

SHEARON HARRIS WILDLIFE MANAGEMENT IMPLEMENTATION PLAN

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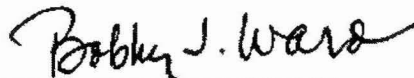
Environmental Services Section

Carolina Power & Light Company

New Hill, North Carolina

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Reviewed and Approved by:



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This report was prepared under my supervision and direction, and I accept the responsibility for its content.



Manager
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1.0 INTRODUCTION

A commitment was made by Carolina Power & Light Company (CP&L) to conduct an active management program for wildlife on lands associated with the Shearon Harris Nuclear Power Plant (SHNPP) located in Wake and Chatham Counties, North Carolina, and to make available the unrestricted portions of the lands and waters associated with this facility to the general public. This commitment reflects the need in our contemporary society to make multiple use of our lands and waters, to conserve as many of the natural features of our native landscape as possible, and to provide a place for people to enjoy the recreational opportunities of this region.

1.1 Purpose

The purpose of this SHNPP Wildlife Management Implementation Plan is (1) to provide goals and objectives for the management and operation of the wildlife program initiated on the SHNPP site; (2) to present a review of the history and justification for establishment of a wildlife management program; (3) to provide a location and brief description of the wildlife management, refuge, and public access areas included in the program; (4) to describe management divisions and habitat inventory guidelines; (5) to describe management programs and their objectives; and (6) to provide guidelines and activity schedules for implementing each program included in the plan.

1.2 Administration

The SHNPP Wildlife Implementation Plan was developed in conjunction with the Harris Development Timber Management Plan prepared by the Land and Right-of-Way Unit of CP&L in December 1982 (CP&L 1982). The SHNPP timber and wildlife programs are administered cooperatively by the Environmental Services Section and the Land and Right-of-Way Unit of CP&L. Timber management conducted on the lands designated as Wildlife Management Areas is carried out with wildlife values given first priority.

2.0 MANAGEMENT GOALS AND OBJECTIVES

In determining the long-range goals and management objectives for the wildlife management and refuge areas, species diversity (both plant and animal) is considered at all planning levels. The primary "diversity ethic" for the site is to maximize diversity across the site rather than within individual land units. By approaching species diversity in this way, those species which require larger contiguous tracts of land are not overlooked at the expense of the more common edge species (Sampson and Knopf 1982).

2.1 Definitions

In order to manage for those species that are dependent upon larger contiguous tracts of similar habitat and the more common edge species, the following working definitions of diversity were used in developing goals for the SHNPP Wildlife Implementation Plan.

Alpha diversity--alpha diversity is defined as "within habitat diversity" and is evaluated by determining the number of species present in a community and the evenness or equitability of their distributions.

Beta diversity--beta diversity is defined as "between habitat diversity" and is determined by the amount of species turnover between habitat types or the change in species composition along environmental gradients.

Gamma diversity--gamma diversity is defined as a measure of all species within a particular geographic area and is the total number of species found in all available habitats within a fairly large defined area.

2.2 Management Goals

Based on the commitment to manage for wildlife and to provide public access and based on the diversity ethic developed for the SHNPP site, the primary goals for management of SHNPP lands set aside for wildlife are as follows:

1. Maintain a diversity of plant and animal species across the site by minimizing practices which promote site-specific diversity, by emphasizing between habitat diversity, and by implementing a "top-down" or a gamma-beta-alpha diversity approach.
2. Enhance and improve habitat for native wildlife species by establishing and/or maintaining specific programs for habitat development.
3. Protect unique plant and animal communities or habitat features in the area (i.e., habitat for endangered species identified on the site, rock outcrops, old growth timber).
4. Provide areas where access is available to the general public by working cooperatively with county and state agencies in the area of resource and recreation management and at the same time protect the natural integrity of the site.

2.3 Management Objectives

The plan is designed to address these overall goals in periods of five-year increments. Specific objectives are defined for the five-year period, 1985-1989, to initiate or continue programs which directly accomplish the goals for the overall plan. The plan is dynamic and is designed to be amended at any time techniques are further defined or developed. The SHNPP Wildlife Management Implementation Plan will be reviewed on a yearly basis to consider accomplishments during the previous year and to assess schedules and objectives for the upcoming year. During the year

1989, a new set of goals will be prepared and evaluated for the period 1990-1994.

The objectives of the five-year period, 1985-1989, are as follow:

1. Provide inventory base maps for all management and refuge areas on the SHNPP site, and physically mark boundaries of each designated area.
2. Obtain a photo index (mosaic of aerial photographs) for the SHNPP area, and create a habitat-type map considering land uses of adjacent landowners. Develop an index of land use in the SHNPP area including percentages of use for agricultural areas, pine plantations, right-of-ways, pasture lands, and forested areas.
3. Conduct habitat inventories of each management and refuge area which identify overstory, understory, herbaceous vegetation, and unique habitat features.
4. Initiate or complete establishment of wildlife programs selected for the SHNPP site including the Hardwood Protection and Mast Production Program, Snag Management Program, Artificial Nest Box Program, Prescribed Burning Program, Wildlife Food Plots and Wildlife Clearing Program, Operation and Maintenance Program for the Greentree Reservoir Refuge, Red-cockaded Woodpecker Refuge Program, and nature trail design, construction, and maintenance programs.
5. Establish or complete agreements with county and state agencies to provide public access and to provide certain areas with specific designations (i.e., game lands, county park, etc.).

3.0 BACKGROUND

In the early 1970s, a commitment was made by CP&L to the Atomic Energy Commission (AEC), the U.S. Fish and Wildlife Service (USFWS), and the North Carolina Wildlife Resources Commission (NCWRC) to set aside lands for wildlife as mitigation for the 4000 acres of terrestrial habitat flooded in the construction of Harris Lake (the makeup water reservoir for the SHNPP cooling tower). This commitment remained a part of the documentation reviewed by these agencies and the Nuclear Regulatory Commission (NRC) for the construction and licensing phases of the SHNPP facility. A commitment was also made to provide public access to the lands and waters developed for the site in 1971. As a result of the documentation supporting these commitments, wildlife management areas and refuges were designated and set aside, boat ramps were constructed, and wildlife management programs were initiated. Harris Lake was officially opened to the public in October 1983.

In the remainder of this section, a chronological review of the documentation for the SHNPP Wildlife Management and Land Access Program is presented.

August 1971

Land Policy

A land policy statement was developed for the Shearon Harris Nuclear Plant. This statement was included in final form in the Environmental Report - Operating License Stage (CP&L 1981). This policy is as follows:

. . . it is the policy of CP&L to make available for the enjoyment of the general public the lands and waters of the SHNPP consistent with their primary purpose--the generation of electric power. To permit the greatest use by the greatest number of people, the Company will cooperate with appropriate state agencies to provide public access for boating, fishing, hunting, and other uses which are not inconsistent with the primary purpose of the lands and waters.

Under the terms of this land policy, no private development is allowed around Harris Lake.

Construction Permit - Environmental Report (CP-ER) (Note: There is no one date for this document). The following excerpts from this report dealt with CP&L's commitment to establish a Wildlife Management Program.

Amendment 18

Preimpoundment and Postimpoundment Studies

. . . information gained from the preimpoundment studies will be utilized to assist in the design of a wildlife management program (i.e., planting, wildlife food, cover and resting areas, and establishment of wildlife refuge areas).

Multiple Use

. . . clearing of the site area will destroy some cover used by wildlife, but creation of a wildlife protection area in the land surrounding the reservoir is expected to create additional habitats in the future.

Recreational Fish and Wildlife Benefits

The construction of the 4000-acre reservoir complex will create a new reservoir potentially capable of providing a multiuse water resource. With almost 75 miles of shoreline, swimming, boating, picnicking, fishing, and other water-oriented activities in the area will be increased. Considerable new wildlife habitat will be created, especially for waterfowl. Wood duck production in the many wooded coves should be increased. The Company will cooperate with interested agencies in the establishment of our Fish and Wildlife Management Program and the creation of a wildlife area adjacent to the reservoir.

Terrestrial Biota

In addition, implementation of the Wildlife Management Program will replace much of the resources that will be lost initially.

Amendment 36

Construction Effects

The disruption and change in some wildlife habitat as a result of clearing operations will be an unavoidable impact in the construction of the Harris Plant. Efforts will be made to minimize this impact, and CP&L will cooperate with interested agencies in developing a Wildlife Management Area adjacent to the reservoir.

March 1974

Revised Final Environmental Statement for the SHNPP Units 1, 2, 3, and 4 (RFES) was issued by the NRC.

In Section 6.2 of the RFES, the NRC repeated verbatim CP&L's statement, included in the CP-ER, that CP&L would use information gained from preimpoundment studies to assist in the design of a wildlife management program.

May 1982

Shearon Harris Wildlife Management Plan was prepared and submitted to CP&L senior management for approval. The major points of this plan were:

1. Establishment of Wildlife Management Areas, wildlife refuge areas, boat access areas, and a nature trail.
2. Recommendation that CP&L assume the responsibility for cost and implementation of the plan.
3. Recommendation that some lands be entered into the NCWRC's Game Lands Program.
4. Provision that CP&L consider the advice of state agencies, such as the NCWRC.
5. Recommendation that regulation of hunting and refuge areas become the responsibility of the NCWRC.

This plan was approved by senior management (Appendix A1).

July 1982

A summary version of the Shearon Harris Wildlife Management Plan was transmitted to CP&L Nuclear Licensing. Nuclear Licensing transmitted this summary copy to the NRC for review (Appendix A2).

September 1982

A meeting was held between representatives from CP&L and the NCWRC. At this meeting, construction of boat ramps and inclusion of land into the NCWRC Game Lands Program were discussed.

February 1983

Memorandum from W. T. Hogarth to CP&L Senior Management--this memorandum included the actions decided upon as a result of the meeting between CP&L and the NCWRC and an implementation schedule. Approval was granted by senior management to designate Wildlife Management Areas 1, 2, and 3; to construct two boat ramps, a Greentree Reservoir, and a nature trail; and to set aside a red-cockaded woodpecker management area and an exclusion area refuge (Appendix A3).

At the same time, an interface document delineating responsibility within CP&L for various projects was transmitted to department managers (Appendix A4).

April 1983

Draft Environmental Statement, SHNPP Units 1 and 2 (DES) was issued for review.

In Section 5.2 of the DES, the NRC stated:

. . . the applicant in consultation with the NCWRC has developed a fish and wildlife management plan for approximately 1619 ha (4000 acres) of land on the site.

The NRC further stated that:

. . . the staff has reviewed a draft of the fish and wildlife management plan and concludes that its implementation should beneficially impact wildlife of the site and site vicinity. The degree of the benefit will depend upon the size of areas managed and the type of habitat manipulations such as tree clearing and planting of food patches.

June 1983

Memorandum to Melba Strickland (NRC) from Don Baker (NCWRC)--in this memorandum, Mr. Baker stated that the NCWRC had not received a copy of the Wildlife Management Plan from CP&L and would withhold comment on the DES until this plan was received and reviewed.

July 1983

Letter from Bruce Blanchard, U.S. Department of the Interior (USDI), to George W. Knighton (NRC)--as a result of their review, the USDI recommended that the specifics of the Wildlife Management Plan be addressed in the final statement including acreages, discussion of wildlife management strategies, and delineation of management and fiscal responsibilities.

August 1983

Letter from Dr. W. T. Hogarth (CP&L) to Mr. Stuart Critcher (NCWRC)--a summary of the SHNPP Wildlife Management Program was presented to the NCWRC for review.

September 1983

Letter from W. Vernon Bevill (NCWRC) to Dr. W. T. Hogarth (CP&L)--Mr. Bevill recommended adoption of the Wildlife Management Plan subject to the following conditions:

1. CP&L should proceed with game lands agreement for Wildlife Management Areas 1, 2, and 3.
2. Restricted hunting privileges should be granted within the exclusion area to increase the total committed acreage to 4000 acres.
3. Additional lands should be considered for inclusion into the Game Lands Program at an appropriate time.
4. Improved access and a parking area should be provided to Wildlife Management Area 3.

October 1983

Letter from Dr. W. T. Hogarth (CP&L) to Mr. W. Vernon Beville (NCWRC)--Dr. Hogarth responded to each of the four conditions discussed by the NCWRC. As a result, CP&L agreed to prepare a game lands agreement for Wildlife Management Areas 1, 2, and 3; to consider restricted hunting within the exclusion area only in event an excessive deer population developed; to consider entering additional land into the Game Lands Program if it became available; and to develop a plan for parking and access to Wildlife Management Area 3.

