Resource Management Guide

Harrison-Crawford State Forest **Compartment: 11** **Tract: 6**
Christine Martin **Date: 4/10**

Location

This tact of land is located within Harrison county Indiana, Sec 14, T3S, R2E.

General Description

The majority of this tract is a softwood cover type. There are many cedar patches on this tract. Some of the cedar patches are from open fields that the previous tenants used to farm. These places are eroded and most of the soil is comprised of red clay. There is one white pine stand located in the northern section of this tract. This white pine stand is stagnant due to the fact that the pine is growing in clay.

There are some hardwood sections on this tract which are good quality hardwoods. These areas could use a harvest in them improve the overall health and quality of the forest.

History

The majority of this tract was acquired in the 1930's. There was one 30 acre section that was acquired in the 80's. This section was the northern most section of this tract.

The last inventory on this tract was performed in 1980. There was found to be a total of 186,000 Doyle board feet, which about 51,000 were harvestable. There was 60 square feet of basal area per acre on average for the tract of timber. The three main species in the inventory are white, black, and red oaks.

In 1983 there was a timber harvest on this tract and five others in the surrounding area. In total there was 333,608 board feet Doyle, removed in this sale. The main tree species harvested were black and red oaks. There were approximately 3,600 Doyle board feet removed from this tract in the sale.

Landscape Context

The majority of this tract is surrounded by forest cover which is part of the Harrison-Crawford State Forest. The east side is bordered by the Blue River for 800 feet. There is residential housing located across the river on Burgess Circle Road.

Within a mile to the southwest there is some residential housing located off of Cox Road. There is some pastureland associated with the residential housing. The majority of the private land use is residential and privately owned forest cover.

Topography, Geology, and Hydrology

This tract has a drainage that runs northeast through this tract dividing this tract into a couple different aspects. There is a west, east and northeast facing slopes on this tract. The most predominant slope is the northwest slope. The intermittent stream flows into a larger intermittent stream which empties into the Blue River.

Soils

Corydon Stony Silt Loam (CoF) Shallow, moderately steep to very steep, well-drained, stony soils on uplands. Surface layer is about 3 inches. Subsurface is about 6 inches thick. Subsoil about 9 inches thick. The depth to hard limestone bedrock is about 18 inches. High in organic matter and low in natural fertility. Runoff is rapid or very rapid. Soil type is characterized by limestone outcrops, with as much as 15% on benches which are deeper than 20 inches to bedrock.
Degree Slope: 20-60 %
Woodland Suitability Group: 3d7
Site Index: 65-75 (Upland oaks)
Growth range potential (Upland oaks): 155-220
Management concerns: Runoff and erosion

Crider Silt Loam (CrB2, CrC2, CsB3, CsC3, CtC2) Deep, gently sloping and moderately sloping well-drained soils on uplands. Surface layer is dark-brown silt loam about 8 inches thick. Subsoil is about 62 inches thick. Moderate in content of organic matter and in natural fertility. Available water capacity is high and permeability is moderate. Typically, these soils are eroded. Runoff is medium to rapid.
Degree Slope: 2-12%
Woodland Suitability Group: 1o1
Site Index: 85-95 (Upland Oaks)
Growth range potential (Upland oaks): 300-375 bd.ft./acre/year
Management Concerns: Runoff and erosion

Gilpin Silt Loam (GlD2, GlD3, GlE2, GpF) Moderately deep, strongly sloping to steep, well-drained soils. Surface layer is very dark grayish-brown silt loam about 3 inches thick. Subsurface layer is pale brown silt loam about 9 inches thick. Subsoil is about 17 inches thick. Depth to hard sandstone and shale bedrock is about 29 inches. Moderate in organic matter. Available water capacity is low and permeability is moderate. Runoff is rapid to very rapid.
Degree Slope: 12-30 %
Woodland Suitability Group: 3o10 or 3r12
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Site Index: 70-80
Management Concerns: Runoff and erosion

