

Little Pee Dee - Lumber River Eligibility Study
for the
South Carolina Scenic Rivers Program

South Carolina Department of Natural Resources
Land, Water, and Conservation Division

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Study Summary and Recommendations

A 64-mile segment of the Little Pee Dee and Lumber river system is proposed for designation as a State Scenic River under the South Carolina Scenic Rivers Act. This report presents the findings and recommendations of a scenic river eligibility study conducted by the South Carolina Department of Natural Resources (SCDNR), Scenic Rivers Program in 1997.

The study area and the proposed State Scenic River include the 64-mile river corridor that begins at the North Carolina border on the Lumber River and extends south to the U.S. Highway 378 bridge on the Little Pee Dee River. This river segment encompasses 17 miles of the Lumber and 47 miles of the Little Pee Dee. The lower end of the Little Pee Dee River, below Highway 378, was designated a State Scenic River in 1990 (see Figure 1, page 6, for map of project area).

Findings from the Eligibility Study

To qualify as eligible for State Scenic River status, Section 29-49-70 of the South Carolina Scenic Rivers Act states “the river” or river segment must possess unique or outstanding scenic, recreational, geological, botanical, fish, wildlife, historic or cultural values” and “the level of pollution of a river’s waters must be considered.” These criteria along with several other factors are used to determine a river’s eligibility for State Scenic River status.

Findings from an eligibility study demonstrate that the Little Pee Dee - Lumber River study area does possess outstanding river-related values and therefore should be considered eligible for State Scenic River status. Those values judged to be of outstanding significance include the river’s scenic, recreational, botanical, fish, wildlife, and historic values.

The basis for the river’s eligibility and a description of its significant values are summarized below. More detailed explanations are provided in later sections of this report.

The South Carolina Rivers Assessment

The *South Carolina Rivers Assessment* provides comparative information about the state’s rivers based on the knowledge and opinion of over 70 experts for 16 categories of river resources. Ten of the 16 river-resource categories evaluated in the Rivers Assessment are directly relevant to scenic river eligibility. Taken as a whole, the 64-mile Little Pee Dee - Lumber study area was rated as having “superior resources of statewide or greater significance” in four categories relevant to the State Scenic Rivers Program. In addition, the study area was rated as having “outstanding resources of regional significance” in four categories.

When compared to all other rivers evaluated in the Rivers Assessment, the combined ratings for the Little Pee Dee - Lumber River study area place this river in South Carolina’s top five candidates for State Scenic River eligibility.

Scenic Characteristics

The best source for comparative information on river scenery may be found in the *South Carolina Rivers Assessment* where scenic and aesthetic qualities were assessed as part of other resource values. The Lumber - Little Pee Dee study area was rated by expert committees as either superior or outstanding for four resource categories that take into account scenic qualities of the river: flatwater boating, backcountry boating, inland fisheries, and recreational fishing.

Overall, the land use inventory indicates that approximately eight miles (roughly 13 percent) of the river within the study area are visually affected by human development. For the remaining 56 miles, one will only see flowing blackwater shouldered by banks of dense undisturbed forests.

The scenic features of the river include clear blackwater, white sandy beaches, open winding water trails lined

by cypress trees and river birch, peaceful oxbow lakes and sloughs formed of old river channels, and occasional clusters of river houses on the high ground.

Recreational Uses

The Lumber and Little Pee Dee rivers were rated by expert committees of the South Carolina Rivers Assessment as an outstanding resource for recreational fishing and a superior resource for flatwater boating and backcountry boating.

The fishing reputation of the Little Pee Dee and Lumber rivers centers around the popular redbreast sunfish. The world's record redbreast, a two-pound fish, was pulled from the Lumber River in 1975. However, according to recent fishery surveys most anglers are targeting a variety of species. The entire 64-mile study area is navigable and it can be accessed at fourteen public boat landings dispersed along its length. Some sections of the river are used by larger powerboats and even water skiing is a popular activity. Small powerboats are commonly used to navigate the narrow river sections, backwaters, and swamps. Opportunities for multiday canoe-camping trips are available during lower water conditions when the sand bars along the river offer camping sites. Swimming and wading opportunities are excellent at the river's many sandbars.

Geological Resources

The most significant geological resources of the study area are probably the geomorphic features, the oxbow lakes, sloughs, braided streams, sand ridges, and other fluvial formations that have been created by the river within the floodplain. These type features are not unusual on Coastal Plain blackwater rivers; however, the Little Pee Dee and Lumber rivers have an unusually numerous and well developed array of fluvial formations. Many of these features can be directly accessed from the main river channel.

Botanical Values

The Lumber and Little Pee Dee study area was rated by expert committees of the South Carolina Rivers Assessment as an outstanding resource for natural features, which accounts for the scarcity and perceived quality, condition, and scientific value of area species and natural communities. The Heritage Trust Program of the South Carolina Department of Natural Resources has identified the Little Pee Dee River corridor as a high priority area for conservation and has acquired roughly 8900 acres which extend along 17 miles of the Little Pee Dee and Lumber rivers. These heritage preserves and other lands along the Little Pee Dee and Lumber provide habitat for the endangered Sarvis holly (*Ilex amelanchier*). The natural communities of concern include cypress-gum swamps, bottomland hardwood forests, and fluvial sand ridge communities.

Fish and Wildlife Values

The Lumber and Little Pee Dee study area was rated by expert committees of the South Carolina Rivers Assessment as a superior resource for inland fisheries. The Little Pee Dee River system of streams, sloughs, oxbow lakes, and swamps provides diverse habitat for the indigenous fish community of both resident and migratory species. Ample streamflow and good water quality further contribute to a favorable environment for fish. The shortnose sturgeon, an endangered fish species that inhabits coastal rivers of South Carolina, may occur in the river. A total of 53 species of fish were recently collected from the Little Pee Dee and Lumber rivers.

The Little Pee Dee - Lumber river floodplain contains vast acreages of wild and undeveloped land that provide high quality habitat for a variety of wildlife species. Much of the area is contained in large landholdings. On these wild lands there are few roads to cause habitat fragmentation or barriers to wildlife; currently, only four highways and one railroad cross the floodplain. The expert committees of the South Carolina Rivers Assessment rated the study area a superior resource for undeveloped rivers and an outstanding resource for natural features; both of these categories are positive assessments for wildlife.

Threatened and endangered wildlife species known to inhabit the area include the American alligator, red-cockaded woodpecker, and bald eagle.

Historic and Cultural Values

The Lumber - Little Pee Dee study area was rated by expert committees of the South Carolina Rivers Assessment as an outstanding resource for historic and cultural values. Approximately 15 archeological sites have been identified within the study area ranging from the Early Archaic period (~8000 B.C.) to early settlement by Europeans. A dugout canoe estimated to be over 1000 years old was found near the Lumber River in North Carolina.

When Europeans first began to settle in South Carolina, the Pee Dee area of the state was inhabited by numerous but small Indian tribes. The major influx of Europeans began in the early 1730's when a series of townships was created on the rivers to help settle the inland areas. Around 1780, General Francis Marion, the Swamp Fox, assisted the cause of the American Revolution in the region of the Little Pee Dee. Marion's style of guerrilla warfare confused British commanders and allowed him military success against the Tories at Britton Neck and near Galivants Ferry.

The Little Pee Dee and Lumber rivers served as a transportation mode from the very beginning of settlement, bringing settlers and supplies up from the Winyah Bay area and taking agricultural products, lumber, naval stores, and other goods down to market. As late as 1915, steamboats ran regularly on the Little Pee Dee up to Galivants Ferry and earlier the boats ran as far as Lumberton.

Streamflow and Water Quality

The mainstems of the Little Pee Dee and Lumber rivers are entirely free flowing. The rivers have not been altered by dams or channelization and the stream channels retain their natural characteristics. Average daily streamflow at Galivants Ferry is about 3200 cubic feet per second (cfs). Ninety percent of the time, streamflow at Galivants Ferry can be expected to equal or exceed 700 cfs. The Little Pee Dee and the Lumber are blackwater rivers, stained a dark tea color by chemicals known as tannins which are leached from tree leaves and other organic material decomposing in the surrounding swamps.

The entire Little Pee Dee River below the Lumber River is classified as "Outstanding Resource Waters" (ORW) by the South Carolina Department of Health and Environmental Control (SCDHEC). The ORW classification is assigned to waters of exceptional recreational or ecological importance or of unusual value. ORW classification also prohibits direct wastewater discharge into the river. The Lumber River is classified as "Freshwater" which applies standards to protect multiple water uses.

Recent analyses of water quality monitoring data by the SCDHEC indicate that the study area of Little Pee Dee and Lumber rivers has very good water quality. Aquatic life uses and recreational uses of the river are fully supported by the existing water quality conditions.

Land Use Conditions and River Classifications

Land use conditions are the determining factor for how a river is classified within the State Scenic River Program. After a river is determined eligible, it must be classified according to the type that best fits each eligible river segment. The three classifications include natural, scenic, or recreational rivers. Classification is based on the degree of naturalness and extent of development on the river and adjacent lands.

The Little Pee Dee and Lumber river channel is isolated from high ground as it meanders through a wide and relatively wet floodplain. The dominant land cover types include forested wetlands and uplands used for timber and wildlife management. Area estimates of land use within a one-mile-wide river corridor are: forested upland and wetland, 96 percent; agricultural land, 2 percent; residential/commercial land, 1 percent; roads and utility corridors, less than 1 percent.

Human development along the river is generally concentrated in areas where the river encounters high ground and where there is a nearby road for access. Groups of five to ten river houses with their associated piers and docks are the typical human development scene on the river. There are 28 distinct areas where development is clustered

along the banks of the river. The greatest concentration and the largest of the developments are located between Fork Retch and Galivants Ferry on the Little Pee Dee.

For purposes of river classification, the upper 12 miles and the lower 25 miles of the study area have a wild and undeveloped character and are suited to the “natural river” class. Twenty-five river miles in the middle portions of the study area are suited to the “scenic river” class because the area generally has greater access, development, and river-use. A two-mile segment of the study area at the Fork Retch community is developed and has a high level of recreational use, therefore it is suited to the “recreational river” class.