November 1983

Final Environmental Statement for the Shearon Harris Nuclear Power Plant Units 1 and 2 (FES) was issued by the NRC. The NRC staff reviewed the management plan submitted to the NCWRC and concluded that its implementation should beneficially impact wildlife of the site and site vicinity. The NRC also stated that the degree of benefit would depend upon the size of areas managed and the type of habitat manipulations such as the clearing and planting of food patches.

November 1983

Lease agreement for entering Wildlife Management Areas 1, 2, and 3 was prepared and signed by CP&L and the NCWRC.

December 1983

Letter from Dr. W. T. Hogarth to CP&L Senior Management--Dr. Hogarth recommended that CP&L enter the Harris Lake surface waters into the NCWRC Game Lands Program so that waterfowl hunting could be regulated by the NCWRC and could be restricted to three days per week. Senior management approved this recommendation.

4.0 LOCATION AND DESCRIPTION OF MANAGEMENT, REFUGE, AND ACCESS AREAS

The SHNPP site is located in the extreme southwest corner of Wake County and the southeast corner of Chatham County, North Carolina. The city of Raleigh is approximately 16 miles northeast, and the city of Sanford is approximately 15 miles southwest. A description of the site including climate, topography and drainage, soils and history, and previous management is included in both the SHNPP Environmental Report - Operating License Phase (CP&L 1981) and the Harris Development Timber Management Plan (CP&L 1982). This description will not be discussed here except as it relates directly to the application of certain management techniques.

In order to meet the commitments to manage for wildlife and provide public access areas, specific management, refuge, and access areas have been designated. The locations of the three Wildlife Management Areas are shown in Figure 1; the locations of the Exclusion Area Wildlife Refuge, Greentree Refuge, and Red-cockaded Woodpecker Refuge are shown in Figure 2; and the locations of the two public boating access areas, game lands, and nature trail are shown in Figure 3.

4.1 Wildlife Management Areas

As of December 1984, a total of 3115 acres was designated as Wildlife Management Areas 1, 2, and 3. A proposal was made to CP&L senior management in the fall of 1984 that a fourth area located on the east side of SR 1115 be given this same designation. Area 4 includes the Greentree Reservoir which makes up only a small portion of the total area of the proposed addition. A decision by senior management on this proposal is currently pending. The location and a brief description of each of the other three Wildlife Management Areas follow:

Wildlife Management Area 1 is approximately 1335 acres in size and is located southwest of Holleman's Crossroads on both sides of SR 1130 between the White Oak arm and the Buckhorn arm of the Harris Lake (Figure 1). Approximately 25% of the land in this management area lies within

Chatham County with the remaining 75% of the land area lying within Wake County. Management Area 1 contains timber stands composed of mixtures of hardwood and pine species with some pure stands of pine present (Figures 4 and 5). Several large inholdings (tracts of privately owned land surrounded on all sides by CP&L property) are contained within this management area.

Wildlife Management Area 2 is approximately 1430 acres in size and is located along the Cape Fear River with portions extending north to NC Highway 42 (Figure 1). All the land in this management area is located within Chatham County and is accessible from SR 1921 or NC 42. Management Area 2 is composed of mixed stands containing hardwood and pine with some large tracts of planted pine (Figures 6 and 7). The stands above the Cape Fear River are dominated by hardwood with only a few scattered pine. These hardwood stands are composed primarily of oak and hickory species with some beech present. Management Area 2 is bisected in several places by transmission line and pipeline right-of-ways.

Wildlife Management Area 3 is 350 acres in size and is located below the Tom Jack arm of Harris Lake (Figure 1). Approximately 90% of the land in this management area lies within Wake County. The remaining 10%, located in the southwest tip of Area 3, lies within Chatham County. This management area is accessible from SR 1912 or SR 1913. Plans are currently being developed to improve access via SR 1913 which is bounded on both sides by CP&L property. A large portion of Wildlife Management Area 3 was in fields before the land was acquired by CP&L. These areas are presently dominated by young loblolly pines which were either planted or seeded in naturally (Figure 8). One stand of mature pine is present as well as several stands containing mixtures of mature hardwood and pine.

4.2 Refuge Areas

Three refuge areas, totaling approximately 2600 acres, are designated to serve several purposes. Nongame wildlife programs are emphasized on the Exclusion Area Wildlife Refuge to benefit many species. The Red-cockaded Woodpecker Refuge protects an area of mature timber used for

cavity construction by these endangered birds. The Greentree Reservoir Refuge provides a feeding and resting area for migratory waterfowl. The location and a brief description of each refuge follow:

Exclusion Area Wildlife Refuge--the exclusion area is defined as a 7000-foot radius around the Shearon Harris Nuclear Power Plant and contains 2480 acres of land (Figure 2). A portion of this area was posted as a no-hunting zone by CP&L in 1984. The Exclusion Area Wildlife Refuge lies almost entirely within Wake County with a small area northwest of the plant located in Chatham County. The 320-acre auxiliary reservoir is located within the boundaries of the exclusion area. The Exclusion Area Wildlife Refuge contains stands composed of pine and hardwood species with some large areas of planted pine (Figures 9-11). Much of the area is fragmented into small stands due to the presence of the auxiliary reservoir, the plants intake and discharge canals, and transmission line, pipeline, railroad, and road right-of-ways. Management of some tracts within this refuge is limited by access problems or proximity to the SHNPP.

Red-Cockaded Woodpecker (RCW) Refuge--the RCW is a federally protected endangered species. The 90-acre refuge site is set aside to protect an RCW colony site which in 1984 contained two active cavity trees as well as several active starts (initiation sites for new cavities). Because of this bird's dependence upon mature pines for cavity construction, protection of the colony site and surrounding stand is critical to the survival of the birds. The refuge is located in Wake County along the north side of US 1, approximately 1.2 miles from the intersection of SR 1134 and US 1 (Figure 2). The upland portions of the RCW refuge tract contain mature loblolly, shortleaf and longleaf pines. These trees are the remnants of prior timber operations (subdominant or cull trees) conducted by the previous owner, Triangle Plywood Company. Hardwood species are thinly scattered throughout the pines and dominate the lower (wetter) areas.

Greentree Reservoir Refuge--the Greentree Reservoir is a seasonally flooded impoundment created to provide a feeding and resting area for wintering waterfowl. The SHNPP Greentree Reservoir site is located in

Wake County on Utley Creek upstream of the White Oak Creek arm of Harris Lake (Figure 2). When flooded, the reservoir is approximately 12 acres in size. The area around the dam and impoundment will be posted as a safety zone, and no hunting will be permitted. The access road to the Greentree Reservoir is located on the north side of SR 1115, approximately 2 miles east of Holleman's Crossroads. This Greentree Reservoir site was selected because of the relatively broad, flat floodplain and the consistent flow of Utley Creek. The area was also desirable because of the presence of mast-producing (acorns and seeds) hardwoods (primarily oaks and hickories).

4.3 Public Access Areas

To facilitate public access to the Harris Lake and SHNPP lands for fishing, hunting, hiking, picnicking, or other recreational purposes, boat access areas were constructed; game lands were designated; and a nature trail was designed and will be constructed in 1985. The location and a brief description of each public access area follow:

NCWRC Game Lands--the land in the three Wildlife Management Areas (3115 acres), as well as the Harris Lake (Figure 3), was formally entered into the North Carolina Wildlife Resources Commission's (NCWRC) Game Lands Program in 1983 and 1984 (Appendix B). The boundaries of these areas were marked by the NCWRC with signs before the initiation of the 1984 hunting season. The NCWRC is responsible for regulation of all hunting activities on these areas.

NCWRC Boating Access Areas--in the summer of 1983, two boat-ramp facilities were constructed by CP&L on the Harris Lake. In October 1983 these ramps were officially opened to the public and turned over to the NCWRC for operation and maintenance. One boating access area (Figure 3) is located in Wildlife Management Area 1 and is accessible via SR 1130. The other boating access area (Figure 3) is located off SR 1912 near its junction with NC 42. Each access area has two ramps and parking space for at least 50 vehicles.

Nature Trail--a nature trail located in a wooded area adjacent to the Shearon Harris Energy & Environmental Center (SHE&EC) was designed in the summer of 1984 and will be constructed in 1985 (Figure 3). The trail is designed to serve an educational as well as a recreational function and will be incorporated into SHE&EC Visitor Center programs. The trail features interest points illustrating prior land-use history, wildlife feeding stations, identification of native woody and herbaceous plants, and timber stands representative of those seen in other locations across the site. A longer 0.9-mile trail loop branches off a shorter 0.6-mile trail.

LEGEND FOR FIGURES 4 THROUGH 11

REPRODUCTION (sizes and spacing)

Map Symbols

- 10--less than 15 feet high--less than 600 stems per acre.
- 11--less than 15 feet high--more than 600 stems per acre.
- 12--more than 15 feet high--less than 600 stems per acre.

PULPWOOD SIZES

- 19--less than eight merchantable trees per acre.
- 20--less than three cords of merchantable pulpwood per acre.
- 21--three to six cords of merchantable pulpwood per acre.
- 22--six to ten cords of merchantable pulpwood per acre.
- 23--more than ten cords of merchantable pulpwood per acre.

SAWTIMBER VOLUMES OR TREE SIZES

- 29--scattered seed tree-type spacing of sawlog-size trees.
- 30--less than three merchantable board feet (M.BD.Ft.) per acre.
- 31--three to six M.BD.Ft. per acre.
- 32--six to ten M.BD.Ft. per acre.
- 33--ten or more M.BD.Ft. per acre.

SYMBOLS FOR FOREST TYPES

- P--pine types (may be shown as Lob., PPLL, SL, etc.).
- H--upland hardwood type. Not wet--well-drained site.
- HB--hardwood bottom. Flat land--not well drained.
- SH--swamp hardwood type. Poor drainage--wet and boggy.
- PH--mixed pine hardwood type with pine predominating.
- C--Cypress.
- T--Tupelo Gum.
- BP--beaver pond.
- P1p--planted pines.

5.0 MANAGEMENT DIVISIONS AND HABITAT INVENTORY

In the fall of 1982, the Land and Right-of-Way Unit completed a timber cruise of Management Areas 1, 2, and 3 and the Exclusion Area Wildlife Refuge. Merchantable timber was classified by timber-type (pine or hardwood), age class, and density class. Volumes of sawtimber and pulpwood were calculated for each area. These cruises provided valuable information for timber management, but many habitat characteristics important to wildlife were not measured. For this reason, the five-year period from 1985 to 1990 will be used to perform wildlife habitat inventories for each of the three Wildlife Management Areas and the Exclusion Area Wildlife Refuge, the Red-cockaded Woodpecker Refuge, and the Greentree Reservoir Refuge. A schedule for habitat inventory of each area is presented in Table 1.

5.1 Management Units

During the timber-stand classification and mapping phase, the two largest areas, Wildlife Management Area 1 and Wildlife Management Area 2, were each divided into two smaller management units approximately equal in size (Figures 4-7). Due to its smaller size, Wildlife Management 3 only constitutes one management unit (Figure 8). The Exclusion Area Wildlife Refuge was divided into three management units (Figures 9 through 11).

5.2 Compartments

Each management unit in the three Wildlife Management Areas was further divided into compartments to create smaller working units for planning purposes (Figures 4-8). The Red-cockaded Woodpecker Refuge and Greentree Reservoir Refuge are designated as single compartments. The compartments are of approximately equal size. The most important consideration in delineating compartment boundaries was to place them along easily discernible landmarks in the field such as roads, transmission lines, or timber stands with different age and/or species classifications. The compartment will form the basic management unit for the five-year plan. All management objectives and activities will be formulated at the compartment level.

5.3 Compartment Cards

Basic habitat inventories will be conducted by completing a compartment card (Appendix C) for each Wildlife Management Area and Exclusion Area Wildlife Refuge compartment. The following information should be supplied on each of the compartment cards:

1. Management Area Number (1-3).
2. Management Unit Number (1-5).
3. Compartment Number (1-24).
4. Location of Management Unit--include county or counties (Wake or Chatham), access routes, and major landmarks.
5. Location of Compartment Within Management Unit--indicate position and direction of compartment within unit; i.e., SW tip, NE corner.
6. Dates Cruised--indicate dates when compartments were surveyed to determine species present, unusual features, etc.
7. Size of Compartment--indicate sizes in acres and in hectares.
8. Dominant Tree Species Composition--list overstory hardwood and pine species present based on cruise of compartment. Attempt to estimate each species' percent of total.
9. Soil Types--list major soil types from Wake and Chatham County soil maps and their drainage characteristics.

