Resource Management Guide
Clark State Forest Compartment 5 Tract 5
Forester Greg Roeder, Brian Backhaus Date June 29, 2009
Management Cycle End Year 2029 Management Cycle Length 20 years

Location
Compartment 5 tract 5 (C5T5) is located in sections 25 and 26 of T2N, R6E in Clark County. The tract is approximately three miles northwest of the town of Henryville, Indiana.

General Description
C5T5 is 158 acres of predominately oak-hickory with a thin strip of mixed hardwoods growing in the Stick Run valley. The southwestern portion of the tract has 2.5 acres that extends into Shaw Lake.

History
The tract is a combination of five purchases made over the period of two decades with only a portion of each purchase encompassing C5T5. Initially the state purchased 40 acres from Carl and Myrtle Elrod on 08/18/1939. This was followed by an 80 acre purchase from James B. Whittington on 04/19/1940 and another 80 acres on 05/25/1940 from Jane E. Cullings. The next purchase was from John Carney for his 200 acres on 01/08/1943. Several years later the last property was purchased from John H. Pound. That purchase took place on 10/13/1950 and encompassed 105 acres.

Landscape Context
The entire tract is surrounded by state forest with a similar cover type. There is only a small portion of its border that is adjacent to Shaw Lake. Shaw Lake provides an opportunity for a different type of recreation than is offered within the forest. All of the state forest in the immediate area is managed for timber and wildlife.

Topography, Geology, and Hydrology
The main topographical feature within C5T5 is a ridge that runs along its southeastern border. This ridge reaches elevations of 1000 feet and is the highpoint within the tract. From this high point the elevations drops to a low of around 700 feet. The low areas are in the center of the tract with elevation gaining in almost all directions. Toward the western side of the tract the elevation continues to drop as it approaches Shaw Lake. This topographical feature produces a mini watershed that all flows toward Shaw Lake, which is a watershed management lake. The lake controls the amount of water that flows into Pigeon Roost Creek. From Pigeon Roost Creek the water flows into Underwood Run, which is approximately three miles north of Henryville, IN. This area is part of the Knobstone escarpment, serving as a transition between the Norman upland and the Scottsburg lowland.

Access
The easiest access to the tract is off Brownstown Road. From the road a horse trail leads directly to the southern portion of the tract and traverses the southeastern edge of the tract.

Boundary
The tract is completely surrounded by state forest, with a small section bordering Shaw Lake.
Wildlife
Wildlife observed within the tract were fawn, box turtles, salamanders, and a few species of birds. The tract provides great habitat for canopy dwelling bird species as well as cover for deer. The understory vegetation is not abundant, but is adequate for wildlife and insects to feed on. A small sampling of berries was noticed.
Wildlife Habitat Feature Tract Summary

Wildlife Habitat Feature Tract Summary

Inventory Filename: C:\Documents and Settings\Greg\My
State Forest: Clark **Compartment Number:** 05 **Tract:** 05

Reference Number: 6300505 **Tract Acres:** 157

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal	Marked For Harvest	Residual Above Maintenance	Residual Above Optimal
Legacy Trees *								
11"+ DBH	1413		2451	1038				
20"+ DBH	471		570	99				
Snags (all species)								
5"+ DBH	628	1099	1673	1045	574			
9"+ DBH	471	942	1561	1090	619			
19"+ DBH	78.5	157	262	183	105			
Cavity Trees (all species)								
7"+ DBH	628	942	111	-517	-831			
11"+ DBH	471	628	111	-360	-517			
19"+ DBH	78.5	157	55	-24	-102			

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

Both the snag and the legacy category met all the guidelines for the DoF wildlife habitat feature guidelines. In the snag category the levels were well above optimal, which would providing good habitat for forest wildlife species. The area where this stand was lacking was in the cavity trees. Cavity trees were lacking in all size classes and did not meet maintenance requirements. The inventory did take place in the summer and may have prevented cruisers from seeing cavities due to leaf out.
Communities
The major plant community present in this tract is the *dry upland mesic forest*. It is typically identified by white oak, black oak, and shagbark hickory, all of which are present. The area is typically a transition between to different moisture gradients caused by its sloping gradient. Exotic plants have been kept in check within this tract. One noted species was Japanese stilt grass.
On the Natural Heritage Database, Thread-like Naiad was listed as a threatened species. This is an aquatic species that is located within the State of Indiana. It requires still clear water to survive. Threats to the species include turbidity,

increased sedimentation, and eutrophication. The sighting of this species was noted on 07/17/2005 around the area of Shaw Lake. Since the species is affected by increased sedimentation, care would have to be taken during any forest management activities to prevent sedimentation.

Recreation

There are many recreation opportunities available within this tract. The lake can be used for fishing or canoing. A trail that leads to the lake also doubles as a horse trail that travels inside of the tract. Lastly the tract can be used for different hunting purposes.

