

**Wee Tee State Forest**

**South Carolina Forestry Commission**

**SFI Manual**

**May, 2014**

**Working Document**

*This document is in development stages, and does not  
officially represent the goals and objectives  
of the South Carolina Forestry Commission.*

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## Scope

This SFI Manual was developed for the improved long-term management of Wee Tee State Forest. Wee Tee State Forest (previously known as the Hollingsworth Santee River Tract) is approximately 12,439 acres, located primarily in Williamsburg County, with roughly 40 acres in Georgetown County. Exact location is West of US 17A and SC41 (40 acres are East of these roads and up to CSX Railroad). The southern boundary is the Santee River and the northern boundary is the high water line of the swamp and S-45-45 (Santee River Public Road #45).

John Hollingsworth purchased this tract in 1970 from the former Williams Furniture Company. The land consisted of three parcels consisting of 11,514.8 acres, 149 acres and 775 acres respectively. The total acreage is 12,438.8.

The entire tract was contract logged by Georgia Pacific Corporation for a 10-year period lasting from 1971 to 1981. All roads in the swamp portion of this tract were built during that period for access purposes. These roads were maintained by Wee Tee Hunt Club, which leased the hunting rights on the property. That lease expired on December 31, 2003.

The majority of the tract consists of bottomland hardwoods which border the Santee River and floods periodically, primarily depending on rainfall amounts upstream and subsequent releases from Lake Marion. This greatly affects access to this entire area, as well as the condition of the road system.

Currently, most of the interior roads are deeply rutted and the bridges are in ill repair. This presents a general safety hazard and limits access to public vehicles, especially heavier equipment utilized in logging operations.

## Company Description

Wee Tee State Forest is managed as one contiguous blocks, and stands are delineated at an appropriate scale for management (Figures 1 & 2). Data for these stands is maintained in a GIS, which contains all relevant stand level data. As a State Forest, we are committed to long-term sustainable management of the resource for multiple use purposes. However, unique to our Agency, our State Forests are mandated to be self-supporting, with the majority of our income coming from timber harvest operations. Therefore, within the scope of our management approach, and our attempt to provide the people of South Carolina with greatest and best use of the Forest, we do so with the over-arching requirement that significant timber harvesting will be required.

Figure 1. Wee Tee State Forest stand delineations.

## Wee Tee State Forest SFI Commitments

PM 16.1 Indicator 1 PM 14.2 Indicator 1
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### **A. Formal commitment to the SFI Standard**

The South Carolina Forestry Commission and Wee Tee State Forest in particular are committed to the SFI Standard, and following the guidelines for the Standard as part of our State Forest Lands management program.

### **B. Formal commitment to comply with applicable social laws**

The South Carolina Forestry Commission and Wee Tee State Forest in particular are committed to complying with all social laws, including but not limited to those covering civil rights, equal employment opportunities, anti-discrimination and anti-harassment measures, workers' compensation, indigenous peoples' rights, workers' compensation, indigenous people's rights, workers' and communities' right to know, prevailing wages, workers' right to organize and occupational health and safety.

### **C. Fiber sourcing policy**

The South Carolina Forestry Commission and State Forest land division has not developed and does not have plans to develop a fiber sourcing policy. However, while it is not within the operational scope of our State Forest lands to have a robust fiber sourcing policy in place, we do adhere to many principles of sustainable forestry and best use of forest products. All harvests conducted must be done in strict accordance with BMP guidelines, and we monitor harvesting operations to ensure compliance.

# Forest Land Management (SFI Objectives 1-7)

## 1. Forest Management Planning

PM 1.1 Indicator 1,2,3,4,5

PM 4.2 Indicator 2

PM 17.1 Indicator 5

### A. Forest management plan(s)

Sustainability is and always should be a sine qua non of responsible forest management. In accordance with the Long Range Plan for the South Carolina Forestry Commission State Lands, Wee Tee State Forest will be managed to be a healthy, productive, forested ecosystem, while improving the quality of life of South Carolina's citizens through the environmental, educational, economic, and recreational benefits of active forest management. The individual management goals can be subdivided into the following four broad categories.

#### *Environment*

Wee Tee State Forest will serve as a leader in environmental protection by implementing science-based, multiple-use forest management practices. Conservation of biological diversity will be a high priority. Protection of soil, water, and air resources will be an integral part of all forest management activities.

#### *Education*

Wee Tee State Forest will be utilized as an outdoor classroom, providing the necessary educational resources and opportunities to raise the awareness of the benefits of forest resource management. We will strengthen our association with colleges and universities to promote forestry-related research and outreach to forest landowners and forestry professionals. Our State Forest will be used as a training center for agency personnel to meet job demands.

#### *Economy*

Wee Tee State Forest will contribute to local and state economies through the sustainable production and sale of forest products. Comprehensive planning, using the latest technology, will be employed to determine sustainable harvest levels. Revenue will be utilized to further the mission of the agency.

#### *Recreation*

Wee Tee State Forest will provide outdoor recreation, compatible with forest management activities. Through statewide and local planning efforts and on-site monitoring, we will involve technical experts and user groups in determining the optimal levels of recreational opportunities at each State Forest.

### ***Timber Harvesting and Stand Management***

The management objectives identified specific to Wee Tee State Forest are listed as follows:

- Management of timber
  - Improve current stand inventory, and delineate sensitive areas
  - Manage bottomland forest for long-rotation hardwood sawtimber
  - Continue to manage for upland pine plantation
  - Allow upland mixed forest stands to develop naturally
- Develop infrastructure to support harvesting and recreational activities
- Maintenance of soil and water quality
- Conservation of significant environmental and cultural resources
- Allow forest to be used as a demonstration site of forest practices
- Support low-impact recreational use for the following identified activities
  - Hunting and fishing
  - Non-motorized boating
  - Road and trail use for hiking and mountain biking as posted

Previous silvicultural activities have left a significant impact on the characteristics of the existing forest. Removal of high value timber, in form, grade and species, has resulted in stands predominantly of poor quality timber. While in some cases the current species composition may still provide adequate forage and habitat for wildlife, the timber value has been degraded such that immediate regeneration harvests for much of the bottomland areas are needed. Delay of such activity could reduce the presence in the understory of those desirable species that would benefit from such activity.

The following descriptions of stands and recommended management activities is still under development. Through partnerships with several local and regional groups, we are working to redress the specific management actions and their respective timing to ensure we meet Agency goals within reasonable parameters of public approval. Recommendations are presented here reflect those set forth in the previous management, with updates specific to recent harvest activity and new stand delineations, as necessary. Notably, the largest portion of the forest is swamp bottomland hardwood forest, and discussed following as Unit 1 (stands). The subsequent stands (2-8) are those areas outside the floodzone, and occupy higher elevations where other stand types have developed or been planted.

**UNIT (stands) 1**

ACRES: 10,590

TYPE: swamp hardwoods; oak, ash, gum, bald cypress, maple, poplar, and elm

AGE: uneven aged natural regeneration

STAND DENSITY (TPA): varies

STAND STOCKING (Basal area): varies

SITE INDEX: 80

SOILS: indicated by the soil map as predominately Chastain and Tawcaw Silty Clay Loams

**Present Condition**

10,590 acres of swamp hardwoods located adjacent to the Santee River. This area floods periodically, and is frequently inundated to an extent that access is limited and logging operations must be halted. Under previous management this area has been treated as one contiguous stand, however current designation as Unit 1 is being replaced by current harvesting activities and planned forest inventory delineating new stands. This entire area was selectively harvested between 1971 and 1981 by Georgia Pacific Corporation under a cutting contract with Mr. Hollingsworth. Some isolated pockets were left uncut due either to BMP issues or access problems. Tree species include: ash, maple, oak, gum, bald cypress, poplar, hackberry and elm. Stand characteristics range from pulpwood size timber with a few sawtimber size trees scattered throughout, to standing open water with over-mature gum and baldcypress. Some over-mature, residual cull trees left standing provide habitat for a variety of wildlife species.

This large unit is currently composed of several stands, ranging in size from 50 to several hundred acres, which collectively are being managed as swamp bottomland forest. However, these stands, as described following, will be further dissected based on on-going inventory work, which will allow for this tract of timber to eventually be broken down into stands of a size more suitable for management prescriptions. Due to the nature of this forest, and the frequent flooding associated with it, inventory efforts have been severely limited. The following section identifies the status of stands within this tract that have been delineated thus far.

**Stand 101**

Located at the extreme Northwest portion of our bottomland tract, this area experiences flooding to a lesser extent than sections further downstream along the Santee River. Still, a network of sloughs and channels create for challenging conditions for access and hauling. This residual large block of timber has not been further delineated into smaller stands, however plans are underway, and much of the inventory data has been updated. Harvest activities have been conducted in and around this area, and as they have taken place, the residual areas have acquired stand numbers and associated management designs, leaving the larger area untouched. Through inventory development and the incorporation of elevation and hydrology gradients, we envision this portion of the forest to be

most active in timber harvesting activity over time. Currently, we view the current timber as high-graded, low-quality forest type, wherein most of the desirable species and representatives have been removed. Rotational harvesting in this area will be conducted using small clearcut, leave-tree, and/or other harvest techniques as deemed necessary for a specific area following stand delineation and during harvest planning.

Final Stand Condition- To develop this large stand into smaller management units, and perpetuate the forest as a healthy bottomland cover type, consisting of a wide variety of species and variable according to the hydrologic conditions present. Regular harvesting will be conducted over an 80+ year rotation, although some harvesting may be done early for recreational, research or other purpose. While our harvesting techniques are designed to favor specific species we identify as beneficial to wildlife and timber value, primarily oak and similar species, we recognize that recent changes to the hydrology of this Forest, due to the installation of a re-diversion channel to the adjacent Santee river, the underlying hydrology may have shifted such that species composition may change regardless of any management activities taking place.

#### **Stands 105, 106, 107, 108, 109, 216**

These stands, while structurally are as described above as Unit one, functionally are isolated from the rest of the bottomland forest by recent harvest activity and existing water bodies. As adjacent stands develop and thus allow for harvest constraints to be met, the ability to conduct some harvesting activity in these stands increases. It should be noted that these areas are along some of the larger hydrologic features of the Forest, namely Wee Tee Lake and its associated headwater stream, and thus BMP shall have a large impact on how harvesting is conducted. It may be more desirable to thin this stand, with residual stems favoring desirable species while allowing harvest activity to enter the riparian and lacustrine zones.

Final Stand Condition- As mentioned above, uncertainty driven by changing hydrology makes it challenging to identify which species may succeed post-harvest. However, our efforts will focus on creating a healthy, bottomland forest with mixed species composition benefitting wildlife and improved timber value.

