RESOURCE MANAGEMENT GUIDE

DRAFT

State Forest: Morgan-Monroe **Compartment:** 13 **Tract:** 12
Forester: Amy Zillmer **Date**: September 25, 2009
Management Cycle End Year: 2029 **Management Cycle Length:** 20 years

Location

This tract is located in Section 20, T10N, R1E of Monroe County. This tract lies about 2.5 miles southeast of Hindustan.

General Description

This tract is comprised of 31 fairly diverse acres of which 26 are considered commercial. Exclusions are VEA areas along Jack Weddle Road and excessively steep areas. The majority of the tract consists of mixed hardwoods and oak-hickory. There is also a small area of planted Virginia pine along the tract's main ridge and an area of planted black walnut in the bottoms.

History

This tract was acquired in two purchases by the state in 1930 and 1931 from Mr. Lon Weddle and the Martinsville Trust Company. Since tract acquisition little active management has occurred. This tract was cruised in 1977 by Forester Bill Bull. Portions of this tract included parts of the present day Tract 11. Inventory estimated 3,497 BF/ac with only 998 BF/ac being harvestable. In 1988 a commercial firewood sale was marked along Farr and Jack Weddle Roads, including roadside portions of Tract 12. In 1989 a second inventory was conducted by Forester Dave Vadas across the acreage of the present day tract 12. His inventory estimated a standing volume of 8,267 BF/ac of which 2,398 Bf/ac was designated as harvest. A harvest was recommended in the next five to seven years. The timber harvest did not occur, although some vine TSI did occur in the tracts bottomlands between 1991 and 1993.

This tract was up for a new inventory and management guide for the 2009/2010 fiscal year. An inventory was completed on July 28, 2009 by Amy Zillmer and Andi Wallis. The results of this inventory are highlighted in the report below.

Landscape Context

This tract is completely surrounded by state forest except for a small area to the south that borders Anderson Road. Closed canopy forest is the most dominant cover type across this landscape. Agricultural fields are common to the southeast as the topography becomes level.

Topography, Geology and Hydrology

This tract lies between the Mt. Carmel Fault and the Leesville Anticline. The tract consists of one finger ridge that grades down to the southeast. A mapped intermittent drainage makes up the eastern boundary. An ephemeral stream is present on the southern half of the western boundary. Jack Weddle road lacks sufficient drainage in

many areas and much of the roads runoff in diverted into this ephemeral. Excessive erosion and sedimentation is present in the head of this ephemeral. The waterways drain into the Bean Blossom Creek watershed. The underlying geology of this area is most likely a combination of siltstone and limestone.

Soils

EkF-Elkinsville Silt Loam

It is found on the ridges and sideslopes. This soil typically occupies stream terraces or flood-plain steps from loess or silty sediments and underlying loamy alluvium. They are welled drained with moderate permeability. This soil has moderate limitations for haul roads and yard due to slope and landslide potential. It is poorly suited for log landings due to slope and has severe rutting hazards due to low strength. This soil has a site index of 86 for northern red oak and 96 for yellow poplar. Over all this soil is very rich and highly productive (one of the best on the Morgan-Monroe).

BkF-Berks-Weikert Complex

It is found on the upper ridgetops and sideslopes. This complex forms from loamy-skeletal residuum over shale and sandstone. This soil has severe limitations for haul roads, yards, and equipment operability due to slopes. This soil has a site index of 60 for northern red oak and 70 for yellow poplar.

WmC-Wellston-Gilpin Silt Loams

This soil is located on the northern tip of the tract; it is formed from loess over loamy residuum over shale. It is well drained and has moderate limitations for harvest equipment. This soil has a site index of 71.

Cu- Cuba Silt Loam

It is found in the wet low lying areas in the southern portion of tract. This soil is formed in acid, silty alluvium on flood plains or flood-plain steps. This soil is well drained with low potential for surface run off. This soil has severe ratings for landings and haul roads due to flooding and severe ratings for rutting hazards due to strength. Timber harvesting and logging operations in these areas would be limited to drier times of year due to frequent flooding. This soil has a site index of 90 for northern red oak and 100 for yellow poplar. This soil is highly productive and very rich.