Recommendations

1. It is recommended that the Little Pee Dee and Lumber rivers be designated as a State Scenic River from the North Carolina border on the Lumber River downstream to the U.S. Highway 378 bridge on the Little Pee Dee River, a total of about 64 river miles. Classification of the river should be as follows:
 - The Lumber River from the North Carolina border downstream to the U.S. Highway 76 bridge, a 12-mile river segment, should be classified a “natural river.”
 - The Lumber River from the U.S. Highway 76 bridge downstream to its confluence with the Little Pee Dee, a five-mile river segment, should be classified a “scenic river.”
 - A two-mile river segment of the Little Pee Dee River at the residential development of Fork Retch should be classified a “recreational river.” This segment begins at the Lumber River confluence and extends downstream to the first river bend passed the Fork Retch development.
 - The Little Pee Dee River from below the Fork Retch residential development downstream to below the Knife Island Landing, a 20-mile river segment, should be classified a “scenic river.”
 - Little Pee Dee River from below the Knife Island Landing downstream to the U.S. Highway 378 bridge, a 25-mile river segment, should be classified a “natural river.”
2. The existing and proposed scenic river segments should be merged into a single project area with one Scenic River Advisory Council. The new project area should include the proposed Little Pee Dee - Lumber Scenic River and the existing Little Pee Dee Scenic River segment below U.S. Highway 378, making a total project area of 78 river-miles.

Introduction

Since the 1970's citizens from the Pee Dee region of South Carolina have been involved in efforts to obtain recognition and protection for the Little Pee Dee River system. Obtaining State Scenic River status for this river through the South Carolina Scenic Rivers Act has been a goal shared by local citizens, elected officials, and government agencies for many years.

Most recently, Wildlife Action, Inc. of Mullins, S.C. requested action by state agencies to move forward in seeking State Scenic River designation for the river. In August of 1996 a study was initiated to assess the eligibility of the Little Pee Dee and the Lumber rivers for designation as a State Scenic River. The eligibility study was conducted by the South Carolina Department of Natural Resources (SCDNR), Scenic Rivers Program. This report presents the findings and recommendations of Little Pee Dee - Lumber River eligibility study and provides a description of the river and surrounding lands.

A 64-mile segment of the Little Pee Dee and Lumber river system is proposed for designation as a State Scenic River under the South Carolina Scenic Rivers Act. The study area and the proposed State Scenic River includes the 64-mile river corridor that begins at the North Carolina border on the Lumber River and extends south to the U.S. Highway 378 bridge on the Little Pee Dee River. This river segment encompasses 17 miles of the Lumber and 47 miles of the Little Pee Dee. The lower end of the Little Pee Dee River, below Highway 378, was designated a State Scenic River in 1990 (see Figure 1, map of the Little Pee Dee - Lumber River study area).

The South Carolina Scenic Rivers Program

The purpose of the Scenic Rivers Program is to protect the State's unique and outstanding river resources. To accomplish this purpose, a cooperative, voluntary management program has been created to involve landowners, community interests, and the SCDNR in a partnership, working together toward common river-conservation goals.

Designating a State Scenic River requires legislative action by the South Carolina General Assembly. However, the designation process begins at the local level and requires the support of local citizens, landowners, and elected officials. The steps in the designation process determined by the South Carolina Scenic Rivers Act are as follows:

- First, a local request for scenic river designation is made, then the SCDNR conducts a scenic river eligibility study. In this case, Wildlife Action, Inc. of Mullins, South Carolina made the request and this eligibility study was initiated in August 1996.
- Second, all river landowners and the general public are notified of the proposal and invited to public meetings to ask questions or express concerns. Public meetings on this proposal are scheduled for July 29 and 31, 1997.
- Third, each county council of all river-bordering counties must approve of the Scenic River proposal. Along the proposed Little Pee Dee - Lumber Scenic River the affected counties are Horry, Marion, and Dillon.
- Finally, the SCDNR board reviews the proposal and a bill is introduced to the General Assembly. When the bill is passed, a new State Scenic River is officially designated.

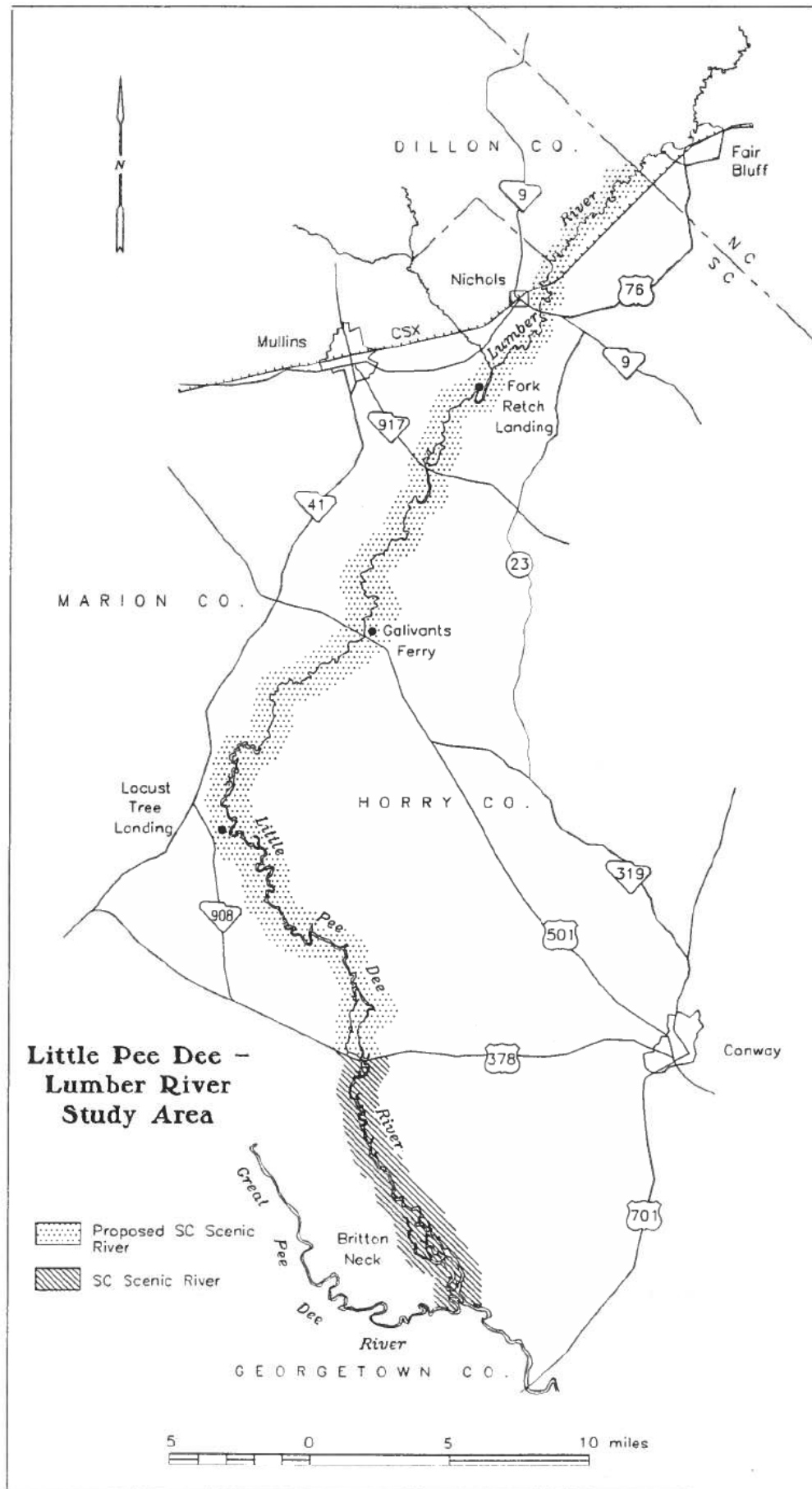
After the designation process is completed the SCDNR establishes a local Scenic River Advisory Council to develop a river management plan. The advisory council is made up of six to ten members, the majority of whom are river-bordering landowners. Implementation of the scenic river management plan is guided by the advisory council.

River-bordering landowners can be involved in the project through the Scenic Rivers Stewardship Program which encourages landowners to enter a land management agreement with the Scenic Rivers Program. The stewardship program offers landowners four voluntary land management options: land registration, memorandum of agreement, conservation easement, or donation of land.

Background / Project History

The Little Pee Dee has long been recognized as an excellent example of a lowcountry blackwater river. The history of effort given to acquiring special recognition for the Little Pee Dee's natural and scenic qualities spans a 26-year period.

Figure 1. Map of the Little Pee Dee - Lumber River Study Area.



One of the earliest known efforts to assess the significance of this river occurred in 1971, three years after passage of the National Wild and Scenic Rivers Act. The South Carolina Water Resources Commission conducted a survey of five Coastal Plain rivers for the U.S. Department of the Interior to consider each river's potential for the National Wild and Scenic River System. The Water Resources Commission determined the Little Pee Dee to be the best example of an undeveloped blackwater river in the state and the most qualifying for potential addition to the National Wild and Scenic River System. In 1980, state leaders became involved with federal legislation (the Omnibus Rivers and Trails bill) to authorize a formal study of the Little Pee Dee River for the national system. However, local fears of potential federal regulation ultimately resulted in the Little Pee Dee River being withdrawn from the federal legislation. As an alternative, State Scenic River designation was pursued that same year.

In November 1980, the Little Pee Dee River from its confluence with the Lumber River downstream to the Great Pee Dee River was determined eligible for inclusion in the State Scenic Rivers Program by the South Carolina Water Resources Commission. Unfortunately, it was nearly impossible to obtain official state scenic river status for the Little Pee Dee or any other river because the South Carolina Scenic Rivers Act of 1974 required substantial land acquisitions before official scenic river designations could occur and no funds were ever appropriated for that purpose. In 1989, the Scenic Rivers Act was amended and made more effective in terms of scenic river designation, management, and public involvement. Land acquisitions were no longer required by the law; a voluntary cooperative management program was established instead. The following year, in March 1990, the lower 14 miles of the Little Pee Dee, from U.S. Highway 378 to the Great Pee Dee were officially designated a State Scenic River by the Legislature. The upper 47 miles of the eligible river segment were not addressed in the 1990 legislation.

In August 1992, Wildlife Action, Inc. of Mullins, South Carolina, requested that a process begin to obtain State Scenic River designation for the remaining eligible portion of the Little Pee Dee River; that is, the 47-mile segment from its confluence with the Lumber River downstream to U.S. Highway 378. However, because of staff limitations, the Scenic Rivers Program was unable to follow through on this request.

(Note: Because of state government reorganization, the South Carolina Water Resources Commission and the Scenic Rivers Program became part of the South Carolina Department of Natural Resources in July 1994.)

All of these events provide the setting for this study. The Little Pee Dee River is again being addressed for State Scenic River designation in order to follow through on the 1992 request of Wildlife Action, Inc. Because 16 years have elapsed and many changes have occurred since the Little Pee Dee River was first determined eligible for Scenic River status, staff at the SCDNR decided it was best for the process of Scenic River designation to reassess the eligibility of the river. Therefore, this eligibility study was initiated in August of 1996.

