

RESOURCE MANAGEMENT GUIDE

DRAFT

State Forest: Morgan-Monroe

Compartment: 18 **Tract:** 14

Forester: Amy Zillmer

Date: August 29, 2008

Management Cycle End Year: 2028/2029

Management Cycle Length: 20 yrs

Location

Tract 14 is located in Sections 23 & 24, T8N, R1E of Monroe Co. It is located approximately 9 mile SE of the city of Bloomington.

General Description

The majority of the tract is composed of oak hickory. Mixed hardwood compositions become more common along the drainages. The tract is comprised of 77 acres of which roughly 67 are considered to be commercial.

History

This tract was acquired from the USFS in 1965. Since acquisition, little to no management has occurred on tract. In 1991 both the south and west boundary lines were painted. In 1994, an inventory and management guide was completed by Dave Vadas. The inventory results averaged 6,717 BF/ac with 2,629 BF being harvestable and 4,157 BF as growing stock. A harvest was recommended for tract due to overcrowding. The total sale was expected to yield about 185,000 BF. After counseling with Wildlife Biologist John Castrale, the Division of Forestry postponed the harvest because of proximity to active eagle nests.

This area was reexamined in July of 2008 by Amy Zillmer. Based upon on ground recon and communication with John Castrale, the bald eagles have moved to a new nesting area.

Landscape Context

Much of the surrounding landscape is publically owned by the state forest system, Hoosier National Forest, and the Army Corp of Engineers. Closed canopy forest is the most dominate land use. Agriculture and residential houses dot the landscape.

Topography, Geology and Hydrology

This tract consists of one main ridge with north and south facing slopes that grades down toward the west. Intermittent drainages run along the sides and join at the base and continue to flow into the Monroe Co. reservoir. The southern portion of tract is comprised of northeast, north and northwest side slopes with trails unmapped intermittent and ephemeral drainages running through them. The bedrock is most likely a combination of shale and siltstone.

Soils

This tract extends into both Monroe and Brown counties, each of which has had different soils surveys performed. Differences include scale, land uses, chronology, or level of detail. These differences have resulted in map unit disagreement across soil survey boundaries.

Monroe Co. Soils

BkF-Berks – Weikert Complex

This is the most dominant soil found on tract. It is located along side slopes and bottoms of the tract's ridges. This soil forms from sandstone bedrock about 38" under the surface. Slopes range from 25% up to 75%. This particular tract does not approach the higher extreme. This soil has severe limitations for forest management due to slope and low strength. Roads should avoid soil when possible. It is recommended that any road construction follow contours or land shaping may be employed. This complex is well drained with a low available water capacity. Although unsuited for urban development due to slope and depth to bedrock, it is well suited for trees. This soil holds a 70 site index.

Bu-Burnside silt loam, occasionally flooded

This soil is found along the mapped intermittent stream flowing into the Monroe Reservoir. It generally forms in alluvial fans or floodplains and is made up of loamy-skeletal alluvium over siltstone or shale. This soil has severe ratings for many forest management activities such as yarding, trails, and rutting due to flooding and low strength. The use of a timber bridge to cross more susceptible areas is recommended.

WmC- Wellston-Gilpin silt loams

This soil is found mainly on ridge tops and side slopes. This soil forms from loess over loamy residuum over shale 46" under surface. Slopes generally range from 6 to 20% slopes. WmC is well drained with a moderate to low available water capacity. Severe hazards to erosion due to silty loam texture. This soil holds a 71 site index.

Brown Co. Soils

BqF-Berks-Trevlac-Wellston complex, 20 – 70% slopes

This complex is found on the tracts sideslopes. It is formed from a combination of siltstone interbedded with sandstone and shale. It has a very low available water capacity and is moderately rapidly permeable. This soil is well suited to woodlands, and has some limitations to harvest. Employing standard BMP regulations such as waterbars or contour shaping for haul roads mitigate these limitations. Other special logging methods, such as uphill yarding with cables can be beneficial when using rubber tired or crawler tractors. This complex holds a SI of 70 in northern red oak, a land capability class of VIIe, and woodland ordination symbol of 4R.

