

**Indiana Department of Natural Resources
Division of Forestry
DRAFT
Resource Management Guide**

**Clark State Forest
Allie Cline**

**Compartment: 8 Tract: 3
Date 11/26/12**

Acres Commercial Forest: 151.27
Acres Noncommercial Forest: 7
Acres permanent Openings: 0
Acres Other:

Basal Area ≥ 14 inches DBH: 17.4
Basal Area < 14 inches DBH: 54
Basal Area Culls: --
Total Basal Area: 68

Acres Total: 158.27

Number Trees/Acre: 120

Stocking Level: Fully stocked 62%

Species	Harvest	Leave	total
Black Walnut	0	2270	2270
Sassafras	2870	0	2870
Red Maple	0	4980	4980
Black Cherry	4130	2030	6160
Black Oak	0	6710	6710
Shagbark Hickory	0	7860	7860
White Ash	10910	9340	20240
White Oak	3900	23930	27830
American Sycamore	17040	10980	28020
Northern Red Oak	2460	34780	37240
Virginia Pine	26710	16790	43510
Yellow Poplar	34790	16760	51550
American Beech	9520	46910	56430
Sugar Maple	33180	31160	64340
Pignut Hickory	0	66000	66000
Chestnut Oak	171470	375280	546740
Totals	316980	647920	964900

Location

This tract is located in Scott County, Indiana; T2N, R6E, Section 34 & 27.

General Description

This tract contains mixed hardwoods and oak-hickory cover types. There are approximately 158.27 acres within this tract. Bowen Lake sits in the middle of this tract, in a steep valley. The gun range is also located within this tract, at the bottom of the dam of Bowen Lake.

History

An inventory was done in this tract in 1986. This inventory indicated a basal area of 86 with 3,737 MBF per acre. There is a small field in the northeast corner of this tract that was planted 5-10 years ago.

Landscape Context

This tract is surrounded on all sides by Clark State Forest, except for the east half of the northern boundary line. This line is bordered by private property. All surrounding tracts are heavily forested due to the steep terrain.

Topography, Geology, and Hydrology

This tract is composed of very steep terrain. The north facing slopes on the south side of Bowen Lake are extremely steep, and will probably be very difficult for logging equipment to get to some of these areas. The slopes on the north side of the lake are less steep, and more accessible.

Bowen Run creek runs through the middle of this tract through the valley. This creek was dammed to form Bowen Lake. The runoff from this creek and lake meet Pigeon Roost Creek just east of the road. Pigeon Roost Creek was also dammed to form Wilcox Lake.

Soils

Brownstown-Gilwood silt loams. These are well drained soils found on hills and knobs.

Bedrock is in the lower part of the subsoil. Subsoil is about 32 inches thick. Underlying material is Channery silt loam. This soil has a low available water capacity. Depth to water table is more than 80 inches.

Slope: 25 to 75 percent

Site Index: 50

Woodland Suitability Group: 7e

Management Concerns: Slope, Soil Rutting, Erosion, Available water capacity, Lack of moisture in mid and late summer.

Gnawbone-Kurtz silt loams. These soils are well drained soils found on back and side slopes in hilly regions. The subsoil is about 47 inches thick, with bedrock in the lower part of the subsoil. The underlying material is silty clay loams and extremely parachannery silty clay loams. The depth to water table is more than 8 inches, with a moderate available water capacity.

Slope: 20 to 60 percent

Site Index: 60

Woodland Suitability Group: 7e

Management Concerns: Slope, Soil Rutting, Erosion, Available water capacity, early spring wetness, and lack of moisture in mid to late summer.

Gilwood-Wrays silt loams. This is a well drained soil. It is found on back, side, and shoulder slopes of knobs and hills. The subsoil is approximately 44 inches thick. The underlying material is silty clay loams and extremely channery silt loams. They have a moderate available water capacity with more than 80 inches to the water table.

Slope: 6 to 18 percent

Site Index: 80

Woodland Suitability Group: 4e

Management Concerns: Soil Rutting, erosion, Available water capacity, early spring wetness, and lack of moisture in mid to late summer.

Spickert silt loam. This is a moderately well drained soil found on back, side, and shoulder slopes of hilly regions. The subsoil is approximately 64 inches thick. The underlying material is silt loam and channery silt loams. They have a low available water capacity with between 18 and 30 inches to the water table.

Slope: 2 to 6 percent slopes

Site Index: 80

Woodland Suitability Group: 3e

Management Concerns: Soil Rutting, Available water capacity, winter and early spring wetness.

Access

Access is easily gained from Clark State Forests Roads. The most direct route is from Bloomington Trail Road, take Pounds Road into the state forest. Pounds Road forms the eastern boundary for this tract. Access is also gained from the north via one of Clark State Forest's many horse trails. This horse trail forms the northern boundary line for the tract.

Wildlife

This tract is excellent for wildlife. Bowen Lake provides a water source for many different species of wildlife, as well as a home for multiple species of fish, turtles, and others. The surrounding wooded acres provide food and shelter that wildlife needs. While inventorying, deer, squirrel, and many birds were noticed.