Study Boundaries

The boundaries for this eligibility study are defined by a 64-mile river corridor which begins at the North Carolina border on the Lumber River and extends south to the U.S. Highway 378 bridge on the Little Pee Dee River. The boundaries encompass 17 miles of the Lumber River and 47 miles of the Little Pee Dee River. The last segment of the Little Pee Dee River, the stretch below U.S. Highway 378, was designated a State Scenic River in 1990; therefore, it is not included in this eligibility study.

The SCDNR staff evaluated whether additional river segments, beyond those determined eligible in 1980, should be addressed in this eligibility study. Two additional river segments above (or upstream from) the confluence of the Little Pee Dee and Lumber rivers were considered: (1) the 17-mile stretch of the Lumber River that extends northeast to the North Carolina border and (2) the 62-mile stretch of the Little Pee Dee which extends northwest into Dillon and Marlboro counties in South Carolina (hereafter referred to as the upper Little Pee Dee). Based on reasons that are explained below, it was decided to include the 17-mile segment of the Lumber River in this eligibility study and to exclude the upper Little Pee Dee.

There are two major reasons for adding the Lumber River to this study. First, the Lumber River, despite the change in name, is the primary hydrological extension of the Little Pee Dee River system above the confluence. The Lumber is the dominant river channel in the system and it possesses the same landforms and ecological characteristics that distinguish the lower portions of the river system. Second, the Lumber River segment in South

Carolina provides the opportunity to link river conservation efforts with the State of North Carolina. The Lumber is recognized as a highly significant river in North Carolina. They have designated 115 miles of the Lumber, upstream from the border, as a State Natural and Scenic River (see map, Figure 2). North Carolina has also designated the river as a state park to be managed as a “state river” (NCDEHNR 1995). In addition, the National Park Service, at the request of North Carolina’s Governor, is currently studying the Lumber River in North Carolina for inclusion in the National Wild and Scenic River System.

Reasons for not including portions of the upper Little Pee Dee River are related to feasibility issues. There are a number of administrative complexities associated with managing a scenic river project. Managing the additional 62 miles on the upper Little Pee Dee would nearly double the size of the proposed project area. It will be more feasible to consider the upper portions of the Little Pee Dee at a later time and, if there is local support, conduct a separate eligibility investigation for that portion of the river.

The Little Pee Dee - Lumber River Watershed

The Little Pee Dee and Lumber rivers flow through the coastal plain at the eastern corner of South Carolina and southeastern North Carolina. The drainage area of this river system (also referred to as the watershed or river-basin), is 3106 square miles (1,988,650 acres) in size. About one-third of the Little Pee Dee and Lumber watershed is in South Carolina, while the majority of the drainage lies within North Carolina. (See Figure 2 for a map of the Little Pee Dee - Lumber River Watershed.) The headwaters of both the Little Pee Dee and the Lumber originate in North Carolina.

The headwaters of the Little Pee Dee originate in Scotland and Richmond counties of North Carolina; however, the name, “Little Pee Dee River,” applies to the stream that begins below Beaverdam Creek and Gum Swamp near S.C. Highway 83 in Marlboro County, South Carolina. The Little Pee Dee River flows southeasterly for about 62 miles through Marlboro, Dillon, and Marion Counties in South Carolina to its confluence with the Lumber River. From this point, the Little Pee Dee flows in a more southerly direction for about 60 miles through a wide flood plain to its confluence with the Great Pee Dee, forming the boundary between Marion County on the west and Horry County on the east. Above its confluence with the Lumber, the upper Little Pee Dee River drains about 24 percent of the entire watershed of Little Pee Dee and Lumber rivers. Below its confluence with the Lumber, the Little Pee Dee River drains about 19 percent of the entire watershed (see Table 1).

The origins of the Lumber River are in Montgomery, Moore, and Scotland counties in North Carolina. The name, “Lumber River,” applies to the stream that begins near State Road 1412/1203 along the Scotland-Hoke county line in North Carolina (NCDEHNR 1995). From this point the Lumber River flows generally south for about 115 miles to the South Carolina border and then continues for another 17 miles to its confluence with the Little Pee Dee River. The Lumber River drains about 56 percent of the entire Little Pee Dee - Lumber River Watershed.

Table 1. Drainage Areas of the Little Pee Dee - Lumber River Watershed.

Watersheds	Area	Percent of Entire Watershed
Little Pee Dee - Lumber River (entire watershed)	3106 miles ² 1,988,654 acres	100%
Lumber River (watershed above confluence with Little Pee Dee River)	1751 miles ² 1,121,152 acres	56%
Upper Little Pee Dee River (watershed above confluence with Lumber River)	752 miles ² 481,394 acres	24%
Lower Little Pee Dee River (watershed below confluence with Lumber River)	603 miles ² 386,104 acres	19%

The Little Pee Dee and the Lumber are blackwater rivers. The water has a dark tea color because the water is stained by chemicals known as tannins. Tannins are leached from the tree leaves and other organic material decomposing in the surrounding swamps. Because the Little Pee Dee and Lumber rivers originate in and flow through the relatively flat sandy soils of the coastal plain, their waters have very little sediment load.

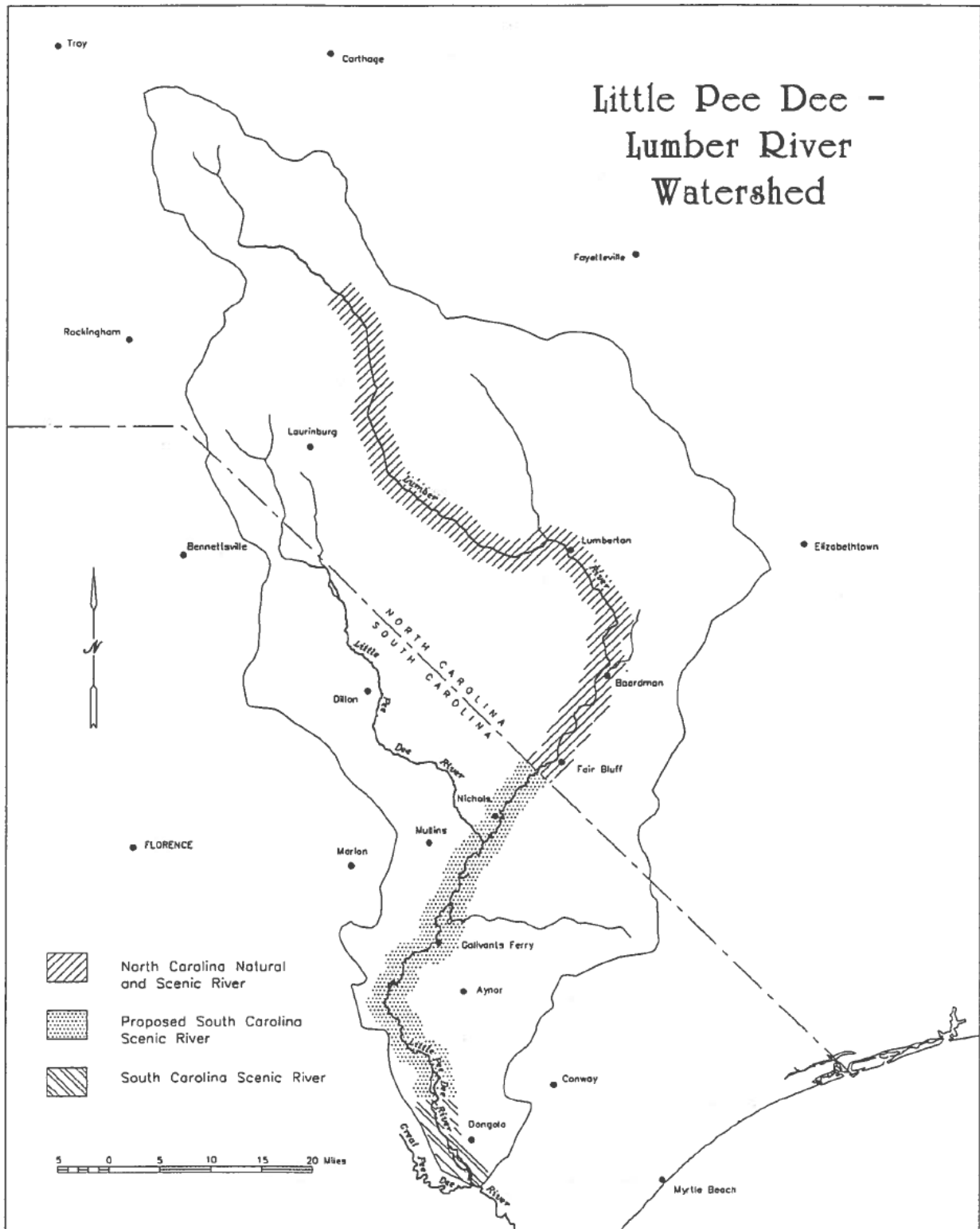
The watershed of the Little Pee Dee and Lumber rivers is rural in nature, with forestry and agriculture being the predominant land use activities. According to the South Carolina Department of Health and Environmental Control (SCDHEC 1997), the mix of land use and land cover types within the South Carolina portion of the watershed is as follows:

- | | | | |
|---------------------|-------|-----------------------|------|
| • forested land | 30.2% | • nonforested wetland | 1.3% |
| • agricultural land | 24.0% | • urban land | 1.1% |
| • forested wetland | 21.8% | • water | 0.3% |
| • scrub/shrub land | 21.2% | | |

The population densities of the counties surrounding the Little Pee Dee and Lumber rivers average about 84 people per square mile and range from 53 to 110 people per square mile. (The population densities for the states of North and South Carolina are about 136 and 115 respectively.) The population centers within the watershed include Southern Pines, Laurinburg, and Lumberton in North Carolina. In South Carolina, Dillon and Mullins are within the river's watershed and other nearby communities include Marion and Conway. Populations within these towns range between six and 15 thousand people. Other smaller towns located in the South Carolina portion of the watershed include Loris, Nichols, Aynor, Latta, Lake View, Clio, and McColl.

Several larger urban areas are in close proximity to the watershed. The city of Florence is located 30 miles west of the Little Pee Dee River and supports an area population of about 55 thousand people. Approximately the same distance to the southeast is Myrtle Beach and the Grand Strand, one of the major recreation and resort areas on the east coast. This area supports a year-round population of roughly 60 thousand people. To the north, about 40 miles from the North Carolina - South Carolina border, is the Fayetteville, North Carolina metropolitan area which supports about 300 thousand people.

Figure 2. Map of the Little Pee Dee - Lumber River Watershed.



