Indiana Department of Natural Resources - Division of Forestry
Resource Management Guide

Harrison-Crawford State Forest **Compartment: 15 Tract: 1**
Dieter Rudolph **Date: October 28, 2010**

Acres Commercial Forest: 31
Acres Noncommercial Forest: 0
Acres Permanent Opening: 0
Acres Other: 0

Basal Area >= 14 inches DBH: 66.56 sqft/ac
Basal Area < 14 inches DBH: 52.81 sqft/ac
Basal Area Culls: 4.18 sqft/ac
Total Basal Area: 119.37 sqft/ac

Acres Total: 31

Number Trees/Acre: 219

Species	Harvest Volume(MBF)	Leave Volume(MBF)	Total Volume(MBF)
American Beech	1.13	0	1.13
American Sycamore	0	0	0
Black Cherry	0	0.42	0.42
Blackgum	1.03	0.79	1.82
Black Oak	35.9	20.87	56.77
Black Walnut	0	1.08	1.08
Chinkapin Oak	0	2.34	2.34
Eastern Red Cedar	9.75	0	9.75
Northern Red Oak	3.2	0.51	3.71
Pignut Hickory	3.86	22.15	26.01
Red Maple	0	0	0
Sassafras	0	0	0
Shagbark Hickory	0	3.89	3.89
Sugar Maple	0.57	2.33	2.9
Virginia Pine	0.43	0.43	0.86
White Ash	1	0	1
White Oak	20.02	40.49	60.51
Yellow Poplar	14.88	21.13	36.01
Total	91.77	116.43	208.2
Total per acre	2.96	3.76	6.71

Location

This 31 acre tract is located in Crawford County, Indiana. It is in sections 19 T3S R2E.

General Description

This tract is located along Interstate 64 in the northern most area of Harrison Crawford State Forest. The tract's boundaries are shared with private property on the east and south sides and the interstate on the north. A county road leads to the southwestern point of the tract. The slopes of the tract are mainly north facing except for two major drainages.

There were two major stands within this tract. The Mixed Hardwoods stand (12 acres) was a younger stand found in the southwestern section of the tract as well as along the large drainage in the center of the tract. The most prominent species in this stand were yellow poplar followed by

black oak. There were also small pockets of eastern red cedar scattered throughout the stand. There was a dense understory present in the Mixed Hardwoods stand and the fast growing yellow poplar was the only species consistently reaching larger sizes. There were some larger black oaks, mainly around the boundaries and edges of the drainages. Trees were typically found in clumps with areas having few overstory sawtimber trees while there were other areas with larger trees with a close spacing.

The Oak Hickory stand (17 acres) was located in the eastern two thirds of the tract excluding the area of the larger drainage. This stand was an older stand in its late successional stage. The understory was not dense like the Mixed Hardwoods stand and the sawtimber trees had better spacing than the other stand. White oak was the most prominent species in this stand followed by black oak then pignut hickory.

History

The land in this tract was obtained in one 60 acre purchase. The previous owner was Slaughterlock and the transaction occurred in 1939.

Landscape Context

1501 is a parcel of land that does not border any other state forest land. The tract is in the northern portion of land in Harrison-Crawford State Forest and is along the southern boundary of Interstate 64's right of way. The land to the south and east of this tract is a field used to grow corn and hay. Roughly 30 yards from the eastern boundary is an open-sided outbuilding with wood and some farm equipment in it. The land north of the interstate is forested and some of it being a part of Harrison Crawford State Forest. Within 1 ½ mile, there is a factory (Jasper Engine), a limestone quarry (Mulzers), and a commercially developed area (Carefree).

Topography, Geology, and Hydrology

The tract is comprised of north facing slopes leading to the interstate. Inside the tract are two major drainages, both of which are comprised of the Mixed Hardwoods stand. The highest portion of land was the ridge that runs along the eastern boundary of the tract.

The large drainage leads into Jordan Creek, meeting it on the northern side of the interstate.

There was no evidence of and karst activity in this tract.