Cultural

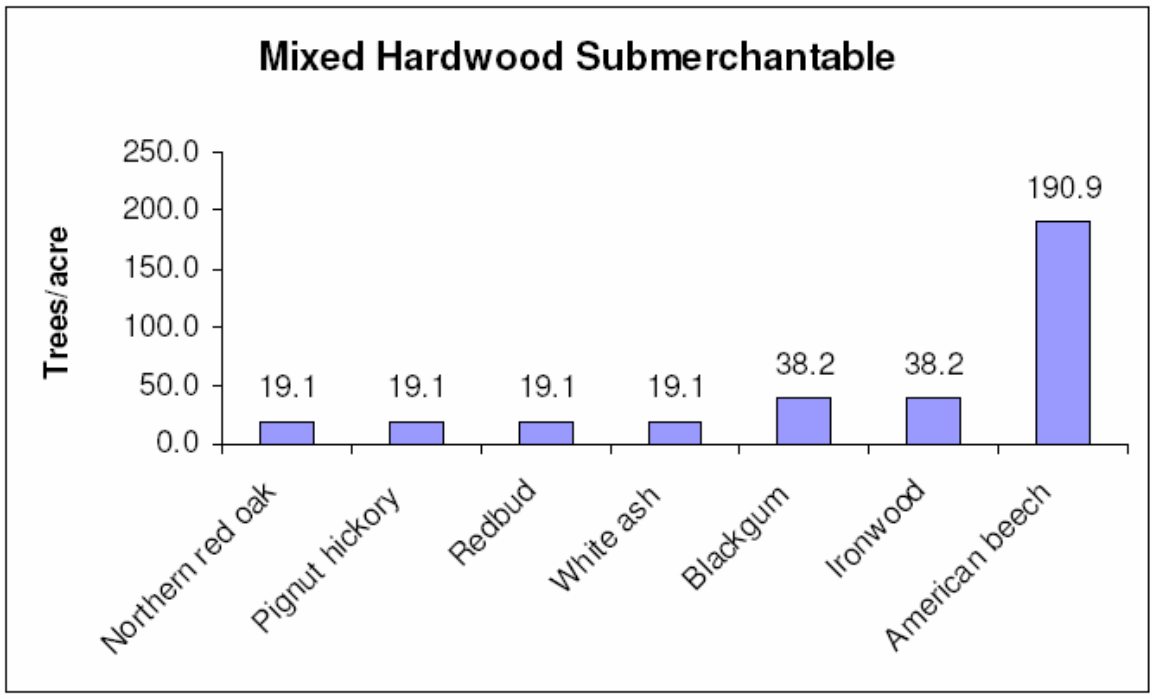
Cultural resources may be present on the tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction projects.

Tract Subdivision Description

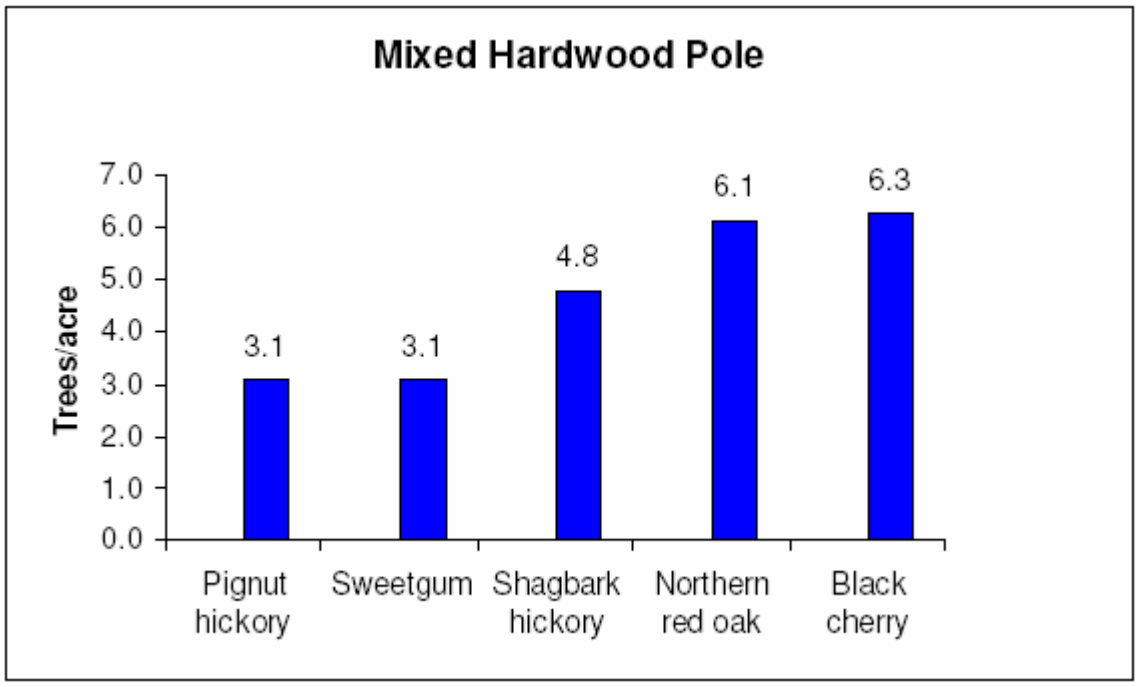
This tract has been divided into two separate stands for silviculture purposes. A 23 acre mixed hardwood stand can be found along the Stick Run creek bottom. This stand was originally a Virginia pine stand that has suffered heavy windthrow and is now a young mixed hardwood stand. The 134 acre oak-hickory stand can be found on the slopes surrounding Stick Run.