#### **Stands 110, 111**

These two stands were rotationally harvested in 2006-07, and are assuming height conditions that meet the green-up constraints within our long-range plan. Assessment of species composition should be made within the next 3-5 years, however general stand inspections of this stand were conducted within the first growing year, and the regeneration of oak species from stump sprouts was noted. This stand was identified as being of a greater desirable species composition than other areas nearby, most notably any other portions of stand 101, which is why it

was targeted for harvesting early. We are cautious in predicting that other harvest areas will respond to rotational treatments as positively.

Final Stand Condition- A bottomland hardwood forest with a noticeable composition of desirable, high value timber species present, with an 80+ year rotational return.

**Stands 102, 103, 104, 208, 209, 213**

These stands are harvest areas, having experienced rotational clearcutting between 2008-2012. Harvesting was conducted in areas where stand composition suggested harvesting would improve resultant stand composition. Located originally within Stand 101, these stands are being allowed to naturally regenerate. As mentioned above, we hope that response to harvest will be as positive as in earlier harvest areas, we recognize that initial stand composition was more diverse and composed of more high-graded areas and resultant stand composition may be negatively impacted.

Final Stand Condition- A bottomland hardwood forest with a noticeable composition of desirable, high value timber species present, with an 80+ year rotational return.

**Stand 213**

Similar in structure and size to stand 101, this large block is located in the central portion of the bottomland forest, and is notably affected by several large water bodies, including Wee Tee and Little Wee Tee lakes. Further, large harvests conducted by previous owners were done on the most accessible (and assumed highest quality) timber within this tract, as described following. Harvesting becomes more limited in this block, as haulage is only provided through main roads in Stand 101.

Final Stand Condition- To develop this large stand into smaller management units, and perpetuate the forest as a healthy bottomland cover type, consisting of a wide variety of species and variable according to the hydrologic conditions present. Regular harvesting will be conducted over an 80+ year rotation, although some harvesting may be done early for recreational, research or other purpose. Due to location and overall slightly reduced elevation, we anticipate a more noticeable change in species composition across this stand, and our resultant management will reflect these changes as they become apparent. Specifically, areas dominated by cypress are present in the sloughs and other more frequently flooded areas, and we anticipate these areas may have increased due to changes in hydrology.

**Stands 210, 212, 311**

These large stands were rotationally harvested ~15-20 years ago, and are forested by timber still in the sapling stage. Some sampling was conducted in these stands, and found regeneration stock of a good species composition (desirable oak, ash,

and good form in associated species of elm, maple, and sweetgum). These stands will be further reduced in total acreage as they mature, along species gradient lines if present, and/or hydrology as needed, from up to 500 acres to a targeted acreage of 30-50 acres per stand.

**Final Stand Condition-** To reduce individual size over time, and to maintain these stands as healthy bottomland forest types, and favor species where possible that are most beneficial to wildlife while maintaining high value for timber management through harvest activity on an 80 year or greater rotation. Some areas of this stand are expected to be delineated as natural cypress and/or cypress/gum stands, or spatially associated with stands as such, and impacts of proper BMP implementation suggest very limited harvest activity in these areas.

### **Stands 214, 320, 321**

These stands have been identified as more characteristically flooded timber, creating significant challenges to harvesting. Furthermore, the timber present is generally of a lesser quality than much of the rest of this bottomland forest, providing less revenue incentive based on harvest costs and reduced stumpage values. Our current management plan is to allow these stands to develop naturally as protected sites, and without any harvest recommendations in the foreseeable future. Given time and any changes in hydrology, access or stand structure, this status may be changed to allow for limited harvesting.

**Final Stand Condition-** Naturally flooded timber, with cypress, gum, and other naturally site-tolerant species being managed continuously under these conditions for recreational, aesthetic, and wildlife benefits. Some limited harvesting may be done to maintain this condition, to improve access, or to improve wildlife or other benefits as may be required.

### **Stand 317**

The southern-most large block of this Unit, stand 317 is the most susceptible to flooding and long-term inundation than any other portion of Wee Tee State Forest. With large sloughs present, and its relative proximity to the lower Santee River, this portion of the forest is also more effected, though limited during most of the year, to tidal fluctuations of the river. Inventory data for this portion of the forest is limited, though current collection efforts are under contract with an outside forest professional, and should be completed by the end of 2014 (data was originally planned to have been collected and developed at the time of this document's creation, regular flooding of the Santee river has prevented access by Agency personnel or any other). Initial timber assessment is that Stand 317 is of lower quality timber, and recent changes in the hydrology of the Santee River are affecting the species composition of this portion of the forest. Extremely limited access to much of this area exclude the option of significant harvest activity.

**Final Stand Condition-** Following the reduced stand generalization into a mosaic of stands based on species gradients (as present) hydrology, and access, final

condition of this stand will ultimately be driven by the increased flooding experienced since installation of the re-diversion canal into the Santee River. We anticipate continual change of species composition down a hydrologic gradient, with species most tolerant of inundation being favored. During drier years or periods, harvesting activity may take place over an 80+ year rotation, with specific attention given to the post-harvest effects on stand conditions.

### **Stands 341,342,342**

These small stands were recently rotationally harvested, and should be allowed to naturally regenerate. The presence and abundance of oak species on these stands should provide for adequate regeneration of desired stand composition.

Final Stand Condition- A bottomland hardwood forest with a noticeable composition of desirable, high value timber species present, with an 80+ year rotational return.

### **Stand 350**

Stand 350 is a wildlife and visual buffer, reducing the impact of recent harvest activity in adjacent stands. This stand should be left until the adjacent stands have reached green-up constraints, then included in any timber harvest activity in the local vicinity, if possible.

Final Stand Condition- A bottomland hardwood forest with a noticeable composition of desirable, high value timber species present, with an 80+ year rotational return.

### **Stand 400**

Located below Highway 17, and thus not contiguous with the remainder of the bottomland forest, this stand is a long, narrow mix of hardwood, with some pine present, that is bordered to the south by a major railway line. Given the location of the stand, the presence in this stand of a large breeding colony of herons, and its proximity to large bridge spans that may provide habitat for endangered species of bats, we consider this stand to be of greater benefit as habitat than under active harvest management. However, as this stand matures, some harvesting may be required from a safety concern to the adjacent travel ways, as long as it is conducted in a manner that does not negatively impact either of the wildlife concerns previously mentioned.

Final Stand Condition- This stand will be allowed to naturally regenerate as a mixed hardwood/bottomland hardwood forest with inherent benefits to wildlife.

### **Stands 900s**

These areas, delineated on the map as Stands, are actually the largest, most significant hydrology features on the Forest. We do manage these areas for public access, and this use is taken into consideration during harvest boundary delineation of adjacent stands, as described in more detail in subsequent chapters.

Final Stand Condition- Not applicable.

### **General Management Recommendations**

Specific areas where high-grading has resulted in poor quality low value stands of un-desirable species should be identified and delineated on the ground. These areas should then be regenerated producing higher quality more productive stands. Several different harvest methods should be used, including rotational harvests, seed-tree, and two-aged management harvests as required to regenerate these stands and improve overall stand composition.

Allowable rotational harvest blocks in bottomland hardwood forests have previously been identified as 150 acres in size or less. Recent involvement with outside user groups, and others have determined that harvest size, when possible, should be in application limited in size to under 100 acres(preferably 50), with several smaller harvests in a given vicinity more desirable than one single harvest area. When desirable stand composition is present, the current management objective will be to allow timber to reach mature sawtimber size. This target rotation should be adhered to until appropriate growth models or experience dictates modification. These blocks shall be irregular in shape, and provide for wildlife travel corridors between clear cuts. Where necessary, stand boundaries will utilize existing road accesses.

### **Stand Type 2**

Stand 2

ACRES: 82 acres

TYPE: Planted Loblolly pine

AGE: 21 years old established 1988

STAND DENSITY (TPA): 591

STAND STOCKING (Basal area): 160

SITE INDEX: 90 ( the projected height for loblolly pine at age fifty)

SOILS: indicated by the soil map as predominately Hornsville Sandy Loam (detailed soil map along with information pertaining to the specific soil is contained in the plans "Soils" section.)

### **Present Condition**

82 acres of planted loblolly pines, planted in 1988. The entire area was bedded prior to planting on a 6'x10' spacing. There is a heavy understory of natural loblolly pine saplings, competing for space in the stand. Parts of this area are very low and subject to holding water during wet weather periods.

### **Management Recommendations**

Establish a prescribed burning program to help control the understory and to reduce threat from wildfire. This should be started within the next 2-3 years, and continued every 2-4 years thereafter.

The entire stand was scheduled for an initial thinning in budget year 2009/10 to allow for continued growth of the residual stand. This thinning was conducted as a third-row thinning, with log decks utilized for wildlife openings, wherever possible and practical. Wildlife openings of 1 acre and up in size can be incorporated into the thinning operation to create more openings. Timing of later thinnings has been generated using a harvest schedule model, however on-the-ground assessment of the appropriateness of these activities should be conducted at time scheduled.

Final Stand Condition- Given the site conditions, these stands are most suited for intensive pine plantation management, and will be kept in this regime. Following final harvest, site will be prepped and planted in loblolly pine, and managed as a timber producing forest.

### **Stand Type 3**

Stand 3

ACRES: 377

TYPE: Pine Hardwood, natural regeneration

AGE: 20 years old

STAND DENSITY (TPA): Hardwood – 154, Pine - 359

STAND STOCKING (Basal area): Hardwood – 25, Pine - 73

SITE INDEX: 90 (the projected height for loblolly pine at age fifty)

SOILS: indicated by the soil map as predominately Chisolm Loamy Fine Sand and Hornsville Sandy Loam (detailed soil map along with information pertaining to the specific soil is contained in the plans “Soils” section.)

### **Present Condition**

377 acres of “natural pine-hardwood reproduction”. This area was harvested in 1989 and allowed to naturally regenerate. Stand has mixture of oak, gum, maple, yellow poplar and loblolly pine saplings and pulpwood sized trees. Some parts of this stand have heavy pine stocking, while others are heavy to the hardwood species. Stand recently underwent a fuel-wood chipping operation, which will have lowered the non-merchantable hardwood component significantly. This has also decreased competition in the residual stand, and should result in increased diameter growth over the next several growing seasons.

### **Management Recommendations**

Allow the stand to grow for at least another 5 years, then check to see if any harvesting is feasible. The areas with heavy pine stocking should be thinned at that point in time, allowing continued increasing diameter growth for future saw-timber production and increased income. All remaining areas should be managed for a mixed pine-hardwood type forest, with emphasis on mast producing species, through thinning undesirable species.

Areas used for log decks, and any other suitable areas, should be converted to wildlife openings. The South Carolina Department of Natural Resources (DNR)

will provide technical assistance with this process. Following fuel-wood chipping, DNR will provide consultation regarding the feasibility of creating wildlife openings where large pockets of non-merchantable hardwood were removed, resulting in large open areas.