Assessment of the River's Resource Values and Conditions

As described in the Introduction, the object of this study is a 64-mile segment of the Little Pee Dee - Lumber river corridor which begins at the North Carolina border on the Lumber River and extends south to the U.S. Highway 378 bridge on the Little Pee Dee River. To determine whether this or any other river qualifies as eligible for State Scenic River status, Section 29-49-70 of the South Carolina Scenic Rivers Act states that the "river or river segment must possess unique or outstanding scenic, recreational, geological, botanical, fish, wildlife, historic or cultural values" and "the level of pollution of a river's waters must be considered." Each of these factors are addressed in this section following a presentation of relevant findings from the *South Carolina Rivers Assessment*.

South Carolina Rivers Assessment Findings

An important source of information for understanding South Carolina rivers is the *South Carolina Rivers Assessment* (SCWRC 1988). It provides some of the best available comparative information about the state's river resources. The Rivers Assessment involved over 70 individuals with an array of river resource expertise in an evaluation of the state's rivers. Using primarily personal knowledge and opinion, the experts assembled into 16 committees and evaluated over 1400 rivers and river segments and classified the rivers according to their significance for 16 different resource categories.

Ten of the 16 resource categories evaluated in the Rivers Assessment are directly relevant to scenic river eligibility. These relevant categories include: undeveloped rivers, natural features, flatwater boating, backcountry boating, whitewater boating, recreational fishing, inland fisheries, wildlife habitat, historic and cultural, and water quality. Taken as a whole, the 64-mile study area of the Little Pee Dee and Lumber rivers was rated as having superior resources of statewide or greater significance in four categories relevant to the Scenic Rivers Program. The study area was also rated as having outstanding resources of regional significance in four of these categories. Compared to all other rivers evaluated in the Rivers Assessment, the combined ratings for the Little Pee Dee - Lumber study area place this river in the top five candidates for scenic river eligibility.

Results for all 16 resource categories that were assessed for the Little Pee Dee and Lumber rivers are presented in Tables 2 and 3 and discussed below.

Superior River Resources

In the Rivers Assessment the Little Pee Dee River was rated as a superior resource of statewide or greater significance for three categories: flatwater boating, backcountry boating, and inland fisheries. The Lumber River was rated a superior resource of statewide or greater significance for three categories: flatwater boating, backcountry boating, and undeveloped rivers.

All of these resource categories take into account the perceived scenic and natural quality of the river in addition to other factors. The flatwater boating category reflects good water quality and good river access while the backcountry boating category reflects good opportunity for extended river trips that involve overnight camping. The inland fisheries category accounts for species composition, and the perceived aquatic habitat quality, fishery quality, and quality of recreational use. The Lumber River was not evaluated for inland fisheries perhaps because the Lumber was viewed as a North Carolina river by this expert committee. The undeveloped river category reflects the natural character and influence of man-made structures on the river corridor.

Outstanding River Resources

In the Rivers Assessment the Little Pee Dee River was rated an outstanding resource of regional significance in six categories: undeveloped rivers, natural features, recreational fishing, historic and cultural, timber management, and water supply. The Lumber River was rated an outstanding resource of regional significance for one category: recreational fishing.

The undeveloped category accounts for man-made structures and reflects the natural character in the river corridor. The natural features category accounts for the known scarcity, and perceived quality, condition, and scientific value of the species and natural communities of the river corridor. The Lumber River was not evaluated for natural features perhaps because the Lumber was viewed as a North Carolina river by this expert committee. Recreational fishing accounts for perceived fishing quality, aquatic habitat, scenic quality, and access. The historic and cultural category accounts for the known historically significant sites associated with the river. Timber management rates the potential timber productivity within the river corridor. The water supply category rates rivers according to the water's quality, quantity, treatability, and accessibility.

Significant River Resources

In the Rivers Assessment the Little Pee Dee River was rated as a significant resource of local significance in four categories: wildlife habitat, water quality, agriculture, and industrial. The Lumber River was rated as a significant resource of local significance in four categories: wildlife habitat, water quality, agriculture, and timber management.

The wildlife habitat category reflects perceived habitat quality, suitability of the habitat, and quality of the hunting opportunities. The water quality category reflects the river's water quality classification and whether water quality standards were maintained in the river. The agriculture category reflects the suitability of adjacent lands for agriculture and the use of the river as a water source. The industrial category rates rivers based on their assimilative capacity for wastewater. Timber management rates river corridors according to their potential timber productivity.

Table 2. South Carolina Rivers Assessment for the Little Pee Dee River.

Resource Category	Value Class	Beginning (upstream) to Ending (downstream)
Agriculture	Value Class 3: Significant	N.C. Line to Great Pee Dee River
Industrial	Value Class 3: Significant	S.C. 83 bridge to Great Pee Dee River
Timber	Value Class 2: Outstanding	S.C. 83 bridge to Great Pee Dee River
Undeveloped Rivers	Value Class 2: Outstanding	Two Sections: S.C. 57 bridge to above I-95 bridge and S.C. 9 bridge to Great Pee Dee River
Natural Features	Value Class 2: Outstanding	N.C. Line to Great Pee Dee River
Flatwater Boating	Value Class 1: Superior	S.C. 83 bridge to Great Pee Dee River
Backcountry Boating	Value Class 1: Superior	S.C. 83 bridge to Great Pee Dee River
Recreational Fishing	Value Class 2: Outstanding	Hayes Swamp (just above I-95 bridge) to Great Pee Dee River
Inland Fisheries	Value Class 1: Superior	S.C. 83 bridge to Great Pee Dee River
Wildlife Habitat	Value Class 3: Significant	S.C. 83 bridge to Great Pee Dee River
Historic and Cultural	Value Class 2: Outstanding	U.S. 501 bridge to Great Pee Dee River
Water Quality	Value Class 3: Significant	Two Sections: N.C. State Line to Ropers Mill Branch and Confluence with Lumber River to Great Pee Dee River
Water Supply	Value Class 2: Outstanding	N.C. State Line to U.S. 501 bridge

Table 3. South Carolina Rivers Assessment for the Lumber River.

Resource Category	Value Class	Beginning (upstream) to Ending (downstream)
Agriculture	Value Class 3: Significant	N.C. Line to Little Pee Dee River
Timber	Value Class 3: Significant	N.C. Line to Little Pee Dee River
Undeveloped Rivers	Value Class 1: Superior	N.C. Line to Little Pee Dee River
Flatwater Boating	Value Class 1: Superior	N.C. Line to Little Pee Dee River
Backcountry Boating	Value Class 1: Superior	N.C. Line to Little Pee Dee River
Recreational Fishing	Value Class 2: Outstanding	N.C. Line to Little Pee Dee River
Wildlife Habitat	Value Class 3: Significant	N.C. Line to Little Pee Dee River
Water Quality	Value Class 3: Significant	N.C. Line to Little Pee Dee River

River Resources not Evaluated

In the Rivers Assessment the Little Pee Dee was not evaluated for the three categories of whitewater boating, urban rivers, or utilities. The Lumber River was not evaluated for eight resource categories which included: whitewater boating, urban rivers, utilities, industrial, historic and cultural, water supply, inland fisheries, and natural features.

In reviewing the methods and criteria, it seems that the Lumber River may have been overlooked for the categories of inland fisheries and natural features. A possible explanation for this is that the Lumber may have been perceived as primarily a North Carolina river and its logical connection with the Little Pee Dee was overlooked by the expert committees of inland fisheries and natural features.

Land Use and Ownership Patterns

Land use and ownership patterns affect the character of rivers and present different management alternatives for the Scenic Rivers Program. Land use and ownership patterns can be important factors affecting scenic quality, wildlife habitat, and water quality. Land use conditions are also the determining factor for how a river is classified within State Scenic River Program. After the river is determined eligible, it must be classified according to the category (either natural, scenic, or recreational) that best fits each eligible river segment. Classification is based on the degree of naturalness and extent of development on the river and adjacent lands at the time of the study.

To better understand land use and ownership patterns, an inventory was conducted for river segment under study. Two measures of land use on the river were taken. First, the acreage of general land use categories was estimated within a one-mile corridor along the river (one-half mile on either side); and second, the river mileage that is visually affected by human development was estimated. Finally, all parcels of land that connect with the river and their acreages (when available) were inventoried. The land use inventories were conducted using 1994 aerial photography, topographic and county highway maps, and field trips to the river. The parcel ownership records were collected from the county tax assessors.

Land Use

As mentioned earlier in the report, the Lumber - Little Pee Dee watershed is rural and the major land use types in the South Carolina portion include forests (52 percent), scrub/shrub vegetation (21 percent), and agriculture (24 percent). Urban or built-up lands cover only a small area of the watershed (1.1 percent). Within the river corridor the land use inventory reveals a very natural condition. Estimates of general land use categories within a one-mile wide corridor along the 64-miles of river are as follows:

- forested upland and wetland 38,890 acres 96%
- agricultural land 860 acres 2%
- residential/commercial land 395 acres 1%
- highways, railroads, powerlines 175 acres <1%

The surrounding terrain of the Little Pee Dee and Lumber rivers is relatively flat and the river channel meanders through a wide floodplain of cypress-tupelo swamp and bottomland hardwood forest. Because of the wide and relatively wet floodplain, the dominant use of land along the river is for forests which are managed for timber and wildlife. Forest management practices in the Little Pee Dee - Lumber River corridor appear to be having a minimal effect on the natural and scenic character of the river.

Human development along the river is generally concentrated in areas where the river encounters high ground and where there is a nearby road for access. Groups of recreational and residential houses with their associated piers and docks are the typical human development scene on the river. Excluding a few places where only a single house is located, there are 28 distinct areas where development is clustered along the banks of the river. Most of these are clusters of five to ten houses and only two of the areas have commercial buildings. The greatest concentration and the largest of the developments are located between Fork Retch and Galivants Ferry on the Little Pee Dee (Section II, described below). The stretch of river with the least amount of development is between Galivants Ferry and Locust Tree Landing on the Little Pee Dee (Section III). Although the areas of housing detract from the wild character of the river, their affect on the scenic values is mixed. In many cases houses and cabins on a river are visually attractive to people, especially if the architecture is interesting and the development patterns are complementary and unobtrusive to the natural landscape. However, in places where houses and related structures are dominant features or they are poorly maintained, they can significantly detract from the river's scenic values.

Other types of development that affect the character of the river corridor are public utilities and infrastructure. Four highway bridges (U.S. 76 / S.C. 9, S.C. 917, U.S. 501, and U.S. 378) one railroad bridge (CSX railroad), and two transmission-line corridors cross the river. Most of these are located on the upper half of the river above Galivants Ferry (sections I and II). There are also 14 public boat landings located in the study area and all but two of these, Huggins and Hughes landings in Horry County, are co-located within the developed areas or highway crossings previously mentioned.

