U.S. Department of Agriculture
Forest Service
Southern Region

Preliminary Draft Land and Resource Management Plan for the Uwharrie National Forest

R8-MB 129A

March 2010

Uwharrie National Forest
Preliminary Draft Land and Resource Management Plan
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This Preliminary Draft Land and Resource Management Plan describes our proposed framework for guiding on-the-ground projects and activities. We encourage your comments on all aspects of the plan. Public notification of commencement of the 60-day scoping period will be published in the Federal Register and Asheville Citizen Times (the newspaper of record for the Forest), and the Montgomery Herald.

E-mail comments to: comments-southern-north-carolina@fs.fed.us
Subject: Uwharrie plan

Or if e-mail is not available -

Written comments should be submitted to:

Draft Land and Resource Management Plan
NFsNC/Uwharrie National Forest
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Plan Organization

Chapter 1 provides a brief overview of the Uwharrie National Forest's roles and contributions; a description of the existing conditions on the landscape; and the goals/desired conditions (36 CFR 219.11(b)) for the various Forest resources.. Goals/Desired Conditions describe how the Forest is expected to look and function in the future when management direction in the Forest Plan has been successfully implemented. Goals/Desired Conditions are described using the ecological, economic, and social attributes that characterize or exemplify the outcomes of land management. The degree to which the Forest achieves the desired conditions will be monitored. Goals/Desired Conditions may be achievable only over the long term.

Chapter 2 describes the Forest-wide Objectives (36 CFR 219.11 (b)) that the USDA Forest Service intends to implement in order to move the Forest toward the Goals/Desired Conditions described in Chapter 1. Chapter 2 also includes some of the management approaches to implementing the objectives.

Chapter 3 describes Standards and Guidelines that are intended to assure that projects protect resources and are consistent with achieving the objectives and desired conditions for the Uwharrie National Forest.

Chapter 4 identifies the suitability of various areas for different types of uses; and describes specific places on the Forest that have special management needs, including unique or rare botanical, zoological, historical, scenic and/ or recreational values. Desired Conditions, Objectives, Standards and Guidelines that apply only to these special management areas are included in this chapter.

Chapter 5 describes the monitoring program the USDA Forest Service intends to implement to ensure progress is made toward the Desired Conditions, and to ensure resource protection.

Appendix A, **Plan Direction Crosswalk**, relates each Goal/Desired Condition to its associated Objectives and Standards and/or Guidelines in an easy-to-track table format.

Appendix B, Proposed and Possible Actions, presents a brief summary of the types of projects that may occur in the planning period. It also includes the planned timber sale program, as required by the National Forest Management Act and Forest Service Directives.

Appendix C, Appropriateness of Regeneration Harvest Methods, contains information necessary to comply with elements of the National Forest Management Act.

Appendix D, Species Scientific Names and NatureServe Community References, lists the common names of plants and animals mentioned in the Plan, along with the scientific name. It also cross-references ecological community names used in the Plan with their NatureServe equivalent, if any.

The **Forest Plan Map** displays the general location of the following land classifications: General Forest, Wilderness, Eligible Wild and Scenic River Corridors, Special Interest Areas, Developed Recreation Areas, Schweinitz's Sunflower Habitat Management Area, and Badin Lake Recreation Area.

The **Recreation and Scenery Settings Map** displays the desired combination of amount of access, amount of use, and scenery values for different parts of the Forest.

The **Potential Vegetation Map** displays the native ecological systems best adapted for various sites, as modeled using environmental factors.

Table of Contents

<u>Included with Proposed Plan</u>:

Plan Map (black and white 11” by 17” format)

<u>Available on-line or by CD:</u>
(Full-color 1 inch to the mile 24” by 36” format)

1. **Plan Map**
2. **Recreation and Scenery Settings Map**
3. **Potential Vegetation Map**

Chapter 1 – Goals/Desired Conditions

National Forest Land Management Plans (Forest Plans) provide broad guidance and information for project and activity decision making for each national forest. The original Uwharrie Forest Plan was adopted in 1986. The National Forest Management Act calls for plans to be revised from time to time, to incorporate new information, to account for changed national policy and direction, and to address new issues and opportunities. The Forest Service developed this revised plan collaboratively with partners, other government agencies, members of user groups, other interest groups, and local citizens. "Goals/Desired Conditions" describes a collective vision of what the Forest should be like. This vision is not necessarily a reflection of what exists today. To put the goals and desired conditions in context, an overview of the Forest and descriptions of the existing conditions are included in this Chapter.

Uwharrie National Forest Overview

In 1931, during the Great Depression, the federal government began purchasing the land that is now the Uwharrie National Forest (hereafter, the Uwharrie, the Forest or UNF). In 1961, President John F. Kennedy proclaimed federal lands in Montgomery, Randolph, and Davidson Counties, North Carolina, as the Uwharrie National Forest, making it one of the newest and smallest in the National Forest System. Today, the Uwharrie includes 50,814 acres, lands that in many cases were once private industrial forest land or private agricultural lands.

The Uwharrie National Forest is located in the North Carolina Piedmont and includes portions of the Uwharrie Mountains. The rolling topography, with well-rounded hills and long ridges, ranges in elevation from 400 to 1000 feet above sea level. The town of Troy and a number of small communities are within the proclamation boundary and several towns are just outside the boundary. The Forest is also within a 2-hour drive from North Carolina's largest population centers, including Charlotte, Raleigh, Durham, Greensboro, and Winston-Salem.

The land that comprises the Uwharrie is made up of approximately 60 separate parcels interspersed within privately owned, mostly forested landscapes; a situation that often makes forest management challenging. The vegetation is approximately half hardwoods and half pines, with associated understory vegetation. Forests on the Uwharrie include a higher percentage of loblolly pines than occurred historically due to an emphasis during the latter half of the 20th century on planting loblolly pine for timber production.

The Uwharrie is rich in historical and archeological resources ("heritage" resources) dating back to prehistoric times. These include everything from prehistoric quarry sites, to historic mines and settlements. Old gold mines dot the landscape and recreational gold panning still occurs.

Many outdoor recreation activities are popular on the Uwharrie such as hunting, horseback riding, hiking, camping, picnicking, bird watching, and OHV riding. Lakeside developments and trails systems are particularly popular.

Gaining a Sense of the Uwharrie's Niche

People who work, play, or live in or near the Forest were invited to participate in a series of meetings to learn how the revised plan would be developed, and to share their ideas about what makes the Uwharrie special. Many of these people helped develop the Plan itself, by participating in the collaborative planning process: a series of public meetings to exchange information and generate ideas for Plan direction.

Many participants appreciate the sights, sounds, and smells of nature as a refuge from urban life. Some are interested primarily in conservation of the native ecosystems. Others see the Uwharrie as a place to recreate by hiking, mountain biking, horseback riding, OHV riding, camping, and boating. Some look for ways the Forest can provide economic benefits to local communities. But all participants expressed value for the Uwharrie's rural setting and its diversity of native plants and animals.

Three themes came to dominate the collaborative planning process and most conversations about the Uwharrie:

1. **Restoring the forest to a more natural ecological condition:** For example, reducing the amount of loblolly pine plantations in favor of reestablishing longleaf pine forests or oak-hickory forests;

2. **Better managing heritage resources**: The Uwharrie has an abundance of artifacts and historic and prehistoric sites within its boundaries. These need protection, but they also provide opportunities for research, teaching, and interpretation;

3. **Providing outstanding and environmentally friendly outdoor recreation opportunities, with excellent trails and facilities:** It is a challenge to provide the kind of experience recreationists want while minimizing impacts to other forest resources and other forest users.

Theme 1 - Restoring the forest to a more natural ecological condition

This theme encompasses the biological and physical natural resources of vegetation, wildlife, soil, water and fisheries.

Vegetation - Existing Conditions

The Forest is located within the Southern Appalachian Piedmont Ecological Section, a broad area over 42 million acres in size that lies between the Coastal Plain and Blue Ridge Mountains. The Forest proclamation boundary - the area within which the Secretary of Agriculture may acquire lands to add to the National Forest - overlaps two Ecological Subsections within the Piedmont: the Carolina Slate Belt and the Southern Triassic Uplands. The proclamation boundary also overlaps a portion of the Sand Hills Ecological Section, although no National Forest System (NFS) lands have yet been acquired within the Sand Hills. The Sand Hills area is dominated by longleaf pine and pond pine Ecological Systems and is very unlike the rest of the Forest. The Carolina Slate Belt contains irregular plains with generally low relief derived from quaternary or tertiary silty to clayey saprolite. The Southern Triassic Uplands contain irregular plains with generally low relief derived from quaternary red silty sand to silty clay decomposition residuum and silty to clayey sandy saprolite

The Uwharrie has a much higher proportion of older forest (>80 years old) than the Piedmont as a whole. Also, there is more old forest now than there was when the 1986 Forest Plan was developed. Forests on the Uwharrie are about half pine-dominated and about half hardwood-dominated, though many forest stands contain pine-hardwood mixtures. There is a higher percentage of pine forest to the south and of hardwood forest to the north.

NatureServe's ecological systems (2004) were used to define ecosystem types on the Uwharrie. Ecological systems are groups of plant associations or plant communities of definite floristic composition, presenting a uniform physiognomy, and growing in uniform habitat conditions. When cross-walked with existing vegetation inventories and environmental models, their mapped distribution provides the basis for evaluating current and desired conditions on the Uwharrie.

There are 14 terrestrial ecological systems on the Uwharrie. **See *Ecological Sustainabiity – Terrestrial Ecosystems* in the Plan Set of Documents for more information on how these systems were determined.** The ecological systems are:

- Xeric Oak Forest
- Dry Oak-Hickory Felsic Forest
- Dry Oak-Hickory Mafic Forest
- Dry-mesic Oak-Hickory Felsic Forest
- Dry-mesic Oak-Hickory Mafic Forest
- Southern Piedmont Mesic Forest
- Southeastern Interior Longleaf Pine Woodland
- Shortleaf Pine-Oak Woodland
- Successional Forest (Loblolly and Shortleaf pine)
- Streamside Forest
- Southern Piedmont Glade and Barrens
- Southern Piedmont Mafic Hardpan Woodland

- Piedmont Seepage Wetland
- Southern Piedmont / Ridge and Valley Upland Depression Swamp

["Felsic" refers to the presence of feldspars and silicates in the underlying rocks. "Mafic" refers to the presence of magnesium and iron.]

The Forest is currently growing a disproportionately higher amount of Successional Forest than would exist in intact, naturally regenerating ecological systems. Successional forests grow up after landscape disturbances but may not be well-adapted to the site over the long-term. Much of this type on the Uwharrie is loblolly pine growing in "plantations," that is, trees purposely planted for timber and fiber production. The vision of this Plan is to move the Uwharrie to a condition that has less successional forest and more native longleaf pine and oak-hickory forests.

The earliest historical accounts from European explorers and traders describe a Piedmont landscape not of endless closed-canopy forest, but with large open woodlands, savannas and prairies. Many disturbance factors probably interacted to account for this: hurricanes, tornadoes, ice and wind storms, lightning and human caused fires. Indeed many of the plants that are rare today, such as the endangered Schweinitz's sunflower, are those that are more abundant in open, sunny conditions. Analysis for the Uwharrie plan identified three plant species federally listed as Threatened or Endangered, 14 sensitive plants and 44 locally rare plants that could potentially exist on the Uwharrie. Twenty-six of these 61 species have been found on the Forest, and the majority of these are sun-loving plants that require open canopy conditions, including all the federally listed species. The Uwharrie is very important to the conservation of several of these plants because it provides a large portion of the total known habitat throughout the species range. During most of the 20th century, fires were suppressed and many agricultural lands were allowed to return to forest. The result is a denser, more closed canopy forest condition across the landscape than might have existed in previous centuries. One vision of this plan is to recreate some of the open woodlands and prairies that support those rare sun-loving species.

A number of rare ecological systems add to the diversity of the Uwharrie. Unique geologic conditions or hydrologic attributes create many of these rare systems, such as barrens, seepage wetlands, and upland depression swamps. In order to better provide for biological diversity, part of the Plan's vision is to recognize rare ecological systems and some of the best examples of the more common ecological systems as botanical Special Areas (see Chapter 4 for details). Sustaining these rare ecological systems also provides habitat for the remaining species-of-concern and species-of-interest not associated with open canopy conditions.

Vegetation-Related Goals/Desired Conditions

VEG-1. Woodlands and open forests with small canopy gaps, interspersed with glades and Piedmont prairies, occupy portions of the forest where they occurred historically. These forests contain mixed ages with old trees and

old forest conditions, as well as canopy openings that provide habitat for federally listed, sensitive and locally rare species.

VEG-2. Plant communities that were more common in the past occur on appropriate sites across the forest. Examples include longleaf pine woodlands, shortleaf pine woodlands, and oak-hickory forests.

VEG-3. Non-native invasive species are at low levels that do not interfere with native plant reproduction and distribution. New outbreaks are not spreading. Coordinate with horse user groups to advocate the use of weed-free hay and straw.

VEG-4. There is increasing evidence of prescribed fire used to restore the structure, composition, and ecosystem processes in ecological systems.

VEG-5. Schweinitz's sunflowers (federally listed as Endangered since 1991) that historically occurred across the Piedmont of North and South Carolina are restored on appropriate sites across the forest (longleaf pine woodlands, dry-oak hickory forests, mafic hardpan woodlands, and xeric forests). Other plant species-of-concern or species-of-interest are sustaining or increasing in number of occurrences or the extent of the occurrences.

VEG-6. Biological diversity is evident across the forest, and is further enhanced by a system of botanical special interest areas. All plant communities found on the Uwharrie are represented in this system, including rare plant communities and the species they support. These botanical special areas are intact and fully functioning; without evidence of unnatural erosion or non-native invasive species, and with intact hydrologic systems.

VEG-7. Regenerating hardwoods are evident following disturbances in tree canopies (canopy gaps) in multi-age deciduous forests and mixed pine-hardwood forests.

VEG-8. Forests are in a healthy condition. Most trees are in good health, well-formed, and with little evidence of widespread insect and/or disease damage. A healthy forest includes some dead and dying trees and hollow den trees used by wildlife. A healthy forest also contains various size patches of disturbance that provide habitat components desired by a variety of wildlife, and space and light for young trees ("regeneration").

VEG-9. The composition, structure and processes of ecological systems are improving. The desired composition, structure and process for each system are described below:

Xeric Oak Forest: These forests on high ridges and knolls (commonly called Monadnocks) are dominated by mature (> 80 years in age) chestnut oak with a

patchy canopy (60-80% canopy closure); common associates include post oak, southern red oak, and pignut hickory. Canopy gaps are more frequent than in other ecological systems and the midstory is patchy and open. The shrub layer is scattered and the herb layer sparse, with less than 30% cover. Typical understory species include hillside blueberry and woodland tick-trefoil, but may be dominated by mountain laurel. Fire return interval is 7-20 years and consists of surface fires of mixed severity with flame heights mostly less than 2 feet with some fires occurring in the growing season.

Dry Oak-Hickory Felsic Forest: These forests on convex, exposed hillsides have a relatively open tree canopy (60%-80% closure) and are dominated by mature (> 80 years in age) dry site oaks or a mixture of oaks and up to 30% cover of shortleaf pine in upper crown positions. Small canopy gaps (1/2-2 acres in size) are dominated by oak and hickory seedlings or saplings or by grasses and herbs. Southern red oak, white oak, or post oak dominate the hardwood species. Shrubs range from sparse to moderately dense and the herb layer, although generally sparse, can be well developed in canopy gaps. Typical understory species include deerberry, broomsedge, and little bluestem. Fire return interval is 7-20 years and consists of surface fires of mixed severity with flame heights mostly less than 2 feet with some fires occurring in the growing season.

Dry Oak-Hickory Mafic Forest: These forests on convex, exposed hillsides on higher pH soils have a relatively open to closed mature tree canopy (60-80% canopy closure) Small canopy gaps (1/2-2 acres in size) are dominated by oak and hickory seedlings or saplings or by grasses and herbs. White oak is generally the most abundant tree. Other characteristic overstory trees include post oak, white ash, pignut hickory, redbud, winged elm, and Carolina shagbark hickory. The shrub and herb layers are generally sparse and may include farkleberry, whorled milkweed, and northern oak grass. The vine layer may be well-developed, and muscadine is common. Fire return interval is 7-20 years and consists of surface fires of mixed severity with flame heights mostly less than 2 feet with some fires occurring in the growing season.

Dry-mesic Oak-Hickory Felsic Forest: These mid to lower slope forests on concave landforms have a relatively open to mostly closed mature tree canopy (60-90% canopy closure) Small canopy gaps (1/2-2 acres in size) are dominated by oak and hickory seedlings or saplings or by grasses and herbs. Forests are dominated by mixtures of oaks and hickories, with white oak the most common species along with northern red oak, black oak, mockernut hickory, and red hickory. Shortleaf pine may be common. The shrub layer ranges from sparse to moderately dense and typically includes squaw-huckleberry, rattlesnake plantain, and little bluestem. The herb layer, although generally sparse, can be well developed in canopy gaps. Fire return interval is 7-20 years and consists of surface fires of mixed severity with flame heights mostly less than 2 feet with some fires occurring in the growing season.

Dry-mesic Oak-Hickory Mafic Forest: These mid to lower slope forests on concave landforms and higher pH soils have a relatively open to mostly closed canopy (60-90% canopy closure). Small canopy gaps (1/2-2 acres in size) are dominated by oak and hickory seedlings or saplings or by grasses and herbs. The tree subcanopy, shrub, and herbaceous layers are moderately well-developed with up to 25% total cover per stratum below the canopy. These forests are dominated by white oak, or mature white oak and mature shagbark hickory in combination with other characteristic species such as redbud, winged elm, chalk maple and Carolina shagbark hickory. Red maple, sweetgum, and tulip poplar may be present but not in abundance. Herbs include: ebony spleenwort, Carolina supplejack, black-edge sedge, and common foamflower. Fire return interval is 7-20 years and consists of surface fires of mixed severity with flame heights mostly less than 2 feet with some fires occurring in the growing season.

Southern Piedmont Mesic Forest: These forests are in sheltered topographic positions with closed (80-100% canopy closure), mature (> 80 years in age) canopies dominated by mesophytic trees. American beech is nearly always present. Other characteristic species include northern red oak, tulip poplar, and red maple; white ash and shagbark hickory occur on higher pH soils. The herb layer is dense and may include black cohosh, bloodroot, maidenhair fern, and Christmas fern. Fire return interval is 12-20 years and consists of surface fires of mixed severity with flame heights mostly less than 1 foot with some fires occurring in the growing season.

Southeastern Interior Longleaf Pine Woodland: These woodlands or open forests (25-60% canopy closure) are dominated by longleaf pine with occasional shortleaf pine and oaks, or codominated by longleaf and shortleaf pine with occasional oaks. They are multi-aged (25%-60% tree cover) with mostly treeless canopy gaps occasionally as large as 1/4 acre in size: ½ to 2 acres in size on sites suitable for Schweinitz's sunflower. Characteristic hardwood associates may include: post oak, southern red oak, and blackjack oak. The midcanopy is very sparse and the understory shrub layer may include hillside blueberry, New Jersey tea, and common chinquapin. The herb layer is nearly continuous, diverse, and includes characteristic species such as little bluestem, splitbeard bluestem, Virginia goat's-rue, yellow Indiangrass, poverty oat-grass, and silky oat-grass. Fire return interval is 3-5 years and consists of surface fires of mixed severity with 2-5 foot flame heights and some fires occurring in the growing season.

Shortleaf Pine-Oak Woodland: These woodlands on very exposed slopes have open canopies (25-60% canopy closure) dominated by shortleaf pine, Virginia pine and chestnut oak or by shortleaf pine, blackjack oak and chestnut oak. Other characteristic trees include: blackgum, white oak, scarlet oak, black oak on soils derived from felsic rock and persimmon or white ash on soils derive from mafic rock. The shrub layer may be dense and include farkleberry, horsesugar, and mountain laurel. The herb layer is diverse and typically includes little bluestem, silky oat grass, butterfly pea, starved witch-grass, and Elliott's broomsedge. Fire

return interval is 3-5 years and consists of surface fires of mixed severity with 2-5 foot flame heights and some fires occurring in the growing season. Stand replacement fire may occur on an 80-100 year interval.

Southern Piedmont Glade and Barrens: These cliffs, bluffs, and other rock outcrops are dominated by open woodlands (< 25% canopy closure) to nearly treeless plant communities with highly variable composition. The open woodland canopy may be dominated by Virginia red cedar and winged elm with eastern red maple and Virginia pine. Other woody species include fringetree, pignut hickory, sand hickory, white ash, farkleberry, hillside blueberry, persimmon, and winged sumac. The sparse to moderate herb layer is typically dominated by little bluestem. Other common grasses include silky oat grass, Indian grass, and starved witch grass. Flowering herbs include whorled milkweed, long-stalked Aster, and cross-vine. Many additional woodland community types are possible in this system. Fire return interval is 5-7 years and consists of surface fires of low severity with 1-2 foot flame heights.

Southern Piedmont Mafic Hardpan Woodland: These upland flats on soils with a perched water table are open woodlands (25-60% crown closure). The canopy is dominated by somewhat stunted post oak and blackjack oak and characteristic species such as Carolina shagbark hickory, persimmon, and black oak. A variety of other characteristic overstory trees may be present including: Carolina shagbark hickory, white ash, pignut hickory, white oak, and black oak. Typical midstory and understory trees include: Virginia red cedar, persimmon, redbud, and winged elm. The understory shrub layer is sparse and the herb layer continuous. Fire return interval is 3-5 years and consists of surface fires of low severity with 1-2 foot flame heights.

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Southern Piedmont / Ridge and Valley Upland Depression Swamp: These seasonal to intermittently flooded upland flats have a closed forest canopy (60-100% canopy closure) dominated by willow oak or codominant with or replaced by overcup oak, swamp chestnut oak, or sweetgum. Shrubs are sparse but may include: black highbush blueberry, highbush blueberry, buttonbush, and inkberry. The understory is also sparse but typically includes sphagnum moss, buttonbush, sedges or lamp rush. Sphagnum moss is common. Fire return interval is highly variable and is dependent upon seasonal and yearly water fluctuations. Low severity surface fires with < 1 foot flame heights originate outside of this wetland.

Upland pools are also included in this Ecological System. Upland pools lack significant tree cover except on their edge and are thought to be geologically successional to Upland Depression Swamps.

Piedmont Seepage Wetland: Streamside seepage areas are imbedded within forests and have a scattered to closed tree canopy (60-100% canopy closure) that may include sweetgum, black gum, sweetbay, and persimmon. The understory may contain: American holly, common winterberry, American strawberry bush,

Virginia sweetspire, Southern wild raisin, tag alder, and ti-ti. The herb layer is diverse and may include royal fern, blaspheme-vine, and muscadine. Common spicebush and yellow root may occur along well-developed stream channels.

Hillside Seepage Bogs are imbedded in forests and woodlands and have patchy to open canopies (60-80% canopy closure) that may include swamp red maple, tulip poplar, sweetgum, or longleaf pine. Characteristic shrubs include: evergreen bayberry, blue huckleberry, Southern blackhaw, and tag alder. The herb layer is diverse and may contain: yellow pitcher plant, purple pitcher plant, bushy broomsedge, ship nuthatch, and sphagnum moss. Fire return interval is highly variable and is dependent upon seasonal and yearly water fluctuations. Low severity surface fires with < 1 foot flame heights originate outside of these wetlands.

Streamside Forest: These forests provide shading, stability to stream banks, a source of coarse wood for in-stream habitat, and special habitat components such as cover and travel corridors for wildlife. They consist of generally a 100-foot corridor on each side of perennial streams as well as all alluvial forests. Fire return interval is 12-20 years and consists of surface fires of mixed severity with flame heights mostly less than 2 feet with some fires occurring in the growing season. Some sites are subject to flooding.

In the floodplains of small to medium-sized streams, where flooding and alluvial processes have some, but limited, influence on vegetation, the canopy, subcanopy, shrub, and herbaceous layers are often well-developed. Widespread species such as sweetgum and tulip poplar may be common along with upland species as well as characteristic alluvial species such as sycamore and river birch. These small stream forests may also be dominated by American beech, white oak, red oak, and green ash, with a fairly dense streamside shrub layer that includes ti-ti and mountain laurel, and an herb layer dominated by galax with wood anemone, northern green-and-gold, yellow yam, and sedges.

In floodplain terraces and levees along larger streams and rivers, the forest canopy is nearly complete (80-100% canopy closure) to somewhat open and dominated by tulip poplar, sweetgum with water oak, sycamore, river birch, loblolly pine, and cherrybark oak. The understory is dominated by ironwood, silverbell, and common pawpaw. Giant cane often forms dense thickets. Vines are frequently prominent. Aquatic and emergent communities of active and abandoned beaver ponds are imbedded with this ecological system.

Restoration of Ecological Systems During the Planning Period: As part of the plan revision process, the Forest Service developed a predictive model of the potential extent of the various ecological systems described above. Characteristics of the landscape, such as geologic formation, landform, slope position, and aspect influence site temperature, moisture and fertility, which interact to determine what groups of species (see ecological system descriptions above) are best adapted to which sites. Table 1.1 displays the

approximate amount of each ecological system that currently exists (existing acres) versus the amount that could exist according to the model (desired acres).

