Resource Management Guide

Harrison-Crawford State Forest **Compartment: 23 Tract: 7**
Christine Martin **Date: 5/10**

Location

This tract is located in Harrison county Indiana, Sec 7, T4S, R3E.

General Description

There are four different stand types on this tract. There is the oak-hickory, which is the largest, cedar, field, and mixed hardwoods. The cedar is found on the eastern side of this tract. There are approximately 20 acres in this stand type. The mixed hardwoods are found along the drainage to the north. There are 7 acres in this stand type. There are 9 acres of field. This field is a permanent wildlife opening located in the south west corner of the tract. The last stand is the oak-hickory and it is 55 acres in size.

History

This tract of land was acquired in 1965.

The last management guide was written in 1973.

There was a timber harvest preformed on this tract in conjunction with tract 2303 in 1981. There were 108,987 board feet removed from this sale. The main species removed were red and black oaks. There was one log yard designated on this sale, and it was located to the north in 2301. There was approximately a quarter mile skid from the northern most part of the sale area to the yard for the sale.

Landscape Context

The main land use surrounding this tract is forest cover. There are private dwellings that are within one mile of this tract. There is also pastureland and hay fields in close proximity of this tract. This tract is mostly surrounded by Harrison Crawford State Forest.

Topography, Geology, and Hydrology

This tract is mainly made up of an east facing slope. On the south east side of the slope the ground becomes rocky. There are some places where it can be limiting to logging.

There are two different drainages that form the boundary of this tract both of these drainages meet and will eventually flow into Indian Creek.

Soils

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

Crider Silt Loam (CrB2, CrC2, CsB3, CsC3, CtC2) Deep, gently sloping and moderately sloping well-drained soils on uplands. Surface layer is dark-brown silt loam about 8 inches thick. Subsoil is about 62 inches thick. Moderate in content of organic matter and in natural fertility. Available water capacity is high and permeability is moderate. Typically, these soils are eroded. Runoff is medium to rapid.
Degree Slope: 2-12%
Woodland Suitability Group: 1o1
Site Index: 85-95 (Upland Oaks)
Growth range potential (Upland oaks): 300-375 bd.ft./acre/year
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

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

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 a firelane that runs to the south of this tract. This firelane needs to be repaired in places in order to make it vehicle accessible. There is a place on the ridge where the roadbed is starting to sink; this will have to be repaired to prevent further degradation of the road. The current road needs ditch work and more water diversion devices to be installed. This road will also need rock placed on it to be accessible for winter logging.

The firelane system that runs by the tracts to the south will need to be repaired as well for truck accessibility.

Boundary

The west boundary line borders private land. There is old fence line that marks where the boundary line runs. The north and south boundary lines are drainages. There is also some boundary line that borders private property on the north east side of this tract. There is one corner stone which marks the south west corner of the private property line. There is no other evidence of this property line.

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

There were a few karst features found in this tract. Most of these features were minor sinkholes, but there was one that could possibly be a cave. These karst features show that there is an underground water system in place. These karst features will be buffered if a harvest is to take place.

Recreation

There are a couple different opportunities for recreation on this tract. The adventure hiking trail traversed through this tract. This segment of the adventure hiking trail is heavily used. The firelane ends at this tract. This firelane can be used for hiking for the public.

There is an illegal horsetrail that run to the south of this tract. This horsetrail runs from private property to the state. This trail will use the firelane system to hook into the main horsetrail system of the forest.

There is an illegal camp site found in the wildlife opeining area of this tract. There is a campfire ring lined with rocks and burn embers in the middle. This site appears to be used more than once.

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.

Summary Tract Silvicultural Description, Prescription and Proposed Activities

Field

This area is 9 acres in size. This is a permanent wildlife opening. There are three retention islands of small diameter hardwood trees and shrubs located throughout this field. There are pines surrounding the outside of the field. These pines are in a state of decline and are slowly blowing over.

This area is a good wildlife opening. The pines are slowly blowing down creating wildlife habitat. There are also the pockets in the middle of the opening which also create wildlife cover.

