difficult and work with river user groups to maintain the navigability of the river.

11. The advisory council should work with DNR to establish a no-wake zone on the scenic segment. This is especially important during the fish spawning season of April through June. The council should work through the media and other means to educate boaters about the existence and benefits of the no wake zone. The council should also work with law enforcement officials to ensure enforcement.
12. For safety purposes and to minimize streambank erosion, the advisory council will continue to discuss a motor size limit for boats on the scenic segment (between US 15 and the eastern boundary of Lynches River County Park) of 10 horsepower. The council will seek to build consensus on the council and within the community on this issue.

To address law enforcement issues:

13. The advisory council should seek appointment of a DNR Conservation Officer to serve in an ex-officio capacity on the council and to serve as a liaison with state and local law enforcement agencies.
14. The advisory council should work with state and local law enforcement officials to keep the river a clean and safe place through increased patrolling of public access areas and the river.

Parks:

15. The Lynches River Advisory Council recognizes Lee State Natural Area and Lynches River County Park as valuable assets to the Lynches Scenic River. The council strongly endorses the South Carolina Department of Parks, Recreation, and Tourism's plans to modify the mission of Lee State Natural Area to reflect the dominant

importance of the river and its resources. Further, the council strongly supports implementation of the Lee State Park Improvement Plan, especially the following river-related elements:

- [SCPRT] continuing to work with the Lynch River Advisory Council to coordinate activities, preservation efforts, and programming;
- Establishment of a “river trail” with acquisition/development of overnight camp sites and canoe access points; (In Progress)
- Construction of overnight, primitive canoe camp sites in the park;
- Development of maps, signage, and information for the river trail; (In Progress)
- Improvement of road access to the river with better drainage and surface;
- Establishment of a new boat landing and parking on the river;
- Promotion of eco-tourism opportunities on the Lynch River;

- Establishment of an active program to teach river skills and river ecology;
- Development of a river pavilion for educational and recreational programs;
- Acquisition of bluffs across from the park to provide year-round access to the river, view protection, and access from the Town of Bishopville; and
- Protection of other critical areas along the river (especially the shoreline opposite the park) through ownership, easement, or other cost-effective methods .

16. SCPRT should review the current mission of Lynch River State Park to determine whether or not it would be appropriate to focus more on the Lynch River. (Note: Operation of Lynch River County Park was transferred to Florence County in 1999. The advisory council and Florence County Recreation Department are working together to focus attention on the Lynch River.)







IMPLEMENTATION

With the publication of this management plan, the initial phase of the Lynches Scenic River Project draws to a close. The development of the plan is a great accomplishment for the Lynches River Advisory Council and the river community. Already, there have been numerous positive outcomes from the community-based planning process. For example, through the advisory council, the local community has been able to define river-related issues and build consensus on means to deal with those issues. The planning process has raised awareness of and appreciation for the river. It has also fostered partnerships among landowners, river users, industries, and government.

Containing 65 management recommendations, *The Lynches Scenic River Management Plan* serves as a blueprint for sound river management. The next step is to put the plan into action. Through implementation, the river community can transform the ideas in the plan into tangible products such as improved water quality; vegetated riparian buffers in currently degraded areas; litter-free boat landings; and an annual river festival to name just a few.

During 1997, the Lynches River Advisory Council will prioritize the recommendations for implementation based on several factors including the immediacy of the need; the potential benefits to the resource and/or the river community; and the availability of funding or other resources. The process of developing priorities and implementing the plan will be open to public participation. Once the priorities are established, the advisory council will present the plan and implementation strategy to the river community at two public meetings and in other forums such as presentations to county councils.

Obviously, not all of the recommendations can be implemented at once. In some cases, implementation will depend on sufficient funding, the establishment of cooperative relationships, and/or political decision making. Other recommendations can be implemented by people and organizations such as landowners, river users, industries, civic/environmental groups,

or governmental entities who simply decide that the recommendations provide the proper way to manage the river.

It is important to remember that the management plan is not a document – rather, it is a dynamic process. On a regular basis, the advisory council will re-visit and update the plan to reflect the current situation. With continuing input and support from the river community, this plan can be responsive to change. True success will require the dedication of the local people for years to come, even beyond the present generation.

Following my father's death, I was given the opportunity to fill his unexpired term on the advisory council. I had no idea all the facets that the council was addressing, but knew how strongly my father believed in it. Having served on the council for more than a year has rekindled my appreciation for the river and my awareness of river stewardship, land use management, and long-term protection of the river.

The river and land surrounding it are gifts from God, therefore, they should be treated with care. As a landowner bordering the river, it is my responsibility to see that these resources are protected.

I challenge my fellow landowners to be good stewards: preserving and protecting the land, valuing and respecting it for the gift that it is, and loving and enjoying it for years to come.

— Anne Carraway,
Sumter County landowner

APPENDIX A:

A SUMMARY OF WATER QUALITY INFORMATION FOR THE LYNCHES SCENIC RIVER (1997)

Water Quality Monitoring

SCDHEC maintains six water quality monitoring stations on the scenic segment of the Lynches River (see Figure 3, page 16). Water samples are collected once per month at primary stations including US 15, US 401, SC 403, Florence County Road 55, and Sparrow Swamp. Sampling is conducted from May through October at Cousar Branch, a tributary near Bishopville. Data are also available for a currently inactive station located at the I-20 crossing of the Lynches River.

