



STATE OF TENNESSEE  
DEPARTMENT OF AGRICULTURE  
DIVISION OF FORESTRY

## FORESTLAND EXAMINATION REPORT

This Forestland Examination Report has been prepared by the Tennessee Department of Agriculture, Division of Forestry for [REDACTED] of Dyersburg, Tennessee, who has requested forestry assistance in the management of his timberland in Gibson County. [REDACTED] is interested in a report detailing the quality and condition of the timberland. The area was cruised February 23, 2017.

### Description of Management Unit

This tract of timberland is located west of [REDACTED] Road a few miles west of [REDACTED]. It supports a total of approximately 55 acres of timber. The timberland has been divided into two stands because of differing stand conditions. Please refer to the attached map for the stand locations. Each stand is described separately below.

The majority of the timberland is found in the North Fork of the Forked Deer River bottom. A few small thickets are found in uplands adjacent to the bottom. The bottomland site is fairly wet and flooding is common. The primary soil type on the bottomland site is Rosebloom silt loam. This soil is a good site for more water tolerant bottomland hardwoods. Lexington silt loam is the major soil type on the upland sites of the property. This soil is a good to excellent site for upland hardwood production.

### **Stand 1**

Stand 1 is the bottomland portion of the timberland and supports an estimated 40 acres of timber. The stand is medium to well stocked with poletimber (trees 6" to 14" in diameter) and small sawtimber. A few areas of medium sized sawtimber are scattered over the stand. Ash, maple, overcup oak (a bottomland white oak), and sweetgum are the primary species on the stand. Cypress and tupelo are common on the lowest and wettest sites of the stand. Overall, this is a good quality stand of bottomland hardwoods.

### **Stand 2**

This stand is made up of the timber on the upland sites of the property. It consists of four thickets that total approximately 15 acres of timber. Medium to well stocked areas of poletimber and small sawtimber comprise most of the timber on the thickets. The easternmost thicket supports medium to large sawtimber. Sweetgum, red oak, and white oak are the primary species present.



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**Forest Management Recommendations**

The timber on both stands needs time to grow and develop. Given ten to twenty years of growth, good quality stands of sawtimber should develop on both stands. Stand 1 should be monitored for both beaver activity and signs of emerald ash borer. Minimal beaver activity was observed at this time. Emerald ash borer is an insect that has caused extensive mortality to ash trees in the midwest and northeast. It has been found in eastern Tennessee. No economically feasible method of control is available for forest stands at this time. If signs or symptoms of this pest are observed and its presence confirmed, the timber should be harvested immediately. Please refer to the enclosed information sheet for details.

Field edges and fence rows should be allowed to grow up in native weeds and grasses. Strips about thirty feet wide should be allowed to grow up. The strips should be disked or mown in alternating sections every year or two so there is a mix of early successional vegetation types. Also, if beans or corn are planted in row crop areas, a few rows should be left along the edges of the field.

Permanent food plots can be established on field corners of the upland areas. Clover would be a good choice. Annual food plots (corn or soybeans) can be established on the bottomland fields of the property. Another alternative to the food plots would be to leave a few rows of corn or soybeans after harvesting the crops.

Fire should be kept out of the timberland. Fire causes scarring which can lower the quality and value of the timberland.





## TREE PLANTING PRESCRIPTION

Landowner Name	Phone <u>home</u> work mobile (circle or underline one)
Mail Address	
City, State, Zip	Phone
Email Address	<u>home</u> work mobile (circle or underline one)

Prepared by:	Date Prepared
Mail Address	TDF Approved by:
Email Address	Signature:

### Treatment Area One 12 Acres

**Treatment Area Description** (past use, suitability, topography, soil type, competing vegetation, current condition):

Rolling pasture with predominantly fescue grass, Dellrose loam and Hawthorne, well suited to upland oak species such as Northern red oak and white oak. Shagbark hickory will also be planted in between each oak along with black cherry in between the oak rows. The yellow-poplar will be planted on one small hillside together.

The landowner intends to install tree tubes over the oaks also.

