

## Resource Management Guide

Clark State Forest	Compartment	13	Tract 8
Forester Greg Roeder	Date	June 22, 2009	
Management Cycle End Year 2029	Management Cycle Length	20 years	

### Location

Compartment 13 tract 08 is located in section 265 of Clark Military Grant in Clark County. The tract is approximately four miles away from the town of Henryville.

### General Description

C13T8 is 139 acres of predominately oak-hickory with a 24-acre pocket of mixed hardwood in its northeast corner.

### History

The tract was originally purchased by the state from two separate owners. The first tract purchased was previously owned by Earl and Mae Sanders, which was sold in April of 1951. This sale encompassed 38.56 acres. A few months later in July of 1951, Levi C and Fern L Malott sold their 100.8 acres, for a combined total of 139 acres.

### Landscape Context

This tract has a unique blend of several different land uses surrounding its boundary. To the east runs a road, which provides access to some of the residential properties that border the tract. Along the south and west borders there is a contiguous expanse of state forest. Along parts of that border are wildlife openings that were created over a decade earlier. Last there is a pasture that lies to the southeast of the tract.

### Topography, Geology, and Hydrology

Running directly through the middle of this tract is a ridge that runs east to west, with the eastern edge sloping down toward a lower elevation. The northern slope of the ridge is slightly steeper than the southern slope, which makes traversing it a little more difficult. Overall the elevation only changes from about 550 feet to around 700 feet. All of this terrain is underlain by shale bedrock that is part of the Knobstone escarpment.

Precipitation is diverted down two different routes depending on which side of the ridge the moisture falls. The north side of the ridge will be directed toward Wrong branch, Right branch, Blue lick creek, and then into Silver Creek. The southern side will first flow into Mountain grove run, then Left branch, Blue lick creek, and then Silver Creek.

### Soils

**BcrAW—Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration**

### Setting

*Landform:* Flood plains

*Landform position:* Natural levees and alluvial fans

**Soil Properties and Qualities**

*Parent material:* Channery, loamy alluvium

*Drainage class:* Moderately well drained

**BfbC2—Blocher, soft bedrock substratum-Weddel silt loams, 6 to 12 percent slopes, eroded**

**Setting**

*Landform:* Dissected till plains

*Landform position:* Shoulders and backslopes

**Soil Properties and Qualities**

**Blocher, soft bedrock**

*Parent material:* Thin loess, loamy materials and a paleosol in till over shale

*Drainage class:* Moderately well drained

**Weddel**

*Parent material:* Loess and a paleosol in till and residuum from shale

*Drainage class:* Moderately well drained

**ComC—Coolville silt loam, 6 to 12 percent slopes**

**Setting**

*Landform:* Hills underlain with shale or siltstone

*Landform position:* Shoulders and backslopes

**Soil Properties and Qualities**

*Parent material:* Thin loess and clayey residuum

*Drainage class:* Moderately well drained

**ConD—Coolville-Rarden complex, 12 to 18 percent slopes**

**Setting**

*Landform:* Hills underlain with shale or siltstone

*Landform position:* Shoulders and backslopes

**Soil Properties and Qualities**

**Coolville**

*Parent material:* Thin loess and clayey residuum

*Drainage class:* Moderately well drained

**Rarden**

*Parent material:* Clayey residuum

*Drainage class:* Moderately well drained

**DbrG—Deam silty clay loam, 20 to 55 percent slopes**

*Landform:* Hills underlain with shale

*Landform position:* Backslopes

*Parent material:* Clayey residuum

*Drainage class:* Well drained

**GmaG—Gnawbone-Kurtz silt loams, 20 to 60 percent slopes**

**Setting**

*Landform:* Hills underlain with siltstone

*Landform position:* Backslopes

**Gnawbone**

*Parent material:* Silty residuum

*Drainage class:* Well drained

## **Kurtz**

*Parent material:* Silty residuum

*Drainage class:* Well drained

## **PcrB2—Pekin silt loam, 2 to 6 percent slopes, eroded**

*Landform:* Dissected stream terraces

*Landform position:* Summits and shoulders

### **Soil Properties and Qualities**

*Parent material:* Thin loess and the underlying alluvium; or alluvium

*Depth class:* Very deep (more than 80 inches)