Areas of heavy pine stocking should be included in the prescribed burning regime with areas 2,6 and 8, on a rotating basis. Burning will take place on a 2-4 year rotation, or as needed.

Final Stand Condition- This stand will be kept in pine/hardwood mixed forest unless natural development leads to areas naturally suited for more intensive pine plantation. Otherwise, harvesting will be conducted as above to maintain current stand conditions.

#### **Stand Type 4**

ACRES: 86

TYPE: Planted Loblolly pine

AGE: 15 years old, established 1994

STAND DENSITY (TPA): 817

STAND STOCKING (Basal area): 136

SITE INDEX: 90

SOILS: indicated by the soil map as predominately Eunola Loamy Sand and Hornsville Sandy Loam (Detailed soil map along with information pertaining to the specific soil is contained in the plans "Soils" section.)

#### **Present Condition**

86 acres of planted loblolly pines, planted in 1994. The stand has a heavy understory of natural loblolly pine saplings, oaks and gums, and was recently thinned using third-row thinning. Stand is responding well to harvest, however canopy closure has not yet occurred.

#### **Management Recommendations**

The timing of future thinning was initially recommended by a harvest schedule model, however as previously mentioned, on-the-ground assessment of the appropriateness of these activities should be conducted at time scheduled.

Final Stand Condition- Continually maintained in pine plantation, similar to Stand 2, for timber production.

#### **Stand Type 5**

ACRES: 9

TYPE: Natural gum pond

AGE: Uneven aged

STAND DENSITY (TPA): - variable, 817 where stocked

STAND STOCKING (Basal area): - variable, 136 where stocked

SITE INDEX: 90

SOILS: indicated by the soil map as predominately Hornsville Sandy Loam (Detailed soil map along with information pertaining to the specific soil is contained in the plans "Soils" section.)

**Present Condition**

This 9 acre "gum pond" holds water year around, except in extreme dry periods. Species are black, tupelo and red gums, with a few bald cypress mixed in. Trees are mostly pulpwood to small saw timber in size. Establishment of plantation pine has been partly successful, which may suggest a shifting species composition over time. However, in more hydric portions of this stand hardwood competition has replaced this effort.

**Management Recommendations**

This area was included in harvest activities prescribed for stand 4, which entirely surrounds this area. Pine basal area was present in sufficient volumes to include in sales. However, maintaining the delineation of this area is recommended, so modifications to its management regime will be made more efficiently if the hydrology returns to favoring primarily hydric species in the future.

Final Stand Condition-As mentioned above, if allowable this stand will be managed similar to the surrounding Stand 2, otherwise following BMP guidelines the area will be maintained as a natural upland depression.

**Stand Type 6**

ACRES: 37

TYPE: natural sweet gum, oak, maple, hickory, persimmon, dogwood, yellow-poplar, holly and loblolly pine

AGE: uneven aged

STAND DENSITY (TPA): Hardwood – 406, Pine - 189

STAND STOCKING (Basal area): Hardwood – 46, Pine - 90

SITE INDEX: 90

SOILS: indicated by the soil map as predominately Hornsville Sandy Loam (Detailed soil map along with information pertaining to the specific soil is contained in the plans "Soils" section.)

**Present Condition**

This area currently consists primarily of mixed hardwood-pine upland type. The most common species associated with this type are: sweet gum, oak, maple, hickory, persimmon, dogwood, yellow-poplar, holly and loblolly pine. There is occasional shortleaf pine also on this site. There are several thick patches of pines scattered throughout the stands. Pines are mostly saw timber and pulpwood in size. Hardwoods are mostly pulpwood, with scattered saw timber size trees.

**Management Recommendations**

Allow this area to continue to grow for approximately 5-10 more years, then re-check the area for growth and a possible harvest (include at the same time as

stand 3 is cut). At that time thin areas of heavily stocked pine, using the least productive sites for log decks.

Final Stand Condition- If possible, this stand may be converted to pine plantation, and maintained as such in continuity. However, if site conditions prefer a natural mixed forest stands, then following harvest areas will be allowed to naturally regenerate.

### **Stand Type 7**

ACRES: 36

TYPE: Hardwood flat, oak, hickory, holly, persimmon, maple and ash scattered loblolly pine

AGE: uneven aged

STAND DENSITY (TPA): 332

STAND STOCKING (Basal area): 133

SITE INDEX:

SOILS: indicated by the soil map as predominately Gourdin Loam (Detailed soil map along with information pertaining to the specific soil is contained in the plans "Soils" section.)

### **Present Condition**

36 acres of "hardwood flat" located between the two stands of pine-hardwood (stands 6&8). This stand contains several mast-producing hardwood species, such as oak, hickory, holly, persimmon, maple and ash. Tree sizes are mostly saw-timber, with a few pulpwood-sized trees mixed throughout the stand. Also scattered along the edges are small patches of loblolly pines – both saw-timber and pulpwood in size.

### **Management Recommendations**

This area should be left to grow and produce mast for upland game species. When stands 6&8 are thinned, some of the pines on the edges could be cut to enhance the sale. Care must be taken not to injure the hardwoods in this operation. As stated earlier, associated wildlife openings in stands 6&8 should benefit wildlife using this stand for food and cover.

Final Stand Condition- this stand shall be allowed to develop naturally, with limited harvesting activity, unless beneficial for wildlife, access, recreation or similar need.

### **Stand Type 8**

ACRES: 128

TYPE: Hardwood-Pine Upland

AGE: 20 years old established 1989 natural regeneration

STAND DENSITY (TPA): Hardwood – 514, Pine - 85

STAND STOCKING (Basal area): Hardwood – 91, Pine - 65

SITE INDEX:

SOILS: indicated by the soil map as predominately Chisolm Loamy Fine Sand and Ogeechee Fine Sandy Loam (Detailed soil map along with information pertaining to the specific soil is contained in the plans “Soils” section.)

### **Present Condition**

Species most commonly associated with this site are: loblolly and slash pine, ash, bald cypress, oak (overcup, water, willow, swamp chestnut), gum, elm and maple. Current reproduction is mostly sapling to pulpwood in size. A few saw-timber size trees are scattered throughout the stand.

### **Management Recommendations**

This area should be left to grow for the immediate planning horizon, allowing for development of mature softwood and hardwood timber. Data provided over time through the continuous forest inventory should be used to identify a possible timber sale. Special consideration should be given to both the BMP and Visual Quality Zone(VQZ) restrictions, as this stand borders much of Wee Tee Lake, as well as the public boat access.

Final Stand Condition- As part of the areas allowing a regular harvesting regime, this stand shall be harvested on an 80+ year rotation, and allowed to naturally regenerate into a mixed stand with desirable species composition.

## **B. Assessments and forest inventories supporting long term harvest planning**

Data collected to support long-term harvest planning is part of an on-going forest inventory plan. Subsequent to and in coordination with our development of a harvest schedule model, a five-year, complete forest inventory was conducted across all State Lands, including Wee Tee State Forest. This inventory was finished in 2009, and then inventory began again, focusing more directly on areas that experienced recent harvesting activity or planting.

From 2008 through present, the South Carolina Forestry Commission, like many State agencies, has been experiencing a period of reduced budgetary capacity, and a loss of personnel across all components of the agency. This resulted in diminished capability to conduct forest inventory at our previous rate. Current efforts to increase inventory data collection have included the development of better use of onsite personnel, and our inventory methods and data collection are being updated to better meet the needs of our new harvest scheduling client.

Over-arching management of Wee Tee State Forest is supported by a robust GIS database. On-the-ground implementation of harvesting as well as other management operations rely on a GIS database that includes information on roads, soils, hydrology, endangered species, elevation, and other data as needed. These data were obtained from many different State and Federal Agencies, our developed in-house where applicable.

**C. Forest inventory updates, recent research results and recalculation of planned harvest levels**

Updating of forest inventory has recently undergone a shift, as we have changed our harvest scheduling client. Data is collected using electronic field recorders, and then uploaded to ForesTech Inc. and stored in their off-site servers. This provides better long-term maintenance of data, and also allows for information to be served Agency-wide as needed.

**D. Regional conservation planning**

While the State Forest system, and Wee Tee State Forest, are not actively part of any regional conservation planning, our Agency has been involved in some research efforts toward this goal, as described elsewhere.

**Training**

PM 16.1 Indicator 2,3,4

Training of personnel is limited to broad-based educational programs associated with maintaining Registered Forester and in some cases Certified Forester certification.

**Monitoring**

PM 20.1 Indicator 1,2

Monitoring of stand harvesting is taken place by on-site personnel. Due to the limited harvesting at Wee Tee, with many years experiencing no harvest activity at all, personnel have had little difficulty in maintaining operational oversight, and have worked closely with forest operators on all harvest activity.

**Records**

For an overview of our records, please refer to our current forest inventory (Appendix 1). Other documentation may be available in the form of harvest contracts.

## 2. Forest Productivity

### Reforestation

PM 1.1 Indicator 5
PM 2.1 Indicator 1,2,3,4,6
PM 2.5 Indicator 1
PM 14.1 Indicator 3
PM 15.1 Indicator 2

#### A. Reforestation and long term forest management planning

Most of our acreage at Wee Tee State Forest is forested, however some acreage has been cleared for wildlife openings and other uses. These areas have been kept in open field conditions where possible, or allowed to naturally regenerate.

Our Agency-wide approach to forest management is to avoid pre-commercial thinning where possible. Harvest activity at Wee Tee, due to its limited volume and frequency, is not accounted on a year over year basis. Instead, harvesting activity takes place as needed, with the minor revenue gains added to the overall State Forest Budget. We do not use or plan to use any fertilization or pruning techniques with forest management.

#### B. Reforestation program

Artificial and natural regeneration schemes are dependant on current stand cover type and desired future cover type. The following provides a general overview of how we approach these stands, however some deviation may be expected on an individual basis, simply as a result of such a large management area.

In the portion of Wee Tee in pine forest, where we are either replacing a stand with the same species, or replacing to Longleaf Pine, our plan includes artificial planting, using available seed stock from the Forest Commission Nursery program. However, in these areas where significant regeneration is evident and noticed by field personnel, we may refrain from planting and allow for natural regeneration, especially in stands of limited access or within a streamside management zone.

In the hardwood forests, and the bottomland hardwood forest in particular, we allow for natural regeneration following a clear-cut rotational harvest. Site conditions following harvest, particularly increased light penetration to the forest floor, have been found to be conducive to development of a stand of desirable species composition. In hardwood stands or more commonly mixed hardwood stands with a significant pine component or site conditions favorable for pine, we may use artificial regeneration to convert the stand to a more desirable composition.

In stands where artificial regeneration is used, we monitor the success of our planting over the years following planting to ensure we have adequate survival. Our planting density has been variable, however we generally plant from 500 (wildlife planting) to less than 700 trees per acre. Following evaluation of our seedling survival rate, we may either replant the stand or in-plant the stand depending on its condition.

