Resource Management Guide

Harrison-Crawford State Forest **Compartment: 14 Tract: 06**
Christine Martin **Date: 7/29/08**

Acres Commercial forest: 51
Acres Noncommercial Forest: 21
Acres Permanent Openings: 0
Acres Other: 0

Acres Total: 72

Average Site Index: 65
Calculated annual Growth (bd. ft.): 264 per acre

Basal Area ≥ 14 inches DBH: 53.7
Basal Area < 14 inches DBH: 41.0
Basal Area Culls: 1.3
Total Basal Area: 96

Number Trees/Acre: 347

Stocking Level : Fully stocked 90%

Species	Harvest	Leave	Total
White Oak	25190	99940	125130
Sugar Maple	24640	5670	30320
Black Oak	21340	37450	61740
Yellow Poplar	12770	42460	55230
White Ash	8240	1620	9860
Northern Red Oak	5880	28450	34330
Black Gum	4110	0	4110
Pignut Hickory	4060	17250	21310
Chinkapin Oak	920	6280	7200
American Beech	0	1860	1860
Black Cherry	0	2220	2220
Chestnut Oak	0	2510	2510
Red Maple	0	11260	11260
Scarlet Oak	0	3900	3900
Shagbark Hickory	0	12240	12240
Red Elm	0	1620	1620
Eastern Red Cedar	0	7590	7590
Totals	**107150**	**274730**	**384840**
Totals/Acre	**1488**	**3816**	**5345**

Location

This tract is located to the west of Wyandotte Cave Rd, in Crawford County T3S R2E 21 and T3S R2E 22. This tract has excellent access because it is directly off of the road.

General Description

There are three different stand types located on this tract. There is an old field section located on the ridge top directly off of Wyandotte Cave Rd, which is 21 acres in size. There is a Mixed hardwood type and is 18 acres in size which is located along the drainages in this tract. The last stand type is the oak-hickory type which encompasses about 33 acres of the entire tract.

In total, there are approximately 5450 board feet per acre on this tract. 1500 board feet per acre would be harvested in this tract with a timber sale. The average basal area for this tract is 96 square feet.

This tract is on the high end of fully stocked at 90%. This tract has a multitude of poor formed black oaks. Some of the small oaks in this stand could also be released to grow better. There is also a need for some timber stand improvement. The sugar maples and beech would have to be cut back in order to let the more desirable species such as white and red oak grow. If not dealt with, the sugar maple and American beech will out compete the oaks, and the stand will turn into a beech maple association.

This tract would be a good candidate for an improvement harvest to remove the unhealthy and poor formed trees in order to promote stand health and vigor.

History

This tract of land was acquired in 1966 by the state, which was previously owned by Rothrock.

There was a timber sale performed on this tact in 1987. This tract was combined with tracts 1407, and 1408. In total there was 165,000 board feet removed from this sale. The main species removed was black oak and pignut hickory.

Landscape Context

This tract is mainly made up of a west facing slope. The eastern third of the tract is made up of a ridge top. This ridge top was previously an old field that has converted into a stand of sassafras and cedar. On the southwestern side, as the slope gets closer to the drainage, it begins to get rockier. There are some rock out-croppings located in this area.

Topography, Geology, and Hydrology

There are three drainages that are located on this tract. All three drainages run into Sharpe Creek. Two of the drainages are made up of the western and southern boundary line. The third drainage is located on the northern portion of the tract running east to west.