Table 1.1 Long Term Desired Restoration

Ecological System	Existing Acres (2006)	Desired Acres
Xeric Oak Forest	1,750	2,900
Dry Oak-Hickory Felsic Forest	10,370	19,200
Dry Oak-Hickory Mafic Forest	1,300	2,200
Dry-mesic Oak-Hickory Felsic Forest	6,670	9,150
Dry-mesic Oak-Hickory Mafic Forest	625	820
Southern Piedmont Mesic Forest	320	920
Southeastern Interior Longleaf Pine Woodland	2,200	8,300
Shortleaf Pine-Oak Woodland	20	<100
Loblolly and shortleaf pine	20,525	0
Southern Piedmont Glades and Barrens	<100	<100
Southern Piedmont Mafic Hardpan Woodland	<50	<50
Southern Piedmont / Ridge and Valley Upland Depression Swamp	<50	<50
Piedmont Seepage Wetland	<200	<200
Streamside Forest	6,900	6,900

The fire return interval mentioned in the descriptions of ecological systems is an approximation of how frequently fire might have burned through the system in the past before the mid - 20th century emphasis on fire suppression. Prescribed fire and wildfire typically would burn in a mosaic pattern and would be generally low intensity. Flame heights of 1-2 feet in oak-hickory forests would be sufficient to kill seedlings and saplings of thin-barked species such as red maple, sweetgum, and tulip poplar which would otherwise compete with the more fire resistant oaks and hickories. Similarly, flame heights of 2-5 feet in longleaf pine and shortleaf pine forests would favor these more fire resistant pines while reducing midcanopy shrubs and hardwoods and providing more favorable conditions for sun-loving grasses and herbs. Table 1.2 summarizes the desired fire return interval for ecological systems addressed in this Plan.

Table 1.2. Desired Fire Return Interval for Ecological Systems of the Uwharrie National Forest

Ecological System	Average Fire Return Interval
Southern Interior Longleaf Pine Woodland	3-5 years
Xeric Oak Forest	7-20 years
Dry Oak-Hickory Forest (felsic)	7-20 years
Dry Oak-Hickory Forest (mafic)	7-20 years
Dry-mesic Oak-Hickory Forest (felsic)	7-20 years
Dry-mesic Oak-Hickory Forest (mafic)	7-20 years
Mesic Forest	12-20 years
Streamside Forest	12-20 years
Shortleaf and Loblolly	
On potential Longleaf sites	3-5 years
On potential Oak-Hickory sites	5-7 years
Shortleaf Pine-Oak Woodland (**rare**)	3-5 years
Glade and Barrens (**rare**)	5-7 years
Mafic Hardpan Woodland (**rare**)	3-5 years
Upland Depression Swamp (**rare**)	Ignitions originate outside these areas
Seepage Wetlands (**rare**)	Ignitions originate outside these areas

Wildlife – Existing Conditions

National forests are managed to provide a framework to contribute to sustaining native ecological systems by providing ecological conditions to support diversity of plant and animal species in the plan area (CFR 219.10(b)). The Uwharrie has a diversity of native vegetation types - hard mast producers such as oaks, soft mast producers such as grapes, succulent stems, and herbaceous plants – that are sources of food for many animal species. Structural components such as snags, dens and downed wood provide cover, nesting, denning, and other needed habitat elements. In addition to providing food and cover, we are learning more and more about designing landscapes to provide the appropriate spatial pattern of habitat conditions needed to support many species.

The Uwharrie is unusual in that almost 40% of the trees are over 80 years of age. Very little oak or hickory regeneration has occurred over the past twenty years, which could eventually result in a period of decline in hard mast (especially acorn) production in the long term if enough young trees are not in place to fill the gaps as the older trees die. At the same time, the Uwharrie lands have a particular niche in providing older forest conditions and open grassy areas, which are less likely to occur on adjacent private forest land.

Most of the 60 mammalian species in North Carolina are present in the Piedmont, with black bear a notable exception. Extensive reptile and amphibian collections in the Uwharrie document about 60 species. With the exception of a few bird species, most of the birds in North Carolina occur in the Piedmont part of the state. Eighty-four bird species have been identified at least once over the past eight years during spring bird surveys on the Uwharrie. This is an indication of the diversity of species and habitats on the Forest.

The North Carolina Wildlife Resources Commission reports that the Uwharrie has the highest hunter use per acre of any games lands in the state. Deer hunting is a tradition of the Uwharrie and an estimated 2.5 whitetail deer per square mile roam these public hunting lands in the middle of the Piedmont. Turkey, squirrel, rabbit and dove are other popularly hunted species. Quail are scarce here as they are throughout the North Carolina Piedmont, but may be found near the larger planted wildlife openings and recently harvested areas with plenty of grass cover.

Waterfowl hunting on the Uwharrie National Forest is confined to the shores of Badin Lake, Uwharrie River, and the Little River areas. Ducks are not plentiful anywhere, since the Uwharrie is not located on a major waterfowl flyway. Mallards, black ducks, pintails, Canada geese and wood ducks can be found on Badin Lake, and wood ducks can be found while floating the Uwharrie and Little Rivers.

Analysis of terrestrial animals for this plan identified two species federally listed as Threatened or Endangered, one species-of-concern, and 17 species-of-interest, (see Table 16 in *Ecological Sustainability – Terrestrial Ecosystems* in the Plan Set of Documents). Eleven of these 20 species have been found on the Forest. No federally listed terrestrial animals are known to exist in resident populations on the Uwharrie. Bald eagles are regular visitors, but no active nests are known to exist and nesting sites remain available along the lakeshore and major rivers. Federally listed red-cockaded woodpeckers have occurred in the past, but no active colonies are known. Longleaf pine restoration would help create potential future habitat for this species over the course of many decades. Of the nine terrestrial animal species-of-concern or species-of-interest found on the Forest, most will be provided for through restoration of longleaf pine woodlands, shortleaf pine woodlands, and oak-hickory forests. Two are associated with Piedmont seepage wetlands and are provided for by plan components that protect these wherever they occur, including in the Special Areas (see Chapter 4).

Wildlife-Related Goals/Desired Conditions

WLF-1. Habitat is present for the diversity of native animal species typical of the Piedmont ecoregion - vertebrates, invertebrates, game and non-game, and including herptiles.

WLF-2. Wildlife fields and openings in the forest are predominantly filled with native and desired noninvasive non-native grasses, herbs, and shrubs of species that native wildlife use for food. Occasional hard mast producing trees occur in the fields as well. Fields and openings are dispersed across the forest and do not occur within 150 yards of developed recreation areas.

WLF-3. Some non-native, non-invasive plants such as grains are growing in a small portion of wildlife openings in order to provide the wildlife viewing and hunting opportunity experience desired by forest visitors.

WLF-4. Den trees, snags, and downed wood are evident in most stands, supporting diverse populations of wildlife that use these habitat components. However, the amount of dead wood is limited near private land developments to reduce fire danger.

WLF-5. Suitable habitat for red-cockaded woodpecker (federally listed as Endangered) occurs on mature longleaf pine or pine woodland sites.

WLF-6. An abundance of hard and soft mast is available across the Forest. Mature oaks and hickories are abundant and well distributed on appropriate sites across the Uwharrie, producing abundant crops of acorns and hickory nuts in most years. Regenerating hardwoods (such as oaks and hickories) are evident in tree canopy gaps in multi-age forests to provide for a continuous supply of hard mast. Native fruit producing shrubs and trees are evident in many areas.

WLF-7. Ephemeral pools, ponds, swamps, seeps, bogs, and other wetlands are frequent throughout the Forest and visited by many wild animals. Conditions are secure for animals such as amphibians that use these habitats for reproducing.

WLF-8. Breeding, wintering and migration, staging and stopover habitat for migratory birds is provided in ways that contribute to their long term conservation.

Soil, Water and Fisheries – Existing Conditions

Approximately 160 miles of streams flow through the Forest. The dissected ownership pattern means that stream condition is often an outcome of land use on adjacent private lands. Sixty-six freshwater fish species occur on the Uwharrie. This relatively high fish species diversity is typical of Piedmont ecosystems. Fifteen species of native freshwater mussels occur on the Uwharrie. Of these mussels, 10 have restricted ranges, low densities and distribution, or limited habitat.

The Uwharrie is also an access point for Badin Lake, a 5,350 acre utility-owned reservoir. Streams feeding Badin Lake originate on both public and private land. While the lake's main purpose is to provide hydropower to Piedmont residents, it is also a recreation destination for boaters and anglers.

About 63 inches of precipitation falls in the region each year, with 68% returning to the atmosphere through evapotransporation and 32% ending up as stream runoff. There is little local demand for water supply from the Uwharrie, presumably due to low populations in the three-county area.

Soils on the Uwharrie include silty loams along the creeks and gentle slopes, slaty silty loams on ridges and slopes, and a fine sandy loam next to the rivers. Most of these soils overlie hard slate and siltstone and are moderately permeable, and subject to erosion. The road and trail network on the Forest is the greatest potential source of soil erosion and water quality degradation. Nearly 113 miles (almost 70%) of both Forest and State roads that occur on the Uwharrie are located on moderately to moderately-high erodible soils. Ninety miles (over 80%) are unpaved. Therefore, there is a high risk of erosion throughout the Forest and a potential for road-derived sediment to enter streams where road/stream crossings occur. Numerous trail segments are also contributing sediment to streams due to poor location or maintenance challenges (see Road- and Trail-Related plan components for addressing these water quality issues).

The condition of stream channels across the Forest varies. There are many unstable stream channels that exhibit a lack of instream large wood, loss of floodplain area, stream bank erosion, downcutting, or visible channel scour. These conditions are largely the legacy of mining and agricultural practices that took place prior to federal acquisition. Channel stability can be improved with various stream restoration techniques.

Analysis for this plan identified three aquatic species that are federally listed as Threatened or Endangered and 17 locally rare species. All of these species either are known to occur on or adjacent to the Forest, or there is suitable habitat and the Forest is part of the species natural range. Numerous plan components have the outcome of improving or sustaining watershed conditions and instream habitat, and the combination of these provides conditions to sustain the suite of native aquatic species.

Soil, Water and Fisheries-Related Desired Conditions

SWF-1. Aquatic ecosystems are diverse, with properly functioning streams providing high quality habitat for all native aquatic species, including non-game species.

SWF-2. Fish are plentiful in streams and lakes. Water is clean and clear of trash and pollutants, and there is in-stream habitat for fish to hide, spawn, and find food.

SWF-3. Road crossings allow for passage of fish and other aquatic animals up and down stream corridors except when there is a need to prevent non-native invasive species from moving upstream.

SWF-4. Non-native aquatic species do not threaten Forest lakes, rivers, or streams.

SWF-5. Native fresh water mussel communities are diverse and represented by multiple age-classes, with signs of reproduction evident. Appropriate habitats support sustainable populations of native freshwater mussels, including those that are federally-listed, regionally-sensitive, or locally rare. Non-native mussel species are not negatively impacting native species.

SWF-6. Streamsides are dominated by native riparian vegetation, including trees capable of adding large woody debris for hydrologic stability and instream habitat. Aquatic habitat is diverse and free of unnatural sediments. Pool habitats are frequent and provide cover for many species of fish. Vegetated streamside areas are effective in providing shading to the streams and filtering sediments produced by all land management activities.

SWF-7. Stream channels are connected to their floodplains so that high streamflow events can be processed through the ecosystem without creating gullies or eroding stream banks. Man-made dikes and deposition are absent, allowing the stream to flood out of its banks and onto the floodplain in a natural way.

SWF-8. Stream channels degraded by historic mining are exhibiting improved biological and hydrological conditions.

SWF-9. Bogs and seeps are maintaining or increasing their size through natural hydrologic processes and fire regimes.

Theme 2 - Better Managing Heritage Resources

This theme encompasses the archeological sites, artifacts, traditional cultural properties, and historic sites found on the Uwharrie.

Heritage Resources – Existing Conditions

The Uwharrie contains many significant heritage resources. The most significant categories of sites are associated with the underlying geology of the Uwharrie: archaic rock quarries used as source material for tool and weapon-making, and the historic gold mines. There are more than 1,600 recorded heritage resources on the Uwharrie. These resources include artifacts and archeological sites that document human use of the area for more than 14,000 years. The Forest was home for people who extracted its resources and the Forest holds abundant evidence of their activities and habitations. Their effects on the landscape and the environment's effects on the people can only be understood with further study of these resources.

By 2009, approximately 66% of the Forest was inventoried and 1,759 sites were recorded. Overall site density was 1 site in 18.4 acres, which is quite high. Some sites are less than an acre in size and some are greater than 15 acres in size.

Increasing use of the Forest has resulted in severe impacts to a number of important heritage resources. Increased access (roads and trails) is facilitating illegal activities. Recently exposed artifacts have been collected without authorization and some sites have been intentionally looted and vandalized. These activities are prohibited under the

Archeological Resources Protection Act of 1979, which protects all artifacts and sites over 100 years of age located on Federal lands.

Opportunities abound for historic interpretation (Thornburg property, Crump Farm, Arrowhead Trail, goldmines) and for scientific research (prehistoric quarries and bogs/upland swamps). Bogs and upland swamps are likely to contain well-preserved data to interpret past environments.

Heritage Resource-Related Goals/Desired Conditions

HER-1. Heritage resources are protected from loss. Significant sites are stabilized, treated, managed and preserved for their historical research value.

HER-2. All known heritage resource sites are evaluated for significance.

HER-3. Visitors to the Uwharrie have opportunities to learn about the past, and how to protect heritage resources, through interpretive programs and information.

HER-4. Archeological sites are available for scientific research.

HER-5. A Heritage Resources Overview for the Forest is complete.

Theme 3 - Providing outstanding and environmentally friendly outdoor recreation opportunities, with excellent trails and facilities.

This theme encompasses both developed and dispersed recreation opportunities including trails of all kinds, facilities such as campgrounds, and water-based recreation.

Outdoor Recreation Opportunities – Existing Conditions

A wide variety of activities are popular on the Uwharrie from hunting and fishing to OHV riding, horseback riding, biking, boating, camping and picnicking. Resource damage and user conflicts are occurring in some places.

Hunting season is a time of potential conflict due to the perceived disruptions hunters experience from mountain bikers or hikers, and likewise the disruptions perceived by the non-hunters from the hunters. Another source of potential user conflict occurs where one type of trail crosses another, such as in the Badin area where horse trails cross OHV trails.

Resource damage may occur if trails and facilities are not properly designed, built or maintained, or where users are unaware of or unwilling to follow light-on-the-land practices, such as always staying on authorized trails.

Outdoor Recreation - Related Goals/Desired Conditions

REC -1. Outstanding recreation opportunities draw visitors to the Uwharrie, provide opportunities for visitors to experience natural forest settings while enjoying physical activities with family and friends, and provide economic benefits to the local communities. Conflicts among users are rare.

REC -2. Expanded recreation opportunities are provided outside the Badin Lake area.

REC -3. The following approximate amount of acres are maintained in each of the following Recreation Opportunity Spectrum (ROS) classes, as shown on the Recreation and Scenery Settings Map:

ROS Class*	Description	Acres
SPNM	Semi-primitive Non-motorized/ Very high scenic integrity	5,160
RN2S	Roaded natural/ Less accessible by open roads/ High scenic integrity	11,144
RN2	Roaded natural/ Less accessible by open roads/ Moderate scenic integrity	20,660
RN1S	Roaded natural/ More accessible by open roads/ High scenic integrity	7,280
RN1	Roaded natural/ Mess accessible by open roads/ Moderate scenic integrity	6,570

* See the Glossary for a more complete definition of each ROS class.

REC -4. For the Badin Lake Recreation Area: the recreation sites are well maintained; the information and fee boards are up-to-date and provide appropriate information to the public; user conflicts on trails, roads, and within the recreation area are minimized; recreation impacts to the natural resources and heritage resources are reduced through improved conservation education programs, signage, and interaction of Forest Service employees with the users of the National Forest.

Trails – Existing Conditions

There are 121 miles of designated system trails on the Uwharrie National Forest. Of this total, 16 miles are designated as OHV routes, 40 miles are designated as equestrian trails, 17 miles are designated as bike trails, and 48 miles are designated as hiker-only trails. All these uses have become increasingly popular on the Uwharrie - especially equestrian and OHV use because of limited opportunities elsewhere in the central portion of North Carolina. The Uwharrie National Recreation Trail follows a north-south route through the Forest. It is the focus of several conservancy organizations that hope to protect the entire length of the trail and put as much of the route as possible on public land. At present, only about 50% of the desired route is on public land.

With the increasingly heavy use, many trails of all types are in need of heavy maintenance, reconstruction, or relocation. Trails that might have sustained the lower levels of use that existed when they were established are unable to sustain today's higher levels of use. The Forest Service has received very limited trail maintenance and management funding for the Uwharrie in recent years; however, dedicated trail volunteers have donated hundreds of hours of time to trail maintenance and have improved conditions in many locations. Over time, additional trails may be built as conditions of the existing trail system improve.

Trail-Related Goals/Desired Conditions

TRL-1. Exceptional trails are available for hikers, horseback riders, off-roaders, mountain bikers, hunters, and anglers. The trails are designed, constructed, and maintained so that a variety of levels of challenge is available and minimal damage occurs to other forest resources such as soil and water.

TRL-2. The trail system has trails of varied lengths, including loop trails and trails with multiple access points, and may connect with trails on other ownerships. Trail users are well-informed about the trails and about ways to minimize their impacts on the environment during their visits. Many trails have vistas – points along the trails that allow for long-range views.

TRL-3. Trails are safe and safe vehicle parking is nearby. Trails and trailheads are well marked and easy to find; trails that cross roads are well marked for safety at all intersections. There are few hazard trees. For added safety, horse use and OHV use occur on separate trails.

TRL-4. Recreation use is dispersed across the Forest and there is good trail access for visitors to both northern and southern portions of the Forest.

TRL-5. The 50-mile Uwharrie National Recreation Trail is complete and marked for hikers. That portion on National Forest System lands has high scenic integrity.

TRL-6. Mountain biking occurs only on roads and designated trails in several parts of the Forest.

TRL-7. Horseback riding occurs only on a designated trail system. Riders are informed about how to ride safely. Horse trails are well designed and maintained to provide varied user experiences (easy to more difficult) while minimizing resource damage. Trails do not coincide with roads and trails will cross roads at designated locations. While trails avoid wet areas, access is available to horse watering areas. While on the horse trails, visitors seldom see evidence of litter or erosion and sediment transport into streams.

TRL-8. An OHV trail system exists that is well designed and maintained to provide varied user experiences (easy to more difficult) while minimizing resource damage. Designated OHV routes are clearly defined on maps and on the ground, and off-highway vehicles are operating only on designated routes during the established open season. Little sediment can be seen entering streams from the OHV system, and trails are free of litter.

TRL-9. Well-trained partners and volunteer groups are working to maintain or improve the trail systems.

Facilities – Existing Conditions

Several major recreation facilities were completed in the Badin Lake Recreation Area in recent years. These improved the Forest's ability to address user demands for camping, horseback riding, fishing, and swimming. Recent projects included Kings Mountain Point Day Use Area, parking facilities along the OHV trail, and electrification of Canebrake Horse Camp. The Uwharrie National Forest offers a range of camping experiences, from primitive camping with no facilities to highly developed campgrounds that include flush toilets, showers and dumpstations. The Forest Service maintains nine campgrounds with a total of 140 camp sites. The majority of campgrounds are in the Badin Lake Recreation Area. Two camping areas cater specifically to horseback riders, one being the developed Canebrake Horse Campground and the other being the primitive Badin Horse Camp.

Other facilities on the Uwharrie National Forest that are maintained include two picnic areas, 2 primitive hunt camps and a shooting range. Even with a number of newer facilities, there remains public interest in additional facilities tailored for specific users, such as OHV users, mountain bikers, and horseback riders. Opportunities also exist to improve existing facilities and to devise ways to meet the ever present maintenance challenges.

Facility-Related Goals/Desired Conditions

FAC-1. Developed recreation areas such as campgrounds, restrooms, showers, and a shooting range are clean, safe, and in good repair. Campgrounds are available, convenient, and appropriately designed for a variety of Forest visitors.

FAC-2. Parking areas and trailheads exist for users at convenient locations and are well-designed for their intended use, including parking for vehicles towing trailers to the OHV area and horse trails. Forest users are parking in a safe manner along roads: not blocking roads, and not impacting adjacent landowners.

FAC-3. Trash receptacles are located at high-use areas. Forest visitors are informed to pack out their own trash and as a result generally leave the forest cleaner than they found it.

Water-Based Recreation – Existing Conditions

Approximately eight miles of the Forest border the eastern shore of Badin Lake. Activities range from motor boating, water skiing, fishing, and paddling on the lake to camping and picnicking at developed facilities near the lake. The Falls Lake area provides a relatively remote setting for fishing and dispersed camping. There is some access to the Uwharrie River from National Forest lands - paddling and fishing are becoming more popular on the river. There is some trail access to other streams such as Barnes Creek.

Both the Uwharrie River and Barnes Creek are listed as eligible for consideration as National Wild and Scenic Rivers. The Uwharrie River has been determined to have outstanding remarkable scenic, historic, and cultural values, while Barnes Creek has been determined to have outstandingly remarkable fish and wildlife values. Of three possible categories (wild, scenic, recreational), both streams meet the criteria for a "recreational" classification. However, public ownership of the stream banks is very limited making long-term protection of special characteristics of the entire river corridor more difficult.

Water-Based-Recreation-Related Goals/Desired Conditions

WBR-1. Access to the water is available for water-oriented activities such as canoeing, kayaking, power boating, fishing, waterfowl hunting, and horse watering. These access points are located in areas that do not degrade the aquatic resources and provide safe, reliable access for users of all abilities where practical.

WBR-2. A water-based trail provides recreationists with floating opportunities on the Uwharrie River and may connect with trails on other ownerships.

WBR-3. Fish habitats are healthy and sustainable, promoting a positive angling experience.

WBR-4. The outstandingly remarkable scenic, historic, and cultural values of the Uwharrie River and the outstandingly remarkable fish and wildlife values of Barnes Creek are evident on those portions that traverse the Uwharrie National Forest.

Additional Important Goals/Desired Conditions

This category includes resources and other aspects of National Forest management in addition to the three major themes, or that cross thematic boundaries.

Wilderness – Existing Conditions

The 5,160-acre Birkhead Mountains Wilderness was established in 1984 and is the only designated Wilderness in the central portion of North Carolina. It is surrounded by private land and development is increasing near several sections of the boundary. Hiking and backpacking are the primary recreation uses. It is still possible to find vestiges of solitude.

Wilderness-Related Goals/Desired Conditions

WLD-1. The wilderness exhibits little evidence of modern human disturbance, and is remote from the sights and sounds of 21st-century civilization such as traffic from roads. Natural processes such as succession, decomposition and natural regeneration, and disturbance factors such as fire, wind, and water shape vegetation. Large areas of uninterrupted habitat provide a safe haven for animals.

WLD-2. Visitors to the area include nature enthusiasts, hikers, hunters, and researchers. No facilities are present other than directional signs. Motorized or mechanical vehicles, equipment, or devices are absent. Information signs are not seen within the wilderness boundary.

WLD-3. Lightning caused fires are allowed to play their natural ecological role as long as they occur within prescribed weather and fuel conditions and do not pose unmitigated threats to life/and or private property, particularly in the wildland urban interface. Prescribed fire helps replace the natural fires interrupted by human activity outside the wilderness boundaries.

Scenery – Existing Conditions

All national forests including the Uwharrie are managed within a basic framework of sustaining natural-appearing scenery. Research has demonstrated that natural-appearing scenery is one of the primary reasons why people visit national forests and is a primary component of recreation experiences. The Uwharrie has a generally natural-appearing character but is bounded by many areas that have a rural character, including industrial forest plantations.

The physiograhic/ecological setting of an area combined with the area's existing and historic human land uses and human perception determine the existing scenic character of the landscape. The Uwharrie is in the Central Piedmont and has a long history of human use dating back thousands of years. Scenic changes in the landscape over time are normal--some changes occur over thousands of years and completely reshape the character of the landscape. In most places in central North Carolina, more recent human uses have altered the landscape to move it away from a natural-appearing condition. However, humans can intervene to restore a landscape closer to its desired condition - such as restoration of oak-hickory or longleaf pine communities.

A primary focus of the Plan is restoration of native forest communities more common in the past on sites currently growing off-site loblolly pines. To restore native communities, active management will be necessary to change the compositions of these forest stands. Activities such as tree cutting and understory burning will be visible while the Forest transitions from the existing condition to the desired condition of more longleaf pine communities and oak-hickory communities. The transition will be carefully managed with the use of scenery mitigation and enhancement techniques so that scenic integrity is maintained. As native communities are reestablished over time, the less natural appearing pine plantations will be replaced with more natural appearing mixed-age and often mixed-species forests.

Scenery-Related Goals/Desired Conditions

SCE-1. Scenery is natural appearing and generally consists of older, multi-storied, closed-canopy forests, or park like or semi-open forests, except in young regeneration areas, woodlands, prairie-like openings, glades, and wildlife openings.

SCE-2. Viewpoints along roads and trails reveal mid- and long-distance views of attractive environments.

SCE-3. The Uwharrie National Forest is free of litter and refuse.

SCE-4. The following approximate amount of acres are maintained in each of the displayed Scenic Integrity categories (refer to the Recreation and Scenery Settings map):

Scenic Integrity category*	Acres
Very High	5,160
High	18,424
Moderate	27,230

*See Glossary for definitions of Scenic Integrity levels

[The very high scenic integrity acres are the Birkhead Mountains Wilderness. The high scenic integrity acres include, among other areas, all the Special Areas (see Chapter 4), and the Uwharrie National Recreation Trail corridor.]