In addition to the monitoring stations on the scenic segment, there are upstream and downstream sampling sites for which information is available. Samples are collected monthly at Road 15 near Bethune approximately 12 miles upstream from US 15. Monthly samples are also collected at US 52 about three miles downstream of the confluence of Sparrow Swamp and the Lynches River.

The historical data collected by SCDHEC provides a picture of the river's "average" physical condition and chemical concentrations. Each discrete sample renders a snapshot of water quality in a particular location at a specific point in time. By compiling and analyzing several years' worth of data, SCDHEC can identify persistent water quality problems and assess changes (declines or improvements) over time.

It is important to note that the sampling method, frequency, and locations utilized by SCDHEC may not detect acute water quality problems caused by temporary or intermittent sources such as a sewage treatment plant malfunction, industrial discharge that is not in compliance with permit limits, or rainfall runoff from a farm field or recently logged site. Routine sampling rarely coincides with the time of the release for a temporary source.

Data Summary

On a monthly basis, SCDHEC monitors the primary stations for basic water quality parameters

including temperature, fecal coliform bacteria, dissolved oxygen (DO), five-day biochemical oxygen demand (BOD₅), pH, turbidity, and nutrients (nitrogen and phosphorus). Cousar Branch, a secondary station, is monitored for these during the summer months. The primary stations are sampled for total organic carbon and metals on a quarterly basis. SCDHEC does not sample regularly for other pollutants such as pesticides and organic compounds due to the high cost of analysis.

The remainder of this section provides a summary of the available water quality data by parameter. Sources for the data include a draft for review of *Watershed Water Quality Management Strategy for the Pee Dee Basin* (SCDHEC, 1996a) and the United States Environmental Protection Agency's (USEPA) Storet data system. References utilized in data interpretation included *Water Classifications and Standards, Regulation 61-68* (SCDHEC, 1993), *Summary of Selected Water Quality Parameter Concentrations in South Carolina Water and Sediments, January 1, 1991- December 31, 1995* (SCDHEC, 1996b), and USEPA's *Quality Criteria for Water*.

Fecal coliform bacteria:

Normally harmless to humans, fecal coliform bacteria are found in the intestinal tracts of all warm-blooded animals including humans, pets, livestock, poultry, and wildlife. The presence of these bacteria in a water sample indicates the potential presence of untreated sewage (human and/or animal waste) which may contain disease-causing bacteria and/or viruses.

The state standard for fecal coliform bacteria in Freshwaters of South Carolina is a geometric mean of 200/100 milliliters (ml) of sample based on five consecutive samples during a 30-day period. The existing data cannot be directly compared to the 200/100 ml standard because SCDHEC collects only one sample per month as opposed to five samples per month. Not more than 10 percent of the samples collected during a 30-day period should exceed 400/100 ml.

To determine if recreational uses are supported at a given site, SCDHEC looks at fecal coliform bacteria levels in the water over a five-year period. When bacteria levels are too high (>400/100 ml) in more than 25 percent of the samples, then the water is deemed not suitable for swimming and fishing. The water is “partially supporting” of recreational uses if bacteria levels are too high in 11-25 percent of the samples. Table A-1 summarizes fecal coliform bacteria data for the Lynches Scenic River.

Based on this method of use assessment, the main stem of the Lynches River from Road 15 near Bethune to the US 52 crossing in Florence County is suitable for fishing and swimming. This is not meant to imply that this section of the river or any particular location is always clean enough for recreational use. There may be occasions when the water is not suitable for swimming or fishing such as following a heavy rain. In addition, recreational activities (especially

swimming) should be restricted in the immediate vicinity of point source discharges due to the potential for a pollution event.

From 1990 through 1994, there were scattered exceedances of the bacteria standard along the entire length of the river, especially in the upper stretch from Road 15 near Bethune to US 401 and at Sparrow Swamp, a major tributary to the Lynches River at the lower end of the scenic segment. SCDHEC has identified a statistically significant increasing trend in bacteria levels at Sparrow Swamp.

Relatively high bacteria levels (>200/100 ml) have been measured at all stations in the last two to three years. These levels are higher than would be expected in a pristine, natural environment where the only source for bacteria is wildlife. Further research is required to pinpoint sources for the bacteria.

Table A-1: Fecal Coliform Bacteria Levels in the Lynches Scenic River

Monitoring Site	1990-1994*			Recreational Use Support	1980-1994* Trend	1/95-4/96**			
	N	EXC	%			N	EXC	Range	Mean
Road 15 (upstream)	59	3	5	Supports	Improving	16	0	31-210	64
US 15	53	1	2	Supports		16	1	16-450	70
Cousar Branch	24	4	17	Partial Support	Improving	6	2	65-1000	175
I-20	12	0	0	Supports		Inactive Station			
US 401	13	1	8	Supports		15	1	20-400	79
SC 403	44	0	0	Supports		16	0	27-220	72
Road 55	14	0	0	Supports		16	0	30-290	79
Sparrow Swamp	61	2	3	Supports	Worsening	16	0	67-330	130
US 52 (downstream)	60	0	0	Supports		16	0	20-360	57

N = Number of samples collected

EXC = Number of samples exceeding the fecal coliform bacteria standard of 400/100 ml

% = Percentage of samples exceeding the fecal coliform bacteria standard of 400/100 ml

Range = the variation between minimum and maximum bacteria levels measured at a given site from January 1995 through April 1996

Mean = the geometric mean (calculated as the *n*th root of a product of *n* factors) for bacteria levels measured at a given site from January 1995 through April 1996

*Information taken from *Watershed Water Quality Management Strategy: Pee Dee Basin, Draft for Review* (SCDHEC, 1996)

**Information derived from STORET data for January 1995 - April 1996

Cousar Branch, a tributary to the Lynches near Bishopville, is only “partially supporting” of recreational uses. This means that at least ten percent of the time (or one in ten days), the water is not suitable for fishing and swimming.

