Resource Management Guide

Harrison-Crawford State Forest **Compartment: 10 Tract: 06**
Christine Martin **Date 2/26/2008**

Acres Commercial forest: 68
Acres Noncommercial Forest: 31
Acres Permanent Openings: 0
Acres Other: 0

Acres Total: 99

Average Site Index: 70
Calculated annual Growth (bd. ft.): 217 per acre

Basal Area ≥ 14 inches DBH: 59.7
Basal Area < 14 inches DBH: 41.6
Basal Area Culls: 0.9 square feet per acre
Total Basal Area: 102 square feet per acre

Number Trees/Acre: 480

Stocking Level : overstocked (102%)

*Harvest/Leave volumes from mixed hardwoods and Oak-Hickory stand types only.

Species	Harvest Volume Bd. Ft	Leave Volume Bd. Ft.	Total Volume Bd. Ft
Black Oak	35150	80270	115420
Yellow Poplar	22650	31890	54540
Sugar Maple	11740	18440	30180
White Oak	11670	206160	217830
Pignut Hickory	9020	24050	33070
Northern Red Oak	6230	20310	26540
White Ash	3820	2530	6350
Scarlet Oak	3040	10460	13500
American Beech	1440	0	1440
Black Gum	0	5390	5390
Shagbark Hickory	0	3460	3460
Totals	104760	402960	507720
Totals/Acre	1541	5926	7466

* Board Feet calculated according to the Doyle Rule.

Location

This tract is located in T3S R2E S21 in Crawford County. It is located about ¼ mile south of interstate 64.

General Description

There are six distinct stand types on this tract. Types include Pine, Cedar/Maple, Oak-Hickory, Mixed Hardwoods, Old Field, and old regeneration openings.

History

This land was acquired in the 1940's. In 1941 Rothrock sold us about 60 acres. In 1941 the state purchased about 30 acres from the Department of Public Works via Aniel Froman. In 1966 Rothrock sold us about 10 acres.

There was a timber sale conducted on this tract in 1984. There were mostly black and white oaks removed in this sale. There were a total of 113,498 board feet removed by this sale.

Landscape Context

This tract is mainly bordered on all side by Harrison-Crawford state forest. The west line is bordered by privately owned forested land.

Topography, Geology, and Hydrology

This tract is made up of mainly a western slope. There is a prominent drainage on the north that runs into Dry Run drainage. There is also a drainage that runs through the center of the tract running from east to west. This drainage also empties into Dry Run drainage.

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 formed 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
Management Concerns: runoff and erosion

Access

This tract has great access. Scott Hill road runs on part of the eastern and western borders. Scott Hill Road connects Wyandotte Cave road and Dry Run road.

Boundary

Scott Hill road makes up the south west boundary line and the eastern boundary line. The west line is made up of private forested property. The private property has been marked with the Crawford county surveyor's markers. There is a corner stone at the north end of the west line. The north line follows a prominent drainage.

Wildlife

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

There natural heritage database shows that there are no threatened or endangered wildlife in this tract. Nearby there are some species that have been found but they are primarily associated with caves.

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 recreation trails that run through this tract. There is evidence that this tract is being used for hunting.

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

Pine

In total there are 8 acres of pine on this tract. There are two different pockets of pine found on this tract. There is a pocket along Scott Hill Rd. which is 6 acres in size and another pocket located in the north central portion of the tract which is 3 acres in size.

Both pockets contain Virginia pine that range from 10-16 inches in diameter. The pocket along the road has a lot of yellow poplar trees intermixed with the pine. The regeneration that is coming up in the under story is mainly beech with some maples. There are also some random pockets of sassafras intermixed within the Virginia pine. On the south west side of the pocket the Virginia pine are poor formed and have small and unbalanced crowns.

The pocket of pine to the interior of the tract is a Virginia pine plantation, with dogwood coming up in the under story. There are a few maples and American beech regeneration. These pines have small crowns and are very close together. These pines are stressed and are in poor health. The total square feet of Basal Area for both pockets is 115. If this stand type were to be harvested there would be 9,330 board feet removed of mainly Virginia pine and yellow poplar.

In order to keep this stand as healthy as possible it should have a Timber Stand Improvement thinning (TSI). The crowns are small and close together, which is an indication that those trees are being stressed. If these pines are thinned it will relieve some of that stress the pines are currently under.