Visitor Information – Existing Conditions

Participants in the collaborative planning process used to develop this plan **placed great emphasis** on the need for better visitor information, both to improve visitor experience and to reduce impacts to the national forest resources.

The Uwharrie maintains a website devoted to recreation information. In addition, an array of brochures describes the most important trail systems and facilities and visitor maps are available. Still, there are information gaps in areas such as: rules and regulations, natural resource information, heritage resource information, and environmental education. It is also a challenge to keep information up-to-date. There is a constant demand from the public for more and better visitor information. Being well-informed will help forest visitors know how to use the Forest in more environmentally friendly ways. Visitor information and conservation education are highly dependent on external partnerships.

Visitor Information-Related Goals/Desired Conditions

VIN-1. Visitors have access to accurate maps and detailed information so they can have a safe, positive experience in the forest. Information on trails includes distances, difficulty, and trailhead locations.

VIN-2. Up-to-date information such as brochures or visitor guides is widely distributed and available at other area attractions such as the zoo, and at area visitor/welcome centers.

VIN-3. Visitors have access to natural and cultural history information, including interpretive exhibits. Information on both aquatic, terrestrial, heritage, and wilderness resources is available.

VIN-4. Visitors are informed about ways to lessen their impact on the environment, including the importance of staying on trails; minimizing impacts to soil, water, vegetation and wildlife; not littering in the forest or leaving trash at campsites, parking areas, or the rifle range.

Roads – Existing Conditions

The Uwharrie road system is comprised of 98 classified roads totaling approximately 107 miles. Of these, 23.6 miles are open for public use, and another 5.0 miles are seasonally open. Over half the roads are closed to motor vehicles or in some way restricted. Some roads that are not open to public motor vehicles are used to access administrative sites or communication sites, or private in-holdings. The chief reasons roads are kept closed are cost of maintenance, and to provide secure areas for wildlife.

Additional travelways (approximately 33 miles) exist that are not part of the Forest Service road system and are considered “unauthorized.” Many are more like trails and include unplanned, abandoned travel ways, old off-road vehicle (OHV) tracks, and roads

that were once under permit or other authorization and were never decommissioned upon termination of the authorization. Travelways in this category are awaiting management direction as to whether or not to include them as part of the transportation system, to decommission or restrict them from further use, or to leave them as is.

Very little new road construction has occurred over the past twenty years (1986 – 2006) and the need for new roads is not expected to be greater in the next twenty years (2007 – 2027). Some of the existing road system needs heavy maintenance, and as of 2005 there was a $1 million plus maintenance backlog due to lack of funds. Maintenance concerns include public safety and erosion that leads to sediment reaching streams.

Road-Related Goals/Desired Conditions

RDS-1. Roads open to public vehicles are safe for forest visitors in non-4-wheel-drive vehicles and for emergency vehicles: there are no gullies, washouts, or slides; there are adequate turnouts or passing areas and adequate sight distances; the road surface is relatively smooth. Some heavily traveled Forest roads are paved. Some roads may be open seasonally to provide recreation opportunities.

RDS-2. Many existing roads are not open to public motorized vehicles, to reduce human disturbance to wildlife and reduce maintenance costs. Roads **not** open to public motor vehicles are still available for use by hikers. Mountain bikers and horseback riders use these only if they are a part of the relevant designated trail system. The road surface is free of gullies and is generally covered with native materials or native grasses and forbs. The road edges are intact and not broken by excessive traffic of forest visitors. During rain events, water is able to seep into the soil gradually without causing erosion.

RDS-3. There is little evidence of new road construction. Unauthorized roads are nonexistent.

RDS-4. A negligible amount of sediment from roads is reaching streams.

Lands – Existing Conditions

The Uwharrie is one of the youngest national forests – it was established as a purchase unit in 1934 by the National Reserve Commission, and was proclaimed a National Forest in 1961. The forest has a total of 50,814 acres, and makes up 23% of lands within the purchase unit boundary. In the years 1994 – 2009, 190 acres was added to the Uwharrie. In 2010, an additional 175 acres has been funded for acquisition.

Due to its small size and scattered ownership patter, acquisition of additional land is a longstanding priority for the forest. Acquisition of additional land will assist in meeting desired conditions for the forest by: 1) providing a corridor for the Uwharrie National

Recreation Trail; 2) providing for terrestrial wildlife corridors; and 3) increasing public recreation opportunities and improving recreation access to existing public land, especially for river-based recreation. A Landownership Adjustment Plan has been developed that identifies priority lands for acquisition as well as Forest Service lands that may be available for exchange.

Lands Goals/Desired Conditions

LND-1. Uwharrie National Forest land base is sufficient to protect wilderness values; provide habitat, refuges and corridors for native wildlife; provide special areas to improve ecological integrity; provide views and vistas; and provide a variety of outdoor recreation opportunities.

LND-2. The land base is adequate to accommodate completion of the Uwharrie National Recreation Trail.

LND-3. The land base is adjusted to provide adequate access for water-based recreation, including access to the Uwharrie River.

LND-4. The land base is mostly contiguous to allow for better resource management; however isolated tracts with special resource values are also a part of the land base.

Special Uses – Existing Conditions

Growing local populations and have created a demand for a variety of uses on federal lands. The Forest Service special uses program authorizes uses of National Forest System lands for public services such as utilities, wells, public roads, and communication sites; rights-of-ways to access private land; special events, outfitter guide trips, and military exercises. There are currently 86 special use authorizations covering approximately 750 acres on the Uwharrie. Approximately 80% of the authorizations are for public services. Since 2000, there has been a 40% increase in the number of new authorizations issued, generally as a result of the residential development of private land adjacent to the Forest. This trend continues as surrounding urban areas continue to grow.

Special Uses Goals/Desired Conditions

SPU-1. Permanent structures associated with special uses are centrally located or concentrated on existing sites or designated corridors, minimizing the number of acres encumbered by special use authorizations.

Minerals and Energy – Existing Conditions

In the 1990s there were about seven prospecting permits, one surface occupancy permit on land with outstanding mineral rights, and two contracts for the sale of common variety minerals in effect. These expired by 1998, and there are currently no active mineral

extraction or exploration except for a small amount of recreational gold panning, which does not require a permit. The Uwharrie has 822 acres of outstanding mineral rights located in the area of the historic Russell Gold Mine. Periodic increases in the value of gold may cause upsurges in short-term mineral activity.

The southern portion of Montgomery County has shale formations that may at some point in the future become economically viable. The Forest is not identified as having a low potential for wind power development, and a moderate potential for photovoltaic solar energy (U.S. Department of Energy, 2004, *Assessing the Potential for Renewable Energy on National Forest System Lands*). Any future oil and gas leases would be issued by the Bureau of Land Management and must comply with Forest Service regulations and Forest Plan standards.

Minerals and Energy Goal/Desired Condition

MIN-1. Minerals and energy developments meet legal mandates to facilitate production of mineral and energy resources on the Forest in a manner that minimizes adverse impacts to surface and groundwater resources, and that do not detract from meeting other desired conditions applicable to the area.

Chapter 2 - Objectives

This chapter describes the objectives that the U.S. Forest Service intends to implement in order to move the Forest toward the Goals/Desired Conditions described in Chapter 1.

Objectives are measurable, time specific accomplishments. They are pursued through forest management activities that take place in an effort to move the Forest to its desired condition, or to maintain that condition. Objectives are aspirations and are not commitments or final decisions approving projects of activities. Objective accomplishment is highly dependent on funding and other influencing factors such as national policy and natural disturbance events.

Objectives are organized by theme and resource area, followed by a description of management approaches to paint a more complete picture of how we perceive moving toward the Desired Conditions. Certain management actions that cannot be quantified in the form of Objectives are also included in the "management approaches." Likely management actions include but are not limited to those discussed as "management approaches."

[NOTE: For these Objectives, the planning period is defined as 15 years]

Theme 1: Restoring the Forest to a more natural ecological condition:

Vegetation and Wildlife Objectives

[Vegetation and wildlife objectives are combined since wildlife habitat depends in large part on the structure and composition of the vegetation.]

1. Over the planning period, the 2,200 acres identified as existing longleaf pine in 2006 are maintained as longleaf pine woodlands.

2. Move toward restoring the desired vegetation conditions on a minimum of 4,500 acres over the planning period. Site-appropriate vegetation is established each year on an average of 200 acres of potential oak-hickory sites and 100 acres of potential longleaf pine sites.

3. Over the planning period, 5 to13 subpopulations of Schweinitz's sunflower (listed as Endangered since 1991) are restored to appropriate sites. Plants from at risk locations will be moved into the reintroduction areas.

4. Over the planning period, 15-30 prairie-like openings of ½ to 2 acres in size are created across longleaf pine and oak-hickory restoration areas that are within the Schweinitz's Sunflower Habitat Management Area.

5. In an effort to achieve a more all-age condition that is desired from both a species sustainability standpoint and for a more even-flow of hard mast production, create or enhance existing gaps in oak-hickory stands to encourage natural regeneration of oak and hickory species. Create or enhance an average of 10 acres of gaps per year.

6. Each year an average of 400 acres are thinned to maintain room for growth and to discourage insect and disease infestation.

7. Each year an average 3,000 to 6,000 acres are prescribe burned to create open canopy conditions, reduce midcanopy, and move toward ecological conditions described in desired condition VEG-9. Public and firefighter safety will be the top priority in fire management activities.

8. Each year, on average a minimum of 20 acres are treated to eliminate non-native invasive plants.

9. Over the planning period, assess existing grass/forb openings to identify conflicts with developed recreation areas, poor soil productivity, or other factors and develop a plan for relocating them to more appropriate locations.

10. Each year the historic hedgerows, grain fields, fruit trees, etc. are restored or maintained at a minimum of one identified key wildlife area (Thornburg, Quick, Klaussner, and Colonel Crump's).

Vegetation/Wildlife Management Approaches

The main strategy for restoring the Forest to a more natural condition involves reducing the amount of off-site and planted pines and either reintroducing or enhancing reproduction of better adapted or more self-sustainable species such as longleaf pine or oaks and hickories at appropriate locations.

Pure loblolly stands cannot be restored quickly to oak-hickory since oak or hickory seedlings may be absent. In some instances it may be necessary to grow shortleaf pine and oak together in the regenerated stand. Apparently, light conditions in shortleaf pine stands are well-suited to development of oak seedlings. Then in later thinnings and improvement cuts oaks would be favored as leave trees.

Creating more open conditions and reestablishing or maintaining a more appropriate fire return interval will help with the restoration and maintenance of certain rare plant communities as well as support habitat for Schweinitz's sunflower, and habitat for sensitive species. It will be important to emphasize opportunities for longleaf pine restoration and Schweinitz's sunflower restoration when prioritizing work, such as when deciding what part of the Forest to work in from year to year.

The designation of the most intact and most rare terrestrial ecological systems as "botanical special areas" will promote the native biological diversity that is a value of the Uwharrie

widely recognized during the collaborative planning process. These areas will also provide habitat for a number of sensitive species.

To facilitate identification of rare ecological systems, Forest personnel will cooperate with state and other agency partners to offer periodic field training for appropriate district personnel. Part of this training will including visiting known locations of rare species or communities to verify conditions, as well as instruction on how to document and track new finds. We plan to document locations of newly found occurrences of rare Ecological Systems (Glades and Barrens, Mafic Hardpan Woodland, Depression Swamps, and Seepage Wetlands) using GPS or similar technology, and enter coordinates in a GIS.

Another strategy to provide for native diversity is to focus on restoring the endangered Schweinitz's sunflower. To facilitate this, portions of the Forest with the best potential for maintaining or restoring populations of this species are recognized as the Schweinitz's Sunflower Habitat Management Area (HMA). Activities that will benefit this endangered plant will also benefit a suite of other uncommon sun-loving plants.

One factor in providing terrestrial wildlife habitat is the condition of the vegetation, including both species composition and structural features. Restoring native oak-hickory and longleaf pine ecosystems with interspersed openings will provide the variety of hard and soft mast producers and herbaceous vegetation to better support self-sustaining wildlife populations.

Soil, Water, and Fisheries Objectives

1. Over the planning period, 1,500 linear feet of aquatic habitat are restored on sites with North Carolina Index of Biotic Integrity (NCIBI) and North Carolina Ephemeroptera, Plecoptera, Tricoptera (NCEPT) ratings below "good." Emphasize aquatic habitat restoration using the following criteria:
    a. The condition and vulnerability of the watershed where the site is located - fair or poor sites within otherwise good condition, high vulnerability watersheds should be given first priority.
    b. Degree of improvement needed to achieve "good" condition - sites rated "fair" should be restored before sites rated "poor."

2. Over the planning period, 1,500 linear feet of unstable and/or poorly functioning stream channel are restored (in addition to habitat restoration under Objective 1).

3. Over the planning period, native freshwater mussel populations are augmented in one to three appropriate aquatic systems. These include Federally-listed, regionally-sensitive, or locally rare species.

4. During the planning period approximately 10 road or trail crossings are reconstructed to improve water quality.

[Also see water-based recreation objectives under Theme 3.]

Soil, Water, and Fisheries Management Approaches

Strategies for moving toward the soil, water, and fisheries desired conditions include cooperating with other state and federal agencies and the academic and research communities to gather information and monitor conditions. We cooperate closely with the North Carolina Wildlife Resources Commission Inland Fish and Non-game Divisions and North Carolina Division of Water Quality in many inventory and monitoring activities. Inventory of a certain amount of stream occurs each year to help define the range of baseline conditions for aquatic habitat quality and quantity. The NCIBI and NCEPT ratings for the Yadkin River Basin – where the Uwharrie is located – are established periodically. Any Forest sites that rate below good are considered candidates for restoration activity to improve the aquatic habitat. This may entail establishing cover such as by adding large wood or boulders for in-stream fish habitat, establishing stream-shading riparian vegetation, eliminating sediment sources, etc.

In addition, we intend to work closely with the US Fish and Wildlife Service to facilitate the reintroduction of rare mussels into selected streams on the Uwharrie.

Controlling erosion from roads and trails is crucial in preventing sedimentation of streams. Restoring any streams or streamsides that are in a degraded condition from past land use or intense recreational use is always a good opportunity to involve a wide community of knowledgeable partners and volunteers. This work entails reshaping stream banks to stable slopes; removing stream side berm material that disconnects streams from floodplains; constructing instream structures to stabilize the channel and improve aquatic habitat; planting riparian-type vegetation; and treating noxious weeds in riparian areas.

Theme 2: Better Managing Heritage Resources

Heritage Resource Objectives

1. Each year, adverse impacts are mitigated at an average of five impacted sites.

2. A heritage resources interpretive trail is developed over the course of the planning period.

3. A Passport In Time project is hosted at least every 2 years.

4. Complete the evaluation of five known but unevaluated sites per year.

5. During the planning period, complete one thematic evaluation for nomination to the National Register of Historic Places such as gold mines, archaic rock quarries or Revolutionary War sites.

Heritage Resources Management Approaches

Meeting the desired conditions for Heritage Resources depends on identifying significant sites, protecting these sites from damage, and planning for future research and interpretation opportunities. Among the most significant types of sites are archaic rock quarries and historic gold mines.

Sites will be identified through surveys that routinely occur prior to management activities to meet the requirements of the National Historic Preservation Act (36 CFR Part 800). In addition, a more in-depth overview survey would help give a Forest-wide picture of the various categories of sites that need to be protected, researched and interpreted. This would also help identify needs and opportunities for research and protection, and opportunities for interpretive trails and other cultural education aids.

Law enforcement will continue to play a key role in protecting heritage resources. All artifacts and sites over 100 years of age located on federal land are protected from unauthorized collection by the Archeological Resources Protection Act of 1979. Designating trails for horses and mountain bikes will also help in resource protection.

Theme 3: Providing outstanding and environmentally friendly outdoor recreation opportunities, with excellent trails and facilities.

Recreation Objectives

1. Each year an average of 10 combined miles of substandard hiking, bike, horse, or OVH trail are improved, with the emphasis being horse trails and OHV trails in the Badin area.

2. During the planning period all intersections are signed where trails cross open Forest Service roads, to increase visitor safety. Signs are replaced as needed.

3. An average of one trailhead per year is in an improved condition. This may involve increasing visibility of trailhead for ease of locating; providing needed information at the trailhead; or establishing, maintaining or improving the parking area.

4. An average of five annual trail design and/or maintenance workday occurs with a trail partners group. Work may include fixing or maintaining erosion control and proper drainage, and removing litter.

5. A minimum of one to two miles of unauthorized trails are closed per year, considering the following priority:
    i. Those impacting significant archeological sites;
    ii. Those impacting Threatened, Endangered, Sensitive or locally rare species;
    iii. Those impacting streams.

6. Fishing opportunities are improved through location and construction of at least one new bank angler access area during the planning period.

7. During the planning period boating opportunities are improved at one existing boating access area and increased by adding one additional boating access area on the Uwharrie River.

8. During the planning period analysis and implementation will be completed for designated horse and mountain bike trail systems.

Recreation Management Approaches

The strategy for trails and dispersed recreation includes developing site-specific recreation plans (separate from the Revised Land Management Plan) as funding permits. We will work to bring all trails to a sustainable standard by redesigning and reconstructing the trails system as necessary to accommodate the designated type of use and to eliminate impacts to other resources. This work may include rehabilitating trails in place or relocating trails as necessary.

Our focus first will be on correcting long standing problems with the trail systems in the Badin area, to reduce impacts to water quality and heritage resources, and provide a better experience for users of the horse trails and OHV trails. One way to facilitate trail improvements is to apply for trail improvement grants on a regular basis. It will also be increasingly important to develop strong partnerships with trails users to help with maintenance of trails and to help share information about proper trail use with new users.

Another recreation priority is completing the Uwharrie National Recreation Trail as opportunities become available. Volunteers and cooperators are actively working to secure funds and identify suitable land suitable for sale, exchange, or easements that would fill in the gaps between National Forest System parcels.

The main strategy for developed recreation is to finish current construction projects and fix or maintain current facilities. Another strategy is to encourage more consistent use of existing facilities, including on weekdays. Some facilities are full on weekends, but remain sparsely used during the week. Additional facilities might be provided only after evaluating the financial sustainability, environmental sustainability (including capacity of use), and operational effectiveness of the potential facility, as well as the Forest Service's ability to adequately clean and maintain any additions.

Water-based recreation is one use that is increasingly popular, and the Forest is limited in its ability to provide access to water due to the land ownership pattern. Working with local landowners, conservation organizations, and State agencies to provide improved public access to rivers and streams will be important. We want to provide universal bank angler access areas (accessible to persons with disabilities) at a variety of spots across the Forest. Acquiring additional land next to rivers and avoiding disposal of such land will provide better access opportunities for water-based recreation.

The Uwharrie River and Barnes Creek are eligible for consideration for National Wild and Scenic River designation. A suitability study covering the length of these streams on public and private lands would need completion before any recommendation for designation or other type of management. Because of the low percentage of stream corridor contained on the Uwharrie National Forest, suitability studies on both rivers have been deferred indefinitely.

Additional Objectives

Wilderness Objectives

1. During the planning period complete 1 condition assessment for the trails and dispersed campsites within the Birkhead Mountains Wilderness.

2. During the planning period develop a site-specific Wilderness Management Guide for the Birkhead Mountains Wilderness that incorporates a Limits of Acceptable Change (LAC) or similar approach to monitoring Wilderness conditions.

3. During the planning period develop an emergency response plan for the wilderness area.

4. During the planning period develop a fire plan for the wilderness area.

Wilderness Management Approaches

Additional actions may occur if needed to maintain the remote, primitive wilderness experience currently available in Birkhead Mountain Wilderness.

The Forest will begin incorporating the Birkhead Mountains Wilderness Education Plan for developing the wilderness education and interpretive programs. Also, supporting local governments and non-profits in their efforts to provide appropriate adjacent land uses on private lands surrounding the Birkhead Mountains will be a focus area.

Visitor Information Objectives

1. At least one Uwharrie National Forest recreation opportunity guide for public use is produced within 5 years. Produce additional or updated information as needed thereafter.

2. At least one Uwharrie National Forest conservation education/natural history guide for public use is produced within5 years. Produce additional or updated information as needed thereafter.

3. At least one Uwharrie National Forest cultural heritage education/ preservation guide for public use is produced within 5 years. Produce additional or updated information as needed thereafter.

Visitor Information Management Approaches

Participants in the collaborative process to develop this Plan frequently expressed that if better information were available, the public would be more inclined to behave appropriately, follow regulations, and reduce their impacts to forest resources. Better natural and cultural resource information would also enhance their visit. The public's desire for information often greatly exceeds the Forest Service's capacity to produce it. Sometimes information is more readily available from other sources. However, a certain amount of basic information is within the capacity of the Forest Service to provide, and we intend to work with cooperators and volunteers interested in helping support and fund the task.

Roads Objectives

1. Grade surfaces, and clean culverts and ditches along at least 12 miles of open system roads as needed each year.

2. Over the planning period, all known unauthorized roads are closed, restored or obliterated unless some portion is determined needed for the transportation system.

Roads Management Approaches

The intent is to minimize new road construction and close unauthorized roads. Roads open to passenger vehicles will be maintained as funding allows. Additionally, some highly used Forest roads may be paved to reduce long term maintenance costs and reduce the level of dust in and around recreation areas. System roads that exhibit excessively degraded conditions would be fixed, beginning with areas that pose health and safety concerns. Road construction, reconstruction, and maintenance will provide adequate cross drainage and filter distance to control sediment delivered to streams. Stream crossings will be designed to maintain or restore passage for aquatic organisms.

Additional Important Resource Management Approaches

Scenery Management Approaches

The resource strategy for scenery management is to manage the Forest for either "High" or "Moderate" scenic integrity, except for Birkhead Mountains Wilderness, which will be managed for "Very High" scenic integrity. This could mean employing certain scenery enhancing techniques when management activities such as timber harvest or prescribed burning take place. Highly scenic areas along roads and trails will also have vistas allowing for mid- and long-distance views.

Lands Management Approaches

No quantifiable Objectives are specified since land acquisition priorities are determined apart from the Land Management Planning process. The Land Adjustment Plan sets the priorities for acquisition and exchange. The resource priorities are to provide a corridor for the Uwharrie National Recreation Trail, provide for terrestrial wildlife corridors, and increase public access for recreation, especially river access opportunities.

Special Uses Management Approaches

No quantifiable Objectives are specified since proposals for special uses typically arise from external sources. Forest Service regulations require the agency to deny uses that can reasonably be accommodated on private land. Special Uses considered for permit must be of public benefit and can occur without creating irreversible impacts to resources. Special Uses on the forest typically fall into the following broad categories: 1) easements, such as for roads or utility corridors; 2) utility support, such as for electronic sites, convenience stations, and communication towers, 3) recreation outfitters and guides; 4) military exercises and special event activities, and 5) permits for scientific research.

Minerals Management Approaches

Commercial permits for minerals prospecting and minerals development are also issued on the Uwharrie. For these and other permitted uses, the permittee would be required to pay for any necessary environmental analysis whether or not the permit was finally granted. Mineral leases and activities in recreational gold panning areas must comply with Forest Service regulations and Forest Plan Standards.

Community Relations Management Approaches

No quantifiable Objectives are specified since community relations fall outside the typical realm of Plan components. Nonetheless, developing and maintaining good community relations are critical for successful planning and project activities. The participants in the collaborative planning process generated a list of concepts that are guiding principles for community relations for Uwharrie National Forest managers and staff:

1. We are good neighbors and positive members of the community. We are involved in community groups like land trusts, forest use groups, and community planning groups.

2. Projects and activities occur on all parts of the Forest including Randolph, Davidson, and Montgomery County.

3. We consult and inform neighbors of the Forest about Forest plans and programs. We coordinate projects with adjacent landowners whenever possible to promote efficient land stewardship and positive relationships.

4. We welcome visitors and widely distribute information on facilities and programs.

5. We support establishment of a Friends of Uwharrie National Forest group.

6. We support and encourage responsible service providers and outfitters in promoting the Forest, informing the public of its existence, and ensuring responsible usage.

Tribal Relations and Native American Interests Management Approaches

No quantifiable Objectives are specified since tribal relations and Native American interests fall outside the typical realm of Plan components. However, we want to be proactive in building relationships and reaching mutual understanding between the Forest Service and Tribal governments. We want to find opportunities for cooperation to the mutual benefit of Federal and Tribal governments. We want to identify and protect traditional cultural properties, and recognize Tribal values when planning forest management activities. Guiding principles:

1. The Forest is maintained in a condition that allows Native American tribes and individuals to retain traditional connections to the land and to foster both traditional and contemporary cultural uses of the Forest.

2. The Forest has active agreements and protocols to facilitate consultation (all resources) and government-to-government relationships.

Chapter 3 - Standards and Guidelines

This chapter contains Guidelines, which provide information and guidance for project and activity decision making to help achieve Desired Conditions and Objectives. A few other sources of guidance are also referenced that are not considered plan components but are useful for successfully implementing plan components. These are included to highlight that other information may be important in meeting the Plan's desired conditions.

Vegetation/Wildlife

[Vegetation and wildlife guidelines are combined since effects to wildlife habitat depend in large part on how projects and activities affect the structure and composition of the vegetation.]

1. To benefit wildlife:
    - When restoring longleaf or shortleaf pine, an average of 10-25 square feet per acre basal area of hard mast producers (oaks and hickories) should be retained whenever it is present;
    - When restoring or thinning stands, standing live and dead den trees should be retained and clumped with other trees for protection;
    - Growth of native soft mast producers should be maintained in all natural communities. Competition from other species should be limited when appropriate.

