Resource Management Guide

Harrison-Crawford State Forest **Compartment: 10 Tract: 2**
Christine Martin **Date 3/12/08**

Acres Commercial forest: 135
Acres Noncommercial Forest: 32
Acres Permanent Openings: 0
Acres Other: 0

Acres Total: 167

Average Site Index: 73

Basal Area ≥ 14 inches DBH: 34.2
Basal Area < 14 inches DBH: 72
Basal Area Culls:
Total Basal Area: 106

Number Trees/Acre: 379

Stocking Level : overstocked
Calculated annual Growth (bd. ft.): 201 board feet/ acre

Species	**Harvest** Doyle Bd/Ft	**Leave** Doyle Bd/Ft	**Total** Doyle Bd/Ft
Yellow Poplar	53150	176860	230010
Black Oak	44900	110080	154980
White Oak	35970	300070	336040
Northern Red Oak	19300	70430	89720
Sugar Maple	18180	3540	21730
Virginia Pine	14550	44280	58830
Chinkapin Oak	12410	8870	21280
Pignut Hickory	9980	43390	53370
American Beech	9810	21640	31440
Red Maple	6360	16180	22530
White Ash	4800	4250	9050
Scarlet Oak	3540	25300	28850
Blackgum	2810	0	2810
Red Elm	2230	0	2230
Shagbark Hickory	0	12670	12670
Black Walnut	0	2570	2570
Eastern Redcedar	0	8720	8720
Persimmon	0	4890	4890
Post Oak	0	8990	8990
Total	237990	824890	1062870
Total/Acre	1515	5495	7011

Location

This tract is located in Crawford County, T3S R2E S16. There is a county road that runs up along the west side of the tract. Schafer Ridge road runs through the southern portion of this tract.

General Description

There are 6 different stand types on this 167 acre tract. The first stand type is the Cedar stand. The cedar stand is 13 acres in size. The second stand type is the Virginia Pine stand. This stand is 18 acres in size. The third stand type is a cedar mix. The cedar is mixed with low quality hardwood trees. The cedar mix is 22 acres in size. The fourth stand type is Oak Hickory. This stand encompasses 107 acres, and is the largest stand on this tract. The fifth stand type is the Yellow-Poplar stand type. This stand is 4 acres in size. The last stand is the Beech/Maple stand type. This stand is 2 acres in size.

History

Most of this tract was acquired by the state in the early 1940s. About 15 acres was acquired in 1975. In 1940 Saltgaver sold the state 110 acres. In 1941 Houff sold the state 40 acres containing the southwest part of the tract. In 1975 the Highway commission transferred 15 acres to the sate, after interstate 64 was built, making up the southern portion of this tract.

Landscape Context

The western side of this tract is bordered by Harrison-Crawford State Forest. The Southern part of the tract is bordered by Interstate 64. The North and east sides are bordered by privately owned forested property. There are two houses that butt up against the boundary line. One house in located on the northeast line, and the second house is located in the middle of the eastern line.

Topography, Geology, and Hydrology

There are two main drainages that flow on this tract. There is a drainage that flows the length of the western boundary. The second drainage flows through the southern portion of the tract along Shafer Ridge Road. Both these drainages meet up and flow into Dry Run Drainage. There is a third drainage that runs east west in the center of this tract. This drainage meets up the main drainage running on the west side of this tract.

There are a couple different aspects because the way the drainages cut the landscape, but mainly it is a western aspect.

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

Gatchel Loam (GacAW)

The Gatchel series consists of very deep, somewhat excessively drained soils on flood plains. They formed in loamy alluvium containing a high percentage of rock fragments in the lower part. The surface horizon is a loam that is 4 inches thick. The first 5 inches of the subsoil is loam, the next 9 inches is a fine sandy loam. The substratum is a coarse sandy loam turning into a sandy loam. Mean annual precipitation is about 43 inches and mean annual temperature is about 54 degrees F.

Degree Slope: 0-2%
Woodland Suitability: 1o8
Site Index: 60
Growth Range potential: 155
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

This tract has good access. Schafer Ridge road runs through the southern portion on the tract. There is a county road that also runs up the west side of the tract.