*Drainage class:* Moderately well drained

*Water table depth:* 1.5 to 2.0 feet (perched)

*Available water capacity to a depth of 60 inches:* About 8.2 inches

## **StdAQ—Stendal silt loam, 0 to 2 percent slopes, rarely flooded**

*Landform:* Flood plains

*Landform position:* Flood plain steps

*Parent material:* Acid, silty alluvium

*Depth class:* Very deep (more than 60 inches)

*Drainage class:* Somewhat poorly drained

## **Access**

Access to the tract can be gained from the east side where it borders Pixley Knob road. A perennial stream flows through the tract so caution would be needed in crossing. A second, more cumbersome entrance to the tract is by driving on a horse trail that starts across from Mountain grove cemetery on cemetery road. The horse trail is approximately one mile long to the area where it borders the tract.

## **Boundary**

On the tract's western side it is bordered by state forest. Along its east side it borders Pixley knob road for a short distance. For the other portion of the eastern border it is juxtaposed next to private pasture and forestland. The borders without an obvious landmark we used a GPS.

## **Wildlife**

Deer scat was abundant throughout the tract along with the visuals of a box turtle, a flying squirrel, and numerous herpitiles. Quiet a few different bird species were heard including such species as the red-eyed vireo, the chickadee, and others that we were unable to identify. Since the tract was divided between two different canopy types, we saw different vegetation. In the mixed hardwoods there was more foraging opportunities for wildlife, most likely the result of being a more mesic site. Compared to the oak-hickory area where the understory

vegetation wasn't nearly as dense and contained more small trees and shrubs than a variety of plant life.

**Wildlife Habitat Feature Tract Summary**

Inventory Filename: C:\Documents and Settings\Greg\My  
 State Forest: Clark      Compartment Number: 13      Tract:  
 08  
 Reference Number: 6301308      Tract Acres: 139

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal	Marked For Harvest	Residual Above Maintenance	Residual Above Optimal
<b>Legacy Trees *</b>								
11"+ DBH	1251		4512	3261				
20"+ DBH	417		719	302				
<b>Snags (all species)</b>								
5"+ DBH	556	973	1969	1413	996			
9"+ DBH	417	834	1057	640	223			
19"+ DBH	69.5	139	135	65	-4			
<b>Cavity Trees (all species)</b>								
7"+ DBH	556	834	90	-466	-744			
11"+ DBH	417	556	23	-394	-533			
19"+ DBH	69.5	139	0	-70	-139			

\* Species Include: AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

No species were listed for this tract on the National Heritage database survey. However, this area is known to be excellent habitat for the Indiana bat. The current stocking levels listed above shows that legacy trees and snags are well above the maintenance level. This provides the habitats necessary for the Indiana bat during the months of roosting, foraging, and maternity. In addition, snags for the five and nine inch diameter class are well above optimal levels. Only the 19-inch class is slightly below the optimal levels. To create more optimal conditions during timber stand improvement after a potential harvest, a few large trees could be girdled to create the desired number per acre. Cavity trees were listed as well below maintenance levels, but this could be due to leaf flush, preventing the forester from seeing any cavities in the canopy level. Overall the habitat is prime for the Indiana bat.

**Communities**

There are two plant communities that go along with the differentiation of the forest canopy. The majority of the stand is classified as *Dry-mesic upland forest*, since it grows between two different moisture gradients. Farther down in elevation is the other plant community, which is the *Mesic upland forest*. This forest type is found on more level terrain with an understory of more shade-tolerant species, species such as sugar maple and basswood. The *dry-mesic upland forest* contains species like shagbark hickory, white oak, and black oak.