10. Fruit-Bearing Shrubs and Herbaceous Plants--list all species present in understory which are beneficial to wildlife. When possible, list which part of plant is preferred (i.e. fruit, stem, etc.).
11. Narrative Description of Compartment--make general description of compartment; include description of topography, presence or absence of creeks or ponds, and number and location of food plots.
12. Management Objectives for Compartment to Achieve Long-Range Goals, 1984-1988--list management objectives by each year for compartment; i.e., reduce understory in Stand P23₄.
13. Specific Management Activities to be Undertaken in Compartment, 1984-1988--list management activities to be undertaken to achieve management objectives for each year; i.e., perform winter-prescribed burn in Stand P23₄.
14. Unique Habitat Features--note presence of habitat features such as old abandoned evergreen orchards; hawthorne thickets, hickory, oak, beech, or other mast-producing groves, heavy coniferous cover, berry patches, recently disturbed sites, wolf trees, snags; and den trees.

Table 1. Schedule for habitat inventory of SHNPP Wildlife Management and Refuge Areas.

Survey Year	Survey Months	Inventory Areas
1985	June-August	Red-cockaded Woodpecker Refuge
		Greentree Reservoir Refuge
	September-November	Compartment 1
		Compartment 2
Compartment 3 Compartment 4		
1986	March-May	Compartment 5
		Compartment 6
		Compartment 7
	June-August	Compartment 8
		Compartment 9
		Compartment 10
	September-November	Compartment 11
		Compartment 12
		Compartment 13
1987	March-May	Compartment 14
		Compartment 15
		Compartment 16
	June-August	Compartment 17
		Compartment 18
		Compartment 19
	September-November	Compartment 20
		Compartment 21
		Compartment 22
1988	March-May	Compartment 23
		Compartment 24
		Exclusion Area Refuge - Unit 6
	June-August	Exclusion Area Refuge - Unit 7
	September-November	Exclusion Area Refuge - Unit 8

6.0 MANAGEMENT PROGRAMS

On each of the three Wildlife Management Areas and the Exclusion Area Refuge, specific wildlife management programs are conducted. These programs include:

- Hardwood Protection and Mast-Production Program
- Snag Management Program
- Artificial Nest Box Program
- Prescribed Burning Program
- Wildlife Food Plots and Wildlife Clearings Program

The following sections contain the purpose and objectives for each program and procedural and scheduling information necessary to conduct these programs. Lists of contact persons and partial listings of vendors are included in Appendix D.

6.1 Hardwood Protection and Mast-Production Program

Management Area 2, located above the Cape Fear River, has many contiguous acres of mature oak and hickory stands. Hardwood stands of smaller size and various species composition are also located on Management Areas 1 and 3. Protection of these areas from logging and fire is very important to those wildlife species present on the SHNPP site which are dependent upon mature hardwood stands for acorn and seed production and nesting areas.

6.1.1 Management Objectives

Management objectives for the SHNPP site to protect hardwood stands and to increase or stabilize mast production are:

1. Protect extensive hardwood stands from logging activities except to release crowns to increase mast production.
2. Protect hardwood stands from fire by separating from adjacent pine stands with adequate fire breaks.
3. Locate and protect wolf trees (large trees growing without competition from other trees). These trees are often excellent mast producers and may be good den trees.
4. Maintain mast production in selected hardwood areas at 100 pounds per acre (requires 22 to 25 large [14 inch or > diameter at breast height] [dbh] oaks/acre). (Decker et al. 1983.)
5. Improve mast production for selected mast producers in specified areas. Decker and Kelley (1982) recommend removing trees in a circle around the selected mast tree using the following formula:

2 x (DBH of crop tree in feet + constant)

constants

Trees < 10-inch dbh - constant = 1

Trees 10 by 17 inches - constant = 2

Trees > 17 inches - constant = 3

Example: An oak tree with a dbh of 13 inches would require a cleared circle of $2 \times (13 + 2) = 30$ feet. Note that the 13-inch dbh becomes 13 feet for calculation of circle diameter.

6.1.2 Discussion

Mast is the general term used for seeds and fruits produced by trees and shrubs. It provides a high-energy food source which is especially important to many wildlife species in fall and winter. Decker et al. (1983) state that at least 38 species of wildlife are known to eat acorns. The amount of mast produced is generally dependent upon the size of the canopy and the amount of sun reaching the canopy. Oak mast is produced at different intervals depending upon which group of oaks is being considered. White oaks flower and bear fruit in one growing season. Red oaks flower and set fruit in the first growing season but do not produce mature acorns until the following year (Decker et al. 1983). Other important mast producers are beech, hickory, black gum, and dogwood.

In a discussion of the management of oak-hickory forests, Evans (1975) stated that the greatest negative impact of modern forestry practices on wildlife is the removal of cull and dead trees and the elimination of large tracts of old growth. To meet the objectives of the management plan, a mosaic of habitat types will be maintained on the three management areas. In some cases, stands with no commercial economic value will be maintained in order to provide the mature timber component necessary to certain members of the wildlife community. The oak, hickory, and beech stands above the Cape Fear River are some of the most valuable hardwood areas on the SHNPP site due to their size.

If canopy closure is too severe in some hardwood areas, management of the hardwood stands should be coordinated with the snag management program. Trees should be girdled rather than thinned in order to create dead wood for cavities. This also creates very small open patches with heavier ground cover through the stand. These openings will not exceed one crown diameter in size. If larger openings are created, this creates edge habitat, thus excluding those species which do not successfully compete with the more common "edge breeding species."

6.2 Snag Management Program

Dead standing trees or snags are an important component of timber stands for many wildlife species. Thomas et al. (1979) provide the following definitions for snags, hard snags, and soft snags:

Snag--a standing dead or partly dead tree from which the leaves and most of the limbs have fallen--at least 4-inch dbh and at least 6 feet tall (definition based on the minimum diameter and height of dead trees used by birds for nesting).

Soft Snag--a snag composed primarily of wood in advanced stages of decay and deterioration, particularly in the sapwood portions; generally not merchantable.

Hard Snag--a snag composed primarily of sound wood, particularly sound sapwood; generally merchantable.

6.2.1 Snag Uses

Snags are used by many species to construct nesting and roosting cavities. Locally, this list includes many of the woodpecker species, the wood duck, kestrel, screech owl, Carolina chickadee, tufted titmouse, Eastern bluebird, Carolina wren, gray squirrel, flying squirrel, tree frogs, and skinks. Snags provide several other important benefits. The surface of the wood is important as a foraging substrate for many animals, and snags located in open areas may serve as perches from which raptors hunt for prey (Conner 1978).

6.2.2 Management Objectives and Methods

To manage for snags on the SHNPP site, the objectives and methods to achieve them are:

1. Inventory all management units including the Exclusion Area Refuge, Red-cockaded Woodpecker Refuge, and Greentree Reservoir Refuge. Count and record incidence of all snags. Classify these snags as hardwood or softwood, hard or soft snags (use hatchet or ax to see how easily wood is penetrated), and cavities present or absent. Also record the dbh, roughly estimate the height for each snag encountered, and plot the location of each snag on compartment maps. A listing of optimum nest cavity height, tree diameter at nest, dbh, and age of tree preferred by several cavity nesters is presented in Table 2.

2. Based on inventory information, determine snag density on a per acre basis. Using the guideline of a maximum of three hard snags and two soft snags per acre (Gutierrez et al. 1979), create snags in areas where they are scarce or lacking. Pay attention to the spatial distribution and avoid clumping. The following methods are used to create snags:
 - a. Injection of silvicide to kill trees--note: make sure silvicide does not inhibit fungal growth or cause harm to wildlife or insects before use.

 - b. Frill girdling--with an ax, cut away a 3- to 4-inch band of bark around the entire circumference of the trunk approximately 2 inches deep at breast height (4.5 feet).

 - c. Inoculation--inject with an appropriate species of fungus at correct heights and positions by using increment borers to create entry sites. Conner (1978) and Thomas et al. (1979) emphasize the relationship between the presence of a fungal heart rot and use of the snag for cavity construction. Trees most likely to be infected with a fungal heart rot are trees with visible

fruiting bodies, broken branch stubs, scars or wounds, soft or decayed cores obtained by increment borers, or areas of dead wood.

Table 2. Optimum nest cavity height, tree diameter at nest, dbh, and age of tree preferred by several cavity nesters (after Conner 1978).

Species	Nest Cavity Height (m)	Tree Diameter at Nest (cm)	Preference Live or Dead Section	DBH (cm)	Age of Tree (yrs)
Red-cockaded Woodpecker	3-12	Unavailable	Live	26-60	70-100
Downy Woodpecker	2-11	15-30	Dead (both)	17-60	60-70
Hairy Woodpecker	3-17	20-40	Both	22-60	85-95
Red-Bellied Woodpecker	3-18	15-35	Dead (both)	30-76	60-200
Red-Headed Woodpecker	4-20	24-36	Dead (both)	70-110	140-300
Common Flicker	3-18	26-60	Dead (both)	30-120	60-300
Pileated Woodpecker	5-17	30-45	Both	35-85	100-180
Black-Capped Chickadee	2-9	9-15	Dead	Unavailable	Unavailable

6.3 Artificial Nest Box Program

As part of the SHNPP Wildlife Management Plan, an artificial nest box program was developed to complement the snag management program. The three species which benefit primarily from these boxes are the wood duck, the Eastern bluebird, and the gray squirrel. In most instances, except for starlings and house sparrows, other species are not discouraged from using these boxes. Fresh nest material is placed in the bluebird and wood duck boxes after the nesting season to extend their use by providing winter shelter.

6.3.1 Management Objectives

The objectives for the artificial nest box program on the SHNPP site are:

1. Provide additional nest sites for wildlife species, especially the wood duck, bluebird, flying squirrel, and increase use of the SHNPP lands for breeding by these species.
2. Provide winter shelter for wildlife species (i.e., screech owls, titmice, Carolina chickadee, and squirrels).
3. Monitor reproductive activity for the bluebird, wood duck, and gray squirrel.

6.3.2 Box Placement Guidelines

Squirrels (Yoakum et al. 1980)

1. Erect boxes at densities of 2-3 per acre in areas producing 100 lb or more mast per hectare.

2. Erect boxes in hardwood stands between 30 and 60 years of age where natural cavities and snags are scarce.
3. Place only in trees where natural cavities are not available.

Bluebirds (Finch 1983)

1. Mount bluebird boxes in open areas well away from the tree-line (minimum distance of 160 feet which is the maximum distance a flying squirrel can glide).
2. Boxes should be mounted a minimum of 10 feet above ground. Mount boxes on poles, pipes, fence posts, or trees. Salvage pipe is available at the SHNPP site and is the preferred method.
3. Place boxes near available perch sites with a clear view (there should be no perch on the box itself). Perch sites used by bluebirds include utility wires and poles, fences, and dead or open tree limbs.

Wood Ducks

1. Place boxes on trees within one-quarter mile of water or mount on poles over shallow water. Preferred mounting method is on poles over shallow water. Salvage pipe is available from the SHNPP site.
2. Place boxes in areas where good escape cover and feeding areas are available.
3. Protect all boxes with conical sheet-metal predator guards placed at least 3 feet above minimum water level and 1 1/2 feet from bottom of box.

6.3.3 Timetables

To ensure that boxes are in good condition and nesting activity is monitored, the following annual timetables are used:

Wood Duck Boxes

January 1 through February 1--obtain fresh supply of sawdust or woodchips for wood duck nest boxes (enough for filling all boxes twice). Clean wood duck nest boxes, if necessary, and fill with nesting material to one-third the box height. Make necessary repairs to boxes and predator shields.

February 15 through July 31--begin regular cycle of checking boxes for nesting activity. Check weekly through June 1. From June 1 through July 31, check boxes every ten days.

September 1 through September 30--clean old nest material from boxes, and put in fresh supply of woodchips or sawdust for winter roosters (there are species besides the wood duck which use boxes for shelter during the winter).

Bluebird Boxes

March 1 through March 15--clean and repair bluebird boxes and make any necessary adjustments or repairs.

March 15 through August 31--begin checking bluebird boxes for nesting activity. Monitor the boxes weekly. Between broods (after fledging), remove old nests; bluebirds will not use a nest twice, although they may rebuild on top of the previous nest.

September 1 through September 15--clean all boxes and put in fresh woodchips or sawdust for winter roosters.

Squirrel Boxes

March 1 through April 30--census boxes to check for spring nesting activity. Boxes should not be permanently attached to tree, so they may be removed for inspection.

August 1 through September 30--census boxes to check for fall nesting activity.

