Indiana Department of Natural Resources - Division of Forestry

RESOURCE MANAGEMENT GUIDE (DRAFT)

Morgan Monroe State Forest **Compartment 10 Tract 04**
Forester: Carl Hauser **Date**: 01/05/2011
Management Cycle End Year: 2030 **Management Cycle Length:** 20 years

Location

Compartment 10, Tract 04 is located in Section 5, Township 10N, and Range 1W, mostly in the West ½ of the SE ¼ of the Section. This tract lies in the western half of Morgan Monroe State Forest just south of Burma Road.

General Description

Compartment 10 Tract 04 is 79.8 acres of closed-canopy mixed hardwood. Approximately 53 acres are considered commercial; the remaining 27 is steep slopes, creek bottom or has poor to no access. The topography ranges from flat ridgetops to modest & steep sideslopes that drain into modest sized intermittent streams.

History

The current tract acreage was acquired from Mr. Leavitt in a 110 acre acquisition in March of 1950. No timber management in the form of harvests or TSI has been implemented since State Acquisition. Prior to 1989 the current tract form & acreage was included within a larger tract (4) of 219 acres. A FDPS inventory of these 219 acres was completed on 4/5/84 by Foresters Breedlove & Vadas. The inventory showed 2,507 BF/A of harvestable volume. In January of 1986, Forester Vadas reported a cattle fence encroachment on the tract's N line during the first boundary marking of the tract. Timber marking was completed by Vadas in the large tract 4 in 1985 & 1986. 3 attempts at selling the marked timber were unsuccessful in 1986 & 1987 due to low bids and poor access. An inventory was completed by Foresters Carl Hauser and Zachary Smith of the current tract 4 on December 15, 2010 which indicated a present volume of 9,731 board feet per acre, with as much as 6,000 board feet per acre in need of harvest at this time.

Landscape Context

This tract lies in a largely residential/farming community of Monroe County. Numerous houses and primary roads are within ½ mile of the tract. Land surrounding the tract to the east is primarily forest land (>90% forested) owned by private individuals and State Forest. Land to the west is an interspersion of rural residential, cropland and pasture, with approximately 80% forest cover. This tract is bounded by State Forest to the southwest and the north half of the west boundary; other boundaries are distributed among private lands.

Topography, Geology and Hydrology

The topography ranges from flat ridge tops to moderately steep side slopes to extremely steep slopes above drainages. Gradients on the steep slopes above the drainages average 65% to 80%, quickly becoming moderately sloped as they approach the ridges. The tract

contains 3 mapped intermittent streams that flow together to become Indian Creek. Most of the west boundary and southeast boundary of this tract are intermittent streams that flow into Indian Creek. The soils in this tract are derived from sandstone, siltstone or shale bedrock.

Soils

Wellston-Gilpin silt loam (WmC) 6-20% slope 10% of tract. This is the soil type on the majority of ridge tops within this tract. The available water capacity is moderate for Wellston soils and low for the Gilpin soils. Permeability for both is moderate. This soil complex has a slight hazard for soil erosion. The woodland suitability subclass is 2o. The "2" refers to high productivity for trees and the "o" indicates that limitations or restrictions for woodlands are insignificant.

Berks-Weikert complex (BkF) 25-75% slope 70% of tract. This soil occupies the side slopes and is the most dominant type throughout the tract. The available water capacity is low in the Berks soil and very low in the Weikert soils. The permeability is moderate or moderately rapid in the Berks and moderately rapid in the Weikert. The complex is well drained. The woodland suitability subclass for the Berks soils is 3f and for the Weikert soils is 4d. The "3" refers to moderately high productivity for trees and the "f" refers to high content of coarse fragments in the soil profile. The "4" refers to moderate productivity for trees and the "d" refers to restricted root depth.

Burnside silt loam (Bu) 5% of tract. This is a nearly level, well drained soil located in bottoms and in narrow flood plains. This soil is subject to periodic flooding in the spring from March to June. Water capacity and permeability for the Burnside soil are moderate. The woodland suitability subclass for this soil is 1o, meaning very high productivity for trees and insignificant limitation or restrictions for woodlands.