## Recreation

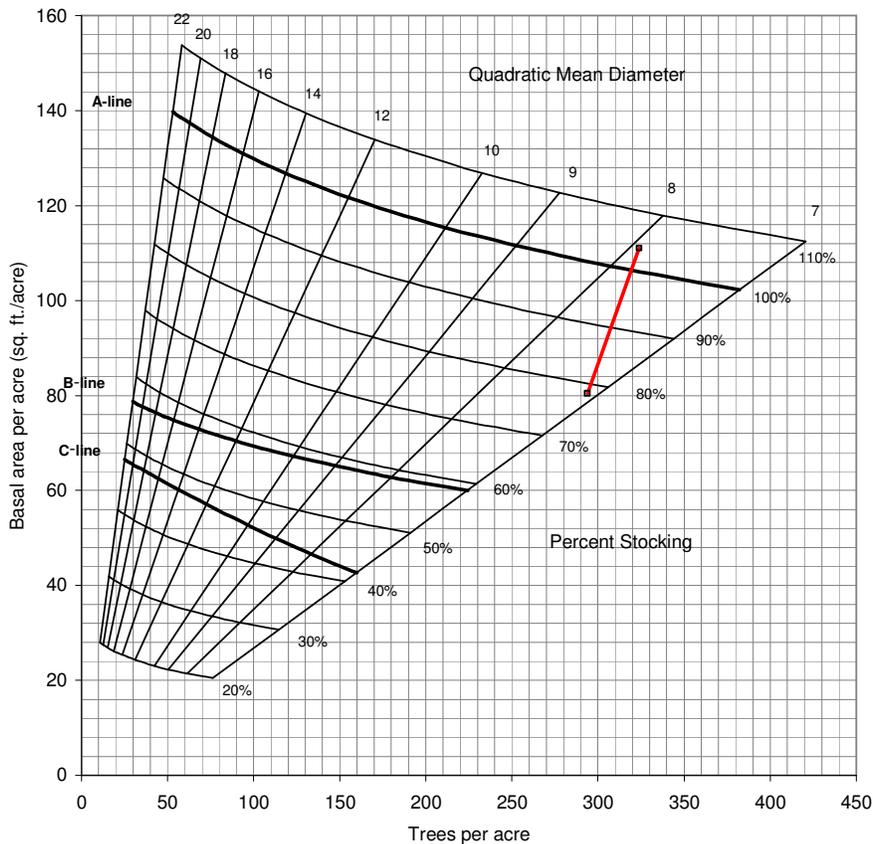
The main recreational use for this property would be hunting for different types of wildlife. Outside of hunting a horse trail does transect through a small section on the western side.

## Cultural

There are no known cultural features within this tract.

## Tract Subdivision Description and Silvicultural Prescription

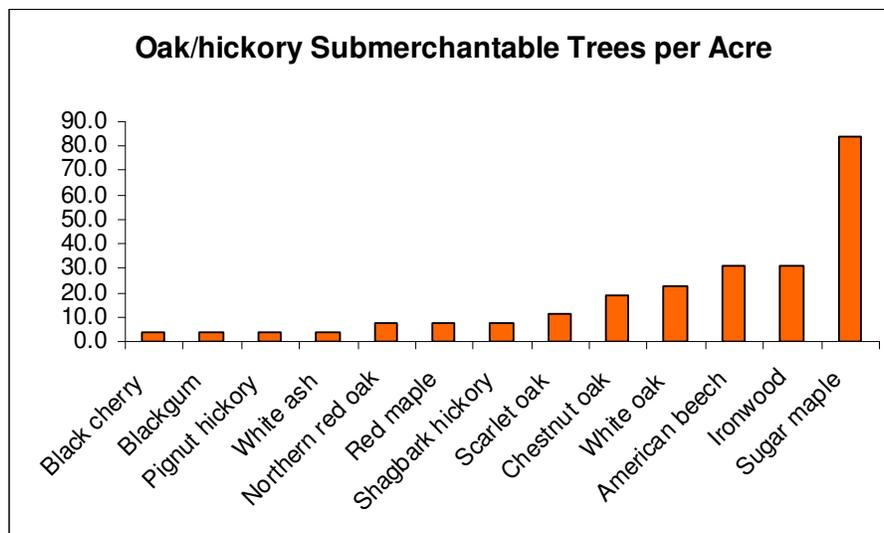
The tract is divided into two major cover types. The larger of the two was oak/hickory, which covered approximately 115 acres. It is dominated by white oak and chestnut oak, in addition to a sizeable class of Virginia pine. The current conditions on the stocking guide shows that the stand is 105% stocked with a mean diameter of around 8 inches and a basal area of 111 ft<sup>2</sup> (see figures below). This shows that overall the stand is in a mature state with a few large trees above the twenty-inch class. There has been some slight damage to a few trees from wind and ice. It is not ubiquitous throughout the stand, but several trees were noticed to have broken limbs. In addition to the broken limbs, there were several blown over trees in pockets of Virginia pine. These pockets appeared to be plantations and mainly had Virginia pine lying on the forest floor; however, several of these pines were still standing.