2. When restoring shortleaf pine, trees should be planted on a wide spacing (less than 350 trees per acre) to allow room for hardwoods to develop as dominant or co-dominant trees. As stands reach 12-15 years old, crown-touching release should be performed (a thinning activity) to favor the best trees and most desirable species as determined in project analysis.

3. When restoring sites following extensive damage to trees from wind, water, insects or disease, use the potential natural vegetation map as a guide to determine the desired species composition.

4. New ground disturbing activities should be located far enough away from rare Ecological Systems (Glades and Barrens, Mafic Hardpan Woodlands, Depression Swamps, and Seepage Wetlands) to avoid direct and indirect impacts from soil erosion and to protect bogs, swamps, and wetlands from alteration of natural hydrologic functioning.

5. Roadside banks shall <u>not</u> be mowed <u>before</u> flowering and seed development where federally listed, sensitive, or locally rare plants occur.

6. When prescribe burning, at least every third burn on a site should be a growing season burn. It is permissible to burn the same acreage in 2 sequential years and to

apply only growing season fire to the same acreage for 3 or more sequential burning cycles.

7. When prescribe burning, the fire should be allowed to burn in a mosaic pattern resulting from differential influence of topography, fuel loading and moisture, and vegetation type.

8. When prescribe burning, regenerated oak-hickory stands with young trees should be avoided until the young trees are large enough to be resistant to fire damage, including scarring and girdling.

9. A prescribed fire that exceeds or is anticipated to exceed one or more prescription parameters or line holding capability and cannot be returned to prescription with project funds is a wildfire. Once declared a wildfire, it cannot be redesignated a prescribed fire.

10. When rehabilitating tractor fire lines, appropriate measures shall be taken to properly drain water and prevent erosion.

11. When creating or managing grass/forb habitat, consider making it coincident with the prairie-like openings in the Schweinitz's Sunflower HMA whenever possible.

12. When creating grass/forb habitat, up to ten square feet of basal area of mature, mast producing hardwood trees should be retained.

13. Gaps created for oak and hickory regeneration should average 1/2 - 2 acres in size and comprise 20-30% of a stand. Classify a regeneration area as an opening until the young trees have reached a height that is approximately 20% of the tallest adjacent trees.

14. When restoring woodland structure in existing longleaf pine stands, projects should be designed to leave a sparse hardwood midstory, and at least 45 pine stems greater than 60 years in age and greater than 14 inches in diameter wherever possible.

15. When project activities may negatively impact species having less than 5 known occurrences on the Forest, project design should document how the species will be protected and the population will be maintained.

16. When considering restoration by regeneration timber harvest, the maximum size of an opening created by even-aged or two-aged treatments shall be 80 acres for loblolly pine and 40 acres for all other tree species. These acreage limits should not apply to areas treated as a result of natural catastrophic events such as fire, insect or disease attack, or windstorm.

17. When considering restoration by regeneration timber harvest, openings should be shaped and blended to the extent practicable with the natural terrain.

18. When considering restoration by regeneration timber harvest, projects shall be considered through interdisciplinary review, assessing the potential environmental, biological, aesthetic, engineering, and economic impacts on the timber sale area, as well as the consistency of the timber sale with the multiple uses of the area. A harvesting system is selected primarily because it will give the greatest dollar return or the greatest output of timber.

19. When restoring plant communities by regeneration timber harvest, the following stocking levels should be achieved within 5 years after harvest:

Forest Type Established	Min. Stocking Level	Target Level
Oak-Hickory, Other Hardwood	150 stems per acre	200-300 stems per acre
Shortleaf Pine/Oak Mix	250 stems per acre	400 (<200 pine) stems per acre
Shortleaf Pine	275 stems per acre	350-400 stems per acre
Longleaf Pine	300 stems per acre	400-500 stems per acre

19. When considering restoration by regeneration harvest, include stands which meet the following minimum ages at the time of timber sale award:

Existing Forest Type	Minimum Regeneration Age
Shortleaf Pine & Shortleaf Pine/Oak	60 Years
Loblolly Pine and Loblolly Pine/Oak	30 Years
Hardwoods	80 Years

20. When selecting areas for thinning consider:
    a. Opportunities to reduce stem density in predominantly pine stands where the stem density is high enough to present a risk of southern pine beetle infestation (basal area over 100 square feet per acre), or;
    b. Opportunities to reduce the risk of catastrophic wildfire.

21. When selecting areas for treatment of non-native invasive plants consider the following priority:
    i. Threatened, Endangered, Sensitive and locally rare species habitat and SS HMAs;
    ii. Special Interest Areas;
    iii. Streamside Forests;
    iv. Other areas.

[Other Referenced Direction: When prescribed burning, Region 8 and state management guidelines as detailed in FSM 5144, the North Carolina Prescribed Burning Act 113-60.43, and the North Carolina Open Burning Rule 15A-NCAC 02D-1900 should be followed.]

Soil, Water, and Fisheries

1. When thinning in pine plantations in the Streamside Forest, entries should only be every 35 to 40 years, to reduce disturbance.

2. Vegetation cutting and use of mechanized ground disturbing equipment should stay more than 30 feet away from perennial streams unless such activity is needed for riparian wildlife habitat, stream channel stability, or to provide access for recreation or stream crossings. Vegetation cutting and ground disturbing equipment should stay more than 50 feet away from perennial streams if the following conditions apply: steep slopes adjacent to the stream; highly erodible soils; soil areas with little or minimal groundcover near the waterbody.

3. Use of mechanized ground disturbing equipment should stay more than 30 feet away from intermittent streams. Refer to North Carolina Division of Forest Resources *Forestry Best Management Practices Manual* for additional guidance.

4. When trees are felled, generally, tree portions that fall within 30 feet of a perennial stream should remain in place unless their placement is disrupting channel stability or is a public safety hazard.

5. New or re-routed roads or **motorized** trails should be located at least 100 feet from perennial streams and at least 30 feet from intermittent streams, except for designated stream crossings.

6. New or re-routed **non-motorized** trails should be located at least 30 feet from perennial and intermittent streams, except for designated stream crossings and horse watering sites.

7. When a ground disturbing project could potentially result in direct delivery of sediment to streams, erosion control measures shall be employed.

8. Where roads or trails cross streams, crossings should be at right angles where possible.

9. The design of stream crossings should first try to simulate the natural stream bottom through use of a bottomless culvert, bridge or other spanning structure. If this isn't feasible, crossings should incorporate the appropriate outlet drops and culvert slopes.

10. All bare soil should be seeded and/or mulched at the time of stream crossing construction.

11. Stream restoration designs should utilize the natural stream channel whenever possible.

12. Stream restoration activities should include provisions to maintain or enhance existing ephemeral pools in the associated streamside forest.

13. Aquatic species management activities shall avoid introduction or stocking of non-native aquatic organisms.

Heritage Resources

1. When mitigating adverse impacts to heritage resources associated with authorized roads and trails, the least restrictive effective means should be used from among the following (listed in order from least restrictive to most restrictive):
    i. Road or trail maintenance to eliminate disturbance or erosion of site;
    ii. Salvage, excavation and/or stabilization of site;
    iii. Relocation of road or trail;
    iv. Closure of road or trail.

Trails (all guidelines refer to authorized, system trails unless noted otherwise)

1. When improving trails or mitigating adverse impacts from trails, consider improving user experience and user safety through reroutes or connectors to make loops.

2. Project designs to construct or improve trails should incorporate ideas and suggestions from trails users as much as practical.

3. New or relocated trails should avoid mine tailings, which have the potential to leach dangerous substances.

4. As trails are maintained, existing vistas should be maintained where appropriate to provide long-distance views and opportunities for new vistas should be considered.

5. When constructing or relocating trails, consider the following when selecting the location:
    - Avoiding damage to cultural resources;
    - Minimizing conflicts between different uses;
    - Minimizing damage to soil, watershed, vegetation, and other resources;
    - Operational feasibility (desired user experience, infrastructure needs, size of usable area, and financial sustainability).

[Other Referenced Direction: Designation of motorized trails should follow procedures outlined in CFR 212.55. Trail projects should follow procedures outlined in FSH 2309.18.]

Facilities

1. Project designs to add or improve facilities should use suggestions and information from forest users and district employees as sources of design ideas.

Roads

- When constructing or relocating roads, consider the following when selecting the location:
  - Avoiding impacts to the special features of the Special Interest Area;
  - Avoiding the spread of invasive species and;
  - Avoiding impacts to the hydrologic functions.

- New or relocated roads should avoid mine tailings, which have the potential to leach dangerous substances.

- A 70% ground cover of permanent vegetation should be established by the end of the first growing season following the end of use of temporary roads, skid trails, and log landings.

- When constructing or relocating roads look for opportunities for vistas and enhancing scenery.

Wilderness

- Non-restrictive means of managing visitor use such as information and education should be attempted prior to instituting use restrictions.

- Trail signage should be minimal and only be used for identifying a trail or trail intersections.

- Management actions should not be designed to encourage more use of the wilderness, in order to maintain the opportunity for solitude.

- Wilderness condition monitoring should incorporate relevant elements of the Chief of the Forest Service's 10-year Wilderness Stewardship Challenge.

- The management of lightning caused wildland fires is allowed when the Fire Management Plan is completed and a Wildland Fire Implementation Plan is approved for the specific wildland fire.

- When managing fires:
  - Hose lays, foam and wetting agents may be used to control fire.
  - Use minimal impact suppression techniques on all fires when possible.

- When suppressing fire:
  - Only allow exceptions to the restrictions on the use of motorized equipment and motorized and mechanical vehicles in cases of extreme emergency during wildfire suppression. Exceptions can be allowed by District Ranger, except tractor plow use which requires Regional Forester approval.

- Use Minimum Impact Suppression Tactics which employ suppression methods and equipment that cause the least alteration of the wilderness landscape, least disturbance of the land surface, least disturbance to visitor solitude, least reduction of visibility during periods of visitor use, and least effects on air quality related values.
- With the exception of firelines, only allow rehabilitation of a burned area if necessary to prevent an unacceptable loss of wilderness resources or to protect resources outside the wilderness. Perform necessary revegetation work with plant species native to the wilderness area.

8. Allow prescribed fire when needed to reduce a buildup of fuels to an acceptable level and to decrease the risks and consequences of wildland fire escaping from wilderness.

9. Natural barriers such as trails or creeks/streams will be the preferred firebreak for management ignited prescribed fire. Small firebreaks built by hand may be necessary in some instances where natural barriers do not occur.

Lands

1. Consider the following when setting priorities for land adjustment and acquisition: improving recreation access especially to rivers and lakes; filling gaps along the Uwharrie National Recreation Trail; providing for ecological connectivity with other conservation ownerships; and improving management efficiency.

2. Land exchanges should be designed to improve the biological diversity of the Forest.

Special Uses

1. New special use authorizations should be compatible with the desired conditions for the area.

2. Special use authorizations shall include terms and conditions to protect any existing federally listed species and suitable habitat present in the area, and direction to reduce impacts to sensitive or locally rare species.

Minerals and Energy

1. Minerals and energy exploration and development authorizations should be compatible with the desired conditions for the area.

2. Minerals and energy exploration and development authorizations in the Schweinitz's Sunflower HMA shall include terms and conditions to protect any existing federally listed species and suitable habitat present in the area, and direction to reduce impacts to sensitive or locally rare species.

Chapter 4 – Suitable Uses and Special Management Areas

National forests are generally suitable for a variety of uses including various outdoor recreation activities, viewing scenery, sustainable timber harvest, fisheries and wildlife, natural and cultural resource interpretation, and watershed purposes. An area is generally suitable for uses that are compatible with goals/desired conditions and objectives for that area. Areas generally suitable for a use may also be limited by plan standards and guidelines (see Chapter 3) or other policies. Any proposed action would be evaluated prior to approval based on site-specific existing and desired conditions.

Land Classifications

General Forest: the largest part of the Uwharrie, "general forest" contains common forest types in typical conditions and is generally suitable for typical multiple-uses. Desired conditions for the general forest are described in Chapter 1.

Streamside Forest: for the Uwharrie, a 100-foot zone on both sides of all perennial streams, and all alluvial forest (an area of alluvial deposition such as a flood plain or delta). The desired conditions for streamside forests are described in Chapter 1.

Developed Recreation Sites: Outdoor recreation areas requiring significant capital investment in facilities to handle a concentration of visitors on a relatively small area. Examples are campgrounds and picnic areas. The desired conditions for developed recreation areas are described in Chapter 1.

Wilderness: An area of land designated by Congress as part of the National Wilderness Preservation System. Birkhead Mountain Wilderness within the boundaries of the Uwharrie National Forest was established in 1984. The desired conditions for wildernessare described in Chapter 1.

Eligible Wild and Scenic River Corridors: A zone one-quarter mile on either side of those portions of the Uwharrie River and Barnes Creek that are contained within the boundaries of the Uwharrie National Forest are managed to protect the "Outstandingly Remarkable Values" for which they were determined eligible for Wild and Scenic River designation (such designation – conferred by Congress – has not occurred).

The desired condition for Uwharrie River is an intact floodplain and river channel that is functioning hydrologically. Access points designated and developed in a sustainable way to allow for safe river access that maintains the health of the riparian area and stability of the streambanks, and protects the historic and cultural resources within the area. Additionally,

trails along the Uwharrie River are designated and located in areas to reduce impacts to sensitive plant species, cultural resources, floodplain, and water quality.

The desired condition for Barnes Creek is an intact floodplain and stream channel that functions hydrologically. Water quality is maintained or improved to improve aquatic habitat. Habitat is available in Barnes Creek for populations of Carolina darter, Roanoke slabshell, Atlantic pigtoe, Savannah lilliput, Greensboro burrowing crayfish, Carolina elktoe, notched rainbow, Carolina creekshell, Carolina fatmucket, squawfoot, and Eastern creekshell. The visibility of timber, mineral, and development activity along Barnes Creek is minimal.

Special Interest Areas: Areas with unique or rare botanical, zoological, geological, historical, scenic and/or recreational values. The Special Interest Areas and their desired conditions are described in more detail later in this chapter.

Schweinitz's Sunflower Habitat Management Areas: Portions of the Uwharrie classified as having the ecological attributes that make it most conducive to restoring Schweinitz's sunflower. The desired condition within Schweinitz's sunflower's management areas is for open conditions within drier portions of the landscape, specifically in Xeric Oak Forest, Dry Oak-Hickory Forest, Dry-Mesic Oak-Hickory Forest, and Piedmont Longleaf Woodlands. Desirable openings within these habitats will vary from ½ to 2 acres in size. The desirable fire frequency once these habitats are restored would be on a 3-5 year cycle.

The Badin Lake Recreation Area: This refers to the area on the Uwharrie National Forest that is adjacent to the east side of the Narrows Reservoir and Badin Lake, west of NC Highway 109 North, south of SR 1156 (Blaine Road) and north of the confluence of the Uwharrie River and the Yadkin-Pee Dee River. This area is special to the Piedmont Region of North Carolina for the recreational opportunities it offers to the people of North Carolina the nation. This area provides camping in both developed campgrounds and in primitive, dispersed locations. The trail systems within this area provide for motorized recreation, and non-motorized recreation for horseback riding, mountain biking, and hiking. Additionally, there is a shooting range, developed boat launch and undeveloped boat access points on the Uwharrie River and on to Narrows Reservoir that also allows access to Badin Lake. There are also picnic areas that allow for family recreation on Badin Lake and offer fishing access. The Badin Lake Recreation Area is the main area that people come to when they want to recreate on the Uwharrie National Forest. (Refer to Proposed Forest Plan Map – Badin Lake Recreation Area.

The desired condition of the Badin Lake Recreation Area is that the recreation sites are well maintained; the information and fee boards are up to date and provide appropriate information to the public. User conflicts on the trails, roads and within the recreation area are minimized. Recreation impacts to the natural resources and heritage resources are reduced through improved conservation education programs, signage, and interaction of Forest Service employees with the users of the National Forest.

Table 4-1 below summarizes the approximate number of acres that comprise each of the land classifications and the Badin Lake Recreation Area. Some acres fall into multiple categories.

Table 4.1 Amount of Acres in Each Land Classification

Classification	Acres
General Forest	+/- 32,350
Streamside Forest	6,929
Eligible Wild and Scenic River Corridors	2,443
Special Interest Areas	5,396
Developed Recreation Sites	To be Determined
Wilderness	5,160
Schweinitz's Sunflower Habitat Management Areas	2,307
Badin Area	10,926

***Acreages are approximate due to Lands Status Updates in progress at this time. Also, total acres exceed Forest land total due to some acres falling into more than one category.**

Certain specific uses (timber harvest, timber production, prescribed fire, special uses, minerals and energy), are more compatible with some portions of the Forest than others. The discussion below identifies if one of these specific uses is likely compatible with the desired conditions for a particular land classification.

Timber Suitability

Forest Service direction provides that most National Forest System lands are available for timber harvest with the with the exception of lands where timber harvest is not permitted because:

1. Statute, Executive order, or regulation generally prohibits timber harvest, or the land has been withdrawn from timber harvest by the Secretary of Agriculture or the Chief of the Forest Service;
2. Soil, slope, or other watershed conditions would be irreversibly damaged by timber harvest, or it would cause substantial and permanent impairment of the productivity of the land;
3. There is no reasonable assurance that such lands can be adequately restocked within 5 years after harvest;
4. Trees are unable to grow due to environmental conditions.

For the Uwharrie National Forest, 5,160 acres (Birkhead Mountain Wilderness) fall into the first category. No land falls into categories 2, 3, or 4. The remainder of the Forest is generally available for timber harvest.

Within the lands considered generally **available** for timber harvest, a subset is also determined ***suitable for timber production***. Timber production is **compatible** with certain goals/desired conditions and objectives: restoration of longleaf pine, shortleaf pine, oak hickory, and mixed communities on sites currently dominated by loblolly pine; thinning for forest health; and creation of gaps for oak/hickory regeneration if natural regeneration is not occurring, and others. Forest Service direction provides that if timber production is compatible with or contributes to the achievements of desired conditions and objectives, and a flow of forest products can be reasonably predicted, those lands should be identified as

"suitable for timber production," even if timber production is not the primary emphasis. Therefore, lands potentially needing restoration, regeneration, or forest health work, which amounts to most of the forest, are classified as suitable for timber production.

On the other hand, there are some lands where timber production is generally not compatible with achieving the desired conditions, such as where restoration of natural communities is not needed or other desired conditions predominate. These lands and are not included in the category "suitable for timber production." These are identified as:

1) **Special Interest Areas** including botanical, archeological, historical, and scenic special areas, since restoration, regeneration and forest health are not driving the desired conditions. These are identified later in this chapter;
2) **Developed Recreation Sites**, since recreation is driving the desired conditions;
3) Most of the **Eligible Wild and Scenic River Corridors**, since the "outstandingly remarkable values" are driving the desired conditions; and
4) Most of the **Streamside Forests** (100-foot zone on either side of perennial streams and alluvial forests), since maintenance of special features (see desired condition description) is driving the desired conditions.

The "other lands" might have trees incidentally cut for reasons including health and safety or resource protection, or if needed to better meet the applicable desired conditions.

Portions of streamside forests and portions of the eligible wild and scenic river corridors contain young (<50 years old) pine plantations that will need forest health thinning and eventual restoration to provide the desired conditions. Otherwise, they risk becoming breeding grounds for insect and disease pests. Those portions that will need work, i.e. thinning and restoration activities, would also be classified as "generally suitable for timber production" **if they are more than 30 feet from the stream**.

Table 4-2 displays the approximate acres in the different timber suitability categories.

Table 4-2. Suitability of Areas for Timber Summary*

Category	Approximate Acres	Approximate Acres	Approximate Acres
Total National Forest Lands	50,814		
Lands generally not available for timber harvest	5,160		
Lands generally available for timber harvest	45,654		
Timber suitable for timber production		33,861	
Other lands		11,793	
Lands not suitable for timber production			16,953

***Acreages are approximate due to Lands Status Updates in progress at this time.**

Prescribed Fire Suitability:

The general forest, streamside forests, special interest areas, eligible wild and scenic river corridors, and Schweinitz's Sunflower Habitat Management Area are generally suitable for prescribed fire. Suitability of prescribed fire use in Birkhead Mountain Wilderness may be

determined through a separate planning process. For all fire management activities, public and firefighter safety are always the highest priority, and these concerns may override general determinations of suitability at specific locations and times.

Special Uses Suitability

The Forest is generally suitable for a variety of special uses if the use cannot be accommodated on private land. Special uses include easements, rights-of-way, wells, events, military exercises, college classes, and commercial activities such as outfitter guide businesses or movie-making. Each request needs individual consideration and evaluation. Special uses that require permanent structures or facilities are generally suitable:

- Outside Wilderness, and;
- Outside Special Interest Areas unless the use would support the relevant special attributes (see Chapter 4).

Utility Corridors and Communication Sites Suitability

Existing communication sites and major utility corridors are identified as generally suitable for such uses. A map of these sites and corridors is available in the Plan Set of Documents.

Minerals and Energy Suitability

The general forest is generally suitable for exploration and mineral sales.

Special Interest Areas

Special Interest Areas on the Uwharrie National Forest include areas with unique or rare botanical, zoological, geological, historical, scenic and/or recreational values. Nominations for Special Interest Areas came from the public collaborative process as well as State agency partners. Nominated areas were then evaluated for their unique or rare characteristics. Many of these areas exhibit more than one special attribute, such as geological AND botanical, or botanical AND scenic AND historical, thus reinforcing their identification as a special area. Table 4-3 displays a list of Special Areas, their sizes, and their special attributes. For all Special Areas the desired condition for scenic integrity is “High.” Following the table are descriptions of the desired conditions specific to each area. Special Interest Areas less than 160 acres may be designated by the Forest Supervisor. Areas of 160 acres or larger are designated at a higher level and are therefore considered here as “recommended for designation.”

Table 4-3. Special Areas of the Uwharrie National Forest

#	Site Name	Special Attributes	Acres
1	Abner Bog	Botanical/Historical	10
2	Badin Upland Depression Swamps and Xeric Woodland	Botanical/Scenic/Historic	129
3	Barnes Creek Bluffs	Botanical/Scenic/Zoological	58
4	Birkhead Upland Forest Natural Area*	Botanical	827
5	Cheek Creek Ridge	Botanical/Geological	23
6	Clarks Grove Longleaf Pine Forest	Botanical/Scenic	140
7	Cotton Place	Historical	76
8	Daniels/Shingle Trap Mountain	Botanical/Recreational/Historical	751
9	Dark Mountain/Jumping Off Rock	Botanical/Scenic/Zoological	233
10	Dutch John Creek	Botanical	134
11	Falls Dam Slope	Botanical/Scenic	245
12	Falls Mountain	Historical	84
13	Goldmine Branch Longleaf Pine Slope	Botanical/Scenic	54
14	Headwaters	Historical	123
15	Horse Trough	Historical	156
16	Little Island Creek Xeric Slope	Botanical/Geological/Scenic	32
17	Nifty Rocks	Scenic/Geological/Historical	64
18	Pleasant Grove Bog and Pine Savanna	Botanical/Scenic/Historical	44
19	Poison Fork Slopes	Botanical/Zoological/Scenic	242
20	Polly Branch Slopes	Botanical	116
21	Rocky Creek Longleaf Pine Forest and Bogs	Botanical/Scenic/Historical	94
34	Roberdo Bog	Botanical/Historical	5
22	Russell Mine	Historical	263
23	Spencer Creek Hillside Seepage Bog	Botanical/Scenic/Historical	52
24	Talbert	Historical	65
25	Thornburg	Historical	168
26	Upper Densons Creek and Abner Mountain	Botanical/Zoological	247
27	Uwharrie Mafic Rock Area	Botanical	92
28	Uwharrie River Boundary Bluff	Botanical/Scenic	28
29	Uwharrie River Slopes	Botanical	49
30	Walker Mountain/Woodrun Natural Area	Botanical	362
32/33	West Branch Eldorado Forest	Botanical	428
31	West Branch Slopes	Botanical	2
	TOTAL		5,396*

*Includes 827 acres inside Birkhead Mountains Wilderness

The following descriptions of desired conditions include ecological community types to be maintained for those special interest areas that are biologically significant. A crosswalk of the ecological community types and their equivalent NatureServe reference is located in Appendix D. Species scientific names are also listed in Appendix D.

Desired conditions for historical areas may be intentionally vague to protect the integrity of the specific heritage resources at the site.

Abner Bog: Botanical/Historical

The Hillside Seepage Bog natural community is healthy and provides the necessary habitat conditions to support the population of purple pitcher plants. The bog is intact hydrologically and available for paleoclimatological studies.

Badin Upland Depression Swamps and Xeric Woodland: Botanical/Scenic/Historical

The existing Upland Depression Swamp Forest and distinctive Basic Rocky Variant of the Xeric Hardpan Forest type are intact.

Barnes Creek Bluffs: Botanical/Scenic/Zoological

The unique variant of Piedmont/Low Mountain Alluvial Forest with its combinations of montane and coastal species, the glade-like rock outcrop variant of Piedmont Mafic Cliff and the Mesic Mixed Hardwood Forest are intact and properly functioning hydrologically.

Habitat is available for populations of three rare plant species: Piedmont indigo-bush, large witch-alder, and southern anemone.

Roadsides provide habitat for mottled dusky wing.

Birkhead Upland Forest Natural Area: Botanical/Zoological

Existing examples of Piedmont Monadnock Forest, Dry-Oak Hickory Forest, Dry-Mesic Oak-Hickory Forest, and Mesic Mixed Hardwood Forest are intact and functioning properly hydrologically.