Access

Access to the tract is from the northeast via a fire trail across Compartment 10 Tract 3 and approximately 3/10 mile of private land. The fire trail and access across private land will require road work including the widening the trail and possibly some stoning. The access into this tract was last improved in 1986. A riprap stream crossing to access the west ridge and a yard on the east ridge was established at that time.

Boundary

Tract is bounded on the north, east, and south half of the west by private land. The north half of the west boundary is an intermittent stream that separates this tract from Compartment 10 Tract 9. The southeast boundary is another intermittent stream separating Compartment 10 Tract 10. All of the tract's private line boundaries were surveyed in July 1987 by Robert Vollmer and concrete/brass monuments were placed at the tract's NE & SW property corners. Established lines have been repainted and reposted following the survey every 5-6 years. All boundaries are clearly and adequately marked with orange paint; additional boundary marking is not required at this time.

Wildlife

Wildlife resources in this tract are abundant. Signs indicate a substantial white-tailed deer population is present. The tract's inventory was conducted during December with a cover of snow revealing deer, squirrel, songbirds, and various unknown mammal tracks. Tree species composition in this tract is diverse ranging from disturbed site species such as sassafras and black walnut on ridgetops to bottomland hardwoods near streams. The forest condition is mature to over-mature, with very small patches of regeneration in canopy gaps resulting from mortality or wind-throw. Early successional wildlife habitat is lacking. The Division of Fish and Wildlife has established and continues to maintain a small permanent opening of less than ½ acre in size on the west ridge of the tract. A mature oak-hickory component is abundant across the tract and provides modest & annual crops of hard mast; soft mast is provided by grapevines, sassafras, cherry and various shrub species in the canopy gaps and small permanent opening.

An official ecological review has been completed for this tract. This review focuses on wildlife habitat, looking at what is present in the tract and what can be created through management activities. Snags (standing dead trees) and cavity trees were inventoried as well. This snag information was used to complete a bat management guideline form. The snag information from the current inventory is included in Table 1 below.

In order to provide some specialized habitat, we have decided to do a number of the following management activities.

1. Leave as many snags as possible.
2. Leave as many Shagbark and Shellbark hickories as possible. These hickories provide mast and valuable habitat for several species.
3. Log landings will be retained in grass and forbs. This will provide some variety in habitat type for wildlife.

<u>Indiana Bat Habitat Guidelines</u>

The Indiana Division of Forestry recognizes the potential to enhance the Indiana bat habitat on its lands by implementing comprehensive management principles. These management principles include obtaining data on size, species, and numbers of snags trees. Snag trees and some specific species are an integral part of the Indiana bat policy as they are prime roosting sites for maternal colonies.

In accordance with Indiana Bat Guidelines, this tract meets residual stand requirements for live legacy trees. The tract is deficient in snags in all size classes. This is surprising based on the over-mature nature of the forest and high level of mortality, and the fact that the tract hasn't been harvested, thinned or manipulated in any way for at least 30 years. There is abundant down dead woody material; apparently the overmature trees succumb to windthrow at a high rate and do not remain as standing snags. A timber stand improvement treatment could increase the number of standing dead snags.

Table 1. Snag and cavity trees

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	718.2		1357	639	
20"+ DBH	239.4		537	298	
Snags (all species)					
5"+ DBH	319.2	558.6	152	-167	-407
9"+ DBH	239.4	478.8	76	-164	-403
19"+ DBH	39.9	79.8	18	-21	-61
Cavity Trees (all species)					
7"+ DBH	319.2	478.8	490	171	12
11"+ DBH	239.4	319.2	354	115	35
19"+ DBH	39.9	79.8	222	182	142

*** Species Include:** American Elm, Bitternut Hickory, Green Ash, Red oak, Red Elm, Shagbark Hickory, Sugar Maple, White Ash and White Oak.

The inventory indicated an abundance of cavity trees in all sizes, as expected based on the over-mature nature of the stand.

Communities

The Heritage Database Review for this tract noted no plant or animal species or communities of concern on or near the tract. No invasive species were noted during the inventory.

Recreation

This tract is generally isolated from public access. Users must cross private land from Burma Road or from the west to access the tract, or travel a long distance across State Forest land from the south. During the inventory, footprints in the snow indicated some use by recreationists, presumably hikers, hunters, wildlife viewers or dog-walkers. Mushroom hunters would find this area attractive, after the snow is gone and the ground warms a bit.