### Tree Planting Component

Species (Standard Hardwoods)	Seedling Spacing	Total per Species	Begin & End Dates
White Oak	24' X 20'	800	February 1, 2017
Northern Red Oak	24' X 20'	700	March 15, 2017
Shagbark Hickory	16' X 20'	1100	
Yellow-Poplar	10' X 8'	1200	
Black Cherry	20' X 8'	2700	

### Competition Control Component(s)

<b>Method: Site Prep Via Herbicide</b> <b>A broadcast herbicide application will be conducted in the early fall resulting in the killing of the existing fescue sod in addition to numerous competing undesirable woody stems. 4 quarts of glyphosate per acre plus 2 oz. of Escort per acre plus 2 oz. Oust will be applied.</b>	<b>Begin &amp; End Dates</b> <b>September 1, 2016</b>  <b>October 31, 2016</b>
<b>Method: Herbicide Release</b> <b>A release spray may be needed in June in which glyphosate would be applied around the seedling while protecting the seedling from any herbicide contact.</b>	<b>Begin &amp; End Dates</b> <b>May 1, 2017</b>  <b>June 30, 2017</b>

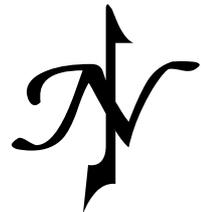
### Additional Information & Requirements for the Seedling Grant

In addition to completing the components noted above, the landowner must understand and agree to the following:

1. Participation in the seedling grant does not constitute approval for any other cost share programs.
2. The TDF Forester's approval for the Seedling Grant is subject to species availability.
3. Follow the guidelines listed in The Care and Planting of Seedlings brochure.
4. Application registered chemicals must be done strictly in accordance with label directions and other federal or state policies and requirements.
5. Maintain and protect planted seedlings for a minimum of 10 years.

## Tree Planting Site Map

Prepared by:		Date Prepared: <b>7-25-2016</b>
County: <b>Lincoln</b>	Latitude: (decimal minutes)	Longitude: (decimal minutes)



# Forest Management Plan



**PROPERTY OWNER:**

**MAP NUMBER:**

**PARCEL NUMBER:**

**PROPERTY LOCATION:**

**PREPARED BY:**

## **Mission Statement:**

This forest management plan was developed for the family who are interested in determining management options for their property located in Warren County. This plan was prepared in response to the landowner's request for natural resource management assistance. This document contains recommendations to fulfill the stated landowner objectives. Recommendations were derived using the said objectives in conjunction with the current state of the resources on the land base. The Division of Forestry hopes that the landowner will use this plan as a guideline for increasing land use productivity and overall enjoyment. We thank you for recognizing the need to pursue sound conservation practices. Together we will work to ensure that your land is being managed as efficiently as possible.

## **Introduction**

This property is located in the southeastern corner of XX. The property totals 55 acres and all of it is forested. The acreage determined by the TN Division of Forestry is for management plan purposes only, and may or may not be the correct property acreage. Survey grade equipment is needed to accurately determine acreages on this property. The owner wishes to manage the property in order to meet the following objectives:

1. **Timber Management-** Maximize future timber production by adjusting species composition using intermediate treatments
2. **Aesthetics-** Maintain the scenic beauty of the property for camping and recreational purposes

The overall goal of this forest management plan is to ensure that forest management practices are carried out sustainably, and the long-term health and quality of the forest is preserved.

## **Stand Description**

This property has been in the family for several generations, dating back to the 1700's. It is located on the edge of the Cumberland Plateau, and lies on fairly level terrain (5-11% slopes). The property is surrounded on all sides by Rocky River Hunt Club Property, and it has no road frontage. The Hunting club allows the to access the property through a gated entrance off of Rt. 8. The hunting club currently uses the property, which is evident from the ATV tracks and several tree stands located throughout. At one time, a stage coach was used as a home at the center of the property, but very little evidence is still left of it. An old cemetery is located at the northwestern corner of the property. Headstones dating back to the 1700's can still be seen, but a majority of them are weathered beyond recognition.

The property was harvested approximately 15-25 years ago, which took a majority of the mature trees. Judging by the aerial photo, and after some investigation on the ground, the property appears to have been harvested using a group seed tree or strip clearcut technique (or a combination of both). All of the large sawtimber sized trees were harvested, but groups of pole sized and small sawlog sized trees were left in these groups or strips. Since the harvest, the property has regenerated into a mix of hardwood species, which are now 1-3" in diameter. Most of these stems are stump sprouts, but the property has regenerated into an adequate density of desirable hardwood stems. White oak makes up an impressive percentage of the sapling species composition (24%), and a majority of these stems are in a good canopy position where they can outcompete their surroundings.