A Natural Heritage Database review was obtained for this tract. If rare, threatened or endangered species were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

Wildlife Habitat Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
<i>11"+ DBH</i>	1416.69		1381	-36	
<i>20"+ DBH</i>	472.23		242	-230	
Snags (all species)					
<i>5"+ DBH</i>	629.64	1101.87	1835	1205	733
<i>9"+ DBH</i>	472.23	944.46	1469	997	525
<i>19"+ DBH</i>	78.705	157.41	194	115	37
Cavity Trees (all species)					
<i>7"+ DBH</i>	629.64	944.46	606	-23	-338
<i>11"+ DBH</i>	472.23	629.64	528	56	-101
<i>19"+ DBH</i>	78.705	157.41	179	100	22
* Species Include: AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO					

This tract seems to be adequate in the number of snags. Where this stand lacks is the cavity trees and the large legacy trees. The cavities are hard to find when cruising at full canopy cover. Studies have shown that the cruiser will miss many of the cavities present; therefore despite the deficiency in the data there is most likely more than enough cavities present in this tract. The deficiency in legacy trees means that this tract does not contain a lot of large diameter trees. The only thing that can happen to increase this number is let the small diameter trees grow into large diameter trees. This can happen with the harvest. The harvest can focus more on the small diameter trees and the trees that will not last another rotation, thereby leaving some of the bigger diameter trees in the tract to become legacy trees in the future.

Recreation

This tract is a highly used recreation area. Bowen Lake, the gun range, and horse trails all lie within this tract. The gun range is used almost daily, while the lake and horse trails are most popular on weekends and in the summer. Consideration for these areas should be taken when harvesting in this area.

Cultural

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

Summary Tract Silvicultural Prescription and Proposed Activities

Oak-Hickory Type

This cover type makes up the majority of tract 630803, approximately 107 acres. It contains medium to large sized sawtimber. Many of the areas had a basal area between 90 and 120, while the steepest slopes were lower; between 40 and 60 basal area. I believe this to be due to the shallower soils. Fewer trees grow here and the ones that do are considerably smaller than trees of the same age on the ridge tops. The average basal area for this type is 79. The inventory indicates that of the 776.5 total MBF, 547.3 MBF should be left and 229.2 MBF should be harvested. A light improvement harvest could be conducted. This harvest should focus on removing the damaged and dying chestnut oak as well as what is left of the pine on the ridges.

Mixed Hardwoods Type

This cover type is found in only two areas within this tract. These two areas combined for a total of 37 acres. The average basal area for this type is 63. There was a total of 153.2 MBF in this type. Of that, 88.5 MBF should be left and 64.6 should be harvested. The inventory reflected this high number of board feet to be cut, because most of the trees in this type were large, over-mature yellow poplar. These trees contained most of the board feet to be cut.

The first area is the northeast corner of the tract. This area lies west of Pounds Road to Bowen Lake dam and then north to the property line. This area was recently acquired by Clark State Forest. Approximately 5 years ago the horse community donated money to help purchase this land through Indiana Heritage Trust for the State Forest in order to have the horse trail re-routed away from the gun range. Before this land was acquired, it was harvested. This is evident by the many old logging roads and stumps. The main species in this area is pine, yellow poplar, American beech, and some maple. Most of the regeneration in this area is maple and beech.

If this tract is harvested, this area should be included. Many of the trees that were left were large beech and poplar. These should be removed because they are over-mature and to make room for the more desirable species. TSI should be completed in this area as well to remove the beech regeneration and for invasive species control. The edge is infested with Japanese honeysuckle and should be treated before the area is opened up any further. This area is also next to a plantation that was put in right after the State received the property. This field makes the most sense for a yard location.

The second area of mixed hardwoods is directly behind the lake. Bowen Run creek that feeds Bowen Lake flows through this area. Most of the species here are wet site species like sycamore, pawpaw, ash,

and blue beech. There are a few shagbark hickory and yellow poplar. The sycamores were very large and if the tract is harvested, they should be removed along with any ash species. This area would have to be harvested in the summer when the drainage would be relatively dry. Also BMPs would have to be closely monitored here due to the stream and lake.

Tract Summary

This entire tract has an acceptable average basal area of 68. This tract is fully stocked at 62%. As it appears on paper this stand does not need a harvest. In reality this tract is suffering from disease and over mature tree decline. There is a lot of mortality and disease found in here. There should be a light improvement harvest to clean out the diseased and dead trees in this stand. There could also be some openings created to clear out the large areas of the diseased and stunted trees to let the next cohort grow. This cleaning out of the forest will lead to a healthier stand in the future so they do not become stressed and die like the stand is currently doing.

Activities Listing

2013- improvement harvest

2014(or when Timber sale is completed)- Post harvest TSI

2033- Re inventory.

To submit a comment on this document, click on the following link:

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You must indicate the 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.

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