November 15 through December 15--check condition of all boxes and make any necessary repairs. Make sure a layer of dry leaves, about 1 inch thick, is present in each box.

6.4 Prescribed Burning Program

The use of prescribed fire is an important tool in the management of southern pine forests. At this time no other treatment is available which accomplishes the same objectives as cheaply or efficiently as the controlled use of fire (Mobley et al. 1973).

6.4.1 Management Objectives

The objectives of the prescribed burning program are as follow:

1. Improvement of wildlife habitat by increasing yield and quality of herbaceous growth, legumes, and browse from hardwood sprouts and creation of openings in the forest stand.
2. Improvement of accessibility for various timber management activities including marking and thinning of trees.
3. Elimination of wildfire hazard by reducing litter accumulations and buildup of fuel.
4. Enhancement of appearance by creating a more open, park-like stand where wildflowers and animal species are more numerous and visible to the recreational public.

6.4.2 Timetable

January 1 through March 1--when weather conditions are optimal, conduct prescribed burns on sites selected and prepared during fall of previous year.

March 1 through July 15

1. Inspect burned areas to assess condition and to identify herbaceous plants which have seeded in as ground cover.

2. Determine whether any tree mortality occurred as a result of prescribed burning.

July 16 through August 15

1. Select areas to be burned during fall and winter.
2. Field-check selected sites and determine where fire breaks should be placed. Mark lines with flagging tape.
3. Calculate total acreage and length of fire line for each area to be burned.

August 15 through September 1--complete and submit form UFI-Request for Contract Services to construct fire line and to work with N.C. Forest Service if CP&L personnel do not plan to conduct the burn. (The Wake County Office of the N.C. Forest Service agreed to work on a contractual basis with CP&L. Their assistance will be used until CP&L personnel have gained several years of experience in conducting prescribed burns).

September 1 through September 15--check all equipment to make sure it is in good condition and working properly.

September 15 through November 15--construct fire breaks after peak leaf fall to prevent them from being covered by combustible material (leaves, pine straw).

November 15 through December 31

1. Notify Physical Sciences Subunit (Emergency Preparedness Unit), CP&L, that prescribed burning will be conducted when weather conditions permit. Ask them to complete form, Weather Forecast for Controlled Forest Burns (Appendix E1).

2. Complete first section of Prescribed Burning Plan (Appendix E2), and notify N.C. Forest Service county ranger (Appendix E3) of tentative burn date based on weather forecast. Make sure that the Forest Service will be on standby on the day burn is to be conducted. If this is not possible, reschedule burn.
3. Give advance notice to SHNPP plant manager of tentative burn dates.

Day of Burn

- a. Check in with Physical Sciences Subunit personnel to make sure weather conditions are safe and should remain stable.
- b. Notify SHNPP plant manager of exact time and location of burn.
- c. Contact N.C. Forest Service and give them the scheduled time of burn. Make sure they will be on standby if needed.

NOTE: If weather conditions change or will not be stable, plant manager does not approve of burn on that day, or N.C. Forest Service will not be available, RE-SCHEDULE BURN.

3. After completion of prescribed burn, complete remaining section of Prescribed Burning Plan - Summary of Burn (Appendix E2).

6.5 Wildlife Food Plots and Wildlife Clearings Program

Wildlife food plantings and clearings may serve several purposes for wildlife management. The objectives of the wildlife food plots and clearings program are:

1. Create open areas for dusting, courtship, and nesting use by wildlife; provide areas of higher density insect and rodent populations; disperse animals across a habitat but also concentrate them around an individual opening or planting; and increase the amount of available edge or interspersions between two habitat types. Only 1% to 5% of a management area is maintained in openings at any one time.
2. Plant wildlife foods in openings to provide important transitional foods between summer and winter diets for some species. Emphasize use of native plant species and encourage regeneration of native vegetation with fire.
3. Maintain openings on a two-year cycle by burning or mechanical methods.

6.5.1 Management Recommendations

Although wildlife food plots and clearings may play an important role in the management of an area for wildlife, Yoakum et al. (1982) stated that "from the standpoint of cost, there is no good substitute for natural regeneration of native species." In a study conducted in Wisconsin, the original plans called for clearing and maintaining 3% to 5% of the study area in food plots and clearings. Because of the excessive costs associated with construction and planting, the authors concluded that no more than 1% of a compartment (in the Wisconsin study, a compartment equaled approximately 600 ac) should be opened through construction (McCaffery et al. 1981). For this reason, less wildlife food plots and openings were constructed on the Harris site than the 10% recommended by some authors.

During 1983 and 1984, food plots were constructed in Management Areas 1, 2, and 3. Rather than construct any new openings, management objectives are aimed at careful and intensive management of already existing sites in order to better control size, quality, and distribution.

6.5.2 Food Plot Planting and Maintenance Timetable

Spring Planting

January 1 through January 31--calculate total acreage to be planted and disked during spring. Calculate total amounts of lime, seed, and fertilizer necessary for spring planting. Write purchase order for any planting materials needed (see Appendix D for a partial listing of seed dealers).

February 1 through February 29--if a contractor other than the one available through Transmission Line Maintenance will be used, complete and submit UF1--Request for Contract Services Form based on total acreage calculations and estimation of travel time between plots.

March 1 through March 15--complete planting table (Appendix F) for each food plot.

March 15 through April 15--if contract services through Transmission Line Maintenance are available, schedule planting and disking through Northern Division Forester (Doug Meier [919] 872-8905).

April 15 through May 1--weather permitting, begin spring planting and disking or maintenance (top-dressing) of perennial plots.

Fall Planting

July 1 through July 31--calculate total acreage to be planted and disked during fall. Calculate total amounts of lime, seed, or fertilizer necessary for fall planting. Write purchase order for any planting materials needed.

August 1 through August 15--if contractor other than the one available through Transmission Line Maintenance will be used, complete and submit UF1--Request for Contract Services Form based on total acreage calculations and estimation of travel time between plots.

August 15 through September 1--complete planting table (Appendix F) for each food plot.

September 1 through September 15--if contract services through Transmission Line Maintenance are available, schedule planting and disking through Northern Division Forester (Doug Meier [919] 872-8905).

September 15 through October 1--weather permitting, begin fall planting and disking or maintenance (top dressing) of perennial plots.

December 1 through December 31--contact district biologist, North Carolina Wildlife Resources Commission, and order free wildlife seed needed during upcoming year (perennial and annual mixtures).

6.6 Greentree Reservoir Operation and Maintenance Program

A Greentree Reservoir is defined as a seasonally flooded waterfowl impoundment with live standing trees. Initial flooding of the area begins in October, and all water is released before March 15. Trees are in a dormant period during this stage of flooding and are not harmed. The waterfowl species which benefit primarily from this type of impoundment are the wood duck, the mallard, and the black duck. These species feed in shallow waters on acorns and seeds which have fallen to the bottom.

6.6.1 Management Objectives

The management objectives for the Greentree Reservoir are:

1. Inventory all species within the area impounded, and mark those trees which are the best mast producers. In the Wildlife Habitat Improvement Handbook (1969), the U.S. Forest Service rated water oak, willow oak, and cherrybark oak as the best food producers for waterfowl species. Swamp chestnut oak, swamp white oak, overcup oak, black gum, hackberry, black locust, honey locust, and cypress were given good ratings. Those species rated as poor food producers for waterfowl were elm, ash, sycamore, yellow poplar, hickory, beech, birch, red maple, box elder, and pine.
2. Remove or girdle trees which are not good mast producers to create snags for cavities. Removal of some trees should allow more space for canopy development of good mast producers.
3. Plant-desirable hardwoods which can be purchased at nurseries for a reasonable cost in some areas of the impoundment.

6.6.2 Greentree Operation

Water control on the Greentree Reservoir is regulated by a stop-log structure on the spillway (Figure 12). Two sets of stop logs are dropped into notches horizontally on the left and right sides of the spillway structure or removed using a hoist. Stop logs should be stored in the fenced area behind the boat shed when they are not in use to prevent theft. The hoist should be carried out to the Greentree site for each use and returned to the boat shed immediately after log removal.

6.6.3 Timetable

February 1--begin releasing water from the Greentree Reservoir control structure by removing stop logs gradually (two to four logs removed each week) and continue releasing slowing.

March 15--all water should be completely released from the Greentree Impoundment by this date (all stop logs except the bottom log on each side removed).

October 15--begin initial flooding of Greentree Reservoir by inserting stop logs to bring the water elevation up to creek bank level.

November 1--begin inserting stop logs to flood above creek bank level.

December 31--Greentree Reservoir should be flooded to maximum level by this date (all stop logs in spillway).

6.7 Red-Cockaded Woodpecker Refuge Management Program

6.7.1 Introduction

As part of the SHNPP Wildlife Management Plan, a refuge area has been set aside for the red-cockaded woodpecker (RCW). This bird is listed on the federal endangered species list due to recent population declines (USDI 1969). The RCW requires mature-living pine timber (60 years or older) for construction of its nest and roost cavities. In 1982 a colony site was located on Harris lands, and in May 1984 two resident birds were identified. The timber stand where the birds are located is on nonrequired land, and CP&L set aside this 90-acre tract to be managed specifically for the red-cockaded woodpecker. In November 1984 a recommendation was made to CP&L senior management and approved to register this tract with North Carolina's Natural Heritage Program due to its unique zoological status. A decision by the North Carolina Natural Heritage Program is currently pending.

6.7.2 Management Objectives

The management objectives for protection of the RCW habitat are as follows:

1. Mark and map all cavity trees and reserve a 200-foot buffer around each tree.
2. Do not log in the colony site except to remove undesirable hardwoods or to perpetuate cavities, snags, or replacement trees to control southern pine beetle infestations and to remove stems which threaten to block off cavities.
3. Reserve or develop a 25-acre stand of at least 80-year-old loblolly or 100-year-old longleaf between one-fourth and three-fourths of a mile from the present colony site as a cavity tree recruitment stand.

4. Maintain a foraging support stand at least 100 acres in size with no more than one-quarter of the stand < 20 years of age.
5. Prescribe burn the stand on 3- to 5-year cycles between December and February. Before burning, rake all litter from around the base of cavity trees and snag out to a distance of 3 feet.

NOTE: Every effort should be made to protect snags in the colony site to reduce competition between other cavity nesters and red-cockaded woodpeckers. The red-cockaded woodpecker is the only species in North America which constructs a cavity in a living tree. If available, other cavity nesters construct nests in snags. When these snags are eliminated, other species are more likely to compete for cavities constructed by the RCW.

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EXECUTIVE SUMMARY

Call DEBRA JOHNSON

DATE: 5 / 27 / 82
 TO: Pat Howe
 FROM: Bill Hogarth *BA*
 ACTION REQUIRED:
 For Your Information _____
 Response Required _____
 To Be Approved x
 DATE REQUIRED: / / to

DATE: / /
 TO: Lynn Eury *See below
 FROM: Pat Howe
 ACTION REQUIRED:
 For Your Information _____
 Response Required _____
 To Be Approved x
 DATE REQUIRED: 6 / 3 / 82 to

DATE: 6 / 30 / 82
 TO: *Bill Hogarth*
 FROM:
 ACTION REQUIRED:
 For Your Information _____
 Response Required _____
 To Be Approved _____
 DATE REQUIRED: / / to

SUBJECT: Shearon Harris Wildlife Management Plan

BACKGROUND/SITUATION

1. SHNPP Revised Final Environmental Statement requires a wildlife management plan to be developed for SHNPP.
2. Currently we are involved with the licensing of SHNPP Unit 1.
3. NRC has requested that the plan be included in the Operating License Environmental Impact Statement.
4. Plan is attached along with cost estimates and map.

CONCLUSIONS

1. Plan calls for establishment of wildlife management areas, wildlife refuge areas, boat access areas, and a nature trail.
2. Administration of the plan should be undertaken by CP&L and cost \$145,000 to implement. Income from timber sales are estimated to be \$206,000.
3. Some lands would be entered into the North Carolina Wildlife Resources Commission's (NCWRC) Game Lands Program.
4. Plan provides for advice from state agencies such as the NCWRC.
5. Hunting and refuge areas will be regulated by the NCWRC.

RECOMMENDATIONS/JUSTIFICATION

1. CP&L to assume the lead in the management effort and assure compliance with the regulatory requirements.
2. None of the management strategies suggested in this plan will affect the SHNPP operation in any way.
- *3. Concurrence of Mr. Howe, Mr. Eury, Mr. McDuffie, and Mr. Utley is necessary.