In stands where natural regeneration is allowed, very little monitoring has been conducted. Some spot sampling has been conducted during years 5-10, and results have show a desirable stand component however follow-up assessments are generally not conducted,

### **C. Assessments supporting reforestation programs**

Planting is conducted generally in the late fall through early winter, which is recommended for improved success rates. Planting is conducted by contract work, through a bid proposal program as required by state law. Purchase, handling and storage of the seedlings is conducted by Manchester State Forest personnel to ensure proper techniques are adhered to, then relocated to Wee Tee State Forest as needed. Monitoring of the planting operation is also conducted to ensure proper spacing and planting depth are maintained, as outline in clear language in the planting contract.

Seedling survival rates are determined through sampling of planting sites in early spring over the 2- to 5-year period following planting. Our experience at Wee Tee State Forest has found that early assessments (first and second-year post-planting) capture good estimates of survival rates, and continued monitoring of stand development less critical. By year five, if planting success is not evident then timing needs of adhering to long-term planning goals requires that we replant the site.

### **D. Use of improved planting stock, varietal seedlings and exotic species**

Agency policy requires that we obtain seedling stock from our own Forest Commission Nursery operation. To assist the operation of the nursery, Wee Tee State Forest allows the nursery to schedule its operations around private vendors first, with may impact the timing of delivery and quality of seedling stock on a year-to-year basis. Generally, we plant a cost-effective Loblolly or Longleaf Pine variant, however in years where demand is low, we may acquire surplus stock of improved variants. We do not plant exotic species.

### **E. Afforestation**

Since most of the Forest is in acceptable forest cover, only a few areas of the forest are in consideration for afforestation work. Primarily, some of our retired wildlife food plots may be allowed to revert to full forest cover. In addition, a portion of the forest is managed as open agriculture for wildlife, and portions of

those areas may be considered for afforestation over time. However, there are no current plans or requirements for active afforestation.

## **Use of Chemicals**

PM 2.2 Indicator 1,2,3,4,5,6
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### **F. Forest chemical program**

Our forest chemical program is limited to pre-planting of sites following harvest and only if needed. We time these broadcast applications near the end of the growing season, to optimize our mortality while reducing other risks associated with heavier spraying.

### **G. Best management practices**

The South Carolina Forestry Commission is the lead agency in South Carolina in designing, interpreting, monitoring, and updating forestry best management practices (BMPs) that protect water quality and conserve site productivity. Best Management Practices are science-based forest management practices, developed pursuant to federal water quality legislation, that minimize or prevent nonpoint source water pollution from forestry operations and give forest landowners and the forestry community guidelines to follow in practicing good stewardship on our valuable forestland. BMP implementation protects the quality of our drinking water and helps sustain the productivity of our forests for future use.

As part of the South Carolina Forestry Commission, the state forests lands, including Wee Tee State Forest, will serve as models for BMP implementation. They should meet or exceed all established BMPs, all applicable state water quality laws, and the requirements of the Clean Water Act for forestland. State forests will make all efforts necessary to ensure that there are no negative impacts to water quality or site productivity from forestry operations (i.e., forest road construction, timber harvesting, site preparation, reforestation, prescribed burning, pesticide application, fertilization, or minor drainage) on their lands.

### **BMP Training**

All state forest employees involved in the supervision of forestry operations will be required to have appropriate BMP training (i.e. Timber Operations Professional or equivalent), and all contractors operating on state forests will be required to have appropriate BMP training (i.e. Timber Operations Professional or equivalent) and will be responsible for BMP compliance on their work site. State forests will include this requirement in all bid invitations and contracts.

## **Operational measures for maintaining site productivity**

## **H. Stand level practices**

Wee Tee State Forest is mostly situated on soils of poor drainage, and frequent inundation. From a harvesting approach, the condition of most of the soils requires significant concern and attention to minimize damage by harvesting activity. We outline in all contracted harvesting operations that BMPS be adhered to, skid rows and decks be minimized in size and impact to the site, and field personnel monitoring the harvest address any violations of areas of concerns as they occur. We use a performance bond as part of the contract to ensure all post-harvest clean-up work is conducted.

At Wee Tee State Forest, we frequently work with timber contractors to allow for seasonal access to timber to mitigate any problems associated with regular and infrequent flooding. Often, timber contracts are extended as access becomes so limited as to shut down harvest operations. In some cases we may provide for inclusions to our harvest contracts to include road improvements as part of the overall bid. These improvements are geared at preventing damage from harvest activity, and in cases improve the current condition of the road, in terms of access, run-off control, and general maintenance.

We require that the site be left to specific conditions that are beneficial to subsequent harvesting, but in areas that require planting we use hand crews to artificially plant, which allows for retention of large woody debris and tops. Site preparation may include prescribed fire application to minimize the obstruction this harvesting debris may pose.

No harvest operations have allowed for biomass removal at Wee Tee State Forest, and no current plan is in place to allow for this practice. While we found on other Forests that biomass harvesting did increase the ease of timber harvesting and may have impacted revenues for that timber, it is hard to calculate the total impact of biomass removal from a revenue vs. site productivity approach, and the revenue stream attributed to the biomass itself is so minimal it has prevented us from any recent applications.

## **I. Landscape level practices**

We have not, in recent years, adopted the use of any landscape level harvesting practices, however we do maintain an active forest-wide road maintenance program. Following harvest activity and road impacts, Forest personnel work to reclaim the road to its previous condition (or better), and reduce any short-term erosion concerns from timber haulage. The following more completely describes our landscape level roads program.

State forest roads will be assessed annually by a designated, TOP-trained individual. The assessment will target erosion problems, improper location, BMP non-compliance, and will address the need for surfacing material, entrenchment, general maintenance, and requirements for the installation of structures or technology to minimize traffic impact. The monitoring process may result in a determination to limit or restrict forest traffic to control recurring maintenance problems.

- Documentation of annual forest road assessments will be held on file at each state forest office. Documentation will include, at a minimum, dated maps with identified road problem areas highlighted and the prescribed corrective actions indicated.

New road construction or major roadwork will be recommended by the forest director. New road design should comply with all applicable BMPs and should consider location, width, slope, purpose, adaptability to alternate use, and functional life. Cost, urgency, and complexity of construction will be determining factors in a decision to solicit contractors.

- Installation of structures such as bridges, culverts, water bars, ditches, etc. will be in compliance with current BMPs and regulations as may be mandated by other agencies.

## **Forest Health**

PM 1.1 Indicator 4 PM 2.4 Indicator 1,2,3
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### **J. Forest health programs**

We consider forest health as many-faceted. Impacts to forest health are many, and this sections addresses first our approach to natural disasters and forest management, and then the subsequent risks from more common health issues, such as insect and disease outbreaks.

#### *Effects of Natural Disaster*

There are several natural disasters that may affect our State Forest lands, though primarily wildfires, flooding events and hurricanes/wind storms are considered the most likely. Indeed, the impacts of these types of events have been recurring and constitute a significant factor in how many of our management operations can take place.

#### *Wildfire*

Fire is a natural part of the forest ecosystem across much of the State Forest system. We maintain a program of prescribed fire management, both to enhance the condition of the forest stands while also serving to mitigate wildfire risk through forest fuels reduction. However, periods of time exist where the risk of uncontrolled wildfire on State Lands is high. In such cases, the South Carolina Forestry Commission, being recognized as the Agency with authority over containing and suppressing all wildfire on both State and private lands, is readily equipped to address fires on Wee Tee State Forest by trained personnel.

### ***Flooding***

Flooding poses a significant risk at Wee Tee State Forest. Access during these events may be severely limited, and road improvements may be required post-flooding. Timber harvest activities at Wee Tee are generally limited to regeneration harvests potentially up to 100 acres in size, however size is usually limited to 50 acres or less. Adjacency restrictions are adhered to as described in our management section, and the stand is allowed to naturally regenerate. When needed, buffer strips are used to protect our riparian zone forest, and some thinning may be conducted in these stands as needed. These thinnings are done in accordance to BMPs, and help to maintain a healthy forest while providing some addition revenue.

### ***Hurricanes***

While small-scale wind events occur fairly frequently across the forest, we consider the damages and management implications to be generally small and can be addressed on an individual basis. Large-scale wind events, primarily hurricanes, are an inevitability in the Southeastern Coastal United States. Due to being in close proximity to the coastal area, damage from hurricanes at Wee Tee are considered to be high-risk, and potentially forest-wide replacement events. Through thinning operations, we maintain stands with adequate spacing which reduces wind-throw susceptibility, however this is only applicable to our upland pine stands. In our bottomland hardwood forest, being in a poor condition partially as a result of high-grading, there exists a greater risk of damage from high winds to existing standing timber. Evidence of damage to the existing upper canopy of the forest is widespread, and believed to have stemmed from the effects of Hurricane Hugo. In such an event, we shall immediately develop plans to salvage log any areas of the forest that are accessible, and fit within the general guidelines of our long-range plan. In the rare occurrence of a catastrophic wind event, the Agency may have to develop a new short-term management strategy for Wee Tee State Forest to better address concerns at that time.

As a part of the States' Incident Management System, we have an enhanced ability to address the immediate effects of a hurricane event. Through training,

maintenance, and readiness planning, we can open roads, provide access, and generally address user safety immediately after an incident.

### ***Ice Storms***

The risk of severe ice storms in the Coastal region of South Carolina is limited, but does occur on an irregular cycle. Salvage logging will be performed, where possible, in the event of impact on any portion of the Forest, primarily in the upland pine stands where damage would be more likely to occur.

### ***Insects and Disease Risks***

We consider active forest management, and maintenance of stands in a healthy and vigorous growing condition, as the most important approach to reducing impacts from insects and disease. Prescribed fire is used to promote forest health, but only in limited capacity due to access, topography, species cover and personnel requirements. Our location in northwestern South Carolina has a limited planting risks from several species of insects, and timing of replanting will be optimized to reduce this risk. Frequent monitoring of our Forest is required to address these risks on an as-needed basis.

Some monitoring of the Forest is conducted as part of State-wide initiatives, but we generally address areas of concern as they develop. Where possible, we minimize the impact or spread of the outbreak through harvesting, a successful and recommended approach to some insect control. All such activities are incorporated into the planned harvest activity, and updates made to our stand inventory as required.

## **K. Assessments supporting forest health programs**

Our most important data collected for forest health is our forest inventory data, used to determine the timing of harvest operations. This data focuses on standard metrics needed to develop growth and yield models, including trees per acre, basal area, species, individual trees measurements of diameter at breast height, stopper height (height to first defect), and total height. If no defect is found, we use total tree height to develop volume estimates.

Other types of assessments that may apply include regional studies conducted by our Agencies Insect and Disease laboratory, which monitors for outbreaks and insect population measures, and general day-to-day assessments by on-site field personnel.