Drier upland habitat is available for Piedmont Indigo-Bush. Aquatic habitat is available in North Prong Hannahs Creek for Carolina Creekshell and Eastern Creekshell.

Cheek Creek Ridge: Botanical/Geological

Habitat is available for populations of glade wild quinine and thin-pod white wild indigo.

The Basic Rocky variant of Xeric Hardpan Forest is intact.

The existing examples of Basic Oak–Hickory Forest with transitions to small areas of acidic Dry Oak–Hickory Forest on Triassic sandstone are intact.

Clarks Grove Longleaf Pine Forest: Botanical/Scenic

The Piedmont Longleaf Pine Forest is maintaining its woodland structure, allowing the Endangered Schweinitz's sunflower to thrive in several areas.

Cotton Place: Historical

The heritage resources of the old home site are preserved.

Daniels/Shingle Trap Mountain: Botanical/Recreational/Historical (Recommended)

The Piedmont Monadnock Forest, including the unusual pine areas, dense heath areas, and unusually xeric areas are intact. The Piedmont Acidic Cliff and Piedmont/Coastal Plain Heath Bluff communities are good examples of these uncommon types.

The open communities on upper slopes, tentatively classified as Low Elevation Rocky Summit, are intact.

The examples of Dry Oak–Hickory Forest, Piedmont/Low Mountain Alluvial Forest, and the Low Elevation Seep community are intact and properly functioning hydrologically.

Habitat is available for populations of Carolina thistle and Piedmont indigo-bush.

The recreation experience for trail users is maintained or improved.

The Heritage Resources are maintained for future study and evaluation.

Dark Mountain/Jumping-Off Rock: Botanical/Scenic/Zoological (Recommended)

Habitat is available for populations of Piedmont indigo-bush and large witch-alder.

The Dry Oak-Hickory Forest, Piedmont Monadnock Forest, and Dry-Mesic Oak–Hickory Forest are intact.

The Low Elevation Seep community in the southwestern part of the site is intact and properly functioning hydrologically.

The small open-canopy grassy glade community and the variant of Piedmont/Coastal Plain Heath Bluff are intact.

Dutch John Creek Area: Botanical

The Piedmont Monadnock Forest, Dry-Mesic Oak–Hickory Forest, and Mesic Mixed Hardwood Forest communities are intact.

Habitat is available for the population of Carolina thistle.

Falls Dam Slope: Botanical/Scenic (Recommended)

The existing two different subtypes of Basic Piedmont Bluff Glade are intact.

The existing Basic Oak–Hickory Forest, Piedmont Monadnock Forest, and Dry Oak–Hickory Forest communities are intact.

Habitat is available for populations of federally Endangered Schweinitz's sunflower, Piedmont indigo-bush, and Carolina thistle.

Falls Mountain: Historical

The heritage resources are protected and available for research.

Goldmine Branch Longleaf Pine Slope: Botanical/Scenic

The Piedmont Longleaf Pine Forest community is intact. This example is unique in that it is on a steep rocky slope, and it has characteristics that may represent a distinct variant or subtype.

Habitat is available for the population of the Piedmont indigo-bush.

Headwaters: Historical

The heritage resources are protected and available for research.

Horse Trough: Historical

The heritage resources are protected and available for research.

Little Island Creek Xeric Slope: Botanical/Geological/Scenic

The distinctive occurrence of Piedmont/Coastal Plain Acidic Cliff and the small Piedmont Monadnock Forest are intact.

Habitat is available for the population of Piedmont indigo-bush.

The unusual geomorphic, soil, and scenic features in the near complete rock cover on the south slope are intact.

Nifty Rocks Scenic/Geological/Historical

The very unusual cluster of huge (house-sized) boulders, which cover much of the ground, are intact. The natural hydrology of the area is properly functioning.

Impacts from the existing trails is less and less evident, though the public's ability to enjoy the site is maintained.

There is little evidence of non-native invasive Japanese stilt grass.

Pleasant Grove Bog and Pine Savanna: Botanical/Zoological/Scenic/Historical

The Piedmont Longleaf Pine Forest communities, both wet and dry types, are intact.

The Piedmont Boggy Streamhead community is intact and properly functioning hydrologically. The bog is intact and available for paleoclimatological studies.

Habitat is available for the existing population of thin-pod white wild indigo.

The Upland Pool community is intact and properly functioning hydrologically, to support a breeding population of the mole salamander.

Poison Fork Slopes: Botanical/Zoological/Scenic (Recommended)

Habitat is available for a large population of southern anemone.

The Piedmont Mafic Cliff community and Basic Piedmont Glade are intact.

The Low Elevation Seep, Mesic Mixed Hardwood Forest, and Piedmont Alluvial Forest are intact and properly functioning hydrologically.

Habitat is available in Poison Fork for populations of Carolina darter, Roanoke slabshell, Atlantic pigtoe, Savannah lilliput, Greensboro burrowing crayfish, Carolina elktoe, notched rainbow, Carolina creekshell, Carolina fatmucket, squawfoot, and Eastern creekshell.

Polly Branch Slopes: Botanical

The mature Dry Oak-Hickory Forest, Dry-Mesic Oak-Hickory Forest, Mesic Mixed Hardwood Forest, and Piedmont/Low Mountain Alluvial Forest communities are intact.

Rocky Creek Longleaf Pine Forest: Botanical/Scenic

The Piedmont Longleaf Pine Forest is maintaining its woodland structure.

Roberdo Bog: Botanical/Historical

The hydrological functioning is maintained allowing the permanence of open water and emergent vegetation within the rare Upland Pool community. The mole salamander population thrives and continues to breed within the Upland Pool.

Russell Mine: Historical (Recommended)

The heritage resources are protected and available for interpretation.

Spencer Creek Hillside Seepage Bog: Botanical/Scenic/Historical

The Hillside Seepage Bog community and the rare Piedmont Boggy Streamhead community are intact, properly functioning hydrologically, and available for paleoclimatological research.

Habitat is available for the population of large witch-alder.

Talbert: Historical

The heritage resources are protected and available for research.

Thornburg: Historical (Recommended)

The historic attributes as a listed National Register of Historic Places are protected.

The historic home and farm are available for interpretation.

Upper Densons Creek and Abner Mountain: Botanical/Zoological (Recommended)

The Piedmont Monadnock Forest, Dry Oak-Hickory Forest, and Dry-Mesic Oak-Hickory Forest are intact.

The Piedmont Alluvial Forest and Low Elevation Seep are intact and properly functioning hydrologically.

Habitat is available in Upper Denson's Creek for populations of Savannah lilliput, Carolina elktoe, yellow lampmussel, Carolina fatmucket, and triangle floater.

Uwharrie Mafic Rock Area: Botanical

The existing mature Basic Oak--Hickory Forest natural community type, including extensive representation of both the dry-mesic and dry types is intact.

The existing small examples of rare Upland Depression Swamp Forest and Xeric Hardpan Forest communities are intact and properly functioning hydrologically.

Uwharrie River Boundary Bluff: Botanical/Scenic

The existing mature Basic Mesic Forest is intact and properly functioning hydrologically. Habitat is available for the existing population of dissected toothwort.

Uwharrie River Slopes: Botanical

The Basic Mesic Forest, Dry-mesic Oak-Hickory Forest, Rocky Bar and Shore, and Piedmont/Mountain Levee Forest are intact. The Basic Cliff community is intact and allows an uncommon opportunity to observe such species as sedum, chinquapin oak, and mosses which are limited to or reach best development on high pH soils.

Habitat is available in the Uwharrie Riever for populations of Carolina darter, Roanoke slabshell, Atlantic pigtoe, Savannah lilliput, Greensboro burrowing crayfish, Carolina elktoe, notched rainbow, Carolina creekshell, Carolina fatmucket, squawfoot, and Eastern creekshell.

Walker Mountain/Wood Run Natural Area: Botanical (Recommended)

The existing diversity of small patch community types: an acidic glade; an Upland Depression Swamp Forest; a collection of Low Elevation Seep communities, including a unique example in a boulderfield, are intact and properly functioning hydrologically.The dry ridgetop shortleaf pine forest is intact.

The existing exemplary examples of Dry Oak-Hickory Forest, Piedmont Monadnock Forest, Dry-Mesic Oak-Hickory Forest, Basic Oak-Hickory Forest are intact.

The Mesic Mixed Hardwood Forest and Piedmont Alluvial Forest are intact and properly functioning hydrologically. Habitat is available for the population of Piedmont indigo bush.

West Branch Eldorado Forests: Botanical (Recommended)

The existing unusual diversity of natural communities is intact: Mesic Mixed Hardwood Forest, Dry-Mesic Oak–Hickory Forest, Dry Oak–Hickory Forest, Piedmont Monadnock Forest, and Basic Oak–Hickory Forest.

The small existing Upland Depression Swamp Forest, Xeric Hardpan Forest, and Low Elevation Seep are intact and properly functioning hydrologically.

West Branch Slopes Botanical

The Mesic Mixed Hardwood Forest is intact and properly functioning hydrologically.

Habitat is available for the Ravine Sedge.

Chapter 5 - Monitoring

Monitoring is used to assess the degree to which on-the-ground management is maintaining or making progress toward the desired conditions and objectives in the Plan. Monitoring information may be changed and updated as appropriate, at any time, without a plan amendment (36 CFR 219.6(b)). Adjustment of the monitoring program is appropriate to account for unanticipated changes in conditions.

This monitoring program was developed with public participation and focuses on key plan components where management projects and activities are likely to cause a change over time. In addition, monitoring questions must be carefully screened so that the selected questions and their associated performance measures will provide the most useful information while also being practical and affordable.

Monitoring may address key desired conditions directly or indirectly by focusing on objectives or guidelines. As part of the collaborative process, the following Desired Conditions were identified as key conditions to be monitored:

VEG-2. Plant communities that were more common in the past occur on appropriate sites across the forest. Examples include longleaf pine woodlands, shortleaf pine woodlands, and oak-hickory forests.

VEG-3. Non-native invasive species are at low levels that do not interfere with native plant reproduction and distribution. New outbreaks are not spreading.

VEG-4. There is increasing evidence of prescribed fire used to restore the structure, composition and ecosystem processes in ecological systems.

VEG-5. Schweinitz's sunflowers (federally listed as Endangered since 1991) that historically occurred across the Piedmont of North and South Carolina are restored on appropriate sites across the forest (longleaf pine woodlands, dry oak-hickory forests, mafic hardpan woodlands, and xeric forests). Other plant species-of-concern or species-of-interest are sustaining or increasing in number of occurrences or the extent of the occurrences.

VEG-6. Biological diversity is evident across the forest, and is further enhanced by a system of botanical special areas. All plant communities found on the Uwharrie are represented in this system, including rare plant communities and the species-of-concern and species-of-interest that they support. These botanical special areas are intact and fully functioning; without evidence of unnatural erosion or non-native invasive species, and with intact hydrologic systems.

VEG -9. The composition, structure and processes of ecological systems are improving.

SWF –6. Streamsides are dominated by native riparian vegetation, including trees capable of adding large woody debris for hydrologic stability and instream fish habitat. Aquatic habitat is diverse and relatively free of unnatural sediments. Pool habitats are frequent and provide cover for many species of fish. Vegetated streamside areas are effective in providing shading to the streams and filtering sediments produced by all land management activities.

HER –1. Archeological resources are protected from loss. Significant sites are stabilized and preserved.

TRL-1. Exceptional trails are available for hikers, horseback riders, off-roaders, mountain bikers, hunters and anglers. The trails are designed, constructed, and maintained so that a variety of levels of challenge is available and minimal damage occurs to other forest resources such as soil and water.

TRL-5. The 50-mile Uwharrie National Recreation Trail is complete and marked for hikers. That portion on National Forest System lands has high scenic integrity.

In addition to these key Desired Conditions, additional monitoring will occur that is a standard part of the Forest Service upward reporting structure, and that will be appropriate for monitoring additional desired conditions.

The table below displays the monitoring questions and performance measures that will be used to evaluate movement toward key Plan Desired Conditions. In some cases the monitoring question and performance measures directly address the Desired Condition. In other cases they address one or more Objectives associated with the Desired Condition.

Monitoring Program

Plan Direction	Monitoring Questions	Performance Measure
VEG – 2 Plant communities more common in the past are reestablished on appropriate sites across the forest. Examples include longleaf pine woodlands, shortleaf pine woodlands, and oak-hickory forests.	What are the trends for Management Indicator Species?	Trends for Management Indicator Species (MIS) and/or habitat. [MIS are identified at the end of this chapter]

Plan Direction	Monitoring Questions	Performance Measure
Objective: Off-site tree species are removed and/or site-appropriate vegetation established each year on an average 200 acres of potential oak-hickory sites and 100 acres of potential longleaf pine sites. This would amount to moving toward restoring the desired vegetation conditions on a minimum of 4,500 acres over the planning period.	What are the trends in restoring longleaf pine forests and oak-hickory forests?	Acres of longleaf pine restoration. Acres of oak-hickory restoration.
VEG – 3 Non-native invasive species (NIS) are at low levels that do not interfere with native plant reproduction and distribution. New outbreaks are not spreading.	What are the trends in NIS plants?	Trends for NIS plants at selected sites.
Objective: Each year, treat on average a minimum of 20 acres to eliminate non-native invasive plants. Select areas based on the following priority: 1. Schweinitz's Sunflower HMA; 2. Botanical Special Areas; 3. Streamside Forests; 4. General Forest.	What are the trends in NIS plants?	Acres of treatment of NIS plants by location.
VEG – 4 There is increasing evidence of prescribed fire used to restore the structure, composition and ecosystem processes in ecological systems.	[See question below.]	[See performance measure below.]
Objective: Each year an average 2,000 to 5,000 acres are prescribe burned to create open canopy conditions, reduce midcanopy, and move toward ecological conditions described in desired conditions VEG-9. Public and firefighter safety will be the top priority in fire management activities.	What are the trends in prescribed fire?	Amount, timing, and location of prescribed fire.
VEG – 5 Schweinitz's sunflowers (federally listed as Endangered since 1991) that historically occurred across the Piedmont of North and South Carolina are restored on appropriate sites across the forest (longleaf pine woodlands, dry oak-hickory forests, mafic hardpan woodlands, and xeric forests). Other plant species-of-concern or species-of-interest are sustaining or increasing in number of occurrences or the extent of the occurrences.	[See question below.]	[See performance measure below.]

Plan Direction	Monitoring Questions	Performance Measure
Objective: Over the planning period, 5 to13 subpopulations of Schweinitz's sunflower (listed as Endangered since 1991) are restored to appropriate sites. As this occurs, plants from at risk locations adjacent to roads or railroads will be moved into the reintroduction areas.	What are the trends in Schweinitz's sunflower across the Forest?	Amount and kinds of restoration activities performed. Documented condition and extent of occurrences.
VEG – 6 Biological diversity is evident across the forest, and is further enhanced by a system of botanical special interest areas. All plant communities found on the Uwharrie are represented in this system, including rare plant communities and the species they support. These botanical special areas are intact and fully functioning; without evidence of unnatural erosion or non-native invasive species, and with intact hydrologic systems.	What are the trends in the condition of element occurrences* on the Forest? (*element occurrence or EO may be a rare community or a rare species population)	Documented condition and extent of occurrence.
VEG - 9. The composition, structure and processes of ecological systems are improving.	What are the trends in ecological system conditions? What are the trends for Management Indicator Species?	• Restoration Actions • Acres of prescribed burning • Trends of Management Indicator Species and/or habitat.
SWF – 6 Streamsides are dominated by native riparian vegetation, including trees capable of adding large woody debris for hydrologic stability and instream fish habitat. Aquatic habitats are diverse and relatively free of unnatural sediments. Pool habitats are frequent and provide cover for many species of fish. Vegetated streamside areas are effective in providing shading to the streams and filtering sediments.	What are the trends in conditions for hydrologic stability, instream habitat, and streamside vegetation? What are the trends in instream and streamside habitat conditions for selected stream segments?	Habitat suitability rating. North Carolina Index of Biotic Integrity (NCIBI) and North Carolina Ephemeroptera, Plecoptera, Tricoptera (NCEPT) rating.

Plan Direction	Monitoring Questions	Performance Measure
HER – 1 Archeological resources are protected from loss. Significant sites are stabilized and preserved.	[See question below.]	[See performance measure below.]
Objective: Each year, adverse impacts are mitigated at an average of five impacted sites, beginning with the five high priority sites known as site numbers 31MG555, 31MG145, 31MG356, 31MG328, and 31MG186.	What are the trends in protection, and/or stabilization and preservation of sites?	Number of sites stabilized or salvaged.
TRL – 2 Exceptional trails are available for hikers, horseback riders, off-roaders, mountain bikers, hunters and anglers. The trails are designed, constructed, and maintained so that a variety of levels of challenge is available and minimal damage occurs to other forest resources such as soil and water.	[See question below.]	[See performance measure below.]
Objective: Each year an average of 10 combined miles of substandard hiking, bike, horse or OHV trail are improved, with the emphasis being horse trails and OVH trails in the Badin area.	What are the trends in trail conditions?	Miles of trails maintained to regional standards. Change in the amount of trail maintenance backlog.
TRL – 5 The 50-mile Uwharrie National Recreation Trail is complete and marked for hikers. That portion on National Forest System lands has high scenic integrity.	What is the percentage of completion for the Uwharrie National Recreation Trail?	Additions to the Uwharrie National Recreation Trail.

Proposed Uwharrie MIS

Pileated Woodpecker	Habitat specialist – snags and cavities
Brown-headed nuthatch	Longleaf pine woodland
Acadian flycatcher	Streamside forest
Northern Bobwhite Quail	Wildlife demand species
Scarlet tanager	Dry oak and oak-hickory forest

Pileated woodpecker

The pileated woodpecker, ***Dryocopus pileatus,*** **has been selected as the species to** indicate management effects to snag dependent wildlife species. This bird species is known to inhabit deciduous, coniferous and mixed forests across its range. The pileated woodpecker is a snag dependent species that uses no less than 4 cavities per year making it an excellent species by which to gauge management effects on snags. Based on breeding bird surveys conducted on the UNF from 1997-2008 (USDA 2010) the pileated woodpecker population on the UNF is currently stable to slightly increasing. Objectives proposed in this LRMP would lead to an increase in habitat and habitat quality for the pileated woodpecker which should encourage this trend.

Brown-headed nuthatch

The brown-headed nuthatch, ***Sitta pusilla,*** **has been selected as the species to** indicate management effects in longleaf pine woodlands. The primary habitat for this bird species in the coastal plain is the longleaf pine ecosystem (NatureServe 2010). The brown-headed nuthatch relies on cavities, especially in longleaf pine trees, making this species an excellent indicator of management for longleaf pine forests. This species has not been recorded often in the breeding bird surveys conducted on the UNF from 1997-2008 (USDA 2010), however from the limited data collected it appears that the brown-headed nuthatch population, which is quite small, is stable. Objectives proposed in this LRMP would lead to an increase in habitat and habitat quality for the brown-headed nuthatch which should lead to an increase in the current small population.

Acadian flycatcher

The Acadian flycatcher, ***Empidonax virescens,*** **has been selected as the species to** indicate management effects in streamside forests. This bird species habitat is near streams in mature deciduous and mixed forests (NatureServe 2010) making this species an excellent indicator of streamside forest management. Based on breeding bird surveys conducted on the UNF from 1997-2008 (USDA 2010) the Acadian flycatcher population on the UNF is stable to slightly increasing. Objectives proposed in this LRMP would lead to an increase in habitat quality for the Acadian flycatcher which should encourage this trend.

Northern Bobwhite Quail

The northern bobwhite quail, *Colinus virginianus,* **is a wildlife demand species that has been selected to** indicate management effects for wildlife demand. This bird species inhabit early successional and open woodland habitats (NatureServe 2010). Early successional habitat was more present on the landscape due to agriculture in the early to mid 1900's, however this habitat is found less often today and quail are more often

hunted in open woodland situations, similar to that of the longleaf pine forest found historically across the southern part of the UNF. Hunting demand for this species makes it a good indicator of wildlife demand species. Based on breeding bird surveys conducted on the UNF from 1997-2008 (USDA 2010) the northern bobwhite quail population on the UNF is slightly decreasing. Objectives proposed in this LRMP would lead to an increase in habitat and habitat quality for the northern bobwhite quail which should reverse this trend.

Scarlet Tanager

The scarlet tanager, ***Piranga olivacea,*** **has been selected as the species to** indicate management effects in dry oak and oak-hickory forests. This bird species relies on deciduous forests, especially in areas with a fairly closed canopy, dense understory and high shrub diversity (NatureServe 2010) making this species an excellent indicator of dry oak and oak-hickory forests management. Based on breeding bird surveys conducted on the UNF from 1997-2008 (USDA 2010) the scarlet tanager population on the UNF is stable. Objectives proposed in this LRMP would lead to an increase in habitat and habitat quality for the scarlet tanager which should encourage population growth.

Appendix A - Plan Direction Crosswalk

On the following pages the Goals/Desired Conditions, Objectives, Standards and Guidelines, and Monitoring direction in the plan are shown side-by-side to facilitate easier interpretation and implementation of the plan.

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
VEG-1. Woodlands and open forests with small canopy gaps, interspersed with glades and Piedmont prairies, occupy portions of the forest where they occurred historically. These forests contain mixed ages with old trees and old forest conditions, as well as canopy openings that provide habitat for federally listed species, sensitive and locally rare species that thrive in open conditions.	Over the planning period, the 2,200 acres identified as existing longleaf pine in 2006 are maintained as longleaf pine woodlands. Move toward restoring the desired vegetation conditions on a minimum of 4,500 acres over the planning period. Site-appropriate vegetation is established each year on an average 200 acres of potential oak-hickory sites and 100 acres of potential longleaf pine sites. Over the planning period, 15-30 prairie-like openings of ½ to 2 acres in size are created across longleaf pine and oak-hickory restoration areas that are within the Schweinitz's Sunflower HMA.	When restoring woodland structure in existing longleaf pine stands, projects should be designed to leave a sparse hardwood midstory, and at least 45 pine stems greater than 60 years in age and greater than 14 inches in diameter wherever possible. To benefit wildlife: • When restoring longleaf or shortleaf pine, an average of 10-25 square feet per acre basal area of hard mast producers (oaks and hickories) should be retained whenever it is present; • When restoring or thinning stands, standing live and dead den trees should be retained and clumped with other trees for protection; • Growth of native soft mast producers should be maintained in all natural communities. Competition from other species should be limited when appropriate. When restoring shortleaf pine, trees should be planted on a wide spacing (less than 350 trees per acre) to allow room for hardwoods to develop as dominant or co-dominant trees. As stands reach 12-15 years old, crown-touching release should be performed (a thinning activity) to favor the best trees and most desirable species as determined in project analysis. When restoring sites following extensive damage to trees from wind, water, insects or disease, use the potential natural vegetation

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
		map as a guide to determine the desired species composition.
VEG-2. Plant communities that were more common in the past occur on appropriate sites across the forest. Examples include longleaf pine woodlands, shortleaf pine woodlands, and oak-hickory forests.	Over the planning period, the 2,200 acres identified as existing longleaf pine in 2006 are maintained as longleaf pine woodlands. Move toward restoring the desired vegetation conditions on a minimum of 4,500 acres over the planning period. Site-appropriate vegetation is established each year on an average 200 acres of potential oak-hickory sites and 100 acres of potential longleaf pine sites.	**[See guidelines for VEG-1]** When considering restoration by regeneration timber harvest, the maximum size of an opening created by even-aged or two-aged treatments should be 80 acres for loblolly pine and 40 acres for all other tree species. These acreage limits should not apply to areas treated as a result of natural catastrophic events such as fire, insect or disease attack, or windstorm. When considering restoration by regeneration timber harvest, openings should be shaped and blended to the extent practicable with the natural terrain. When considering restoration by regeneration timber harvest, projects should be considered through interdisciplinary review, assessing the potential environmental, biological, aesthetic, engineering, and economic impacts on the timber sale area, as well as the consistency of the timber sale with the multiple uses of the area. A harvesting system should not be selected primarily because it will give the greatest dollar return or the greatest output of timber. When restoring plant communities by regeneration timber harvest, the following stocking levels should achieved within 5 years after harvest:

<table>
<tr><th>Goal/Desired Conditions</th><th>Related Objectives</th><th>Related Standards & Guidelines</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Forest Type Established</th><th>Min. Stocking Level</th><th>Target Level</th></tr>
<tr><td>Oak-Hickory, Other Hardwood</td><td>150 stems per acre</td><td>200-300 stems per acre</td></tr>
<tr><td>Shortleaf Pine/Oak Mix</td><td>250 stems per acre</td><td>400 (<200 pine) stems per acre</td></tr>
<tr><td>Shortleaf Pine</td><td>275 stems per acre</td><td>350-400 stems per acre</td></tr>
<tr><td>Longleaf Pine</td><td>300 stems per acre</td><td>400-500 stems per acre</td></tr>
</table>

When considering restoration by regeneration harvest, include stands which meet the following minimum ages at the time of timber sale award:
<table>
<tr><th>Existing Forest Type</th><th>Minimum Regeneration Age</th></tr>
<tr><td>Shortleaf Pine & Shortleaf Pine/Oak</td><td>60 Years</td></tr>
<tr><td>Loblolly Pine and Loblolly Pine/Oak</td><td>30 Years</td></tr>
<tr><td>Hardwoods</td><td>80 Years</td></tr>
</table>
</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>VEG-3. Non-native invasive species are at low levels that do not interfere with native plant reproduction and distribution. New outbreaks are not spreading.</td><td>Each year, on average a minimum of 20 acres are treated to eliminate non-native invasive plants.</td><td>When selecting areas for treatment of non-native invasive plants consider the following priority:
i. Schweinitz’s Sunflower HMA;
ii. Botanical Special Interest Areas;
iii. Streamside Forests;
iv. General Forest.</td></tr>
</table>

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
VEG-4. There is increasing evidence of prescribed fire used to restore the structure, composition and ecosystem processes in ecological systems.	Each year an average 3,000 to 6,000 acres are prescribe burned to create open canopy conditions, reduce midcanopy, and move toward ecological conditions described in desired conditions VEG-9. Public and firefighter safety will be the top priority in fire management activities.	When prescribe burning, at least every third burn on a site should be a growing season burn. It is permissible to burn the same acreage in 2 sequential years and to apply only growing season fire to the same acreage for 3 or more sequential burning cycles. When prescribe burning, the fire should be allowed to burn in a mosaic pattern resulting from differential influence of topography, fuel loading and moisture, and vegetation type. When prescribe burning, Region 8 and State guidelines for smoke management should be followed. When prescribe burning, oak-hickory stands with regenerating young trees should be avoided until the young trees are large enough to be resistant to fire damage, including scarring and girdling. When rehabilitating tractor fire lines, appropriate measures **shall** be taken to properly drain water and prevent erosion. A prescribed fire that exceeds or is anticipated to exceed one or more prescription parameters or line holding capability and cannot be returned to prescription with project funds is a wildfire. Once declared a wildfire, it cannot be redesignated a prescribed fire.
VEG-5. Schweinitz's sunflowers (federally listed as Endangered since 1991) that historically occurred across the Piedmont of	Over the planning period, 5 to13 subpopulations of Schweinitz's sunflower (listed as Endangered since 1991) are	Roadside banks should <u>not</u> be mowed <u>before</u> flowering and seed development where Federally listed, sensitive, or locally rare

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
North and South Carolina are restored on appropriate sites across the forest (longleaf pine woodlands, dry-oak hickory forests, mafic hardpan woodlands, and xeric forests). Other sensitive or locally rare plant species are sustaining or increasing in number of occurrences or the extent of the occurrences.	restored to appropriate sites. Plants from at risk locations adjacent to roads or railroads will be moved into the reintroduction areas. Over the planning period, 15-30 prairie-like openings of ½ to 2 acres in size are created across longleaf pine and oak-hickory restoration areas that are within the Schweinitz's Sunflower HMA.	plants occur. Special use authorizations shall include terms and conditions to protect any existing federally listed species and suitable habitat present in the area, and direction to reduce impacts to sensitive or locally rare species. Minerals and energy exploration and development authorizations for uses in Schweinitz's Sunflower HMA should include terms and conditions to protect any existing federally listed species and suitable habitat present in the area, and direction to reduce impacts to sensitive or locally rare species. When project activities may negatively impact species of concern or species of interest having less than 5 known occurrences on the Forest, project design should document how the species will be protected and the population will be maintained.
VEG-6. Biological diversity is evident across the forest, and is further enhanced by a system of botanical special interest areas. All plant communities found on the Uwharrie are represented in this system, including rare plant communities and the species they support. These botanical special interest areas are intact and fully functioning; without evidence of unnatural erosion or non-native invasive species, and with intact hydrologic systems.	**[No objectives required at this time, maintenance and monitoring only. Botanical Special Interest Areas are established in this Plan (see Chapter 4).]**	New ground disturbing activities should be located far enough away from rare Ecological Systems (Glades and Barrens, Mafic Hardpan Woodland, Depression Swamps, and Seepage Wetlands) to avoid direct and indirect impacts from soil erosion and to protect bogs, swamps, and wetlands from alteration of natural hydrologic functioning. When project activities may negatively impact species of concern or species of interest having less than 5 known occurrences on the Forest, project design should document how the species will be protected and the population will be maintained.