Hagerstown Silt Loam (HaC2, HaD2, HgC3, HgD3, HgE3) Deep, moderately sloping to moderately steep, well-drained soils on uplands. Surface layer is dark yellowish brown silt loam about 6 inches thick. The subsoil is about 46 inches thick. The depth to limestone is about 52 inches. Characteristically, this soil is eroded to severely eroded. Moderate in content of organic matter and medium in natural fertility. Available water capacity is moderate or high, and permeability is moderate. Runoff is rapid to very rapid.
Degree Slope: 6-25 %
Woodland Suitability Group: 1o1 or 1r2
Site Index: 85-95 (Upland Oaks)
Growth range potential (Upland oaks): 300-375 bd.ft. /acre/year
Management Concerns: Runoff and erosion

Haymond Silt Loam (Hm) Deep, nearly level, well-drained soils on bottom lands and in basins of sinkholes in uplands. Surface layer is dark-brown about 9 inches thick. Subsoil dark yellowish-brown about 17 inches thick. Underlying material is dark yellowish-brown stratified silt loam that contains less prominent layers of loam. Moderate in content of organic matter. Available water capacity is high, and permeability is moderate. Runoff is slow.
Degree Slope: 0%
Woodland Suitability Group: 1o8
Site Index: (95-105- no rating for upland oaks)
Growth range potential (Tulip poplar-no rating for oaks): 375-450 bd.ft./acre/year
Management Concerns: Flooding between December and June

Wellston Silt Loam (WeC2, WeC3, WeD2, WeD3) Moderately deep and deep, moderately sloping and strongly sloping, well draineds soils on uplands. Surface layer is about 9 inches thick and yellowish-brown. The subsoil is about 31 inches thick. Depth to hard sandstone bedrock is about 40 inches. Moderate in content of organic matter and low in natural fertility. Available water capacity is moderate or high, and permeability is moderate. Runoff ranges from medium to very rapid.
Degree Slope: 6-18 %
Woodland Suitability Group: 3o10
Site Index: 70-80 (Upland oaks)
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Management Concerns: Runoff and erosion

Zanesville Silt Loam (ZaC2, ZaC3, ZaD2) Deep, moderately sloping and strongly sloping, well-drained soils on uplands. Avery firm fragipan in the lower part of the subsoil. Surface layer is very dark grayish-brown silt loam about 3 inches thick. The subsurface layer is about 5 inches thick and dark yellowish-brown. Subsoil is about 42 inches thick. The depth to sandstone bedrock is about 65 inches Moderate or low in content of organic matter and low in natural fertility. Available water capacity is high, and permeability is very slow. Runoff is medium to rapid.
Degree Slope: 6-18%
Woodland Suitability Group: 3d9
Site Index: 70-80 (Upland Oaks)
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Management Concerns: Runoff and erosion. Fragipan limits the available water capacity.

Access

This tract is land locked within the Harrison-Crawford State Forest. There is an old road bed that runs though this tract that is accessible by ATV.

It would be beneficial to create a road to provide better access to this tract. The old road bed can be repaired in places, but will need to be re-routed in others spots because the road is to eroded to fix. There are a couple tracts to the north and west of this tract that would be beneficial to have access to.

Boundary

The majority of this tract is bordered by the Harrison-Crawford State forest. There is one ¼ mile section that is bordered by private forested land. This private section is located across the power line right-of-way; therefore there is not much confusion where the state and private lines are.

The southern boundary of this tract is the power line right-of-way. The northern boundary is a drainage that flows into the Blue River. The western boundary line is an old road bed that starts north from Cox Road, and leads back to tract 1103. The east boundary is the Blue River.

Wildlife

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

According to the inventory of this tract there are a sufficient number of live trees per acre to support a timber harvest and still meet the requirements for the Indiana Bat Habitat Guideline. The inventory shows that there are an insufficient number of snags on this tract required for the bat. If it is decided that there should be more snag trees for the bat, a post- harvest TSI could generate the snags needed. This could be done by girdling the cull trees, especially the ones with the desirable bark characteristics.

Ecological resource guide discussions

The proposed management activities in this tract are a timber harvest, road building, and timber stand improvement. These are the activities that can alter the habitat present for the wildlife.

The harvest will affect the understory vegetation in the short term. Trees are removed thereby letting more sunlight hit the forest floor, creating more understory vegetation growth. As time passes the trees in the overstory will grow and overtake these holes in the canopy so therefore there is a decrease of light hitting the forest floor. The decreased light creates a decrease in understory vegetation growth. Approximately 5 years after the harvest the vegetation is what it was before the harvest took place.