Seventeen percent of the water samples collected at Cousar Branch from January 1990 through December 1994 had bacteria levels in excess of the state standard. High bacteria levels have been measured at this station during recent months. From May through October 1995, two of six samples exceeded the state standard. On October 4, 1995, SCDHEC measured a high bacteria level of 1000/100 ml. This high measurement coincides with an afternoon thunderstorm of 1.88 inches in Bishopville on the preceding day and points to the possibility of nonpoint source contributions and/or a release of untreated sewage from a point source.

A study of data collected between 1980 and 1994 indicates that bacteria levels are decreasing at Cousar Branch. This trend suggests improving conditions. However, water quality has not improved to the point that this tributary consistently supports fishing and swimming.

Dissolved Oxygen and Biochemical Oxygen Demand:

To determine if aquatic life uses (survival and reproduction of aquatic plants and animals) are supported at a given site, SCDHEC looks at several parameters including dissolved oxygen (DO), five-day biochemical oxygen demand (BOD_5), pH, and toxicant levels. Oxygen is essential to the survival of aquatic organisms. If the amount of oxygen in the water falls below the minimum requirements, aquatic organisms or their eggs and larvae may die. A severe example is a fish kill.

Dissolved oxygen varies greatly due to natural phenomena. For example, water holds less oxygen at higher temperatures so DO levels are generally lower during the summer months. Some types of pollution can also cause declines in DO. The dissolved oxygen standard for Freshwaters in South Carolina is a daily average not less than 5 mg/l with a low of 4 mg/l. When DO levels are too low (< 5 mg/l) in more than 25 percent of the samples, then the water does not support aquatic life uses. The water is “partially supporting” of aquatic life uses if DO levels are too low in 11-25 percent of the samples. Table A-2 summarizes DO data for the Lynches Scenic River.

There have been scattered exceedances of the

DO standard at Road 15 near Bethune, US 15, I-20, US 401, Sparrow Swamp, and US 52. It is very difficult to assess the impact of these excursions on the aquatic community. Depending on the extent of the excursions, low DO levels can result in minor or significant stress for the aquatic community. A single month with extremely low DO could represent a greater threat to the aquatic plants and animals than several months with short-term, minor excursions.

Biochemical oxygen demand (BOD_5) is a measure of the amount of dissolved oxygen needed by aquatic organisms for respiration and decomposition of organic matter. High BOD_5 can lead to declines in dissolved oxygen. Aquatic life uses are threatened at US 15 and SC 403 due to statistically significant increasing trends in BOD_5 .

pH:

pH is a measure of the acidity of water. The pH scale ranges from 0 to 14 standard units. A pH of 7 is considered neutral, with values less than 7 being acidic, and values greater than 7 being basic. The state standard for pH in Freshwaters of South Carolina is between 6.0 to 8.5 standard units.

The degree of acidity of the water reflects the carbon dioxide content as well as the presence of organic acids and pollution. The higher the pH of a stream, the richer the waters generally are in carbonates, bicarbonates, and associated salts. Such streams support more abundant aquatic life than streams with acid waters. Table A-3 summarizes pH data for the Lynches Scenic River.

Aquatic life uses are threatened by low pH levels at US 15 and Cousar Branch. There have been numerous violations of the pH standard at both sites. From 1990 through 1994, 14 of 52 samples from US 15 (26 percent) exceeded the standard. More than 40 percent of the samples collected at Cousar Branch from 1990 through 1994 were in violation of the pH standard. Low pH levels have been measured at both stations over the past two years. An increasing trend in pH suggests improving conditions at US 15 while pH levels are decreasing at Cousar Branch.

There have been scattered violations of the pH standard at I-20, Sparrow Swamp, and US 52. Each of these stations experienced a significant decline in pH levels between 1980 and 1994. It is difficult to assess the impact of the pH exceedances on the aquatic life of the Lynches River. The low pH levels measured in the river are typical of South Carolina's

Table A-2: Dissolved Oxygen Levels in the Lynches Scenic River

Monitoring Site	1990-1994*			1980-1994* Trend	1/95-4/96**			
	N	EXC	%		N	EXC	Range	Avg
Road 15 (upstream)	59	1	2	Worsening	16	0	6.7 - 12.1	9.3
US 15	52	2	4		16	1	6.1 - 10.6	8.5
Cousar Branch	24	0	0	Improving	6	2	7.1 - 8.0	7.6
I-20	12	2	17		Inactive Station			
US 401	14	0	0		16	1	4.7 - 10.5	8.3
SC 403	44	0	0		16	0	6.1 - 12.3	8.6
Road 55	14	0	0		16	0	7.0 - 12.7	8.7
Sparrow Swamp	61	4	7		16	0	3.3 - 10.8	7.8
US 52 (downstream)	60	2	3	Worsening	16	0	6.5 - 12.5	8.3