Mixed Hardwoods

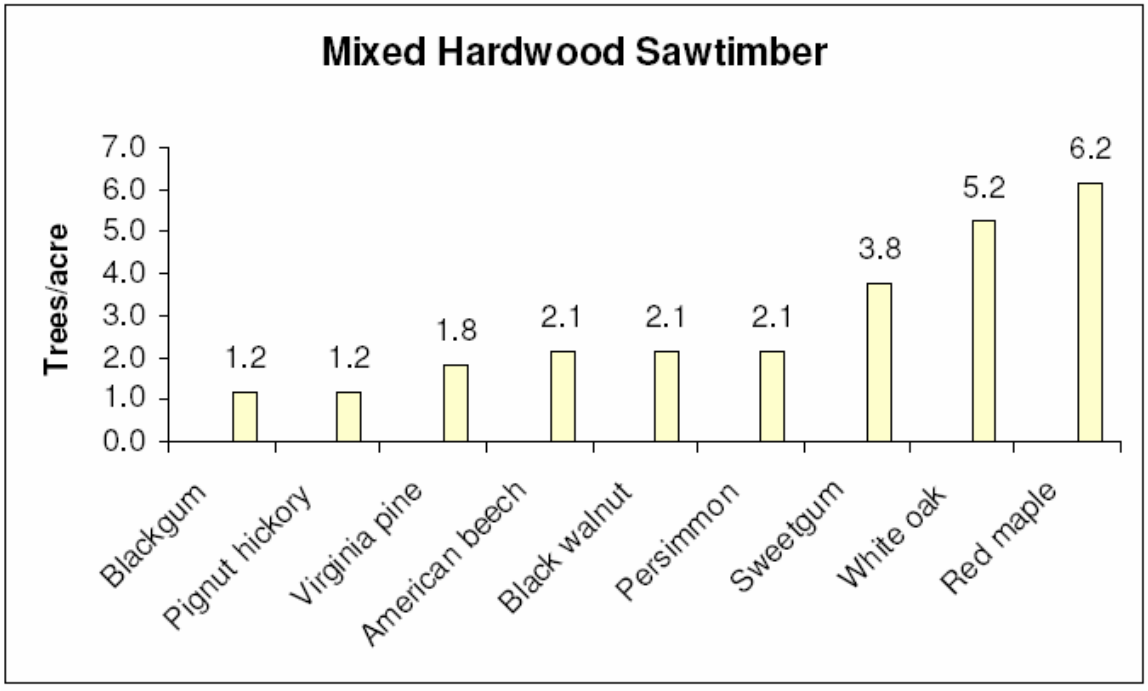
The submerchantable category is dominated by American beech (190.9 tpa), ironwood (38.2 tpa), and blackgum (38.2 tpa). Advanced regeneration (submerchantable) in this tract is made up of several undesirable species, with oak-hickory species accounting for only 10% of all stems inventoried.



The pole tree category in the mixed hardwood stand is composed of several desireable species; black cherry 6.3 tpa, red oak 6.1 tpa, and shagbark hickory 4.8 tpa.

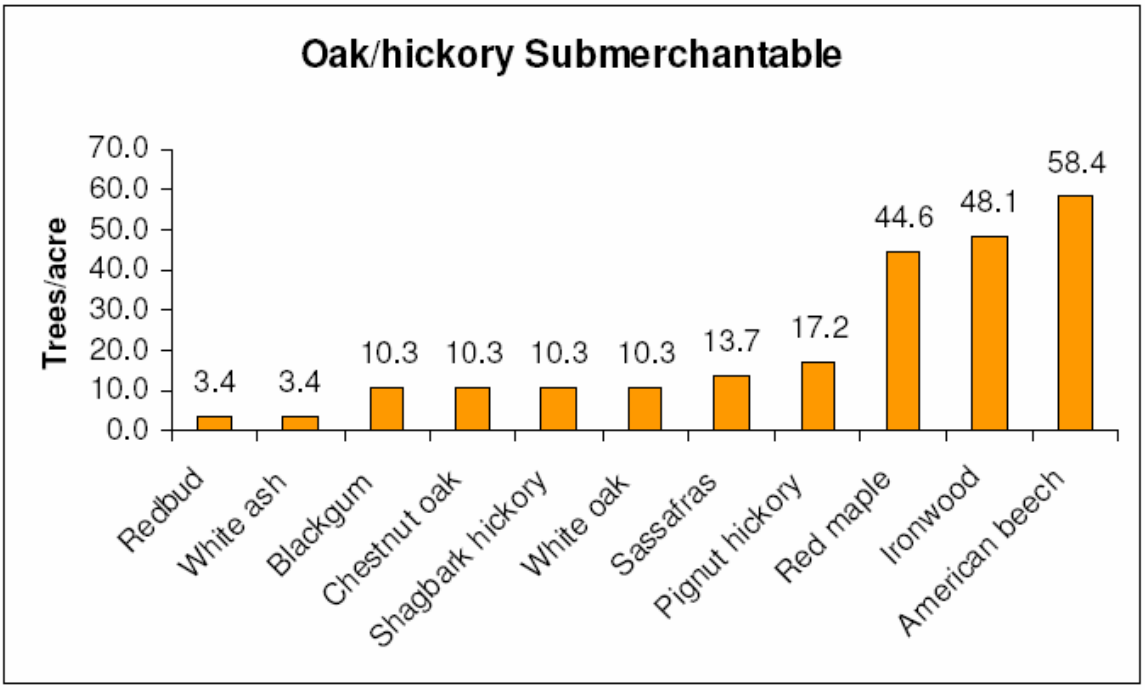


Sawtimber in the mixed hardwood stand is dominated by red maple, white oak, and sweetgum. The 5.2 white oak trees per acre seems high for this stand and is likely a result of plots that fell on the mixed hardwood/oak-hickory border. The overall sawtimber species composition and quality in this stand was very low due to its development in a shaded environment under the Virginia pine stand.

