

RESOURCE MANAGEMENT GUIDE

Clark State Forest
Forester Greg Roeder & Matt Gee
Management Cycle End Year 2030

Compartment 14 Tract 6
Date 05/24/2010
Management Cycle Length 20 years

Location

Compartment 14, tract six has 71.3 acres of predominately hardwood timber located in the Clark Military Grant #235, in Clark County, Indiana.

General Description

C14T6 is split between two management areas, hardwood and young mixed hardwoods. In the past, it has been Virginia pine and hardwood stands. Past storms have blown down the majority of the Virginia pine. Tulip popular, sweetgum, maple, black cherry, scarlet oak and white oak trees are taking the place of the pine.

History

1951-Acquired tract from Frank J. Riley
1985-Timber Inventory, (112.9 BA/Ac) & Resource management guide
1986-TSI, & Timber Inventory 90.01 BA/acre
1987-Timber sale: 47,099 board feet, sold to Joe Spencer Logging for \$9,450.00
2010- Timber Inventory & management guide

Landscape Context

Private land surrounds this tract. There are several homes in the area, and some agriculture, hay fields and beef cattle near here. There is a home in the area, across from the tract that is improving their property by clear cutting and installing a pond.

Topography, Geology and Hydrology

C14T6 is comprised of north facing slopes, with several small hills. The elevation stays somewhat constant, sloping slightly from the front, or southern part of the tract at 550' to the northern part of the tract down to 530'. Here the tract drains into a small bottom, containing Bowery Creek. Bowery Creek runs west to east through the northern most corner of the property. It empties into Blue Lick Creek, then into Silver Creek, and eventually into the Ohio River.

Soils

BcrAW-Beanblossom silt loam

1-3% slopes, occasionally flooded, very brief duration
Landform: Flood plains
Landform position: Natural levees and alluvial fans
Parent material: Channery, loamy alluvium
Drainage class: Moderately well drained
Water table depth: 3.5 to 5.0 feet (apparent)
Yellow poplar site index: 95

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
Water table depth: 1 to 2 feet (perched)

red oak site index: 66

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

Water table depth: 1 to 2 feet (perched)

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

Landform: Dissected stream terraces

Landform position: Summits and shoulders

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

Drainage class: Moderately well drained

Water table depth: 1.5 to 2.0 feet (perched)

Yellow poplar site index: 85

PcrC2- Perkins silt loam, 6 to 12 percent slopes, eroded.

Landform: Dissected stream terraces

Landform position: Shoulders and backslopes

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 8.1 inches

Composition

Pekin and similar soils: 76 percent

Dissimilar inclusions: 24 percent

* Pekin soils, severely eroded on shoulders and the upper part of backslopes

* Pekin soils with 12 to 18 percent slopes on backslopes

* Stendal soils on toeslopes

WedB2—Weddel silt loam, 2 to 6 percent slopes, eroded

Landform: Dissected till plains

Landform position: Summits

Soil Properties and Qualities

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

Depth class: Very deep (more than 60 inches)

Drainage class: Moderately well drained

Water table depth: 1.5 to 3.0 feet (perched)

Available water capacity to a depth of 60 inches: About 7.9 inches

Composition

Weddel and similar soils: 95 percent

Dissimilar inclusions: 5 percent

Coolville soils on summits and intermixed throughout the unit

Access

This tract has access through a 3.35 acre easement that touches Percy King road. Inside the tract are old logging roads, for illegal horseback and ATV riding.

Boundary

This tract, with the exception of the 3.35 acre easement that touches King Road is isolated and surrounded by private land. Four stone markers and three steel pins were found and flagged. Some of the tract has fence on the property line; some is barbwire while some is woven wire.

Wildlife

White-tailed deer, wild turkey, raccoon, toads, bullfrogs, songbirds, and hawks were seen in this tract. Other small mammals (rabbits, & squirrels, etc.), quail, and various reptiles occur on nearby tracts and private property and are likely to be in this tract as well.

Wildlife Habitat Feature Tract Summary

Inventory		C:\Documents and Settings\groeder\My					
State Forest: Clark		Compartment		14		Tract:06	
Reference		Number:		Tract Acres: 71			
Number:		6301406					
Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal	Marked For Harvest	Residual Above Maintenance	Residual Above Optimal
Legacy Trees *							
<i>11"+ DBH</i>	639	1498	859				
<i>20"+ DBH</i>	213	546	333				
Snags (All species)							
<i>5"+ DBH</i>	284	497	828	544	331		
<i>9"+ DBH</i>	213	426	760	547	334		
<i>19"+ DBH</i>	35.5	71	26	-10	-45		
Cavity Trees (All species)							
<i>7"+ DBH</i>	284	426	110	-174	-316		
<i>11"+ DBH</i>	213	284	13	-200	-271		
<i>19"+ DBH</i>	35.5	71	0	-36	-71		

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

Both the legacy and the snag categories meet the DOF wildlife habitat feature guidelines, with the exception of the 19"+ snag category. The 19"+ snag category is the only snag category that does not meet guidelines. To reach guidelines, post-harvest TSI work will need to be done to girdle any cull trees left in the area. This should provide enough 19"+ snags to meet guidelines. This tract is lacking cavity trees. All size classes were lacking, however the 19"+ category is closest to the guidelines. One possible reason for the lack of cavities may be the time of the inventory. The inventory took place in summer and may have prevented cruisers from seeing the cavities because of the leaf out.