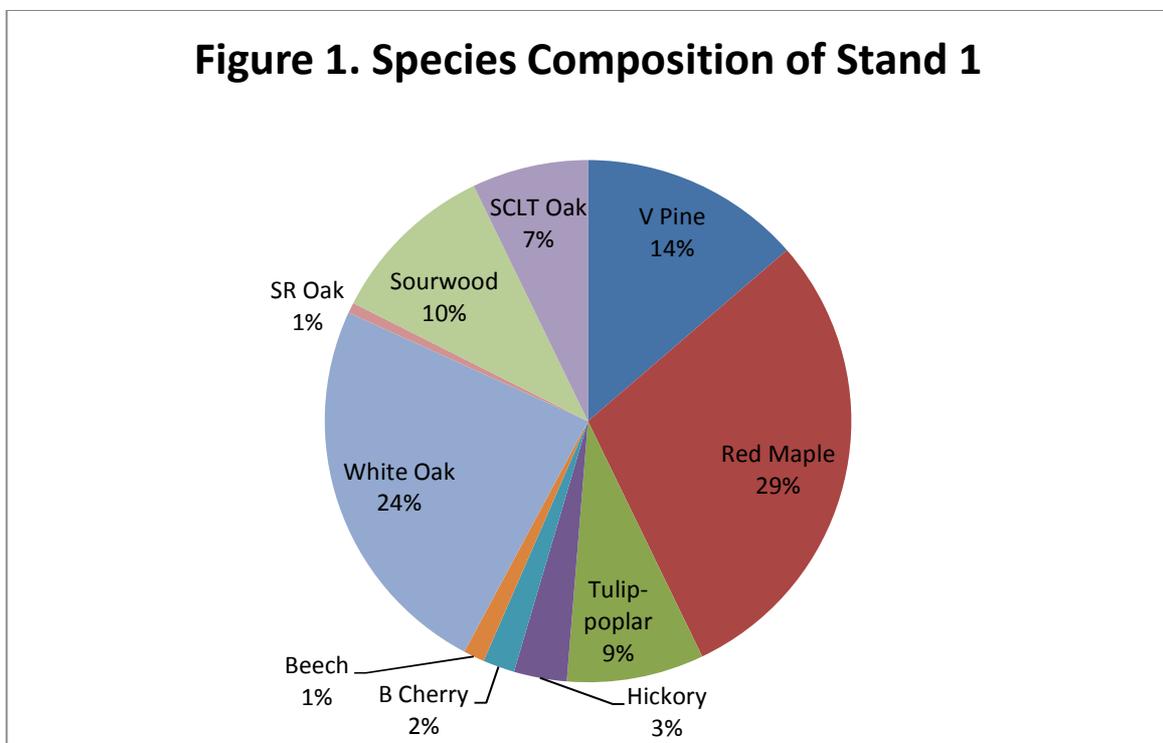
A stream runs east to west near the southern border of the property, and the trees along the stream side have not been harvested in recent history. The area along the stream still holds mature trees ranging from 60-75 years old. A white oak located at the center of this stand is about 40" in diameter, and is probably twice as old as the rest of the trees along the creek.

The majority of this property has not reached a merchantable size yet, but there are still management techniques that can help improve the species composition, and ensure that the future stand will be productive and valuable for future generations to enjoy.

### **Stand 1**

This stand comprises a majority of the property (45.6 acres), and is composed of 15-25 year old saplings that have regenerated after the timber harvest. The stand has a fairly thick understory of greenbrier in most areas, with American holly and eastern redcedar scattered throughout. White oak saplings make up an impressive component of the stand (24% of the species composition). Red Maple is the most common species (29%) however, most of these stems are being outcompeted by the white oak stump sprouts. Scarlet oak (7%) and tulip-poplar (9%) saplings are also commonly found throughout the stand. White oak is an ideal species to have, from a timber standpoint and a wildlife standpoint, so promoting this within the stand should be made a priority. The stand currently has an estimated 1096 white oak saplings/acre, which is an excellent density, and should allow the stand to have a dominant white oak component when it's mature. However, the stand could be made to have an even better stocking of white oak, through some intermediate treatments. In order to ensure that the oak saplings will grow to become the dominant species, and to improve the overall species composition of the stand, the following recommendations should be carried out.