## **L. Fire prevention and control**

As previously discussed, the Forestry Commission, and thus Wee Tee State Forest is the lead Agency used to address wildfire suppression in the state. This designation provides us with ample resources and training to maintain an active prescribed fire management program.

Through the use of fire to reduce fuels, we have seen improved site conditions for planting, and improve stand conditions through reduction of hardwood competition in those stands where hardwoods are undesirable. Decreases in personnel in recent years have resulted in less acres burned, but overall forest condition is still healthy, and as we return to full staffing we anticipate increasing the acreage of our burning program.

## **Training**

PM 16.1 Indicator 2,3,4

Our management staff at Wee Tee is limited to one full time forest technician, who is well trained in many aspects of forest management. Overall management of the Forest has fallen under the purview of the Director of Manchester State Forest and its personnel. Use of personnel from Manchester has been required to perform much of the management of Wee Tee State Forest, however the on-site technician has been able to monitor harvest sites, and maintain access to the property as possible. Additional assistance is available for forest management activities as needed by other State Forest personnel. As part of the Forestry Commission, all personnel participate in frequent workshops addressing many aspects of forest management and health.

Our staff has included technicians and other employees who are provided the opportunity to complete a forest technician training program geared at improving their ability to assist management, including identification of forest health issues. All staff are required to maintain forest firefighter fireline certification status, which includes an annual refresher course in fireline safety, and completion of a physical fitness examination.

Finally, our Wee Tee State Forest technician maintains the safety and integrity of our chemical applications for wildlife plantings on the Forest, however we currently do not have on staff a licensed pesticide applicator.

## **Monitoring**

PM 20.1 Indicator 1,2

Our monitoring program for assuring that stands are replanted adequately and that forest disturbance is minimal, and still being developed into a more robust, formal system. We maintain review on a yearly basis, and supervisor approval of sites as

needed. An annual report of our activities is provided as part of the review of the Forestry Commission in its entirety.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Site Preparation within 1 <sup>st</sup> year	Site burned or chem. Treated as needed	100%	Annual review	Harvest Supervisor
Sites planted within 2yrs	Trees planted correctly, and at correct spacing	100%	Annual review	Harvest Supervisor
Seedling establishment	Seedling survival checks	75-95%	2-3 yr post-planting	Harvest Supervisor

## Records

Our planting plans are available on an annual basis, as part of our bid proposal process. These data are then added as updates to our forest inventory. Chemical records and application plans may be available as part of the managers planning report. Certification of personnel as fireline qualified is documented through our agency training manager.

### 3. Protection and Maintenance of Water Quality

PM 3.1 Indicator 1,2,3

PM 3.2 Indicator 1,2,3,4,5

PM 1.1 Indicator 1h

#### A. Key water quality and riparian constraints impacting forest management planning

Our harvesting activity includes stands that contain riparian boundaries, which we address at the implementation of the harvest activity. All areas are managed in complete accordance with BMP recommendations, and frequently exceed the minimal distance requirements as we consider other factors, such as aesthetics or wildlife.

A significant feature of Wee Tee State Forest is the presence of streams, sloughs, lakes, and other wetlands. Their presence is often limiting to access, as temporary crossing are not considered cost-effective. In most cases, we design a sale areas and haulage route with specific concern to these hydrologic features, as well as their impact to haulage roads over time as water levels may change. We manage adjacent forests under the appropriate regulations as set forth by the BMP Guidelines.

#### B. Water quality and riparian protection programs

As previously mentioned, our agency is the lead in BMP monitoring for the state, and as such we include guidelines for maintaining their use in our timber sale contracts. Site conditions over much of the Forest reduce the need for extensive road and landing design, however in areas where the concern exists our staff works closely with harvest operators to best locate their decks and skid trails.

Our GIS contains several hydrology layers, including streams and other water bodies, and these layers are used to identify areas of concern in stands before harvesting is conducted. Field foresters make on-the-ground assessments for BMP use, and design stand boundaries in accordance.

In cases where there is concern with BMP adherence or rules, we use our Agency personnel in charge of BMP monitoring to assist in making management decisions.

#### C. Contract provisions

Our harvest contract requires compliance with BMP use, and also the inclusion of a performance bond to promote BMP use or pay for remediation work, as needed.

### Training

PM 16.1 Indicator 2,3,4

The Forestry Commission provides for BMP training through administration of the TOP Logger program, and all Agency staff may attend the training free of cost. Current efforts are underway to develop a BMP workshop specific to State Forest personnel.

**Monitoring**

PM 20.1 Indicator 1,2  
PM 3.1 Indicator 4

We monitor indicators key to water quality as part of our harvest operations review. The following table may be used to illustrate the compliance rate we require of harvest operations. All approval of post-harvest site conditions is through the field forester with supervisory approval.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Proportion of stream crossings installed with a quality score of 95% or more.	Post-installation inspection	100%	In conjunction with each installation	Road construction supervisor
Proportion of blocks that comply with riparian BMPs	Post-harvest inspection	100%	Annual following compilation of all final harvest inspection results	Harvesting supervisor

**Records**

The key supporting documents for BMPS and their implementation are our BMP guidelines produced as part of our Agency, our GIS layers, harvest maps where required, and example contracts, upon request.

## 4. Conservation of Biological Diversity including Forests with Exceptional Conservation Value

### Landscape Level Management Programs and Practices

PM 1.1 Indicator 1h PM4.1 Indicator 1,2,5,6,7,8 PM 4.2 Indicator 1,2
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#### A. Key biological diversity and wildlife issues impacting forest management planning

Our harvest activity takes into account the protection of critical habitats, and protection of any known threatened and endangered species where presently known or as encountered. An area of identified critical habitat is present on the Forest, and its protection and preservation is considered a critical long-term goal of our forest management.

#### B. Landscape level programs

Due to its location along the floodplain margins of a coastal riverine system, the large range in species composition and diversity across the Forest is not as robust as on other State Forest land. Still, much diversity is present, and our current management approach, which includes timber harvesting as well as providing for recreation and wildlife management, adequately provides for these species, habitats, and ecological communities. Our total harvest activity, when viewed over the entire Forest, has impacted only 10 percent of the managed land.

#### *Fish and Wildlife*

Wee Tee State Forest contains a wide range of habitats including diversity within stands and across the landscape. This mix of forest types provides excellent habitat for many wildlife species, both game and non-game.

Many forest management activities are beneficial to game species of wildlife. Practices such as thinning, prescribed burning, planting beneficial tree species, and supplemental wildlife food plots encourage a variety of game species. White-tailed deer, bobwhite quail, mourning dove, and eastern wild turkey are the most prevalent game species in our forests. Other species, including rabbit, gray squirrel, fox squirrel, black bear, alligator, and waterfowl are also present. The streams and managed ponds on state forests contain fishing opportunities for sunfish, largemouth bass, and trout.

Since hunting is one of the multiple-use goals of state forest lands, game management should be aggressively pursued. Most state forest lands are enrolled in the South Carolina Department of Natural Resources Wildlife Management Area program, which allows public hunting opportunities. Through this

cooperative agreement, DNR monitors the health of game species and provides recommendations and funding to maintain and increase populations. Forest management activities should be planned to maximize the benefits to game species by considering appropriate timing of an activity, size of the affected area, and spatial arrangement.

Non-game wildlife species play an important role in management planning and prescriptions on state forests. Threatened and endangered wildlife species and species of concern, including the green salamander, and neo-tropical migratory birds should be considered when forest management activities take place. Endangered species populations should be managed with input from DNR and the US Fish & Wildlife Service, utilizing appropriate habitat management measures to increase and maintain populations. Where sensitive species are known to occur, particular concern should be given to reducing fragmentation of habitat, maintaining and creating additional high-quality habitat, and complying with the Endangered Species Act.

#### **C. Assessments and inventories supporting wildlife programs**

As part of the WMA program, key assessments of wildlife are taken by the South Carolina DNR, although Forest staff frequently assist in population monitoring for the DNR upon request. Subsequent hunting regulations, dates and times, and seasonal availability are determined in cooperation with DNR to maintain a healthy forest wildlife community. At Wee Tee State Forest, this cooperative effort and on-going assessment has recently resulted in additional as well as extended seasons on wild boar, as their presence and activity has become detrimental to parts of the Forest.

#### **D. Forests with Exceptional Conservation Value**

Other than the South Carolina DNR, who is our primary contact and advisor for management of critical species and habitats on the Forest, we do not maintain any current associations with other agencies or groups. Also, we maintain any GIS data related to these critical on a request-only basis, so as to discourage site degradation from public access.

#### **E. Landscape considerations in threatened and endangered species programs**

At Wee Tee State Forest, there are a few opportunities for us to work with imperiled species and/or sites. Notably, the presence of a heron rookery, as described in the management section. Also, the Highway 17 bridge, adjacent to our extreme southern boundary, may provide habitat to endangered species of bat. Stumps, snags, and hollows within existing trees are also noted as providing beneficial habitat to a myriad of species, including bats. As a result of previous harvest activities and hurricane damage, Wee Tee provides more of this habitat than many forest managers would prefer, but our approach to leaving these nest and den trees in harvest areas, as possible, allows for their continued use, and is in agreement with our overall mission of multi-use management.

## **F. Support for old growth conservation**

Our active forest management does not identify old growth conservation as a primary objective. However, in areas of limited access, within riparian areas, swamps, and other sites, we may allow for old growth conditions to remain or develop. Given these conditions are present across a large portion of Wee Tee (as described previously), the potential for large tracts of timber to develop into old growth forests is significant, and has occurred in a limited capacity along sloughs, and other inaccessible reaches, although these trees were often overlooked as deemed of inferior quality. Thus many of our large mature to over-mature timber has defects, including hollow stems, broken crowns, and disease. In areas where public use is heavy, some of these larger trees may have to be removed due to safety concerns.

## **G. Programs to address invasive exotic plants and animals**

The Wee Tee State Forest, being dominated by its riverine habitat, is thus very susceptible to a host of species that use aquatic paths as a means of seed dispersal. While we have not found areas where some species of high concern have established (i.e. Japanese Climbing Fern), our personnel are aware of the potential threat, and monitor the Forest for such populations during their day-to-day activities.

Wild hogs, an invasive animal, are present on the forest, and are managed under game regulations as set forth by the South Carolina DNR, and as discussed previously. Other exotic plants and animals will be addressed on an individual basis as needed.

## **H. Prescribed fire**

The use of prescribed fire has been mentioned in several instances in this document. Forest personnel use prescribed fire in many instances: site preparation, fuels reductions, timber stand improvement, aesthetics, and improved habitat through species management. Our personnel are trained and licensed through the Agency, and we maintain a high level of fire preparedness.