Communities

This tract is considered a combination of mesic floodplain forest and dry-mesic upland forest. Mesic floodplain forests are characterized by white oak, sugar maple, and white ash. Dry-mesic upland forests are dominated by white, black, red, and scarlet oak timber. No threatened or endangered species were found in this tract although a Natural Heritage Database Review contains record of an undated timber rattlesnake sighting in the vicinity. Several invasive species, such as multiflora rose, bush honeysuckle, and Japanese stiltgrass were observed during the inventory.

Recreation

The main recreation opportunities found in this tract at the current time include hiking, and birding. In the future once the area has gone through thinning horseback riding may be an option, once an official trail is setup.

Cultural

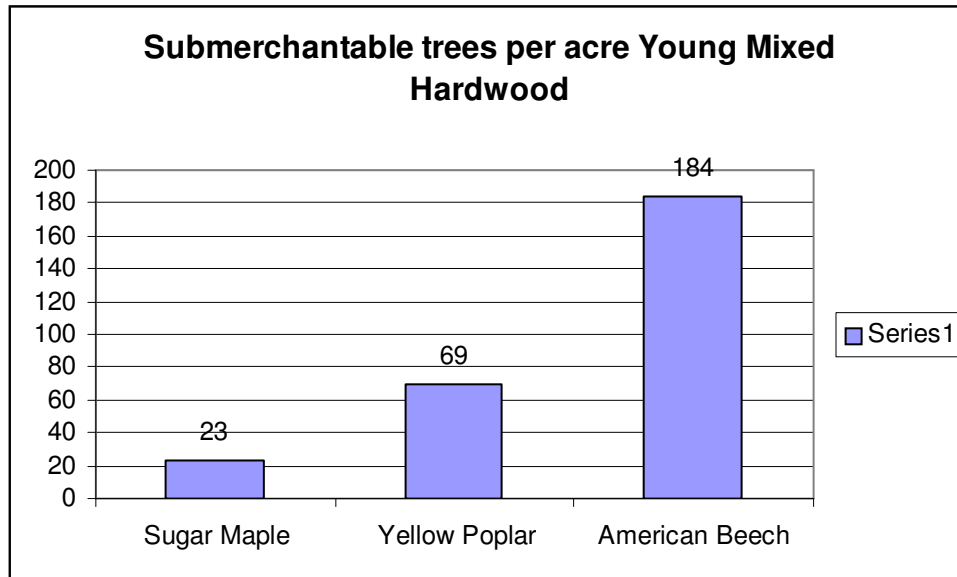
There were no cultural sites observed while preparing this guide.

Tract Subdivision Description

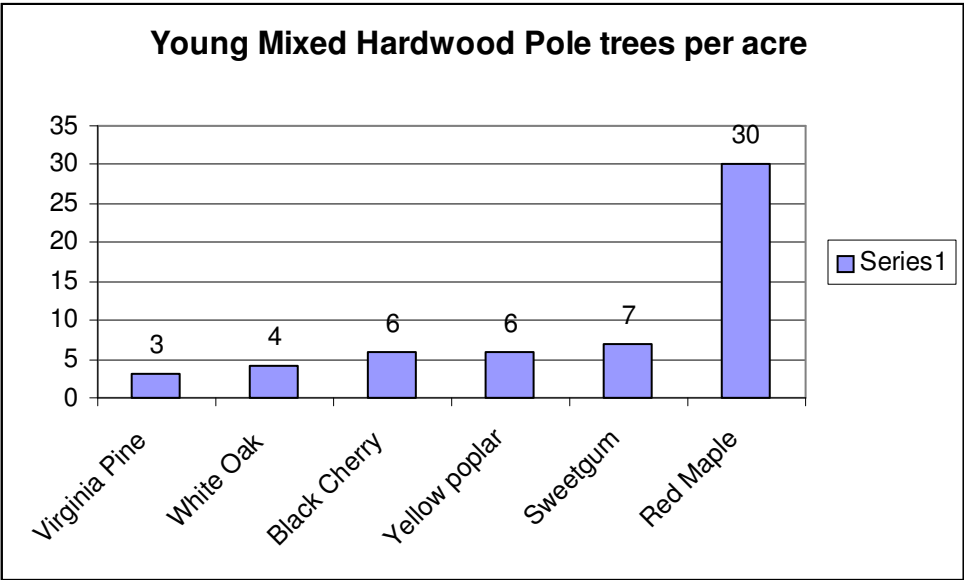
C14T6 contains two separate stands. The management areas are oak-hickory and young mixed hardwoods. In the past the young mixed hardwood was recorded as Virginia pine. Past storms have blown down the vast majority of the Virginia pine. This area had 5 inventory plots and is approximately 12 of the 71.3 acres. The other 59.3 acres is oak-hickory. It starts at the southern part of the tract and surrounds the blown down or mixed hardwood area.

