Resource Management Guide

Harrison-Crawford State Forest **Compartment: 5 Tract: 5**
Christine Martin **Date 2/1/2008**

Acres Commercial forest: 48
Acres Noncommercial Forest: 0
Acres Permanent Openings: 0
Acres Other: 0

Acres Total: 63

Average Site Index: 65
Calculated annual Growth (bd. ft.): 185.5

Basal Area ≥ 14 inches DBH: 37
Basal Area < 14 inches DBH: 72
Basal Area Culls: 1
Total Basal Area: 110

Number Trees/Acre: 365

Stocking Level : overstocked (105%)

	Harvest	Leave	Total
White Oak	35490	188140	219080
Northern Red Oak	18330	27750	46070
Yellow Poplar	15450	25950	41400
White Ash	13240	16220	29460
Sugar Maple	11130	5540	16670
Black Oak	10820	2440	13260
Chinkapin Oak	6070	9150	15220
Pignut Hickory	2280	24380	26650
Scarlet Oak	1930	0	1930
American Beech	1640	0	1640
Shagbark Hickory	0	14880	14880
Total	116380	314450	426260
Total/Acres	2238	6047	8197

Location

This tract is located in T2S R2E S30. The tract is close to the small town of El Bethel. The west and north boundary line runs against private property.

General Description

The entire tract consists of 63 acres. The majority of this tract, 48 acres, is comprised of the oak-hickory stand type. The ridge top changes more into an old field stand type, which is about 8 acres. There is a little bit of a white pine stand near the creek which consists of 4 acres. Lastly there is a mixed hardwood stand that is made up of 4 acres.

History

This land was acquired in the 1950's. In 1952 Byrd sold us approximately 25 acres, and in 1953 Jenkins sold us about 39 acres.

In 1982 this tract had a timber sale on it. It included 43 acres and sold 47,546 board feet. The main tree harvested was white oak; a close second was black oak. The harvest was mainly on the over mature oaks in the tract.

Landscape Context

The Tract is bordered by the Harrison-Crawford state forest on the eastern side. On the western side it is bordered by private landownership. The private land is currently forested. The North West corner is kitty corner to an agricultural field. The Northern boundary is also in forested private landownership.

Topography, Geology, and Hydrology

This tract is mainly situated on an eastern slope. The northern part of the tract forms a southern slope, at the base of this slope runs a creek. There is also a drainage that runs the length of the eastern boarder, next to the road. Both the drainage and the creek run into Slick 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 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 a clay then it turns into a clay loam for 9 inches. The last 21 inches of the subsoil is a loam. The bedrock is a 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

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

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

Access to this site is by Whiskey Run road, which forms the eastern boundary for this tract.

Boundary

This tract is more of a triangle in shape. The east line consists of the county road, Whisky Run Ranch Rd. The western boundary consists of private landowners. The landowners have their land posted. The northern boundary also consists of a private landowner. This line is harder to find, because it does not follow the section line. There is a small scrap of barbed wire on the northeastern side, close to the road. There is no other evidence of barbed wire along the north line.

Wildlife

The wildlife is typical of what you would see in this area. The Natural Heritage Database Review shows that there are no threatened or endangered species within the tract. Two species were found roughly ¼ mile to the southeast of the tract. The two species were Appalachian Quillwort, and Roundleaf Water-hyssop.

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 on this tract. There was evidence found that suggests that this tract is 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

There are four different stand types on this tract. The main stand type is oak- hickory. The remaining stands are old field, mixed hardwoods, and a white pine monoculture. See stand map.

Old Field

There are approximately 8 acres of old field. The old field stand type is located more on the ridge top. This stand is comprised of eastern Red Cedar, Yellow Poplar, Dogwood, and Red maple. The main component of this stand is Easter Red Cedar. The size of these trees range from poles (6-12 DBH) to small saw timber (12-16 DBH). Because of the small size of the trees there is no harvestable volume in this area. The basal area for the old field stand is 111. The regeneration in this area is mainly of red maple. There is also a lot of Dogwood competing with the red maple.

Mixed Hardwoods

South of the old field stand is about 4 acres of mixed hardwoods. In this area the predominant species is yellow poplar and red maple. These trees are mainly pole sized trees (6-12 DBH). The harvestable volume is approximately 8,000 bf for the 4 acres of mixed hardwoods. The average stand basal is 120. The yellow poplars in this area are starting to show signs of drought stress. There are also some overmature white oaks that are on the outskirts of the mixed hardwood area. These white oaks are in the high 20's DBH.