Cultural

Cultural resources were not observed during the inventory. If discovered during management activities their locations will be protected and reported to the Forest Archeologist. Adverse impacts to significant cultural resources will be avoided during any management or construction projects.

Tract Subdivision Description and Silvicultural Prescription

The current tract inventory was completed by Hauser and Smith on 12/15/2010. Overall, the present volume of this tract contains 9,731 bd. ft. per acre with an estimated harvest of 6,020 bd. ft. per acre. A summary of the current inventory's species and volumes is shown in table 2.

Table 2. Harvest/Leave Volume Estimate (BF-Doyle) from December 15, 2010 Inventory

Species	Harvest Stock	Leave Stock	Total
White Oak	62,180	147,840	210,030
Black Oak	146,780	20,710	167,490
Scarlet Oak	76,620	4,990	81,610
Northern Red Oak	44,510	33,730	78,240
Yellow Poplar	46,200	5,260	51,460
American Beech	21,660	20,500	42,160
American Sycamore	19,620	18,720	38,340
Pignut Hickory	21,400	15,310	36,710
Black Walnut	0	12,960	12,960
Sugar Maple	4,870	8,030	12,900
Sassafras	10,780	780	11,560
White Ash	6,710	3,930	10,650
Black Cherry	8,880	0	8,880
Largetooth Aspen	8,380	0	8,380
Bitternut Hickory	0	3,350	3,350
Red Maple	1,790	0	1,790
Tract Total	480,380	296,110	776,510
Per Acre	6,020	3,711	9,731

This tract is composed of three timber types. Approximately 8 acres (10% of tract) is bottomland hardwoods with sycamore, basswood, northern red oak, sugar maple, red maple, black walnut and at least one Kentucky coffee tree. Another 16 acres (20% of tract) is composed of upland mixed hardwoods, with sugar maple, beech, red oak, black walnut, yellow-poplar, bitternut hickory, shagbark hickory, sassafras and black cherry. Most of the tract (56 acres or 70%) is upland oak-hickory with black oak, white oak, northern red oak, chestnut oak, pignut hickory being dominant. The regeneration and understory is uniformly sugar maple and beech throughout the tract.

Most of the tract is in mature to over-mature condition and in need of regeneration. There is a general shortage of immature or young growing stock in the tract. Mortality is occurring as individual trees or small groups of trees are wind-thrown. These individual tree or small group gaps are being regenerated primarily by maple, beech, sassafras, cherry and ash, with little to no oak or hickory. For this reason, canopy gaps, small groups and "large" group openings up to 5 acres in size are recommended. Regeneration of a minimum of 10% of tract acres will be addressed in the tract marking objective.

Species composition will likely become more diverse and less susceptible to insect and disease infestation as is common in unmanaged, homogeneous stands. The exact size and location of openings will be determined as harvest marking is completed, but is expected to include two or more regeneration openings with a total area of approximately 10 acres. One of the regeneration openings is expected to completely encircle the permanent opening maintained by the Division of Fish and Wildlife. Approximately 43 acres will be selectively marked removing mature and over-mature trees and releasing the better quality trees that can be expected to live and grow another 20 years. The remaining approximately 37 acres will not be treated at this time. These areas are delineated on the Harvest Area map. Total volume marked for removal is expected to be around 350,000 board feet, assuming 10 acres of regeneration marking at 9,730 board feet per acre plus 43 acres of improvement harvest marking at 6,020 board feet per acre.

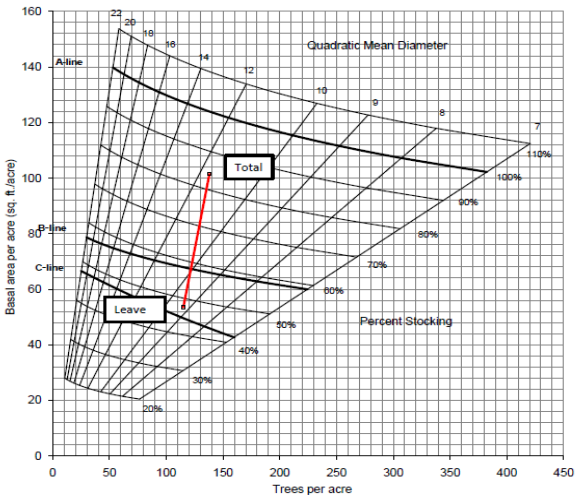
Proposed Activities Listing

Timber Sale planned in 2011 Fiscal Year.
TSI work during 2012/2013 Fiscal Year.
Stand Re-inventory work 2030.