Young Mixed Hardwoods

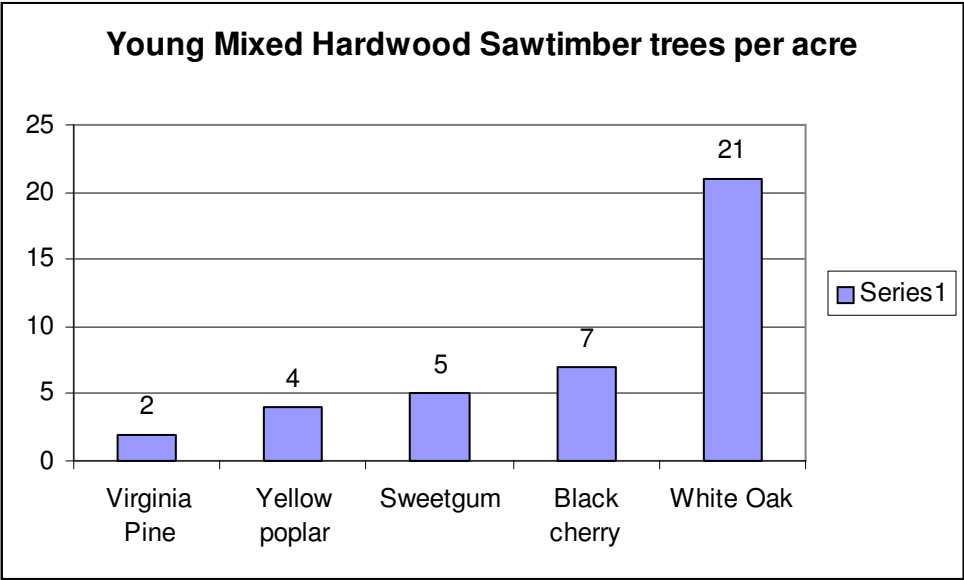
The sub-merchantable category is dominated by American beech with 184 TPA.



The pole tree category is lead by an undesirable species, Red maple (30 TPA). The following species are sweetgum (7 TPA), Yellow poplar (6 TPA), and black cherry (6 TPA).

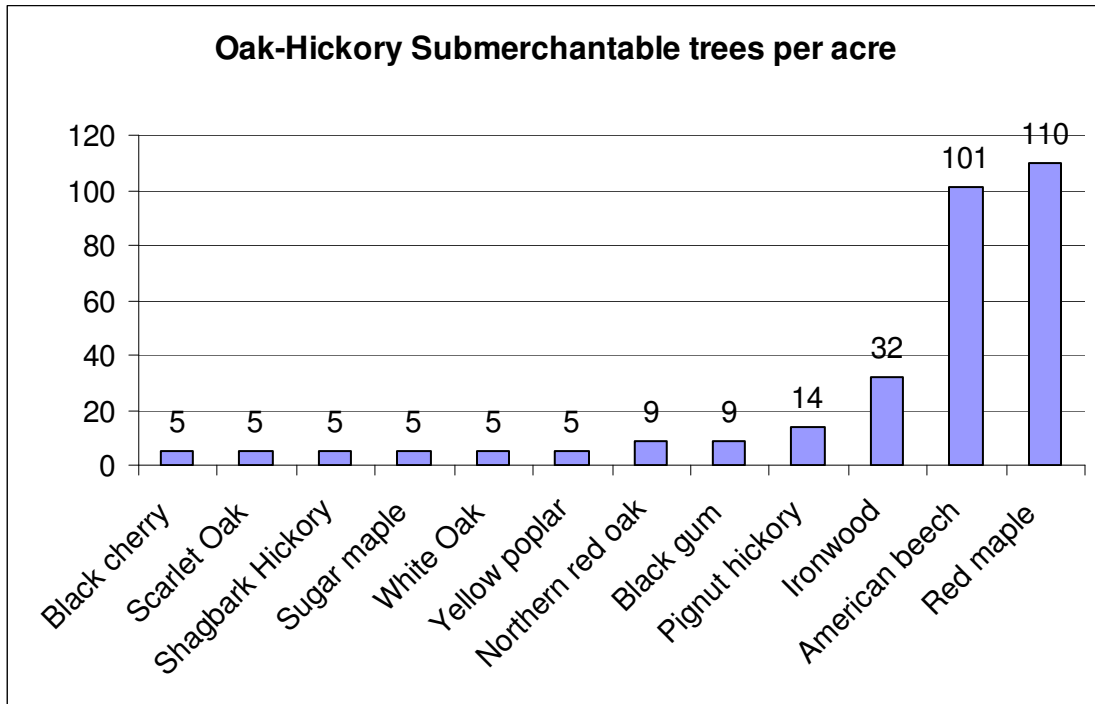


The young mixed hardwood stand is lead by very desirable species: White oak (21 TPA), and Black cherry (7 TPA).