The harvest will also provide more habitat for some wildlife. There will be more coarse woody debris on the ground after the harvest. This large amount of down material is great habitat for wildlife.

This harvest should not affect any travel corridors or drastically alter the cover types of the area. The method used in this harvest will be single tree selection. There may be areas of regeneration openings that may exceed 5 acres in size. These openings will not overall affect the continuity of the forest. These regeneration areas will provide habitat for wildlife.

The road maintenance may affect the habitat by creating a permanent edge in the forest. The proposed road will be built on old roadbeds that have fallen into disrepair. By placing this road on old roadbeds it minimizes the disturbance to the forest thereby minimizing disturbance to the wildlife. This road will be a firelane which is used for accessing the currently inaccessible section of the forest.

The timber stand improvement should have minimal affect on overall forest continuity.

Recreation

The recreation is limited on this tract. There is no good access to this tract and there are no recreational trails within this tract. There is evidence that this tract is heavily used for hunting. There were many deer stands found while inventorying this tract.

There is also illegal ATV use. The old county road is a heavily used trail, as is the power line right-of-way. All of the deer stands found on this tract have ATV trails that lead to them. Some of the neighbors have ATV trails that hook into the powerline right-of-way illegal trail system.

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.

Summary Tract Silvicultural Description, Prescription and Proposed Activities

Oak- Hickory

There are in total 41 acres to this stand type. This stand is mainly located on the east facing slope of this tract. There are a total of 108 square feet of basal area per acre in this stand. There are 302,880 Doyle board feet in this stand of which 95,750 Doyle board feet are harvestable.

White Oak is the most numerous tree species in this stand. This stand could use an improvement harvest. There are multiple trees with broken limbs and busted tops from the past wind events. There are also some poor quality trees that need to be removed to make this stand healthier and more productive. There are some good quality trees intermixed with the poor quality trees. These good quality trees should be released in the improvement harvest.

The regeneration in this stand is mainly American beech and sugar maple. There are some areas where there are some oak poles growing intermixed with the sugar maple regeneration. In these areas the oak will need to be released from the surrounding maples.

Mixed Hardwoods

This stand is located along the drainages and outside of the cedar stands. There are 24 acres included in this stand. There are 112 square feet of basal area per acre. There are 145,530 total Doyle board feet of which 30,260 are harvestable.

The main tree species are red and black oaks. There is a thick layer of cedar in the understory. These cedars should be removed to increase the light reaching the understory. There are some black oak and scarlet oak poles growing amongst the cedars in the understory. These oak poles should be released in the improvement harvest. There is mainly sugar maple regenerating in this stand, but with the increased light in the understory there may be more of a variety of trees that will start to regenerate.

Cedar
There are 48 acres in this stand. The square feet of basal area is 102 per acre. There are a total of 124, 950 Doyle board feet on this stand.

There are three different patches of the cedar stand type of this tract. In these stands there is mainly American beech regenerating. The patch furthest to the east is the patch that is most harvestable at this time. These cedars average 10 inches in diameter. This cedar patch has the most diverse regeneration in the understory. This patch of cedar is slowly converting to mixed hardwoods and a cedar removal harvest will help speed the process up.

The patch to the east has the most potential for being harvestable. These cedars average around 13 inches in diameter. There are two homesites located near this cedar patch. These homesites will need to be avoided if a harvest is to be conducted.

White Pine
This stand is found in the northern most part of this tract. This stand is 12 acres in size. The square feet of basal area per acre in this stand is 109.

This is a poor quality white pine stand. The trees are not much bigger than 16 inches in diameter. Most of these pines have two trunks. The poor quality of these pines in attributable to the very high clay which the pines are growing in. In this heavy soil type the pines grow slow and poorly in. There are also some yellow poplars that have come up underneath the pines. These poplars are small sawtimber size trees.

The white pine should be removed from the overstory to let the poplars grow. The pines have stagnated and there is not much more that the pines will grow. The yellow poplar will take over the site and grow better in this heavy clay soil.

Proposed Activities Listing

Timber Harvest Hardwoods-2011

Road Building-2013

Timber Harvest White Pine-2014

Timber Harvest Cedar-2015

Re-inventory-2031

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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.