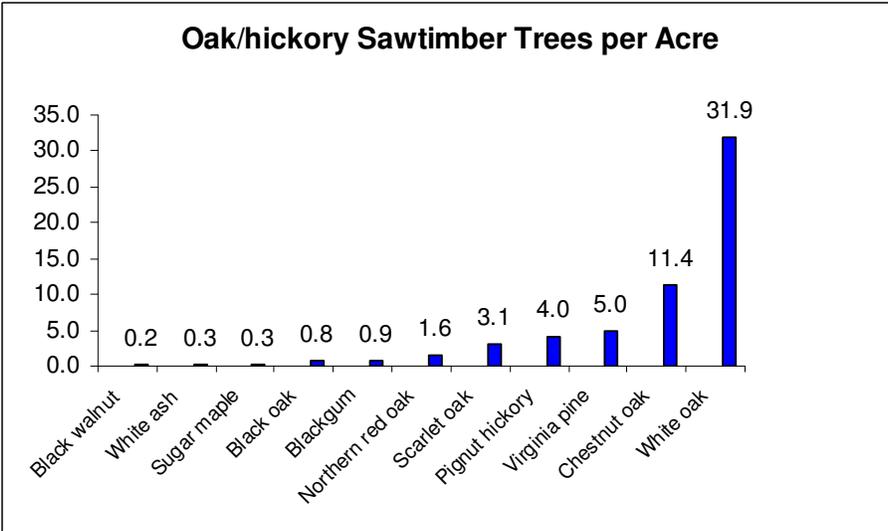
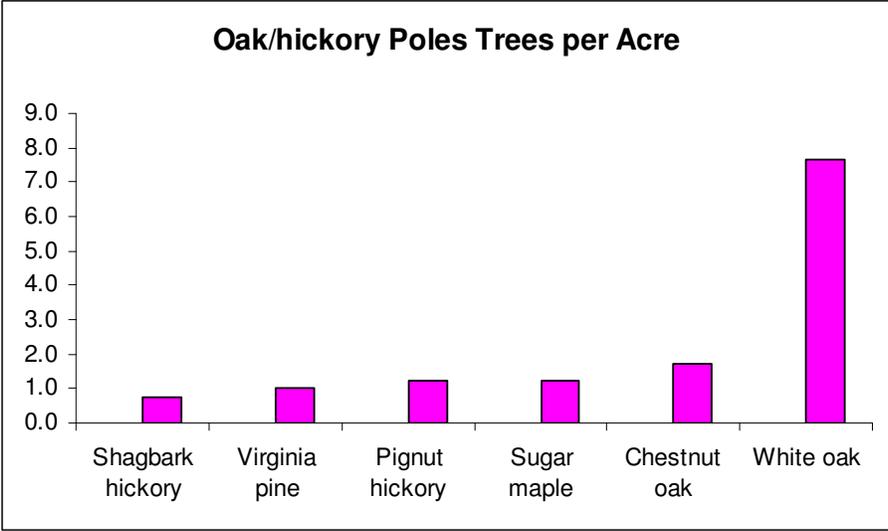


A single tree selection harvest with Virginia pine group selection openings is recommended for this stand. Such a harvest is projected to remove 2.3 MBF/Ac, or 266.8 MBF across the whole stand.