WaD-Wellston – Berks – Trevlac Complex, 6 to 20 % slopes

This complex is found on the tract's ridgetops. It forms from weathered sandstone-shale-siltstone bedrock at a depth of 51" with a loess cap. The slopes range from 6 – 20%. This soil is unsuited to urban development due to slope. It is very well suited to forestry, with only moderate equipment limitations due to slope and depth to bedrock on some components of complex. Following natural contours for road construction and land shaping can mitigate erosion hazards. This soil has a site index of 70 for northern red oak and a woodland ordination symbol of 4A.

Access

The tract contains relatively good access. The northern area is bisected by McGowan Road and the eastern edge is bordered by Gilmore Ridge Road. Section of the tract can be made more accessible with the usage of a timber bridge to cross prominent water features.

Boundary

Both the south and western boundary serve as property lines and are clearly painted. The eastern boundary abuts Gilmore Ridge Road and the northern boundary follows a stream that drains into the Monroe Reservoir.

Wildlife

The Natural Heritage Database did not report any sightings of rare or endangered animals within tract boundaries however the tract provides abundant habitat. Sightings of deer, chipmunks, timber rattlesnake, and numerous songbirds were noted on the tract. Overall, the forest bestows a steady food source in the form of mast and the neighboring reservoir provides a constant source of water. This information was used to complete a Wildlife Review that is stored in tract file.

Crotalus horridus or the Timber Rattler is a species of special concern in Indiana. This species suffers from triad of obstacles. Namely habitat destruction and fragmentation, sport hunting, shading over, and road mortality. Future management activities will most likely employ group selection harvesting. The harvest will not only increase the tract's horizontal heterogeneity but it will also increase viable breeding grounds for the snakes in this area.

Numerous species were identified in the matrix surrounding tract. Sightings included the timber rattlesnake, smooth green snake, rough green snake, American bald eagle, broad-winged hawk, hooded warbler, worm-eating warbler, and the black-and-white warbler

Indiana Bat Habitat Guidelines

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.

Live Tree's-Entire Tract – Desired Species Only*

	Required	Inventory	Available for Removal
11" DBH+	693	702	9
20" DBH+	231	145	-86

Snags – Entire Tract – All Species

	Required	Inventory	Available for Removal
9" DBH+	462	155	-307
19" DBH+	77	11	-66

**Desired Species include: AME, BIH, BLA, BLL, COT, GRA, REO, POO, SAS, SHH, ZSH, SHO, SIM, WHA, WHO*

Currently this tract is only meeting requirements for live trees 11" + DBH. Current management proposal includes thinning and releasing higher quality oak species (i.e. northern red oak, and white oak) and retaining much of the volume found in hickory. Following harvest, these species will increase in growth and move into larger size classes. In terms of snag density, snag creation of cull trees should be considered in post-harvest TSI.

Communities

The Natural Heritage Database did not report any rare, threatened, or endangered plants or plant communities within the tract boundaries however sightings of American ginseng and golden seal were reported in the surrounding matrix.

Recreation

This area does not contain any established recreational facilities. This area does show signs of hunting usage. Other uses may include wildlife viewing, hiking, and mushroom 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

Forest Condition

Species	Harvest	Growing Stock	Total
American Beech	1,270	7,070	8,340
Basswood	2,250	780	3,030

Bitternut Hickory	0	2,980	2,980
Blackgum	2,250	1,790	4,040
Black Oak	7,520	17,140	24,660
Chestnut Oak	33,130	96,190	129,320
Northern Red Oak	17,010	46,770	63,780
Pignut Hickory	1,270	15,540	16,810
Red Maple	0	1,160	1,160
Scarlet Oak	2,480	2,440	4,920
Sugar Maple	4,580	9,380	13,960
White Ash	8,490	0	8,490
White Oak	11,090	42,480	53,570
Yellow Poplar	33,050	38,620	71,670
Total	124,390	282,340	406,730
Avg/Acre	1,615	3,667	5,282

This tract was reinventoried in August of 2008. Growth data show a decline in stand volume from the 1994 inventory. When comparing the two inventories, growth decline is strongest in northern red oak and black oak. This change could be attributed to natural senescence, a reflection of different inventory intensity, volume loss due to fire decay, changes in tract boundaries, or even variation in plot sampling locations.