URT

SHEARON HARRIS WILDLIFE MANAGEMENT AND PUBLIC ACCESS OPTIONS

INTRODUCTION

The Revised Final Environmental Statement Related to Construction of Shearon Harris Nuclear Power Plant Units 1, 2, 3, and 4 includes a requirement for Carolina Power & Light Company (CP&L) to develop a wildlife management program for the project area. Section 6.2 states:

"Information gained from the preimpoundment studies will be utilized to assist in the design of a wildlife management program (i.e., planting wildlife food, cover and resting areas, and establishment of wildlife refuge areas)."

In addition, Section 2.1.3 of the OL-ER states that CP&L will cooperate with interested state agencies in developing a wildlife management area adjacent to the reservoir and a wildlife management program for the Company-owned lands. Several intervenors' contentions are that CP&L does not have a fish and wildlife management and mitigation program.

CP&L owns approximately 20,000 acres of land surrounding the SHNPP, of which about 4,000 acres will be reservoir. Several large tracts of land exist adjacent to the reservoir which would be suitable as refuge and/or management areas. The required lands on the periphery of the reservoir and plant area will not be sold or leased for private development as is stipulated by CP&L's "Shearon Harris Nuclear Plant Land Policy."

In addition to providing wildlife management areas and a wildlife management program, CP&L has adopted a policy to permit public use of the SHNPP lands and waters. This policy, as presented in Section 2.1.3 of the OL-ER, states that the Company will cooperate with appropriate state agencies to provide public access for boating, fishing, hunting, and other uses which are not inconsistent with the primary purpose of the lands and waters.

In order to fulfill these requirements, CP&L must develop and administer a land and wildlife management program. The purpose of wildlife management would be to increase the production of wildlife on the land and/or to increase the attractiveness of the habitat to wildlife. The program would be conducted and/or

coordinated entirely by CP&L personnel. There are several advantages to conducting the work in-house. First, CP&L would be fulfilling the regulatory requirement to manage for wildlife production in the most effective way. Second, CP&L would assure compliance with the regulations by developing the plan and by coordinating the program. Third, management of forests and the concomitant production of wildlife increases the value of the land while providing for excellent public relations due to good land stewardship. This is particularly important due to the proximity of the SHNPP to large population centers and the presence of the Harris Energy and Environmental Center.

The proposed SHNPP wildlife management and public access plan can be fully implemented by 1985, the date of expected operation of SHNPP Unit 1. Four areas have been chosen that have high wildlife production potential and are suitable for management. The total acreage for these areas is approximately 2,400 acres. Additionally, another 1,600 acres should be entered into the NCWRC Game Lands Program. A total of approximately 4,000 acres of land would be committed to wildlife management and refuges. This is equivalent to the acreage removed from terrestrial production for the Harris Reservoir and is sufficient to satisfy the state as well as being a suitable size for effective wildlife management. At the Mayo Steam Electric Plant, about 2,900 acres were committed to the Game Lands Program. (The size of the Mayo Reservoir is approximately 2,800 acres). None of the management strategies suggested in this plan would affect the SHNPP operation in any way.

WILDLIFE MANAGEMENT PLAN

Wildlife and Fish Management Areas

A fish and wildlife management plan that would satisfy the regulatory requirements and provide improved wildlife habitat on the SHNPP site would include the establishment of wildlife management areas. An acceptable wildlife management plan on all or portions of these areas would include forest thinning and/or clearing operations, construction of a green tree reservoir, wildlife food planting, and establishment of cover and resting areas where deficient.

The techniques employed and the extent of habitat manipulation would depend upon the species or group of species of interest. Forest thinning and clearing operations are necessary to sculpt the existing forests into productive wildlife habitats. Left to themselves, many forest types become "crowded," and periodic thinning of trees and/or underbrush is necessary, particularly in pine plantations. Also, a proper mix of forest age classes must be established by clearing and/or thinning the existing stands to provide a wide variety of habitat types.

Establishment of food plots entails planting an area in crops (usually seed and fruit bearing shrubs) that are preferred food by various species of wildlife, usually small game animals and birds. These plots are small (about one acre) and are placed where natural food availability is low. They must be periodically plowed under and reseeded every 2-5 years depending on the crop.

Wildlife cover can be established by planting shrubby species and by windrowing the debris produced by forestry practices. These will be established where natural cover availability is low.

A green tree reservoir provides food for wintering waterfowl and, basically, consists of a hardwood forest which is periodically flooded with several feet of water. These hardwood species produce mast (seeds) which fall to the ground in the late summer and can be made available to waterfowl by flooding the area each fall after the trees are dormant. In the late winter the small impoundment is drained and the hardwood trees, unharmed by the waters, produce a new seed crop for the following year. The green tree reservoir can be established by building an earthen dam to impound water in a small tributary stream above the contour of the main reservoir. Water levels in the impoundment would be controlled by a drop-log dam system. This area would not affect main reservoir water level.

ETS recommends management for diversity of wildlife habitat and wildlife species rather than single (target) species management. This would provide for mitigation of the loss of biological communities impacted by the SHNPP Reservoir construction and would benefit game and nongame species alike. One exception would be for management of the wild turkey. This species occurred on the site in small numbers along the White Oak Creek bottom and probably still inhabits small

sections of the SHNPP lands. There is concern for the wild turkey in North Carolina as it is one of the least abundant large game animals. Management of this species should be undertaken on suitable SHNPP lands as mitigation for turkey habitat lost by the clearing of SHNPP reservoir basin. The purpose of this management would be to provide turkey habitat and ultimately to increase production of turkeys on the SHNPP site.

Five areas that have high wildlife productivity potential are (Figure 1):

1. A large tract of land southwest of Wake SR 1127 along both sides of Wake SR 1130/Chatham SR 1914 from Hollemans Crossroads to the reservoir at the end of abandoned Chatham SR 1914. This area is bounded on the northwest and southeast by the reservoir.
2. Land along Buckhorn Creek downstream of N.C. 42 to and along the Cape Fear River.
3. Land to the southeast of Wake SR 1134 bounded on two sides by the reservoir. This area includes the old terrestrial vertebrate Sample Area 2.
4. Land to the southwest of Wake SR 1152 along White Oak Creek is suitable for a small green tree reservoir (20 acres) for waterfowl management.
5. The Harris Reservoir fishery will develop from fish populations already existing in the Buckhorn and White Oak Creek system. To enhance the fishery, two artificial reefs have been established; and the need for further fishery management will be based on the results of fishery monitoring programs.

Wildlife Refuge Areas and Game Lands

The issue of entering all nonrequired CP&L land in the project area into the Game Lands Program will undoubtedly arise during discussions with the NCWRC. The entering of some lands into the Game Lands Program has merit in that CP&L

could stipulate the specific area to be posted by NCWRC as "safety zones" which are closed to hunting. Land within the exclusion area boundary (Figure 1) would also be closed to hunting and would thus be wildlife refuge. The specific property to be entered into the NCWRC Game Lands Program has not been selected. As was done at Mayo, cancellation clauses, and other stipulations concerning CP&L lands entered into the Game Lands Programs, can be negotiated with the NCWRC and put into the contract agreement.

PUBLIC ACCESS AND NATURE TRAIL

Reservoir Access

In the past, CP&L has facilitated public access to its reservoirs by providing sites to the NCWRC or other public agencies for the installation of boat ramps. However, at this time the NCWRC has little or no funds for such development, and CP&L proposes to provide the boat ramp facilities to assure adequate public access to the reservoir (Figure 1). One ramp already constructed near the main dam for Company use could be modified for public use. Some road improvement and a larger parking area would be required. A second public access area, possibly at the Wake SR 1127 crossing of the reservoir, should also be provided. These areas are next to state maintained roads and would not require passage through the plant site or the exclusion area boundary.

Nature Trail


The Harris Visitors Center, located on the SHNPP site, was established to educate the public on CP&L's activities and provide information specific to the SHNPP. Establishment of a nature trail on the SHNPP site would be an appropriate way to inform the public on the natural state of the SHNPP and to educate it on the various activities in which CP&L becomes involved due to regulatory requirements. The trail could traverse the forest types common in the area and culminate on the reservoir shore. The trail would originate at the E&E Center for convenience of administration.

CONCLUSIONS

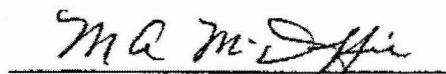
ETS recommends that CP&L develop a wildlife management plan, after consultation with the NCWRC, for the land surrounding the SHNPP in order to assure compliance with the regulatory requirements. Such a plan would call for the establishment of wildlife management areas, wildlife refuge areas, a nature trail, and boat access areas. Administration of the land would be undertaken by CP&L, although some lands would be entered into the NCWRC Game Lands Program. Management for habitat improvement should include forestry operations, construction of a green tree reservoir, and wildlife food and cover plantings. Management of wildlife species should emphasize habitat diversity and improvement rather than the target-species approach. The exception would be management for wild turkey on the SHNPP site.

This recommendation for CP&L to assume the lead in the management efforts will assure that the regulatory requirements are met. We believe that the Commission should be consulted but that the leadership and management program direction come from within CP&L.

Concurrence:


P. W. Howe


L. W. Eury


M. A. McDuffie


E. E. Utley

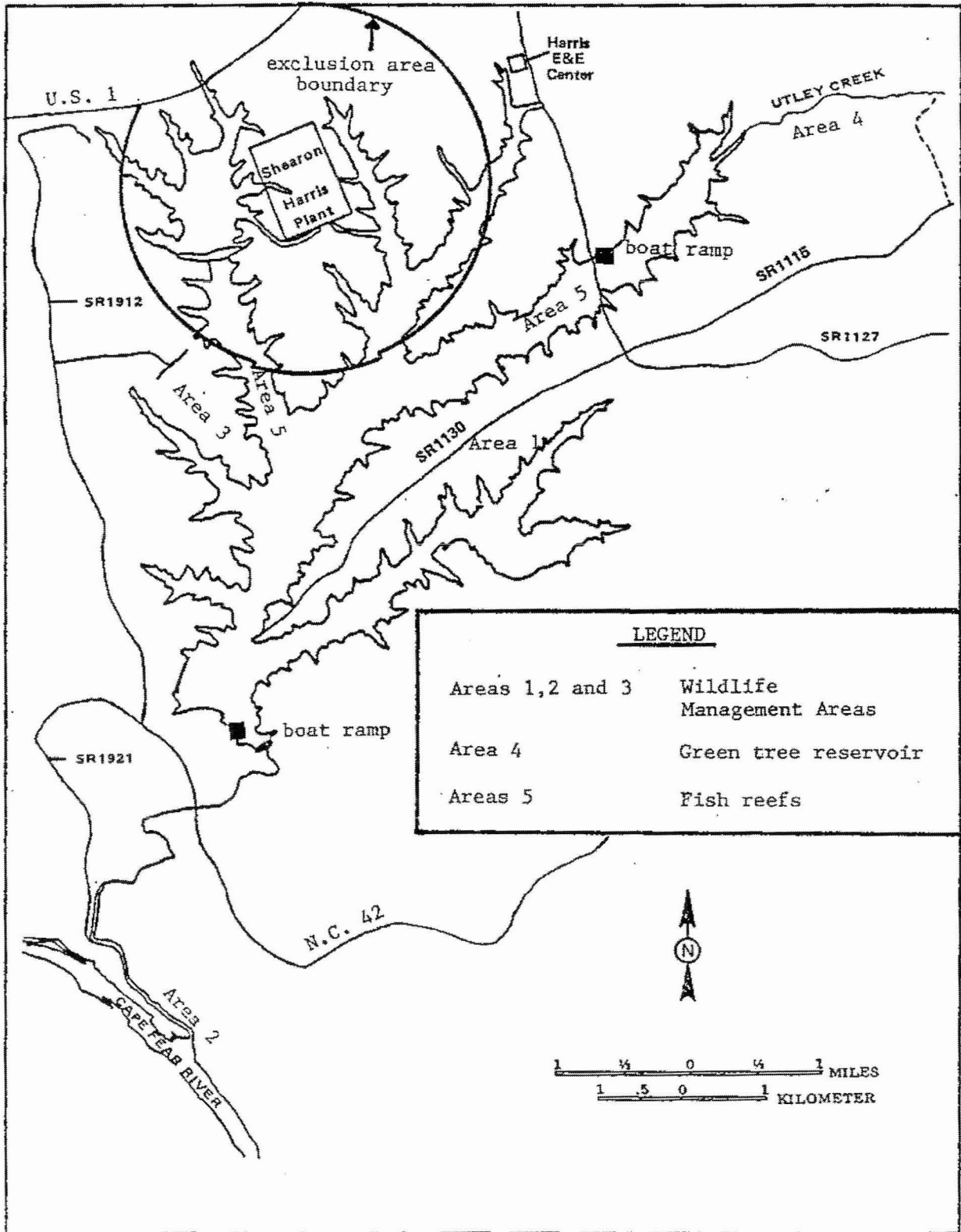


Figure 1 SHNPP wildlife management areas

**SHNPP WILDLIFE MANAGEMENT AND PUBLIC ACCESS PROPOSAL
AND
PRELIMINARY COST ASSESSMENT**

The proposed SHNPP wildlife management plan has three stages and can be fully implemented by 1985, the date of expected operation of the SHNPP Unit I. Timber sales would result in an income of \$206,000 as well as habitat improvement for wildlife. Expenses through 1985 would be \$144,760.