White Pine

In the drainage there is a monoculture of White Pine that records show to have been planted in 1955. There were also about 2,000 red pine reportedly were planted at the same time but I did not see any trace of those. The basal area of the white pine is about 100. These Pines could be thinned out. The crowns are touching, and the crowns are not as full as they could be. Thinning this stand would result in a harvestable volume of about 9,000bf. If all the pines were removed from the area the harvestable volume would be about 22,000. Complete removal of the pines would release the regeneration coming up

underneath the pines. The regeneration species is red maple, with some oaks. The oaks are growing underneath the red maple.

Oak-Hickory

The rest of the tract, 48 acres, is comprised of oak-hickory stand type. The main species in the stand is White Oak. On the southern side of the stand, there are smaller trees. The trees also get smaller as it gets closer to the drainage. The average diameter for this stand is in the low to mid 20 inches in DBH size class. There are some larger trees around the old field stand type. There are also some big (28 DBH) Black Oak in this area. As you travel farther from the old field, the diameters return back to the mid 20's. The trees along the road are almost a log taller (12 ft) than the trees on the upper slope. Along the Northeast point on the hill, the stand picks up with yellow poplar. These yellow poplars are of average height and the diameters are in the mid 20's DBH. As you travel northward you will hit a creek. Across the creek is another hill. On the ridge top of this hill is almost a pure white oak stand. On the steeper side of the hill, it is sparse. There are bigger yellow poplars, and dispersed white oaks. As you travel more eastward, the white oaks pick up again. Chinkapin oaks also start to appear here more frequently. The chinkapin are not terribly formed. Throughout the stand there is a component of sugar maple regeneration. If this stand were to be opened up there would have to be something done to control the maple otherwise the next generation stand will be maple. The total harvestable volume in this stand type is around 100,000bf. The total overall volume is 408, 000 bf. The stand basal area is 110.

Summary Tract Silvicultural Prescription and Proposed Activities

Old Field

In this area there are not much harvesting activities that could be done. Because it is not very merchantable a harvest would not be feasible. There could be some TSI done on this site. The TSI could involve clearing out the cedar and poor formed trees, and dogwood. This site could then start all over and hopefully start something that would be more merchantable in the future.

Mixed Hardwoods

Parts of this stand may possibly be a good area for a regeneration opening. Even though the yellow poplars are not very big (small saw timber); they are showing signs of stress. The stressed trees will be starting to die off within the next couple of years. There are also some big over mature white oaks adjacent to the stressed poplars. These mature trees may not make it to the next harvest cycle.

The regeneration in this area is maple, poplar, and some oaks. This regeneration can be released. To enhance the release of the oaks, some TSI should be done to remove the maples and some of the yellow poplar.

If an opening is made this it will accomplish two objectives. The first being to get rid of the dying over story and the second is to release the regeneration underneath.

White Pine

In order to maintain the healthiest white pine they should be thinned out to regain vigor. The Pines are big enough, that they probably should be removed from the site. There are also not too many of them so clearing them would make more sense than doing a small thinning. The regeneration growing beneath them could benefit from a release. This area would then be converted back into hardwoods. In order to release the desirable oak regeneration, the red maples would need to be removed from the stand.

Oak-Hickory

This stand could be thinned. In the northern section there are some mature trees that should be removed. In the southern half there are some trees that are not the healthiest and should be removed, to maintain stand vigor. The stand would be thinned down to a 75 BA. The main species of tree that would be taken out is white oak. There are some mature Black oaks that will be removed as well.

Proposed Activities Listing

Possible TSI-

before harvest in the regeneration opening

Harvest- within the next 5 years

Thinning/improvement cut in the oak-hickory stand type and the mixed hardwoods.