Mixed hardwoods
There are 7 acres in this stand. There is 85 total square feet of basal area per acre. There is 3,810 Doyle board feet per acre in this stand type. The main tree species is white oak and American beech.

This stand is found along the drainage to the north in this tract. There is more yellow poplar and American beech in the overstory of this stand than the oak-hickory stand.

There should be a harvest in this stand type to improve stand vigor. Some of the yellow poplar and American beech are mature and should be removed from the stand to let the younger more vigorous trees grow.

There is one pocket of Ailanthus that was found in this stand type. The Ailanthus trees were approximately 6-8 inches in diameter. These trees will need to be treated before the harvest can take place.

Oak-hickory
There are 55 total acres in this stand. This stand is 107 square feet of basal area per acre. There are 5,710 Doyle board feet per acre total in this stand. The main species in this stand is white oak.

This stand comprised most of the tract. The main species found throughout this stand is white oak. There is also a good component of black oak. There are very large black oaks found in the northeast section of the tract located close to the boundary line. These oaks are over mature and should be harvested from the stand. There are also areas where there is mainly only hickory growing. These areas should be thinned out in order to promote other species to grow besides only hickory.

There should be an improvement harvest in this tract. The mature black oaks are in a state of decline. There are areas where the poor quality trees need to be thinned out in order to improve stand vigor. In some areas there needs to be more species diversity. This will be achieved by harvesting heavier and letting more light hit the forest floor.

Along the southern drainage there were copious areas where there was blow down. In these blow down pockets there are Ailanthus trees growing. These Ailanthus trees are not much taller than 4 feet. These trees will need to be treated in the future. This stand will also need to be monitored after the harvest for new Ailanthus pockets that may sprout up. These new pockets will also have to be chemically treated.

Cedar
There is 112 square feet of basal area per acre in this stand type. There are 20 acres total in this stand. There is about 3,390 Doyle board feet per acre total in this stand.

This stand has sugar maple and American beech regenerating in the understory. These cedars are growing in thin soil. The soil that is present is mainly clay. There are some sections of this stand where it is rocky ground. This rocky ground is limiting to logging equipment.

If possible this stand should be harvested to promote the hardwood growth underneath. This stand is eroded and needs trees with a better root system to help grow more soil. This stand will continue to erode down to the bedrock of nothing is done.

Proposed Activities Listing

Road Repair-2011

Ailanthus Treatment- 2011

Timber harvest hardwoods-2012

Ailanthus recon and treatment- 2013

Re-inventory-2021

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.

Acres Commercial forest: 66
Acres Noncommercial Forest: 16
Acres Permanent Openings: 9
Acres Other:

Acres Total: 91

Average Site Index: 85
Calculated annual Growth (bd. ft.): 248bd.ft/acre/yr

Basal Area ≥ 14 inches DBH:54.7 sq.ft./acre
Basal Area < 14 inches DBH:41.2 sq.ft./acre
Basal Area Culls: 4.6 sq.ft./acre
Total Basal Area: 100.6 sq.ft./acre

