Resource Management Guide

Harrison-Crawford State Forest **Compartment: 16 Tract: 1**
Christine Martin **Date: September 1, 2008**

Acres Commercial forest: 30
Acres Noncommercial Forest: 35
Acres Permanent Openings: 0
Acres Other: 0

Acres Total: 65

Basal Area ≥ 14 inches DBH: 47.3
Basal Area < 14 inches DBH: 40
Basal Area Culls: 2.4
Total Basal Area: 89.7

Number Trees/Acre: 276

Location

This tract is located in Harrison county Indiana, Sec30 T3S R2E. This tract is also located a half mile to the west of Mulzer's Quarry.

General Description

There are 65 acres that comprise this tract. There are a couple different stand types on this tract. There are some pockets of Virginia Pine, the ridge top is mainly old field and the side slopes are an oak-hickory composition. The Oak-hickory stand is the largest in this tract which is made up of 30 acres. The Old field stand type is the second largest with 28 acres. This stand is located on the ridge top. There is mainly yellow poplar, and scarlet oak on this stand. The Virginia pine stand is made up of 7 acres. This tract is mainly some smaller sized Virginia pine with hardwoods coming up underneath.

History

In 1940, 15 acres were purchased from Pleasant, later in the year the remaining 50 acres was purchased from Onstott.

In 1992 there was some TSI preformed on the oak-hickory section of the stand. The TSI method was single tree selection with chainsaw girdling or treatment with herbicide.

Landscape Context

The south and the east parts of this tract are bordered by the Harrison-Crawford State Forest. The Northern and Western boundaries are made up of private ownership. To the North there is an open field with a High Line running through the field. The west side is bordered by privately owned forested land.

Topography, Geology, and Hydrology

The tract is mainly made up of a southern slope. There is a drainage that runs along the southern boundary which will empty into Texas creek. The ridge top appears to have been farmed in the past. There are some erosion gullies that have started from the old field portion of the tract, and continue part of the way down the hill.

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

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

Access

There is good access to the north western 15 acres of the tract. There is a firelane which runs south off of Tower Road that runs through the northern portion of this tract. In order to access the remaining 48 acres there is a fairly wide and deep drainage that would need to be crossed. There is no firelane leading into this portion of the tract therefore the only access would be walking or skidding across the drainage. There are only a few placed which would be possible to cross with a skidder.

Boundary

The southern and eastern boundary is made up of a drainage that runs into Texas creek. The northern and western boundaries are made up of private property. The Western line is marked with posts of rebar. The northern line has a corner on the east end and there is an old barbed wire fence running the length of the boundary. There is also a corner in the middle of the line possibly marking different ownerships on the private side.

Wildlife

This tract is not unlike any other found in Crawford County. There were deer, turkey, chipmunks, and squirrels observed when cruising this tract.

There was a Natural Heritage Database Review performed on this tract before it was cruised. There was nothing that was found on the tract but a half mile to the north there was a Shortleaf Arrow Wood observed in 1950. To the southeast of this tract about a quarter mile is a nature preserve. The nature preserve is home to a plethora of rare species. The Division of Nature Preserves manages for these species.

Recreation

There are no recreation trails on this tract so the recreation would be limited. There is a firelane which could possibly be used as a hiking trail. There was some evidence of hunting observed on this tract. There were some old deer stands hanging in the trees.

There is a geocache found on this tract to the east of the firelane. This cache has been found by many people, according to the log book. This cache will continue to be a source of recreation for future geocache seekers.

There is an illegal 4 wheel trail that goes from the neighbors' property to the west to the firelane located on tract 1602.

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.

Tract Subdivision Description and Silvicultural Prescription

Oak-Hickory

This stand type is located along the slopes of this tract. This stand is made up of about 30 acres which is a little less than half of the total tract acreage. There is 90 square feet of

basal area in this stand. If this stand were to be harvested in there would be about 1600 board feet per acre removed from this stand.