Attachments (on file in Property office)

- A topographical map of the tract.
- A map showing the soil types in the tract.
- Harvest Area map
- Stocking Guide
- Heritage Database Review map

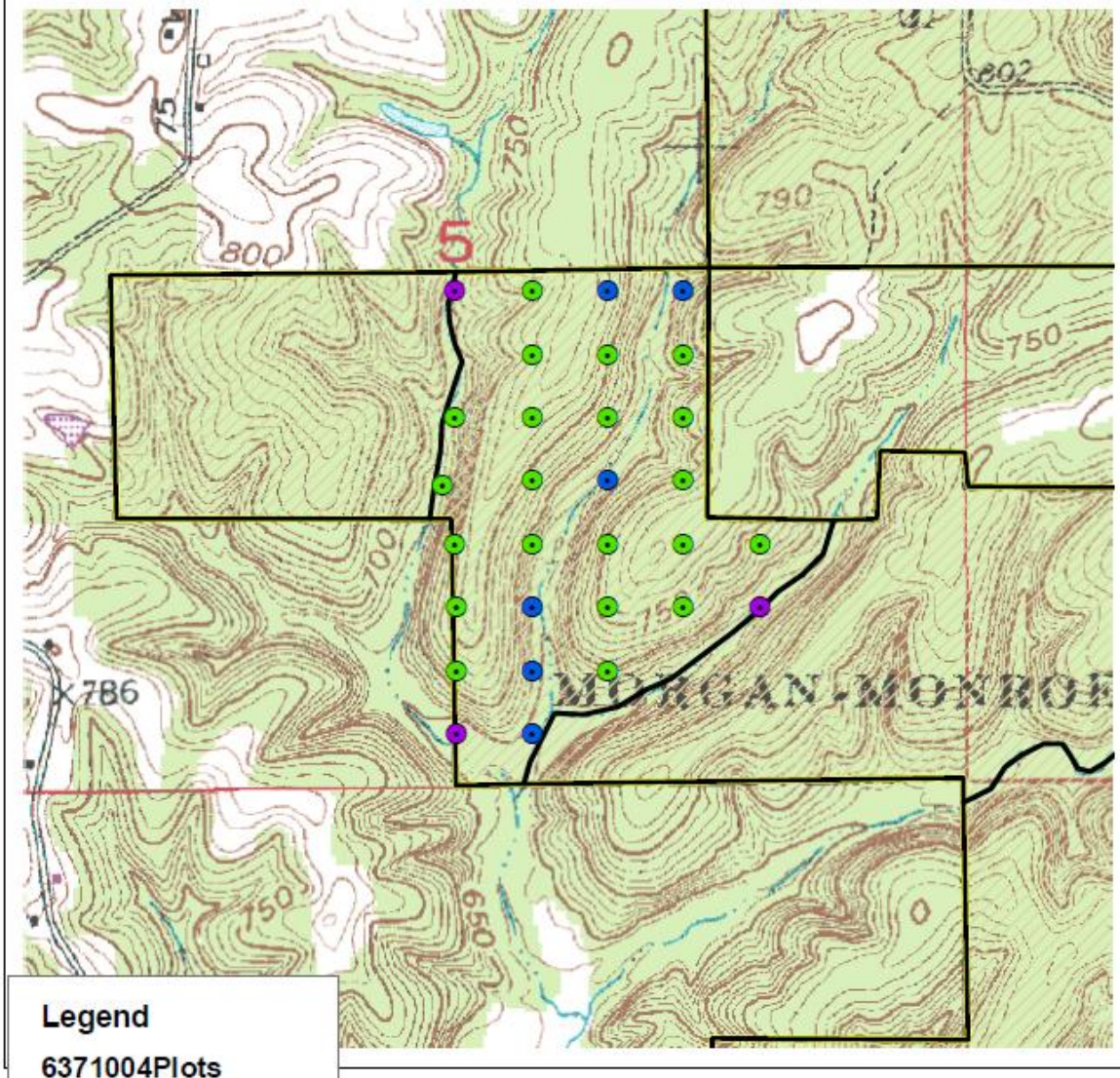
Gingrich Stocking Chart



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 the 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.