I Planning Stage - 1982

This stage will involve plan development and require efforts by both Environmental Technology Section (ETS) and Lands Section (LS) personnel. Goals for 1982 are:

1. Plan completion
2. Timber inventory
3. Designation of cull trees
4. Contract arrangements for tree harvest
5. Cooperation with NCWRC on establishment of public boat access.

II Implementation Stage - 1982-1985

This stage will include implementation of the plan over a four-year period. Yearly goals are:

A. Phase I - 1982

Establishment of public boat access areas.

B. Phase II - 1983

1. Culling and thinning of pines on the three management areas.

2. Establishment of small openings in both pine and hardwood forests as part of timber management.
3. Construction of a green tree reservoir.

C. Phase III - 1984

1. Establishment of the HE&EC Nature Trail (approximately two-mile trail).
2. Establishment of 10 one-acre wildlife food plots.

D. Phase IV - 1985

Establishment of game lands (1,600 acres), some of which are to be designated as "safety zones" (no hunting) for wildlife refuges.

III Maintenance Stage - 1985...

This stage would include periodic maintenance of the wildlife management areas, green tree reservoir, food plots, and nature trail.

IV Costs

A. Planning Stage

The planning stage costs would be restricted to personnel time only.

Estimations are:

Lands Section personnel 6 weeks (40 hours/week) = 240 hours

ET Section personnel 9 weeks (40 hours/week) = 360 hours

Total 600 hours @ \$13.00/hour = \$7,800

B. Implementation Stage

1. Phase I

Establishment of public boat access areas \$ 30,000

2. Phase II

Income:

Clearing, cutting, culling approximately
1,000 acres pine \$ 200,000

Clearing, cutting, culling approximately 150 acres
of hardwood \$ 6,000

Total Income \$ 206,000

Expenses:

Preparation of 300 acres \$ 600

Clean up 150 acres pines \$ 45,000

Green tree reservoir \$ 20,000

CP&L manpower:

LS: 4 weeks (40 hours/week) = 160 hours x 13.00 = \$ 2,080

ETS: 8 weeks (40 hours/week) = 320 hours x 13.00 = \$ 4,160

Phase II total expenses \$ 61,840

3. Phase III

Establishment of HE&E Center Nature Trail \$ 18,000

Establishment of food plots \$ 14,000

CP&L manpower:

ETS: 4 weeks (40 hours/week) = 160 hours x 13.00 = \$ 2,080

Phase III total expenses \$ 34,080

4. Phase IV

Establishment of Game lands

CP&L manpower:

ETS: 2 weeks (40 hours/week) = 80 hours x 13.00 = \$ 1,040

Phase IV total cost \$ 1,040

C. Summary of Planning and Implementation Stage

Income from timber sales \$ 206,000

Expenses \$ 144,760

IV. Maintenance Stage

- A. Periodic cutting, burning, thinning, and culling of forests would be self-sustaining.
- B. Nature trail maintenance could be contracted to the HE&EC ground maintenance crew.
- C. Food plots may need to be plowed under and replanted every 2-5 years.
- D. Periodic maintenance of public boat access areas.



Carolina Power & Light Company

JUL 14 1982

HI/A-2d

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, D.C. 20555

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NOS. 1 AND 2
DOCKET NOS. 50-400 AND 50-401
ENVIRONMENTAL REPORT REVIEW QUESTIONS RESPONSES

Dear Mr. Denton:

Carolina Power & Light Company's response to the final Environmental Report (ER) review questions numbered 240.1, 240.2, 240.10, 290.5, 290.7, 291.7, 291.8, 291.9 and 291.13 (partial) is attached. This response supplements our letter of June 3, 1982, and completes our response to the ER review questions with the exception of certain Hydrologic Engineering questions and the reservoir reanalysis dependent portions of Terrestrial and Aquatic Resource questions 291.13 and 291.15 as discussed below.

Hydrologic Engineering questions 240.3 through 240.9 are being addressed in conjunction with the NRC questions resulting from the April 6-7, 1982 Hydrology Site Visit. The Hydrology Site Visit questions were expected to revise and clarify questions 240.3 through 240.9 and thus have a significant impact on the reanalysis of the SHNPP reservoirs. These questions arrived on July 9 by telecopy. Work has now begun on all of the remaining Hydrology questions.

Portions of Terrestrial and Aquatic Resource questions 291.13 and 291.15 are dependent on the above reservoir reanalysis and are still under review. Responses to these questions will be transmitted with the responses to the Hydrologic Engineering questions.

Yours very truly,

M. A. McDuffie
Senior Vice President
Engineering & Construction

GSC/lr (206C6T2)
Attachment

cc: Mr. E. A. Licitra (w/o att.)
Mr. J. P. O'Reilly (NRC-RII) (w/o att.)

411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

bcc: Mr. H. R. Banks
Mr. C. S. Bohanan
Mr. N. J. Chiangi
Mr. A. B. Cutter
Dr. T. S. Elleman
Mr. G. L. Forehand
Mr. B. J. Furr
Mr. P. W. Howe
Dr. J. D. E. Jeffries
Mr. I. A. Johnson

Mr. L. I. Loflin
Mr. R. L. Mayton, Jr.
Mr. S. McManus
Mr. C. H. Moseley, Jr.
Mr. R. M. Parsons
Mr. J. J. Sheppard
Mr. Sheldon D. Smith
Mr. J. L. Willis
Mr. S. R. Zimmerman
File: HI/A-2D
File: H-X-0508

290.7
(General)

Provide for NRC review a copy of the proposed site fish and wildlife management plan.

RESPONSE:

A copy of the SHNPP fish and wildlife management plan is provided in Attachment 1.

SHEARON HARRIS WILDLIFE MANAGEMENT AND PUBLIC ACCESS PLAN

INTRODUCTION

Section 2.1.3 of the Operating License - Environmental Report (OL-ER) states that CP&L will cooperate with interested state agencies in developing a wildlife management area adjacent to the reservoir and a wildlife management program for the Company owned lands. In addition, CP&L has adopted a policy to permit public use of the SHNPP lands. This policy, as presented in Section 2.1.3 of the OL-ER, states that the Company will cooperate with appropriate state agencies to provide public access for boating, fishing, hunting, and other uses which are not inconsistent with the primary purpose of the reservoir.

CP&L owns approximately 20,000 acres of land surrounding the SHNPP, of which about 4,000 acres will be reservoir. To mitigate for the loss in terrestrial production of this 4,000 acres, CP&L has developed a land and wildlife management program. The purposes of the wildlife management are to increase the production of wildlife on the land and to increase the attractiveness of the habitat to wildlife. The total acreage involved in the program will be approximately equal to the acreage committed to the reservoir (about 4,000 acres). The SHNPP wildlife management and public access plan will be fully implemented by 1985, the date of expected operation of SHNPP Unit 1.

WILDLIFE MANAGEMENT PLAN

Wildlife and Fish Management Areas

The wildlife management plan will provide improved wildlife habitat on the SHNPP site and will include the establishment of wildlife management areas. Five areas that have high wildlife productivity potential are (Figure 1):

1. A large tract of land southwest of Wake SR 1127 along both sides of Wake SR 1130/Chatham SR 1914 from Hollemans Crossroads to the reservoir at the end of abandoned Chatham SR 1914. This area is bounded on the northwest and southeast by the reservoir.
2. Land along Buckhorn Creek downstream of N.C. 42 to and along the Cape Fear River.
3. Land to the southeast of Wake SR 1134 bounded on two sides by the reservoir.
4. Land to the southwest of Wake SR 1152, along White Oak Creek is suitable for a small green tree reservoir for waterfowl management.
5. The Harris Reservoir fishery will develop from fish populations already existing in the Buckhorn and White Oak Creek system. To enhance the fishery, two artificial reefs have been established; and the need for further fishery management will be based on the results of fishery monitoring programs.

The wildlife management plan for these areas will include forest thinning and/or clearing operations, construction of a green tree reservoir, wildlife food planting, and establishment of cover and resting areas where deficient. Forest thinning and clearing operations are necessary to sculpt the existing forests into productive wildlife habitats and will result in a proper mix of forest age classes that provide a wide variety of habitat types. Establishment of food plots entails planting an area in crops (usually seed and fruit bearing shrubs) that are preferred food by various species of wildlife. Wildlife cover can be established by planting shrubby species and by windrowing the debris produced by forestry practices. A green tree reservoir provides food for wintering waterfowl and consists of a hardwood forest which is periodically flooded with several feet of water.

Management for a diversity of wildlife habitat and wildlife species rather than single (target) species management is planned. This will provide for mitigation of the loss of biological communities impacted by the SHNPP Reservoir construction and will benefit game and nongame species alike. One exception will be management of the wild turkey. This species occurred on the site in small numbers along the White Oak Creek bottom and probably still inhabits small sections of the SHNPP lands. There is concern for the wild turkey in North Carolina, as it is one of the least abundant large game animals. Management of this species will be undertaken on suitable SHNPP lands as mitigation for turkey habitat lost by the clearing of SHNPP reservoir basin. The purpose of this management will be to provide suitable turkey habitat and ultimately to increase production of turkeys on the SHNPP site.

Wildlife Refuge Areas and Game Lands

The entering of some lands into the North Carolina Wildlife Resources Commission (NCWRC) Game Lands Program has merit in that CP&L could stipulate specific areas to be posted by NCWRC as "safety zones." The safety zones would be closed to hunting and would be refuges for wildlife. Land within the exclusion area boundary (Figure 1) would also be closed to hunting and would thus be a wildlife refuge.

CP&L will work with the NCWRC to select the specific property to be entered into the Game Lands Program.

PUBLIC ACCESS AND NATURE TRAIL

Reservoir Access

CP&L will provide boat ramp facilities to assure adequate public access to the reservoir (Figure 1). One ramp already constructed near the main dam for Company use may be modified for public use. Some road improvement and a larger parking area would be required. A second public access area, possibly at the Wake SR 1127 crossing of the reservoir, will also be provided. These areas are next to state maintained roads and would not require passage through the plant site or the exclusion area boundary.

Nature Trail

Establishment of a nature trail on the SHNPP site will inform the public on the natural state of the SHNPP area and educate it on environmental aspects of power plant construction and operation as well as the mitigation efforts outlined in this plan. The trail will traverse the forest types common in the area and culminate on the reservoir shore. The trail would originate at the Harris Energy & Environmental Center for convenience of administration. The Harris Visitors Center was established to educate the public on CP&L's activities and provide information specific to the SHNPP.

SUMMARY

CP&L will assume the lead in management efforts to assure that this plan is effectively administered. The management program includes the establishment of wildlife management areas, wildlife refuge areas, a nature trail, and boat access areas. The acreage to be involved in management will be approximately 4,000 acres. This is equivalent to the size of the SHNPP reservoir. Administration of these lands will be undertaken by CP&L, although some lands will be entered into the NCWRC Game Lands Program. Management of wildlife species will emphasize habitat diversity and improvement rather than the target species approach. The exception would be management for wild turkey.