Currently the tract holds an estimated volume of 5,282 BF/ acre with 1,615 BF/ac being harvestable and 3,667 BF/ac designated as growing stock. There is an overall basal area of 89.5 square feet in 267 trees. It is fully stocked at 83%.

This tract is rather homogenous with common overstory species including chestnut oak, yellow poplar, and white oak. The understory is made up of primarily sugar maple and chestnut oak. Regenerating stems are primarily sugar maple, American Beech, and dogwood.

Many of the stems are poor formed or in decline. Fire damage is prevalent on drier slopes.

Oak-Hickory

This coverttype is the most dominate and covers roughly 65 acres. The 2008 inventory reported 91.6 square feet of basal area per acre. This stand is fully stocked at 83%. 1,640 BF/ac (in 13 trees) of the 5,370 BF/ac are considered to be harvestable.

Overstory volume is dominated by chestnut oak, yellow polar, northern red oak, and white oak. The understory is similar, but with higher concentrations of sugar

maple, beech, and mixed hickory. Regeneration is dominated by sugar maple and American beech.

Xeric Chestnut Oak

This sub stratum is found on drier ride tops and south to southwest facing slopes occasionally forming pure stands chestnut oak. Green briar is common in the understory as is abundant chestnut oak regeneration. Many of the merchantable stems are in small sawtimber size classes and commonly possess fire damage. Single tree selection to favor higher quality stems and group selection to regenerate fire damaged areas is recommended.

Mesic Oak Hickory

This substratum is found on mesic northern facing slopes and lower side slopes. Many areas contain mature to over mature northern red oak and yellow poplar. Thinning these areas from both and below to release higher quality stems will help to restore stand health and vigor. Areas that possess an abundance of overmature stems would benefit from group selection regeneration openings.

Mixed Hardwoods

This covertime covers roughly 12 acres of tract. Presently this section holds 4,820 BF/ ac of which 1,300 BF/ac (in 5 trees) is harvestable. Overstory species consist of yellow poplar, basswood, white ash, American beech, hickory. Understory composition is predominately red elm, sugar maple, and basswood. This section could benefit from removal of commercial ash to discourage the spread of emerald ash borer and removal of overmature and poor formed stems to release higher quality stems.

Many sections north of McGowan Rd may be inaccessible due to slope and inadequate yarding areas.

Summary Tract Silvicultural Prescription and Proposed Activities

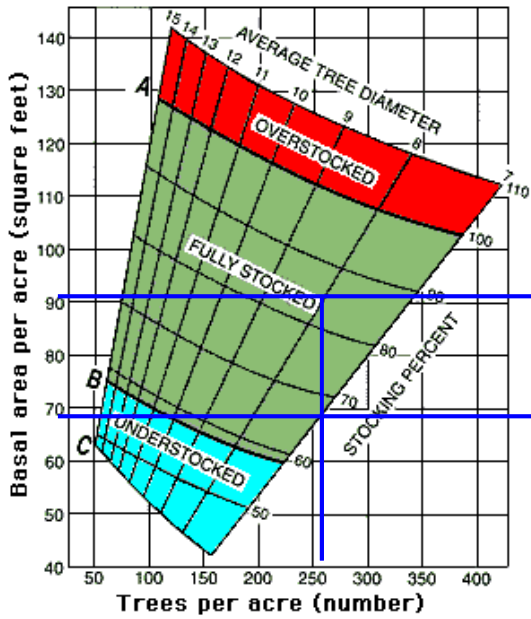
An improvement thinning utilizing single tree and group selection should be performed across tract to improve overall stand health and improve crop tree spacing. Stand will be marked and sold in the 08/09 fiscal year. Harvest yields from tract are estimated between 125,000-150,000 BF. Post harvest TSI to complete any opening will be performed following harvest. Tract should be up for a new management guide in 2028.