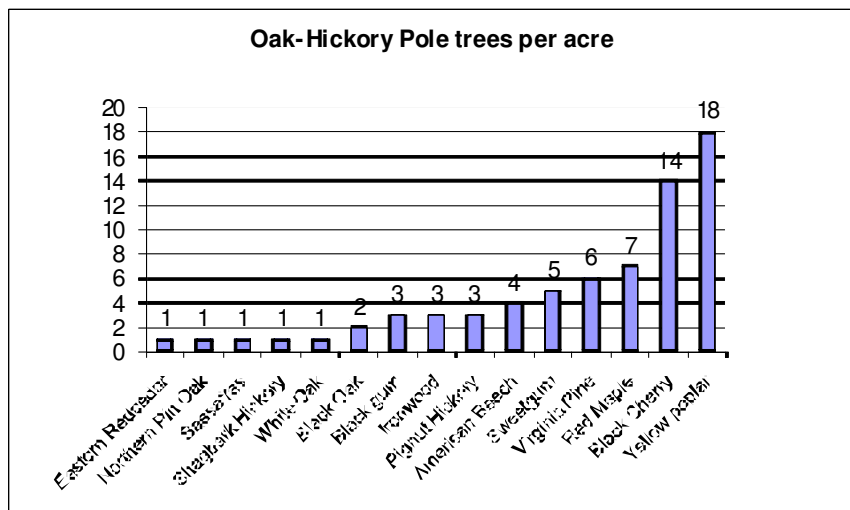


Oak-Hickory

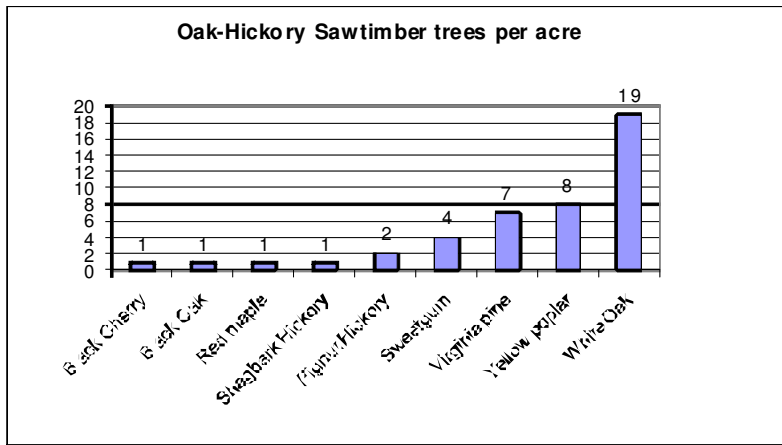
The sub-merchantable category is dominated by Red maple 110 TPA, and American beech, 101 TPA.



The pole tree category in the oak-hickory stand is dominated by yellow poplar (18TPA) and black cherry (14TPA). After these, undesirable species, red maple and Virginia pine follow at 7TPA and 6 TPA. The rest of the stand is mixed with desirable and undesirable species at a rate of 1 to 5 TPA.



The sawtimber category in the Oak-Hickory stand is lead by two desirable species, White oak (19 TPA), and Yellow poplar (8TPA). Virginia pine and Sweetgum, two undesirable species follow at 8 & 7 TPA.