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
VEG-7. Regenerating hardwoods are evident following disturbances in tree canopies (canopy gaps) in multi-age deciduous forests and mixed pine-hardwood forests.	In an effort to achieve a more all-age condition that is desired from both a species sustainability standpoint and for a more even-flow of hard mast production, create or enhance existing gaps in oak-hickory stands to encourage natural regeneration of oak and hickory species. Create or enhance an average of 10 acres of gaps per year.	Gaps created for oak and hickory regeneration should average1/2 - 2 acres in size and comprise 20-30% of a stand. Classify a regeneration area as an opening until the young trees have reached a height that is approximately 20% of the tallest adjacent trees.
VEG-8. Forests are in a healthy condition. Most trees are in good health, well-formed, and with little evidence of widespread insect and/or disease damage. A healthy forest includes some dead and dying trees and hollow den trees used by wildlife. A healthy forest also contains various size patches of disturbance that provide habitat components desired by a variety of wildlife, and space and light for young trees ("regeneration").	Each year an average of 400 acres are thinned to maintain room for growth and to discourage insect and disease infestation.	When selecting areas for thinning consider: i. Opportunities to reduce stem density in predominantly pine stands where the stem density is high enough to present a risk of southern pine beetle infestation (basal area over 100 square feet per acre), or: ii. Opportunities to reduce the risk of catastrophic wildfire. When thinning in pine plantations in the Streamside Forest, entries should only be every 35 to 40 years, to reduce disturbance. When restoring or thinning stands, standing live and dead den trees should be retained, clumped with other trees for protection. When restoring sites following extensive damage to trees from wind, water, insects or disease, use the potential natural vegetation map as a guide to determine the desired species composition.
VEG-9. The composition, structure and processes of ecological systems are improving.	**[All Vegetation Objectives Apply]**	**[All Vegetation Standards & Guidelines Apply]**

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
WLF-1. Habitat is present for the diversity of native animal species typical of the Piedmont ecoregion - vertebrates, invertebrates, game and non-game, and including herptiles.	Over the planning period, the 2,200 acres identified as existing longleaf pine in 2006 are maintained as longleaf pine woodlands. Move toward restoring the desired vegetation conditions on a minimum of 4,500 acres over the planning period. Site-appropriate vegetation is established each year on an average 200 acres of potential oak-hickory sites and 100 acres of potential longleaf pine sites. Over the planning period, assess existing grass/forb openings to identify conflicts with developed recreation areas, poor soil productivity, or other factors and develop a plan for relocating them to more appropriate locations.	**[See guidelines for VEG-1]** When restoring shortleaf pine, trees should be planted on a wide spacing (less than 350 trees per acre) to allow room for hardwoods to develop as dominant or co-dominant trees. As stands reach 12-15 years old, crown-touching release should be performed (a thinning activity) to favor the best trees and most desirable species as determined in project analysis. When creating grass/forb habitat, up to ten square feet of basal area of mature, mast producing hardwood trees should be retained. New ground disturbing activities should be located away from rare Ecological Systems (Glades and Barrens, Mafic Hardpan Woodland, Depression Swamps, and Seepage Wetlands) to avoid direct and indirect impacts from soil erosion and to protect bogs, swamps, and wetlands from alteration of natural hydrologic functioning.
WLF-2. Wildlife fields and openings in the forest are predominantly filled with native grasses, herbs, and shrubs of species that native wildlife use for food. Occasional hard mast producing trees occur in the fields as well. Fields and openings are dispersed across the forest nd do not occur within 150 yards of developed recreation areas..	Over the planning period, assess existing grass/forb openings to identify conflicts with developed recreation areas, poor soil productivity, or other factors and develop a plan for relocating them to more appropriate locations. Each year the historic hedgerows, grain fields, fruit trees, etc. are restored or maintained at a minimum of one identified key wildlife area (Thornburg, Quick, Klaussner, and Colonel Crump's).	When creating grass/forb habitat, up to ten square feet of basal area of mature, mast producing hardwood trees should be retained. When creating grass/forb habitat, consider making it coincident with the prairie-like openings in the Schweinitz's Sunflower HMA whenever possible.

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
WLF-3. Some non-native, non-invasive plants such as grains are growing in a small portion of wildlife openings in order to provide the wildlife viewing experience desired by forest visitors.	**[See Objectives for WLF-2]**	**[See Guidelines for WLF-2]**
WLF-4. Den trees, snags and downed wood are evident in most stands, supporting diverse populations of wildlife that use these habitat components. However the amount of dead wood is limited near private land developments to reduce fire danger.	**[While there are no quantitative objectives, proposals will be considered if deficits are identified in an area, or if excesses are identified near private land developments.]**	When restoring or thinning stands, standing live and dead den trees should be retained, clumped with other trees for protection.
WLF-5. Suitable habitat for red-cockaded woodpecker occurs on mature longleaf pine sites.	Over the planning period, the 2,200 acres identified as existing longleaf pine in 2006 are maintained as longleaf pine woodlands. Move toward restoring the desired vegetation conditions on a minimum of 4,500 acres over the planning period. Site-appropriate vegetation is established each year on an average 200 acres of potential oak-hickory sites and 100 acres of potential longleaf pine sites.	When restoring woodland structure in existing longleaf pine stands, projects should be designed to leave a sparse hardwood midstory, and at least 45 pine stems greater than 60 years in age and greater than 14 inches in diameter whenever possible..
WLF-6. An abundance of hard and soft mast is available across the Forest. Mature oaks and hickories are abundant and well distributed on appropriate sites across the Uwharrie, producing abundant crops of acorns and hickory in most years. Regenerating hardwoods (such as oaks and hickories) are evident in tree canopy gaps in multi-age forests to provide for a continuous supply of hard mast. Native fruit producing shrubs and trees are evident in many areas.	**[While there are no quantitative objectives, proposals will be considered if deficits in some described habitat element are noted.]**	Gaps created for oak and hickory regeneration should average1/2 - 2 acres in size and comprise 20-30% of a stand. Classify a regeneration area as an opening until the young trees have reached a height that is approximately 20% of the tallest adjacent trees.

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
WLF-7. Ephemeral pools, ponds, swamps, seeps, bogs, and other wetlands are frequent throughout the Forest and visited by many wild animals. Conditions are secure for animals such as amphibians, including species-of-concern and species-of-interest amphibians, that use these habitats for reproducing.	**[Covered by Guidelines.]**	Stream restoration activities should include provisions to maintain or enhance existing ephemeral pools in the associated streamside forest. New ground disturbing activities should be located away from rare Ecological Systems (Glades and Barrens, Mafic Hardpan Woodland, Depression Swamps, and Seepage Wetlands) to avoid direct and indirect impacts from soil erosion and to protect bogs, swamps, and wetlands from alteration of natural hydrologic functioning.
WLF-8. Breeding, wintering, and migration, staging and stopover habitat for migratory birds is provided in ways that contribute to their long term conservation.	**[While there are no quantitative objectives, proposals will be considered if deficits in some described habitat element are noted.]**	
SWF-1. Aquatic ecosystems are diverse, with properly functioning streams providing high quality habitat for all native aquatic species, including non-game species.	Over the planning period, 1,500 linear feet of aquatic habitat is restored on sites with NCEPT or NCIBI ratings below "good." This work entails establishing cover such as by adding large wood or boulders for in-stream fish habitat, establishing stream-shading riparian vegetation, eliminating sediment sources, etc.	Emphasize aquatic habitat restoration using the following criteria: i. The condition and vulnerability of the watershed where the site is located - fair or poor sites within otherwise good condition, high vulnerability watersheds should be given first priority. ii. Degree of improvement needed to achieve "good" condition - sites rated "fair" should be restored before sites rated "poor." When thinning in pine plantations in the Streamside Forest, entries should only be every 35 to 40 years, to reduce disturbance. Vegetation cutting and use of mechanized ground disturbing equipment should stay

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
(SWF-1. Aquatic ecosystems are diverse, with properly functioning streams providing high quality habitat for all native aquatic species, including non-game species.)		more than 30 feet away from perennial streams unless such activity is needed for riparian wildlife habitat, stream channel stability, or to provide access for recreation or stream crossings. Vegetation cutting and ground disturbing equipment should stay more than 50 feet away from perennial streams if the following conditions apply: steep slopes adjacent to the stream; highly erodible soils; soil areas with little or minimal groundcover near the waterbody. Use of mechanized ground disturbing equipment should stay more than 30 feet away from intermittent streams. Refer to North Carolina Division of Forest Resources *Forestry Best Management Practices Manual* for additional guidance. When trees are felled, generally. tree portions that fall within 30 feet of a perennial stream should remain in place unless their placement is disrupting channel stability or is a public safety hazard. New or rerouted roads or **motorized** trails should be located at least 100 feet from perennial streams, and at least 30 feet from intermittent streams, except for designated stream crossings. New or re-routed **non-motorized** trails should be located at least 30 feet from perennial and intermittent streams, except for designated stream crossings and horse watering sites. When a ground disturbing project could potentially result in direct delivery of sediment

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
		to streams, erosion control measures **shall** be employed. Where roads or trails cross streams, crossings should be at right angles where possible. The design of stream crossings should first try to simulate the natural stream bottom through use of a bottomless culvert, bridge, or other spanning structure. If this isn't feasible, incorporate the appropriate outlet drops and culvert slopes. All bare soil should be seeded and/or mulched at the time of stream crossing construction. Stream restoration activities should include provisions to maintain or enhance existing ephemeral pools in the associated streamside forest.
SWF-2. Fish are plentiful in streams and lakes. Water is clean and clear of trash and pollutants, and there is in-stream habitat for fish to hide, spawn, and find food.	**[See Objective for SWF-1]**	**[See Guidelines for SWF-1]**
SWF-3. Road crossings allow for passage of fish and other aquatic animals up and down stream corridors except where there is a need to prevent non-native invasive species from moving upstream.	During the planning period approximately 10 road or trail crossings are reconstructed to improve water quality.	The design of stream crossings should first try to simulate the natural stream bottom through use of a bottomless culvert, bridge, or other spanning structure. If this isn't feasible, incorporate the appropriate outlet drops and culvert slopes.
SWF-4. Non-native aquatic species do not threaten Forest lakes, rivers, or streams.	**[Covered by Guideline.]**	Aquatic species management should avoid introduction or stocking of non-native aquatic

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
		organisms.
SWF-5. Native fresh water mussel communities are diverse and represented by multiple age-classes, with signs of reproduction evident. Appropriate habitats support sustainable populations of native freshwater mussels including those that are federally listed, regionally sensitive or locally rare. Non-native mussel species are not negatively impacting native species.	Over the planning period, native freshwater mussel populations are reintroduced in one to three appropriate aquatic systems. These reintroduction will include Federally-listed, regionally sensitive, or locally rare.	**[See Guidelines for SWF-1]**
SWF-6. Streamsides are dominated by native riparian vegetation, including trees capable of adding large woody debris for hydrologic stability and instream fish habitat. Aquatic habitat is diverse and free of unnatural sediments. Pool habitats are frequent and provide cover for many species of fish. Vegetated streamside areas are effective in providing shading to the streams and filtering sediments produced by all land management activities.	**[See Objective for SWF-1]**	**[See Guidelines for SWF-1]**
SWF-7. Stream channels are connected to their floodplains so that high streamflow events can be processed through the ecosystem without creating gullies or eroding stream banks. Man-made dikes and deposition are absent, allowing the stream to flood out of its banks and onto the floodplain in a natural way.	Over the planning period, 1,500 linear feet of unstable and/or poorly functioning stream channel are restored (in additions to habitat restoration work above).	**[See Guidelines for SWF-1]** Stream restoration designs should utilize the natural stream channel whenever possible. Stream restoration activities should include provisions to maintain or enhance existing ephemeral pools in the associated streamside forest.
SWF-8. Stream channels degraded by historic mining are exhibiting improved biological and hydrological conditions.	**[See Objective for SWF-7]**	**[See Guideline for SWF-7]**

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
SWF-9. Bogs and seeps are maintaining or increasing their size through natural hydrologic processes and fire regimes.	**[Guideline applies.]**	New ground disturbing activities should be located far enough away from rare Ecological Systems (Glades and Barrens, Mafic Hardpan Woodland, Depression Swamps, and Seepage Wetlands) to avoid direct and indirect impacts from soil erosion and to protect bogs, swamps, and wetlands from alteration of natural hydrologic functioning.
HER-1. Heritage resources are protected from loss. Significant sites are stabilized, treated, managed and preserved for their historical research value.	Each year, adverse impacts are mitigated at an average of five impacted sites.	When mitigating adverse impacts to heritage resources associated with authorized roads and trails, use the least restrictive effective means from among the following (listed in order from least restrictive to most restrictive): i. Road/trail maintenance to eliminate disturbance or erosion of site; ii. Salvage, excavation and/or stabilization of site; iii. Relocation of road or trail; iv. Closure of road or trail. New special use authorizations should have associated documentation of the compatibility of the use with the desired conditions for the areas. New minerals and energy exploration and development authorizations should have associated documentation of the compatibility of the use with the desired conditions for the areas.
HER-2. All known heritage resource sites are evaluated for significance.	Each year complete the evaluation of an average of five known but unevaluated sites	
HER-3. Visitors to the Uwharrie have opportunities to learn about the past, and how	A heritage resources interpretive trail is developed over the course of the planning	

<table>
<tr><th>Goal/Desired Conditions</th><th>Related Objectives</th><th>Related Standards & Guidelines</th></tr>
<tr><td>to protect heritage resources, through interpretive programs and information.</td><td>period.

A Passport In Time project is hosted at least every 2 years.</td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>HER-4. Archeological sites are available for scientific research.</td><td>[No actions needed at this time.]</td><td>[See Guidelines for HER-1]</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>HER-5. A Heritage Resources Overview for the Forest is complete.</td><td>During the planning period, complete one thematic evaluation for nomination to the National Register of Historic Places such as gold mines, archaic rock quarries or Revolutionary War sites.</td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>REC-1. Outstanding recreation opportunities draw visitors to the Uwharrie, provide opportunities for visitors to experience natural forest settings while enjoying physical activities with family and friends, and provide economic benefits to the local communities. Conflicts among users are rare.</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>REC-2. Expanded recreation opportunities are provided outside the Badin Lake area.</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>REC-3. The following approximate amount of acres are maintained in each of the following Recreation Opportunity Spectrum (ROS) classes, as shown on the ROS Map:

<table><tr><th>ROS Class*</th><th>Acres</th></tr><tr><td>SPNM (Birkhead Mountains Wilderness)</td><td>5,160</td></tr><tr><td>RN2S</td><td>11,144</td></tr><tr><td>RN2</td><td>20,660</td></tr><tr><td>RN1S</td><td>7,280</td></tr><tr><td>RN1</td><td>6,570</td></tr></table></td><td></td><td></td></tr>
</table>

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
REC-4. For the Badin Lake Recreation Area: the recreation sites are well maintained; the information and fee boards are up-to-date and provide appropriate information to the public; user conflicts on trails, roads and within the recreation area are minimized; recreation impacts to the natural resources and heritage resources are reduced through improved conservation education programs, signage, and interaction of Forest Service employees with the users of the National Forest.		
TRL-1. Exceptional trails are available for hikers, horseback riders, off-roaders, mountain bikers, hunters and anglers. The trails are designed, constructed, and maintained so that a variety of levels of challenge is available and minimal damage occurs to other forest resources such as soil and water.	Each year an average of 10 combined miles of substandard hiking, bike, horse, or OHV trail are improved, with the emphasis being horse trail and OVH trails in the Badin area. A minimum of one to two miles of unauthorized trails are closed per year, considering the following priority: 1. Those impacting archeological sites; 2. Those impacting rare communities; 3. Those impacting streamside forests	When improving trails or mitigating adverse impacts from trails, consider improving user experience and user safety through reroutes or connectors to make loops. Project designs to construct or improve trails should incorporate ideas and suggestions from trail users as much as practical. New or rerouted trails should avoid mine tailings, which have the potential to leach dangerous substances. When mitigating adverse impacts to heritage resources associated with authorized roads and trails, use the least restrictive effective means from among the following (listed in order from least restrictive to most restrictive): i. Road/trail maintenance to eliminate disturbance or erosion of site; ii. Salvage, excavation and/or stabilization of site; iii. Relocation of road or trail; iv. Closure of road or trail.

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
TRL-2. The trail system has trails of varied lengths, including loop trails and trails with multiple access points. Trail users are well-informed about the trails and about ways to minimize their impacts on the environment during their visits. Many trails have vistas – points along the trails that allow for long-range views.	**[See Objectives for TRL-1 & VIN-1]**	As trails are maintained, existing vistas should be maintained where appropriate to provide long-distance views and opportunities for new vistas should be considered. Designation of motorized trails should follow procedures outlines in CFR 212.55. When constructing or relocating trails, consider the following when selecting the location: • Avoiding damage to cultural resources; • Minimizing conflicts between different uses; • Minimizing damage to soil, watershed, vegetation, and other resources; • Operational feasibility (considering desired user experience, infrastructure needs, size of usable area, and financial sustainability).
TRL-3. Trails are safe and safe vehicle parking is nearby. Trails and trailheads are well marked and easy to find; trails that cross roads are well marked for safety at all intersections. There are few hazard trees. For added safety, horse use and OHV use occurs on separate trails.	Over the planning period all intersections are signed where trails cross open Forest Service roads, to increase visitor safety. Signs are replaced as needed. An average of one trailhead per year is in an improved condition. This may involve increasing visibility of trailhead for ease of locating; providing needed information at the trailhead; establishing, maintaining or improving the parking area.	
TRL-4. Recreation use is dispersed across the Forest and there is good trail access for	**[See Objective for TRL-1]**	

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
visitors to both northern and southern portions of the Forest.		
TRL-5. The 50-mile Uwharrie National Recreation Trail is complete and marked for hikers. That portion on National Forest System lands has high scenic integrity.	**[Refer to description of management approaches for Trails and Lands in Chapter 2.]**	
TRL-6. Mountain biking occurs only on designated roads and trails in several parts of the Forest.	**[See Objectives for TRL-1]**	**[See Guidelines for TRL-1 & TRL-2]**
TRL-7. Horseback riding occurs only on a designated trail system, with camping and watering areas. Riders are informed about how to ride safely. Horse trails are well designed and maintained to provide varied user experiences (easy to more rugged) while minimizing resource damage. While trails avoid wet areas, access is available to horse watering areas. While on the horse trails, visitors seldom see evidence of litter or erosion and sediment transport into streams.	**[See Objectives for TRL-1]**	**[See Guidelines for TRL-1 & TRL-2]**
TRL-8. An OHV trail system exists that is well designed and maintained to provide varied user experiences (easy to more difficult) while minimizing resource damage. Designated OHV routes are clearly defined on maps and on the ground, and off-highway vehicles are operating only on designated routes during the established open season. Little sediment can be seen entering streams from the OHV system, and trails are free of litter.	**[See Objectives for TRL-1]**	**[See Guidelines for TRL-1]**
TRL-9. Well-trained partners and volunteer groups are working to maintain or improve the trail systems.	An average of five annual trail design and/or maintenance workday occurs with a trail partners group. Work may include fixing or	

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
	maintaining erosion control and proper drainage, and removing litter.	
FAC-1. Developed recreation areas such as campgrounds, restrooms, showers a shooting range are clean, safe, and in good repair. Campgrounds are available, convenient, and appropriately designed for a variety of Forest visitors.	**[While there are no objectives for new facilities, proposals will be considered if needed to better meet the desired condition.]**	Project designs to add or improve facilities should use suggestions and information from forest users and district employees as sources of design ideas..
FAC-2. Parking areas and trailheads exist for users at convenient locations and are well-designed for their intended use, including parking for vehicles towing trailers to the OHV area and horse trails. Forest users are parking in a safe manner along roads: not blocking roads, and not impacting adjacent landowners.	**[New or different parking areas may be included in the overall recreation plan that is anticipated within the next two years. While there are no objectives for new parking areas, proposals will be considered if needed to better meet the desired condition.]**	
FAC-3. Trash receptacles are located at high-use areas. Forest visitors are informed to pack out their own trash and as a result generally leave the forest cleaner than they found it.	**[While there are no objectives for new trash receptacles, proposals will be considered if needed to better meet the desired condition.]**	
WBR-1. Access to the water is available for water-oriented activities such as canoeing, kayaking, power boating, fishing, waterfowl hunting, and horse watering. These access points are located in areas that do not degrade the aquatic resources and provide safe, reliable access for users of all abilities where practical.	Fishing opportunities are improved through location and construction of at least one new bank angler access area during the planning period. During the planning period boating opportunities are improved at one existing boating access area and increase by adding one additional boating access area on the Uwharrie River.	
WBR-2. A water-based trail provides recreationists with floating opportunities on		

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
the Uwharrie River and may connect with trails on other ownerships.		
WBR-3. Fish habitats are healthy and sustainable, promoting a positive angling experience.	**[See Objectives for Soil, Water, and Fisheries]**	**[See Guidelines for Soil, Water, and Fisheries]**
WBR-4. The outstandingly remarkable scenic, historic, and cultural values of the Uwharrie River and the outstandingly remarkable fish and wildlife values of Barnes Creek are evident on those portions that traverse the Uwharrie National Forest.	**[No actions needed at this time.]**	New special use authorizations should have associated documentation of the compatibility of the use with the desired conditions for the areas. New minerals and energy exploration and development authorizations should have associated documentation of the compatibility of the use with the desired conditions for the areas.
WLD-1. The wilderness exhibits little evidence of modern human disturbance, and is remote from the sights and sounds of 21st-century civilization such as traffic from roads. Natural processes such as succession, decomposition and natural regeneration, and disturbance factors such as fire, wind, and water shape vegetation. Large areas of uninterrupted habitat provide a safe haven for animals.	During the planning period complete one condition assessment for the trails and dispersed campsites within the Birkhead Mountains Wilderness. During the planning period develop a site-specific Wilderness Management Guide for the Birkhead Mountains Wilderness that incorporates a Limits of Acceptable Change (LAC) or similar approach to monitoring Wilderness conditions.	Non-restrictive means of managing visitor use such as information and education should be attempted prior to instituting use restrictions. Trail signage should be minimal and only be used for identifying a trail or trail intersections. Management actions should not encourage more use of the wilderness. Wilderness condition monitoring should incorporate relevant elements of the Chief of the Forest Service's 10-year Wilderness Stewardship Challenge.
WLD-2. Visitors to the area include nature enthusiasts, hikers, hunters, and researchers. No facilities are present other than directional signs. Motorized or mechanical vehicles,	During the planning period develop an emergency response plan for the wilderness area.	[**See Guidelines for WLD-1.**]