Boundary

The southern boundary is interstate 64. The western boundary is Harrison-Crawford State forest. The North and east boundaries are private property.

Wildlife

The wildlife is typical of what would be found in Crawford county Indiana.

There was signs found indicating that the wildlife thrive very well on this tract. Deer, turkey, and a Coyotes were observed while inventorying the tract.

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.

Recreation

There are no hiking or horse trails located on this tract. There has been evidence found that this tract is being used for hunting.

Cultural

There were no historic or cultural sites found on this tract.

Tract Subdivision Description and Silvicultural Prescription

Cedar

This section consists of a cedar monoculture. The cedars in this stand are around 12 inches in diameter. There is very little hardwoods regenerating in the under Story. The main hardwood tree species that is present is American Beech. If this stand were to be harvested in there would be a total of 6,570 board feet removed according to the Doyle log scale. The basal area is sitting at 103 square feet per acre.

This stand could benefit from some Timber stand improvement (TSI) cuttings. The cedars are tightly packed in this stand, and there is not much under story. If more light could hit the ground there would be more hardwood regenerating and more diverse regeneration.

Virginia Pine

This stand consists of a monoculture of Virginia Pine. The average diameters in this stand are 12-14 inches. There had been a lot of wind throw in these pines. Where there is wind throw there is hardwood regeneration. The regeneration mainly consists of sugar maple and beech. There are some ash and oaks present as well. If this tract were to be harvested in there would be a total of 23050 board feet removed in this stand type. There is a total of 130 square feet of basal area per acre.

There are two different silvicutural options that can be explored on this stand. The first option is to leave the pines. The pines are facilitating good hardwood regeneration, therefore could be left to help diversify the area. The second option is to remove the pines. There is good advanced regeneration of the hardwoods present and they could be released. As of right now the former is the better option.

Cedar Mix

In this stand there are many low quality hardwood trees, mixed with cedar. These low quality trees should be thinned out. The predominant hardwood species is black and red oaks. These oaks are approximately 22 inches in diameter. These oaks are open grown

with low forks and large crowns. There is also a portion of yellow poplar in this stand type as well. These poplars are also open grown with low branching crowns. The regeneration in this area is mainly of American Beech and Sugar Maple. If this stand were to be harvested in there would be a total of 13,240 board feet removed. There is a total of 86 square feet of basal area per acre in this stand.

There should be an improvement thinning conducted in this stand. This would improve the overall stand vigor. There should also be some Timber stand improvement conducted in this stand. The cedar should be removed to make room for hardwoods. This will also allow more light to hit the ground. There should be some regeneration openings made in this stand type, to help increase stand diversity and to promote more desirable trees species and discourage the less desirable species.

Oak-Hickory

In this stand there is a predominance of white and black oaks. The diameters of the oaks are around 20 inches in diameter. There is good quality timber on the perimeter of the tract. As you travel to the center of the tract the quality decreases. In the center of the tract there are low forks, and crooked stems. Outside of the cedar and Virginia pine stand types is where the worst formed oaks reside. The regeneration consists of a beech maple mix. If this stand type were to be harvested there would be 180790 board feet removed from this stand. The current basal area is 105 square feet per acre.

This tract has not grown much in the past 20+yrs. This tract could be cut in attempt to facilitate oak regeneration and growth. There will also be some openings to regenerate the shade intolerant species, such as yellow poplar, and cherry. These openings will help provide species diversity and habitat for wildlife.

Yellow Poplar

The majority of this stand is Yellow Poplar. These are growing on a northern slope adjacent to a Virginia Pine stand. These Poplars are around 22 inches in diameter. These poplars are showing signs of stress. The regeneration in this stand is an American Beech/ Maple mix. If this tract were to be harvested there would be 15,760 board feet removed . The current basal area is at 143 square feet per acre.

The overcrowding and the previous drought damage are starting to cause health issues with the Yellow Poplar. There should be a thinning conducted in this area removing the poplars that are under the most stress. The stand will be reduced to 80 square feet of basal area per acre. This will help the vigor of the stand and will promote good health of the stand.