Overall, the land use inventory indicates that approximately eight miles (roughly 13 percent) of the river within the study area are visually affected by human development. For the remaining 55 miles, one will only see flowing blackwater shouldered by banks of dense forests which remain close to an undisturbed natural condition.

Details of the land use inventory are presented below for four sections of the study area beginning with the upper end on the Lumber River.

Section I: The Lumber River from the North Carolina border to the Little Pee Dee River at Fork Retch. On this 17-mile stretch of the river approximately one and a half miles are visually affected by seven areas of development, a powerline corridor, a railroad bridge, a highway bridge, and two public boat landings.

- On the upper portion of this section three small settlements (clusters of roughly 5 to 10 houses) are visible on the Horry County side of the river where Causey Road and the CSX railroad parallel the river.
- Near the town of Nichols there are three utility crossings within a two mile stretch of the Lumber River: a powerline corridor, the CSX railroad bridge, and the U.S. 76 / S.C. 9 highway bridge.
- Also near Nichols, two developments are visible on the Horry County side of the river; one is a small group of houses above the highway bridge, the other, a development at Rice Field Cove (10-15 houses) below the bridge.
- Logging has recently occurred in the floodplain below Nichols in Marion County. Most of the logged areas are not visible from the river.
- Two settlements are visible on the lower Lumber river, Marion County side: first a single house and then a group of houses and a field on the bluff at Anderson Lake.
- The two public boat landings located on this section are Causey Landing and Rice Field Cove Landing. Just below the end of this section a landing is located at Fork Retch on the Little Pee Dee River and is accounted for in Section II.

Section II: The Little Pee Dee River from Fork Retch to Galivants Ferry. On this 17-mile stretch of the river approximately four miles are visually affected by 12 areas of development, two highway bridges, a powerline corridor, and five public boat landings.

- Fork Retch in Marion County is a settlement of 75+ residential and recreational homes located along the first two miles of the Little Pee Dee River below its confluence with the Lumber River. Fork Retch is the largest development located on the banks of the river in the study area.
- Within two miles downstream of the Fork Retch development there are three additional clusters of development on the river. The larger developments (20 to 30 buildings) are at Grice Ferry and Red Bluff Landing and a smaller settlement is at Stave Landing. All three are in Marion County.
- Settlements at the S.C Highway 917 bridge include five clusters of development dispersed along about one mile of the river; two of these are on the Marion County side and the other three are in Horry County.
- Downriver there are two more clusters of houses on the river, one at Red Hill in Horry County and the other at Cartwheel Landing in Marion County.
- Logging has recently occurred in the floodplain below Cartwheel Landing in Marion County. Most of the logged areas are not visible from the river because a strip of trees remains along the streamside.
- A powerline corridor crosses the Little Pee Dee River about one-quarter mile upstream from the U.S. Highway 501 bridge.
- The U.S. Highway 501 bridge crosses the Little Pee Dee River at Galivants Ferry. The village of Galivants Ferry is located on the Horry County side and because of the high bluff only a few commercial buildings are partially visible from the river.
- The five public boat landings located on this section are Fork Retch Landing, Red Bluff Landing, Sandy Bluff Landing, and two landings at U.S. Highway 501 bridge / Galivants Ferry.

Section III: The Little Pee Dee River from Galivants Ferry to Locust Tree Landing. On this 15-mile stretch of the river approximately one-quarter of a mile is visually affected by three developments, a few river houses, and four public boat landings.

- Features at Galivants Ferry and U.S. Highway 501 bridge are addressed in Section I. Downstream from Galivants Ferry, on the Marion County side, there are two clusters of development at the following areas: Knife Island Landing (a settlement of 30+ houses built around a canal system) and Davis Landing (5-10 houses). There are also a few individual river houses located on the Marion County side.
- An agricultural field is located on Lower Dog Bluff next to the river on the Marion County side. The height of the bluff and a strip of trees along the river bank screens the field from view.
- There is a small settlement at Locust Tree Landing in Marion County located just off the Little Pee Dee River on a short canal. Most of this development is screened by trees from the river.
- The four public boat landings located on this section (excluding the landings at Galivants Ferry) are Huggins Landing, Knife Island Landing, Davis Landing, and Locust Tree Landing.

Section IV: The Little Pee Dee River from Locust Tree Landing to Highway 378. On this 15-mile stretch of the river approximately one and a quarter miles are visually affected by five areas of development, a highway bridge, and three public boat landings.

- Features at Locust Tree Landing are addressed in Section III. Downstream from Locust Tree Landing five small settlements (clusters of roughly 5 to 10 houses) are visible along the river: two are in Horry County on or near Gunter Lake and the other three are on the Marion County side where State Road 86 parallels the river.
- Logging has recently occurred in the floodplain below Johnson Big Lake on the Marion County side and a dirt road runs along the riverbank for about three-quarters of a mile. Most of this is not visible from the river.
- The U.S. Highway 378 bridge crosses the Little Pee Dee River at the end of this section.
- The three public boat landings located on this section (excluding Locust Tree Landing) are Gunter Lake Landing, Hughes Landing, and Pitch Landing at the U.S. Highway 378 bridge.

Land Ownership Patterns

Land bordering the Little Pee Dee and Lumber rivers is divided among 430 parcels. Most parcels (70 percent) are ten acres or less in size; and 94 percent of these (a total of 283) can be classified as lots of one acre or less in

size. Because high ground and roads are closer to the river on the western bank, Marion County has more parcels, particularly smaller parcels, than on the eastern side in Horry County. In Marion County there are 279 individual land parcels contiguous with the river. Horry County has 149 parcels bordering the river and Dillon County has two parcels are found along its eight-mile border with the Lumber River. Table 4 provides information on the distribution of river-bordering land parcels by size categories and by counties.

Table 4. Distribution of Land Parcels Contiguous with Little Pee Dee - Lumber River by Size and County.

Parcel Size	Marion Co.	Horry Co.	Dillon Co.	Entire River
<1 acre	196 parcels	87 parcels		283 parcels
1 to 10 acres	5 parcels	14 parcels		19 parcels
10 to 100 acres	30 parcels	14 parcels	1 parcel	45 parcels
100 to 500 acres	34 parcels	17 parcels		51 parcels
500 to 1000 acre	11 parcels	8 parcels		19 parcels
1000 to 2500 acres	1 parcel	5 parcels		6 parcels
2500 to 5000 acres	2 parcels	2 parcels		4 parcels
>5000 acres	2 parcels		1 parcel	3 parcels
Total number of parcels	279 parcels	149 parcels	2 parcels	430 parcels

Scenic Rivers Classification

Land use conditions are the determining factor for how a river is classified within the State Scenic River Program. After a river is determined eligible, it must be classified according to the type that best fits each eligible river segment and may be classified as more than one river type along its length. Classification is based on the degree of naturalness and extent of development on the river and adjacent lands at the time of the study. The general descriptions for the three river classifications are as follows:

- *Natural rivers* are free-flowing (without impoundment, diversion, or other modification to the waterway), generally inaccessible except by trail or river, with essentially undeveloped shorelines and unpolluted waters.
- *Scenic rivers* are essentially free-flowing with largely undeveloped shorelines and limited road access; adjacent lands are used for dispersed human activities, such as agriculture, silviculture, and others, which do not disturb the natural character of the river.
- *Recreational rivers* may have more access and development along the shoreline and should possess outstanding river-related recreational opportunities.

For purposes of river classification, 37 miles of the Little Pee Dee - Lumber River are suited to the “natural river” class because of the wild and undeveloped character of the river on the upper and lower ends of the study area. Twenty-five miles are suited to the “scenic river” class because of the increase in access, development, and river-use found in the middle portions of the study area. A two-mile segment of the Little Pee Dee below its confluence with the Lumber has extensive residential development along the west bank and a high level of recreational use, therefore it is suited to the “recreational river” class. More specifically, the recommended classification of river segments is as follows:

- The Lumber River from the North Carolina border downstream to the U.S. Highway 76 bridge, a 12-mile river segment, should be classified a “natural river.”
- The Lumber River from the U.S. Highway 76 bridge downstream to its confluence with the Little Pee Dee, a five-mile river segment, should be classified a “scenic river.”
- A two-mile river segment of the Little Pee Dee River at the residential development of Fork Retch should be classified a “recreational river.” This segment begins at the Lumber River confluence and extends downstream to the first river bend passed the Fork Retch development.

- The Little Pee Dee River from below the Fork Retch residential development downstream to below the Knife Island Landing, a 20-mile river segment, should be classified a “scenic river.”
- Little Pee Dee River from below the Knife Island Landing downstream to the U.S. Highway 378 bridge, a 25-mile river segment, should be classified a “natural river.”

Scenic Characteristics

Impartial and systematic methods for evaluating the scenic resources of rivers have been developed and applied in different areas of the country. The Bureau of Land Management (1986) has a visual resource inventory and evaluation method which has been adapted to rivers and considers the overall impression created by characteristics such as landforms, vegetative diversity, natural colors in the landscape, diversity of views, special features, and human effects. However, no such method has ever been applied to South Carolina’s rivers.

The best source for comparative information on river scenery may be found in the *South Carolina Rivers Assessment* where scenic and aesthetic qualities were assessed as part of other resource values. The Lumber and Little Pee Dee rivers were rated by expert committees as either superior or outstanding for four resource categories that take into account scenic qualities of the river. The superior and outstanding values were for flatwater boating, backcountry boating, inland fisheries, and recreational fishing.

The ways in which scenic values and visual aesthetic qualities of rivers were addressed in the Rivers Assessment are as follows. For recreational fishing, backcountry boating, and flatwater boating, a criterion called “scenic quality” was used to rank the rivers. They defined scenic quality by the type and diversity of landforms, vegetation, degree of naturalness, and presence of man-made features. Scenery and other aesthetic factors were part of the criterion, “Quality of Recreational Use,” that was used by the inland fisheries group. Other factors that could be related to visual aesthetic character of rivers are the degree of naturalness, the quality and condition of habitats, and the scarcity of species and communities; these were assessed by the expert committees for natural features and undeveloped rivers.

As mentioned in the previous section on land use, human development activities have visually affected approximately eight miles (roughly 13 percent) of the river within the study area. Approximately 56 river miles are visually free of human development and provide a setting where natural conditions surround the river users. An experience of pristine wilderness-like conditions is available along much of this river.

A 1982 report published by the Scenic Rivers Program provided the following description of the scenic values of the Little Pee Dee River.