The pines by the road could be removed to release the under story. There is enough hardwood regeneration that taking off the over story will help convert this pine stand into a hardwood stand.

Cedar/Maple

There are 6 acres of this stand type. This stand is also located in the north central portion of the tract adjacent to the interior pine pocket. The main species of this stand is cedar with a strong red maple component. The red maples are around 12 inches in diameter and are poorly formed. The maples have low forks, and crooked stems. There are also some yellow poplars in this stand. The cedars are around 10 inches in diameter. The yellow poplar are larger, about medium saw timber (20 inches DBH). The regeneration is mainly American beech with some maple, ash, and yellow poplar. There is 105 square feet of basal area in this stand. If this stand were to be harvested in there would be 6,470 board feet removed of mainly red maple and yellow poplar.

This area is of low quality timber. There is not much of anything that could be done here to improve the current stand. The one thing that could be done is to do some Timber Stand Improvement (TSI). The low quality timber could all be cut down in order to release the regeneration in the under story

Old Field

There are 13 acres of old field. This stand is located in the northwest corner of the tract. The over story is predominantly yellow poplar. There is mainly dogwood growing in the under story. The regeneration is maple and yellow poplar. The ground cover is a layer of mutliflora rose. The yellow poplar range in sizes, but the average is 14 inches in diameter. This area is a little wetter than the rest of the tract, so it does not look like these poplars have suffered too much from the previous droughts. The square feet of basal area

in this stand is 70 per acre. If this tract were to be harvested, it would yield 6,780 board feet.

The ground is wetter here so the poplars are not showing signs of drought stress, and therefore could be left alone. This area could be left to grow for the time being.

Old regeneration openings

There are two previous regeneration openings on this tract. The total acreage for the openings is 3 acres. There is one by the corner of Dry Run rd. and Scott Hill rd. which is one acre. The second opening is in the center of the tract which is 2 acres. The regeneration coming up in both these openings is the same. It is mainly yellow poplar with some American beech and maple. The yellow poplar regeneration is around 4-6 inches in diameter. The beech and maple regeneration is about 2-4 inches in diameter. The square feet of basal area for this stand is 75 per acre. There is nothing to harvest at the moment in these openings.

These areas will grow up into yellow poplar stands. These opening could benefit from a crop tree release. There are many young trees growing up in these openings; thinning would greatly improve the quality of trees.

Oak-Hickory

The oak –hickory component encompassed the majority of the tract. There are 60 acres of this stand type. The main tree species is white oak. The average size class for the over story trees is medium saw timber, which is between 18-22inches in diameter. The regeneration is mainly American beech and sugar maple for the entire stand. The west central part of the tact has many black oaks growing there. These black oaks are in poor form. The oaks either have low forks, or small crowns. These oaks average about 22 inches in diameter. The southern portion of the stand is mainly white oaks. There are some white oaks poles (4-6 inches in diameter) growing up into the over story. In the northern part of the stand, there are many pignut hickories, but they disappear as heading south. The entire stand is at 103 square feet per acre of basal area. If this were to be harvested in there would be 75,030 board feet removed of mainly black oak and white oak.

This stand could be harvested in. there is enough stocking to warrant a timber harvest in this area. The harvest should not be any later than 5 years, because the poorly formed black oaks will need to be cut out of the stand by then. The stressed yellow poplar will also need to be harvested. There are some white oak poles that could benefit from being released. When harvested this stand's stocking should be reduced to 80 square feet of basal area through harvest and TSI.

There is also a lot of maple and beech regeneration in this stand. To get more desirable regeneration there should be a prescribed burn. This will promote the regeneration of oaks, and discourage the regeneration of beech and maple

Mixed Hardwoods

This stand is 8 acres in area. This stand is located along the northern drainage of this tract. There are mainly yellow poplars in this stand. The regeneration is mainly red maple, sugar maple, and American beech. The yellow poplars are medium sawtimber. The poplars are showing signs of drought stress. There are oaks growing in this stand as well. The oaks are of poor form. Most of the oaks have some type of defect associated with them. The defects range from seams to butt rot. There are also low forks and some of the oaks are showing signs of stress. This stand is in poor health. There are 123 square feet of basal area in this stand. If this stand were to be harvested, there would be 29,730 board feet removed consisting mainly of yellow poplar.