The main tree species that are located in this stand are white oak, which is the most prevalent, then chinquapin, and black oak. The main diameters for these trees were 14-16 inches. This fits into the small sawtimber range. The under story of this stand type is a beech maple mix. There are numerous poles of maple that are vigorously growing in this stand. If nothing is done to encourage the oak regeneration this stand will eventually turn into a beech maple stand.

There is enough board feet to have a commercial harvest, but the trees size is a little on the small end of the spectrum. It would be better served to have some Timber stand improvement and then in a couple years have the harvest. The timber stand improvement would concentrate on increasing the oak regeneration and discourage the maple and beech regeneration. This would hopefully stop the stand from converting to a beech maple stand and hopefully remain oak-hickory.

Virginia Pine

There is a section of 7 acres on the east end of the tract. There is 108 total square feet of basal area/acre in this stand type. If this stand were to be harvested in there would be approximately 25 square feet of basal area/acre removed which makes up 8,150 total board feet for the stand.

The main component of this stand is Virginia pine, but there is also a considerable scrubby hardwood portion to this stand as well. The main size class of the pine is in the pole range the average is 8 inches in diameter. There are some larger hardwood trees incorporated into this stand. These larger trees are more open grown and generally have some type of defect, whether it be a seam, or some type of canker.

This area could use some timber stand improvement to help facilitate the growth of the hardwoods. The pines could be removed thereby letting more light in the stand and releasing the hardwood regeneration.

Old Field

There are two different areas of the old field stand type. There is the stand by Tower Road which is 11 acres and there is another that is on the North West corner on the ridge top of the tract which is 17 acres. Together these two stands make up 28 acres.

The main species for both areas are yellow poplar and scarlet oak. These trees are within the small-medium sawtimber range. The average diameter is 16 inches. The yellow poplars in this area seem to show signs of decline, most likely from the droughts which occurred in the last 10 years.

The first area of old field is located in the northeast section closest to Tower Road. There is a lot of oak regeneration in this area. The overstory in this section is mainly older

poplars. The poplars in this area seem to be on average larger and were more susceptible to the drought damage than the second old field area. The poplars here are more open grown with a lower branching habit. This section would need some timber stand improvement done before the harvest to encourage the oak regeneration and discourage the poplar and the beech/maple regeneration that is present.

The second area of old field is located along the ridge top. Here there are various yellow poplars and a strong component of maple in the understory. The yellow poplars in this area do not seem to be affected by the drought as the poplars by Tower Road. The poplars in this area are also on average a little smaller and are not as open grown so they are taller.

The average square feet of basal area is 82/acre. If there were to be a harvest with single tree selection there would be 890 board feet/acre removed. If there were to be a harvest in this area, the main goal would be to release the oak regeneration in the under story.

What this area needs is to have timber stand performed on the area to encourage the oaks and discourage the maple beech regeneration. After the oak regeneration has been established there should be a harvest that removed the majority of the overstory to release the oak regeneration that is established. If this is managed properly it will convert the site from a scrubby old field stand to an oak-hickory stand type.

Proposed Activities Listing

2009- TSI in old field and hardwood sections to promote oak regeneration.

2013- evaluate stand and see if ready for harvest or if more TSI is needed. If TSI is needed perform hopefully in the same year if time allows. In about a couple years after performing the second TSI a harvest should be preformed to complete the transformation of the old field sites into oak hickory stand type.

2014- If TSI was not needed a second time a harvest should be preformed in this year.

2034- another inventory should be preformed on this stand to re-evaluate and write a management prescription.

Average Site Index: 68 Stocking Level : Fully stocked (85%)
Calculated annual Growth (bd. ft.): 266 bd. Ft./acre/year

	Harvest (Bd. Ft./ acre)	Leave (Bd. Ft./acre)	Total (Bd. Ft./acre)
Yellow Poplar	35010	35610	70620
Black Oak	9710	16050	25770
Chinkapin Oak	5900	14740	20640
White Oak	5650	60750	66400
White Ash	5470	4390	9860
Northern Red Oak	5130	5680	10800
Red Maple	3670	2000	5670
Sugar Maple	2170	8340	10510
Scarlet Oak	2070	26770	28840
Pignut Hickory	1930	10650	12580
Shagbark Hickory		3280	3280
Hardwood Totals	**76710**	**188260**	**264970**
Hardwood Total/Ac	**1180**	**2896**	**4076**
Eastern Redcedar		9050	9050
Virginia Pine	5350	9470	14820
Softwood Totals	**5350**	**18520**	**23870**