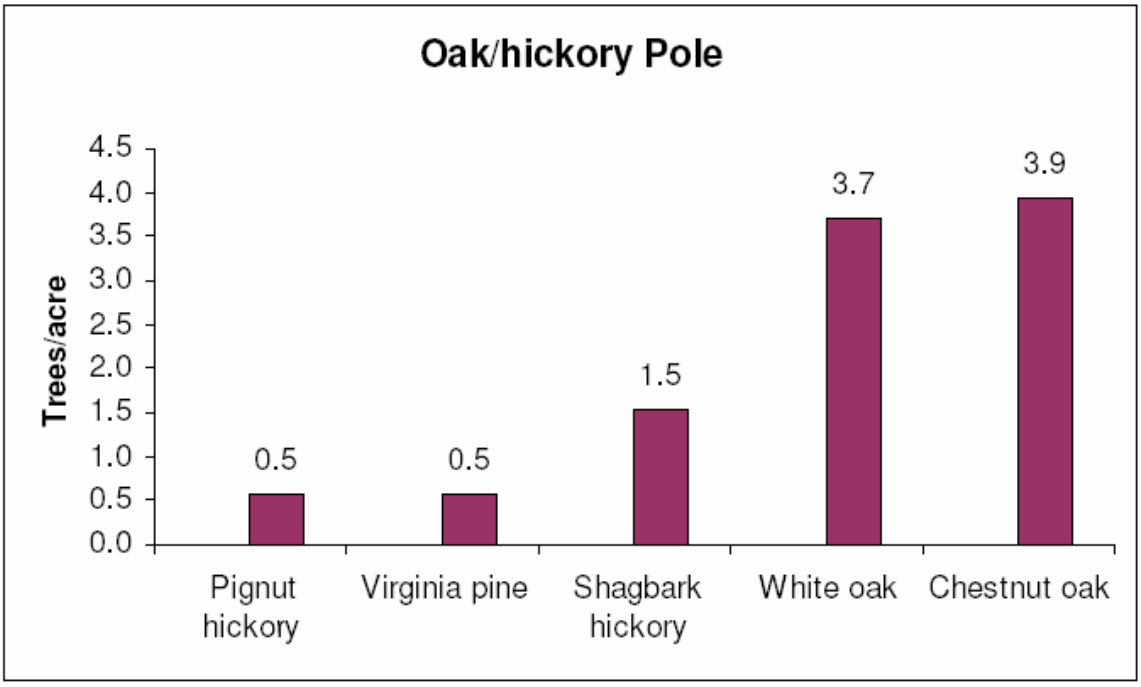


Oak-Hickory

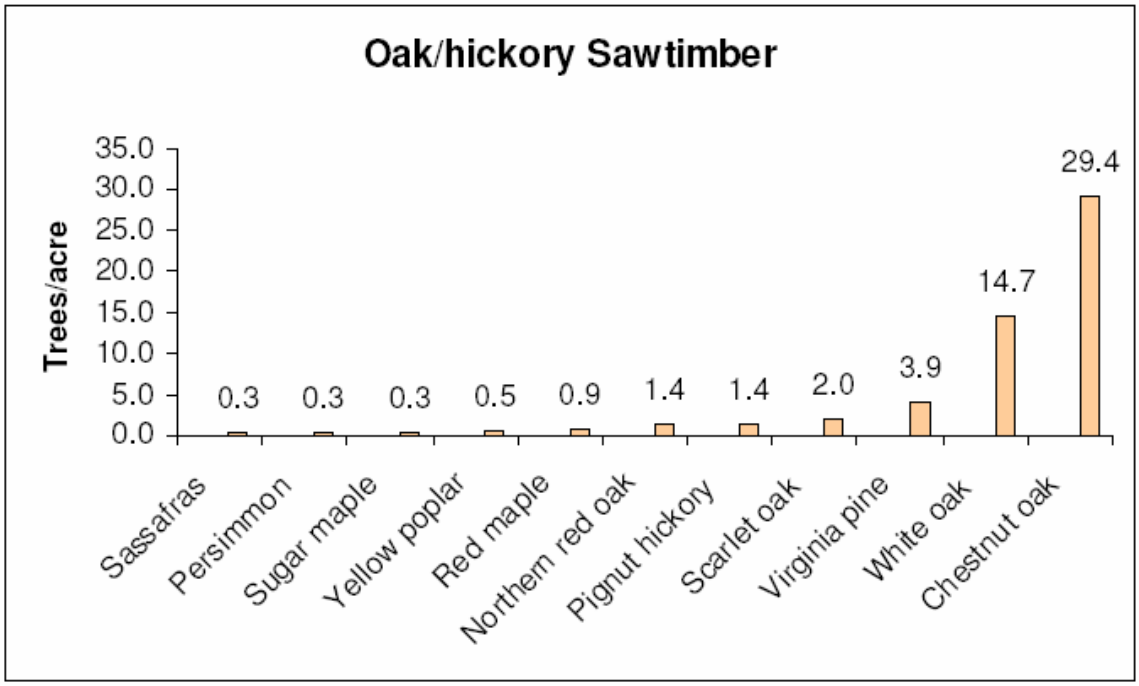
The regeneration layer in the oak-hickory stand exhibits very poor species composition. The product class is dominated by shade tolerant American beech, ironwood, and red maple. All of which are undesired species for this stand.



