Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: Morgan-Monroe **Compartment:** 03 **Tract:** 12
Forester: William Capello(for Dave Ramey) **Date**: July 14, 2010
Management Cycle End Year: 2030 **Management Cycle Length:** 20 years

Location

This tract is located in Sections 33 & 34 of T11N, R1E of Morgan County. It is located approximately 1.5 north of the Morgan-Monroe State Forest Headquarters and borders along portions of Gose Creek Road and Rosenbaum Road.

General Description

The 72 acre tract (commercial forest acres = 68) sits in Morgan County, just north of the Morgan-Monroe county line. The south to southwest boundary of the tract is Gose Creek road. Along the east to southeast boundary is Rosenbaum road. A utility power line right of way bisects through the eastern half of the tract and constitutes up to 4 acres of noncommercial forestland. The majority of the tract's forest resource consists of mixed upland hardwoods and mixed oaks. The 2010 inventory data (Noted in Table 1) lists the frequency within each category of the tract's forest composition in descending order of dominance.

Table 1. Species composition from July 2010 inventory on 6370312

Overstory Sawtimber	Understory Poles	Regeneration Layer
Yellow Poplar	Sassafras	Sugar Maple
American Beech	Sugar Maple	American Beech
Sugar Maple	Yellow Poplar	Sassafras
Black Oak	Red Maple	Yellow Poplar
White Ash	American Beech	Pignut Hickory
Sassafras	Red Elm	Red Elm
Red Maple	Blackgum	
Largetooth Aspen	Largetooth Aspen	
Pignut Hickory	Pignut Hickory	
Shagbark Hickory	Shagbark Hickory	
Northern Red Oak	White Ash	
Blackgum	White Oak	
Basswood		
Red Elm		
Bitternut Hickory		
Black Walnut		
Chestnut Oak		
Scarlet Oak		
White Oak		

History
This tract was acquired in two purchases by the State in 1931. Since tract acquisition, little active management has occurred. A timber sale was sold to Graham Mfg. Co. Inc. on February 27, 1971 for $3,050. This sale covered 50 acres included 776 trees and had a harvest volume of 106,660 BF. A 2nd timber sale was sold to Dan Cramer Sr. on Sept. 30, 1971 for $6,550. This sale included the south portion of the current M0312 as well as all of M0306. This sale consisted of 1,175 trees with a volume of 153,580 BF. Following a major windstorm event in 1990, a combined 4 tract salvage sale covering tracts 1, 10 & 12 of Compartment 3 as well as M0409 was marked and sold to DBA Hawkins Logging on August 12, 1991. This salvage sale covered 157 acres and included 851 trees, 496 culls containing 153,320 BF which sold for $22,075. A sale of 1 Black Walnut tree was also sold to DBA Hawkins Logging on February 25, 1992 for $1,100. Harvesting of these tracts was completed by Hawkins on May 12, 1992. The current tract resource inventory was completed on July 12, 2010 by Forest Intermittent William Capello and the results of this inventory are highlighted in the report below.

Landscape Context
This tract is completely surrounded by State Forest. Closed canopy forest is the most dominant cover type across this landscape. The tract has a SCI REMC power line running through it on the east side of the tract that provides about 4 acres of maintained, permanent wildlife habitat as it is periodically mowed. Morgan-Monroe State Forest's recreational campgrounds and the Scout Ridge Nature Preserve lie approximately 1 mile south and southeast of the tract.

Topography, Geology and Hydrology
This tract has two ridges with an unmapped intermittent drainage on the east half of the tract that separates them. A large mapped intermittent stream runs along the north boundary of the tract. These streams are popular spots for recreational gold panners. There is a manmade wildlife pond on the eastern ridge of the tract that was constructed by the Division of Fish and Wildlife. This pond is routinely mowed. The soils are formed in residuum of sandstone and shale or in loess and underlying residuum of sandstone on uplands. Sandstone, siltstone and shale are the bedrock base materials. Water resources from this tract drain into Deadman Hollow and from there into Gose Creek and further into Little Indian Creek which flows into the White River.

Soils
This tract is mostly Berks Channery silt loam and Gilpin silt loam.

BfG	Berks Channery silt loam	35 - 80% slope	Sandstone-bedrock – 30"
SI – 70	Well drained. Most areas wooded. Soil suited to trees.		
Acres	Limited to building sites due to steepness of slope and depth of bedrock.		
Blue	*Moderate, severe, moderate, slight.		

WfC	Wellston silt loam	6 – 12% slope	Sandstone-bedrock – 43"
SI – 71	Well drained. Most areas woodland. Well suited to trees.		
Acres	Moderate limitation to building due to slope and for absorption.		
Yellow	*Slight, Slight, Slight, Slight.		