Proposed Activities Listing

<u>Proposed Activity</u>	<u>Proposed Date</u>
Mark 125,000 – 150,000 BF	08/09
Road work	08/09
Sell 125,000 – 150,000 BF	08/09
Post Harvest TSI	09/10
New Management Guide	28/29

Gingrich Stock Charts
Morgan Monroe State Forest
Compartment 18 Tract 14
March 12, 2008

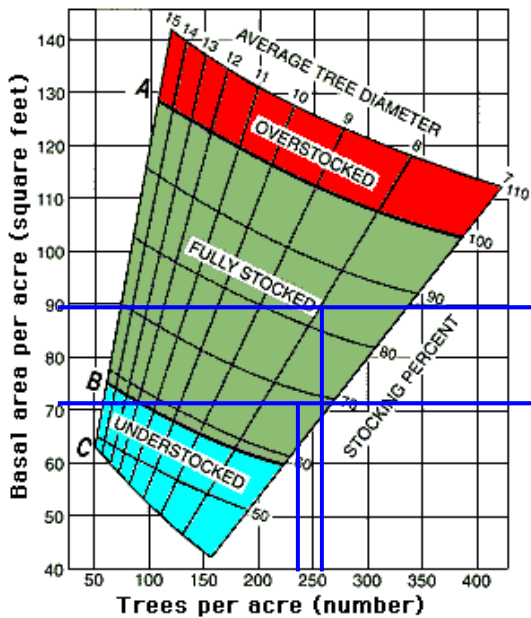
Tract Total



Current Stand
 89.5 BA
 267 Trees/Ac
 Fully Stocked: 83%
 Avg. DBH: 11"

Leave Stand
 70.8 BA
 254 Trees/Ac
 Fully Stocked: 67%

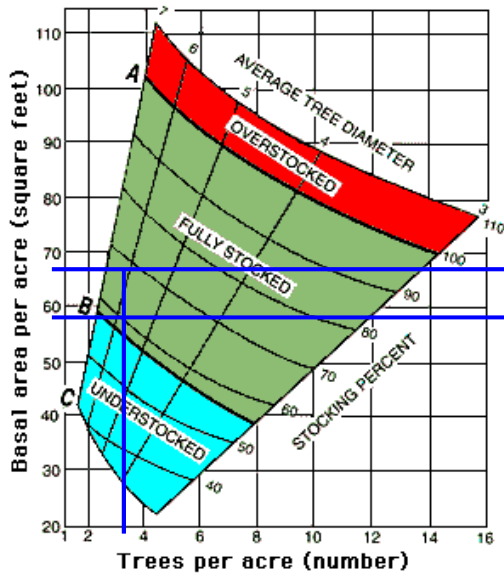
Oak-Hickory Strata



Current Stand
 91.6 BA
 264 Trees/Ac
 Fully Stocked: 83%
 Avg. DBH: 8"

Leave Stand
 72 BA
 254 Trees/Ac
 Fully Stocked: 69%

Mixed Hardwoods Strata



Current Stand
68.7 BA
297 Trees/Ac
Fully Stocked: 69%
Avg. DBH: 6.1"

