Indiana Department of Natural Resources
Division of Forestry
Resource Management Guide

Clark State Forest **Compartment: 15 Tract: 02**
Christine Martin **Date: 12/12/13**

Acres Commercial forest: 148
Acres Noncommercial Forest: 0
Acres Permanent Openings: 0
Acres Other: 0

Basal Area ≥ 14 inches DBH: 15.5
Basal Area < 14 inches DBH: 65.5
Basal Area Culls: 0
Total Basal Area: 81

Acres Total: 148
Stocking Level : Fully Stocked (65%)

Number Trees/Acre: 89

Species	Harvest	Leave	Total
Red maple	2930	0	2930
Sweetgum	1670	3570	5240
White Ash	5480	1990	7470
Blackgum	4150	5720	9870
Sugar Maple	0	13160	13160
Black Oak	4230	13590	17820
Northern Red Oak	4200	24380	28580
Yellow Poplar	16180	12520	28700
Virginia Pine	45670	30990	76660
Scarlet Oak	37240	50780	88020
Chestnut Oak	43410	234040	277450
White Oak	37630	302200	339830
Totals	**202790**	**692940**	**895730**
Total/Acre	**1370**	**4682**	**6052**

Location

This tract is located in Clark county Indiana, T1N R6E 32, Section 33.

General Description

In total this tract of land comprises 148 acres. There are three different cover types in this tract. The largest type is the oak-hickory which is approximately 120 acres. The oak-pine area is about 14 acres and the mixed hardwoods are about 13 acres.

There is a lot of blow down found in this tract throughout all the three cover types. The Virginia pine in this stand is over mature and is constantly blowing over.

History

This tract had 2 previous inventories performed on it. The first one was in 1975 and the second was in 1987.

In the mid to late 80's the tract lines were re drawn. It is unclear where the data was taken in the 1975 inventory because the lines were re drawn and there is no map accompanying the management guide. This being said there was a stocking of 2,000 bd.ft./acre.

The inventory preformed in 1987 states that there is an overall 95 square feet of basal area. There is also 4,500 bd.ft. per acre.

The current basal area is lower than the basal area stated in the 1987 inventory. This is likely because of the blow down pockets of Virginia pine that were found throughout the tract.

Landscape Context

This tract is mainly comprised of 2 ridges. One of the ridges runs north south and the other ridge cuts east and west. Therefore all of the aspects are represented in this tract. There is about 200ft of elevation change from the bottom of the slopes to the top.

Topography, Geology, and Hydrology

There are two intermittent streams that converge at the south eastern point of this tract to create a perennial stream. This stream is one of the drainages that feed Deam Lake.

Soils

Beanblosson Silt Loam(BcrAW) or Wakeland Silt (WaaAH)

The Wakeland series consists of very deep, somewhat poorly drained soils that formed in silty alluvium. These soils are on flood plains and flood-plain steps. The surface horizon is a plowed horizon with a dark grayish brown silt loam. After this horizon the rest of the profile is comprised of substratum. The substratum is mainly a grayish brown silt loam. The end of the profile is at 60 inches.
Degree Slope: 0-2%
Site Index: 80
Growth Range Potential: 342

Coolville (ComC)
The Coolville series consists of moderately well drained soils with amoderat available water capacity. These soils are comprised of Loess with a clayey residuum over shale and siltstone. The first Horizon is a silt loam which is 8 inches thick. The next horizon is 8-21inches thick and is comprised of a silty clay loam. At 21-37 soils is a silty clay. At 37-44inches it is a parachannery silty clay loam. At 44-60 inches it is bedrock.
Degree Slope: 6-12%
Land capability: 3e
Management concerns: None

Gnawbone (GmaG)
The Gnawbone series consists of moderately deep soils with and available water capacityis moderate. These soils mainly form on the backslope of hills. In a typical profile the soil is silt loam in the surface layer and in the substratum the soil is a parachannery silty clay loam with bedrock at 60 inches

Access

There is good access to this tract. There is a horsetrail that runs through this tract. The horsetrail that runs south of the tract can be accessed easily by a vehicle. The horsetrail that runs through the tract to the north will need some improvements if there is to be vehicle traffic on it. The trail gets muddy by the creek and is steep in sections. Improvements will benefit recreation use, emergency/mgt access and soil stability.

Boundary

This tract is surrounded by Clark State forest. The majority of the boundaries are geographical. The northern boundary is the section line.

Wildlife and Communities

This tract is typical of Southern Indiana's flora and fauna. Deer, squirrels, chipmunks, song birds, and some birds of prey were observed while inventorying.

The ridges on the upper slope provides great wildlife habitat with all the green brier used for cover. There is also a heavy component of chestnut oak, which provided a food source. The lower slopes of the tract are heavy to white oak and the American beech in the understory. These two areas will provide another food source for the wildlife.