**Figure 1. Species Composition of Stand 1**



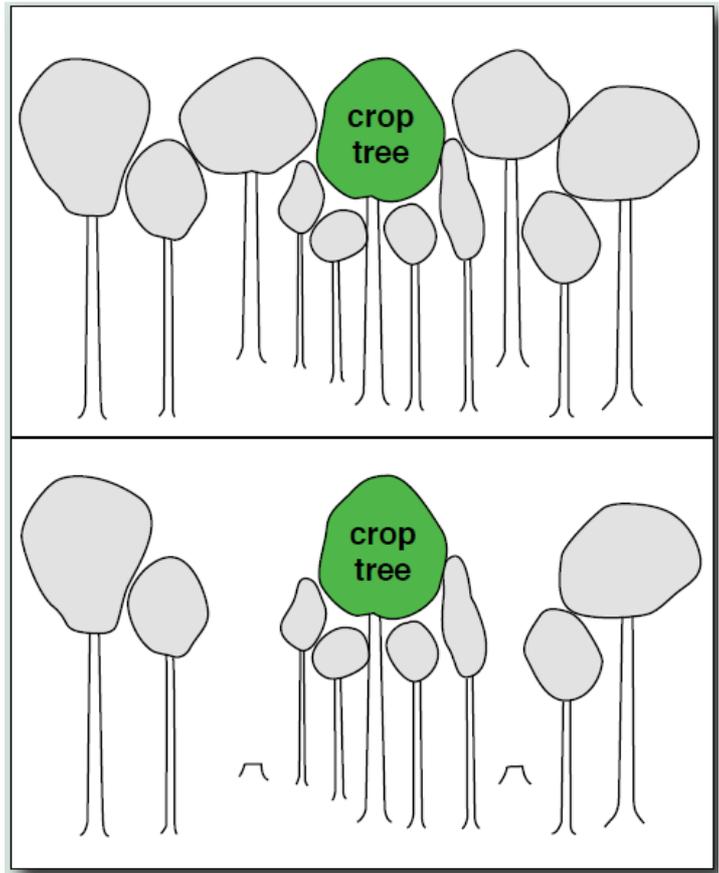
## Timber Stand Improvement

Considering the size, density and species composition of this stand, a timber stand improvement would be an ideal way to promote the growth of white oaks, while excluding other undesirable species. This would be a small investment that could alter the species composition of the stand for the duration of its lifetime. The main focus of this operation will be to promote the growth of oak species by clearing all stems in the immediate vicinity. This operation will give them a competitive edge, and allow them to become a dominant part of the future stand. Red maples should be the target species to remove during this operation. This species provides very little in the way of timber or wildlife value, and would only impede the growth of species that you would like to have. The landowner can accomplish this using a chainsaw to cut all undesirable stems around a tree that you would like to keep. Desirable stems should have the following characteristics:

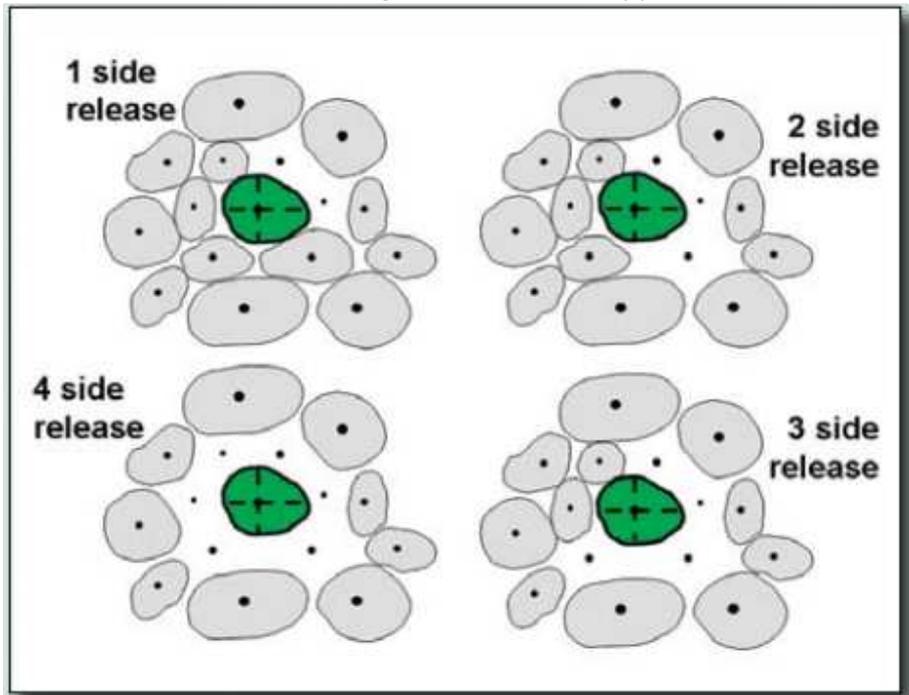
- Desirable species (white oak, tulip-poplar, scarlet oak)
- Well formed (straight stemmed), with a vigorous crown in the main canopy
- Without V-shaped forks in the stem
- Without large cracks, seams, or wounds in the bark