Soils

Apalonia Silt Loam (AgrA. AgrB, AgrC2, AgrC3)

The Apalonia series consists of very deep, moderately well drained soils forms in loess and the underlying residuum from shale with limestone and siltstone. They are moderately deep or shallow to a fragipan. The surface horizon is a silt loam 8 inches thick. The first 8 inches of the subsoil is a silty clay loam. The next 33 inches is a silt loam. The next 11 inches is clay then it turns into a clay loam for 9 inches. The last 21 inches of the subsoil is a loam. The bedrock is weakly cemented shale with moderately and strongly cemented sandstone. The mean annual precipitation is about 43 inches and the mean annual temperature is about 54 degrees F.
Degree Slope: 0-12%
Woodland suitability group: 3d9

Site Index: 60
Growth Range potential: 258
Management Concerns: runoff and erosion

Tipsaw Very Fine Sandy Loam (TbIG)

The Tipsaw series consists of moderately deep, somewhat excessively drained soils. They formed in loamy residuum from sandstone with shale and siltstone. The surface is a dark grey very fine sandy loam about 2 inches thick. The subsurface horizon is also a very fine sandy loam about 3 inches thick. The subsoil is 15 inches is a fine sand loam and the last 20 inches is a loam. The bedrock consist of a weakly cemented and moderately cemented sandstone with shale, siltstone. The mean annual precipitation is about 43 inches, and mean annual temperature is about 54 degrees F. Permeability is moderate or moderately rapid
Degree Slope: 20-70%
Woodland Suitability: 3r12
Site Index: 70
Growth Range potential: 342
Management Concerns: runoff and erosion

Udorthents Cut and Filled (Uaa)

The Udorthents are cut and filled soils, mainly used for roadbeds. The depth to water table or restricting layer is more than 80 inches. These soils have no frequency of flooding or ponding. The mean annual precipitation is between 40 and 46 inches. The mean annual temperature is between 52 and 57 degrees F.
Degree Slope: 0-90%

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

A county road leads to the southwestern corner of this tract and ends at a house. Before the driveway is a small grassy area that falls in the interstate right of way making it a good area to park at to access the tract. Between this point of access and the tract is the fence that runs a short distance off of the interstate.

Boundary

An old fence line runs along the eastern boundary of this tract as well as the eastern third of the southern boundary. The northern boundary runs along Interstate 64 while the interstate's fence runs near the boundary within the tract. Corner stones were located in 2007 at the offset midway across the southern boundary.

Wildlife

The Natural Heritage Database Review shows no rare, threatened, or endangered species within the tract but does show the presence of three vascular plants in any of the nearby tracts.

Of the wildlife habitat goals, only half were met on the maintenance level. There was a deficit of cavity trees. The maintenance level goals were met for all snags along with the optimal level goals for snags in the size class 5"–9".

The wildlife that was noted during the inventory was typical with other areas in Crawford County. Evidence of deer, turkey, squirrels, raccoons, and various birds were noted during the inventory. The difference between the field, mixed hardwoods, and oak hickory covertypes as well as the transition zones creates a diverse habitat for local wildlife.

Wildlife Habitat Feature (Tract Wide)

Category	Maintenance level	Optimal Level	Inventory	Available Above maintenance	Available Above Optimal
Legacy Trees *					
11"+	279		801	522	
20"+	93		109	16	
Snags (all species)					
5"+	124	217	241	117	24
9"+	93	186	157	64	-29
19"+	15.5	31	18	2.5	-13
Cavity Trees (all species)					
7"+	124	186	12	-112	-174
11"+	93	124	12	-81	-112
19"+	15.5	31	12	-3.5	-19

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

Indiana Bat

As management activities currently can only be performed in the winter months due to Indiana bat regulations, it is unlikely that direct harm will come to the Indiana bat as they are hibernating in nearby caves at this time. Any skid trails/haul roads created in this tract could improve the habitat for the Indiana bat by improving the canopy foraging conditions due to the reduction of understory clutter. Furthermore, the areas around likely roost trees can be opened up to benefit the bat. The edge of log yards can increase the solar exposure of roost trees which improves the microclimate and thermal conditions of the roosting areas.

Trees that are ideal for roosting bats such as large snags and large trees that have loose/exfoliating bark can be retained to provide for the Indiana bat. Furthermore, the growth of ideal tree species for the Indiana bat can be managed to promote growth to increase the recruitment of trees into the categories suitable for the Indiana bat. At the moment this tract needs a higher amount of cavity trees. Any management practices that occur in the future should pay attention to the retention of cavity species of the desirable species.

Recreation

There is relatively no form of recreation within this tract. The separation of this tract from the main body of Harrison Crawford State Forest deters most recreationists from the area. The only use noted in this tract was a deer stand that was on the boundary between this stand and private property. Hunting is limited in this tract due to the close proximity to the Interstate as well as private residence. The only hunters would be those associated with the landowners to the south of the tract or accessing it via I-64.