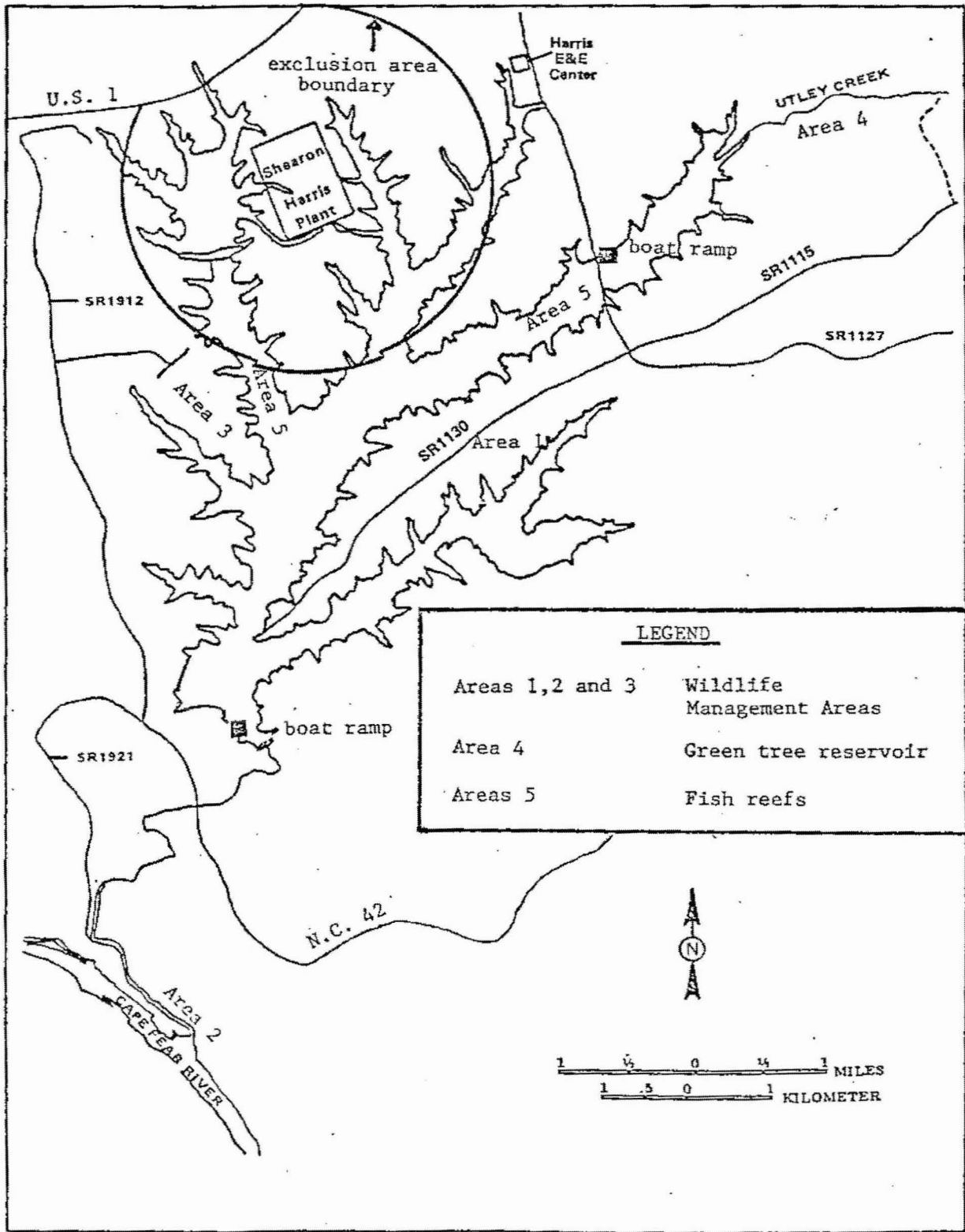


Figure 1 SHNPP wildlife management areas



Carolina Power & Light Company

New Hill, North Carolina
February 8, 1983

Company Correspondence

MEMORANDUM TO: Messrs. M. L. Holmes
W. J. Hurford
B. J. Furr
L. W. Eury
A. L. Morris
W. E. Graham, Jr.
R. H. Lee
E. E. Utley

FROM: W. T. Hogarth

SUBJECT: SHNPP Wildlife Management Plan

The following actions were decided upon as a result of the meeting to discuss the Harris Wildlife Management Plan held on February 3, 1983.

The Company's land-use policy is to make available for the enjoyment of the general public the lands and waters of the SHNPP and reservoir consistent with their primary purpose--the generation of electric power. As stated in the SHNPP Environmental Report, "To permit the greatest use by the greatest number of people, the Company will cooperate with appropriate state agencies to provide public access for boating, fishing, hunting, and other uses which are not inconsistent with the primary purpose of the land and waters."

The NRC has requested our Wildlife Management Plan, and as a result, the following plans were developed:

1. Wildlife Management Areas:

- a. Three tracts for general wildlife management. These will be located as following:

Management Unit I - Tract is located on both sides of SR 1130 between White Oak and Buckhorn arms of the SHNPP reservoir.

Management Unit II - Tract is located between NC 42 and the Cape Fear River.

February 8, 1983

Management Unit III - Tract is located off SR 1912 below Tom Jack arm of SHNPP reservoir.

Implementation schedule: Timber Management Programs--1983-1987

- b. Green tree reservoir for waterfowl management. Area is located on the upper reaches of Utley Creek. A dam will be constructed after consultation with Wake County Soil Conservation Service personnel in order to flood a small area and provide food for waterfowl.

Implementation schedule: Design and construction complete-1983

- c. North Carolina Wildlife Resources Commission (NCWRC) Game Lands Program: Hunting will be allowed in these areas (approximately 2000-2500 acres) and regulated by the North Carolina Wildlife Resources Commission.

Implementation schedule: Establishment--1983

2. Nature Trail:

This trail will run from the Visitor's Center to the reservoir--a distance of approximately two miles. Project will be undertaken in conjunction with the Visitors Center.

Implementation schedule: Design and construction complete-1984

3. Wildlife Refuge Areas:

- a. Red-cockaded woodpecker management area: Tract is located along north side of US 1 at intersection with SR 1134.

Implementation schedule: Establishment and initial understory clearing--1983

- b. NCWRC Game Lands Program refuge areas: Approximately 2000 acres located within exclusion area boundary around SHNPP.

Implementation schedule: Establishment--1985 or earlier

3. Boat Access:

CP&L has committed to two boat ramps. The first ramp will be located near Holleman's Crossroads and has been accepted by the NCWRC. The second ramp will be located near NC 42. The NCWRC is currently evaluating this ramp and CP&L believes it will also be accepted.

February 8, 1983

CP&L will provide materials and construct the ramps. These ramps will be turned over to the state for maintenance and enforcement of fishing and boating laws. It is important that access be made available by this spring.

Implementation schedule: Construction complete--Spring 1983

There have been three other requests for use of land at Harris which were not part of the submittal to the NRC:

1. Wake County:

This request is for approximately 400 acres to be used for recreation purposes only. This is recommended and Mr. Holmes will be working with the Wake County Parks and Recreation Department to finalize their plans for review by Senior Management.

Implementation schedule: 1984 or earlier

2. North Carolina State University request for use of lands and water for research and educational purposes: We will develop a plan with North Carolina State University for utilization of lands outside the exclusion area.

Implementation schedule: 1984 or earlier

3. Wake County Wildlife Club:

Lands were requested for private hunting club. This request will not be honored.

None of the projects recommended will impact plant operations or the reservoir water level or quality.

A summary of the plan and the schedule is attached.

We request your concurrence with this Management Plan for the Harris Lands.

W. J. August

RJB/bbw

Approval:

W. T. Hogarth 2-8-83
W. T. Hogarth

A. L. Morris
A. L. Morris

M. L. Holmes
M. L. Holmes

W. E. Graham, Jr.
W. E. Graham, Jr.

W. J. Hurford
W. J. Hurford

R. H. Lee
R. H. Lee

B. J. Furr
B. J. Furr

E. E. Utley
E. E. Utley

L. W. Eury
L. W. Eury

SCHEDULE FOR IMPLEMENTATION OF SHNPP WILDLIFE MANAGEMENT PLAN

1983

Establishment of public boat access areas
Establishment of Game Lands and refuge areas
Design and construction of Green Tree Reservoir
Initial pulpwood thinning--118 acres
Initial creation of wildlife openings--80 acres
Establishment and understory clearing of red-cockaded management area

1984

Establishment of nature trail
Initial establishment of food plots
Second pulpwood thinning--154 acres
Second creation of wildlife openings--110 acres

1985

Third pulpwood thinnings--194 acres
Third creation of wildlife openings--110 acres

1986

Pulpwood thinnings--156 acres
Creation of wildlife openings--110 acres
Project maintenance

1987

Pulpwood thinnings--141 acres
Creation of wildlife openings--110 acres
Project maintenance



Carolina Power & Light Company

COPY

New Hill, North Carolina
March 10 1983

MEMORANDUM TO: Mr. C. D. Barham, Jr. Mr. M. A. McDuffie
 Mr. R. W. Cooksey Mr. A. L. Morris
 Mr. E. W. Craig Mr. J. T. Mullins
 Mr. A. B. Cutter Mr. E. S. Noell
 Mr. B. J. Furr Mr. R. Parsons
 Mr. W. B. Grant Mr. L. A. Pearce
 Mr. M. Holmes Mr. W. Simmons
 Mr. F. Jerome Mr. S. D. Smith
 Mr. R. E. Jones Mr. B. H. Webster
 Mr. R. H. Lee Mr. J. L. Willis
 Mr. L. I. Loflin Mr. L. B. Wilson
 Mr. J. W. Massengill Mr. S. R. Zimmerman

FROM: W. T. Hogarth

SUBJECT: Shearon Harris Nuclear Power Plant Wildlife
 Management Plan Interface Document

Attached is the interface document delineating lead and secondary responsibilities within CP&L for projects included in the SHNPP Wildlife Management and Land and Reservoir Use Plan. Also listed are county and state cooperating agencies. A schedule outlining initiation of projects has also been included with this document. If there are questions, please let me know.

Original Signed By

WTH/bmc
Attachment

cc: Mr. L. W. Eury
 Mr. W. J. Hurford
 Mr. R. C. Yates ✓
 Dr. B. J. Ward

COORDINATION OF SHNPP WILDLIFE MANAGEMENT PLAN

Project	CP&L Sections Assuming Lead Responsibility	Other CP&L Groups Assuming Secondary Responsibilities	Cooperating Agencies	Responsibilities of Cooperating Agencies
Boat Ramps	ETS-Bio Unit Coordination	CP&L Engineering & Construction Lands	NCWRC	Maintenance & Management
Green Tree Reservoir	ETS-Bio Unit Coordination Management Maintenance	Lands Licensing and Permits CP&L Engineering & Construction	Wake County Soil Conservation Service	Design
Red-Cockaded Woodpecker Management Area	ETS-Bio Unit Management Monitoring Maintenance	Lands	None	
Game Lands	ETS-Bio Unit Coordination and Wildlife Management	Lands	North Carolina Wildlife Resources Commission	Hunting Regulation, Liability, and Administration
Park Lands	Lands Section Coordination	ETS-Bio Unit Licensing and Permits	Wake County Parks and Recreation Department	Administration, Management, and Maintenance
NC State Univ. Research Lands	ETS-Bio Unit Coordination Administration Management	Lands Licensing and Permits	North Carolina State University	
Timber Management Program	Lands Section Administration and Management	ETS-Bio Unit	Private timber contractor	Harvest
Food Plots	ETS-Bio Unit Management Maintenance	Lands Transmission Line Maintenance <i>Location and Engineering</i> Environmental Submit	None <i>System Operation Dept, Power Supply</i>	
Nature Trail	ETS-Bio Unit Design Coordination	Visitor Center Staff HE&EC Grounds Staff	Private landscape contractor	Construction

A-26

SCHEDULE FOR IMPLEMENTATION OF SHNPP WILDLIFE MANAGEMENT PLAN

1983

Establishment of public boat access areas
Establishment of Game Lands and refuge areas
Design and construction of Green Tree Reservoir
Initial pulpwood thinning--118 acres
Initial creation of wildlife openings--80 acres
Establishment and understory clearing of red-cockaded management area

1984

Establishment of nature trail
Initial establishment of food plots
Second pulpwood thinning--154 acres
Second creation of wildlife openings--110 acres

1985

Third pulpwood thinnings--194 acres
Third creation of wildlife openings--110 acres

1986

Pulpwood thinnings--156 acres
Creation of wildlife openings--110 acres
Project maintenance

1987

Pulpwood thinnings--141 acres
Creation of wildlife openings--110 acres
Project maintenance

NORTH CAROLINA

WAKE AND CHATHAM COUNTIES

THIS AGREEMENT, made the 29th day of November, 1983,
by and between CAROLINA POWER & LIGHT COMPANY, a corporation, party of the
first part, hereinafter called CP&L, and the NORTH CAROLINA WILDLIFE RESOURCES
COMMISSION, party of the second part, hereinafter called the COMMISSION;

W I T N E S S E T H:

THAT WHEREAS, CP&L and North Carolina Eastern Municipal Power Agency
are the owners, as tenants in common, of certain lands in Wake and Chatham
Counties, North Carolina, known as the Shearon Harris Nuclear Power Plant lands;
and

WHEREAS, CP&L is the sole owner of certain lands adjoining said
jointly-owned Shearon Harris Nuclear Power Plant lands; and

WHEREAS, insofar as the Shearon Harris Nuclear Power Plant lands are
concerned, CP&L and North Carolina Eastern Municipal Power Agency entered into
Agreements dated July 31, 1981, whereby North Carolina Eastern Municipal Power
Agency designated CP&L to construct, operate, and maintain the facilities on
and its interests in said jointly-owned lands, and CP&L is so acting for itself
and on behalf of North Carolina Eastern Municipal Power Agency in this Agreement;
and

WHEREAS, under the provisions of Articles 7 and 23 of Chapter 113
and Article 24 of Chapter 143 of the General Statutes of North Carolina, the
said COMMISSION is authorized to enter into cooperative agreements with land-
owners and with the consent of such owners to establish wildlife refuges on
private lands; and

WHEREAS, CP&L and the North Carolina Eastern Municipal Power Agency
own an undivided interest as tenants in common in the greater portion of the
lands shown on Exhibit "A" attached, said jointly-owned portion being shown and
described on Carolina Power & Light Company Drawing No. L-D-6392, and being
the portion on which CP&L will operate and maintain the Shearon Harris Nuclear
Power Plant; and

WHEREAS, CP&L has consented to the establishment of one or more
wildlife refuges on the lands hereinafter described.