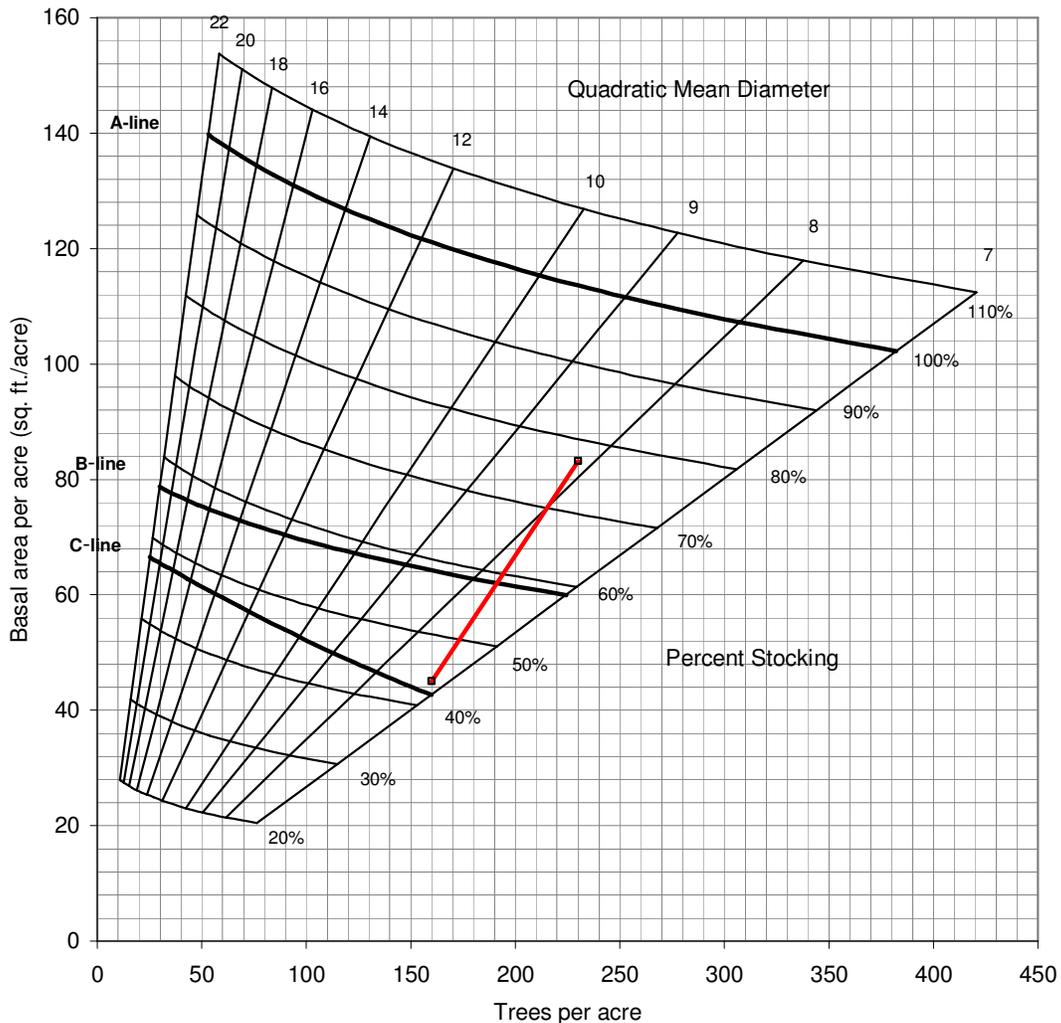
Since pockets of Virginia pine were observed, these areas should be clearcut, allowing natural regeneration to take over. These areas had a lot of blow over, making a clearcut necessary to obtain a healthier more open forest. Outside of the pockets of pine, single tree selection should be used to improve the oak and hickory portion of the stand. The stand is in a mature state, yet there are a few trees of bad form. These trees should be removed allowing regeneration to grow and opening the canopy for some of the larger trees. Also single tree selection would remove the trees damaged by wind and ice. The broken limbs may produce discolored wood thereby lowering its quality.

Prescribed fire is recommended for this tract following a harvest. Fire will be imperative to kill off the shade-tolerant submerchantable trees (maple, beech, ironwood) in this stand in anticipation of a bumper acorn crop. Without the removal of this shade-tolerant submerchantable layer, white oak regeneration has no chance of survival.