Access

This tract has extremely good access as it is bordered to the east by Jack Weddle Rd. A new haul road and skid trail would need to be installed for sale. Haul Road and yard will be present on BkF soils. Although this soil has a severe rating for haul roads and yards due to slope- the effects will be mitigated due to placement on the ridgetop where the topography is much gentler.

Boundary

As stated, this tract borders state forest property on three sides. The southern boundary is the centerline of Anderson Road.

Wildlife

A Natural Heritage Database search was done and is in tract file. The natural heritage database did not report any findings of rare, threatened, or endangered animals within or in immediate surrounding of tract. The tract does provide a variety of habitats for animals. Sightings of deer, chipmunks, turkey, and numerous songbirds were noted on the tract. The forest provides a steady food source in the form of hard and soft mast. Permanent water sources are available from Bean Blossom Creek. Single tree and group selection harvesting methods will increase the horizontal heterogeneity across the tract by creating gaps of varying successional stages.

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.

Table 1. Legacy Trees inventoried July 28, 2009 on 6371312

Size Classes	Maintenance Level	Inventory	Available For Removal
11"+ DBH	279	615	336
20"+ DBH	93	197	104

**** Species Include:*** *American Elm, Bitternut Hickory, Black Locust, Cottonwood,, Green Ash, Northern Red Oak, Post Oak, Red Elm, Shagbark Hickory, Shellbark Hickory, Silver Maple, Sugar Maple, White Ash, White Oak*

These species of trees, whether dead, dying, or alive have a relative high value as potential Indiana Bat roost trees and are encouraged for conservation.

Table 2. Snag Trees inventoried July 28, 2009 on 6371312

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
5"+ DBH	124	217	354	230	137
9"+ DBH	93	186	64	-29	-122
19"+ DBH	15.5	31	28	12	-3

Table 3. Cavity Trees inventoried July 28, 2009 on 6371312.

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
7"+ DBH	124	186	204	80	18
11"+ DBH	93	124	204	111	80
19"+ DBH	15.5	31	53	38	22

Inventory currently meet and exceed guidelines in all size classes for live and cavity trees. Deficiencies in snags in the 9-19" size classes are present on tract. Harvesting activities should maintain snags present on tract unless safety issues arrive. Post-harvest TSI should incorporate snag creation to increase the tract's viability for Indiana Bat habitat.

Recreation
This tract does not contain any established recreational facilities. Signs of hunting were present on tract. Other uses may include hiking, meditation, wildlife viewing, and/or mushroom hunting.
Illegal dumping is common on tract. In the early nineties, work was done to clean up tract and post a no dumping sign from the Monroe County Health Dept. This area now has about half a dozen tires and several pieces of home construction waste. Much of this has been thrown into the ephemeral road drainage for Jack Weddle Road and is covered with many layers of sediment. An effort should be made to clean up this area when road construction is occurring.

Exotics
Japanese stilt grass was noted along Jack Weddle Road. Treatment is recommended during appropriate months. Following any roadwork, disturbed trails and yards should be seeded promptly to minimize new colonization.

Cultural
No cultural features were noted on tract.

Tract Subdivision Description and Silvicultural Prescription
Forest Condition
Presently, this tract contains 276,080 BF (8,906 BF/ac) of volume with 102,120 BF (3,294 BF/ac) of volume being harvestable and 173,960 BF (5,612 BF/ac)

Table 4. Harvest/Leave Volume Estimate (BF-Doyle) from July 28, 2009 Inventory.