Pole timber in the oak-hickory stand is made up of chestnut oak, white oak, and shagbark hickory. All of these species are of those the forester enjoys seeing in a sub-dominate canopy position.



The sawtimber product class is mostly comprised of chestnut oak, with white oak, Virginia pine, scarlet oak, and red oak, making up the majority of sawtimber trees.

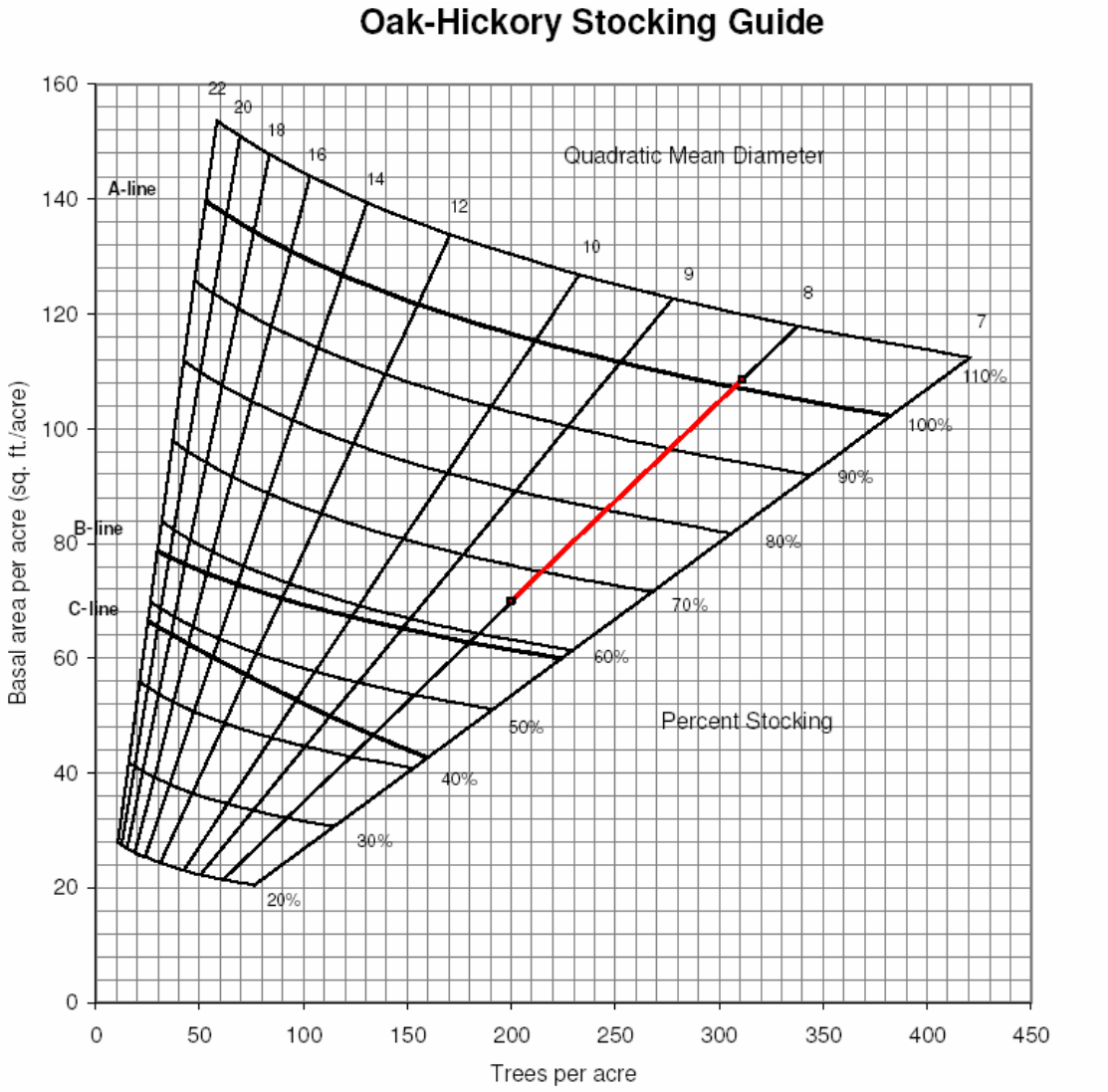


Silviculture Prescription

Oak-Hickory

The oak-hickory stand is currently overstocked with 108.6 ft^2 and 311 trees per acre for over 100% stocking. An overstocked stand has little to no room for trees