NOW THEREFORE, CP&L, in consideration of the premises, but subject
to the matters and things agreed upon between the parties as hereinafter set
forth, does grant and convey unto the COMMISSION control over all wildlife
and the taking thereof on the following described lands:

Being those certain areas of land, designated as Wildlife Area 1, 2 and 3 as shaded in green on the attached Exhibit "A", and containing approximately 3,110 acres; however, SAVING AND EXCEPTING from Exhibit "A" the area previously leased to the N. C. Wildlife Resources Commission for the purpose of operating and maintaining a boating access area containing 5.671 acres, more or less, as shown and described on Carolina Power & Light Company Drawing No. L-D-6940, dated September 6, 1982.

THE COMMISSION AGREES:

1. To recognize that the primary use of a portion of these lands by CP&L will be for operating and maintaining a facility for the generating of electricity, and to apply only those techniques that are compatible with that primary use.
2. To provide game protection through the staff of the COMMISSION for the proper enforcement of the game laws, rules and regulations made pursuant to the game laws of North Carolina.
3. To rely upon natural reproduction of native wildlife as opposed to restocking and to develop the area for game by the application of scientific management techniques that are compatible with good land use and consistent with the funds, personnel and other facilities available for such use.
4. To construct no buildings or other improvements without prior consent of CP&L.
5. To assist CP&L in any way possible with the protection of the property against fire and against hunting and trapping trespass.
6. To formulate and administer a program of controlled public hunting based on scientific principles of harvest and wildlife management, which shall specifically provide for control of deer populations in a scientific manner which will limit any serious damage to the growth of timber.
7. That it will do no act, or allow its employees, servants or agents to do any thing or act which will increase CP&L's or other owner's liability to any person on the demised premises, and the COMMISSION does agree that any person injured as a result of its acts as aforesaid shall have the right to proceed against it as provided by the General Statutes of North Carolina and will do any and all things necessary to save CP&L and the North Carolina Eastern Municipal Power Agency harmless in all respects from any liability so arising.

8. That permission for the general public to camp, hike and drive through the area not inconsistent with the wildlife program will be left to the discretion of CP&L.

CP&L AGREES:

1. That the COMMISSION shall have the right of ingress, egress and regress upon said lands at any and all times for the protection and propagation of wildlife.

2. To permit the COMMISSION to regulate harvest of the game populations for the benefit of the public.

IT IS MUTUALLY AGREED:

1. To demarcate the boundary of the area under consideration with signs of suitable material setting forth the intent and use of the area, said marking to be done by personnel of the COMMISSION in cooperation with personnel of CP&L.

2. That this Agreement shall become effective as soon as signed by the parties hereto.

3. That this Agreement may be terminated on March 1 of any year by prior written notice of either party to the other; however, should licensing, convenience of plant operations, or regulatory requirements dictate the need to close this area to public hunting at any time during the year, CP&L may cancel the Agreement by thirty (30) days written notice to the COMMISSION.

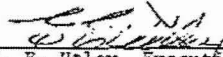
4. That in the event termination is effected the COMMISSION shall have the right to remove any and all buildings, equipment, apparatus and materials supplied by the COMMISSION for the purpose of this Agreement.

5. That amendments to this Agreement may be proposed by either party upon thirty (30) days notice to the other and such amendments shall become effective as soon as signed by the parties hereto.

6. That nothing herein contained shall be construed as limiting or affecting in any way, except as to game conservation, the authority of CP&L in connection with the proper protection and administration of the above mentioned lands, including the operation and maintenance of the facilities now located thereon and to be constructed thereon.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their officers thereunto duly authorized and their corporate seals to be hereunto affixed the day and year first above written.

CAROLINA POWER & LIGHT COMPANY

BY: 
E. E. Utley, Executive Vice President
Power Supply and Engineering & Construction



ATTEST:

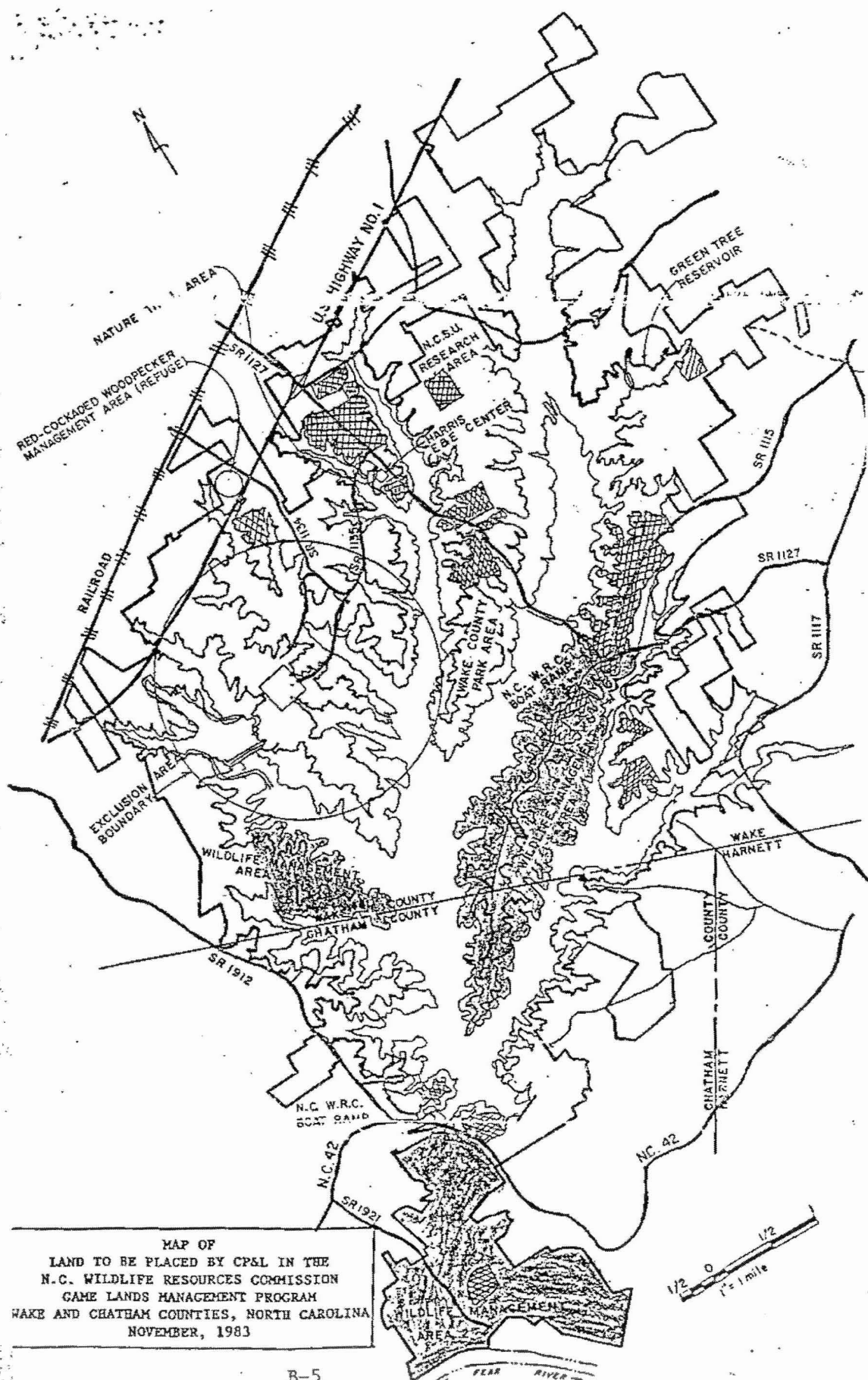

Secretary

NORTH CAROLINA WILDLIFE RESOURCES COMMISSION

BY: W. Vernon Bivill
Executive Director

ATTEST:

Sherry D. Outlaw



MAP OF
 LAND TO BE PLACED BY CP&SL IN THE
 N.C. WILDLIFE RESOURCES COMMISSION
 GAME LANDS MANAGEMENT PROGRAM
 WAKE AND CHATHAM COUNTIES, NORTH CAROLINA
 NOVEMBER, 1983



Carolina Power & Light Company

Company Correspondence

Raleigh, North Carolina
January 26, 1984

MEMORANDUM

TO: Ms. Robbie Blue
FROM: B. D. McFeaters
SUBJECT: Meteorological Forecast for Prescribed Forest Burns

As per our conversation of January 24, the attached form has been developed to be used by the Physical Sciences Subunit in making recommendations as to whether the Biological Unit should conduct prescribed forest burns at the SHNPP Site. The Physical Sciences Subunit will complete this form on a daily basis "Monday through Friday" and will call your office with our recommendations at around 3:00 p.m. each day. If you should decide that the burn is to be conducted, and you wish to conduct meteorological conditions, please contact our offices at 836-7259 on the day of your event.

If there is further information which you require, please call me at 836-6136.

BDM/kjr (1032MET)
Attachment

cc: Mr. T. J. Crawford

Carolina Power & Light Company
Weather Center
Weather Forecast for Controlled Forest Burns

Issued By: _____ Date: _____ Time: _____

Received By: _____ Date: _____ Time: _____

<u>Category:</u>	<u>1st Day</u>		<u>2nd Day</u>		<u>3rd Day</u>	
	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>No</u>
1. Has it rained 1/2" or more in the last 1 to 3 days	—	—	—	—	—	—
2. Will winds be fairly steady from one direction during next 24 hours	—	—	—	—	—	—
3. Will winds be 5 to 18 mph during next 24 hours	—	—	—	—	—	—
4. Will relative humidity range from 30% to 50%	—	—	—	—	—	—
5. Will temperatures range from 20°F to 50°F over next 24 hours	—	—	—	—	—	—
6. Will there be a severe inversion over next 24 hours (smoke trapping so as to limit visibility)	—	—	—	—	—	—
Recommendation to Burn	—	—	—	—	—	—

Robbie J. Blue (362-3284)

PRESCRIBED BURNING PLAN

County: Wake
Chatham

Date of Burn _____

Date County Forest Ranger Notified _____

Location of Burn:

Management Area _____
Management Unit _____
Compartment _____
Location within Compartment _____

Date Plow Lines Established _____

Size of Strand Burned _____ (acres)

Adjacent Landowners	Date of Notification
_____	_____
_____	_____
_____	_____

General Description of Stand

1. Overstory Type, Density, Size _____

2. Understory Type, Density, Average Height _____

3. Fuels, Age, and Density of Rough _____

Summary of Burn

1. Area Burned (coverage) _____ Type Fire Used _____
2. Time Set _____
3. Days Since Rain _____ Last Rain Inches _____
4. Amount of Litter Layer Consumed _____

Chatham and Wake County Forest Ranger

Wake

Mr. Albert Coley
Wake County Forest Ranger
2600 Howard Road
Raleigh, North Carolina 27612

Telephone: (919) 848-0688

Chatham

Mr. Kenneth Perry
Chatham County Forest Ranger
Pittsboro, North Carolina

Telephone: (919) 542-5739

District Burn Supervisor

Mr. Ed Sykes
N.C. Division of Forest Resources
Chapel Hill District
Route 3, Box 186-1A
Hillsborough, North Carolina 27278

Telephone: (919) 732-8105