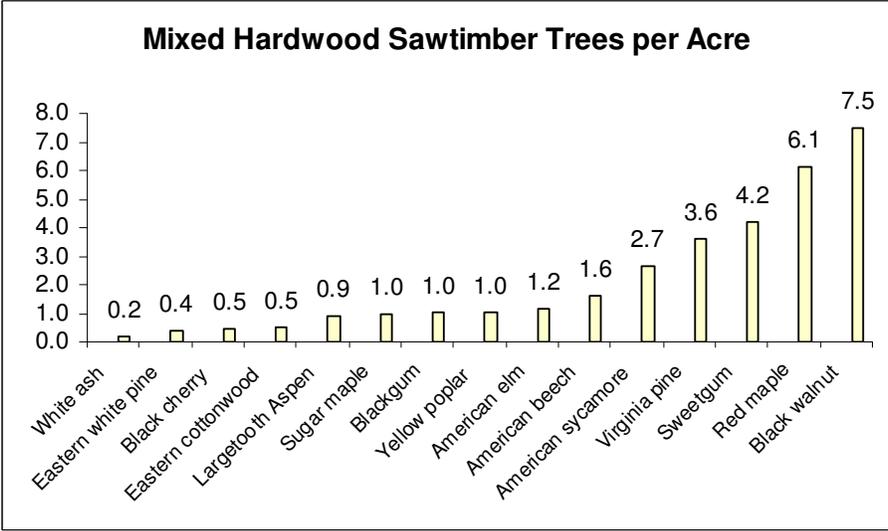
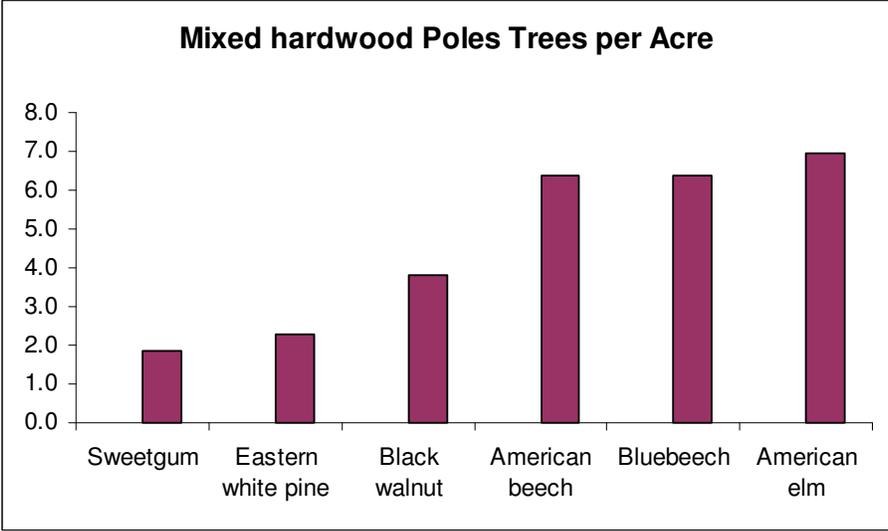
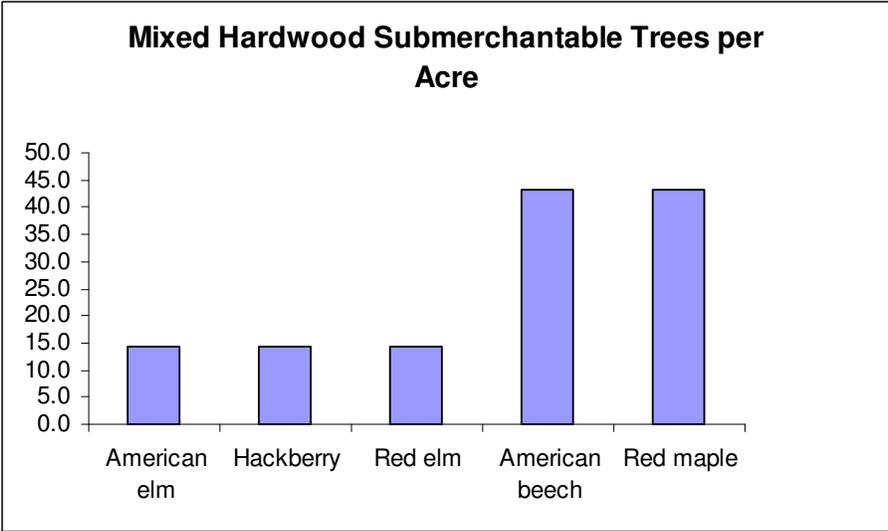




The second stand is 24 acres in size and is mixed hardwood in a more mesic environment. The area is lower in elevation and is located near a perennial stream. Some of the dominant species include black walnut, red maple, and sweetgum. The stocking level is approximately 78% with 230 trees per acre and a basal area of 83.2 ft<sup>2</sup>.