Since most of these stems are stump sprouts (several sprouts emerging from the stump of a harvested tree), the weakest stump sprouts in these groups can be cut as well. This will be a labor intensive operation, and the TDF can supply names of companies that could do the work at cost to the landowner.

Suppressed trees located underneath the main canopy do not need to be removed, and should be retained in order to prevent epicormic sprouting on the save tree. Only trees directly competing with the crop tree (touching canopies) should be removed.



This figure illustrates the correct way to remove competing trees, while leaving trees in lower canopy classes.

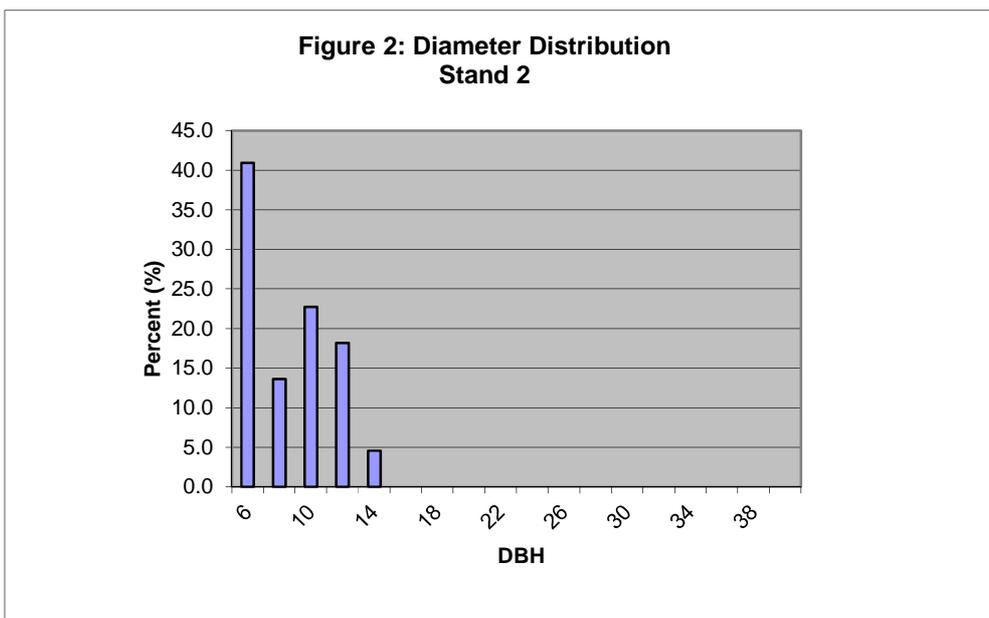


This illustration shows the different intensities of crop tree releases, using the crown touching method.