“The Little Pee Dee River provides a high-quality experience in terms of scenic beauty for the boater and canoeist. The river’s appeal is one of quiet beauty, with cypress and tupelo trees reflecting on the dark water. Frequent glimpses of waterfowl and other wildlife add to the natural character of the river. Quiet sloughs entice the canoeist to explore the many connecting waterways which lace the broad floodplain swamp. While there is little change in elevation, the river itself provides scenic vistas. The Little Pee Dee is at one moment a broad stream, then divides and subdivides into several channels which flow through the swamp or around islands. The constantly changing sandbars provide white beaches or occasional glimpses of white sand through the tea-colored water. While cypress trees stand a tall guard along the banks, other trees lean out over the water, often becoming victims of flood and erosion. Water snakes and turtles sun themselves on exposed logs. Once out of range of powerboats, the quiet and stillness of the river present a hushed atmosphere of wilderness, broken only by the quiet murmur of the water gently moving, the splash of the frog, or the call of the waterfowl. Long stretches of the river are completely untouched by man, except for the long ago logging which felled the virgin stands of cypress. Occasional areas of houses and river shacks, highway bridges, and landings are the major evidences of man’s activities” (SCWRC 1982).

Fifteen years have passed since this description was written and it continues to accurately reflect the scenic and aesthetic qualities of both the Little Pee Dee and the Lumber rivers. Along most of its route the river is open, typically ranging from 100 to 200 feet in width. Around the bends the views commonly extend a quarter mile downriver, and in a few places they extend a half mile or more. The river scenes are of clear blackwater, white sandy

beaches, open winding water trails lined by cypress trees and river birch, peaceful lakes formed of old river channels, and clustered houses beneath pines on the occasional areas of high ground. These are visual elements that make lasting impressions of the Lumber and Little Pee Dee.

Recreational Values

The recreational values of the river are assessed by considering the importance of existing and potential recreational uses such as boating, swimming, fishing, hunting, and camping. Other factors considered are river access facilities and proximity to population centers

Comparative information about the recreational resources of the state's rivers can be derived from the *South Carolina Rivers Assessment*. As explained previously, the Lumber and Little Pee Dee rivers were rated by expert committees as a superior recreational resource for flatwater boating and backcountry boating and they were rated an outstanding resource for recreational fishing. Associated with these recreational uses are primitive camping opportunities. Also within the Rivers Assessment, recreational hunting opportunities were assessed by the wildlife habitat committee and they determined the Lumber and Little Pee Dee rivers to be a resource of local significance.

The fishing reputation of the Little Pee Dee and Lumber rivers centers around the popular redbreast sunfish. The world's record redbreast, a two-pound fish, was pulled from the Lumber River in 1975. However, according to fishery surveys conducted by the SCDNR from 1988 to 1992 most anglers are targeting a variety of species on the Little Pee Dee (SCDNR ~1995). Creel surveys have encountered 18 fish species among anglers on the river. Warmouth, bluegill, redbreast, and largemouth bass were consistently the most abundant fish caught in terms of numbers and total weight.

The SCDNR fishery surveys also show very localized use of the river with 80 to 90 percent of the anglers coming from Marion or Horry counties and very few (less than one percent) coming from out of state. During the survey period 90 percent of the fishing effort was by boat anglers and 10 percent was from the bank. Fishing activities vary from year to year but the most popular time is in May and June when over half of the total angler effort on the river is expended. Estimates of angler effort on the Little Pee Dee during the five year study period (32,755 angler hours per year) are considered low fishing pressure for a river of this type. The fish sampling data which has been collected from the Little Pee Dee indicates there is a healthy fishery in the river (SCDNR ~1995).

The entire 64-mile stretch of river addressed in this study is navigable and it can be accessed at fourteen public boat landings dispersed along its length. Some sections of the river are navigable by larger powerboats and even water skiing is a popular activity. Other sections require smaller craft such as canoes or jonboats, especially during periods of low water levels. Locally made one-man fishing boats are popular for navigating the narrow sections of the river and the backwaters and swamps.

The Little Pee Dee and the Lumber are popular rivers for canoeists. Day trips are the most common use. Opportunities for multiday canoe-camping trips are available during lower water conditions when the sand bars along the river offer pleasant camping locations. Currently, there are no camping facilities on the private or public lands adjacent to the river.

Wherever access is available to the river, people will use the white sandy beaches along the banks for picnicking, camping, and swimming. Swimming and wading opportunities are excellent at the river's sandbars which slope into clean cool blackwater.

The study area is within easy driving distance of several large population centers making the river's recreational resources accessible to many thousands of people. Florence, Myrtle Beach, and Georgetown are each within a one-hour drive of the river. Charleston, Columbia, Fayetteville, and Wilmington are within a two-hour drive.

Geological Resources

The geologic resources of interest on scenic rivers are features, processes, or phenomena that are considered unique or outstanding. These could include features of rare or unusual geologic composition or appearance, such as

waterfalls, bluffs, unusual rock formations or geomorphic features.

The most significant geological resources of the study area may be the geomorphological features; the oxbow lakes, sloughs, braided streams, sand ridges and other fluvial formations that have been created by the river within the floodplain. These type features are not unusual on Coastal Plain blackwater rivers; however, the Little Pee Dee and Lumber rivers have an unusually numerous and well developed array of these fluvial formations in its floodplain. Many of these features can be directly accessed from the main river channel.

The Little Pee Dee and Lumber river flow through the flatlands of the Coastal Plain region of South Carolina. The relatively flat terrain, wide floodplains, and the sandy soils produce the vast swamplands and clear blackwater conditions that distinguish the river. The river corridor is underlain by thick layers of consolidated and unconsolidated sedimentary formations (for example, the Pee Dee Formation and the Black Creek Formation) that consist of alluvial sediments brought down from the Piedmont and marine sediments deposited when ocean and estuarine waters covered the region. Materials in these formations include sand, gravel, clay, and limestone.

Botanical Values

The botanical values of the river are assessed by considering the natural communities and species that exist within the river corridor. The extent of high quality natural communities, communities of special significance, and threatened or endangered species habitat are considered.

The Lumber and Little Pee Dee study area was rated by expert committees of the South Carolina Rivers Assessment as an outstanding resource for natural features. The natural features category accounts for the scarcity and perceived quality, condition, and scientific value of the species and natural communities found along the river.

The vegetative communities of the Little Pee Dee and Lumber rivers and adjacent land are typical of blackwater rivers and bordering swamplands in the lower Coastal Plain of South Carolina. The area has potential for supporting high quality examples of these communities.

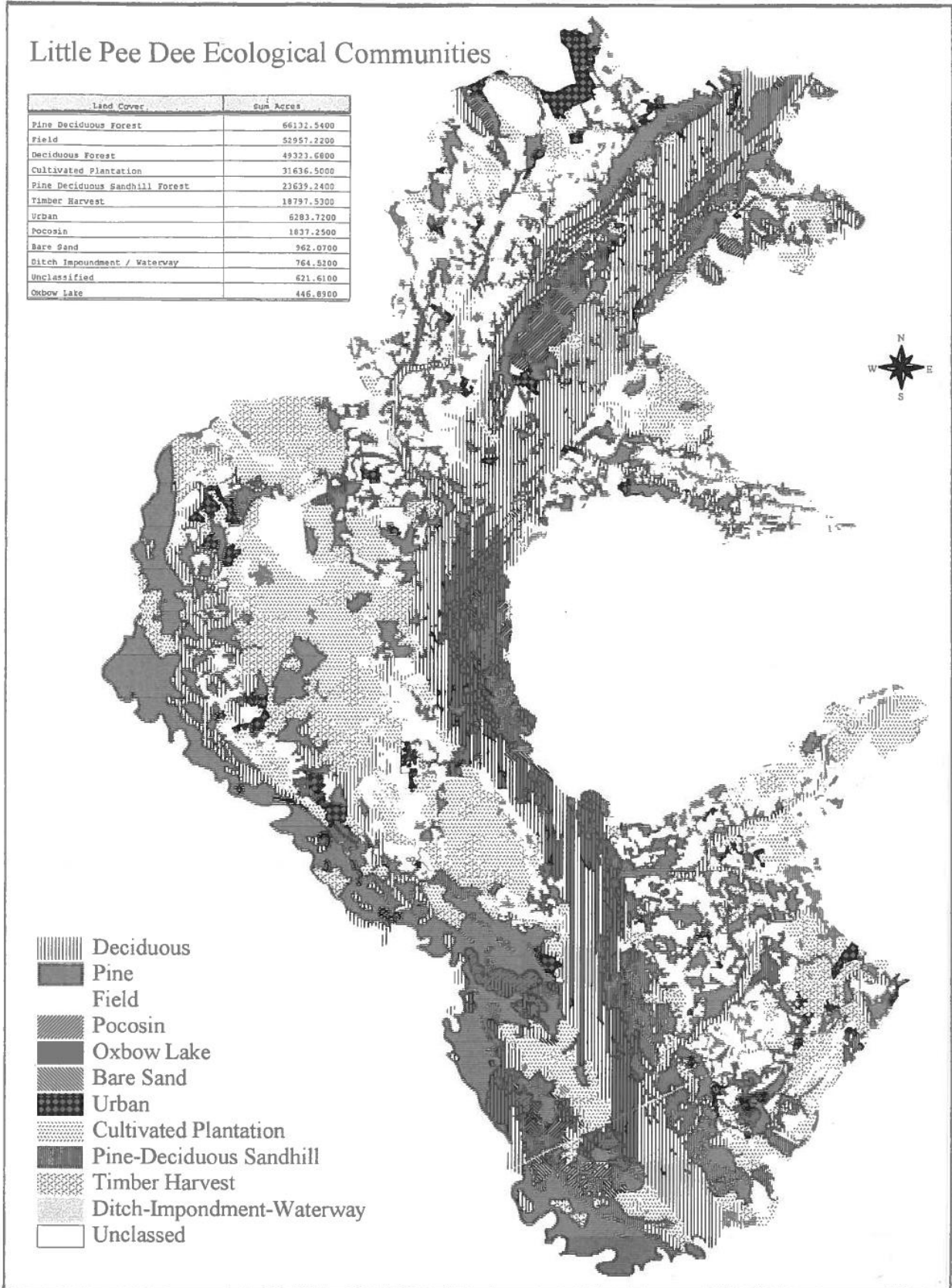
The Heritage Trust Program of the SCDNR has identified the Little Pee Dee River corridor as a high priority area for conservation because the area has very large land parcels, it supports many significant natural communities and sensitive species, and the area has high potential for recreational uses (SCDNR 1997a). The Heritage Trust Program has acquired roughly 8900 acres which extend along 17 miles of the Little Pee Dee and Lumber rivers. These properties are contained in four separate preserves:

- Little Pee Dee Heritage Preserve (Horry County, 3780 acres)
- Tilghman Heritage Preserve (Marion County, 456 acres)
- Little Pee Dee (Ward) Heritage Preserve (Marion County, 269 acres)
- Dargan Heritage Preserve (Marion and Horry counties, 4375 acres)

Heritage preserves and other lands along the Little Pee Dee and Lumber provide habitat for the endangered Sarvis holly (*Ilex amelanchier*). The natural communities with high resource value include cypress-gum swamps, bottomland hardwood forests, and fluvial sand ridge communities.