* all volumes calculated using the Doyle log rule

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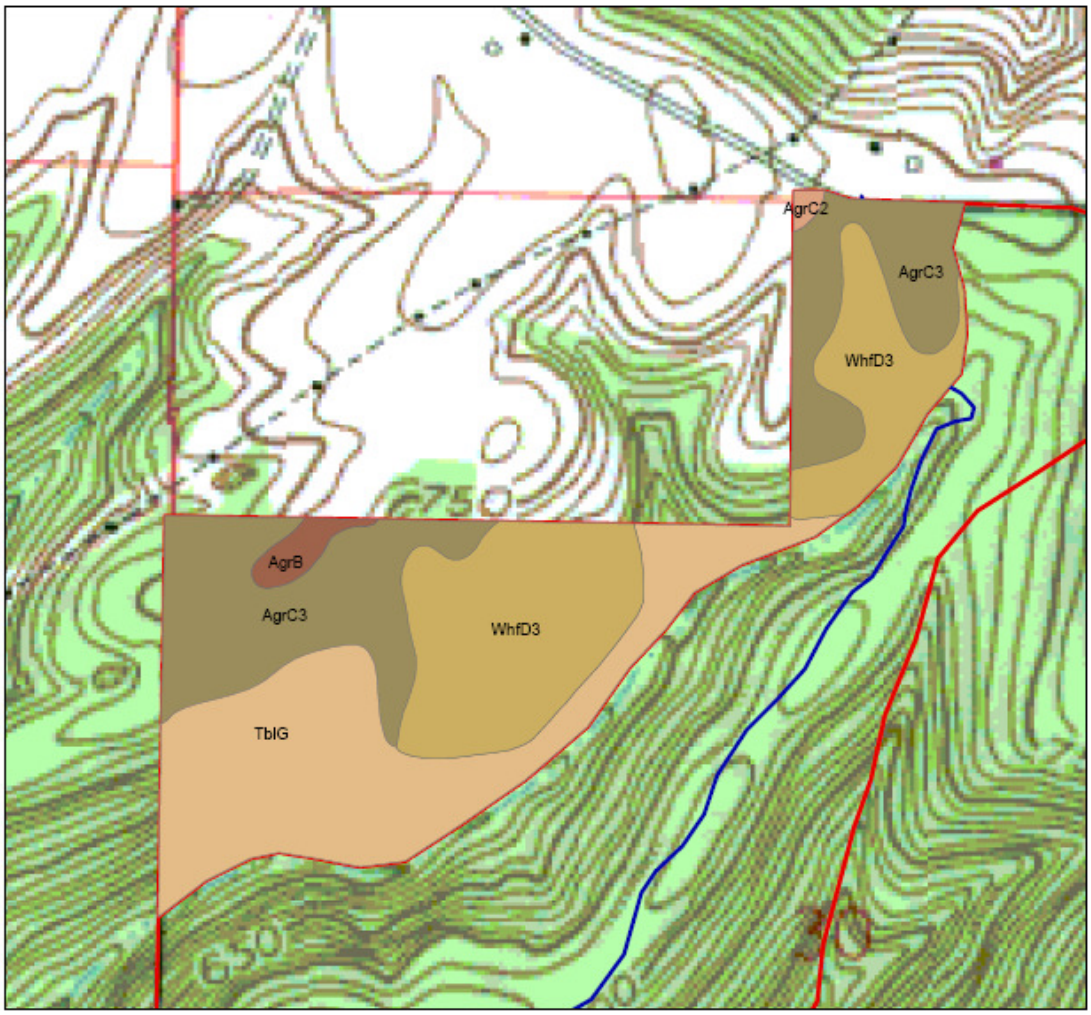
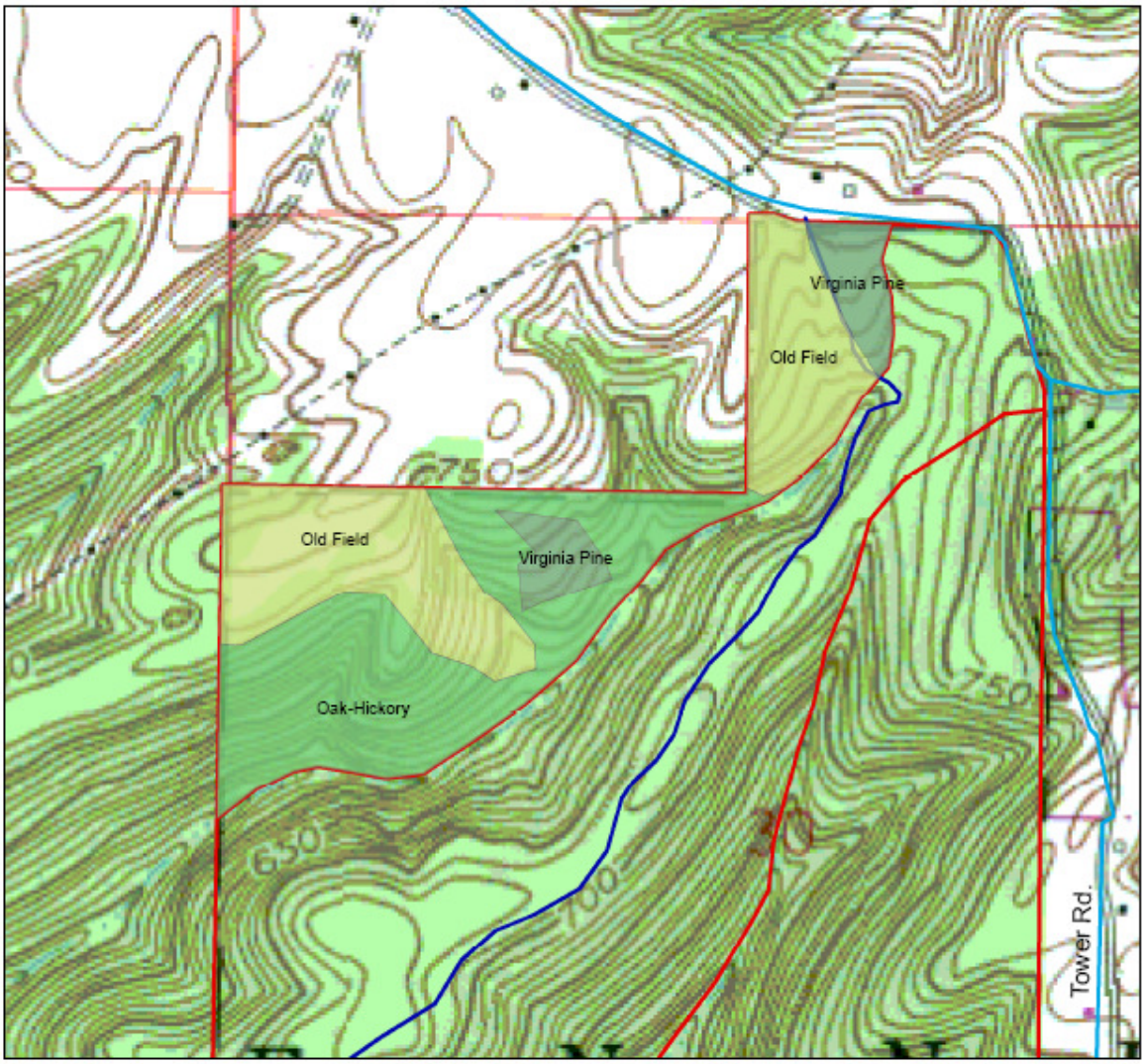
Soil Map
Compartment 16 Tract 1
T3S R2E 38



Compartment 16 Tract 1
T3S R2E 38
Stand Map



stands
- Oak-Hickory
- Old Field
- Virginia Pine

Legend
- Firelane
- Road
- HCSF Tracts

0 0.15 0.3 0.6 Miles