## **Stand Level Management Programs and Practices**

PM 4.1 Indicator 1,2,3,4 PM 4.2 Indicator 1
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## **I. Stand level programs**

Within stand management allows for increased biological diversity through many factors. Retention of snags, allowance of coarse woody debris, and the robustness of our BMP riparian zone interpretation all increase the variability of habitat and diversity within stands. Our adjacency constraints on harvesting and are limits of harvest size (green-up constraints based on age and tree height, and rotational

harvest limited to 50 acres maximum size), also provide for a shifting mosaic of stand conditions at the tract level.

**J. Threatened and endangered species**

In stands where threatened or endangered species are known, we make management decisions as described elsewhere here. As we implement our harvest activity and develop site-specific plans for product removal, particularly adjacent to areas of concern, we inspect for presence of species and make changes to our long-term plans accordingly. Additionally, we request in our harvest contract that operators also monitor for presence of species, and notify us if any species of concern are located.

**Training**

PM 16.1 Indicator 2,3,4

For prescribed fire applications, staff are certified through the Prescribed Fire Manager Program, as well as provided training through the status of wildland firefighter. Additional training may be obtained through additional workshops, most frequently as part of the continuing education requirements to maintain registered Forester Status. Most recently, several Forest staff attended a training exercise in adopting harvest plans to benefit forest bird populations.

**Monitoring**

PM 20.1 Indicator 1,2

The key indicators to monitored landscape and stand level biodiversity management programs can be identified in the following table.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Proportion of old growth forest by management unit/ecological grouping	Inventory updates	Based on accepted science	Annual	Planning forester
In-block retention levels	Post –harvest inspection (part of post harvest inspection checklist)	Average 7%	Following completion of logging activities on a block specific basis.	Harvest supervisors

**Records**

Inventory data support the implementation of harvest areas in accordance with our wildlife management considerations, green-up constraints, and the presence of robust riparian habitat. Training records of those employees who have attended the Prescribed Fire Manager training are available through our Agency training manager.

## 5. Management of Visual Quality and Recreational Benefits

### Visual Quality Practices and Programs

PM 1.1 Indicator 1h PM 5.1 Indicator 1,2 PM 5.2 Indicator 1,2 PM 5.3 Indicator 1,2,3
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#### A. Key visual quality issues impacting forest management planning

Our visual constraints in harvesting are many. Primarily, we leave forest buffers along travel corridors, and recreational waterways that exceed BMP standards. We also limit harvest size, and manage for timing of harvest activity, to prevent large non-forested openings. Some previous harvest areas at Wee Tee State Forest were over 100 acres in size, which are still well within our guidelines. However, we are adapting our harvest sizes and goals, targeting smaller acreage blocks, with several smaller openings rather than one large opening. Also, we plan on utilizing more seed-tree harvest methods, which may be considered more aesthetically pleasing, provide a good seed source for regeneration, and still allow for adequate light to penetrate to the forest floor for germination and development of desired, shade-intolerant species.

We may leave aesthetic buffers along trail systems, or in areas heavily frequented by recreational users. However, in all of these areas we may violate our constraints during harvesting operations where we are converting from an undesirable species to a more desirable species. These decisions are made on a stand by stand basis.

#### B. Visual quality management program

We do not have an active management program in our road design, and frequently we work with our timber contractors and operators to allow them to install decks and skid rows where best meets their needs. Due to the remoteness of most of our forest lands, we do not generally consider the location of the deck a critical aesthetic concern, however we do work closely to minimize the size of the deck, any debris piles that may be left behind, and ensure that no litter or waste associated with the contractor are left on site. Enforcement of these rules is in compliance with the performance bond inclusion on the timber contract.

At Wee Tee State Forest, where elevation change is minimal, our viewshed is considered naturally protected, and only our riparian forest areas are managed with visual quality as a major concern. As with some of our other forests, our overall lack of harvesting activity on much of Forest also helps to support viewshed preservation.

### **C. Assessments and inventories supporting visual quality programs**

We do not currently use any visual quality analysis or digital terrain models to inventory our viewsheds or to make management decisions. While no plans are in place for that incorporation, the Agency and Wee Tee State Forest are committed to improving our ability to better manage our State Land, and may incorporate those programs in the future. Our primary inventory approach to maintain a healthy viewshed is through the use of green-up constraints and adjacency constraints, as discussed elsewhere.

### **D. Clearcut harvest provisions**

Generally, our green-up constraints require a specific height or age to be reached before an adjacent stand can be harvested. Our rotational harvest areas are to be limited to approximately 30-100 acres in size, and favoring the low end of this range. We do require all stems to a certain diameter be cut, which helps promote adequate regeneration, and we also allow for the retention of snags, and large over-mature trees which are not commercially viable.

## **Public Recreational Opportunities**

PM 1.1 Indicator 1h PM 5.4 Indicator 1
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### **E. Recreation**

The goal of the South Carolina Forestry Commission is to provide outdoor recreational opportunities on the state forests that are compatible with forest management activities. The SCFC will strive to accommodate the needs of the various recreational user groups that enjoy the state forests. However, as is the case for forest management activities, management of recreational activities will not take precedence over the protection and enhancement of the environment. In addition, management for the sustainability of forest products will always take priority over recreation and other forest management activities.

There are a variety of recreational opportunities in South Carolina's state forests. In fact, the opportunities are as diverse as the forests themselves. There are hiking trails, and fishing and hunting opportunities. Other activities include boating, geocaching, picnicking, and bird watching to name a few. Wee Tee State Forest has historically been enrolled in the Wildlife Management Area (WMA) program, which is regulated by the Department of Natural Resources. Therefore, hunting and fishing on this State Forest require applicable licenses and a WMA permit and is allowed only in designated areas during the appropriate seasons. For more detailed information on hunting and fishing activities, refer to the annual DNR Hunting and Fishing Regulations.

It is through sound multiple-use forest management that the Forestry Commission plans to maintain the integrity of and enhance the state forest environment while providing for future natural resource uses, including recreation.

## Training

PM 16.1 Indicator 2,3,4

Access to staff for training in wildlife and habitat management, and recreational development is limited. However, workshops are held by the Agency on occasion, and Forest personnel are encouraged to attend.

## Monitoring

PM 20.1 Indicator 1,2

We can identify much of the success of our recreational programs through the collection and monitoring of fees associated with their use. We also provide users feedback opportunities through many different venues; through our website, through other internet based- or social media, and through personal communications.

From a stand perspective, our use of GIS, and specifically a harvest scheduling model, reduces the potential or requirement for monitoring to ensure that our size limits are not exceeded. However, annual review of planned harvest areas allows for verification, as shown following.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Clearcut size does not exceed constraints	Inventory updates	100%	Periodic	Harvest Supervisor and Forest Analyst
Providing needed recreational opportunities	Permit sales	Maintain or increase permit sale numbers	Annual	Forest Director

## Records

Key items supporting the above programs that are available for verification include our inventory data, and maps of our recreational sites and fishing streams.

## 6. Protection of Special Sites

PM 1.1 Indicator 1h PM 6.1 Indicator 1,2 PM 18.2 Indicator 1b
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### A. Key special sites issues impacting forest management planning

The South Carolina Forestry Commission is aware of many special sites existing across our State Forest system lands, and continues to maintain, preserve, and enhance these sites on an individual basis. Our general guidelines for all State Forest lands expressly forbid metal detecting, collection of artifacts an any kind, digging on or damaging forest lands, or collection of any vegetative material without the express consent of the Agency.

The location of some of these sites, specifically existing structures and cemeteries, are made available to the public with varying levels of access (some of the buildings are still in use by the Agency, and thus access to their interior is limited). However, many of the historical sites are considered sensitive, and information regarding their location is kept within the Agency and made available on an individual basis.

### B. Special Sites program

#### *Historical Value*

Historical sites are denoted by their cultural, historical, and/or archeological significance and include existing structures, old home sites, grave sites or cemeteries, Native American mounds and middens, historical trails, and others. In most cases, our management approach is to leave these sites as undisturbed as possible, with the location information made available to the public upon special request only. This strategy has helped to protect these sites from the potential damages of collection and looting common at widely known historical sites. The following subsections address each significant category in more detail.

Site of archeological value are present on many locations across the State Forest System. The presence of Native American sites on Wee Tee State Forest has been documented. While the location of these sites is known to much of the general public, we still maintain the location details of these sites in-house to avoid site degradation. In some cases, sites of high archeological value have been discovered on state forest lands, and the Agency has worked closely with State and/or University archeologists to allow research on the Forests as well as to better understand how to preserve and maintain the site for future generations to enjoy.

A limited number of grave sites and cemeteries are present across Wee Tee State Forest. Access is provided upon request or through existing easements for families who still actively use cemeteries, however maintenance of these access routes is only improved by the Agency upon request. Harvesting activity is generally excluded from these sites where timber is present, although infrequent harvest may take place as needed to maintain or preserve the site.

### ***Biological Value***

Many sites exist across the State Forest system that may be considered to have high biological value, based on species diversity and composition. For much of the Forest, we consider this intrinsic value to be inherent in our current management objectives, which is managed for through species selection, harvest type, and fire regime. These factors may improve or maintain desirable forest conditions. Unless specific action is required on a stand by stand basis, additional management concerns are not incurred on forest-wide stands. However, in locations where endangered species are known or suspected to be present, or where the habitat is considered critical, then the Agency adopts stricter management policies as needed.

### ***Aesthetic Value***

The South Carolina Forestry Commission recognizes that in some instances, the aesthetic value inherent to some sites is sufficient to merit additional consideration under our management regimes. At Wee Tee State Forest, some unique hydrologic features exist that we manage specifically to protect. Several strategies are in place to protect and enhance these sites. Most commonly, we protect these sites by minimizing occurrence of management activity. The activities that may still continue include applications of prescribed fire, and harvest activity as required to maintain site conditions. Another strategy we use is the extended applications of our standard Best Management Practices, where we exceed recommended or minimum buffer distances around harvest areas to improve the Visual Quality Zones (VQZs) of adjacent areas. This approach not only reduces the visual impact of harvesting to the recreational community, but also improves the intended performance of the buffer strip while providing enhanced habitat and habitat corridors for wildlife.

### ***Other***

Sites with unusual, rare, or unique geologic formations, evidence of past land uses desirable for preservation, or other considerations as they are discovered, will be managed as special sites on State Forest lands.

### C. Assessments supporting special sites programs

Wee Tee State Forest personnel are currently developing a GIS layer that includes special sites that exist on the Forest. As sites are discovered, they are recorded and then eventually included in the GIS, however we maintain the spatial data in-house. No active program is in place to seek out special sites across the Forest, and we generally preserve

#### Training

PM 16.1 Indicator 2,3,4

No training for special sites has been identified at this time.

#### Monitoring

PM 20.1 Indicator 1,2

We monitor special sites and their continual protection and preservation in the following format:

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Proportion of identified special sites protected during operations	Post harvest inspections	100%	Ongoing at the completion of each unit	Harvest supervisors

#### Records

Our management and development of a special sites program is ongoing. A developmental GIS layer is available to document this, as well as the plans as set forth in this SFI.