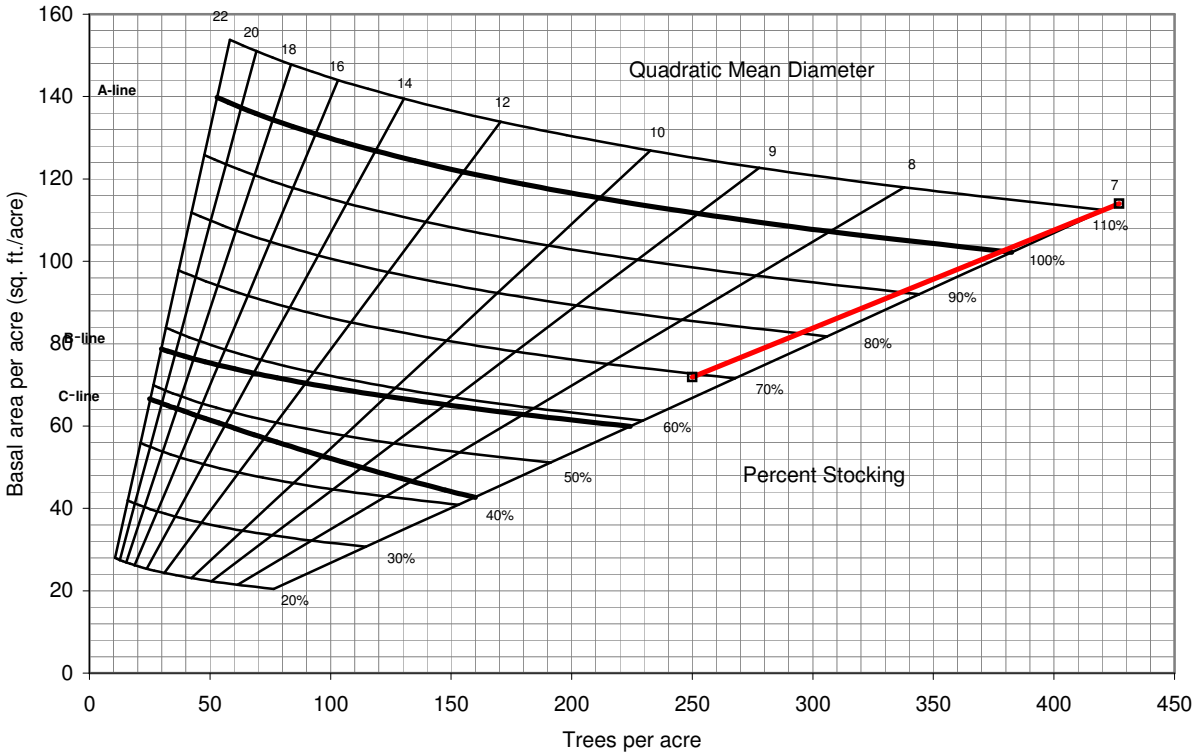


Silvicultural Prescription

Oak-Hickory

The oak-hickory stand is currently overstocked with 114 square feet and 427 trees per acre for approximately 110% stocking. An overstocked stand has little or no room for trees to continue growing. They also lead to a shade tolerant understory, which will eventually change the composition of the stand from oak hickory to beech-maple. An intermediate harvest using low thinning and improvement cutting is recommended to reduce stocking to create growing space for the residual stand through the management cycle. Low thinning is aimed at reducing tree density in the co-dominant and suppressed canopy layers. Low thinning removes trees whose mortality is imminent because they are being out-competed by their cohorts. Improvement cutting removes low quality, undesirable, and damaged trees so that their cohorts may utilize their space. Post-harvest timber stand improvement should greatly reduce the number of sub-merchantable and pole size red maple, beech, and ironwood. A prescribed burn would also help kill off any beech-maple species left in the understory. This should allow the oak-hickory mast production and regeneration rates to increase, insuring a sustained oak-hickory forest through the next rotation. Overall harvest stock for this stand is 1.69 MBF/Ac or 99.71 MBF across the whole tract.