N = Number of samples collected

EXC = Number of samples not meeting the dissolved oxygen standard of 5 milligrams/ liter

%= Percentage of samples not meeting the dissolved oxygen standard of 5 milligrams/ liter

Range = the variation between minimum and maximum dissolved oxygen levels measured at a given site from January 1995 through April 1996

Avg = the arithmetic mean for dissolved oxygen levels measured at a given site from January 1995 through April 1996

*Information taken from *Watershed Water Quality Management Strategy: Pee Dee Basin, Draft for Review* (SCDHEC, 1996)

**Information derived from STORET data for January 1995 - April 1996

coastal plain swamps and blackwater rivers. At this point, it is uncertain whether the low pH levels are attributable to natural or other sources.

Heavy Metals

Metals are transition elements that are typically flexible and malleable with high tensile strength. Heavy metals are “heavy” because they have a greater density than other metals. Examples include cadmium, chromium, copper, lead, mercury, nickel, and zinc. Potential sources for heavy metals include atmospheric deposition, urban runoff, automobiles, industrial processes, and livestock waste. With regard to water quality, metals are of particular concern because they can be toxic to aquatic life with heavy, prolonged, or repeated doses. Metals may also bioaccumulate in fish tissue posing a health risk for humans who eat the fish.

Metals data are available for seven stations on the

Lynches River including Road 15, US 15, US 401, SC 403, Florence County Road 55, Sparrow Swamp, and US 52. No information is available for Cousar Branch or I-20. A review of the data from January 1990 through August 1996 reveals scattered exceedances of the state standards for zinc and copper. These standards are based on USEPA acute toxicity criteria. The standard for zinc in freshwater is a one-hour average of 65 micrograms per liter (µg/l). Exceedances of the zinc standard have occurred at Road 15, US 15, US 401, SC 403, and US 52. The standard for copper in freshwater is a one-hour average of 9.22 µg/l. Exceedances of the copper standard have occurred at Road 15, US 15, US 401, SC 403, Florence County Road 55, and US 52.

Zinc and copper levels are elevated in surface waters throughout the state. These levels do not appear to adversely affect fisheries which suggests

Table A-3: pH Levels in the Lynches Scenic River

Monitoring Site	1990-1994*			1980-1994* Trend	1/95-4/96**			
	N	EXC	%		N	EXC	Range	Avg
Road 15 (upstream)	59	2	3		16	1	5.8 - 7.2	6.8
US 15	52	14	26	Improving	16	4	5.2 - 7.3	6.4
Cousar Branch	24	10	42	Worsening	6	1	5.7 - 6.7	6.3
I-20	12	1	8	Worsening	Inactive Station			
US 401	14	0	0		16	0	6.0 - 7.4	6.7
SC 403	44	2	5		16	0	6.4 - 7.6	6.9
Road 55	14	1	7		16	0	6.4 - 7.5	6.8
Sparrow Swamp	61	0	0	Worsening	16	0	6.2 - 7.4	6.7
US 52 (downstream)	60	7	12	Worsening	16	0	6.2 - 7.4	6.8

N = Number of samples collected

EXC = Number of samples contravening the pH standard of 6.0 to 8.5 SU for Freshwaters of South Carolina

% = Percentage of samples contravening the pH standard of 6.0 to 8.5 SU milligrams/liter for Freshwaters of South Carolina

Range = the variation between minimum and maximum pH levels measured at a given site from January 1995 through April 1996

Avg = the arithmetic mean for pH levels measured at a given site from January 1995 through April 1996

*Information taken from *Watershed Water Quality Management Strategy: Pee Dee Basin, Draft for Review* (SCDHEC, 1996)

**Information derived from STORET data for January 1995 - April 1996

that the fish have adapted to this situation over time. To identify areas where zinc and copper are elevated in the water column above normal background concentrations, SCDHEC has calculated percentile values based on data from all monitoring sites statewide over a five-year period from 1990 through 1994. A metal concentration is considered “high” if it is in the top 10 percent of the pooled results (>90th percentile) and “very high” if it is in the top 5 percent of the pooled results (> 95th percentile). The percentiles are based on 20,585 sample values.

Aquatic life uses are threatened due to high zinc levels at Road 15, US 15, and SC 403 and very high zinc levels at US 52. Elevated levels of zinc have also been measured in the sediment at Sparrow Swamp. High copper levels threaten aquatic life uses at Road 15 and SC 403. In addition to high zinc and copper levels, a very high level of mercury (99th percentile)

was measured at SC 403 on August 8, 1995.

SCDHEC has recorded elevated mercury levels in fish taken from the Lynches River. Mercury contamination of fish is a common problem in waterbodies across South Carolina and the eastern United States. The source for the mercury is unknown although the prime suspect is air emissions.

When mercury enters the water, it settles to the bottom. If the mercury is in organic form, small fish and other aquatic life can absorb it from the water and sediment. The mercury accumulates in fish tissue. Bigger fish, such as bass, that eat other fish are more likely to have high mercury levels. There is a fish consumption advisory due to the high mercury levels.