Ecological communities of the Little Pee Dee River region below the Lumber River confluence including all of the area known as Britton Neck were mapped (see Figure 3) by John Nelson (1993) in cooperation with the Heritage Trust Program and the Land Resources Division of the SCDNR. Figure 3 shows the distribution of ecological communities along most of the study area. The 12 types listed in the map's legend correspond with the 12 land cover types listed in the map's acreage table, even though the terms vary somewhat. The "deciduous" (as presented in the legend) or "deciduous forest" land cover type (as presented in table) shows the location of the cypress-gum swamps. The long linear pattern of deciduous forest shown on the map defines the location of the river's floodplain. The "pine" or "pine-deciduous forest" land cover type shows the distribution of bottomland hardwood forests. The "pine-deciduous sandhill" or "pine-deciduous sandhill forest" land cover type shows where xeric sandhill scub and fluvial sand ridge communities may be found. The "pocosin" type, in most cases, reveals the location of Carolina bays (SCDNR 1997b and Nelson 1993).

Figure 3. Map of Little Pee Dee Ecological Communities.



As previously reported by the Scenic Rivers Program (SCWRC 1982), the dominant overstory trees are baldcypress and tupelo which occur along the river's edge, in oxbow lakes and sloughs, and throughout the adjacent swamps. These two species become increasingly abundant with distance downstream as swamp habitat increases.

Other common overstory species along the river segment include red maple, sycamore, sweetgum, black gum, overcup oak, water oak, laurel oak, water hickory, American holly, and green ash. The loblolly pine occurs on some of the higher banks and along sand ridges found within the river's floodplain.

Understory vegetation along the river's edge is dominated by river birch which overhangs the water in many areas. Black willow is a common understory species along exposed sandbars in the lower portion of the river. Other common species include hornbeam and buttonbush.

Herbaceous aquatic macrophytes are common in shallow, slow-flowing habitats along the entire river segment. As with baldcypress and tupelo, the abundance of aquatic plants generally increases with distance downstream where shallow, swamp habitat is most extensive.

Fish and Wildlife Values

Fish and wildlife values are assessed by considering the occurrence of habitats and populations in the river corridor. Habitats of special significance for both game and nongame species, habitats for threatened or endangered species, and the abundance and diversity of habitats and species are considered.

Fisheries

The Lumber and Little Pee Dee study area was rated by expert committees of the South Carolina Rivers Assessment as a superior resource for inland fisheries. The Little Pee Dee River and associated tributary streams, sloughs, oxbow lakes, and swamps provide a diverse habitat for the indigenous fish community. The river's relatively stable streamflow and good water quality further contribute to a favorable environment for fish. The shortnose sturgeon, an endangered fish species that inhabits coastal rivers of South Carolina, may occur in the river.

A total of 53 species of fish were collected from the Little Pee Dee and Lumber rivers during 1990 to 1993 sampling conducted by the SCDNR (SCDNR ~1995). The most abundant species by numbers were coastal shiners, spotted sunfish, and redbreast sunfish, accounting for 20 percent, 18 percent, and 17 percent of the total number of fish sampled respectively. By weight, the most abundant fish were bowfin, largemouth bass, spotted sucker, and carp, representing 37 percent, 12 percent, 9 percent, and 8 percent of the total biomass sampled respectively.

In addition to the resident fish community, a number of migratory species are known to seasonally inhabit the river (SCWRC 1982). These fish migrate upstream from Winyah Bay and the Atlantic Ocean to spawn. Migratory species include the American shad, hickory shad, blueback herring, and striped bass. A limited commercial fishery for shad and herring and sport fishery for striped bass exist in the lower portion of the Little Pee Dee.

Wildlife

The Little Pee Dee - Lumber river floodplain, roughly 4-miles wide and 50 miles long, contains vast acreages of wild and undeveloped land that provide suitable habitat for a variety of wildlife species. Adjacent to the river there are 32 parcels of land that exceed 500 acres in size and 13 parcels that exceed 1000 acres. On these wild lands there are few roads to cause habitat fragmentation or barriers to wildlife; only four highways and one railroad cross the floodplain. The expert committees of the South Carolina Rivers Assessment rated the Little Pee Dee - Lumber river study area a superior resource for undeveloped rivers and an outstanding resource for natural features; both of these categories are positive assessments for wildlife.

Threatened and endangered wildlife species known to inhabit the area include the American alligator, red-cockaded woodpecker, and bald eagle.

The most common big game animal in the study area is the whitetail deer. Wild turkeys are also scattered in

occurrence within the area. The black bear probably occurs infrequently in the Little Pee Dee - Lumber river floodplain as well, traveling from nearby bear-inhabited areas in North Carolina. A number of small game mammals occur in the area and several, such as raccoon, gray fox, red fox, and mink, are harvested for furs. Eastern cottontail populations are sparse but gray squirrels are common along the river and in adjacent hardwood forests. Beavers are fairly common along the river. River otter and bobcat occur in the area but are not common.

Game bird populations include bobwhite quail, mourning doves, and migratory and non-migratory waterfowl. Quail populations are considered light to moderate, and mourning doves are common. The wood duck, South Carolina's only year-long resident duck, is common and nests in the area. Migratory waterfowl which may inhabit the area seasonally include black duck, mallard, green-winged teal, widgeon, gadwall, and pintail.

Many species of non-game animals inhabit the river corridor. Songbirds, wading birds, and birds of prey are common and are probably the most visible wildlife species to recreational river users. Several species of turtles and water snakes are common and are also easily observed along the river.

Historic and Cultural Values

The historic and cultural values of the river are assessed by considering the importance of historical and prehistorical events, uses, structures, and artifacts related to the river corridor. When rated by expert committees from the South Carolina Rivers Assessment, the Lumber - Little Pee Dee study area was as an outstanding resource for historic and cultural values.

Approximately 15 archeological sites have been identified within a two-mile proximity to the Little Pee Dee and Lumber rivers in South Carolina. Most of these sites are on the upland areas adjacent to the river, and they are believed to date from various cultural periods ranging from the Early Archaic period (~8000 B.C.) to early settlement by Europeans (SCIAA 1997). Archaeological evidence indicates that prehistoric inhabitants utilized the floodplain for hunting, foraging or cultivating, and permanent living sites were on the adjacent bluffs and sand ridges.

A dugout canoe estimated to be over 1000 years old was found near the Lumber River in North Carolina. This indicates that native Americans like the European settlers navigated the river for trading, fishing, hunting, and other activities (NCDEHNR 1995).

When Europeans first began to settle in South Carolina, the Pee Dee area of the state was inhabited by numerous but small indian villages. Names of some indian tribes have been preserved in the names of rivers, creeks, and towns of the region. The Pee Dee Indians generally lived around the two rivers which bear their name. Other tribes included the Lumbees, Cheraws, Waccamaws, Winyahs, Sampits, and Chicoras. Little is known about the Pee Dee and other indian tribes of this region. After white settlement began, the small tribes declined rapidly because of disease or were forced out of the area. The Pee Dee people may have joined with the Catawbans (SCWRC 1982).

The major influx of Europeans began in the early 1730's when a series of townships were created on the rivers to help settle the inland areas. The land between the Great Pee Dee and Little Pee Dee became known as Britton Neck, named for a family of successful planters in the area. Francis Britton established the first ferry across the Great Pee Dee in 1749. There were several fords on the Little Pee Dee which were used during periods of low water. About the time of the American Revolution, Potato Bed Ferry was established at the site of the present U.S. Highway 378 bridge (SCWRC 1982).

During the Revolution, the area around the Little Pee Dee contained many persons who were loyal to the King, and it became the scene for much of the activity of General Francis Marion, the Swamp Fox. Marion's highly mobile force, largely on horseback, was composed of men who knew the forests, canebrakes, rivers, and swamps. They introduced a type of guerrilla warfare which generally confused the British commanders. Marion's base of operations was Snow Island, at the confluence of the Great Pee Dee and Lynches Rivers. From this area, his men moved at will through the countryside. After striking the Tories at Britton Neck in August of 1780, Marion moved north along the Little Pee Dee to the Blue Savannah near Galivants Ferry. Here he encountered 2000 Tories on

September 4 under Captain Jesse Barefield, and drew them into a devastating ambush. The services of General Marion and Major Peter Horry were recognized later when the two Counties were named for them (SCWRC 1982).

The Little Pee Dee River served as a transportation mode from the very beginning of settlement, bringing settlers and supplies up from the Winyah Bay area and taking agricultural products, lumber, naval stores, and other goods down to market. One-hundred-foot logs were rafted downriver from North Carolina in the late 1800's to Georgetown (NCDEHNR 1995). Up until 1897, the Army Corps of Engineers cleared snags from the river channel to allow steamboat travel from Georgetown all the way to Lumberton, North Carolina. As late as 1915, steamboats ran regularly on the Little Pee Dee up to Galivants Ferry (SCWRC 1982).

Today the primary use of the river is for recreation. It has always attracted anglers, and interesting one-man fishing boats have been developed locally which are especially suited for use on the river, its swamps, and small lakes.

Streamflow and Water Quality

To assess streamflow, issues of minimum flow, navigation, and natural stream conditions are considered. Streamflow conditions should include a sufficient volume of water during normal years to permit traditional instream uses. The volume of water should be sufficient for safe navigation where navigational use is important. To assess water quality, the river's water classification, water quality trends, and related water quality problems are considered. The water quality in scenic rivers should meet or exceed the relevant state water quality standards.

Streamflow

The mainstems of the Little Pee Dee and Lumber rivers are entirely freeflowing. The rivers have not been altered by dams or channelization and the stream channels retain their natural characteristics.

Stream-stage monitoring by the U.S. Geological Survey at the Highway 501 bridge at Galivants Ferry provides a continuous record of the river's flow. Average daily streamflow, measured on the Little Pee Dee River at Galivants Ferry, is about 3200 cubic feet per second (cfs). Ninety percent of the time, streamflow at Galivants Ferry can be expected to equal or exceed 700 cfs. The lowest flow and the highest flow of record at Galivants Ferry was 155 cfs and 27,600 cfs respectively (SCWRC 1983). Streamflows are typically highest during the winter and early spring and lowest during the summer and early fall. In all but the driest years, navigation on the river is easy by small boats.