Morgan Monroe State Forest
Compartment 10 Tract 4
Topography



Legend

6371004Plots

Plot Cover Type

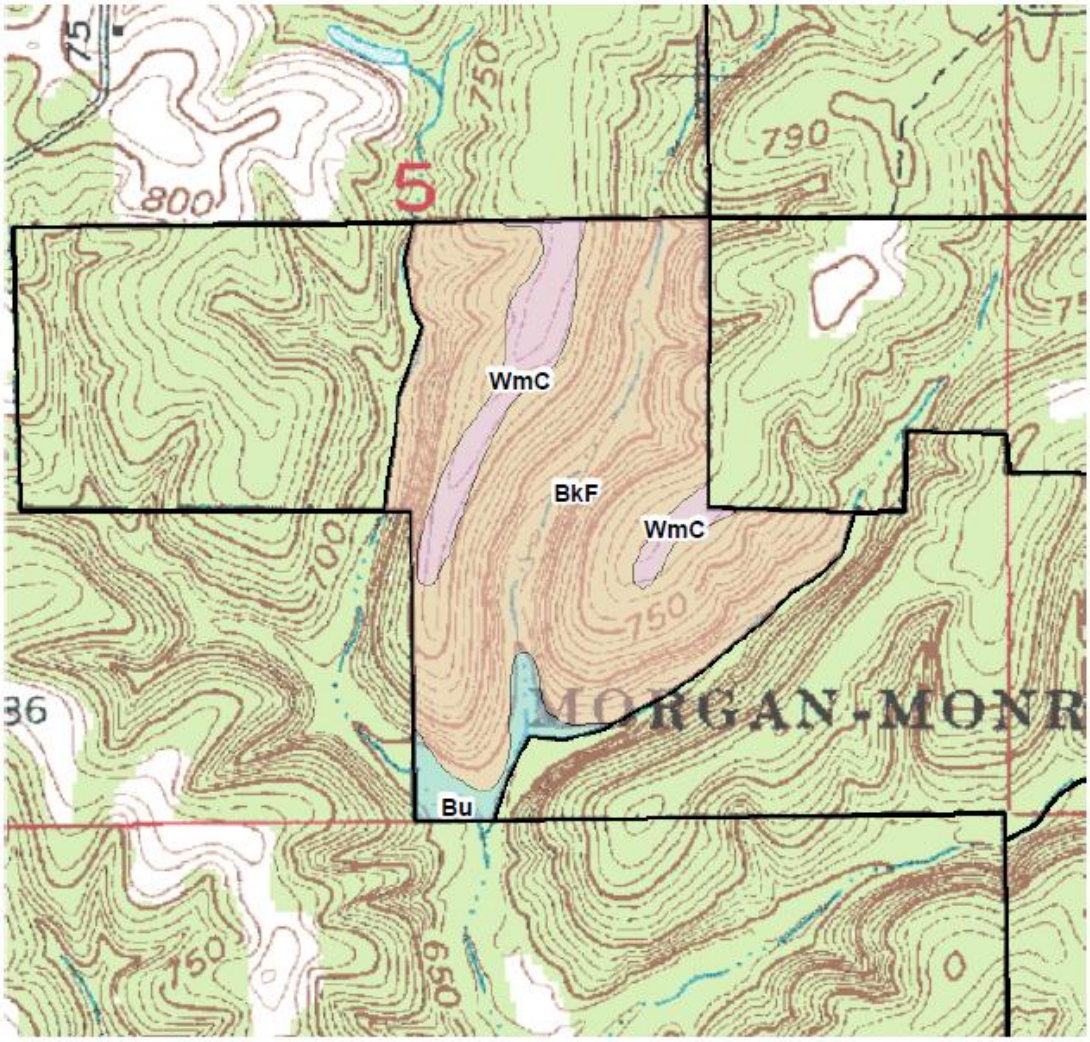
- Bottomland Hdw
- Mixed Hdw
- Oak Hickory
- Tract