The mixed hardwood does have a diverse species composition however, that diversity brought a lot of species of low value and quality. There are several pockets small black walnut sawtimber throughout the stand. An improvement harvest in conjunction with group selection openings in the dilapidated pine stands is recommended for this stand. Such a harvest may remove 2.09 MBF/Ac, or 48 MBF throughout the stand, leaving residual stocking at approximately 40%.



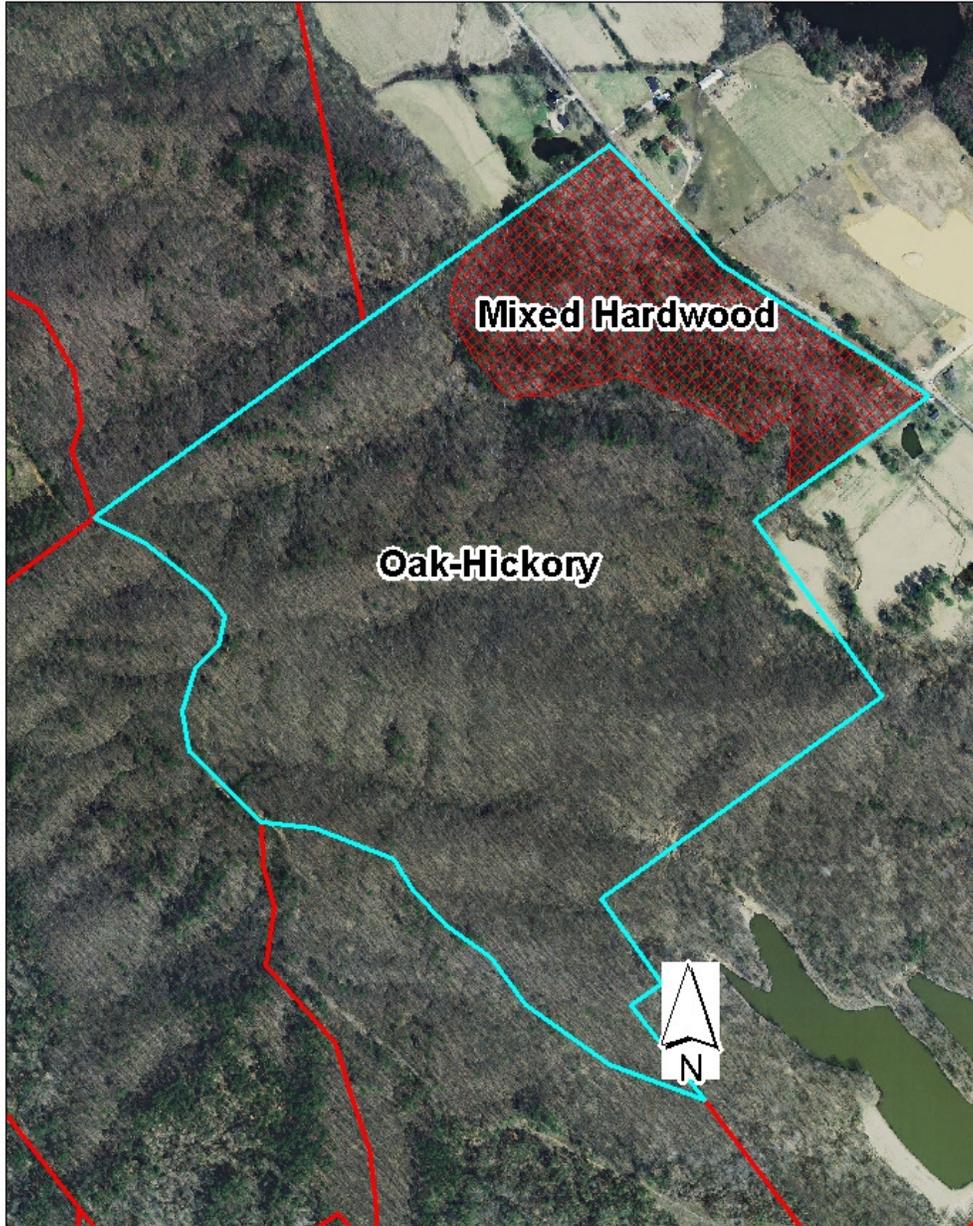
## Proposed Activities Listing

<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Single tree selection/group selection harvest	2010
Timber stand improvement	2012
Prescribed Fire	2013
Stand Inventory	2029