Turbidity

Turbidity is a measure of the amount of solid material (e.g. organic matter, sediment) suspended in the water. High turbidity levels affect aquatic plants and animals. Suspended solids block light penetration which in turn affects photosynthesis. Other adverse impacts related to high turbidity include impaired respiration for fish and aquatic invertebrates, lowered reproduction levels, and reduced prey capture for sight-feeding species.

Chemicals such as some pesticides, phosphorus, and ammonium are transported with sediment in an adsorbed state. Changes in the aquatic environment can cause these chemicals to be released from the sediment.

There is not a state standard for turbidity in Freshwaters. Based on an analysis of 17,275 samples collected in Freshwaters of South Carolina from 1991 through 1995, the 90th percentile for turbidity is 32 nephelometric turbidity units (NTU). Turbidity levels in excess of 32 NTU should be considered high, and levels greater than 53 NTU should be considered very high.

Based on data from January 1980 through December 1994, turbidity levels are increasing in Cousar Branch and Sparrow Swamp, the two major tributaries to the Lynches Scenic River. Turbidity levels are also rising upstream from the scenic segment at Road 15 near Bethune and downstream at US 52. Based on more recent data, from January 1995 through August 1996, there have been high turbidity levels measured at Road 15 and US 15 and very high levels detected at Cousar Branch.

Nutrients

With regard to water quality, the term “nutrients” generally refers to nitrogen and phosphorus. Both nitrogen and phosphorus are required by aquatic plants for growth and reproduction. Maintaining natural, healthy, riparian wetlands results in a reduction of these nutrients in the river.

Phosphorus

Typically, phosphorus availability is the limiting factor for plant growth in freshwater systems. Potential sources for phosphorus include fertilizers as well as human and animal waste. When phosphorus is introduced to a river in excessive amounts, aquatic plant productivity may increase dramatically. This, in turn, results in the addition of organic material

to the system. As the organic matter decomposes, unpleasant odors are produced and the oxygen supply is depleted. Highly enriched waters also stimulate algae production leading to increased turbidity and color.

There is not a State Standard or USEPA criterion for phosphorus levels in Freshwaters. SCDHEC has analyzed the data from January 1980 to December 1994 to determine trends in total phosphorus levels in the Lynches River. Based on that analysis, phosphorus levels are declining at Road 15, Cousar Branch, I-20, Sparrow Swamp, and US 52. This signifies improving conditions. SCDHEC has also calculated percentile values for total phosphorus based on data from all monitoring sites statewide over a five-year period (17,865 samples) from 1990 through 1994. A total phosphorus concentration is considered “high” if it is in the top 10 percent of the pooled results (>90th percentile) and “very high” if it is in the top 5 percent of the pooled results (> 95th percentile). Applying these percentiles to data collected from January 1995 through August 1996, high phosphorus levels have been measured on two occasions at Road 15 upstream of the scenic segment and on one occasion at SC 403 near Sardis.

Nitrogen

Potential sources for nitrogen include fertilizers, human waste and animal waste. Similar to phosphorus, excess nitrogen stimulates algae and microbial growth in freshwater. Certain forms of nitrogen can be harmful to fish and/or humans. For example, very small concentrations of ammonia can be toxic to fish while nitrates in drinking water are harmful to human infants.

The State Standard for ammonia depends on the pH of the water as well as the water temperature. For all water samples collected from January 1995 through August 1996, the ammonia levels fall well below the State Standard.

Pesticides

SCDHEC does not sample water for pesticides on a routine basis. Pesticide scans have been conducted on sediment samples taken from the Lynches River at Road 15, Florence County Road 55, Sparrow Swamp, and US 52. Measurable levels of two DDT derivatives (O,P’DDD and P,P’DDT) have been detected in sediment at Sparrow Swamp. Although the use of DDT was banned in 1973, it is very persistent in the environment.

Conclusions

Based on data from SCDHEC’s monitoring stations, water quality in the Lynches River is relatively good. Recreational uses including swimming and fishing are fully supported along the main stem of the river from Road 15 near Bethune to US 52 south of Florence. At Cousar Branch, a tributary to the Lynches River near Bishopville, recreational uses

are only partially supported due to high levels of fecal coliform bacteria. Aquatic life uses are threatened at several locations along the river for a variety of reasons. Table A-4 summarizes recreational use support and aquatic life support for the Lynches Scenic River by monitoring site. For more information, see Section III, Resources of the Lynches River Corridor.