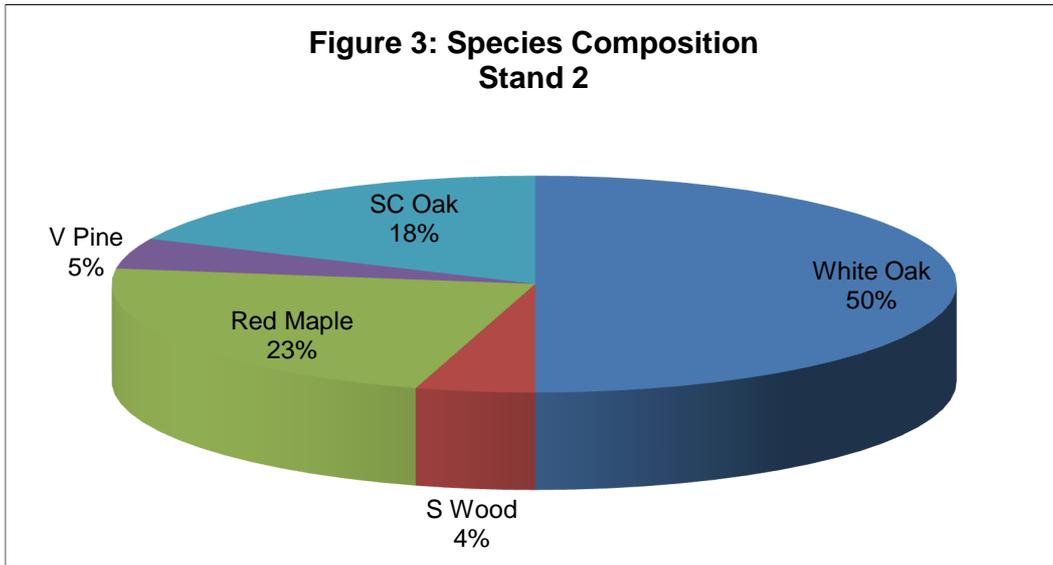
Herbicides will not be necessary to use on the stumps of the cut trees. Any resprouting that occurs will not jeopardize the trees in higher canopy classes.

### **Stand 2**

Stand 2 is made up of pole-sized and small sawtimber sized trees that were not taken during the initial harvest. Most of this stand is made of 10-12" diameter oaks (white oak-50% and scarlet oak-18%), which are providing a seed source to the property. Red Maple (23%) is also a dominant component of this stand. There's not enough volume to include this stand in a timber harvest, and a majority of the trees won't reach a merchantable size for several years.

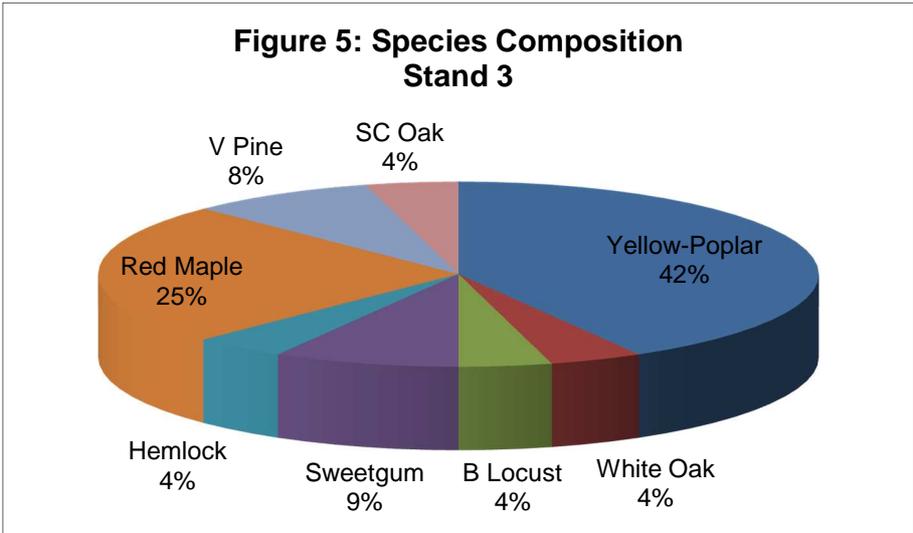
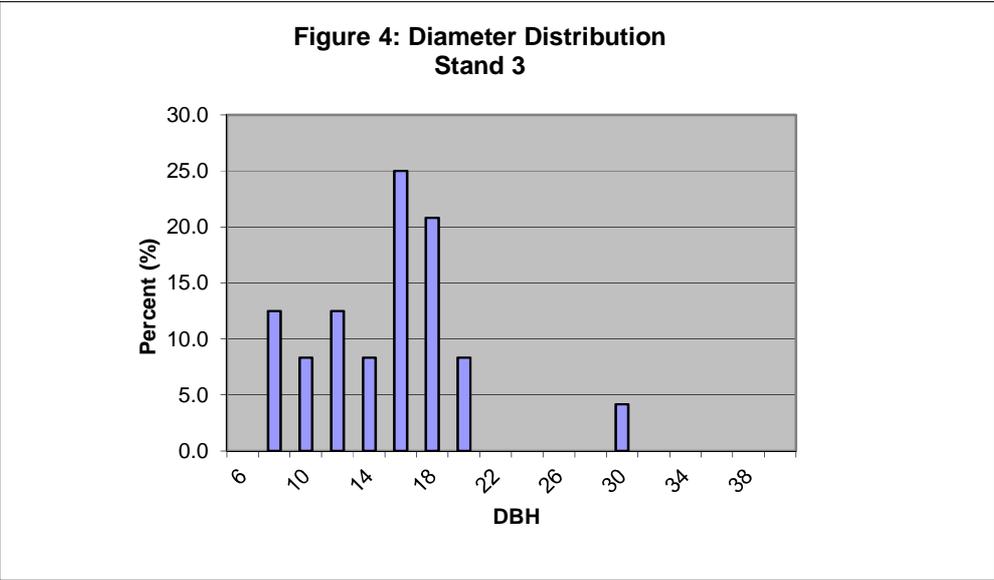