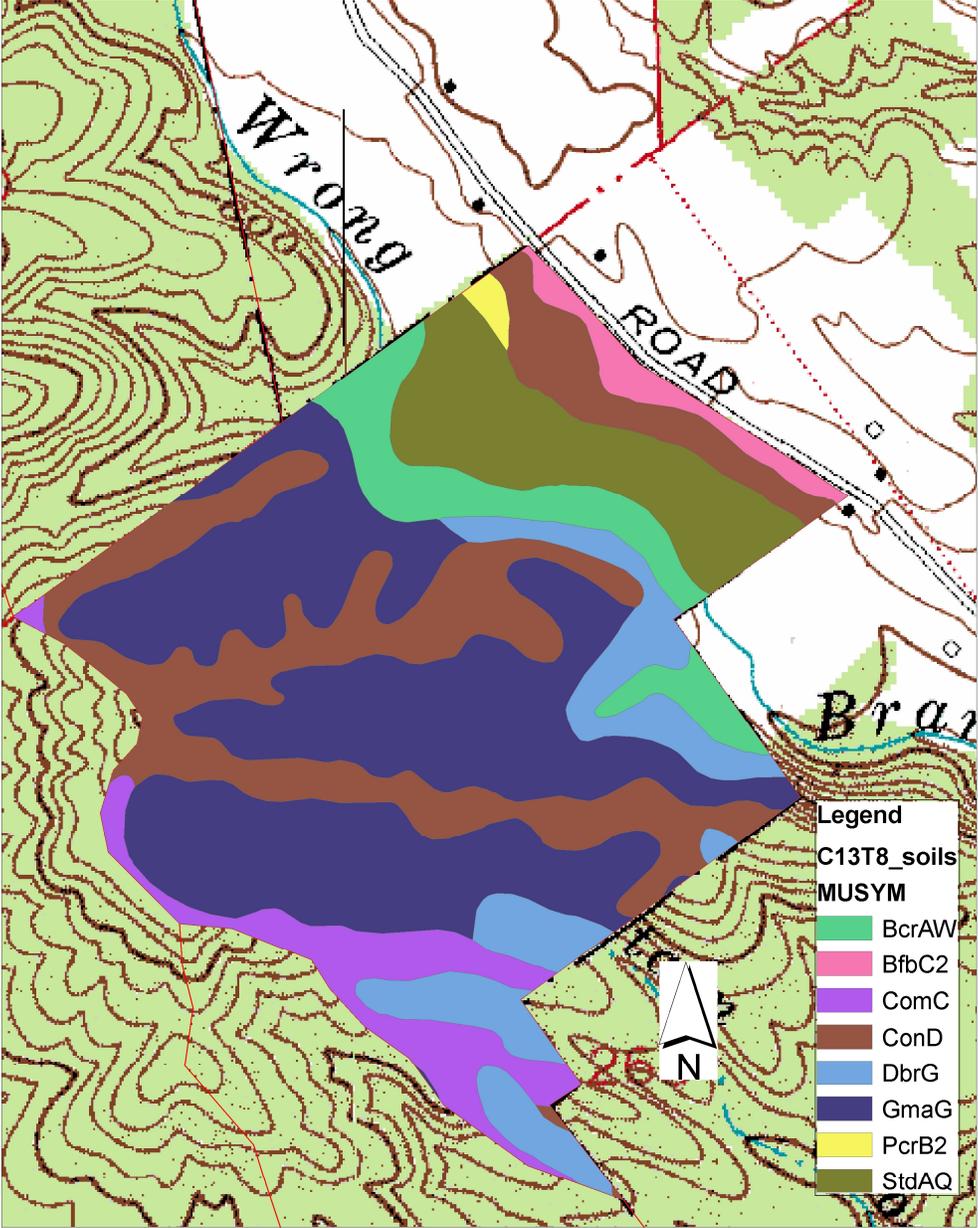
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C13T8**



# Clark State Forest C13T8



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