Table A-4: Recreational and Aquatic Life Use Support

Monitoring Site	Recreational Use Support	Aquatic Life Use Support	Reasons for Impairment of Aquatic Life Uses
Road 15 (upstream)	Supports	Threatened	Elevated copper and zinc; decreasing DO; increasing turbidity
US 15	Supports	Threatened	Low pH; increasing BOD ₅
Cousar Branch	Partial Support (elevated bacteria)	Threatened	Low DO; decreasing pH; increasing turbidity
I-20	Supports	Supports	
US 401	Supports	Supports	
SC 403	Supports	Threatened	Elevated copper and zinc; increasing BOD ₅
Road 55	Supports	Supports	
Sparrow Swamp	Threatened (increasing bacteria)	Threatened	Decreasing pH; increasing turbidity; zinc in sediment; DDT derivatives in sediment
US 52 (downstream)	Supports	Threatened	Elevated zinc; decreasing DO; increasing turbidity

APPENDIX B:

THE SCENIC RIVERS STEWARDSHIP PROGRAM

One of the primary goals of the South Carolina Scenic Rivers Program is to build and maintain a land ethic or stewardship among river users and riparian landowners – to instill or rekindle a set of values for land management that will result in the protection of river resources. The motivation for stewardship comes from familiarity and respect for the resource. The steward is convinced that his/her actions will benefit him/her, the resource, and future generations. A special program for riparian landowners along state-designated scenic rivers, the Scenic Rivers Stewardship Program consists of two components: education and wise land management.

Education/Landowner Contact

Through the Scenic Rivers Stewardship Program, landowners are provided basic information on their river with emphasis on the relationship between land/water use and the quality (short- and long-term) of the resource. Essential tools for the education/landowner contact component include river-specific slide shows, a fact sheet on the respective land management options, and a list of common sense measures or best management practices (BMPs) to protect river resources. For each state-designated scenic river, program staff develop a slide show that focuses on river-specific information such as outstanding and unique resources, river issues, and management plan recommendations. Each slide show also includes general information on land management options available to riparian landowners through the Scenic Rivers Stewardship Program. Project staff meet with riparian landowners one-on-one or in a small group setting to explain the program and how it could apply to the landowner's parcel(s).

Riparian Land Management

Once the landowner understands the function and values of the river, the next step is to select and implement a riparian land management strategy. This strategy may apply to all or a portion of a river-bordering parcel and/or to any parcel which falls within the river corridor. The width of the river corridor (measuring from the ordinary high water mark or the mean high water line on both sides of the river) is defined according to river classification: 300

to 500 feet for a natural river (Type I), 200 to 500 feet for a scenic river (Type II), and 100 to 500 feet for a recreational river (Type III). The Lynches River is a Type II State Scenic River.

To participate in the stewardship program, the landowner enters a land management agreement with the SC Scenic Rivers Program. The landowner may choose among four land management options: land registration, a memorandum of agreement, a conservation easement, or donation of land.

The Scenic Rivers Stewardship Program was designed to provide a continuum of land management options in terms of timeframe of commitment (one generation versus “in perpetuity”); degree of program involvement in land management (i.e., technical assistance, monitoring, etc.); and legal enforceability. Descriptions of the respective land management options follow:

- A. Land Registration: A landowner may choose to register river-bordering land or land within a defined river corridor in the Scenic Rivers Land Registry. Land registration involves a simple, written agreement between the landowner and the Scenic Rivers Program. See page 58 for an example of the land registration document.

Terms of Land Registration:

- The landowner agrees to manage land in concert with scenic river goals.
- The landowner promises to give notice of any change in land ownership, major change(s) in land use, or known threats to the resource.
- Responsibility for land management rests solely with the landowner.
- Project staff contact the landowner on an annual basis to answer any questions or obtain updates.
- Land registration is a voluntary and non-binding agreement (not legally enforceable).

Benefits to Landowner:

- The land registration agreement provides protection for the river and its resources while preserving the rights of the landowner.



Scenic Rivers Stewardship Program

Land Registration Agreement

The South Carolina Scenic Rivers Program is charged to protect unique and outstanding rivers. Through a cooperative, non-regulatory community planning approach, the program identifies and prioritizes river management needs and strives to protect resources including plant and animal life, wildlife habitat, wetlands, scenic views, geologic formations, recreation areas, and cultural or historic treasures. Riparian land management is an important element of river protection. The activities of each individual landowner can have positive or negative effects on river resources and, thereby, impact aesthetic and scenic qualities, wildlife habitats, and water quality.

As a landowner on the Scenic Lynches River, I recognize and accept the responsibility to be a good steward of my land and the river. To demonstrate my dedication to this purpose, I hereby register my river-bordering property in the South Carolina Scenic Rivers Stewardship Program.

By entering this cooperative, voluntary land management agreement, I will:

- * To the best of my ability, manage my land in such a manner as to protect the natural and scenic qualities of the river corridor;
- * Give notice to the SC Scenic Rivers Program of any change in land ownership or major change in land use;
- * Alert the SC Scenic Rivers Program to any known threats to the river and its resources;
- * Stay informed about the Lynches Scenic River Project; and
- * Try to participate in special events and activities sponsored by the Lynches Scenic River Project.

I understand that this agreement is completely voluntary and non-binding. Responsibility for wise management of my river-bordering land rests solely with me.

Landowner Date

SC Scenic Rivers Program Manager Date

- The landowner receives information on the project including invitations to special events and activities.
- The landowner is recognized by the SC Scenic Rivers Program with a certificate signed by the Executive Director of the Department of Natural Resources and Manager of the SC Scenic Rivers Program as well as listing in SC River News.

NOTE: There are no tax benefits associated with land registration due to the temporary and non-binding nature of the agreement. Registration is considered a temporary agreement because land ownership changes over time. In order to receive tax benefits, there must be a commitment to manage the land according to program goals in perpetuity.

