# Resource Management Guide

**Harrison-Crawford State Forest** **Compartment: 11 Tract: 5**
**Christine Martin** **Date: March 2010**

| | | | |
|---|---|---|---|
| Acres Commercial forest: | 36 | Basal Area ≥ 14 inches DBH: | 56 sqft/acre |
| Acres Noncommercial Forest: | 0 | Basal Area < 14 inches DBH: | 29 sqft/acre |
| Acres Permanent Openings: | 0 | Basal Area Culls: | 5.5 sqft/acre |
| Acres Other: | 0 | Total Basal Area: | 90.5 sqft/acre |
| Acres Total: | 36 | Number Trees/Acre: | 294 |

## Location

This tract of land is located in Harrison county Indiana, Sec, 23 T3S R2E.

## General Description

This tract borders interstate 64. There are 36 acres in this tract of land. The entire tract is comprised of a mixed hardwoods stand type. There are many drainages that over time have been exaggerated by interstate 64.

The main tree species are sugar maple and black oak. There are many yellow poplars that grow along the drainages found in this tact. The average tree diameter is around 18 inches.

## History

This tract was deeded to the Harrison-Crawford State forest in the 1930's.

This tact was last inventoried in 1980. There was found to be approximately 90,000 Doyle board feet harvestable on this tract. There were 250,000 Doyle board feet in total on this tract of land. The most prevalent species were black oak and sugar maple.

In 1983 there was a timber harvest on this tract and five others in the surrounding area. In total there was 333,608 board feet Doyle, removed in this sale. The main tree species harvested were black and red oaks.

## Landscape Context

The main landscape context of this tract is forested land. The majority of the forested land belongs to the Harrison-Crawford State Forest.

There are a couple features that break up the continuity of forested land of this tract. The first is interstate 64 which runs to the south of this tract. The second is Blue River which flows within a mile to the northeast of this tract. There are also some residential areas and farm fields that fall within a mile of this tract.

## Topography, Geology, and Hydrology

This is mainly a northeast facing slope with a prominent drainage comprising the north and east boundaries. The minor drainages will flow into the more pronounced drainages that empty into an intermittent stream which flows directly into the Blue River.

## Soils

**Corydon Stony Silt Loam (CoF)** Shallow, moderately steep to very steep, well-drained, stony soils on uplands. Surface layer is about 3 inches. Subsurface is about 6 inches thick. Subsoil about 9 inches thick. The depth to hard limestone bedrock is about 18 inches. High in organic matter and low in natural fertility. Runoff is rapid or very rapid. Soil type is characterized by limestone outcrops, with as much as 15% on benches which are deeper than 20 inches to bedrock.
Degree Slope: 20-60 %
Woodland Suitability Group: 3d7
Site Index: 65-75 (Upland oaks)
Growth range potential (Upland oaks): 155-220
Management concerns: Runoff and erosion

**Gilpin Silt Loam (GlD2, GlD3, GlE2, GpF)** Moderately deep, strongly sloping to steep, well-drained soils. Surface layer is very dark grayish-brown silt loam about 3 inches thick. Subsurface layer is pale brown silt loam about 9 inches thick. Subsoil is about 17 inches thick. Depth to hard sandstone and shale bedrock is about 29 inches. Moderate in organic matter. Available water capacity is low and permeability is moderate. Runoff is rapid to very rapid.
Degree Slope: 12-30 %
Woodland Suitability Group: 3o10 or 3r12
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Site Index: 70-80
Management Concerns: Runoff and erosion