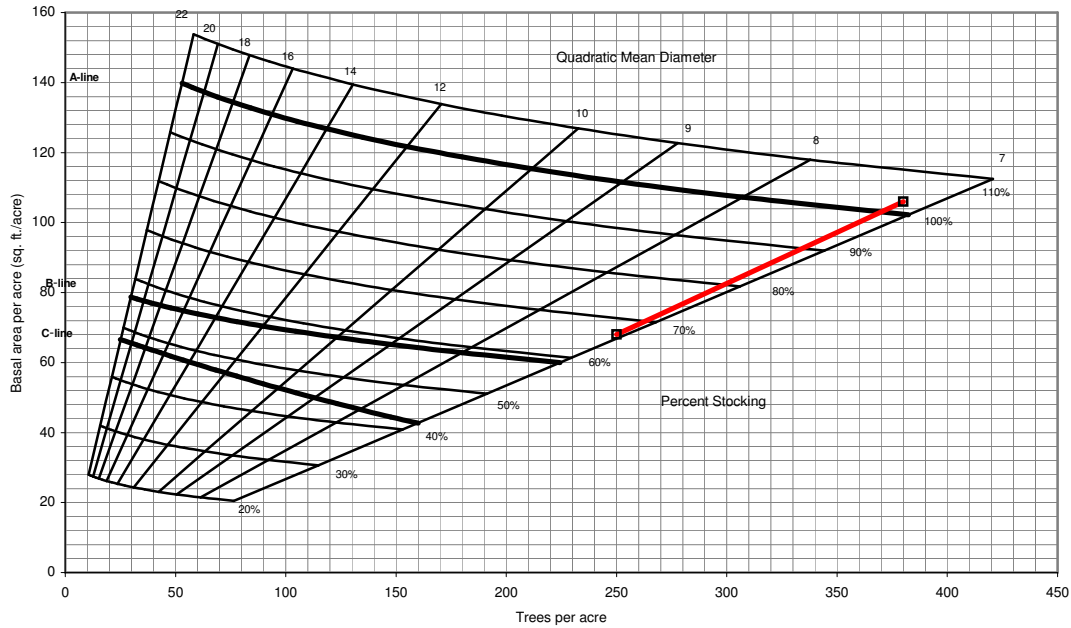
Oak-Hickory Stocking Guide



Young Mixed Hardwood

The young mixed hardwood stand is currently overstocked, with 106 square feet and 380 trees per acre for over 100% stocking. Although the sawtimber size timber appears to be doing well the pole and sub-merchantable categories are filling the understory with many undesired species. An intermediate harvest and post-harvest timber stand improvement should help to thin the young mixed hardwood stand. Along with TSI a prescribed burn would help to kill off any beech-maple species left in the understory. These management practices will allow the desirable species, such as Yellow poplar, White oak, and Black cherry to continue to grow and raise seed production and regeneration rates. This should work to sustain a mixed hardwood stand until the next rotation. Overall harvest for this stand is 2.24 MBF/Ac or 26.88 MBF for the whole tract.

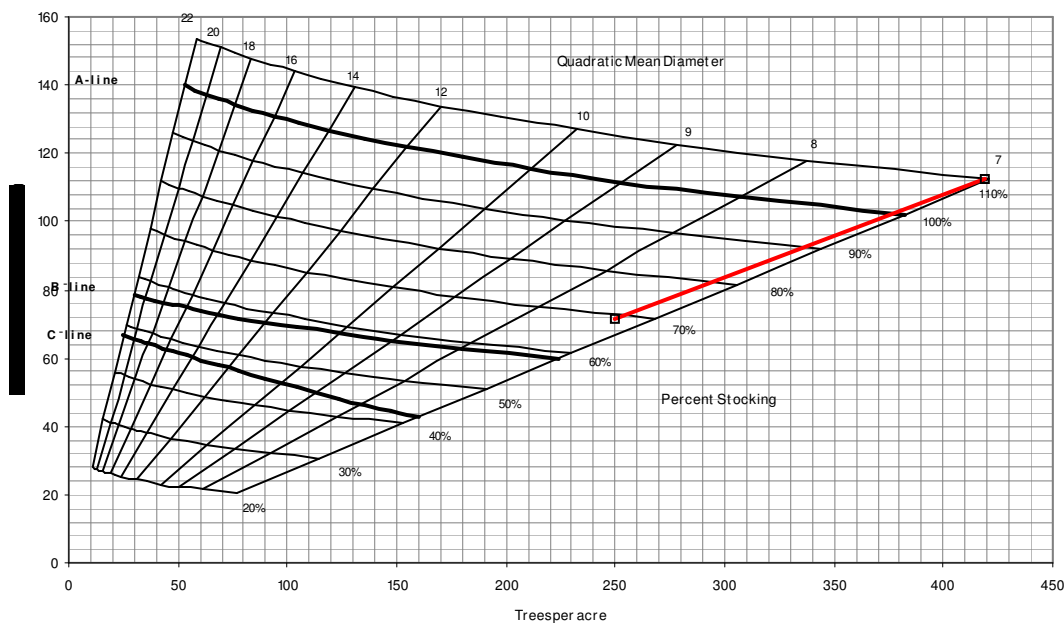
Young Mixed Hardwood Stocking Guide



Tract Total

The overall tract is overstocked between 100-110% and needs to be thinned. The understory is becoming, or in some cases is already stocked with shade tolerant species. Timber stand improvement will need to be performed after the harvest. TSI should focus on killing any unharvested cull trees, completing group selection openings, killing grapevines, and releasing any crop trees that are deemed necessary to further improve the stand. The stand will also need forest health treatments aimed at eliminating invasive species, particularly multiflora rose and honeysuckle.

Prescribed fire is highly recommended especially in the oak hickory stand. After the stocking rates are lowered from an intermediate harvest and timber stand improvement work a good mast crop will be needed to establish oak-hickory in the understory, however the fire is necessary to eliminate understory competition, without it the mast crop will go to waste. The overall harvest for the two combined stands is 1.79 MBF/Ac or 127 MBF for the whole tract.