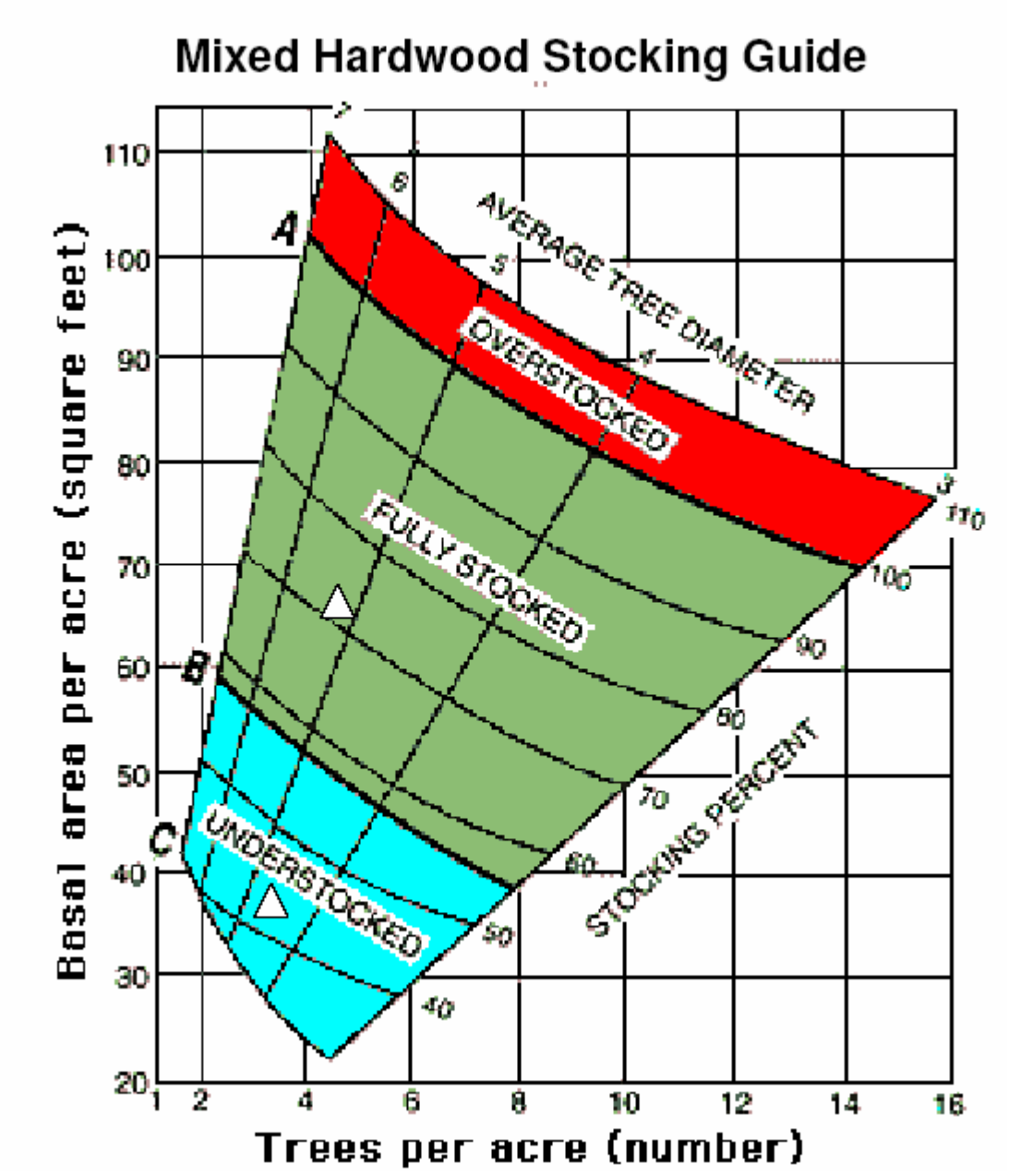
to continue growing. Overstocked stands also lead to shade tolerant understory composition which will shift the stand from oak-hickory to beech-maple in the long run. A thinning single tree selection harvest reducing overall stocking to 60-65% will greatly increase the growth rate of the residual stand and will likely increase acorn production in the residual oak trees. Increased acorn production in concert with an understory treatment aimed at killing beech, ironwood, and maple saplings should work to establish more desirable oak-hickory advanced regeneration, insuring a sustained oak-hickory forest through the next rotation. Overall harvest stock for this stand is 2.89 MBF/Ac or approximately 388 MBF across the whole tract.



Mixed Hardwood

The mixed hardwood stand species composition is very poor in the sawtimber and submerchantable product classes. The pole class is somewhat better however. I recommend an improvement harvest prescription in this stand aimed at removing undesirable sawtimber trees in favor of black cherry and red oak

poles found in the midstory. Current stocking is approximately 73%. Removing the red maple, sweetgum, and Virginia pine from the stand could yield 1.33 MBF/Ac or approximately 30 MBF across the whole stand. The stand would be understocked at approximately 40% stocking, but would have a much better sawtimber species composition.