This stand could greatly benefit form an improvement thinning. There are may trees that are in poor health and should be removed. The stand is overstocked and would benefit from removing these trees that are in poor health. This stand will be harvested at the same time as the Oak-Hickory stand. This stand's stocking will be reduced to 80 square feet of basal area.

Proposed Activities Listing

2008 TSI- TSI the interior pocket of Virginia pines to 90 square feet of basal area.
2008/9 Timber harvest- Oak-hickory and mixed hardwoods. Harvest down to 80 square feet of basal area

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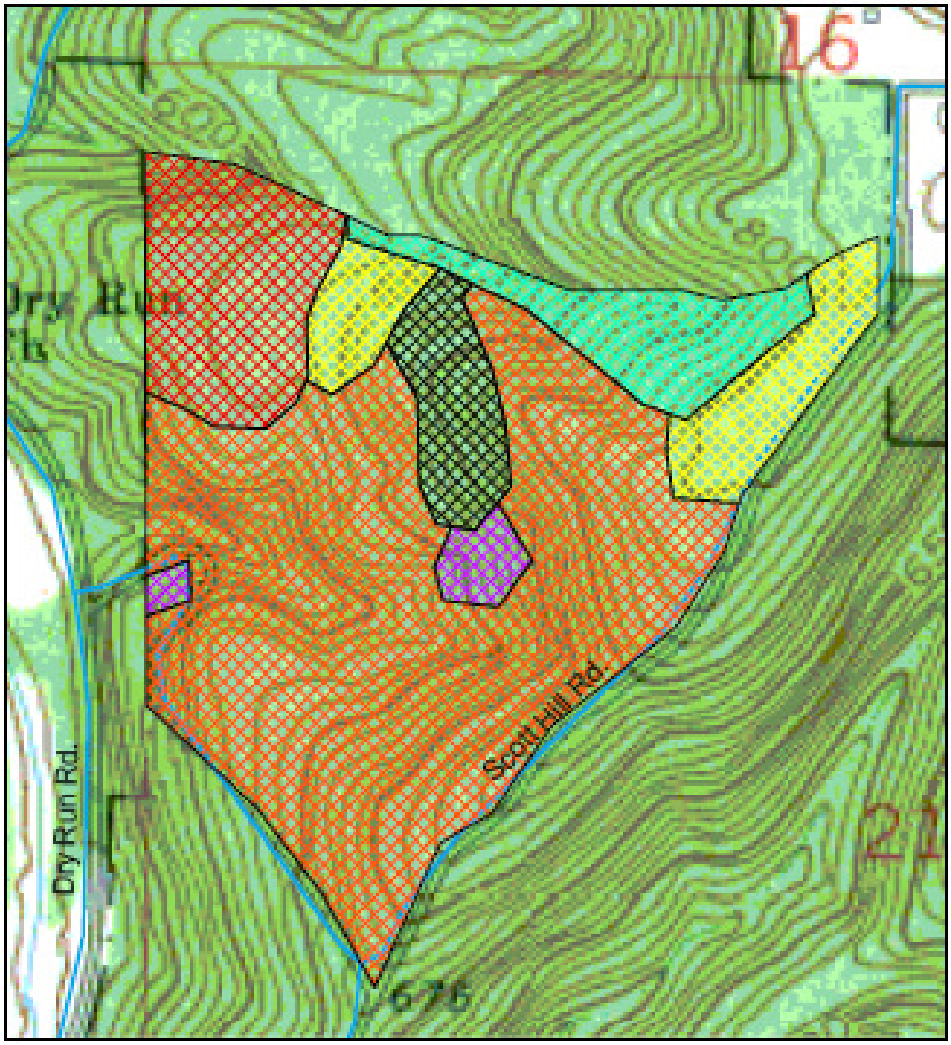
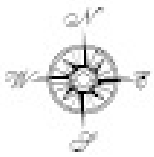
You **must** indicate "Harrison-Crawford C10 T06" in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

Compartment 10 Tract 6
T3S R2E S21
Stand Map



Stand Types

- Cedar/Maple
- Mixed Hardwoods
- Oak-Hickory
- Old Field
- Opening
- Pine



Compartment 10 Tract 6
T3S R2E S21
Merchantable Area Map