Cultural

There were no cultural sites located in this tract.

Summary Tract Silvicultural Description, Prescription, and Proposed Activities

Oak Hickory (17 acres)

This stand, taking up about half of the tract, was found surrounding the drainages in the eastern two thirds of the tract. The dominant species in this stand was white oak followed by black oak. The stand had a basal area of 128 sqft/ac and a volume of 7,600 bf/ac. The understory was not as cluttered and shrub like as the Mixed Hardwoods stand and the overstory trees had a more consistent distribution instead of being clumped in certain areas with others void of large overstory trees. The high basal area of the stand suggests that the area would benefit from a harvest in order to reduce the competition of the residual individuals. The harvest would remove roughly 50 sqft/ac and 3,325 bf/ac leaving 77 sqft/ac and 4,250 bf/ac. The goal of the harvest would be to maintain the health of the stand and to keep the primary species composition already present.

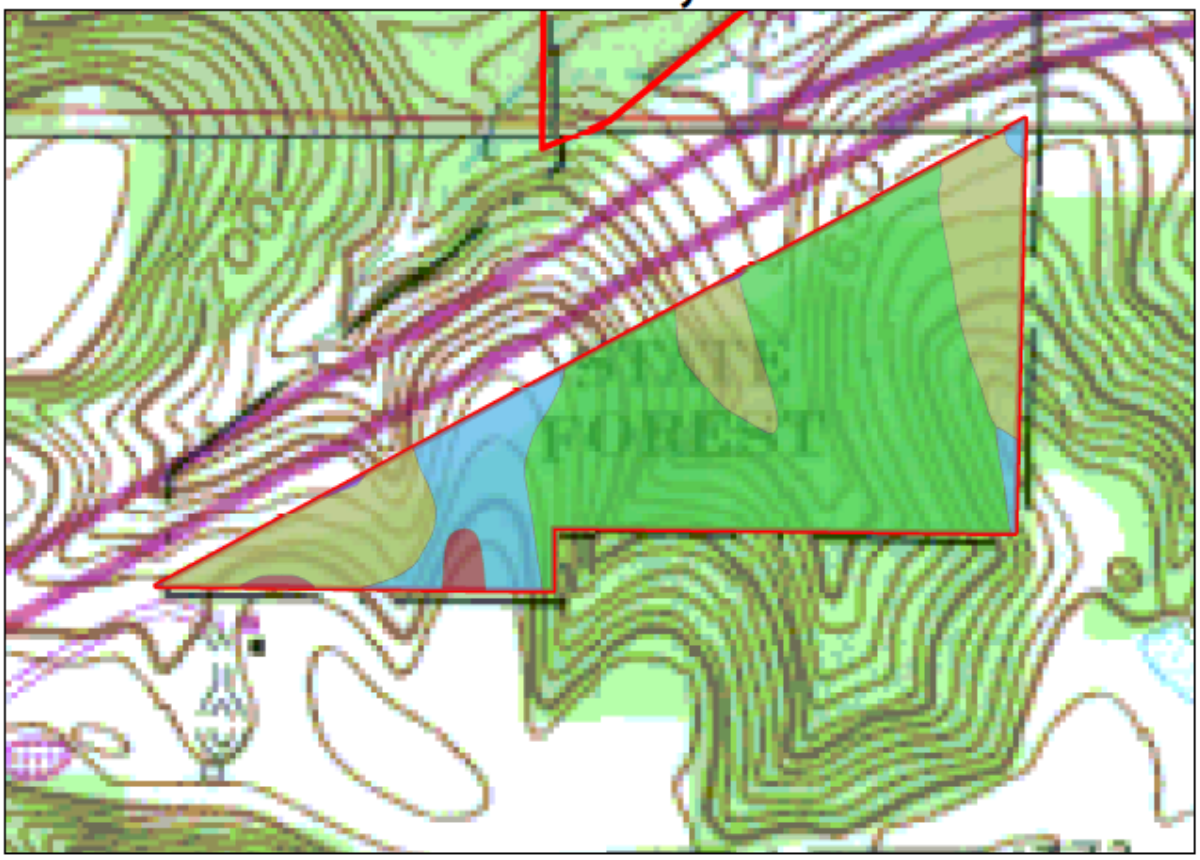
Mixed Hardwoods (12 acres)