Check regeneration opening in the mixed hardwoods-

after harvest check to make sure that the desirable regeneration is occurring, if not then do some more TSI

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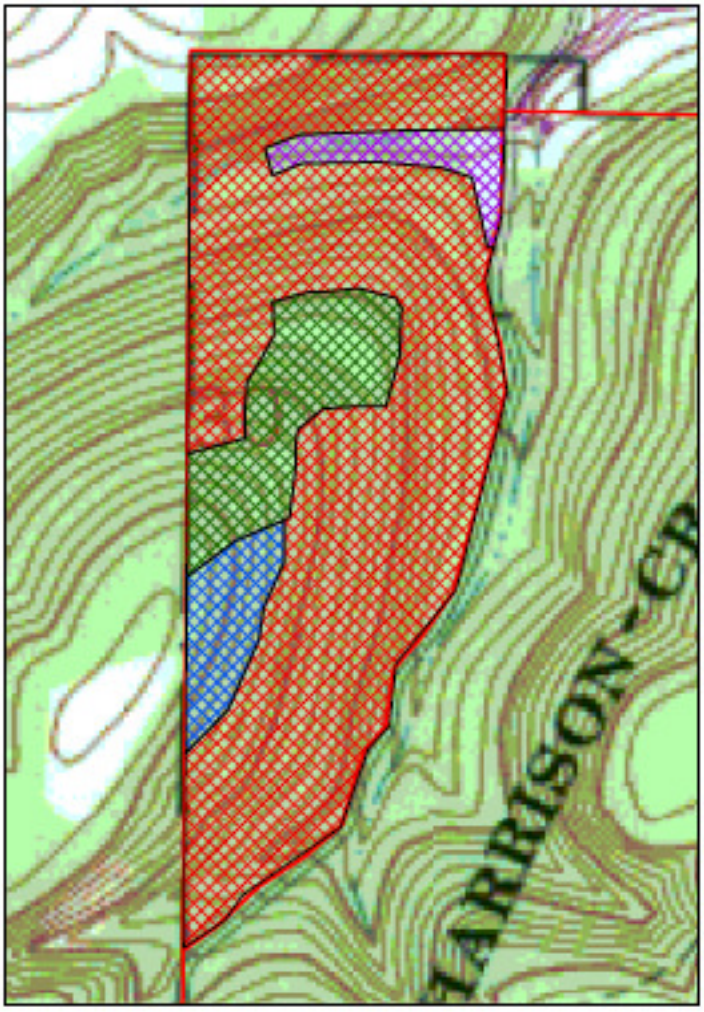
Compartment 5 Tract 5
T2S R2E S30
Stand Map

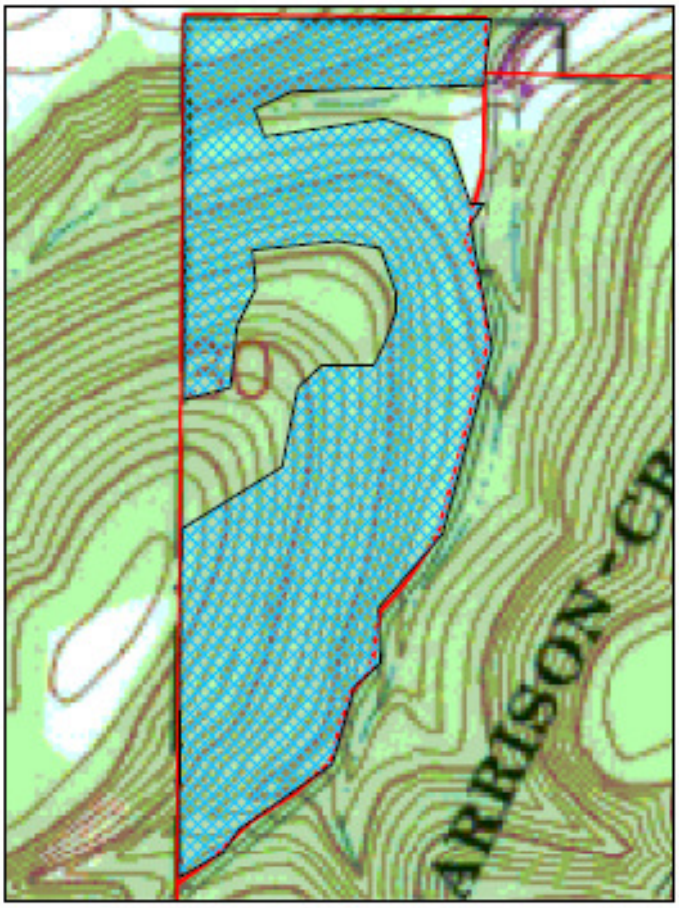


Stand Types

- Mixed Hardwoods
- Oak-Hickory
- Old Field
- White Pine

0 0.15 0.3 0.6 Miles

Compartment 5 Tract 5
T2S R2E S30
Merchantble Map/
Possible Sale Area



0 0.1 0.2 0.4 Miles