Wildlife Habitat Feature Tract Summary				
State Forest: Clark		**Compartment**	15	**Tract:2**
Reference	6301502	**Tract Acres:**	148	

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	1332		3005	1673	
20"+ DBH	444		690	246	
Snags (all species)					
5"+ DBH	592	1036	1817	1225	781
9"+ DBH	444	888	1373	929	485
19"+ DBH	74	148	229	155	81

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

This tract meets all the required guidelines for habitat features.

Indiana Bat

Recreation and resource management activities may have both positive and negative effects on the Indiana bat. Well planned timber harvests 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 positively to local populations. In cases of maternity trees this could provide conditions that increase growth and activity rates of young bats.

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

There is room for improvement on the cavity trees in this tract. It is hard to get a full tally of the cavities in the tracts because it is hard to see many of the cavities available for the wildlife when the tree has a full growing crown. Studies have shown that there are many many more cavities in the woods than generally get recorded.

A Natural Heritage Database Review was completed for the tract. If Rare, Threatened or Endangered species (RTE's) were identified, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

Invasive Species

Japanese Stiltgrass was found growing in a thick carpet along the western drainage to this tract. There was some stiltgrass found in the other drainages of this tract. This grass is spreading by natural vectors, wildlife and recreation users. Populations will be further evaluated for pre and post harvest/mgt treatments..

Recreation

This tract is highly utilized for recreation. There is a horsetrail that runs through this tract. This tract is also heavily hunted in because of the proximity to the handicapped hunter trail. This tract will be closed for recreation activities including the horstreail during the harvest. There are many other places that the public can hunt in and many other horsetrails that they can ride on.

Cultural

Cultural resources may be present, but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management activity

Summary Tract Silvicultural Prescription and Proposed Activities

OAK-HICKORY

There are approximately 120 acres in this stratum. The main species is white oak. The basal area 78sf/ac, with approximately 13sf of basal area that can be removed from this area. There are approximately 734,170 Doyle board feet found in this stratum and 150,130 of that was tallied for possible harvest, which is about a fifth of the total volume. The stand is fully stocked at 64%.

The main tree species are white and chestnut oak. The white oak resides lower on the slopes and the chestnut is higher in elevation. In both areas of this stand there is a heavy presence of diseased and dying trees.

Near the chestnut oak/ Virginia pine stand there is also some blow down from Virginia pine that is in this stand type. There were some pockets of Virginia pine growing that have now been decimated. These areas have many virginia pines and some oak regeneration.

An improvement harvest is prescribed top thin out poor quality, stunted, and stressed trees to make room for the young trees to take over. These young trees will improve 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 where the stunted or defected trees are found. There also have been areas found with a large amount of stressed white oak. These areas are also good candidates for an opening because of the abundance of white oak seedling regeneration already present.

VIRGINIA PINE/ CHESTNUT OAK

This stratum resides in this tract above 750 ft in elevation and is 14acres in size. There is a total of 121 sf of basal area. There are 30 sf of basal area tallied for possible removal or 1,900 board feet per acre. This stand is fully stocked at 98%, almost overstocked.

The main trees are Virginia pine and chestnut oak. There is not much variety. There is also a thick carpet of green brier in the understory. In areas where the pine has blown down the green brier is almost impenetrable.

This stand has a lot of Virginia pine blow down. The Virginia pines are over mature therefore with every strong wind event more pines fall to the ground. A timber harvest is prescribed to thin out these pines and salvage dead and dying trees.

There is also an overcrowding of chestnut oaks in this stand. This overcrowding leads to highly stressed trees. When the trees are stressed they will be more susceptible to disease and damages. In the case of this stand there has been a history of drought. There are many pockets of 6-8 oak trees that have already died. These dead oak pockets occur mainly in the head of the drainages. The oaks in this stand could also use an improvement harvest in order to groom out the stressed and dying trees thereby make room for the healthier trees to grow.

This harvest will improve the overall health of the stand. There are too many trees that are stressed which leads to high mortality. Once the stressed trees are removed the stand is better able to fight off biotic and abiotic attacks.

MIXED HARDWOOD

This stratum is mainly found in the drainage. There are approximately 14 acres found in this type. There is 70 sf of basal area/ac in this stratum. There is 78,140 total Doyle board feet in this type. There is 22,000 board feet tallied harvestable; which is a little less than a quarter of the total volume.

The main tree species are Chestnut oak, White oak and Sugar maple. This stand is fully stocked (60%) but with many diseased trees. There are many trees that have bad rot and are going to be dead within a couple years. The harvest in this stand will also open up the canopy to help sunlight hit the forest floor which will help the tree regeneration in the vegetation layer to grow.

Stiltgrass was found growing in a thick carpet in the drainages of this tract. This stiltgrass should be assessed for preharvest treatment and monitored during and after the harvest to ensure it is not spreading any further. This stiltgrass will take considerable effort and multi-year treatments to get under control.

Proposed Activities Listing

2015-road/trail improvements and stilt grass control
2016-Timber Sale
2017- Timber stand improvement (TSI), invasive control, regeneration check
2036- re evaluate for next managements cycle.

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