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
equipment, or devices are absent. Information signs are not seen within the wilderness boundary.		
WLD-3. Lightning caused fires are allowed to play their natural ecological role as long as they occur within prescribed weather and fuel conditions and do not pose unmitigated threats to life/and or private property, particularly in the wildland urban interface. Prescribed fire helps replace the natural fires interrupted by human activity outside the wilderness boundaries.	During the plan period develop a fire plan for the wilderness area.	The management of lightning caused wildland fires is allowed when the Fire Management Plan is completed and a Wildland Fire Implementation Plan is approved for the specific wildland fire. When managing fires: • Hose lays, foam and wetting agents may be used to control fire. • Use minimal impact suppression techniques on all fires when possible. When suppressing fire: • Only allow exceptions to the restrictions on the use of motorized equipment and motorized and mechanical vehicles in cases of extreme emergency during wildfire suppression. Exceptions can be allowed by District Ranger, except tractor plow use which requires Regional Forester approval. • Use Minimum Impact Suppression Tactics which employ suppression methods and equipment that cause the least alteration of the wilderness landscape, least disturbance of the land surface, least disturbance to visitor solitude, least reduction of visibility during periods of visitor use, and least effects on air quality related values. With the exception of firelines, only allow rehabilitation of a burned area if necessary to prevent an unacceptable loss of wilderness resources or to protect resources outside the

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
		wilderness. Perform necessary revegetation work with plant species native to the wilderness area. Allow prescribed fire when needed to reduce a buildup of fuels to an acceptable level and to decrease the risks and consequences of wildland fire escaping from wilderness. Natural barriers such as trails or creeks/streams will be the preferred firebreak for management ignited prescribed fire. Small firebreaks built by hand may be necessary in some instances where natural barriers do not occur.
SCE-1. Scenery is natural appearing and generally consists of older, multi-storied, closed-canopy forests, or park-like or semi-open forests, except in young regeneration areas, woodlands, prairie-like openings, glades, and wildlife openings.	**[Vegetation Objectives will help achieve this desired conditions for scenery.]**	
SCE-2. Viewpoints along roads and trails reveal mid- and long-distance views of attractive environments.	**[Guideline applies.]**	As trails are maintained, existing vistas should be maintained where appropriate to provide long-distance views and opportunities for new vistas should be considered.
SCE-3. The Uwharrie National Forest is free of litter and refuse.	**[No Objective identified. Proposals will be considered if needed to better meet the Desired Condition.]**	
SCE-4. The following approximate amount of acres are maintained in each of the displayed Scenic Integrity categories (refer to the Recreation and Scenery Settings map): **Scenic Integrity** | **Acres**		

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
Objective*		
Very High	5,160	
High	18,424	
Moderate	27,230	
[The very high scenic integrity acres are the Birkhead Mountains Wilderness. The high scenic integrity acres include, among other areas, all the Special Areas (see Chapter 4), and the Uwharrie National Recreation Trail corridor.]		
VIN-1. Visitors have access to accurate maps and detailed information so they can have a safe, positive experience in the forest. Information on trails includes distances, difficulty, and trailhead locations.	At least one Uwharrie National Forest recreation opportunity guide for public use is produced within 5 years. Produce additional or updated information as needed thereafter.	
VIN-2. Up-to-date printed information such as brochures or visitor guides is widely distributed and available at other area attractions such as the zoo, and at area visitor/welcome centers.	**[See Objective for VIN-1]**	
VIN-3. Visitors have access to natural and cultural history information, including interpretive exhibits. Information on both aquatic and terrestrial resources is available.	At least one Uwharrie National Forest conservation education/natural history guide for public use is produced within 5 years. Produce additional or updated information as needed thereafter. Aat least one Uwharrie National Forest cultural heritage education/ conservation guide for public use is produced within 5 years. Produce additional or updated information as needed thereafter.	
VIN-4. Visitors are informed about ways to	To produce at least one Uwharrie National	

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
lessen their impact on the environment, including the importance of staying on trails; minimizing impacts to soil, water, vegetation and wildlife; not littering in the forest or not leaving trash at campsites, parking areas, or the rifle range.	Forest conservation education/natural history guide for public use within 4 years. Produce additional or updated information as needed thereafter.	
RDS-1. Roads open to public vehicles are safe for forest visitors in non-4-wheel-drive vehicles and for emergency vehicles: there are no gullies, washouts, or slides; there are adequate turnouts or passing areas and adequate sight distances; the road surface is relatively smooth. Some heavily traveled Forest roads are paved. Some roads may be open seasonally to provide recreation opportunities.	Grade surfaces, and clean culverts and ditches along at least 12 miles of open system roads as needed each year.	
RDS-2. Many existing roads are not open to public motorized vehicles, to reduce human disturbance to wildlife and reduce maintenance costs. Roads **not** open to public motor vehicles are available for use by hikers. Mountain bikers and horseback riders use these only if they are a part of the relevant designated trail system. The road surface is free of gullies and is generally covered with native materials or native grasses and forbs. The road edges are intact and not broken by excessive traffic of forest visitors. During rain events, water is able to seep into the soil gradually without causing erosion.	**[See strategies for Roads in Chapter 2]**	A 70% ground cover of permanent vegetation should be established by the end of the first growing season following the end of use of temporary roads, skid trails, and log landings.
RDS-3. There is little evidence of new road construction. Unauthorized roads are non-existent.	Over the planning period, all known unauthorized roads are closed, restored, or obliterated unless some portion is determined needed for the transportation system.	When constructing or relocating roads, consider the following when selecting the location: • Avoiding impacts to the special features of Special Interest Areas;

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
		• Avoiding the spread of invasive species and; • Avoiding impacts to the hydrologic functions. New or relocated roads should avoid mine tailings, which have the potential to leach dangerous substances. When constructing or relocating roads look for opportunities for vistas and enhancing scenery.
RDS-4. A negligible amount of sediment from roads is reaching streams.	**[Guidelines apply.]**	New or rerouted roads or motorized trails should be located at least 100 feet from perennial streams, and at least 30 feet from intermittent streams, except for designated stream crossings. When a ground disturbing project could potentially result in direct delivery of sediment to streams, erosion control measures should be employed. Where roads or trails cross streams, crossings should be at right angles where possible. The design of stream crossings should first try to simulate the natural stream bottom through use of a bottomless culvert, bridge, or other spanning structure. If this isn't feasible, incorporate the outlet drops and culvert slopes identified in *Evaluation of a predictive model for upstream fish passage through culverts*. All bare soil should be seeded at the time of

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
		crossing construction. When mitigating adverse impacts to heritage resources associated with authorized roads and trails, use the least restrictive effective means from among the following (listed in order from least restrictive to most restrictive): i. Road/trail maintenance to eliminate disturbance or erosion of site; ii. Salvage, excavation and/or stabilization of site; iii. Relocation of road or trail; iv. Closure of road or trail.
LND-1. Uwharrie National Forest land base is sufficient to protect wilderness values; provide habitat, refuges and corridors for native wildlife; provide special areas to improve ecological integrity; provide views and vistas; and provide a variety of outdoor recreation opportunities.	**[No quantifiable Objectives are specified since proposals for land adjustment typically arise from external sources.]**	Consider the following when setting priorities for land adjustment and acquisition: improving recreation access especially to rivers and lakes; filling gaps along the Uwharrie National Recreation Trail; providing for ecological connectivity with other conservation ownerships; and improving management efficiency. Land exchanges should be designed to biological diversity of the Forest.
LND-2. The land base is adequate to accommodate completion of the Uwharrie National Recreation Trail.	**[SEE ABOVE]**	**[See Guidelines for LND-1]**
LND-3. The land base is adjusted to provide adequate access for water-based recreation, including access to the Uwharrie River.	**[SEE ABOVE]**	**[See Guidelines for LND-1]**
LND-4. The land base is mostly contiguous to allow for better resource management; however isolated tracts with special resource values are also a part of the land base.	**[SEE ABOVE]**	**[See Guidelines for LND-1]**

Goal/Desired Conditions	Related Objectives	Related Standards & Guidelines
SPU-1. Permanent structures associated with special uses are centrally located or concentrated on existing sites or designated corridors, minimizing the number of acres encumbered by special use authorizations.	**[No quantifiable Objectives are specified since proposals for special uses typically arise from external sources.]**	New special use authorizations should have associated documentation of the compatibility of the use with the desired conditions for the areas. Special use authorizations **shall** include terms and conditions to protect any existing federally listed species and suitable habitat present in the area, and direction to reduce impacts to sensitive or locally rare species.
MIN-1. Minerals and energy developments meet legal mandates to facilitate production of mineral and energy resources on the Forest in a manner that minimizes adverse impacts to surface and groundwater resources, and that do not detract from meeting other desired conditions applicable to the area.	**[No quantifiable Objectives are specified since proposals for minerals and energy uses typically arise from external sources.]**	Minerals and energy exploration and development authorizations should have associated documentation of the compatibility of the use with the desired conditions for the areas. Minerals and energy exploration and development in Schweinitz's Sunflower HMA **shall** include terms and conditions to protect existing federally listed species populations and suitable habitat present in the area, and to reduce impacts to any species-of-concern or species-of-interest populations.

Appendix B –Proposed and Possible Actions

Proposed and possible actions includes a summary of the types of projects that may occur in the planning period to maintain or move toward the desired conditions. These are not commitments and would have to go through a project-level decision making process.

Fire Management

Restoring and maintaining native ecosystems on the Uwharrie involves the periodic burning of many of the ecological systems. These burns also serve to reduce fuel loading which will lessen the chances of catastrophic wildfire. While most planned burns are expected to occur in the dormant season, increasingly, burns will also be carried out during the growing season.

Air Quality

The Forest Service must receive permission from the North Carolina Division of Air Quality prior to the line officer approving any project proposed for Davidson and Randolph counties likely to contribute emissions, since both counties have been designated as non-attainment for ground-level ozone, and fine particulate matter. Prescribed burning is the action most likely to contribute emissions, and the prescribed burning program is expected to be as great or greater than has occurred in the past planning period. Most of the emissions estimated from prescribed fires on the Uwharrie NF are likely to be released in Montgomery County, which is unlikely to be designated as non-attainment for the fine particulates; however some prescribed fire is likely to occur in the non-attainment counties. The Forest Service must follow State regulations and Region 8 guidelines in regard to smoke management.

Wildlife and Fisheries

Wildlife management involves the establishment and maintenance of habitat components needed to provide food, cover, shelter, and water for animals. Typical actions include establishment and maintenance of wildlife openings and food plots, actions needed to ensure a continuous supply of hard mast (such as acorns and hickory nuts), soft mast (fruits and berries), and browse (soft stems, grasses and herbs), and actions needed to manage access, such as closing unauthorized roads and trails to ensure habitat free from the disturbance of motor vehicles.

Fisheries management may include actions needed to ensure a steady stream of large woody debris is available to provide in-stream nutrients; actions needed to ensure streamside shading and stream bank stability; and actions needed to prevent the unnatural

accumulation of sediments from sources such as roads and trails. Reintroduction of native freshwater mussel populations is also likely to occur.

Recreation and Scenery

Recreation management actions include those that are associated with controlling visitor impacts; those associated with construction and maintenance of facilities and trails; and those associated with providing a positive visitor experience. Specifically, the following types of actions are likely to occur:

- Trail construction, reconstruction, maintenance and relocation;
- Construction of facilities such as parking areas, toilets, trailheads, information kiosks, fishing access and boating access points;
- Maintenance of facilities such campgrounds, picnic areas, toilets, a shooting range, and parking lots.

Scenery management involves primarily actions to mitigate the effects of other activities, whether these activities are USDA Forest Service projects or activities associated with visitor use. Most of these mitigation measures are associated with treating the vegetation so that the impacts of management are less obvious. For example, slash from logging or prescribed burning would likely be chopped up so that it lays close to the ground in highly scenic areas, thus reducing the visual impact.

Scenery management may also involve actions to create and maintain vistas along roads and trails.

Lands and Special Uses

Lands program actions are likely to include maintaining land-lines, and actions associated with adjusting NFS ownership through purchases, exchanges, or other conveyances.

Special Use program management involves permitting uses such as easements, structures such as communication towers, outfitter/guides, and activities such as military exercise and special events.

Heritage Resources

Likely actions in the Heritage Resources program area involve primarily conducting surveys to identify significant sites, and follow-up actions to protect, stabilize, or salvage sites. Law enforcement is important element of heritage resource protection, since such sites are subject to frequent vandalism and illegal collection of artifacts.

Roads

Road grading, ditching, application of gravel and paving are actions associated with roads management. Construction, reconstruction, and relocation are likely to occur to some extent to support resource management. Unauthorized roads are likely to be closed and perhaps obliterated.

Water

Stream restoration actions are likely to occur at selected stream segments to improve degraded conditions and stream channel stability. Such actions may include reshaping stream banks to stable slopes; removing streamside berm material that disconnects streams from floodplains; constructing instream structures to stabilize the channel and improve aquatic habitat; planting riparian-type vegetation; and treating noxious weeds in riparian areas.

All streams within the Uwharrie boundary are currently identified by the state as meeting state water quality criteria. The Uwharrie River upstream of the NFS lands has been proposed for listing on the state 303(d) list of impaired waters, but this would not impact management on the federal lands. Forest Service assessment of stream channel condition has identified stream reaches that are in need of restoration along Big Creek and McClean's Creek. Excessive road and trail-derived sediments are present in reaches of Moccasin Creek and Dutch John Creek and actions to reduce future inputs of sediment are likely to occur. This may entail road and trail maintenance, reconstruction, rerouting, and/or closure.

Vegetation Management

Vegetation management activities include the fire management program, already described in this section, and the silviculture/timber sales programs. The silviculture/timber sale program areas apply active management to the vegetative resource in order to move the forest toward desired conditions (see Chapter 1, VEG-1 through VEG-9). Activities described in this section include timber sales such as intermediate timber harvest (thinning), and silvicultural harvest treatments that are even age in nature (clearcut, or two-age regeneration), or uneven age (group selection). The estimated or projected size of the vegetation management program (acres of management activity) is based on the ecological needs of the resource, tempered by the historical budget and personnel levels for the Uwharrie National Forest.

[Continued on the next page]

Following is a table showing estimated average annual vegetation treatments to be applied to the Uwharrie National Forest for the first decade covered by this plan:

Estimated Vegetation Management Practices
(Annual Average Treatment Area (Acres) in First Decade for Lands Generally Suitable for Timber Harvest)

Practice	Primary Management Emphasis						
Lands where Timber Production Achieves, or is Compatible with Desired Conditions and Objectives	**Timber Prod.**	**Water Yield**	**Wildlife/ Fisheries**	**Recreation/ Scenery**	**Fire/Fuels/ Forest Health**	**Ecological Restoration**	**Totals**
Regeneration Cutting (even- or two-aged)						266	266
Uneven-aged Management							
Intermediate Harvest							
Commercial Thinning					400	34	434
Salvage/Sanitation							
Other Harvest Cutting							
Reforestation						266	266
Timber Stand Improvement						300	300
Other Lands		**Water Yield**	**Wildlife/ Fisheries**	**Recreation/ Scenery**	**Fire/Fuels/ Forest Health**	**Ecological Restoration**	**Totals**
Regeneration Cutting (even- or two-aged)							
Uneven-aged Management							
Intermediate Harvest							
Commercial Thinning							
Salvage/Sanitation							
Other Harvest Cutting							
Reforestation							
Timber Stand Improvement							

Note that timber harvesting activity in the first decade is dedicated primarily toward restoration of ecosystems and commercial thinning for forest health reasons. To see estimated activity levels in future decades, refer to the timber resource analysis documents that are in the Plan Set of Documents.

[Continued on the next page]

The timber sale activities described above will yield wood products to the commercial markets in the form of pulpwood and sawtimber. The following table shows the estimated average annual outputs (MBF = Thousand Board Feet, and MCF = Thousand Cubic Feet) from the harvesting described above – the **Timber Sale Program Quantity**:

Timber Sale Program Quantity
(Annual Average Volume Outputs for First Decade)

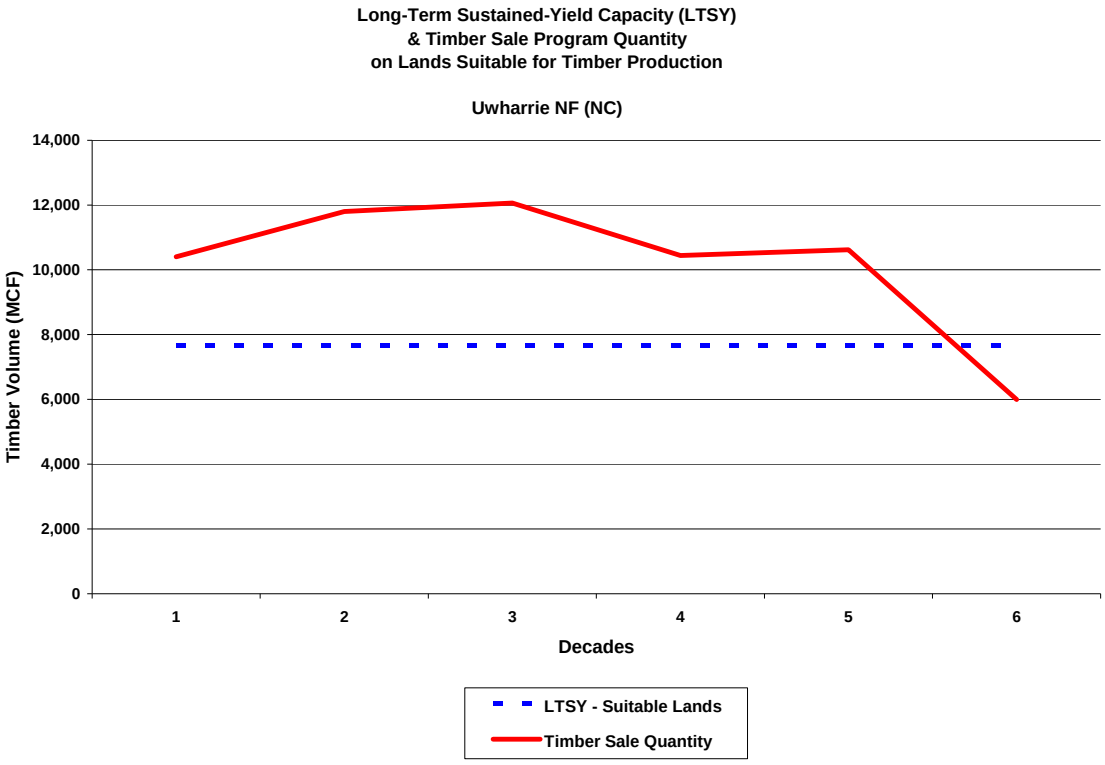
Practice	Timber Sale Program Quantity (TSPQ) By Management Emphasis						
Lands where Timber Production Achieves, or is Compatible with Desired Conditions and Objectives	**Timber Prod.**	**Water Yield**	**Wildlife/ Fisheries**	**Recreation/ Scenery**	**Fire/Fuels/ Forest Health**	**Ecological Restoration**	**Totals**
Regeneration Cutting (even- or two-aged)						570	570
Uneven-aged Management							
Intermediate Harvest							
Commercial Thinning					450	20	470
Salvage/Sanitation							
Other Harvest Cutting							
Subtotal, Sawtimber (MBF)					750	1,475	2,225
Subtotal, All Products (MCF)					450	590	1,040
Other Lands		**Water Yield**	**Wildlife/ Fisheries**	**Recreation/ Scenery**	**Fire/Fuels/ Forest Health**	**Ecological Restoration**	**Totals**
Regeneration Cutting (even- or two-aged)							
Uneven-aged Management							
Intermediate Harvest							
Commercial Thinning							
Salvage/Sanitation							
Other Harvest Cutting							
Subtotal, Sawtimber (MBF)							
Subtotal, All Products (MCF)							
Grand Totals – Sawtimber (MBF)					750	1,475	2,225
Grand Totals, All Products (MCF)					450	590	1,040

Note that neither table indicates harvesting activity on "Other Lands", which include "available for harvest" but not "suitable for timber production" (see Chapter 4). While this plan does not estimate, in advance, that harvesting will occur on these lands, it does acknowledge that harvesting may be necessary on these lands to address an unforeseen future event such as wind storm, ice storm, or insect/disease infestation.

Vegetation Management Requirements at the Project Level – This plan makes the general determination about National Forest lands that are suitable/not suitable for timber harvest, and timber production. Final decisions about a proposed project that involves timber harvest are made at the project level. In making this determination, the following factors must be evaluated at the project level and documented in the project or case file (Reference FSH 1909.12, Chapter 61).

- A determination must be made that the project will not cause irreversible damage to resources such as soil productivity or watershed condition;
- That the area can be adequately re-stocked according to the plan's objectives for achieving desired conditions;
- In the case of regeneration harvest, stands should generally have reached culmination of mean annual increment (CMAI). (Note that the themes of this plan have to do with restoration of ecosystems, and replacing off-sit species with more appropriate vegetation)

Finally, the harvest levels proposed must be compared to the long term sustained yield (LTSY) calculated for the Uwharrie National Forest. The following chart depicts the LTSY of 7,672 MCF per decade, compared to the estimated harvesting levels, by decade:



This chart depicts an initial rise in the timber sale program quantity followed by a decline. This is a reflection the activity needed to restore native ecosystems. A great amount of volume will be available from the loblolly plantations as they are removed in the early decades and the land is restored to longleaf pine and oak-hickory forests. The restored types produce much less volume per acre than loblolly plantations. Once the backlog of loblolly is removed, the timber sale program quantity is expected to decline in the latter decades as it approaches the LTSY, which is the amount of timber that could be removed in perpetuity once the forest reaches it desired condition of restored longleaf and oak-hickory communities. For more details, refer to the Timber Resource Analysis in the Plan Set of Documents.

Appendix C – Appropriateness of Regeneration Harvest Methods

Regeneration methods expected to be used to implement desired conditions include **clearcutting** and **clearcutting with reserves** (even-aged management system), **shelterwood with reserves** (two-aged system), and **group selection** (uneven-aged system). At this time, single-tree selection (uneven-aged management) is not being considered as appropriate in meeting long-term regeneration needs to sustain productive stands of desirable tree species on the Uwharrie NF because regeneration objectives for shade-intolerant species would not be met.

Clearcutting and/or clearcutting with reserves would be used only for the following reasons:

1. *To establish, enhance, or maintain habitat for threatened, endangered, or sensitive species.*
2. *To enhance wildlife habitat or provide for scenic vistas.*
3. *To rehabilitate lands adversely impacted by events such as fires, windstorms, or insect or disease infestations.*
4. *To preclude or minimize the occurrence of potentially adverse impacts of insect or disease infestations, windthrow, logging damage, or other factors affecting forest health.*
5. *To provide for the establishment and growth of desired trees or other vegetative species that are shade intolerant.*
6. *To rehabilitate poorly stocked stands or remove off-site tree species that occur due to past management or natural events.*
7. *To meet research needs.*
8. *To restore longleaf pine, shortleaf pine, or oak-hickory on sites currently occupied by off-site species..*

These circumstances would be referred to on a site-specific basis when showing that clearcutting is optimum for a given stand.

The **shelterwood with reserves (or two-age)** regeneration method perpetuates at least two distinct ages of timber growing on the same site. Since reserve trees do not have to support another operable sale, they do not have to be merchantable and not as many have to be left. The type and arrangement of reserve trees retained would depend on site-specific objectives. Basal area of reserve trees should typically average 15-25 sq ft/acre and should not exceed 30 sq ft/acre fifteen years after harvest to prevent reserve trees from hindering further growth and development of the new stand. The two-age method is appropriate in operable stands on slopes less than 40 percent whenever there are enough leave trees that would live to be a part of the stand for 50-100 years into the future. Two-age could be appropriate to meet objectives other than timber production, e.g. if continuous acorn production is needed within a stand, or if den trees are scarce, or if aesthetics is a consideration. Two-age is not appropriate in stands where there are few suitable reserve trees, or in stands where insect or disease hazards are high and widespread. It is also not appropriate where leaving a loblolly pine or Virginia pine seed source would hinder restoration efforts.