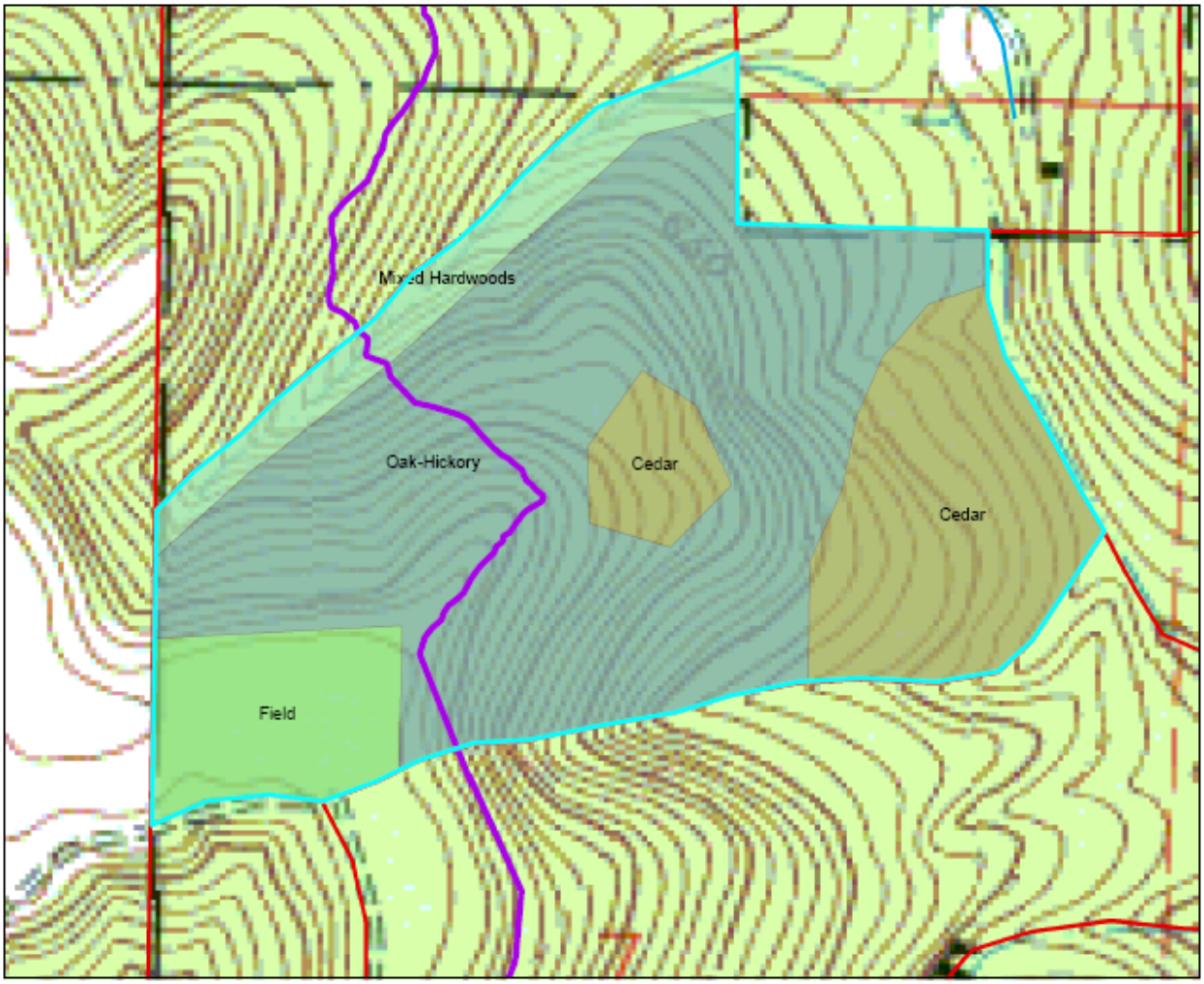
Number Trees/Acre: 403

Stocking Level : overstocked (100%)

Species	Harvest	Leave	Total
White Oak	10800	134920	145720
Black Oak	33180	33050	66230
Yellow Poplar	14640	27090	41730
Pignut hickory	10580	21640	32220
Northern Red Oak	12070	9330	21410
Shagbark Hickory		15620	15620
White Ash	8230	7100	15330
American Beech	3430	9290	12720
Sugar Maple	3000	5400	8400
Post Oak	6100		6100
Chinkapin Oak		2510	2510
Red Maple		2240	2240
Sassafras		1920	1920
Blackgum		1180	1180
Hardwood Total	**102030**	**271290**	**373330**
Eastern Red Cedar		52880	52880
Tract Total	**102030**	**324170**	**426210**
Total/acre	**1121**	**3562**	**4683**