## 7. Efficient Use of Forest Resources

PM 1.1 Indicator 1g  
PM 7.1 Indicator 1

### A. Key Utilization issues impacting forest management planning

At Wee Tee State Forest, our regional location does not provide for strong markets for delivery of forest products, and we suffer significant decreases in stumpage values as a result. Since our primary management of this forest is not timber production, our harvest level is sporadic, and based on needed operations based on stand conditions. In cases where under low-grade material or poor value species are present, for instance our Virginia Pine upland stand, we are allowing natural stand replacement rather than harvesting as the revenue stream is not worth the risk to the resource, and the short-term impact to our viewshed. Similar conditions exist across the Forest, and only areas where stand health concerns and and/or viable revenue streams exist will be actively managed for timber.

### B. Utilization programs adopted

Post-harvest, we inspect our harvest areas to ensure that site conditions outlined in each harvest contract are met. This includes the treatment of slash and debris, reductions in piles, and that all stems above given diameter are removed. This ensure the site is better prepared for harvesting, burning, and/or receptive to seed dispersal from leave trees.

The Commission and State Forest lands base our volume estimates, used in developing our bid sales, based on common diameter and height specifications. However, we do not translate these measurements into required log utilization specifications, we mentioned above. Traditionally, we have allowed the harvest contractor to determine the optimal specifications for merchandizing. Similarly, as our timber harvesting is done under contract, we have not tried to impose restrictions on how that timber is merchandized, or developed any incentives for the better utilization of off-grade wood. species and off-grade wood.

### C. Assessments and inventories supporting utilization programs

Harvest operation sites are only monitored in relation to conditions as outlined in each harvest contract, which includes site conditions post-harvest, relative to slash, debris, and related factors. Our performance bond, included in each contract as described elsewhere, is used to ensure these conditions are met. However, since product utilization has not become a component of our stumpage marketing, we do not have any current assessments in place for that over site.

Following the audit and successful SFI certification, we recognize the potential for our timber products to have increased market value. Given such, we may, through a research and trial period, explore the inclusion of product utilization guidelines or incentives.

## Training

PM 16.1 Indicator 2,3,4

Training in this section is only applicable to site inspections, and in regard to post-harvest conditions. Our training is provided by supervisory personnel, onsite, and under the general orientation period. We recognize that the Agency has opportunities to develop a better training program to better monitor post-harvest condition assessments, and which may lead into similar assessments of product utilization, as mentioned above.

## Monitoring

PM 20.1 Indicator 1,2

Key indicators monitored in relation to utilization programs are summarize as following:

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Inspections with adequate post-harvest conditions	Harvest inspections	100%	Following completion of logging activities on a block specific basis.	Harvest supervisors
Average waste wood levels per sale (potential)	Waste/Site surveys	Company/forest type specific	Following completion of logging activities on a block specific basis.	Harvest supervisors

## Records

The key items supporting the above programs may be available in the following:

- Harvest inspections
- Training records (maintained by Agency Training Supervisory)

# Forest Land Management and Fiber Sourcing (SFI Objectives 14-20)

## 14. Legal and Regulatory Compliance

PM 14.1 Indicator 1,2,3 PM 14.2 Indicator 2
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### A. Access to applicable laws and regulations

Several components are involved to ensure staff and contractors have access to relevant laws and regulations. Our Forest personnel are provided with training in BMPS, and work closely with contractors through evaluation of contract obligations. Our contractors themselves are required to be TOP Logger certified in the case of timber operations, and a Certified Tree Planter when hired for planting operations. Adherence to BMPS and other provisions is required within the contract, with performance bond limits to ensure operators remain within those limitations. BMP guidelines and other relevant information is available through many venues, including headquarters of the Forest operations.

### B. Compliance management program

Forest personnel conduct post-harvest inspection, as well as site monitoring during harvesting as feasible, and address any issues as they arise. Site inspection includes BMP considerations as well as general site conditions following operator egress. In addition, we maintain an open line of communication with our contractors to allow them the opportunity to contact us as the encounter situations that may conflict with BMP guidelines, their contractual obligations, or other issues. Further opportunity is provided during post-harvest evaluation and any required mitigation work, which is terminated with the release of the aforementioned performance bond.

### C. Compliance with social laws

Our Agency personnel are made aware of all social laws, and rights of workers at time of hiring. In addition, our Agency has a defined Grievance Policy for redress of conflicts as they may arise. All information required relevant to worker's rights is post in a public area.

For our contractors, we include language in our contracts that requires the following is ensured for their employees:

- Workers compensation is provided to all employees
- Workers are provided with liability insurance
- Contractor will only employ legally allowed workers

## Training

### PM 16.1 Indicator 2,3,4

For contractors, the TOP logger program and BMP training is required by contractual agreement. Other regulatory requirements may be addressed in the contract itself, and this outside the scope of a training regimen.

Forest personnel are also provided with training through TOP Logger, BMP training, and other training opportunities that may address legal and regulatory compliance as they become available and as part of personnel's continuing education.

## Monitoring

### PM 20.1 Indicator 1,2

Key indicators monitored in relation to compliance programs are derived implicitly from those references made in Section B, and are highlight in the following table.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
BMP Awareness	Signage of sales document	100%	Individual sales contract	Harvest supervisor
BMP and tree planting awareness	Approval to bid on contracts	100%	Annual review	Management section
BMP compliance	Post-harvest site inspection	100%	Individual sales contract	Harvest supervisor/BMP Forester

## Records

The following is a list key items supporting the above programs that may be available for verification:

- BMP guidelines
- Timber sale contract
- Tree planting contract
- Training records if staff (available through Agency Training Coordinator)
- Training records of contractors (available through Management Section)

## 15. Forestry Research, Science and Technology

PM 15.1 Indicator 1 PM 15.2 Indicator 1 PM 15.3 Indicator 1,2
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### A. Research program

While research is not a significant activity at any of our Forests, as part of the South Carolina Forestry Commission we are associated with many research Opportunities, with the Forest providing sites and data as and when requested. This following sections describes the most prominent research activities currently underway.

The Agency has an Insects and Disease lab, which monitors for different activity across the state, as well as frequently on the Forest. This data is used both in-house and cooperatively with other state and federal agencies. The work conducted by this lab helps to identify threats and concerns associated with insect and disease outbreaks, and better prepares us to address this events as they occur.

The Agency maintains its own Nursery operations and tree improvement operations. Through association with our nurseries, we provide areas for research plantings, actively use nursery stock within our own operations, and serve as a benchmark for tree improvement performance over time.

In some cases, our collective State Forest system have provided land and data as outside support for other research requests, including chemical applications, tree improvement studies, biomass plantations and more.

Our Agency also serves as the liaison for the conductance of Forest Inventory and Analysis (FIA) for the state of South Carolina. Our Agency employees conduct all plot sampling, with coordinated reporting of results which is used both internally and by the United States Forest Service.

Lastly, through our association with ForSight Resources and our development of a Harvest Schedule model, our forest inventory data has been used in the development of forest growth and yield models. This data then used to better adapt our own forest growth to planned harvest levels.

### B. Internal research

As mentioned previously, our Agency conducts Insect and Disease studies and Tree Improvement through our Nursery operations. Through our association with the South Carolina DNR, and through our direct participation of most of our State Forests as a Wildlife Management Area (Harbison State Forest being the sole non-participant due to hunting restrictions associated with the property), much of

the work performed on biological diversity and wildlife management has fallen under their purview. Still, Forest personnel frequently assist in data collection as needed.

### **C. Funding of external research**

The State Forest system and Our Agency collectively is not associated with external research funding at present. As a state Agency, we consider our role more associated with providing access and land for research plots where possible as our method of supporting forest research, rather than through direct financial contributions.

### **D. Regional analyses**

As previously mentioned, Agency personnel collect and report FIA data, which is used internally for economic development research, as well as general forest research and reporting at the State Level.

Our Agency has also been the state compliance monitor for BMPS, and have generated annual reports of compliance for many years, and multi-year analysis of compliance in white papers and peer-reviewed journal publications. Lastly, The Commission, and State Forest personnel, served as lead reporters and committee researchers in a comprehensive analysis of the state, finalized in the South Carolina State Forest Resource Assessment.

### **E. Climate change**

The State Forest system and Our Agency collectively is not associated with any climate change research.

## **Training**

PM 16.1 Indicator 2,3,4
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Adequate training for Forest Research, Science and Technology is difficult to identify. Due to the specificity of the research topics discussed, Agency personnel receive training and educational opportunities related to their unique areas of study.

## **Monitoring**

PM 20.1 Indicator 1,2
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We identify the key indicators monitored in relation to research programs in the following table.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
FIA data reporting	Accuracy of data collected	95%	Throughout year	FIA supervisor
Continued contributions of nursery <sup>1</sup>	Realized tree improvement	Increased awareness and sales	Annual review	Nursery Manager
Continued contributions of nursery <sup>2</sup>	Increased supporter of a-/reforestation	Increases in seedling sales	Annual review	Nursery Manager

## Records

The following items document the above programs, and are available for verification:

- South Carolina Forestry Commission Yearly Accountability Report
- South Carolina Forestry Commission Annual Report
- Nursery sales reports and white papers
- Insect and Disease white papers
- Annual BMP Compliance report and Journal Publications
- South Carolina State Forest Resource Assessment

## 16. Training and Education

### Internal Training and Education

PM 16.1 Indicator 1,2,3,4,5
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#### A. Communication of commitment to the SFI Standard

Our plans to communicate our commitment to the SFI Standard are ongoing, and predicated by our successful acceptance into the program. Currently, all SFI communication has been at the upper management level throughout the State Forest system. Upon acceptance, we plan to initially educate our personnel on the SFI program, our role in the program, and how our participation may improve our State Forest, its operation, and their contributions to the State Forest.

#### B. Roles and responsibilities for achieving SFI objectives

The monitoring of our SFI performance and our maintenance of the Standard will be conducted by the State Forest Analyst, with oversight review by the State Lands Coordinator.

The State Forest Analyst will conduct an annual review of all Forest Directors and Managers, evaluating how the SFI Standard has been communicated, acknowledged or recognized by outside parties, and how its use internally has impacted our daily operations. This review will be summarized, and then evaluated by the State Lands Coordinator.

#### C. Staff and contractor training and education

Overall training of Forest personnel is reviewed in the following table.

	Forest Directors	Foresters	Forest Technicians	Management Support	Other Agency Personnel
General awareness of SFI commitments	✓	✓	✓	✓	✓
Detailed knowledge of Company objectives and programs	✓	✓		✓	
BMP training	✓			✓	
Wildlife habitat recognition	✓	✓	✓	✓	✓
Chemical usage requirements			✓		✓
Forest health factor recognition	✓	✓	✓	✓	✓
Utilization standards	✓	✓		✓	✓

## External Training and Education

PM 16.2 Indicator 1,2

### D. SFI Implementation Committee participation

The South Carolina Forestry Commission is not an active participant in outside training. Contingent on our acceptance, this status may change.