- B. Memorandum of Agreement (MOA): A MOA, signed by a landowner and the Scenic Rivers Program, acts as a statement of intent. The MOA outlines recommended best management practices (BMPs) for implementation on river-bordering land. Based on his/her land use objectives, the landowner selects and implements the appropriate land management measures. The landowner may choose to manage for water quality, scenic values, wildlife, or a combination of resource values. Different sections of a parcel may be managed for different purposes. For example, a landowner may choose to manage one area for timber, one area for pasture, and another for wildlife. See pages 60 and 61 for an example of the memorandum of agreement.

Terms of the MOA:

- The MOA outlines land management guidelines and BMPs which are consistent with scenic river classification guidelines and management plan recommendations. The landowner agrees to manage his/her property in accordance with these BMPs.
- To some degree, land management guidelines/BMPs can be tailored for the specific situation/property.
- The landowner promises to give notice of any change in land ownership, major change in land use, or known threats to the resource.

- Responsibility for land management rests solely with the landowner.
- Project staff are available to provide technical guidance.
- Project staff meet with the landowner on an annual basis (may include a site visit).
- The agreement is voluntary and non-binding (not legally enforceable).
- The agreement is not binding on successive landowners.
- The agreement may be terminated with a 30-day written notice from the landowner.

Benefits to Landowner:

- The MOA provides protection for the river and its resources while preserving the rights of the landowner.
- The landowner receives technical guidance on land management from resource professionals.
- The landowner receives information on the project including invitations to special events and activities.
- The landowner is recognized by the SC Scenic Rivers Program with a certificate signed by and the Executive Director of the Department of Natural Resources as well as listing in SC River News.

NOTE: There are no tax benefits due to the temporary nature of the agreement. The memorandum of agreement is considered a temporary agreement because land ownership changes over time. In order to receive tax benefits, there must be a commitment to manage the land according to program goals in perpetuity.

- C. Conservation Easement: A conservation easement is a legally recorded and permanent land management agreement between the landowner and the SC Scenic Rivers Program. Similar to the MOA, the conservation easement is based on management guidelines and recommended best management practices; however, the easement agreement is binding and permanent. The land management guidelines are based on the level of development in the river corridor.



Scenic Rivers Stewardship Program

Memorandum of Agreement

The South Carolina Scenic Rivers Program is charged to protect unique and outstanding rivers. Through a cooperative, non-regulatory community planning approach, the program identifies and prioritizes river management needs and strives to protect resources including plant and animal life, wildlife habitat, wetlands, scenic views, geologic formations, recreation areas, and cultural or historic treasures. Riparian land management is an important element of river protection. The activities of each individual landowner can have positive or negative effects on river resources and, thereby, impact aesthetic and scenic qualities, wildlife habitats, and water quality.

As a landowner on the Scenic Lynches River, I recognize and accept the responsibility to be a good steward of my land and the river. To demonstrate my dedication to this purpose, I hereby register my river-bordering property in the South Carolina Scenic Rivers Stewardship Program.

By entering this cooperative, voluntary land management agreement, I will:

- * To the best of my ability, manage my land in such a manner as to protect the natural and scenic qualities of the river corridor;
- * Follow the land management guidelines and recommended best management practices set forth in this memorandum of agreement;
- * Give notice to the SC Scenic Rivers Program of any change in land ownership or major change in land use;
- * Alert the SC Scenic Rivers Program to any known threats to the river and its resources;
- * Stay informed about the Lynches Scenic River Project;
- * Try to participate in special events and activities sponsored by the Lynches Scenic River Project; and
- * Provide 30 days written notice in the event that I decide to terminate this agreement for any reason.

I understand that this agreement is completely voluntary and non-binding. Responsibility for wise management of my river-bordering land rests solely with me.

Landowner

Date

SC Scenic Rivers Program Manager

Date

(Further details of agreement on back)

DIRECTIONS: Please place an "X" beside all management practices that apply to you and your plans for river resource protection. If applicable, fill in the blanks to specify the width of your scenic buffer or riparian wildlife corridor. Then, using the space provided and additional sheets of paper, if necessary, write a brief explanation to clarify your specific management intentions.

_____ **Water quality**

For the protection of water quality, I will maintain a minimum buffer of 40 feet, and I plan to implement BMPs associated with the following land uses:

- Timber management
- Row crop production
- Livestock production (pasture)
- Livestock/poultry production (confined animal facilities)
- Urban/residential development

_____ **Scenic values**

For the protection of scenic values, I will do the following:

- maintain a scenic buffer of _____ feet in width
- leave at least 50 feet of the buffer adjacent to the river undisturbed
- set back new or existing structures and property _____ feet from the riverbank
- design building exteriors to be complimentary/unobtrusive to scenic river qualities
- remove signage
- control access and uses that degrade riverbanks and riparian areas
- restore degraded areas

_____ **Wildlife**

For the protection of wildlife and wildlife habitat, I will do the following:

- maintain a riparian habitat corridor of _____ feet in width
- manage timber in a manner that promotes wildlife habitat and diversity
- enhance wildlife diversity by maintaining the specified habitat characteristics
- restore degraded riverbanks and riparian areas
- conduct reforestation efforts

_____ Different areas of my river-bordering property will be managed for different resource values (see attached map and written description)

Please provide additional terms, explanations, or clarification of this agreement below:



Terms:

- The easement agreement outlines land management guidelines and best management practices which are consistent with scenic river classification guidelines and management plan recommendations. The landowner agrees to manage his/her property in accordance with these guidelines and BMPs.
- The landowner must give notice of any change in land ownership, major change in land use, or known threats to the resource
- Easements can be written to accommodate the wishes and intent of the landowner and can allow the landowner a great deal of flexibility in future use of the property.
- An easement does not preclude any uses of the property that the landowner wishes to keep.
- Ownership is retained by the landowner.
- Responsibility for land management rests solely with the landowner.
- Project staff are available to provide technical guidance.
- Project staff meet with the landowner on an

annual basis. This meeting may include a site visit to monitor the property for compliance with the agreement.