**Hagerstown Silt Loam (HaC2, HaD2, HgC3, HgD3, HgE3)** Deep, moderately sloping to moderately steep, well-drained soils on uplands. Surface layer is dark yellowish brown silt loam about 6 inches thick. The subsoil is about 46 inches thick. The depth to limestone is about 52 inches. Characteristically, this soil is eroded to severely eroded. Moderate in content of organic matter and medium in natural fertility. Available water capacity is moderate or high, and permeability is moderate. Runoff is rapid to very rapid.
Degree Slope: 6-25 %
Woodland Suitability Group: 1o1 or 1r2
Site Index: 85-95 (Upland Oaks)
Growth range potential (Upland oaks): 300-375 bd.ft. /acre/year
Management Concerns: Runoff and erosion

**Tilsit Silt Loam (TlB2)** Deep, gently sloping, modrately well drained soils on uplands. Fragipan in the lower part of the subsoil. Surface layer is dark yellowish-brown silt loam about 8 inches thick. Subsoil is about 38 inches thick. Depth to interbedded shale and sandstone bedrock is about 66 inches. Moderate in content of organic matter and low in natural fertility. Available water capacity is moderate and permeability is very slow. Runoff is medium.
Degree Slope: 2-6 %
Woodland Suitability Group: 3d9
Site Index: 70-80 (Upland Oaks)
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Management Concerns: Erosion, wetness early in spring, available water capacity, lack of moisture in mid and late summer if rainfall is below normal.

**Wellston Silt Loam (WeC2, WeC3, WeD2, WeD3)** Moderately deep and deep, moderately sloping and strongly sloping, well draineds soils on uplands. Surface layer is about 9 inches thick and yellowish-brown. The subsoil is about 31 inches thick. Depth to hard sandstone bedrock is about 40 inches. Moderate in content of organic matter and low in natural fertility. Available water capacity is moderate or high, and permeability is moderate. Runoff ranges from medium to very rapid.
Degree Slope: 6-18 %
Woodland Suitability Group: 3o10
Site Index: 70-80 (Upland oaks)
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Management Concerns: Runoff and erosion

**Zanesville Silt Loam (ZaC2, ZaC3, ZaD2)** Deep, moderately sloping and strongly sloping, well-drained soils on uplands. Avery firm fragipan in the lower part of the subsoil. Surface layer is very dark grayish-brown silt loam about 3 inches thick. The subsurface layer is about 5 inches thick and dark yellowish-brown. Subsoil is about 42 inches thick. The depth to sandstone bedrock is about 65 inches Moderate or low in content of organic matter and low in natural fertility. Available water capacity is high, and permeability is very slow. Runoff is medium to rapid.
Degree Slope: 6-18%
Woodland Suitability Group: 3d9
Site Index: 70-80 (Upland Oaks)
Growth range potential (Upland oaks): 185-260 bd.ft./acre/year
Management Concerns: Runoff and erosion. Fragipan limits the available water capacity.

## Access

There is no good access to this tract. The best way to access this tract is to walk the old grown up roadbed that runs through tract 1104. It is also possible to park along the interstate and climb over the interstate fence to get to this tract.

In the near future there should be a road building project that starts at the end of Cox road, in tract 1104 and continues through tract 1105 to gain access to compartment 12. There is an existing old roadbed that was used in the last harvest in 1983. This roadbed can be repaired in parts, but will need some drastic re-routes to avoid the deep drainages that have been exaggerated by Interstate 64.

## Boundary

This tract is roughly in the shape of a triangle. The northern boundary is a drain that runs to the east. The west boundary is interstate 64 which runs to the southeast. The eastern boundary is a drainage that starts at the interstate and run north until it meets the northern boundary.

## Wildlife

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.

Ecological resource guide discussions

The proposed management activities in this tract are a timber harvest, road building, and timber stand improvement. These are the activities that can alter the habitat present for the wildlife.

The harvest will affect the understory vegetation in the short term. Trees are removed thereby letting more sunlight hit the forest floor, creating more understory vegetation growth. As time passes the trees in the overstory will grow and overtake these holes in the canopy so therefore there is a decrease of light hitting the forest floor. The decreased light creates a decrease in understory vegetation growth. Approximately 5 years after the harvest the vegetation is what it was before the harvest took place.