Timber stand improvement will have to be performed following a harvest. TSI should focus on killing any unharvested cull trees, completing group selection openings, killing gravevines, and any crop tree release deemed necessary to further improve the stand.
Prescribed fire is highly recommended in the oak-hickory stand. After stocking is

lowered during a single tree selection harvest acorn production should increase due to lower competitive stress placed on the stand. A bumper acorn crop will be necessary to establish oak reproduction, but will go to waste unless shade tolerant understory competition is eliminated by fire.

Proposed Management Activity	*Proposed Date*
Single tree selection/improvement harvest	2011
Timber stand improvement	2013
Prescribed fire	2013
Re-evaluate oak reproduction	2015
Resource Management Guide	2029

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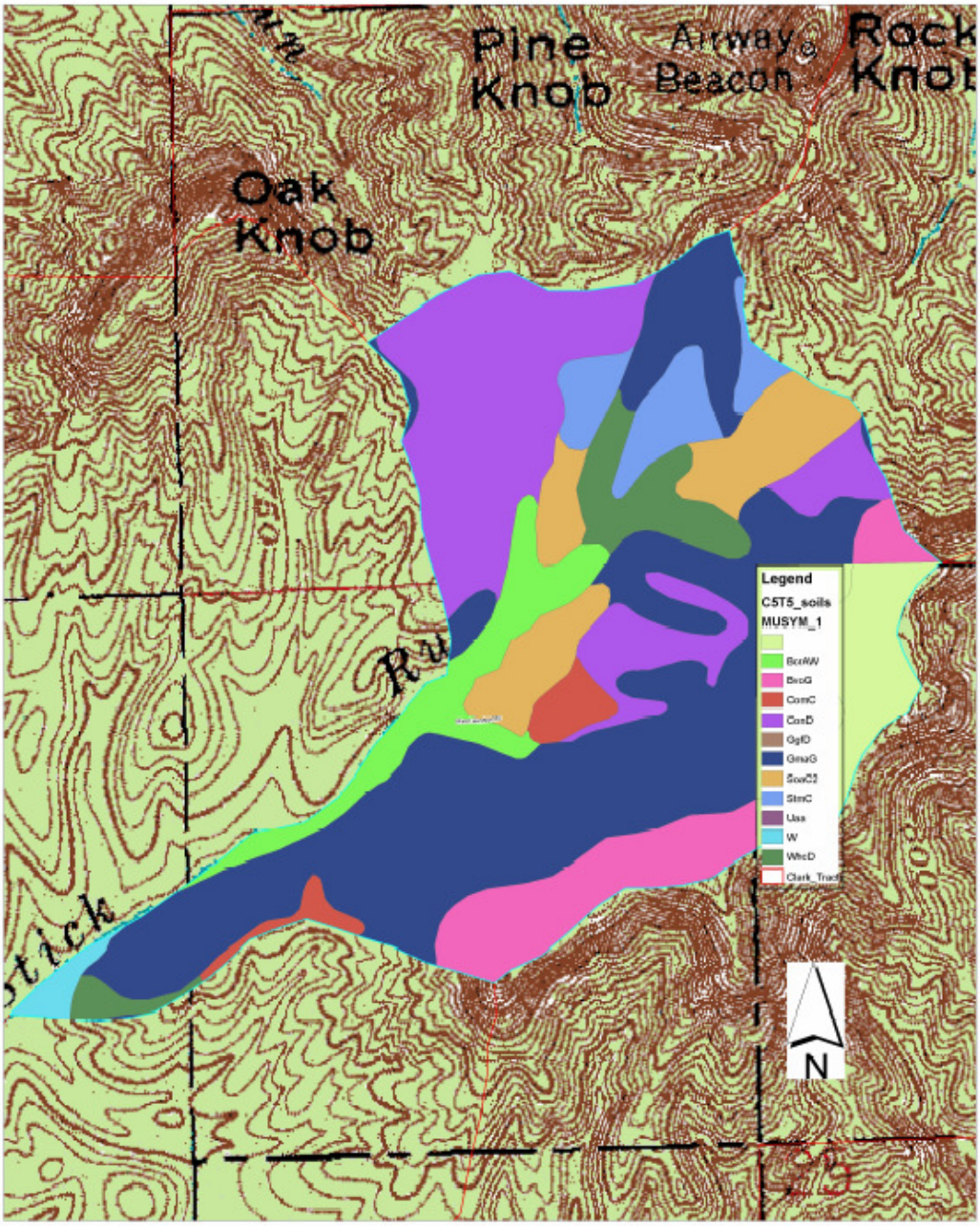
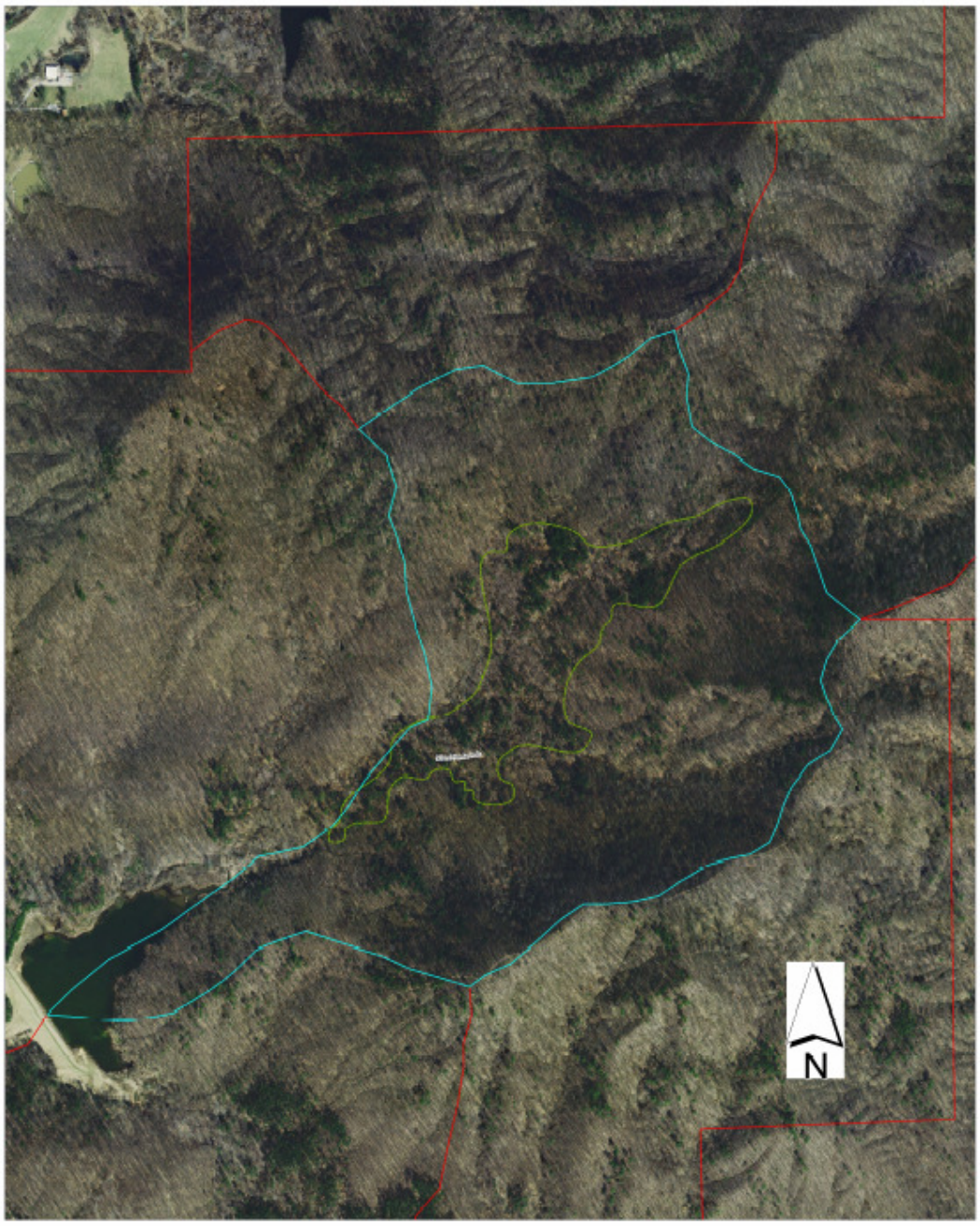
Clark State Forest
C5T5