Proposed Management Activity

Proposed Date

Intermediate Timber Harvest	2013
Timber stand improvement	2015
Prescribed burn	2015
Re-evaluate oak reproduction	2017
Resource Management Guide	2030

To submit a comment on this document, click on the following link:
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

You **must** indicate State Forest Name, Compartment Number and Tract Number in the “Subject or file reference” line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

Harvest/Leave Summary Report By Strata per Acre

Tract: 6301406i
Cruiser: Gee
Location:

Indiana DNR, Division of Forestry
 402 West Washington Street Room
 Indianapolis, IN 46204
 (317) 232-4105 Fax (317) 233-3683

Total Acres: 71
Number of 30
Cruise Point
BAF: 10

Owner: Indiana Dept of Natural
 Resources - DoF

Cruise Date: 05/26/2010

Stand Number	Acres				Leave				Total				
	OH	59	Harvest		\$	Trees	BA	Bd. Ft.	\$	# Trees	BA	Bd. Ft.	\$
	Trees	BA	Bd. Ft.										
American Beech													
Submerch	5	0.1				87	4.7			101	5.6		
Poles						4	0.8		0	4	0.8		0.09
Sawtimber	0	0.4	17	1						0	0.4	17	0.83
Cull	3	2.4				2	0.4			5	2.8		
American Sycamore													
Sawtimber						0	0.4	41	2	0	0.4	41	2.48
Black Cherry													
Submerch						5	0.1			5	0.1		
Poles						14	3.6		0	14	3.6		0.37
Sawtimber						1	0.4	12	4	1	0.4	12	3.63
Blackgum													
Submerch						9	0.5			9	0.5		
Poles						3	0.8		0	3	0.8		0.08
Black Oak													
Poles						2	0.8		0	2	0.8		0.08
Sawtimber						1	0.4	12	2	1	0.4	12	1.99
Chestnut Oak													
Sawtimber						0	0.4	36	5	0	0.4	36	5.47
Eastern Redcedar													
Poles						1	0.4		0	1	0.4		0.04
Ironwood													
Submerch						32	0.4			32	0.4		
Poles						3	0.8		0	3	0.8		0.10
Northern Pin Oak													
Poles	1	0.4		0						1	0.4		0.04
Sawtimber	0	0.8	83	14						0	0.8	83	14.15
Northern Red Oak													
Submerch						9	0.8			9	0.8		
Sawtimber	0	0.4	17	3						0	0.4	17	3.49
Pignut Hickory													
Submerch						14	0.4			14	0.4		
Poles						3	1.2		0	3	1.2		0.13
Sawtimber						2	2.0	84	7	2	2.0	84	6.75
Red Maple													
Submerch						110	5.0			110	5.0		
Poles						7	1.6		0	7	1.6		0.17
Sawtimber	1	0.8	42	4						1	0.8	42	3.79
Cull	5	2.0								5	2.0		
River Birch													

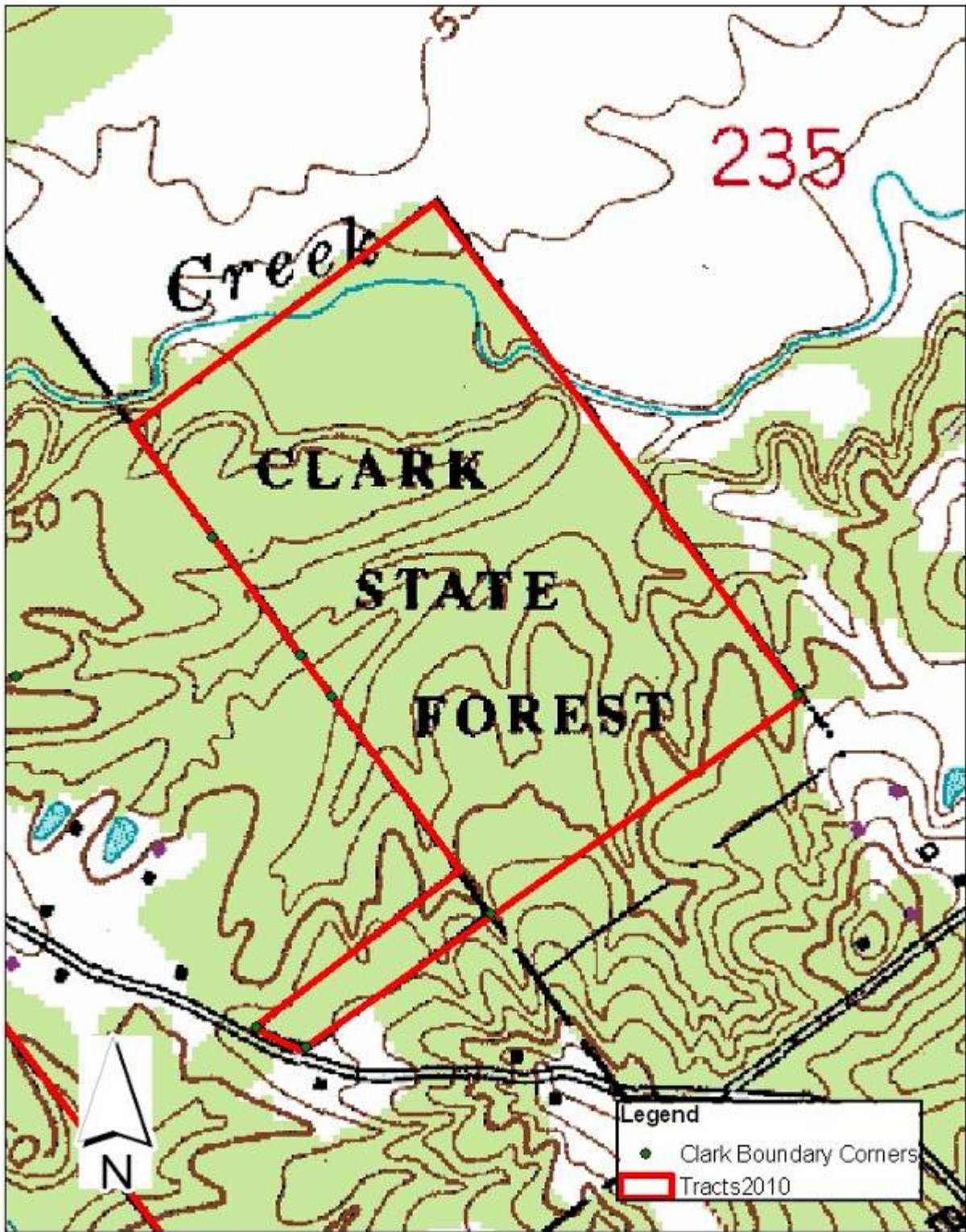
Harvest/Leave Summary Report By Strata -Per Acre Summary

