Indiana Department of Natural Resources
Division of Forestry

DRAFT

Resource Management Guide

Clark State Forest **Compartment: 1** **Tract: 09**
Christine Martin **Date 2/16/12**

Acres Commercial forest: 113.52
Acres Noncommercial Forest: 0
Acres Permanent Openings: 0
Acres Other: 0

Acres Total: 113.52

Average Site Index: 80

Basal Area ≥ 14 inches DBH: 55
Basal Area < 14 inches DBH: 38
Basal Area Culls: 4
Total Basal Area: 97

Number Trees/Acre: 321

Stocking Level : Fully Stocked 95%

Species	Harvest	leave	Total
Blackgum	2550		2550
White Ash	3540		3540
Northern red Oak		4120	4120
American Beech	4200		4200
largetooth Aspen	4560	0	4560
Sugar maple	9230	1240	10470
Pignut Hickory	2670	10900	14820
Scarlet Oak	1240	13720	14960
Red Maple	20510	2660	23170
Yellow Poplar	21550	24500	46050
White Oak	15440	104340	119780
Chestnut Oak	58760	218460	277220
Totals	**144250**	**379940**	**525440**

Location

This tract is located in Washington County Indiana, T3N R6E S31.

General Description

This tract consists of three major stand types' chestnut oak, oak hickory, and mixed hardwood. The largest stand type is the oak-hickory with 96 acres. The next largest stand is the chestnut oak stand. This stand has approximately 10 acres and is mainly located on the ridge tops of the high altitude slopes. The last stand type, mixed hardwoods, is found in the drainages of this tract with 6.5 acres.

History

In 1979 this tract of land was acquired from the Nature conservancy. The last known inventory was performed in 1986. The result of the inventory stated that there was only 1,600 board feet to the acre.

Landscape Context

There are many fingers that comprise the landscape but the majority of this tract is made up of a northern facing slope and a southern facing slope.

Topography, Geology, and Hydrology

There are many minor drainages located within this tract. The main drainage flows to the west of this tract which flows into Elk creek.

Soils

Burnside silt loam (Bu)

This deep well developed soil is found on flood plains which is can be flooded for short periods in the spring. This profile averages from 40-60 inches deep. The top soil is 9 inches of silt loam. The subsoil consist of a loam grading to a channery loam. The underlying material is a channery loam and beneath that is sandstone bedrock. The soil is moderately permeable and the runoff is slow. The available water capacity is moderate.
Degree Slope : 0-2%
Site index: 95-YEP
Growth range potential: 588- YEP
Woodland suitability group: 7A
Management considerations: flooding

Gilpin-Berks loam (GnF)

This soils is a moderately steep, moderately deep well drained soil. These soil are mainly found on side slopes in the uplands. This complex is approximately 50% Gilpin and 35%

berks soil. This soil is moderately permeable and the available water capacity is low. The runoff is very rapid.
Degree slope: 18-50
Site index: 80
Growth range potential: 372
Management concerns: flooding

Berks-Gilpin-Weikert Complex (BgF) Upland soils. Mainly between benches or shelf-like areas, on hillsides. On long hillsides it is also in areas near the base of escarpmentlike slopes. Some areas are at the lower end of natural drainageways. These soils are also shallow, stony, and steep.
Degree Slope: 25-45%
Woodland Suitability Group: 3r12
Site Index: 70-80
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Management Concerns: Runoff and erosion

Stendal (Sf, So)
This soil consists of deep moderately permeable soils found on flood plains. These soils are formed in acid alluvium. These soils are frequently flooded. The surface horizon is made up of a silt loam plow layer. This soil has not sub soil as it is mixed in the plow layer. The substratum is a silt loam and is very strongly acidic.
Degree Slope:0-2
Site Index: 90
Growth Range Potential:432

Wellston Silt Loam (WhfC2, WhfD2, WhfD3)
The Wellston series consists of deep, or very deep, well drained soils formed in silty material from loess and from fine-grained sandstone or siltstone and with bedrock at depths of 40 to 72 inches. These soils have moderate permeability. The surface horizon is a silt loam which is 2 inches thick. The subsurface horizon is a silt loam about 8 inches thick. The first portion of the subsoil consists of 11 inches of a silt loam, the next portion consist of 4 inches of a silty clay loam. The last portion of the subsoil is one inch of a clay. The stratum is 9 inches of loam. The bedrock which is at 45 inches form the surface

is an acid fine-grained sandstone. Mean annual precipitation is about 40 inches, and mean annual temperature is about 53 degrees F. Well drained. Runoff is medium to rapid.
Degree Slope: 0-50%
Woodland suitability group: 3o10
Site Index: 80
Growth Range potential: 342
Management Concerns: runoff and erosion

Access

The access to this tract is going to need a lot of work. The main gate is located a mile north off of smith road. There is an old road that runs through tract 6300108 and stops after crossing into 6300107. This old roadbed is sunken and is in need of major repair. There is some gravel to the entrance of this old roadbed, but quickly disappears.

Boundary

While performing the inventory no evidence of the boundary line was found. This tract is bordered by private property on three sides. The west side's boundary is mainly the drainage, which on the other side of the drainage is state forest. The north part of the west side's boundary is a ridgeline.

