

Resource Management Guide

Harrison-Crawford State Forest
Christine Martin

Compartment: 14 Tract: 7
Date: August 25, 2008

Location

This tract is located in Crawford county Indiana, in three different sections; T3SR2E21, T3SR2E22, and T3SR2E28.

General Description

The average square feet of basal area in this tract is 94. The average diameter is 17 inches. The most prevalent tree species on this tract is black oak. The black oaks are poor quality. The main problem that the black oaks share is that they all have small and dying crowns. The yellow poplars found on this tract are under stress and declining as well.

This tract is mainly composed of two stand types. The first is the Oak-Hickory stand type. This type encompasses 30 acres of the tract which is roughly half. The trees averaged 20 inches in diameter. The trees were the largest along the horse trail which runs the length of the tract. The second stand type is the Mixed Hardwoods stand. This stand type is made up of 35 acres. There is a prevalence of yellow poplar and sugar maple in this stand type.

History

This tract of land was acquired in 1966 when it was sold to the state by Rothrock.

There was a timber sale performed on this tract in 1987. This tract was combined with tracts 1406, and 1408. In total there was 165,000 board feet removed from this sale. The main species removed were black oak and pignut hickory.

Landscape Context

This tract is bordered by the Harrison-Crawford State Forest on all sides. The Harrison-Crawford is currently forested. Wyandotte Cave Road runs along the east side of the tract, and a power line right of way runs along the road as well.

Topography, Geology, and Hydrology

This tract is made up of a northwest facing slope. There is a ridge on the east side, and the southern side of the tract. The slope ends on the North West portion of the tract in a drainage that empties into Sharpe Creek.

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

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

Haymond Silt Loam (HcgAH)

The Haymond series consists of very deep, well drained, soils that formed in silty alluvium. These soils are on flood plains and flood-plain steps. The surface horizon is a brown silt loam plow layer that extends approximately 10 inches. The first subsurface horizon is a dark yellowish brown silt loam that extends to 25 inches. The second subsurface horizon is a yellowish brown silt loam that extends until 44 inches. The stratum is a massive yellowish brown fine sandy loam. The mean annual precipitation is 40-46 inches. Mean annual air temperature is about 55 degrees F, and mean annual precipitation is about 42 inches. Permeability is moderate.

Degree Slope: 0-3%

Woodland Suitability: 1o8

Site Index: 60

Growth Range Potential: 155

Management Concerns: droughtiness and occasional flooding

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 from 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 very good. This tract is located off of Wyandotte Cave Road. There is also a graveled parking lot to the west of the road. There is a power line that runs along the west side of the road. The line is high enough that there should not be a problem with equipment clearance, but precautions should be taken just to ensure there will be no problems.

Boundary

The boundary to this tract is mainly made up of drainages and ridge tops. The east side is made up Wyandotte Cave Road. The north boundaries consist of drainage. The southern boundary starts out as the ridge top, and then it cuts down the side of the ridge toward the drainage.

Wildlife

The wildlife found on this tract are what you would typically find in Crawford County, Indiana. The sights and signs of what was observed when this tract was cruised in August were deer, squirrels, chipmunks, various songbirds, and vultures.

There were a couple species of special concern that have been observed on this tract within the last 20 years. These species that have been found are associated with the cave. The cave is also a known Indiana bat hibernacula. This hibernacula will be buffered by 20 acres from the timber harvest. These species of concern will not be affected by the harvest.

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 was an old day hiking trail located on this tract called the Wyandotte woods trail. This trail was originally an educational trail. This trail is non-existent as of right now, but there is still a sign that marking the trail head, and posts located throughout the woods marking the stops along the trail. There is no discernable trail, and the information for each stop along the trail is lost.

There is a horse trail that follows the southern ridge of this tract. This horse trail is used frequently.

Cultural

There were no cultural sites observed on this tract.