The harvest will also provide more habitat for some wildlife. There will be more coarse woody debris on the ground after the harvest. This large amount of down material is great habitat for wildlife.

This harvest should not affect any travel corridors or drastically alter the cover types of the area. The method used in this harvest will be single tree selection. There may be areas of regeneration openings that may exceed 5 acres in size. These openings will not overall affect the continuity of the forest. These regeneration areas will provide habitat for wildlife.

The road maintenance may affect the habitat by creating a permanent edge in the forest. The proposed road will be built on old roadbeds that have fallen into disrepair. By placing this road on old roadbeds it minimizes the disturbance to the forest thereby minimizing disturbance to the wildlife. This road will be a firelane which is used for accessing the currently inaccessible section of the forest.

The timber stand improvement should have minimal affect on overall forest continuity.

## Recreation

There is also no good access to this tract. There are also no recreational trails in this tract therefore the recreation is limited. The recreation would be limited to foraging for edible plants and hunting. There is clear evidence that this tract is currently being used for hunting with all the deer stands found while inventorying this tract.

## Cultural

There were no cultural sites found within this tract.

## Summary Tract Silvicultural Description, Prescription and Proposed Activities

*Mixed Hardwoods*

The entire 36 acres of this tract comprise this stand type. There is an average of 90.5 square feet of basal area per acre. According to the inventory there are 50,000 Doyle board feet available for removal in an improvement harvest. The main tree species are sugar maple and black oak.

The regeneration is predominantly sugar maple and American beech. The American beech regeneration is mainly concentrated along the drainages. There is some oak regeneration that should be released form the surrounding maple regeneration.

This stand could use an improvement harvest. There should be more diverse regeneration in this tract of timber. In areas there are black oaks that are maturing and will decline in the future. These mature trees should be removed to allow for regeneration to grow in this stand.

This tract should be harvested with tract 1104. These two tracts are on the same hill side and it is not much further to get to 1105 from the southern edge of 1104.

**Proposed Activities Listing**

**Timber harvest- 2011**

**Post harvest TSI- 2013**

**Road building- 2013**

**Re-inventory- 2031**

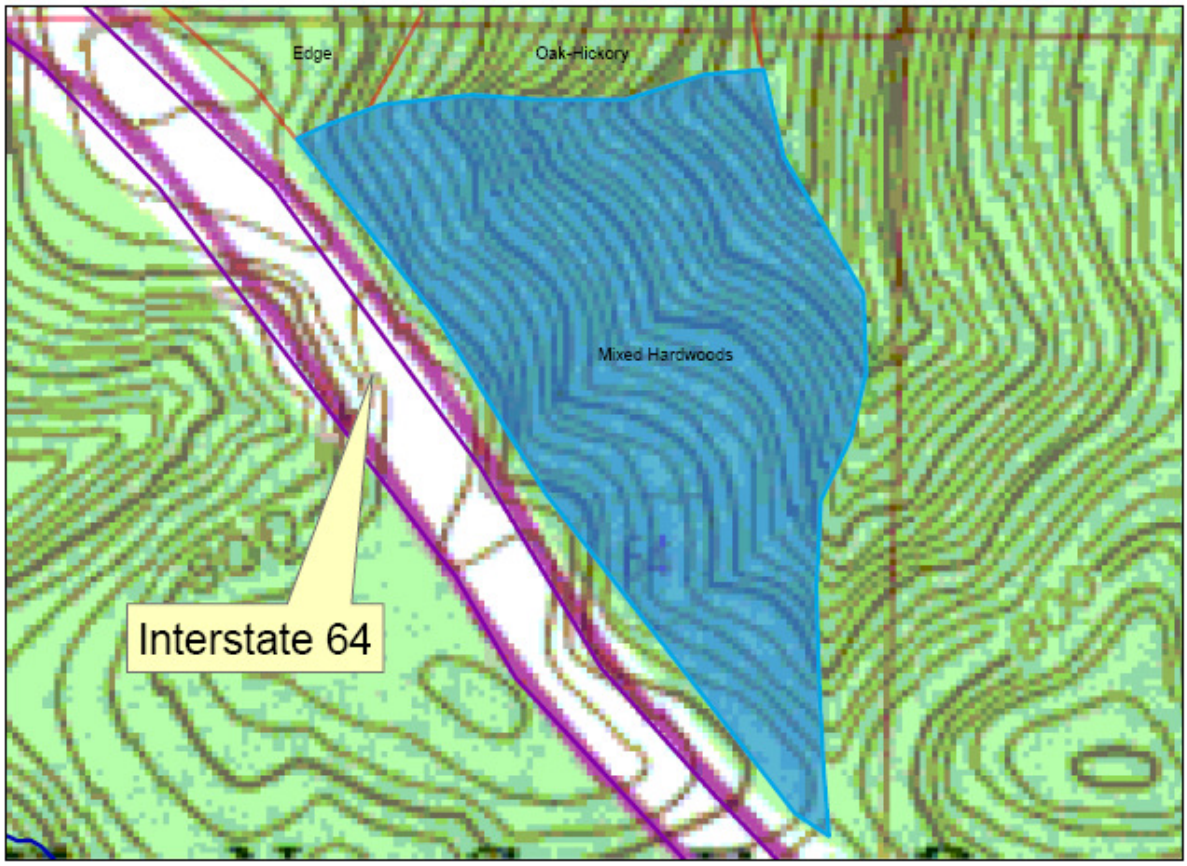
**To submit a comment on this document, click on the following link:**
**http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry**