Clark State Forest
C5T5



Soils

BcrAW—Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration
Landform: Flood plains
Parent material: Channery, loamy alluvium
Drainage class: Moderately well drained
BvoG—Brownstown-Gilwood silt loams, 25 to 75 percent slopes
Landform: Hills underlain with siltstone
Landform position: Backslopes
Brownstown
Parent material: Silty residuum
Drainage class: Well drained
Gilwood
Parent material: Silty residuum
Drainage class: Well drained
ComC—Coolville silt loam, 6 to 12 percent slopes
Landform: Hills underlain with shale or siltstone
Landform position: Shoulders and backslopes
Parent material: Thin loess and clayey residuum
Drainage class: Moderately well drained
ConD—Coolville-Rarden complex, 12 to 18 percent slopes
Landform: Hills underlain with shale or siltstone
Landform position: Shoulders and backslopes
Coolville
Parent material: Thin loess and clayey residuum
Drainage class: Moderately well drained
Rarden
Parent material: Clayey residuum
Drainage class: Moderately well drained
GgfD—Gilwood-Wrays silt loams, 6 to 18 percent slopes
Landform: Hills underlain with siltstone
Landform position: Shoulders and the upper part of backslopes
Gilwood
Parent material: Silty residuum
Drainage class: Well drained
Wrays
Parent material: Loess and silty residuum
Drainage class: Well drained
GmaG—Gnawbone-Kurtz silt loams, 20 to 60 percent slopes
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
SoaC2—Spickert silt loam, 6 to 12 percent slopes, eroded
Landform: Hills underlain with siltstone
Landform position: Shoulders and the backslopes
Parent material: Loess and silty residuum
Drainage class: Moderately well drained
StmC—Stonehead silt loam, 6 to 12 percent slopes
Landform: Hills underlain with shale or siltstone
Landform position: Shoulders and backslopes
Parent material: Loess and clayey residuum

WhcD—Wellrock-Gnawbone silt loams, 6 to 20 percent slopes
Landform: Hills underlain with siltstone
Landform position: Shoulders and backslopes
Wellrock
Parent material: Loess and silty residuum
Drainage class: Well drained
Gnawbone
Parent material: Silty residuum
Drainage class: Well drained