0 330 660 1,320 1,980 2,640 Feet

N

C. E. Hauser
01/06/2011

Morgan Monroe State Forest
Compartment 10 Tract 4
Soils



Soils

- BkF
- Bu
- WmC

N

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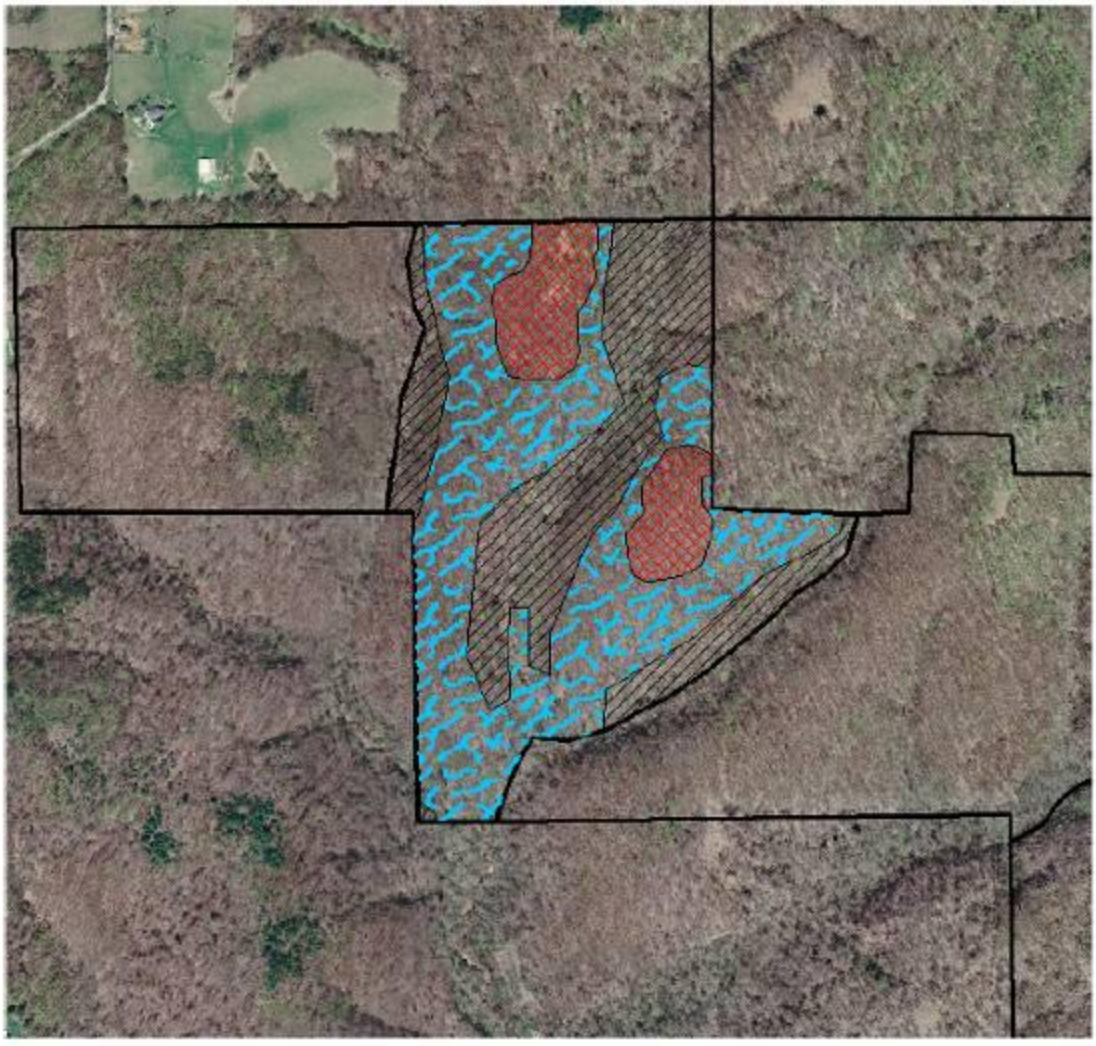
0 330 660 1,320 1,980 2,640 Feet

Morgan Monroe State Forest
Compartment 10 Tract 4
Silvicultural Prescription



Silvicultural Treatment

- Improvement Harvest
- Leave
- Regeneration Opening

N

C. E. Hauser
01/06/2011

0 330 660 1,320 1,980 2,640 Feet