Summary Tract Silvicultural Prescription and Proposed Activities

Oak-Hickory

This stand type runs along the ridge top on this tract. The most prevalent species in this stand are black and white oaks. If there were to be a harvest performed in this stand approximately 50,000 board feet would be removed. This stand would have 15 square feet of basal area removed reducing the stand back to a manageable 78 square feet of basal area.

There are larger trees along the road, and horse trail. A majority of the trees along the horse trail are in poor health condition. These trees suffer from small dying crowns, cankers, and structural deformities. The black oaks in this area are approaching or have reached maturity, others are starting to decline. The regeneration in this stand as of right now is a beech-maple mix.

This area could use an improvement cut in order to improve the health of the overall stand. There would be harvesting along the horse trail because that is where the vast majority of the unhealthy trees reside. In this stand the beech and maple regeneration would need to be suppressed in order for the oak regeneration to grow. During the harvest attention would be paid to helping release the oak regeneration. Also possibly scarifying the soil so the oak acorns can take root and grow would also be done during the harvest.

Mixed Hardwoods

Yellow poplar, red oak, and pignut hickory are the three most prevalent species in this stand type. If a timber harvest were to occur on this tract there would be approximately 50,000 board feet removed. There would be 15 square feet of basal area removed leaving

this stand at a respectable 78 square feet of basal area. The mixed hardwood and the oak hickory stand types are similar in the fact that they both require the same amount of timber removed to provide a healthy post harvest stand.

This stand has two different components to it. There is merchantable mixed hardwoods which consists of 20 inch diameter yellow poplars and 16 inch diameter red oaks. The other component to this stand type is the unmerchantable mixed hardwoods. This component is made up of many pole sized timber or sparsely spaced sawtimber. The average diameters of these poles are approximately 10 inches.

There could be a timber harvest performed in this stand. The harvest would be an improvement cut. There are some poor quality red oaks in this stand, and some yellow poplars that are stress and declining. The overall health of the stand would improve if a harvest was performed.

The regeneration is a beech maple mix. There would need to be special attention paid to the regeneration on this tract. There would need to be some scarification of the soil in order for the oak regeneration to be established. There would also need to be some TSI done to reduce the maple and beech advanced regeneration.

Proposed Activities Listing

Timber Harvest- improvement cut to improve stand vigor 2010

TSI-2011

Re-inventory and new management guide-2020

| | |
|-----------------------------|-------------------------------------|
| Acres Commercial forest: 65 | Basal Area \geq 14 inches DBH: 64 |
| Acres Noncommercial Forest: | Basal Area < 14 inches DBH: 30 |
| Acres Permanent Openings: | Total Basal Area: 94 square feet |

| | |
|-----------------|------------------------|
| Acres Total: 65 | Number Trees/Acre: 297 |
|-----------------|------------------------|

| | |
|--|------------------------------------|
| Average Site Index: 65 | Stocking Level : fully stocked 90% |
| Calculated annual Growth (bd. ft.): 277bd ft/acre/yr | |