Soils

Adyeville Very Fine Sandy Laom (AbqE2, AciE)

The Adyeville series consists of moderately deep, somewhat excessively drained soils. Surface Horizon is 9 inches thick. The subsurface horizon then grades into 8 inches of silt loam then with the remaining 60 inches turns into a loam texture type soil. The bedrock consists of moderately cemented sandstone with some siltstone, and shale. The permeability is moderately rapid. The mean annual precipitation is about 43 inches and the mean annual temperature is about 54 degrees F.
Degree Slope: 8-60%
Woodland suitability group: 3o10
Site Index: 70
Growth Range potential: 200
Management Concerns: Runoff and erosion

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

Corydon Stony Silt (CqyG)

The Corydon series consists of shallow, well drained soils that formed in as much as 8 inches of loess and in the underlying limestone residuum. The Corydon soils are on hills underlain with limestone. The surface horizon is 8 inches of a silt loam. The subsoil is 9 inches of clay. The bottom of the profile is unweathered bedrock. Mean annual precipitation is about 44 inches, and mean annual air temperature is about 54 degrees F.
Degree Slope: 20-60%
Woodland suitability group: 1o8
Site Index: 64
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

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 good due to the fact that the east line is made up of Wyandotte Cave Road. There also is a power line that runs along the west side of the road. The only problem that this would pose is when heavy equipment is being moved in and out of the area. The line is high enough that it should not be a problem, but precautions should be taken to be sure.

Boundary

Part of the northern line is bordered by a field. The other portion of the line is bordered by a private wooded lot. The northern boundary has been surveyed in the past. There are still some wooden posts marking the line. The east line is made up of Wyandotte Cave Road. The west and southern lines are bordered by other tracts in the Harrison-Crawford State Forest. The Western line is made up of a significant drainage that runs into Sharpe Creek. The Southern line is made up of another well defined drainage that also runs into Sharpe Creek.

Wildlife

The wildlife on this tract is typically what you would find in Crawford County Indiana.

What was observed when the tract was inventoried were various song birds, chipmunks, and squirrels.

A check of the natural heritage database indicated that there were some rare threatened or endangered species located around this tract, but they mainly are associated with the cave found in the tracts nearby. These species would not be disturbed by a timber harvest. The cave that these invertebrate animals have been found in is not located on this tract. There would be no disturbance to the cave so there will be no disturbance to the creatures living in the cave, by harvesting activities.

<u>Indiana Bat</u>

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.

Recreation

There are no recreation trails located directly on this tract. This tract has shown evidence that it is being used for hunting.

There are some horse trails located on the tracts to the south and to the west of this tract.

Cultural

No home sites or any historic sites were observed on this tract.

Tract Subdivision Description and Silvicultural Prescription

Old field

There are 100 square feet of basal area in this stand type which encompasses 21 acres on this tract. There are approximately 3000 board feet to the acre in this stand at this time.

This stand encompasses the ridge top along the road. It is made up mainly of sassafras small cedars and stressed yellow poplars. Along the western border there are more oaks. These trees are large and some are wolf trees. On the western side of the old field there is a spot that is an eastern red cedar pocket. This spot which is about a couple acres in size is made up of cedars that are average 8 inches in size.

In spots there is some substantial oak regeneration. This regeneration is head high or taller in some parts. These regenerating oaks should be released. There is not much that is merchantable in this area at this time, there should be some timber stand improvement (TSI) taken place. The TSI will help transition the old field area into a more merchantable stand type.

Mixed Hardwoods

There are 87 square feet of basal area in this stand type, which is 18 acres of the tract. There is 1130 board feet per acre that can be harvested at this time.

The Hardwood stand runs along the drainages in this tract. The south western side of this tract becomes rockier and steeper. There will not be any harvesting in this section because of the limitations of the equipment at this time. The average diameter also becomes smaller so there is also not much merchantable timber in this area.

The majority of the species in this stand type is white oak. There are also red and black oaks and a large portion of sugar maple and yellow poplar. This stand type is made up of smaller diameter trees. These trees average around 14 inches in diameter. Because of the small size of this stand the majority of the stand in not very merchantable at this time.

Oak-Hickory

The total land area for this stand is 33 acres. The total square feet of basal area are 99 for the stand type. There are 5440 board feet per acre and 2190 board feet per acre that can be harvested.