Leave Stand
58.7 BA
293 Trees/Ac
Fully Stocked: 63%

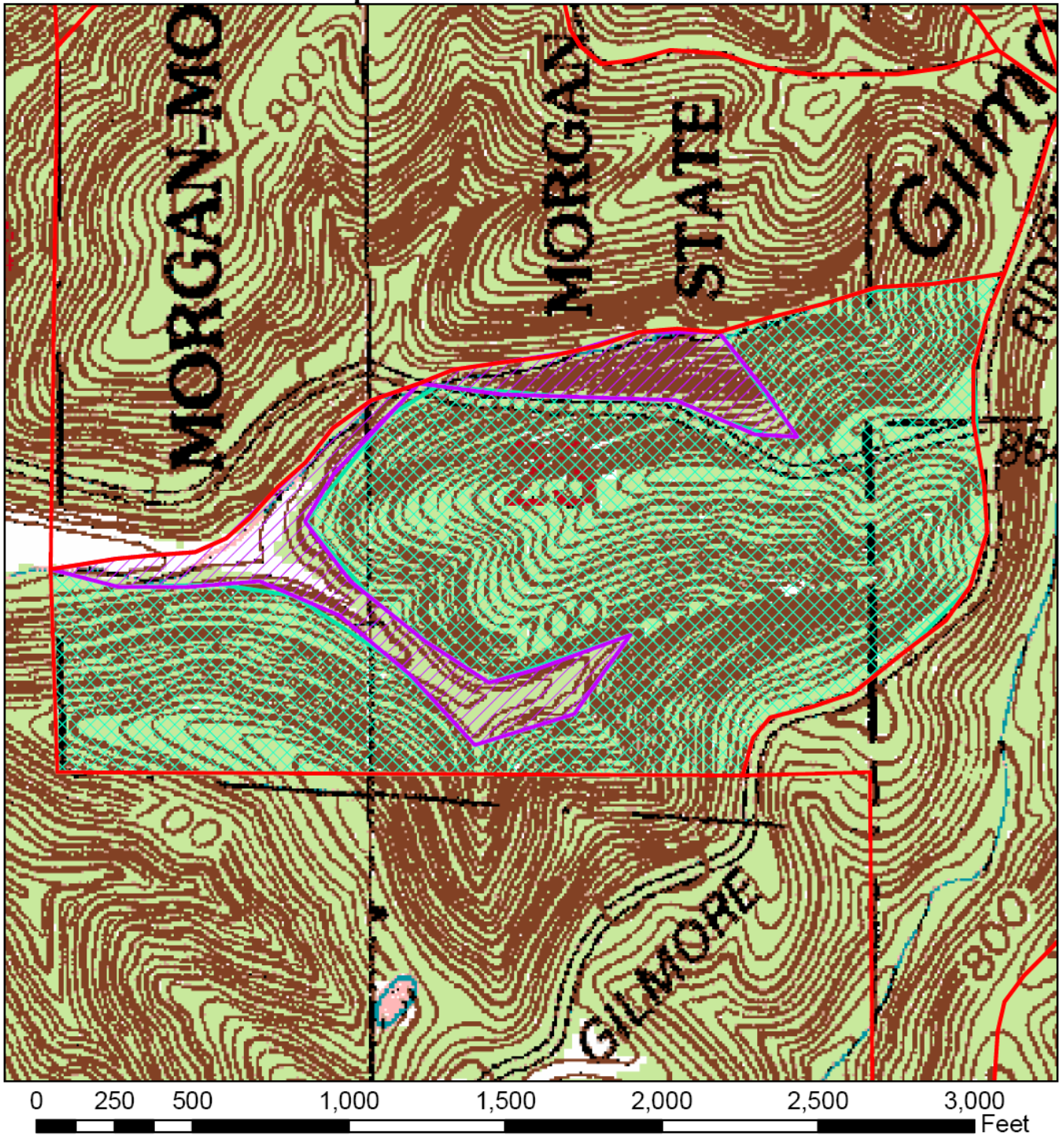
To submit a comment on this document, click on the following link:
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

You **must** indicate "Morgan-Monroe C18 T14" 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.