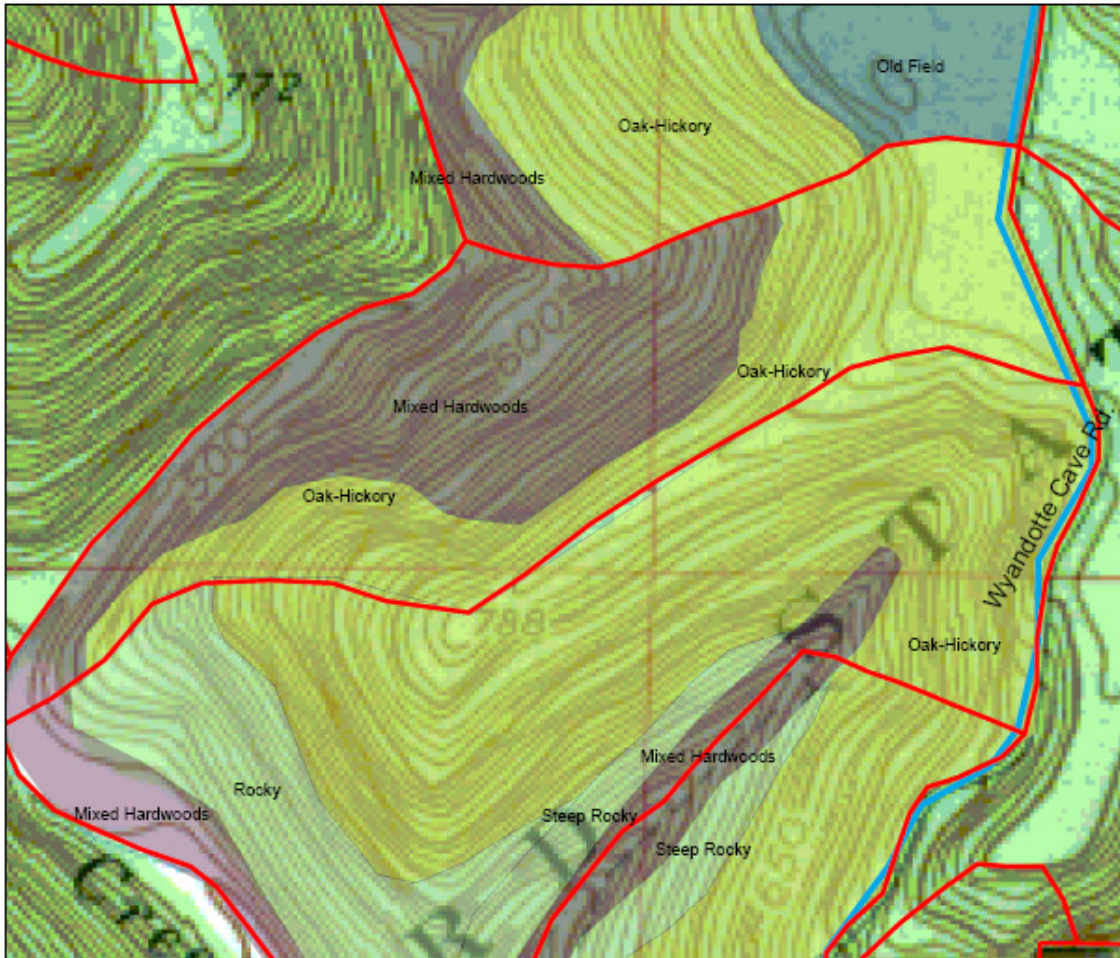
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You **must** indicate “Harrison-Crawford C14 T7” in the “Subject or file reference” line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

| Species | Harvest | Leave | Total |
|-------------------|----------------|---------------|---------------|
| American Beech | 4190 | 18660 | 22850 |
| Basswood | | 1240 | 1240 |
| Bitternut Hickory | 1830 | 7190 | 9020 |
| Blackgum | 1970 | 3130 | 5100 |
| Black Oak | 22570 | 73930 | 96500 |
| Black Walnut | | 4070 | 4070 |
| Chinkapin Oak | | 6070 | 6070 |
| Eastern Redcedar | | 2500 | 2500 |
| Mockernut Hickory | 890 | | 890 |
| Northern Red Oak | 5380 | 48320 | 53700 |
| Pignut Hickory | 6770 | 45900 | 52670 |
| Sassafras | 1970 | | 1970 |
| Shagbark Hickory | | 13250 | 13250 |
| Sugar Maple | 7130 | 16420 | 23550 |
| White Ash | | 4790 | 4790 |
| White Oak | 9590 | 74060 | 83650 |
| Yellow Poplar | 34040 | 33850 | 67890 |
| Totals | 96330 | 353380 | 449710 |
| Total/Acre | 1482 | 54366 | 6918 |

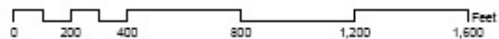
Compartment 14 Tract 7
Stand Type Map
T3S R2E 21,22,28,27



Legend

stands

- Mixed Hardwoods
- Oak-Hickory
- Old Field



Compartment 14 Tract 7
Merchantable Area
T3S R2E 21,22,28,27