Wildlife

This tract is typical of Southern Indiana. There were found deer, squirrels, chipmunks, song birds, and some birds of prey, while inventorying.

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.

Indiana Bat

Timber harvest activities may have both positive and negative effects on the Indiana bat. While undetected but occupied roost trees could be cut during spring, summer or fall, the probability of disturbance or direct injury or death to bats is extremely small. Timber harvest could create conditions that are beneficial to Indiana bats. Roads and/or skid trails provide improved canopy foraging conditions by reducing clutter. Roosting habitat could also be improved by reducing clutter around roost trees. Edges of log landings and regeneration openings could provide roost trees with improved solar exposure, thus improving microclimate/thermal conditions for roosting areas. This would improve reproductive success and fitness, contributing to local population stability or increase. In cases of maternity trees this could provide conditions that increase growth and activity rates of young bats, leading to reduced time for parental care.

Suitable roost trees such as large diameter snags or live trees with loose or exfoliating bark will be retained in sufficient numbers to provide continuing roosting habitat for the Indiana bat.

In this inventory it is shown that the number of large legacy trees and snags have been found not to meet the maintenance level for the Indiana bat. This tract has been found to have mainly small sawtimber (18 inch diameter – 14 inch diameter) and pole timber (8in-13 inch diameter). Without large trees to begin with it is near impossible to have many snags that are over 20 inches in diameter. One of the objectives while marking the stand

can be to limit the number of large trees harvested, to increase the habitat for the Indiana bat.

Recreation

The Knobstone Trail traverses through this tract; therefore hiking is a main recreational use. There are also a lot of deer stands and turkey blinds that have been found while inventorying. This tract can also be used for hunting and foraging for edible plants.

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

There are approximately 96 acres in this stand of timber. The main species are chestnut oak and white oak. The basal area per square foot is 94, which means there is approximately 19 square feet of basal area that can be removed from this stand. There are approximately 462, 600 Doyle board feet found in this stand and 122,430 of that is harvestable which is roughly a quarter of the total volume.

This stand consists of small sawtimber to pole size timber. Some of the small sawtimber found in this tract seems to be trees that have been stunted in their growth and have stopped growing. This means the trees are vulnerable for a broad array of disease and insect attacks. The higher altitude the worse the quality of timber is, and the more defects are found in the trees. Some of this stand may be limiting to logging because of the steep terrain. Then northern and southern end of this tract have steep topography. There are areas they may be able to log on the ridgetops if there is a way found off the ridges without tearing up the drainages. A side slope skid would be a good option for some of the steep terrain.

The regeneration is mainly red maple and American beech. There is not much sunlight hitting the forest floor to support oak regeneration. With the shade tolerant species in the understory it exacerbates the oak regeneration problem. There should be some large openings created with the harvest to increase the sunlight hitting the forest floor. There will need to be follow-up timber stand improvement to get rid of the maples and beeches growing in the newly created opening that will be shading out the oak regeneration.

This stand can use an improvement harvest. The poor quality and stunted trees should be thinned out to make room for the young stand of trees to take over. These young trees will improve stand vigor and overall health. There also needs to be some larger openings in order to facilitate oak regeneration. These openings should be created in areas with large groups of stunted or defected trees are found.

Chestnut Oak

This stand is found to the far north and south of this tract where the elevation exceeds 800ft. There are approximately 10 acres in this stand. There is 92 square feet of basal area in this stand. There is approximately 22 square feet of basal area that can be removed from this stand type. There is approximately 6,000 Doyle board feet that can be harvested within this stand type leaving 18,800 board feet, which is a little less than a third. The main tree species is chestnut oak. There is also a carpet of green brier found in this stand type.

The soil is starting to become thinner in the higher the altitude. This means smaller diameters and poorer quality trees. This stand consists mainly of pole size chestnut oaks, with some white oak poles intermixed. The chestnut oaks have many defects. There are a lot of butt rots found within this stand type. The primary regeneration is of red maple and American beech. There are some areas where chestnut oak is regenerating.

This stand may be tricky to get a skidder up and down some of the steep slopes. There should be enough room on the major ridges to get a skidder through. The side slopes are steep and would need some thought put into how to harvest them. There are areas where a side slope skid should work.

Mixed Hardwood

This stand is mainly found in the drainage. There are approximately 7 acres found in this stand type. There is 125 square feet of basal area in this stand. There is approximately 35 square feet of basal area that can be removed in the harvest. There is 47,230 total Doyle board feet in this stand type. There is 19,820 Doyle board feet that is harvestable.

The main tree species are yellow poplar and sugar maple. The diameters of the trees are in the range of small to medium sawtimber. There was not much defect found within this stand type. American beech is the primary regeneration in this stand.

The drainage which this stand follows is an intermittent stream. In order to comply with the riparian management zone there needs to be a 25ft, buffer in order to skid in the drainage. Some of the places in this drainage can get narrow therefore that will need to be taken into account when planning the skid routes.

Proposed Activities Listing

20013- Road work
2014-Timber Sale
2015- Timber stand improvement

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