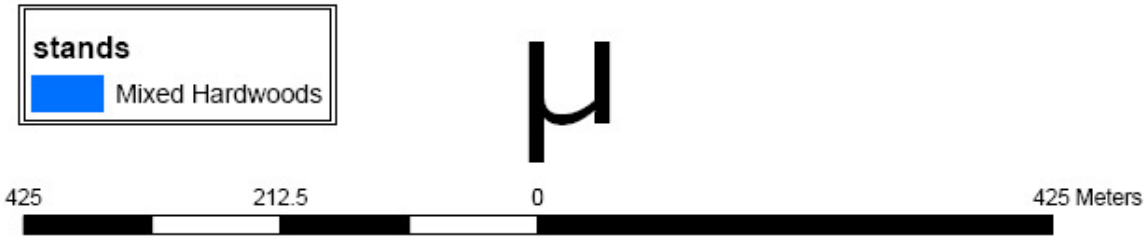
You **must** indicate State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

Average Site Index: 77 Stocking Level : Fully Stocked (87%)
Calculated annual Growth (bd. ft.): 202

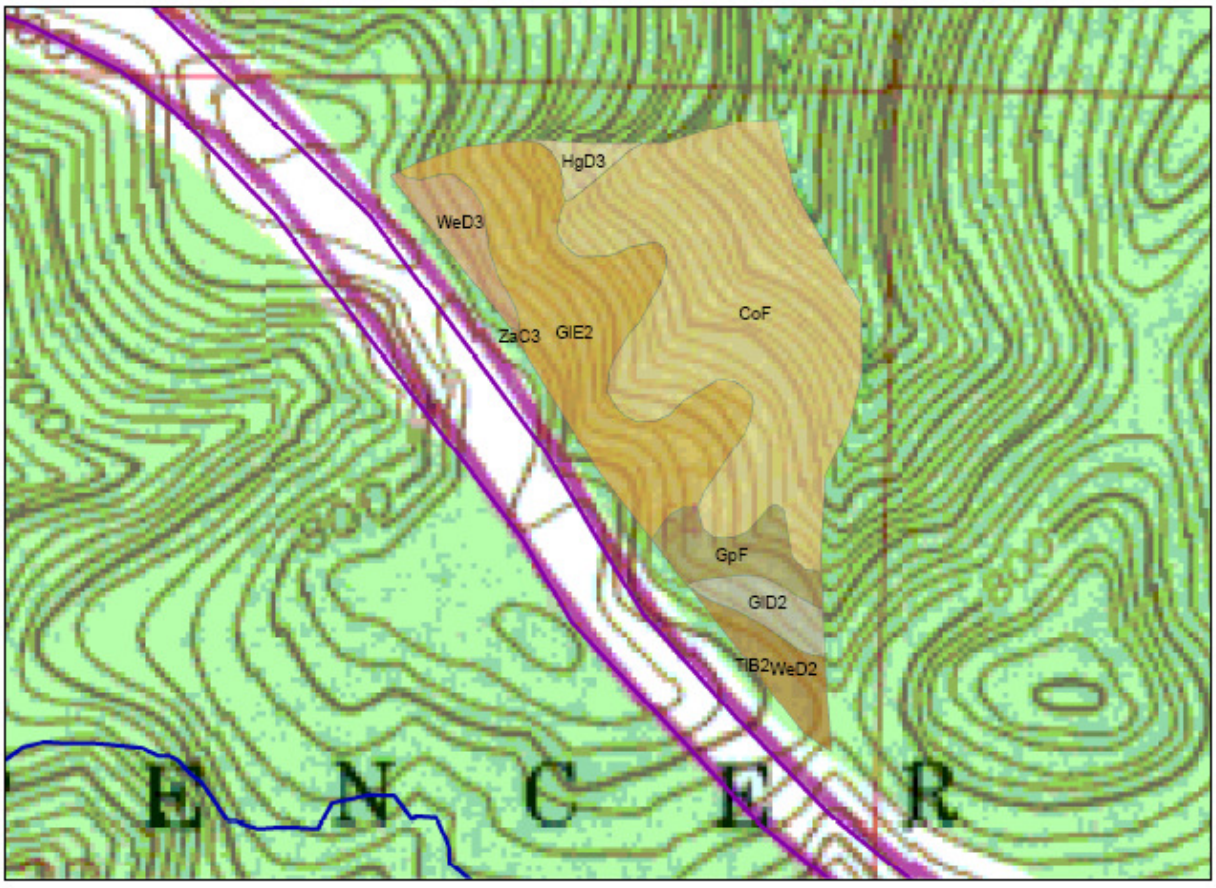
| Species | Harvest | Leave | Total |
|---|---|---|---|
| Sugar Maple | 18,400 | 17,390 | 35,790 |
| Black Oak | 15,110 | 11,130 | 26,240 |
| Northern Red Oak | 2,150 | 18,180 | 20,330 |
| White Ash | 8,960 | 11,150 | 20,110 |
| White Oak | 3,430 | 15,500 | 18,930 |
| Yellow Poplar | 5,590 | 10,710 | 16,300 |
| Shagbark Hickory | 0 | 15,070 | 15,070 |
| American Beech | 3,800 | 7,810 | 11,610 |
| Pignut Hickory | 0 | 8,990 | 8,990 |
| Basswood | 0 | 7,080 | 7,080 |
| Chinkiapin Oak | 0 | 6,080 | 6,080 |
| Black Walnut | 0 | 4,100 | 4,100 |
| Red Elm | 0 | 1,830 | 1,830 |
| Black Cherry | 0 | 1,800 | 1,800 |
| **Totals** | **57,440** | **136,820** | **194,260** |
| **Toals/Acre** | **1,600** | **3,800** | **5,400** |

# Compartment 11 Tract 5
# Stand Map



# Compartment 11 Tract 5
# Soil Map




**Soil Types**

- CoF
- GlD2
- GlE2
- GpF
- HgD3
- TlB2
- WeD2
- WeD3
- ZaC3

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