This stand was located in the western third of the tract as well as along the major drainage in the center of the tract. The dominant species in this stand was yellow poplar followed by black oak. The stand had a basal area of 110 sqft/ac and 5,900 bf/ac. The understory in this stand was dense and had multiple shrub-like individuals made up of young hardwood species, spice bush, autumn olive, and service berry. The trees in the overstory were inconsistent in spacing. There were areas with clumps of overstory trees, most of which were yellow poplar, while others had no trees of overstory height. Furthermore, there were pockets of eastern red cedar within this stand, which were too small to merit their own stand. If the Oak Hickory stand were harvested, this area should be included in order to move this stand along to a later successional type. This stand would likely transition to being an Oak Hickory stand like the areas surrounding it. The areas directly surrounding the drainage would remain a mixed hardwoods covertype as is typical with drainages.

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 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.

Harrison Crawford State Forest
Compartment 15 Tract 1
October 6, 2010



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Miles

Legend

Soils_1501

- AgrB
- AgrC3
- TblG
- Uaa
- WhfD3

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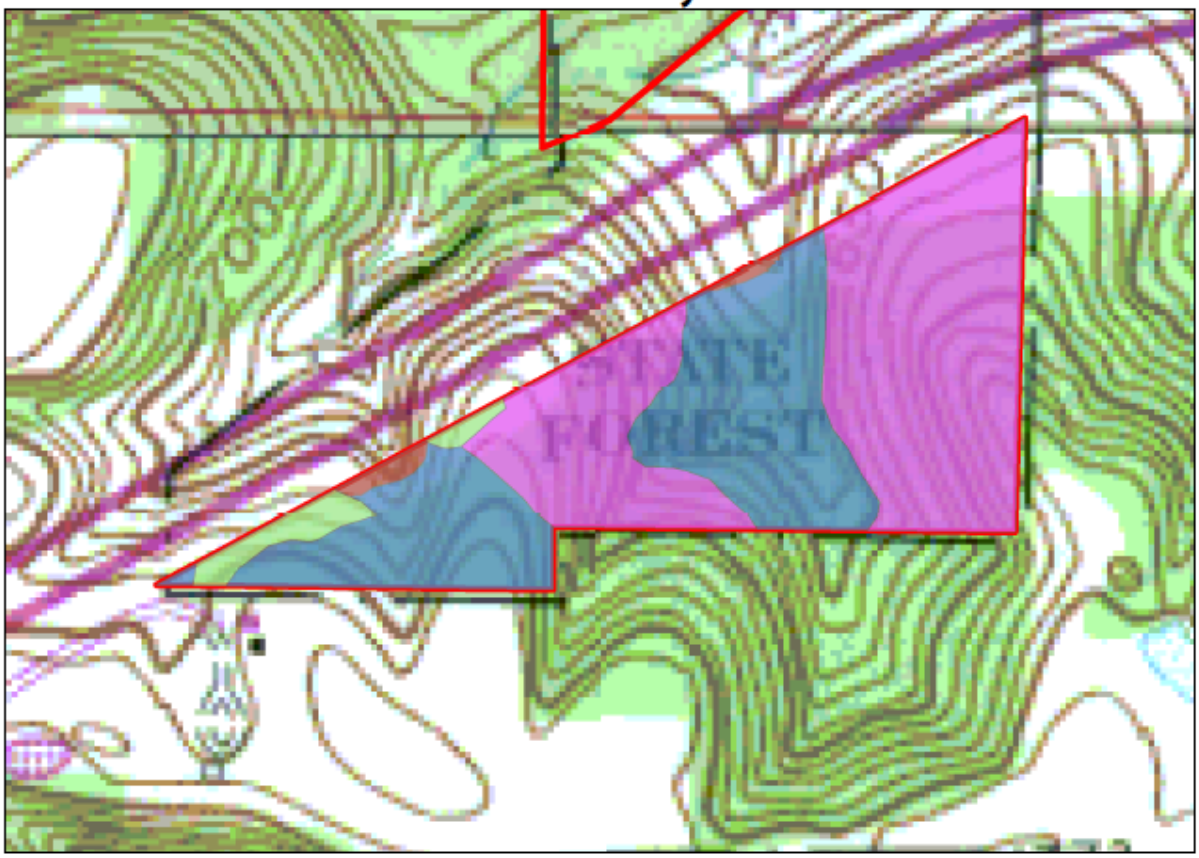
Harrison Crawford State Forest
Compartment 15 Tract 1
October 6, 2010



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Miles

Legend

stands_1501

- Mixed Hardwoods
- Oak-Hickory
- Open
- Virginia Pine

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