Stand Map

Morgan-Monroe State Forest

Compartment 18 Tract 14



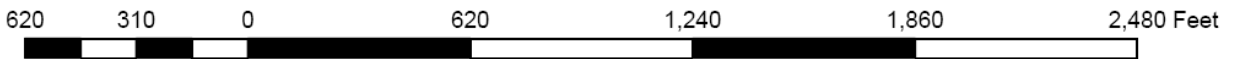
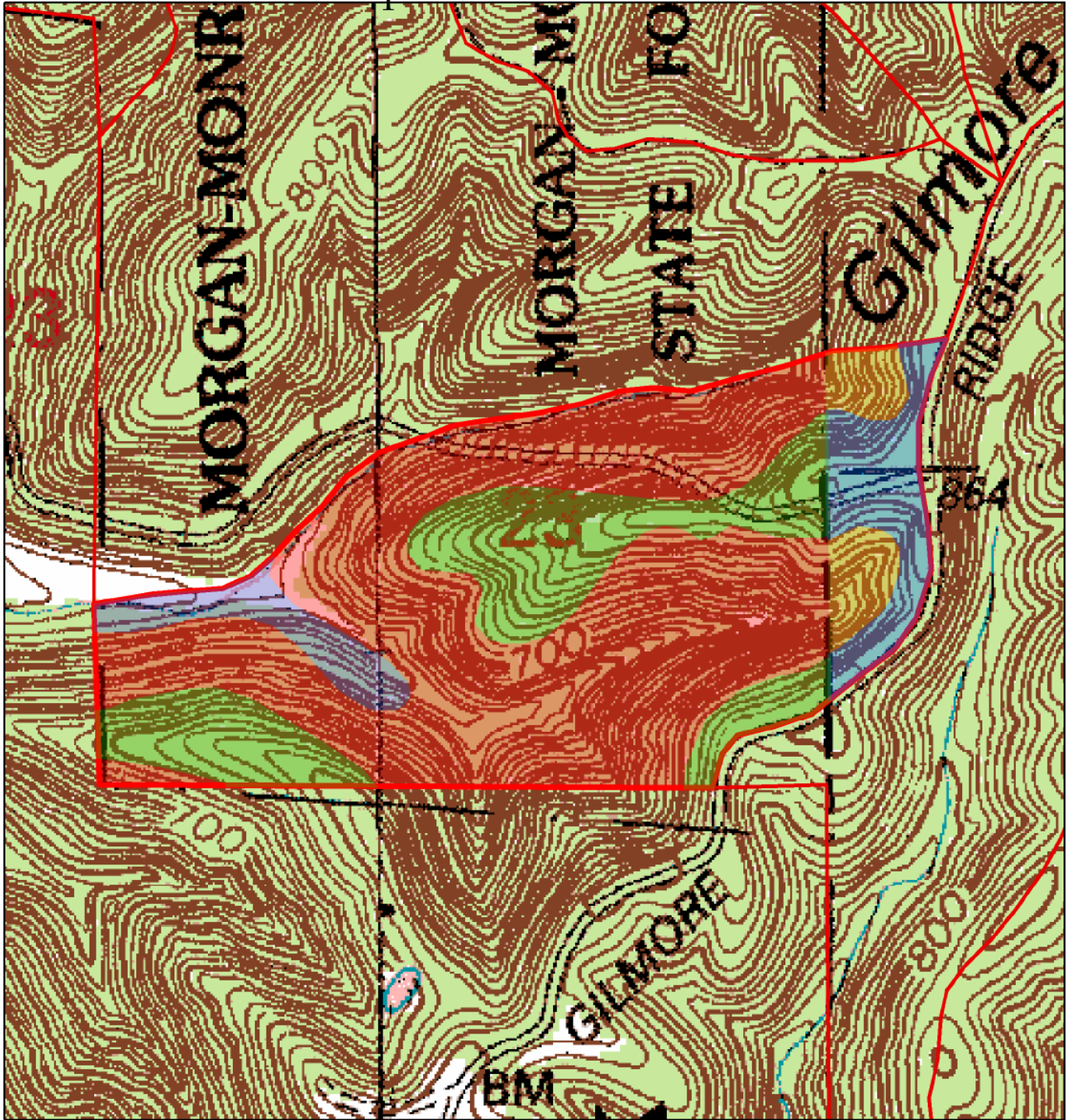
Legend  Tract  Mixed Hardwoods  Oak Hickory



Soils Map

Morgan-Monroe SF

Compartment 18 Tract 14



Legend



Monroe Co. Soils



Brown Co. Soils