***Volumes estimated on Doyle board foot scale.**

Stand Map
Compartment 23 Tract 7
T4S R3E 7



Stands

- Cedar
- Field
- Mixed Hardwoods
- Oak-Hickory

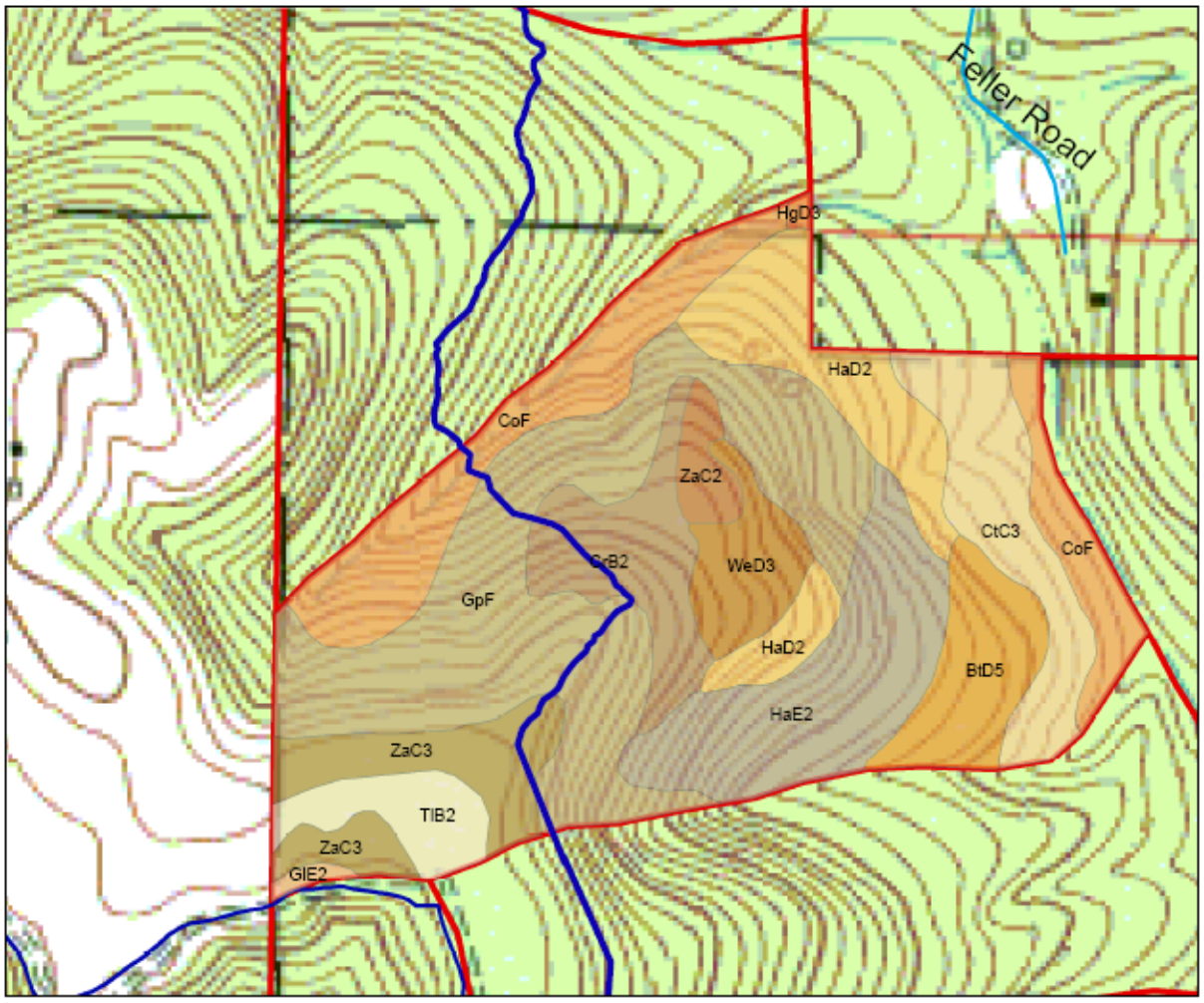
Legend

- Adventure Hiking Trail
- HCSF Tracts

N W E S

0 225 450 900 1,350 1,800 Feet

Soil Map