On the slope on the northern side there are larger White oaks that are rapidly reaching maturity. These oaks should be thinned out to encourage the younger and more vigorous growing oaks. This will improve the overall health and vigor of the stand.

On the mid slope there are patches of black and white oaks that are poorly formed. Underneath these oaks there is a plethora of oak regeneration ranging from shin to waist high. Since the trees that are currently in the overstory are of poor quality, the area should have a regeneration cut. This will allow the regenerating oaks that are established to grow freely and reach the overstory. These areas will have some TSI preformed on them to discourage the maple and beech regeneration and encourage the oak regeneration.

Summary Tract Silvicultural Prescription and Proposed Activities

The total harvestable area of this tract is about 32 acres which is a little less than half of the tract. Since this is such a small area, this tract should be combined with the 1407 and 1408 which are the tracts directly to the south.

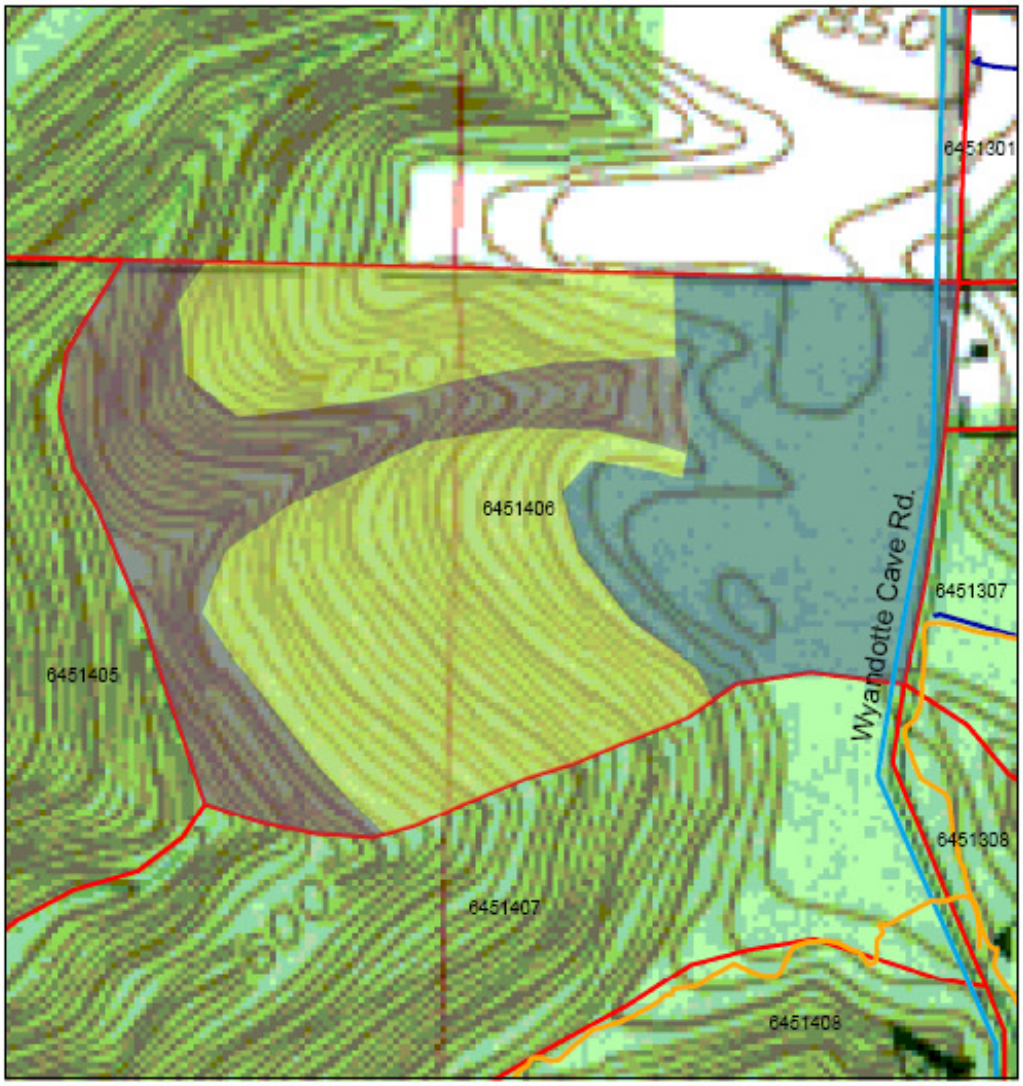
Proposed Activities Listing

2010 improvement harvest with 1407/8
2011 tsi
2020 re-inventory

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 "Harrison Crawford C14 T6" 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.