Beech/Maple

This stand encompasses 3 acres of the tract. The dominant species in this stand is American Beech. The diameters are around 22 inches. The majority of the Beech in this stand are suffering from some type of rot. There is also a strong component of Sugar Maple. The Maples are around 18 inches in diameter. The regeneration in this stand is predominantly beech maple. If this tract were to be harvested there would be

approximately 3,430 board feet removed from this stand. The current basal area is 110 square feet per acre.

This stand would benefit from an improvement thinning. The removal of the Beeches with rot would improve the condition of the stand. There are about 3,500 board foot of timber in this stand that could be removed.

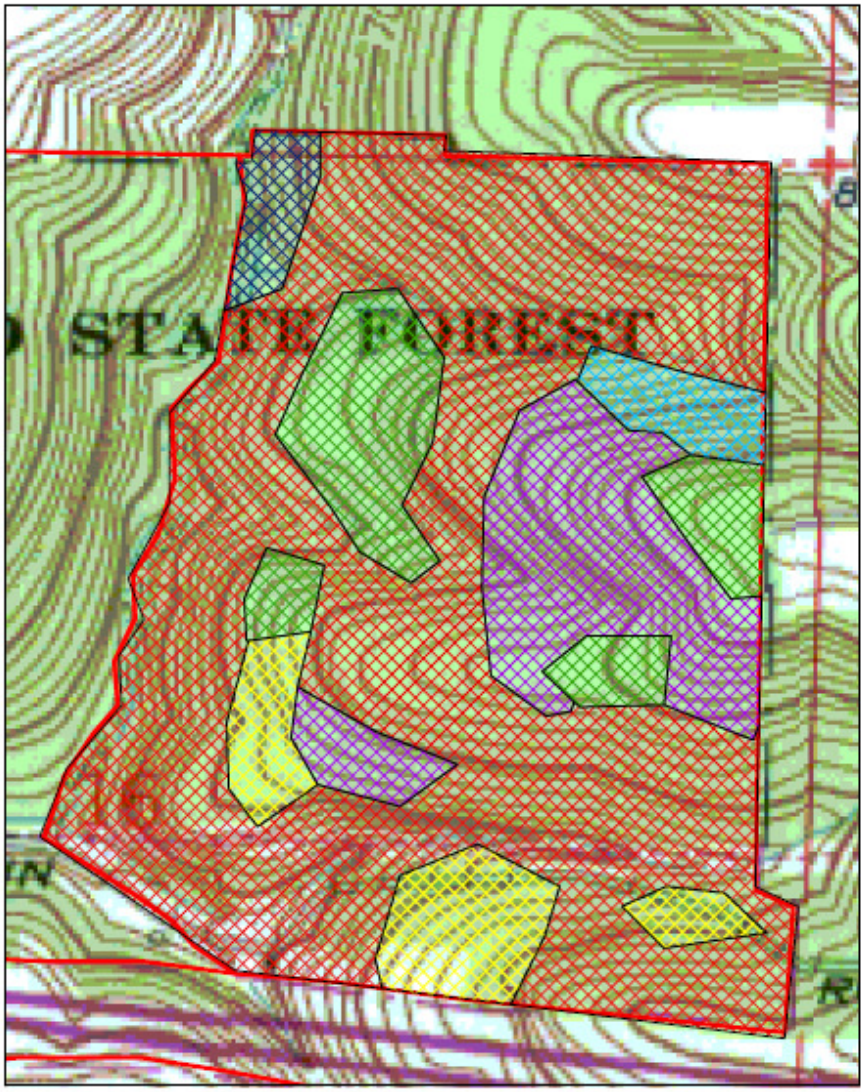
Proposed Activities Listing

2010 Timber harvest – reduce to 70 square feet of basal area.
2011 TSI- in the regeneration openings
2030 re-evaluate- re-evaluate stand and perform another inventory and write a new management plan

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 C10 T02 " 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.