Compartment 23 Tract 7

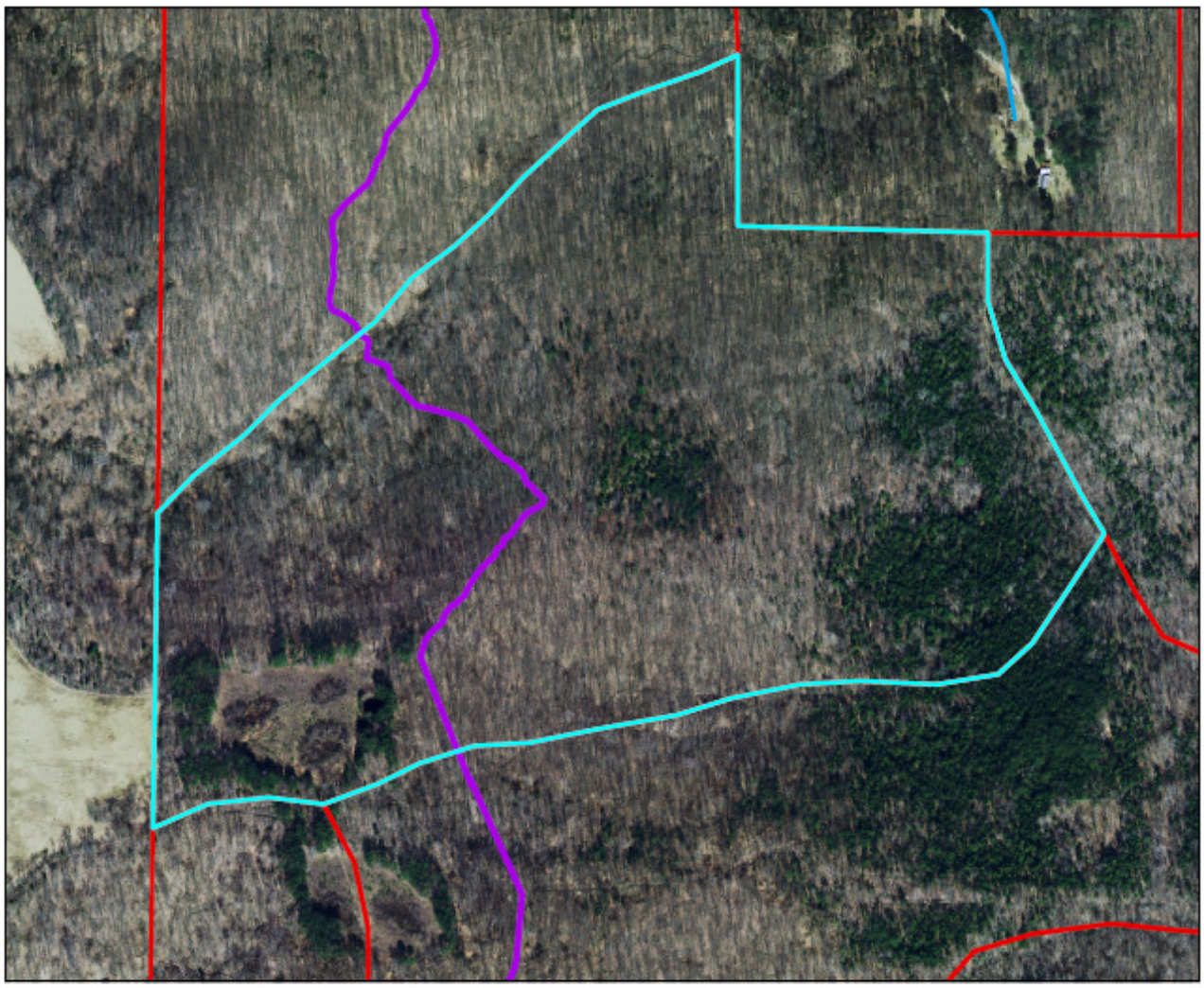


Soil Types

BtD5	GlE2	HgD3	ZaC3
CoF	GpF	TlB2	
CrB2	HaD2	WeD3	
CtC3	HaE2	ZaC2	

0 310 620 1,240 1,860 2,480 Feet

Air Photo
Compartment 23 Tract 7
T4S R3E 7



Legend

Adventure Hiking Trail

HCSF Tracts

0 225 450 900 1,350 1,800 Feet