Cull	1	1.2						1	1.2			
Sassafras												
Poles				1	0.4			0	1	0.4	0.04	
Scarlet Oak												
Submerch				5	0.1			5	0.1			
Sawtimber	0	0.4	42	7				0	0.4	42	7.18	
Shagbark Hickory												
Submerch				5	0.6			5	0.6			
Poles				1	0.4			0	1	0.4	0.04	
Sawtimber				1	0.4	12		1	1	0.4	12	
Sugar Maple												
Submerch				5	0.6			5	0.6			
Sawtimber	0	0.4	37	7				0	0.4	37	7.11	
Sweetgum												
Poles	4	1.6		0	1	0.8		0	5	2.4	0.29	
Sawtimber	2	2.8	169	8	2	1.6	55	3	4	4.4	224	
Cull	1	0.8						1	0.8			
Virginia Pine												
Poles	6	3.2		0				6	3.2		0.34	
Sawtimber	7	8.0	417	29				7	8.0	417	29.21	
Quality	0	0.4	25	2				0	0.4	25	1.72	
White Oak												
Submerch				5	0.6			5	0.6			
Poles	0	0.4		0	1	0.4		0	1	0.8	0.08	
Sawtimber	9	13.6	807	121	11	22.0	1,663	249	19	35.6	2,470	
Prime	0	0.4	28	54	0	0.4	32	62	0	0.8	59	
Yellow Poplar												
Submerch				5	0.4			5	0.4			
Poles				18	7.6			1	18	7.6	0.81	
Sawtimber	0	0.4	15	1	7	9.6	603	42	8	10.0	618	
Cull	1	0.4						1	0.4			
Stratum Total:	46	41.3	1,699	253	372	71.9	2,550	379	427	114.0	4,249	632.35

Harvest/Leave Summary Report By Strata -Per Acre Summary

Stand Number VIP	Acres		Harvest				Leave				Total			
	Trees	BA	Bd. Ft.	\$	Trees	BA	Bd. Ft.	\$	# Trees	BA	Bd. Ft.	\$		
American Beech Submerch Cull	4	4.0			184	6.1			184	6.1				
Black Cherry Poles Sawtimber					6	4.0		0	6	4.0		0.41		
					7	6.0	194	60	7	6.0	194	60.09		
Red Maple Poles	6	2.0		0	24	6.0		1	30	8.0		0.85		
Sugar Maple Submerch					23	0.1			23	0.1				
Sweetgum Poles Sawtimber					7	4.0		0	7	4.0		0.43		
					5	6.0	323	16	5	6.0	323	16.16		
Virginia Pine Poles Sawtimber	3	2.0		0					3	2.0		0.21		
	2	2.0	69	5					2	2.0	69	4.86		
White Oak Poles Sawtimber Prime	12	26.0	2,035	305	4	2.0		0	4	2.0		0.21		
	1	2.0	139	271	8	22.0	2,062	309	20	48.0	4,097	614.50		
Yellow Poplar Submerch Poles Sawtimber					69	1.8			69	1.8				
					13	6.0		1	13	6.0		0.64		
					4	4.0	193	14	4	4.0	193	13.53		
Stratum Total:	27	38.0	2,244	582	353	68.0	2,772	401	380	106.0	5,016	983.24		
Tract		40.7		309		71.3		383		112.7		691.65		
Average/Ac:	43		1,791		369		2,587		419		4,378			

Clark State Forest C14T6



Clark State Forest C14T6



Clark State Forest C14T6