### E. SFI Implementation Committee training criteria and delivery mechanisms

Not applicable, as described previously.

## Monitoring

PM 20.1 Indicator 1,2

Our monitoring approach to internal training and education is two-fold. First, we are currently developing a new training scheme for State Forest land employees, to address short-comings that have been found during this SFI process. Most significantly, much of our training has become on-the-job experience, and during the orientation of our new personnel. While we have not experienced any negative results from using this approach, it does not allow us to monitor or address areas of training that might be beneficial to our personnel, or that might require retraining at some point in the future. Second, as a new participant in the SFI program, we are in the process of educating our personnel of our involvement, and benefit of participation. The following table outlines our initial approach at assessing our own training levels, while additionally assessing how our participation in SFI is being acknowledged for Forest personnel.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Employee Training	Adequately trained in recognized areas	100%	Annual Review	Forest Directors and/or Stand Land Coordinator
Employee's SFI Application	Can express knowledge of and use of SFI and assoc. docs.	100%	Annual Review	Forest Directors and/or Stand Land

				Coordinator
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**Records**

Not applicable, as described previously.

## **17. Community Involvement in the Practice of Sustainable Forestry**

### **Support for Sustainable Forest Management**

PM 17.1 Indicator 1,2,3,4,5

#### **A. Support for SICs**

The Agency, and Forest personnel, provide partial support, mostly in the terms of personnel time, for the following SIC programs.

- Project Learning Tree
- Wood Magic Forest Fair
- Teachers Tour

These different programs require different assistance. In previous years, the State Forest system at large has served as the location and facility support for all of these events. Personnel have provided event support, and will continue do to so. Lastly, some personnel work with these programs as part of their day to day functions, providing, at least indirectly, some financial support in terms of staffing.

#### **B. Educational materials**

The development and distribution of educational material to forest landowners has, in years past, fallen under the supervision and direction of other entities within the Agency. Still we provide educational materials on site at each State Forest, and also participate in a leadership role in landowner and educational tours on our lands.

#### **C. Conservation of managed forests**

From an Agency perspective, conservation of managed forests has been addressed through cost-share programs. Under our State Forest system specifically, we have provided facilities and program support, although generally on an as-needed basis.

#### **D. Regional conservation planning**

Generally, are forests are not part of any regional conservation planning efforts at this time.

### **Public Outreach and Education**

PM 17.2 Indicator 1

**E. SICs and other outreach organizations**

Our outreach participation, as previously described elsewhere, is through leadership and participation in the Wood Magic Forest Fair, Teacher’s Tour, and Project Learning Tree programs.

**F. Public educational opportunities**

Our public educational opportunities are many. Across the State Forest system, we participate in Future Farmer’s of America events, conduct field tours, provided training and educational opportunities to local schools, provide volunteer opportunities to various groups, and have developed or are in the process of developing self-guided tours, respectively. In addition, personnel frequently provide their services, through speaking engagements and teaching opportunities, to many schools, groups, conferences, and other users on an annual or by request basis.

**Stakeholder Concerns**

**G. Company processes for receiving and responding to public inquiries and concerns**

There are many avenues through which public inquiries can be made and subsequent response actions taken. The Agency, and Forests alike, use interpersonal communications, social media, regular postal and email, and other avenues as they arise to take concerns and inquiries for our actions. These inquiries are then directed to the appropriate parties, researched, and then responded to in a timely fashion.

**H. Nonconforming practices**

The Agency and State Forest system will address stakeholder concerns regarding apparent nonconforming practices on an individual basis.

**Training**

Other than participation in the aforementioned programs we are involved in, no specific training relevant to community involvement has been identified or provided for. Specific training operations for the operations mentioned is

available however, and we have found that personnel who seek to participate in these programs, have also participated in training events and workshops, such as PLT training. However, through the SFI certification process, and the review of our personnel training levels, we recognize a need to address community involvement as well as other issues as we develop a new training scheme for all State Lands employees, as described in Section 16.

## **Monitoring**

PM 20.1 Indicator 1,2
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Monitoring of our response to community involvement will be internal, and on an individual basis as needs arise.

## **Records**

The key items supporting the above programs and available for verification are as follows.:

- Educational records (Training Coordinator)
- Records of educational opportunities provided, as available
- Review documentation and event advertising for listed SIC programs
- Records of FOIA requests (SCFC Public Information Officer)

## 18. Public Land Management Responsibilities

PM 18.1 Indicator 1,2  
PM 18.2 Indicator 1

### A. Public land planning and management processes

The State Forest system is involved in land management planning in many venues. Overarching guidance is provided through a Long-Range Plan, which serves as a working document for setting long-term goals and objectives. Following these guidelines, we continue to update and adapt a management plan specific for each State Forest, which more closely addresses their respective objectives and relative concerns. Finally, and in concert with our management plans, a harvest schedule model has been developed, and is in the process of being updated, which supplies ancillary data for our Forest system to better meet its needs.

### B. Stakeholder engagement

Contact with local stakeholders over forest management issues is provided through many relationships, associations, and previously mentioned venues, as described elsewhere. Various trail groups, riding associations, and other organizations have, over time, developed lines of communication with our Forest personnel, from interpersonal to regular meetings, where concerns over respected issues can be brought forward, or addressed collectively. However, the State Forest position has, to this point, been to address concerns or requests on an as-needed basis, rather than seek out the inputs of any given group.

### C. Indigenous peoples

Our policy for communicating with indigenous peoples has not been clearly developed, as we have not found it to be a frequent occurrence. Instead, we address issues or events as they have arisen, have made appropriate contact with tribal leaders when necessary, and taken any corrective actions, as needed.

## Training

PM 16.1 Indicator 2,3,4

Training for public land management responsibilities has been determined to be non-specific, however Forest personnel have attended leadership programs and other team-building workshops, which help to provide them with training for many relevant situations.

## Monitoring

### PM 20.1 Indicator 1,2

Our key indicators for monitoring programs for involvement in sustainable forestry are limited to the planning records and the implementation of the monitoring process still in development. We identify our preliminary indicators as described here:

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Long Range Plan usage	Forest system in compliance	100%	Annual review	Forest Analyst
Management Plan	Current to State Forest Need	100%	Annual review	Forest Director
Harvest Schedule Model	Current to State Forest Need	100%	2-3 yr review	Forest Analyst

## Records

The key items supporting the above programs that are available for verification are as follows:

- Records of FOIA requests
- Records of meetings with groups and associations
- Long Range Plan
- Management Plans
- Personnel Training records (Agency Training Coordinator)

## 19. Communications and Public Reporting

PM 19.1 Indicator 1 PM 19.2 Indicator 1,2,3
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### A. Summary audit report

Upon completion of this draft version of our current existing management plans tailored to the SFI standard, we shall submit our documents to the certification body for auditing. These documents will be assessed for content, and congruence to the SFI Standard, and the results will be submitted to SFI Inc. for posting to an external website. We shall also maintain all records of our audits for certification or recertification on hand at our Forestry Commission Headquarters in Columbia, SC, as well as each respective State Forest. We shall also work towards developing a documentation library, to better facilitate the auditing process.

### B. Annual progress reports

As described previously, the State Forest Analyst is responsible for SFI Standard adherence, and for collating data and preparing and submitting annual progress reports to SFI Inc. The method of review was described in detail in Section 16 (B). Reporting will be conducted in congruence with the SFI program, and will be developed in more detail upon acceptance.

## Training

PM 16.1 Indicator 2,3,4
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Training opportunities for Forest personnel, specific to the enhancement of their ability to communicate and more effectively report information, with special consideration to the SFI Program and Standards, will be developed as needs and availability dictate.

## Monitoring

PM 20.1 Indicator 1,2
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Key indicators monitored in relation to programs for involvement in sustainable forestry are unknown at this time, and will be developed through our commitment to the SFI program upon acceptance.

## Records

Records will not be available until after acceptance to the SFI program is conducted and subsequent participation monitored.

## 20. Management Review and Continual Improvement

PM 20.1 Indicator 1,2,3

### A. SFI program effectiveness assessment

The Agency and State Forests in particular will use the following categories and associated criteria in the evaluation of the effectiveness of SFI programs and achieving continuous improvement in performance:

- a. Improved effectiveness of management process
  - i. Operational improvements
  - ii. Streamlined management
  - iii. Improved review process to meet Standard
- b. Realized increases in SFI certified wood and wood products
  - i. Enhanced revenue stream
  - ii. Increased participation of contractors
- c. Improved recognition of our leadership or exemplary status in sustainable forest management
  - i. Increased request for SFI literature or information
  - ii. Increased appearance of Agency in relevant publications and literature
  - iii. Increased request for our participation in events or literature related to forest sustainability

### B. Monitoring of progress in achieving the SFI objectives and performance measures

The development of useful metrics to monitor progress against the SFI objectives and performance measures is challenging. While some of the expectations are noted previously, other measures have been identified that may support our progress

Describe the basic process used by the Company to monitor progress against the SFI objectives and performance measures. Note: The key data collected to support continual improvement should be captured in the *Monitoring* sections of this document.

### C. Annual management review

Describe the timing, participants and content requirements of the annual review of progress including at least:

- Review of overall performance against the SFI objectives and performance measures

- Stakeholder concerns
- An assessment of the effectiveness of current programs
- Areas requiring improvement, related actions to be taken, timelines and responsibilities
- Proposed changes to programs
- External audit findings and any required corrective/preventive actions
- A management conclusion regarding the ongoing adequacy of the Company's SFI program

## Training

PM 16.1 Indicator 2,3,4

The Agency and State Forest system have not developed a training program for management review and continual improvement, however we hope our continued association with the SFI Program will provide us opportunities to do so in the future.

## Monitoring

PM 20.1 Indicator 1,2

The key indicators that may be monitored in relation to effectiveness programs are identified in the following table, however the methodology for measuring these indicators is still in development.

Indicator	Measurement Method	Target	Measurement Frequency and Timing	Measurement Responsibility
Increased awareness of SFI Status	Increased number of bids	Unknown	Individual and Annual review	Harvest Supervisor and Forest Director
Greater Public Awareness of SFI Status	Increased appearance in relevant literature	Unknown	Individual basis	Forest Director, Forest Analyst, and State Lands Coordinator
Increased effectiveness in operations	Personnel overview	Agreement of Personnel in applications	Annual review	Forest Personnel

## Records

The key items identified that may support the continual improvement of our Agency association with SFI and the SFI Standards, and that may be available for verification are as follows:

- Annual Report of Audit
- South Carolina Forestry Commission Annual Report
- South Carolina Forestry Commission Accountability Report