Acres Commercial forest: 135
Acres Noncommercial Forest: 0
Acres Permanent Openings: 0
Acres Other: 0

Acres Total: 135

Basal Area ≥ 14 inches DBH: 52.8sq.ft./acre
Basal Area < 14 inches DBH: 46.1sq.ft./acre
Basal Area Culls: 2.5 sq.ft./acre
Total Basal Area: 101 sq.ft./acre

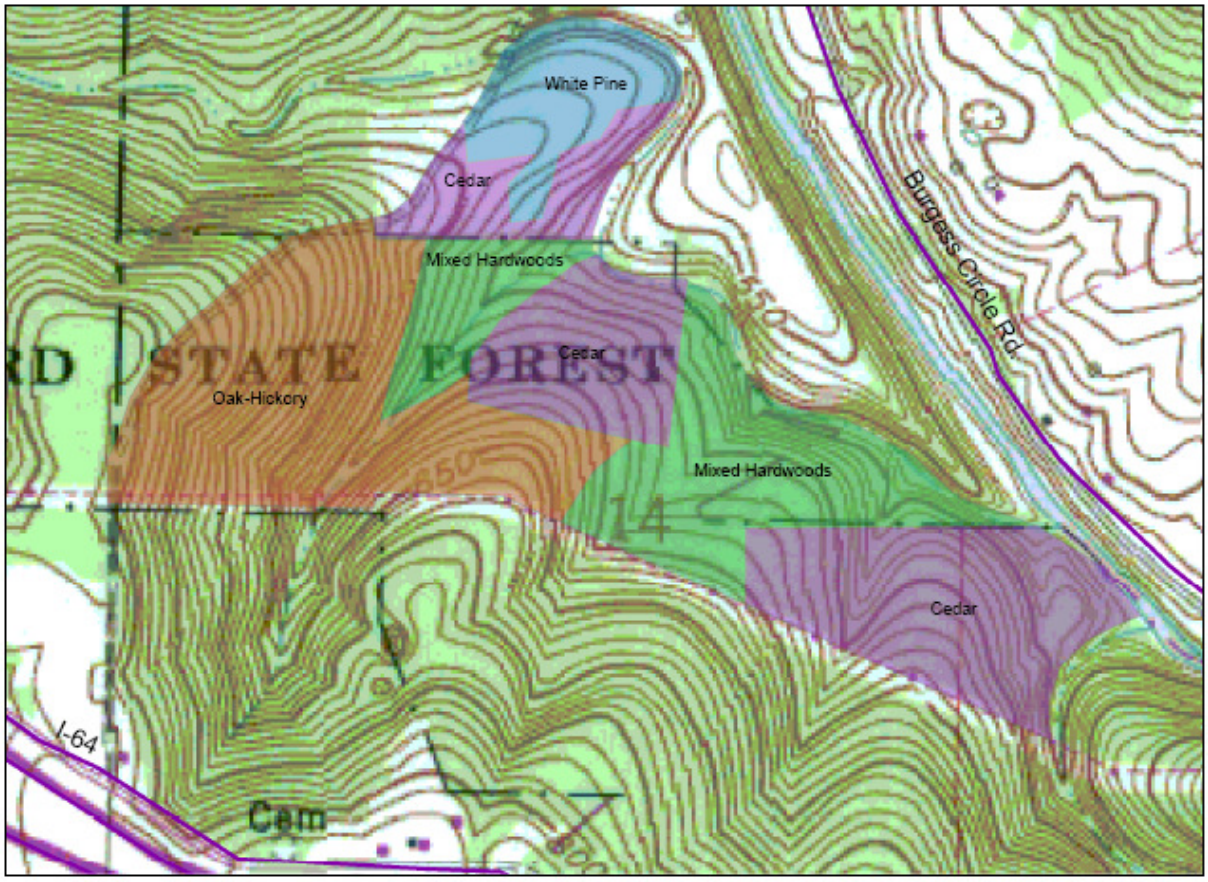
Number Trees/Acre: 375

Average Site Index:
Calculated annual Growth (bd. ft.):