Species	Harvest Stock	Growing Stock	Total Volume
American Beech	11,710	20,400	32,110
Bitternut Hickory	0	430	430
Black Cherry	2,490	1,660	4,150
Blackgum	0	3,260	3,260
Black Oak	32,000	13,960	45,960
Black Walnut	0	2,730	2,730
Largetooth Aspen	1,130	0	1,130
Northern Red Oak	17,100	23,440	40,540
Pignut Hickory	2,640	7,300	9,940
Red Maple	4,770	0	4,770
Shagbark Hickory	0	1,510	1,510
Sugar Maple	12,590	22,050	34,640
White Ash	1,300	1,910	3,210
White Oak	3,690	37,600	41,290
Yellow Poplar	12,700	37,710	50,410
Totals	**102,120**	**173,960**	**276,080**
Average per Acre	**3,294**	**5,612**	**8,906**

designated as reserve stock. There is an average basal area of 106 square feet per acre. The tract is fully stocked (98%). All records and on ground observations indicate that this tract has not been harvested under state ownership. The majority of the tracts acreage is mixed hardwoods and oak-hickory. A small area (<1 acre) of black walnut is located in the tract's bottomlands and some planted Virginia pine mixed with young yellow poplar on the tract's main ridge (most likely an old agricultural field before state ownership). The bottomland walnut area could use some light thinning. The Virginia Pine is of poor quality and could be removed to hasten transition to hardwoods.

Mixed Hardwoods

This is the most dominant cover type on tract and covers approximately 20 acres of the tract. Presently this stand contains 166,600 BF (8,333 BF/ac) with 59,800 BF (2,990 BF/ac) harvestable timber and 106,800 BF (5,340 BF/ac) designated as growing stock. This subdivision holds 101 square feet of basal area in 316 trees. The overstory in this stratum consists of species such as American Beech, Black Oak, Northern Red Oak, Sugar Maple, White Oak, and Yellow Poplar. Both the understory and regeneration layers are dominated by shade tolerant Beech/Maple although there are intermixed with smatterings of oak, hickory, poplar, and cherry. As much of the Black Oak and Northern Red Oak is reaching maturity and subsequently showing decline, harvest levels in these species groups is predicted to be high. Removing these less vigorous stems will allow for release for higher quality and longer lived stems. Sanitation removal of white ash is recommended for tract to reduce Emerald Ash Borer breeding areas. Both single and group selection harvest methods are recommended to remove lower quality stems and to remove areas of poor quality and excessively mature timber.

Oak-Hickory

This stratum covers about 9 acres of tract. This stand holds 85,500 BF (9,500 BF/ac) with 35,010 BF (3,890 BF/ac) being harvestable and 50,490 BF (5,610 BF/ac) designated as growing stock. The stand is overstocked (109%).

The majority of the overstory is made up of Black Oak, White Oak, American Beech, Northern Red Oak, and Hickory. The understory and regeneration layers are predominantly Beech/Maple. As with much of oak-hickory stands the Black Oak and Red Oak are reaching maturity and with selective thinning practices low vigor stems can be removed. Inventory shows high removals in sawtimber size sugar maple and American Beech. Due to the unfavorable regeneration in stand, understory treatment following harvest to encourage oak regeneration would be very beneficial as much of this area may qualify for regeneration treatments during the next rotation.

Summary Tract Silvicultural Prescription and Proposed Activities
This tract would benefit from forest management. An improvement thinning utilizing single tree and group selection should be performed across the tract to improve overall stand health and improve croptree spacing. Single tree selection will remove poor formed, mature stems, and improve spacing of crop trees to increase growth of residual stand. Group selection will be implemented in areas of inadequate stocking, poor quality, or mature timber. Tract should be marked and sold during current fiscal year. Harvest yields from tract are estimated to be between 80,000 – 100,000 BF. Areas where midstory release to increase density of advanced oak regeneration should be noted during marking and incorporated into post harvest timber stand improvement plan in conjunction with opening completion and snag creation in 9-19” size classes. This tract will be up for a new management guide in 2029.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Road work	2009
Mark and Sell Timber Harvest	2010
Stilt Grass Treatment along Jack Weddle Road	2010 (summer)
Post-Harvest TSI	2012
New Management Guide	2029

Attachments (in Tract File)

Gingrich Stocking Charts
Ecological Resource Review
Natural Heritage Database Review
Wildlife Habitat Review
Archeological Clearance/Roadwork Request
Soil, Stand, and Roadwork Maps
TCruise Reports

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You **must** indicate "Morgan-Monroe C13 T12" 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.