Compartmnet 10 Tract 2
T3S R2E S16
Stand Map

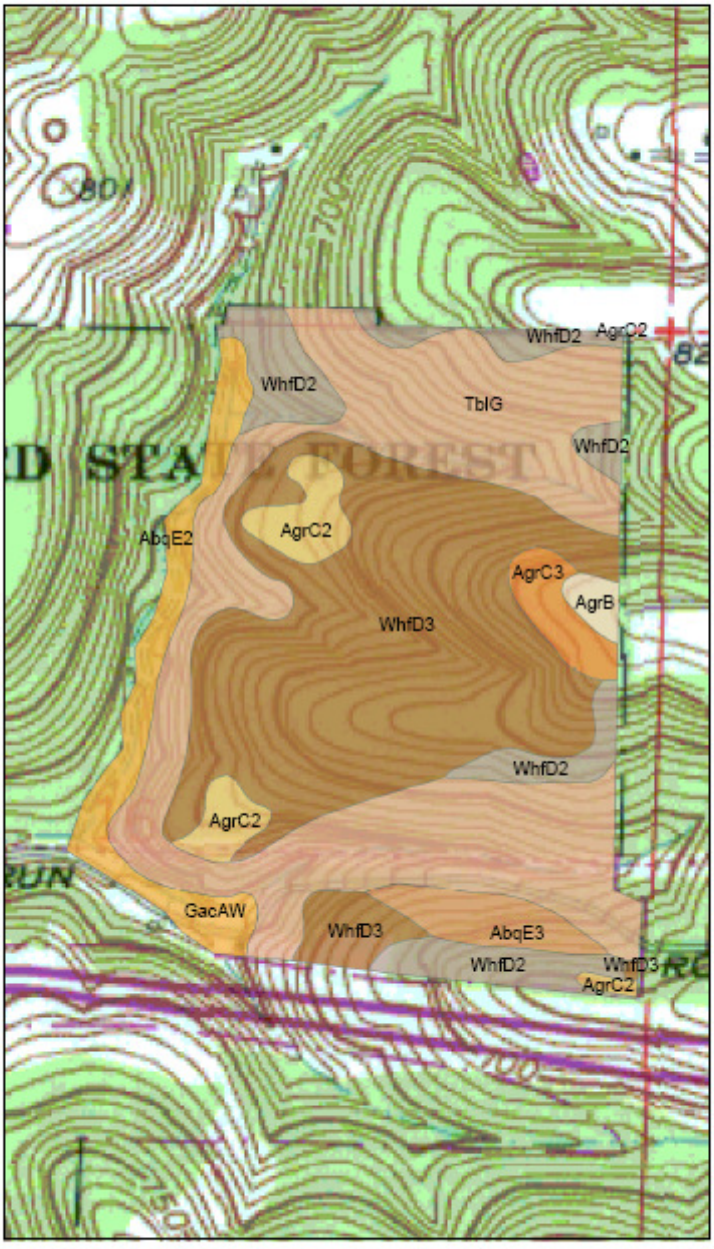


Stand Types

- Beech/maple
- Cedar
- Cedar Mix
- Oak-Hickory
- Virginia Pine
- Yellow Poplar

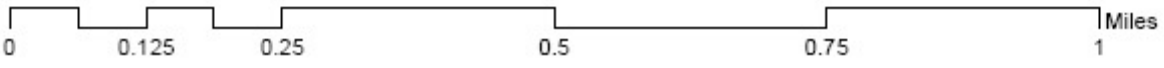
0 0.1 0.2 0.4 0.6 0.8 Miles

Compartment 10 Tract 2
T3S R2E S16
Soil Map



Soil Types

- AbqE2-Adyville Very Fine Sandy Loam
- AbqE3- Adyville Very Fine Sandy Loam
- AgrB- Apalonia Silt Loam
- AgrC2- Apalonia Silt Loam
- AgrC3- Apalonia Silt Loam
- GacAW- Gatchel Loam
- TblG- Tilsilt Silt Loam
- WhfD2- Wellston Silt Loam
- WhfD3-Wellston Silt Loam



Compartment 10 Tract 2
T3S R2E S16
Nonmerchantable areas Map