Compartment 14 tract 6
T3S R2E 21
T3S R2E 22
Stand Map



Wyandotte Cave Road
Harrison-Crawford Tracts

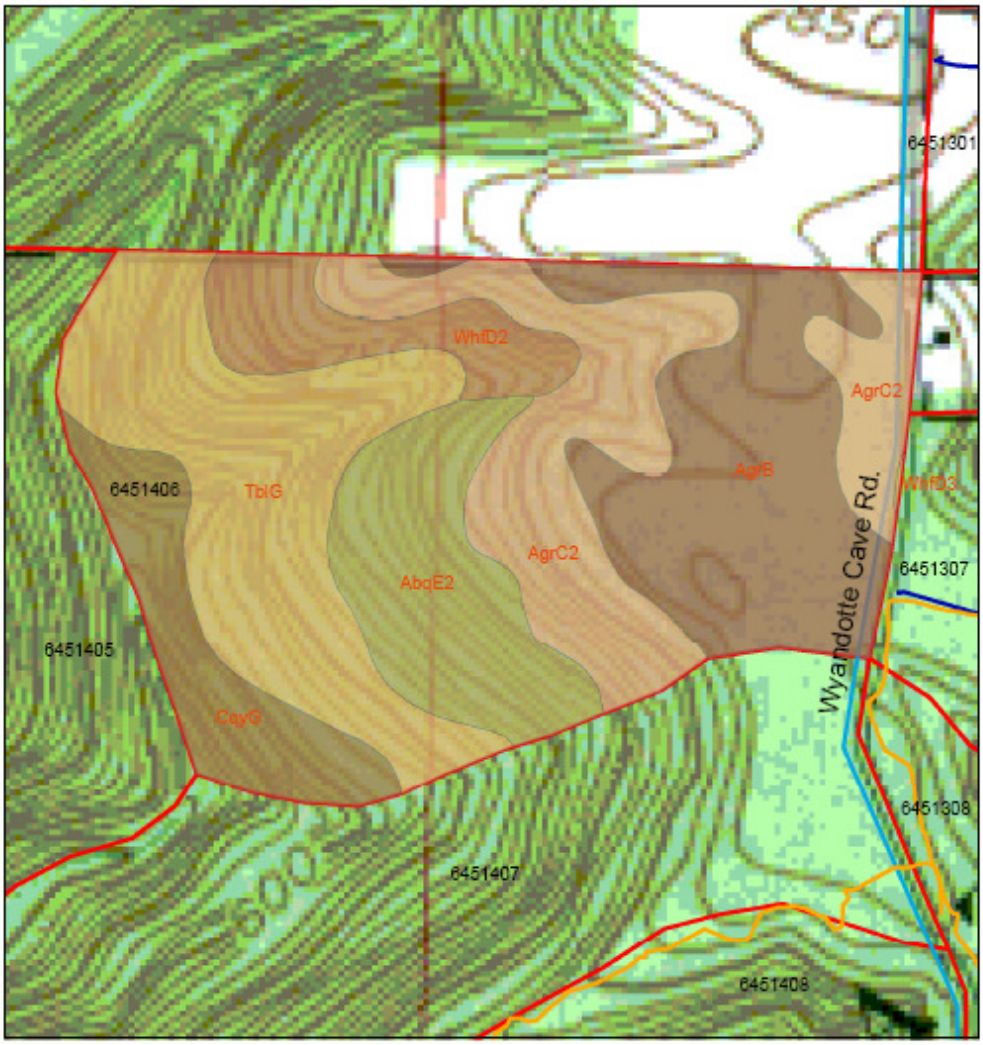
Stand Types

Mixed Hardwoods
Oak-Hickory
Old Field

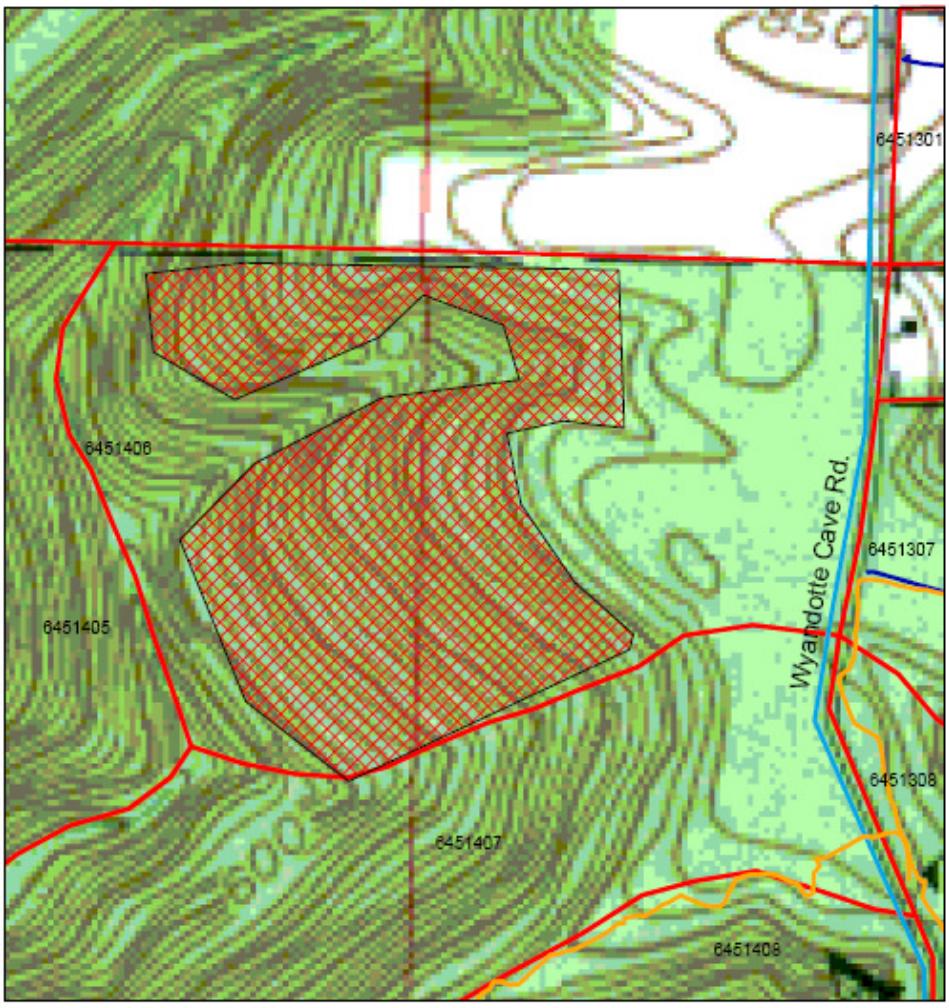
N
W
E
S

0 220 440 880 1,320 1,760 Feet

Compartment 14 tract 6
T3S R2E 21
T3S R2E 22
Soil Map



Compartment 14 tract 6
T3S R2E 21
T3S R2E 22
Harvest Area Map



Legend

Wyandotte Cave Road

Harrison-Crawford Tracts

N
W
E
S

0 220 440 880 1,320 1,760 Feet