**Figure 3: Species Composition  
Stand 2**



**Stand 3**

Stand 3 is a sawtimber sized stand dominated by tulip-poplar (43%) and red maple (25%). Oak species make up a minor component (8%). This stand was not harvested initially to maintain water quality and aesthetics on the property. This area should be maintained as a riparian buffer, and should also provide a place for camping and recreational activities for the family. There are several interesting sites within the stand that should be maintained (the home site, and the spring site). An old stage coach served as the home site on the property, but very little is now left of it. The spring is still there, and still supplies clean water to the property, which can be utilized in the future if the family wishes to build a structure there.



**Underlying Soils**

**Forestland Productivity**

This table can help forestland owners or managers plan the use of soils for wood crops. It shows the potential productivity of the soils for wood crops.

*Potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry

Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

*Trees to manage* are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Productivity—Sequatchie County, Tennessee				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
			<i>Cu ft/ac</i>	
LaB—Lily loam, 2 to 6 percent slopes				
Lily	Chestnut oak	80	57.00	Northern red oak, Yellow-poplar
	Yellow-poplar	90	100.00	
LaC—Lily loam, 6 to 12 percent slopes				
Lily	Scarlet oak	77	43.00	Scarlet oak, Shortleaf pine, Virginia pine, White oak
	Shortleaf pine	63	100.00	
	Virginia pine	80	114.00	
	White oak	73	57.00	

Forestland Productivity—Sequatchie County, Tennessee				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
			<i>Cu ft/ac</i>	
RaC—Ramsey sandy loam, 5 to 15 percent slopes				
Ramsey	Eastern white pine	70	114.00	Eastern white pine, Loblolly pine, Shortleaf pine, Virginia pine
	Northern red oak	60	43.00	
	Shortleaf pine	59	86.00	
	Virginia pine	60	86.00	
	White oak	61	43.00	

Forestland Productivity—Warren County, Tennessee				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
			<i>Cu ft/ac</i>	
LoB—Lonewood loam, 2 to 5 percent slopes				
Lonewood	Northern red oak	70	62.00	Northern red oak, Shortleaf pine, Virginia pine, White oak, Yellow-poplar
	Shortleaf pine	70	114.00	
	Virginia pine	70	114.00	
	White oak	70	57.00	
LwC—Lonewood-Lily complex, 5 to 12 percent slopes				
Lonewood	Northern red oak	70	62.00	Northern red oak, Shortleaf pine, Virginia pine, White oak, Yellow-poplar
	Shortleaf pine	70	114.00	
	Virginia pine	70	114.00	
	White oak	70	57.00	
Lily	Scarlet oak	77	43.00	Scarlet oak, Shortleaf pine, Virginia pine, White oak
	Shortleaf pine	63	100.00	
	Virginia pine	80	114.00	
	White oak	73	57.00	

Forestland Productivity—Warren County, Tennessee				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
			<i>Cu ft/ac</i>	
RmD—Ramsey-Lily complex, 5 to 20 percent slopes, very rocky				
Ramsey	Northern red oak	50	29.00	Eastern white pine, Loblolly pine, Northern red oak, Scarlet oak, Shortleaf pine, Virginia pine, White oak
	Shortleaf pine	50	72.00	
	Virginia pine	50	77.00	
Lily	Chestnut oak	80	57.00	Northern red oak, Yellow-poplar
	Scarlet oak	66	57.00	
	Shortleaf pine	57	57.00	
	Virginia pine	71	100.00	
	White oak	67	57.00	
	Yellow-poplar	88	86.00	
Ww—Whitwell loam				
Whitwell	Eastern white pine	90	172.00	Eastern white pine, Loblolly pine, Sweetgum
	Loblolly pine	90	129.00	
	Northern red oak	75	57.00	
	Sweetgum	90	100.00	
	Yellow-poplar	95	100.00	