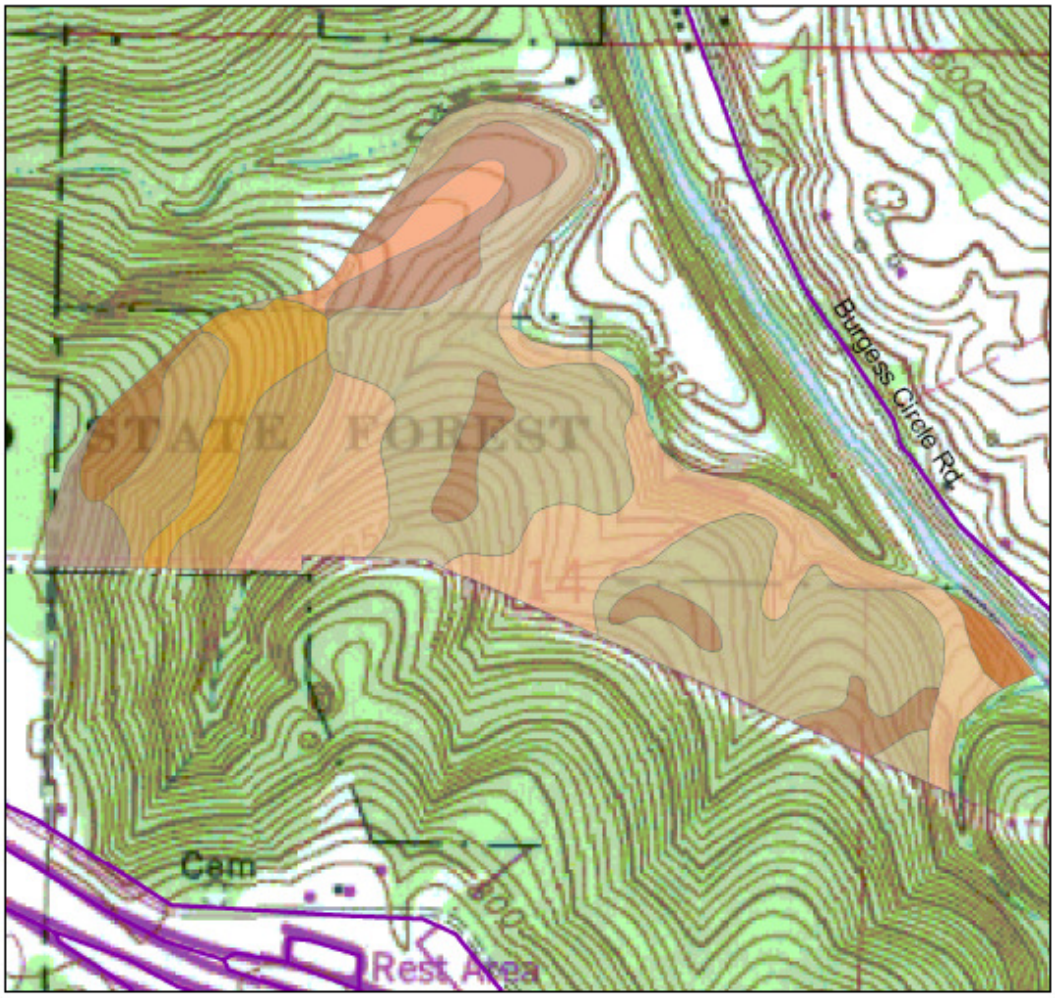
Stocking Level : Fully Stocked (99%)
borderline Overstocked

Species	Harvest	Leave	Total
White Oak	14620	100950	115570
Bkack Oak	24150	63510	87660
Northern Red Oak	5380	54070	59450
Pignut Hickory	12140	41160	53300
Yellow Poplar	4160	24810	28970
Sugar Maple	17560	7670	25230
Scarlet Oak	10110	10780	20890
White Ash	10100	6720	16820
American Beech	4100	1560	5660
Red Elm		4990	4990
Shagbark Hickory		4210	4210
Chinquapin Oak		3760	3760
Hardwood Total	**102320**	**324190**	**426510**
Eastern Red Cedar	15280	91210	106490
Eastern White Pine		39800	39800
Virginia Pine		1440	1440
Softwood Total	**15280**	**132450**	**147730**
Tract Total	**117600**	**456640**	**574240**
Total/Acre	**871**	**3382**	**4253**

Compartment 11 Tract 6
Stand Map



Compartment 11 Tract 6
Soil Map



Soil Types

CoF	HgD3
CrB2	Hm
CtC3	W
GlD2	WeD2
HaD2	ZaC2

8

0 0.05 0.1 0.2 0.3 0.4 Miles