Approximately 50 inches of precipitation enter the Little Pee Dee - Lumber River Basin annually. Of this amount, about one-third leaves the basin as streamflow. The other two-thirds is lost largely to evapotranspiration with a small amount seeping into deep aquifers.

The river system flows through sandy, permeable soils of the Coastal Plain. The headwaters of the river originate in the Sand Hills. The porous soils store large amounts of water and during periods of low rainfall the shallow aquifers discharge groundwater to the streams and supplement the river's flow. This groundwater discharge to the streams is reduced during the summer and early fall when high temperatures result in substantial losses of water from the basin through evaporation and transpiration by plants.

Water Quality

The Little Pee Dee and the Lumber are blackwater rivers. The water has a dark tea color because the water is stained by chemicals known as tannins which are leached from the tree leaves and other organic material decomposing in the surrounding swamps. Because the Little Pee Dee and Lumber rivers originate in and flow through the relatively flat sandy soils of the coastal plain, their waters have very little sediment load. The permeable soils and extensive swamplands found throughout the watershed are natural characteristics that serve to protect water quality from human pollution sources. The swamps, however, can cause natural water quality problems with low levels of pH and dissolved oxygen.

The entire Little Pee Dee River below the Lumber River is classified as "Outstanding Resource Waters" (ORW)

within the system of water classification and water quality standards administered by South Carolina Department of Health and Environmental Control (SCDHEC). The ORW classification is assigned to waters of exceptional recreational or ecological importance or of unusual value. ORW classification also prohibits direct wastewater discharge into the river. The Lumber River is classified as “Freshwater” which applies standards to protect multiple uses including the following: swimming, boating, fishing, drinking water supply, survival and propagation of the natural aquatic community, and industrial and agricultural needs.

Recent analyses of water quality monitoring data by SCDHEC indicate that the study area of Little Pee Dee and Lumber rivers has very good water quality. Aquatic life uses and recreational uses of the river are fully supported by the existing water quality conditions (SCDHEC 1997).

At several monitoring sites low levels of dissolved oxygen and pH occur which contravene water quality standards. SCDHEC considers the levels to be typical of swamps and blackwater streams. The low levels for oxygen and pH are considered natural, not standards violations.

Analyses of trends in the data show both favorable and unfavorable changes in water quality over time. At several sites changes in biochemical oxygen demand, nutrient concentrations (total phosphorus, and total nitrogen), and total suspended solids suggest improving conditions for these pollutants. However, at several sites trends in turbidity, fecal coliform bacteria concentrations, pH, and dissolved oxygen concentrations suggest unfavorable change in conditions for these pollutants. Water quality problems in the Little Pee Dee and Lumber rivers have been attributed mainly to natural conditions and non point source pollution.

SCDHEC (1987) reports that the South Carolina permitted wastewater dischargers to the Lumber River include the Town of Nichols wastewater treatment plant. The indirect dischargers include the Town of Lake View that discharges to Bear Swamp and B&M Aquacultural Farms that discharges to Bull Swamp.

As mentioned above, the ORW classification for the Little Pee Dee below the Lumber River excludes all direct wastewater discharges. However, on the tributaries there are several permitted dischargers. From the Marion County side the Town of Mullins discharges to White Oak Creek and Locust Tree Development discharges to a tributary. On the Horry County side the City of Loris discharges to a Lake Swamp tributary. In addition, Grand Strand Water and Sewer Authority / Town of Aynor and another discharger use Brunson Swamp tributaries.

On the upper Little Pee Dee, above the Lumber River confluence, permitted wastewater dischargers include the City of Dillon and Trico/Hamer water treatment plant. On tributaries of the upper Little Pee Dee three dischargers use Buck Swamp and one discharger is located on each of the following: Gum Swamp, Hayes Swamp, Ropers Mill Branch, and Long Branch.

Conclusions about the River's Eligibility

Findings from this eligibility study demonstrate that the 64-mile Little Pee Dee - Lumber River study area does possess outstanding river-related values and therefore should be designated a State Scenic River. Those values judged to be of outstanding significance include the river's scenic, recreational, botanical, fish, wildlife, and historic values. Water quality conditions are also of outstanding significance.

The Lumber and Little Pee Dee study area was rated by expert committees of the *South Carolina Rivers Assessment* as follows:

- Scenic values -- the river is superior in three categories and outstanding in one category that takes into account scenic qualities; the categories are flatwater boating, backcountry boating, inland fisheries, and recreational fishing.
- Recreation values -- the river is a superior recreational resource for flatwater boating and backcountry boating and an outstanding resource for recreational fishing.
- Botanical values -- the river is an outstanding resource for natural features which accounts for sensitive species and communities.
- Fish and Wildlife values -- the river is a superior resource for inland fisheries and undeveloped rivers and an outstanding resource for natural features (accounts for sensitive species and communities).
- Historic values -- the river is an outstanding resource for historic and cultural resources.

When compared to all other rivers evaluated in the Rivers Assessment, the combined ratings of scenic river values for the Little Pee Dee - Lumber River study area place this river in South Carolina's top five candidates for State Scenic River eligibility.

The significance of the river is demonstrated by the Heritage Trust Program identifying the Little Pee Dee River corridor as a high priority area for conservation and acquiring roughly 8900 acres along 17 miles of the Little Pee Dee and Lumber rivers.

Water quality conditions, alone, make this river an outstanding resource. The ORW classification is assigned by SCDHEC to waters of exceptional recreational or ecological importance or of unusual value.

For purposes of river classification, the upper 12 miles and the lower 25 miles of the study area have a wild and undeveloped character and are suited to the "natural river" class. Twenty-five river miles in the middle portions of the study area are suited to the "scenic river" class because the area generally has greater access, development, and river-use. A two-mile segment of the study area at the Fork Retch community is developed and has a high level of recreational use, therefore it is suited to the "recreational river" class.

Appendix

The information provided in this appendix was not a part of the July 22, 1997 draft report of the Little Pee Dee - Lumber River Eligibility Study; the information is included with this final report to address the outcomes of the public process for the scenic river designation which followed.

Local Opposition Halts SCDNR Action for Scenic River Designation

In May 1997, the SCDNR began notifying landowners and elected officials of the proposed 64-mile Little Pee Dee - Lumber scenic river designation and informed them of the designation process which would include wide-spread public notification, public meetings, and County Council approval before going to the General Assembly for legislation. Opposition to the scenic river proposal arose from citizens of Marion County from the Fork Retch community who ultimately persuaded Marion County Council to reject the designation proposal in November 1997.

In July 1997 two public meetings were held to provide information and address the questions and concerns of landowners and local citizens regarding the scenic river designation. The public meetings were held July 29 and 31 in Mullins and Conway, South Carolina. River bordering landowners, county council members, and other interested citizens were sent a letter inviting them to the public meetings. Notice of the public meetings was published in the State Register and in newspapers with local and statewide circulation. A press release announcing the scenic river proposal and the public meetings was distributed two weeks prior to the meetings.

In August 1997 the county councils were requested to review and approve the proposal.

- Horry County Council approved the scenic river proposal on September 16, 1997.
- Marion County Council held its own public hearing regarding the proposal on September 25 and then voted 5 to 1 to reject the proposal on November 11, 1997.
- Dillon County Council never made a decision regarding the proposal despite several requests for the decision from SCDNR staff.

The opposition in Marion County to the proposed scenic river designation was based on concerns that the Scenic River designation would result in a host of new regulations. Even though there are no regulations associated with the designation concerns remained that regulations would eventually follow the designation.

Because the Marion County Council voted to reject the proposed Little Pee Dee - Lumber scenic river designation, SCDNR staff advise that no further action be pursued by the SCDNR regarding the recommendations of this study until public support, additional information, or policy change prompts further action.

Answers to Common Questions about State Scenic Rivers

The common questions of concern expressed by landowners and citizens are grouped and shown below in italics. The responses provided by the Scenic Rivers Program staff follow each set of questions.

How will scenic river designation affect property owners? Are there regulations or restrictions associated with the designation? Will there be restricted use of the river?

The Scenic Rivers Program is conducted in a manner that respects private property rights. There are no state regulations imposed on property owners and no one is obligated to participate in the program. The program works through a voluntary, cooperative management approach where river-management objectives are determined by a Scenic River Advisory Council, a group representing local landowners and local river users. To further protect private property owners, the South Carolina Scenic Rivers Act prohibits the use of eminent domain or condemnation of private property through this program.

The Scenic River Advisory Council will create a management plan to define the long-term management needs of the river and to set goals and objectives for addressing those needs. The management plan is created and implemented by involving any interested citizen who wishes to participate. After studying a particular

problem, it is possible the Advisory Council may conclude that a form of regulation is needed to better manage the river in some way, and they may try to establish a regulation. However, the Advisory Councils have no power to create regulations themselves. Like any other interest group, they have to go through county councils or the General Assembly or some other governing authority to get a regulation passed.

Because most members are local landowners, the Scenic River Advisory Councils usually advocate nonregulatory solutions to river problems. The groups usually accomplish their objectives through voluntary management agreements with landowners, cooperative river-improvement projects, and education activities.

How are members of the Advisory Councils appointed? Who determines their direction and what they will do?

Scenic River Advisory Councils are appointed by the Executive Director of the SCDNR and they are chaired by a staff member from the SCDNR Scenic Rivers Program. Nominations for members are solicited from the local landowners and citizens. Additional people, beyond the official members, are encouraged to be involved in the work of the Advisory Council and they can be appointed as *ex-officio* (non-voting) members.

A Scenic River Advisory Council is a committee composed six to ten voting members who represent landowners and community groups with an interest in the river. By law, the majority of voting members must be river-bordering landowners. The overall direction of activity for a scenic river project is determined by the Advisory Council. Decisions and courses of action are usually based on a consensus, or full agreement, among the whole group.

All meetings of the Advisory Councils are open to visitors who are welcomed to provide input to Advisory Council decisions. Participation of as *ex-officio* (non-voting) members is encouraged on the Advisory Councils.

What is the advantage of the scenic river designation?

The primary advantage of scenic river designation is the creation of a partnership between local citizens and the SCDNR to conserve and enhance the scenic river. The SCDNR makes a commitment to work cooperatively with local citizens and local governments to take a long-term, comprehensive view of the resource and try managing changes in a way that conserves the natural and scenic qualities of the river for the enjoyment of present and future generations.

The scenic rivers program can provide protection for natural and cultural features through conservation easements which also provide tax advantages for property owners.

There can also be economic benefits from scenic river designation. Property values will likely increase for all river bordering landowners. Local tourism can be enhanced with the presence of a scenic river. Recreation oriented businesses may increase. And the scenic river can possibly attract high profile development and industry that looks for communities with high quality natural environments.

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