- The agreement is voluntary, but legally binding and enforceable.
- The agreement is permanent and binding on successive landowners.
- A conservation easement can be altered or terminated only with the mutual consent of the SC Scenic Rivers Program and the current landowner.
- The property may be passed on to heir(s), given to family members, or sold.

Benefits to Landowner:

- A conservation easement provides permanent protection for the river and its resources.
- The landowner receives technical guidance on land management from resource professionals.
- The landowner may realize income, property, and/or estate tax benefits.
- The landowner receives information on the project including invitations to special events

and activities.

- The landowner is recognized by the SC Scenic Rivers Program with a certificate signed by the Governor of South Carolina and the Executive Director of the Department of Natural Resources; listing in SC River News; recognition at the annual meeting; and a matted/framed photograph of the river.

D. Donation of Land: The landowner grants title to the land to the SC Scenic Rivers Program.

Terms:

- Land management guidelines are consistent with classification guidelines and management plan recommendations.
- Management responsibility belongs to the SC Scenic Rivers Program.
- If property is not managed for the purpose for which it was donated, the title to the land reverts to the donor.
- Donation of land is voluntary and legally-binding.

Benefits to Landowner:

- The agreement provides permanent protection for the river and its resources.
- A landowner with no heirs can ensure that the land is managed for river protection beyond his/her lifetime.

- The landowner receives information on the project including invitations to special events and activities.
- The landowner may realize income, property, and/or estate tax benefits.
- The landowner is recognized by the SC Scenic Rivers Program with a certificate signed by the Governor of South Carolina and the Executive Director of the Department of Natural Resources; listing in SC River News; recognition at the annual meeting; and a matted/framed photograph of the river.

Implementation Strategy

Each scenic river advisory council will develop a river-specific stewardship plan. For all state-designated scenic rivers, the primary goal is to achieve 100 percent landowner participation through land registration. Landowners will be encouraged to consider other stewardship options which include specific management guidelines and provide for long-term resource protection. The advisory councils will identify areas of special significance for additional protection through memoranda of agreement, conservation easements, and/or donation of land. Priority areas for protection include large, undisturbed tracts; scenic vistas; areas of ecological significance; unique or outstanding habitat; intact riparian buffer areas; special recreation sites; geologic features; and cultural/historic sites.

GLOSSARY

best management practice (BMP)- a method, activity, maintenance procedure, or other management practice for reducing the amount of pollution entering a water body

bluff- a steep riverbank

bottomland hardwood forest- a type of forest community commonly found on river floodplains of the southeastern United States; common tree species include bald cypress, overcup oak, red maple, blackgum, ironwood, American holly, swamp chestnut oak, and others

erosion- the wearing away of rock or soil by water, wind, ice, and/or other mechanical or chemical forces

habitat- the specific area or environment in which a particular type of plant or animal lives (elements of habitat include food, cover, and water)

intermittent stream- a watercourse that flows in a well-defined channel for 20 to 90 percent of the year during normal rainfall conditions

nonpoint source pollution- contamination that comes from a diffuse source rather than from a specific point

NPDES permit- Pipe discharges of treated wastewater require a permit under the federal National Pollutant Discharge Elimination System (NPDES) program. The permit is based on a wasteload allocation model that determines the river's ability to assimilate particular pollutants. The permit specifies the types and amounts of pollutants that can be released to the river by each respective discharger.

ordinary high water mark- the natural or clear line impressed on the shore or bank representing the ordinary height of the water

perennial stream- a watercourse that flows continuously (at least 90 percent of the year) in a well-defined channel

point source pollution- contamination that comes from a specific, definable source such as an outfall pipe

riparian buffer- a strip of natural vegetation along a stream or river. Riparian buffers fulfill three basic roles: maintenance of the hydrologic, hydraulic, and ecological integrity of the stream channel; removal of pollution from runoff; and protection of fish and wildlife.

riparian zone- At the smallest scale, the riparian zone would be the immediate water's edge where specialized plants and animals form a distinct community. At a larger scale, it would be the area periodically inundated by high water; i.e., the banks and floodplain of the river. Finally, on the largest scale, it would be the band of forest that has a significant influence on the river ecosystem, or conversely is significantly influenced by the river (Hunter, 1990).

tributary- a stream or river flowing into a larger stream or river

watershed- the drainage area of a stream and its tributaries

wetland- land transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Wetlands must have one or more of the following three attributes: 1) at least periodically, the land supports predominantly hydrophytes (plants adapted to wet soil conditions); 2) the substrate is predominantly undrained hydric soil, and 3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

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