## Threatened and Endangered Species

The Endangered Species Act (ESA) was passed by Congress in 1973 to protect species of plants and animals that are in danger of extinction. The ESA also protects the habitat on which they depend. Under the ESA, plants or animals presently in danger of extinction are classified as "endangered." Those that are a bit more abundant, but still declining and which may disappear in the near future, are classified as "threatened." The ESA treats plants and animals differently. Animals which are listed as threatened or endangered are protected on both public and private lands. Listed plants, however, are protected primarily on public lands. There are in many instances state laws that protect certain plants not covered by the ESA. Most forestry related activities do not harm threatened and endangered species as long as best management practices are followed. However, situations may arise where there are conflicts between forestry practices and protection of these species. In most cases, there are workable solutions. The U.S. Fish and Wildlife Service is the federal agency with regulatory responsibility for the ESA. Information on federally threatened or endangered species can be obtained the Service's field office in Cookeville. Information on state-listed threatened or endangered species is available from the Tennessee Wildlife Resources Agency and the Tennessee Department of Environment and Conservation, Division of Natural Heritage.

Buffer Distance: 4 mile

There are currently no threatened or endangered species on this property, but the following threatened or endangered species have been identified within the specified buffer distance of the property based on data kept in the Tennessee Division of Environment and Conservation, Natural Heritage Inventory Database.

TYPE	COMMON NAME	STATUS	HABITAT
Mammal	Pygmy Shrew	E - Verified extant (viability not assessed)	Found in a variety of habitats, with moist sites preferred over dry areas; middle and east Tennessee.
Flowering Plant	White Fringeless Orchid	B - Good estimated viability	Acidic Seeps And Stream Heads
Flowering Plant	Goldenseal	E - Verified extant (viability not assessed)	Rich Woods
Flowering Plant	Wood Lily	B - Good estimated viability	Dry Openings, Powerlines
Flowering Plant	American Ginseng	E - Verified extant (viability not assessed)	Rich Woods
Flowering Plant	Eggert's Sunflower	CD - Fair or poor estimated viability	Barrens And Roadsides

## ADDITIONAL COMMENTS

1. The TDF does offer assistance with certain forest management practices at cost to the landowner. Services include: Marking trees for timber sale (up to 20 acres), prescribed burning, tree planting, and subsoiling. Fees vary between services provided. Please be sure to make contact well in advance to set up or request work on your property.
2. For any future commercial harvesting activities that may be recommended, you should consider retaining a consultant forester to assist you. There are several good reasons for this. Nationwide, statistics show that landowners who retain a consulting forester receive about double the income from a forest harvest than landowners who do not retain a consulting forester. Additionally, hiring a consultant forester relieves you of worrying about all the details of a harvest, such as contracts, inspections, legal permits required, etc., which can be handled by the consultant forester. Most importantly, by hiring a forester to administer a harvest according to a management plan, you can be assured the condition of the woodland following the harvest will continue to be productive and valuable. You can contact the forestry office for a list of private consulting foresters licensed to practice forestry in Tennessee.
3. Upon request, the TN Division of Forestry can demonstrate forestry practices not offered as vendor services on up to 1 acre- free of charge. These services include: non-commercial thinnings, cull tree removals, site preparation for natural regeneration of hardwoods, mid-story removals, and herbicide applications.
4. Boundary location and marking is essential in order to eliminate the potential threat of timber trespass during active timber cutting operations, and will deter unwanted intruders. Boundary lines should be clearly marked with blue paint at eye level facing away from the property. These should be identified and displayed clearly before logging operations begin.
5. Tree seedlings are available at cost to landowners for reforesting cut over areas, afforesting old fields or improving wildlife habitat. Contact the area forester for ordering and planting details.
6. Cost-share assistance may be available through state cost-share programs to help pay for a portion the expenses associated with implementing the forestry or wildlife management activities in this plan. Contact the forestry office for further information.