Regeneration using the **group selection** method is appropriate where slopes are gentle enough to allow ground skidding of timber (logging costs are relatively low) and where there is enough volume and value in the stands to make selection cutting operable. Group selection is not appropriate in very small stands, on slopes greater than 40 percent where cable logging is required, where timber volume or value is low, or in stands where insect or disease hazards are high and widespread. It is also not appropriate where partial cutting and leaving a loblolly pine or Virginia pine seed source would hinder restoration efforts

Appendix D – Species Scientific Names and NatureServe Community References

Species Scientific Names

Common name	Scientific Name
Plants	
American beech	*Fagus grandiflora*
American holly	*Ilex opaca*
American strawberry bush	*Euonymus americanus*
Black cohosh	*Cimicifuga racemosa*
Black highbush blueberry	*Vaccinium atrococcum*
Black oak	*Quercus velutina*
Black-edge sedge	*Carex nigromarginata*
Blackjack oak	*Quercus marilandica*
Blaspheme-vine	*Smilax laurifolia*
Bloodroot	*Sanguinaria canadensi*
Blue huckleberry	*Carex nigromarginata*
Broomsedge	Andropogon virginicus virginicus
Bushy broomsedge	*Andropogon glomeratus*
Butterfly pea	*Clitoria mariana*
Buttonbush	*Cephalanthus occidentalis occidentalis*
Carolina shagbark hickory	*Carya carolinae-septentrionalis*
Carolina supplejack	*Berchemia scandens*
Carolina thistle	*Cirsium carolinianum*
Chalk maple	*Acer leucoderme*
Cherrybark oak	*Quercus pagoda*
Chestnut oak	*Quercus montana*
Christmas fern	*Polystichum acrostichoides*
Common chinquapin	*Castanea pumila* var. *pumila*
Common foamflower	*Tiarella cordifolia var. collina*
Common pawpaw	*Asimina triloba*
Common spicebush	*Lindera benzoin*
Common winterberry	*Ilex verticillata*
Cross-vine	*Bignonia capreolata*
Deerberry	*Vaccinium stamineum*
Dissected toothwort	*Cardamine dissecta*
Eastern red maple	*Acer rubrum var. rubrum*
Ebony spleenwort	*Asplenium platyneuron* var. *platyneuron*
Elliott's broomsedge	*Andropogon gyrans*
Evergreen bayberry	*Andropogon gyrans*
Farkleberry	*Vaccinium arboretum*
Fringetree	*Chionanthus virginicus*
Galax	*Galax urceolata*

Common name	Scientific Name
Giant cane	*Arundinaria gigantea*
Glade wild quinine	*Parthenium auriculatum*
Green ash	*Fraxinus pennsylvanica*
Highbush blueberry	*Vaccinium corymbosum*
Hillside blueberry	*Vaccinium pallidum*
Horsesugar	*Symplocos tinctoria*
Indian grass	*Sorghastrum nutans*
Indigo-bush	*Amorpha schwerinii*
Inkberry	*Ilex decidua*
Ironwood	*Carpinus caroliniana ssp caroliniana*
Lamp rush	*Juncus effuses*
Large witch-alder	*Fothergilla major*
Little bluestem	*Schizachyrium scoparium*
Loblolly pine	*Pinus taeda*
Longleaf pine	*Pinus palustris*
Long-stalked Aster	*Symphyotrichum dumosum* var. *dumosum*
Maidenhair fern	*Adiantum pedatum*
Mockernut hickory	*Carya alba*
Mountain laurel	*Kalmia latifolia*
Muscadine	*Vitis rotundifolia*
New Jersey tea	*Ceanothus americana*
Northern green-and-gold	*Chrysogonum virginianum*
Northern oat grass	*Danthonia spicata*
Northern red oak	*Quercus rubra*
Overcup oak	*Quercus lyrata*
Persimmon	*Diospyros virginiana*
Piedmont indigo-bush	*Amorpha schwerinii*
Pignut hickory	*Carya glabra*
Post oak	*Quercus stellata*
Poverty oat-grass	*Danthonia spicata*
Purple pitcher plant	*Sarracenia purpurea*
Ravine sedge	*Carex impressineriva*
Red hickory	*Carya ovalis*
Red maple	*Acer rubrum*
Red oak	*Quercus rubra var. rubra*
Redbud	*Cercis Canadensis*
River birch	*Betula nigra*
Royal fern	*Osmunda regalis spectabilis*
Sand hickory	*Carya palida*
Schweinitz's sunflower	*Helianthus schweinitzii*
Sedges	*Carex* spp.
Shagbark hickory	*Carya ovata*
Ship nuthatch	*Scleria triglomerata*
Shortleaf pine	*Pinus echinata*

Common name	Scientific Name
Silky oat grass	*Danthonia spicata*
Silverbell	*Halesia tetraptera var. tetraptera*
Southern anemone	*Anemone berlandieri*
Southern blackhaw	*Viburnum rufidulum*
Southern red oak	*Quercus falcate*
Southern wild raisin	*Viburnum nudum* var. *nudum*
Sphagnum moss	*Sphagnum* spp.
Splitbeard bluestem	*Andropogon ternarius var. ternarius*
Squaw-huckleberry	*Vaccinium stamineum*
Starved witch grass	*Dichanthelium depauperatum*
Swamp chestnut oak	*Quercus michauxii*
Swamp red maple	*Acer rubrum* var. *trilobum*
Sweetgum	*Liquidambar styraciflua*
Sycamore	*Platanus occidentalis*
Tag alder	*Alnus serrulata*
Thin-pod white wild indigo	*Baptisia albescens*
Ti-ti	*Alnus serrulata*
Tulip poplar	*Liriodendron tulipifera*
Virginia goat's-rue	*Tephrosia virginiana*
Virginia pine	*Pinus virginiana*
Virginia red cedar	*Juniperus virginiana var. virginiana*
Virginia sweetspire	*Itea virginica*
Water oak	*Quercus nigra*
White ash	*Fraxinus americana*
White oak	*Quercus alba*
Whorled milkweed	*Asclepias verticillata*
Whorled milkweed	*Asclepias verticillata*
Willow oak	*Quercus phellos*
Winged elm	*Ulmus Americana*
Winged sumac	
Wood anemone	*Anemone quinquefolia* var. *quenquefolia*
Woodland tick-trefoil	*Desmodium nudiflorum*
Yellow indiangrass	*Sorghastrum nutans*
Yellow pitcher plant	*Sarracenia flava*
Yellow root	*Xanthorhiza simplicissima*
Yellow yam	*Xanthorhiza simplicissima*
Terrestrial animals	
Bald eagle	*Haliaeetus leucocephalus*
Black bear	*Ursus americanus*
Black duck	*Anas rubripes*
Canada goose	*Branta canadensis*
Dove	*Zenaidura macroura*
Eastern cougar	*Felis concolor*
Mallard	*Anas platyrhynchos*
Mole salamander	*Ambystoma talpoideum*

Common name	Scientific Name
Mottled dusky wing	*Erynnis martialis*
Pintail	*Anas acuta*
Quail	*Calinus virginianus*
Rabbit	*Sylvilagus floridans*
Red-cockaded woodpecker	*Dendrocoposn borealis*
Squirrel	*Sciurus carolinensis*
Turkey	*Meleagris gallopava*
Whitetail deer	*Odocoileus virginianus*
Wood duck	*Aix sponsa*
Aquatic animals	
Atlantic pigtoe mussel	*Fusconaia masoni*
Carolina creekshell mussel	*Villosa vaughaniana*
Carolina darter (central Piedmont population) fish	*Etheostoma collis (population 1)*
Carolina elktoe mussell	*Alasmidonta robusta*
Carolina fatmucket mussel	*Lampsilis radiata conspicua*
Carolina fatmucket mussel	*Lampsilis radiata conspicua*
Eastern creekshell mussel	*Villosa delumbis*
Greensboro burrowing crayfish	*Cambarus catagius*
Notched rainbow mussel	*Villosa constricta*
Roanoke slabshell mussel	*Elliptio roanokensis*
Savannah lilliput mussel	*Toxolasma pullus*
Squawfoot mussel	*Strophitus undulatus*
Squawfoot mussell	*Strophitus undulatus*
Triangle floater mussel	*Alasmidonta undulata*
Triangle floater mussel	*Alasmidonta undulata*
Yellow lampmussel mussel	*Lampsilis cariosa*

Rare Communities and NATURESERVE Reference

NAME	NATURESERVE REFERENCE
Acidic glade	Piedmont Acidic Cliff, CEGL003979
Basic Cliff	in part CEGL003982
Basic Mesic Forest	CEGL008466
Basic Oak–Hickory Forest	CEGL007773 and CEGL004541
Basic Piedmont Bluff Glade	CEGL004443
Basic Piedmont Glade	CEGL004443
Basic Rocky Variant of the Xeric Hardpan Forest	CEGL003713
Dry Basic Oak--Hickory Forest	CEGL007773 and CEGL004541
Dry Oak–Hickory Forest	CEGL007244
Dry ridgetop shortleaf pine forest	no Natureserve equivalent
Dry-mesic Basic Oak--Hickory Forest	CEG7237, CEGL007236, and CEGL007232
Dry-Mesic Oak–Hickory Forest	CEGL008475
Dry-Oak Hickory Forest	CEGL007244
Hillside Seepage Bog	CEGL004781
Low Elevation Rocky Summit	derivative of CEGL008437
Low Elevation Seep	no Natureserve equivalent
Mesic Mixed Hardwood Forest	CEGL008465
Open-canopy grassy glade community	in part CEGL004443
Piedmont Acidic Cliff	CEGL003979
Piedmont Alluvial Forest	in part CEGL004549, CEGL004550, and CEGL007388
Piedmont Boggy Streamhead	CEGL004551
Piedmont Longleaf Pine Forest	in part CEGL008437 and CEGL003663
Piedmont Mafic Cliff	CEGL003982
Piedmont Monadnock Forest	CEGL006281
Piedmont/Coastal Plain Acidic Cliff	CEGL003979
Piedmont/Coastal Plain Heath Bluff	CEGL004446
Piedmont/Low Mountain Alluvial Forest	in part CEGL004549, CEGL004550, and CEGL007388
Piedmont/Mountain Levee Forest	CEGL004419
Rocky Bar and Shore	CEGL004286
Upland Depression Swamp Forest	CEGL007403
Xeric Hardpan Forest	CEGL003714

Glossary

Activity. A measure, course of action, or treatment that is undertaken to directly or indirectly produce, enhance, or maintain a desired condition or objective on a Forest, Grassland, Prairie, or other comparable administrative unit.

Advance Reproduction.Young trees, usually seedlings and saplings, growing in the understory of existing stands.

Biodiversity/Biological Diversity. The variety and abundance of species, their genetic composition, their communities, and the ecosystems and landscapes of which they are a part.

Clearcutting (for Even-Aged Regeneration). Removal, in a single cutting, of older trees to establish a new stand of trees in a fully exposed microclimate. All merchantable trees on an area are harvested, and remaining trees are cut or killed in site preparation. Regeneration is from stump sprouts, seedling sprouts, natural seed in place or from adjacent stands, direct seeding, planted seedlings, and/or advance reproduction. Cutting may be done in groups or patches (Group or Patch Clearcutting), or in strips (Strip Clearcutting). This method would be used only when no other method is feasible.

Clearcutting with Reserves (for Even-Aged Regeneration). Similar to clearcutting, but where up to 10 sq ft/ac of basal area of reserve trees are not cut or harvested and are left indefinitely to attain management goals other than regeneration.

Collaboration. People working together to share knowledge and resources to describe and achieve desired conditions for National Forest System (NFS) lands and for associated social, ecological, and economic systems in a plan area. Collaboration applies throughout the planning process, encompasses a wide range of external and internal relationships, and entails formal and informal processes.

Commercial Forest Products. For the purposes of this plan, merchantable sawlogs, small roundwood, biomass, and other forest products removed in the process of harvesting or cutting trees from NFS lands.

Desired Conditions. The social, economic, and ecological attributes toward which management of the land and resources of the plan area are to be directed. Desired conditions are aspirations and are not commitments or final decisions approving projects and activities, and may be achievable only over a long time period (36 CFR 219.7).

Developed Recreation Site. Outdoor recreation area requiring significant capital investment in facilities to handle a concentration of visitors on a relatively small area. Examples are campgrounds and picnic areas.

Disturbance. A relatively discrete event, either natural or human-induced, that causes a change in the existing condition of an ecological system.

Diversity of Plant and Animal Communities. The distribution and relative abundance or extent of plant and animal communities and their component species, including tree species, occurring in an area (36 CFR 219.16).

Downed Wood. Fallen trees, large dead branches, and large fragments of wood found on or near the forest floor. These provide living spaces for a host of organisms and serve as long-term storage sites for moisture, nutrients, and energy.

Ecological Conditions. Components of the biological and physical environment that can affect diversity of plant and animal communities and the productive capacity of ecological systems. These components could include the abundance and distribution of aquatic and terrestrial habitats, roads and other structural developments, human uses, and invasive, exotic species (36 CFR 219.16).

Ecological Processes. The actions or events that link organisms and their environment, such as predation, mutualism, successional development, nutrient cycling, carbon sequestration, primary productivity, and decay.

Ecosystem, Ecological System. An interacting system of living organisms and their environment.

Ecosystem Diversity. The variety and relative extent of ecosystem types, including their composition, structure, and processes within all or a part of an area of analysis (36 CFR 219.16).

Eligible Wild and Scenic River Corridor. For the Uwharrie National Forest, ¼ mile zone on either side the those segments of the Uwharrie River and Barnes Creek that traverse National Forest System lands.

Endangered Species. A plant or animal species listed under the Endangered Species Act that is in danger of extinction throughout all or a significant portion of its range.

Federally Recognized Indian Tribe. An Indian or Alaska Native Tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian Tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. 479a (36 CFR 219.16).

Felsic. Indicative of the presence of feldspars and silicates in the underlying rocks.

Fire Return Interval. Time (in years) between two successive fires in a designated area.

Fire Regime. The fire pattern across the landscape, characterized by occurrence interval and relative intensity. Fire regimes result from a unique combination of climate and vegetation. Fire regimes exist on a continuum from short-interval, low-intensity stand maintenance fires to ling-interval, high intensity stand replacement fires.

Forest Land. Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use. Lands developed for non-forest use include areas for crops, improved pasture, residential or administrative areas, improved roads of any width and adjoining road clearing, and powerline clearings of any width (36 CFR 219.16).

Free Thinning. Cutting trees that are diseased or damaged, suppressed by other trees, or that are crowding other trees. The best trees in terms of species, size or quality are left to grow. Some minimum basal area is usually set using this type of timber stand improvement.

General Forest. For the purposes of this plan, Uwharrie National Forest System land that is not one of the following: Streamside Forest, Special Area, Eligible Wild and Scenic River Corridor, Developed Recreation Site, Schweinitz's Sunflower Habitat Management Area.

Group Selection Cutting (for Uneven-Aged Regeneration). Cutting small areas between 0.2 and 1.0 acre each, distributed over a large area, with the intent over time to establish three or more distinct age-classes. Width of an individual opening would be 1.5 - 2 times the height of trees adjacent to the opening. Small trees having good growth potential may be left standing within openings, and priority for openings would be where mature timber occurs. The number of openings would depend on the size of the area where selection would be used, the frequency of timber sale entry, and the desired age of the oldest trees. Intermediate harvests to improve the condition of the residual stand or to establish advance regeneration may be done between openings when needed.

Guidelines. Information and guidance for project and activity decision-making to help achieve desired conditions and objectives in the plan area (36 CFR 219.7).

Habitat. (a) An area in which a specific plant or animal can naturally live, grow, and reproduce. (b) For wildlife, habitat is the combination of food, water, cover, and space.

Heritage Resources. Such resources as archeological, historical, or architectural sites, structures, places, objects, ideas, and traditions that are identified by field inventory, historical documentation, or evidence and that are important to specified social or heritage groups or scientific and management endeavors.

Invasive Species. Non-native species that are introduced into an area in which they did not evolve, and in which they usually have few or no natural enemies to limit their reproduction and spread. These species can cause environmental harm by significantly changing the ecosystem composition, structure, or processes, and can cause economic harm or harm to human health.

Land Adjustment Plan. A document to guide the long-range (5-10 years) land ownership program and to plan the annual program of work at the regional and forest levels. In this context, land adjustment includes purchases and donations of land or interests in land,

exchanges, interchanges or transfers with other federal agencies, sales, grants, title claims and reconveyance of land erroneously acquired.

Lands Generally Suited for Timber Harvest. Lands where timber production is compatible with the achievement of desired conditions and objectives established by the plan, and Other lands where salvage sales or other harvest necessary for multiple-use objectives other than timber production may take place.

Limits of Acceptable Change. A set of criteria that has been created to protect or restore the conditions necessary to maintain wilderness values that visitors seek. It focuses on limiting change to resources and social encounters that, if overused, would degrade the wilderness experience and resource.

Long-term Sustained-yield Timber Capacity. The highest uniform wood yield that may be sustained under specified management intensities consistent with multiple-use objectives after stands have reached desired conditions.

Mafic. Indicative of the presence of magnesium and iron in the underlying rock.

Mesic. Of, characterized by, or adapted to a moderately moist habitat.

Mineral Resource: A concentration of naturally occurring solid, liquid or gaseous material in or on the Earth's crust in such form and amount that economic extraction at a profit may be feasible under current or future conditions.

Monitoring. A systematic process of collecting information to evaluate changes in actions, conditions, and relationships over time and space or progress toward meeting desired conditions or plan objectives.

Multiple Use. The management of all the various renewable surface resources of the National Forest System so they are used in the combination that will best meet the needs of the American people: making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in the use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output (Multiple Use-Sustained-Yield Act 1960, U.S.C. 531).

National Forest System. All National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010-1012), the Midewin Tallgrass Prairie, and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system (16 U.S.C. 1608).

National Recreation Trail. Trails designated by the Regional Forester as part of the National system of trails authorized by the National Trails System Act.

National Wild and Scenic River System. Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition.

Native Species. Species indigenous to an area of analysis. Animals or plants that have historically occupied a given aquatic or terrestrial system.

Natural Appearing. Landscape character that has resulted from human activities, yet appears natural, such as historic conversion of native forests into farmlands, pastures, or other areas that have reverted back to forests through reforestation activities or natural regeneration.

Niche. In this plan, the Forest's role in contributing to social, economic, and ecological sustainability.

Non-forest Land. Lands that do not meeting the definition of forest land.

Not Suitable for Timber Harvest. Lands where:

a. Statute, Executive order, or regulation prohibits timber production on the land; or the Secretary of Agriculture or the Chief of the Forest Service have withdrawn the land from timber harvest;
b. Soil, slope, or other watershed conditions will be irreversibly damaged by timber harvest;
c. There is no assurance the land could be adequately restocked within fiver years after harvest;
d. Trees are unable to grow due to environmental conditions.

Objectives. Concise projections of measurable, time-specific intended outcomes. The objectives for a plan are the means of measuring progress toward achieving or maintaining desired conditions. Like desired conditions, objectives are aspirations and are not commitments or final decisions approving projects and activities (36 CFR 219.7).

Performance Measure. Indicators used to quantify outcomes of plan's desired conditions and objectives.

Plan. A document, or set of documents, that integrates and displays information relevant to management of the National Forest System unit (36 CFR 219.16).

Plan Area. The National Forest System lands covered by a plan (36 CFR 219.16).

Plan Components. Broad guidance in a plan that identifies desired conditions, objectives, guidelines, suitability of areas, and special areas.

Plan Set of Documents. The complete set of documentation supporting conclusions reached in the land management plan and it may include but is not limited to: evaluation reports, documentation of public involvement, the plan including applicable maps, applicable plan improvement documents, applicable NEPA documents if any, the monitoring program for the plan area, and documents relating to the EMS established for the unit.

Planning Period. NFMA call for plans to be revised every at least every 15 years. For the purposes of this plan the planning period is 15 years.

Prescribed Fire. Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements (where applicable) must be met prior to ignition.

Program Strategies. A multi-year course of action proposed under a given set of assumptions and constraints.

Project. An organized effort to achieve an objective identified by location, activities, outputs, effects, times, and responsibilities for execution.

Public Lands. Any land, and interest in land, administered by the Secretary of the Interior through the Bureau of Land Management (Federal Land Policy and Management Act of 1976). This includes the mineral estates underlying National Forest System lands.

Public Participation. Activities that include a wide range of public involvement tools and processes such as collaboration, public meetings, open houses, workshops, and comment periods (36 CFR 219.16).

Recreation Opportunity Spectrum. A framework of land delineations that identifies a variety of recreation experience opportunities categorized into classes on a continuum. The Spectrum's continuum has been divided into six major classes for Forest Service use: Urban (U), Rural (R), Roaded Natural (RN), Semi-Primitive Non-Motorized (SPNM), Semi-primitive Motorized (SPM), and Primitive (P) (FSM 2311). Most of the Uwharrie National Forest is classified as Roaded Natural since it the whole area (public and private land) is highly roaded, and few areas are remote. The Uwharrie has areas classified as RN1, RN2, and SPNM:

- RN1 – A sub-classification of Roaded Natural setting generally located within a half mile of an open road. Interaction between users is moderate and evidence of other users is prevalent.
- RN2 – a sub-classification of Roaded Natural that, while still near open roads, has a generally lower road density than RN1. Interaction between users is lower than in RN1.
- SPNM – An area characterized by a predominantly natural-appearing environment of moderate-to-large size. Interaction between users is low. On the Uwharrie National Forest, only the Birkhead Mountains Wilderness meets this definition.

Restoration. The act of putting something back to a prior position, place, or condition.

Sanitation Thinning. Cutting trees that have been attacked or appear in imminent danger of attack from injurious agents (such as disease or insects) other than competition between trees. The best trees in terms of species or vigor are left to grow. No minimum basal area is set using this type of timber stand improvement.

Scenic Integrity Objectives (SIO). A desired level of excellence based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations to the valued attributes of the characteristic landscape. Objectives include Very High, High, Moderate, and Low. These categories are defined below:

- Very High – Generally provides for only ecological changes in natural landscapes and complete intactness of landscape character in cultural landscapes.
- High – Human activities are not visually evident to the casual observer. Activities may repeat attributes of form, line, color, and texture found in the existing landscape.
- Moderate – Landscapes appear slightly altered. Noticeable human created deviations remain visually subordinate to the landscape character being viewed.

Schweinitz's Sunflower Habitat Management Area. That portion of the Uwharrie National Forest classified as having the ecological attributes that make it most conducive to restoring Schweinitz's sunflower.

Shelterwood with Reserves (for Two-Aged Regeneration). Similar to clearcutting with reserves, but where 15-30 sq ft/ac of basal area of reserve trees are not cut or harvested to attain management goals other than regeneration and so that two distinct ages of trees are maintained on the same site. Depending on diameter, this could be between 7 and 40 trees per acre (fewer large trees are required to reach a given basal area) left in clumps or uniformly distributed across the stand. Reserve trees should be long-lived since they may be expected to live 40 years or more past their present age.

Silvicultural System. A planned series of treatments for tending, harvesting, and re-establishing a stand. The system name is based on the number of age classes (coppice, even-aged, two-aged, uneven-aged) or the regeneration method (clearcutting, seed tree, shelterwood, selection, coppice) used.

Snag. A standing dead tree.

Special Areas. Areas in the National Forest System designated for their unique or special characteristics (36 CFR 219.7).

Species Diversity. The number and relative abundance of different species within a plan area.

Species. Any member of the currently accepted and scientifically defined plant or animal kingdoms of organisms (36 CFR 219.16).

Stand. A community of trees or other vegetation sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities and so form a silvicultural or management entity.

Streamside Forest. For the purposes of this plan, a 100-foot zone on both sides of all perennial streams, and all alluvial forest (an area of alluvial deposition such as a flood plain or delta). Streamside forests provide shading, stability to stream banks, a source of coarse wood for in-stream habitat, and special habitat components such as cover and travel corridors for wildlife.

Successional Stages. The different structural and compositional phases of vegetation development of forests, grasslands, and prairies that occur over time and include the major developmental or seral stages within a particular environment.

Suitability. The appropriateness of a particular area of land for applying certain resource management practices, as determined by an analysis of the existing resource condition and the social, economic, and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

Sustainability. Meeting needs of the present generation without compromising the ability of future generations to meet their needs. Sustainability is composed of desirable social, economic, and ecological conditions or trends interacting at varying spatial and temporal scales embodying the principles of multiple-use and sustained-yield.

Timber Harvest. The removal of trees for wood fiber use and/or other multiple-use purposes.

Timber Production. The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use (36 CFR 219.16).

Timber Sale Program Quantity (TSPQ). The estimated output of timber from the plan area. The estimate is displayed as an average annual cubic foot output for a decade. It includes projected outputs from lands generally suitable for timber harvest. The projected timber outputs reflect past and projected budget levels and organizational capacity to achieve the desired conditions and objectives in the plan (36 CFR 219.12 and FSM 1921.12).

Transportation and Utility Corridor. A parcel of land, without fixed limits or boundaries, which is used as the location for one or more transportation or utility right-of-ways.

Unauthorized road or trail. A road or trail that is not included in a forest transportation atlas. Typically, user-created trails outside the established trail system.

Universal Access. Programs and facilities are accessible to all people, thereby providing for the integration of all people in outdoor developed recreation areas, without separate or segregated access for people with disabilities.

Watershed Condition. The state of the watershed based on physical and biogeochemical characteristics and processes such as hydrologic, geomorphic, landscape, topographic, vegetative cover, and aquatic habitat, water flow characteristics and processes such as volume and timing, and water quality characteristics and processes such as chemical, physical, and biological as they affect water quality and water resources (65 FR 62572, October 18, 2000).

Wilderness. Any area of land designated by Congress as part of the National Wilderness Preservation System that was established in the Wilderness Act of 1964 (16 U.S.C. 1131-1136), (36 CFR 219.16).

Wildlife opening. An area with few trees but abundant shrubs, grasses and other herbaceous vegetation that provides concentrated food sources for certain wildlife species, especially in winter and spring. A *planted* wildlife opening may include areas that are sown with grains, warm season grasses, or other crops that mimic the type of habitat provided by old-time farm fields.

Xeric. Of, characterized by, or adapted to an extremely dry habitat.