GpE	Gilpin silt loam	18 – 25% slope	Sandstone-bedrock – 36”
SI – 80	Well drained. Most areas woodland. Soil suited to trees.		
Acres	Not suited for building sites.		
Green	*Moderate, Moderate, Moderate, Slight.		
ZaB	Zanesville silt loam	2 - 6% slope	Sandstone-bedrock– 47”
SI – 68	Well drained. Most areas woodlands. Soil suited to trees.		
Acres	Fragipan restrict root development.		
Yellow	*Slight, Slight, Slight, Slight.		

*Management Concerns: Erosion Hazard, Equipment Limitations, Seedling Mortality, Windthrow Hazard.

Access

The tract has two access roadways. Both roadways are secured by cable gates limiting public access. One roadway is located on the north side of Gose Creek road and the other is located off of Rosenbaum road. The access off of Rosenbaum Road has 2 entries into the same roadway, 1 of these is being retired. The access off of Rosenbaum Road has a public parking lot adjacent to the cable gate, the access off of Gose Creek Road has a parking lot across the road for public use.

Boundary

This tract is completely surrounded by Morgan-Monroe State Forest property tracts, there are no private land boundaries. Gose Creek road forms the border for the southeast portion of the tract. Rosenbaum road constitutes the eastern boundary of the tract.

Wildlife

Wildlife habitat documentation and analysis is an important element of tract level forest management. Considering that wildlife species vary greatly in habitat use, the management goal is to maintain the highest level of wildlife habitat diversity. Wildlife habitat features include: snags, live trees, cavity/den roosting trees, culls, downed woody material, ponds, water pools, mast trees, shrubs and fruit producing vines. Standing dead or dying trees (snags), provide bat roosts, cavities and sites for wildlife dens and nests. They also contribute (through decomposition) as food reservoirs both above ground and on the forest floor. It will be recommended to retain all standing snags during timber harvest operations, unless there is a felling safety issue. Live tree retention is also important for most forest wildlife species, as they depend on these trees for shelter, escape cover, roosting, mast and foliage. Specific tree densities are essential for tree roosting Indiana bats and cavity nesting/denning wildlife species. Live cavity trees are used by a wide range of wildlife species as they provide long term nests, dens, and create potential future snags. Cull trees are damaged and/or decayed trees that also provide sources of future cavity trees and roosts. Live culls with cavities and decay will be retained for wildlife value if they do not compete with high value croptrees. If an adequate number of snag trees are not present to meet IN bat guidelines, girdling live culls during post harvest timber stand improvement can assist in satisfying guideline requirements. Downed woody material may include tree stems, logs, limbs and tree tops. The advanced stages of decay provide cover and foraging habitat for small mammals, ground-dwelling birds, reptiles, and amphibians. Natural water pools are seasonal and typically occur on poorly drained soils or in places where the water table is close to the ground surface. Mast trees, shrubs and fruit producing vines are hard and soft food resources that are essential for a wide variety of forest wildlife. Wild grapevines will be

retained except where their growth jeopardizes the integrity of regeneration openings or future stand development. In tract level forest management every effort will be made to meet or exceed target densities of snags, roost trees and cavity trees described to ensure that wildlife habitat benefits the highest number of individuals and populations possible.

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 2. Legacy Trees* inventoried July 28, 2009 within 6370312.

Size Classes	Maintenance Level	Inventory	Available For Removal
11"+ DBH	648	1531	883
20"+ DBH	216	372	156

** **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 3. Snag Trees inventoried July 28, 2009 within 6370312.

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
5"+ DBH	288	504	288	0	-216
9"+ DBH	216	432	208	-8	-224
19"+ DBH	36	72	34	-2	-38

Table 4. Cavity Trees inventoried July 28, 2009 within 6370312.

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
7"+ DBH	288	432	13	-275	-419
11"+ DBH	216	288	13	-203	-275
19"+ DBH	36	72	13	-23	-59

Inventory currently does not meet all guidelines in size classes for live and cavity trees. Harvesting activities should maintain snags present on tract unless safety issues are present. Post-harvest TSI should incorporate snag creation to increase the tract's viability for Indiana Bat habitat.

Table 5. M0312 Volume Estimates (BF-Doyle) July 28, 2009 Inventory data

Species	Harvest (MBF)	Leave (MBF)	Total Volume (MBF)
Yellow Poplar	45.50	106.04	151.54
White Oak	0	76.44	76.44
Northern Red Oak	4.66	61.71	66.37
Black Oak	21.53	37.16	58.69
Sugar Maple	25.33	31.72	57.05
American Beech	36.96	9.77	46.73
Red Maple	13.78	25.19	38.97
Pignut Hickory	10.45	27.45	37.90
White Ash	19.34	5.77	25.11
Sassafras	18.82	4.04	22.86
Largetooth Aspen	13.71	9.12	22.83
Scarlet Oak	0	18.90	18.90
Chestnut Oak	0	16.05	16.05
Shagbark Hickory	7.43	5.23	12.66
Red Elm	1.87	3.10	4.97
Black Walnut	0	4.76	4.76
Blackgum	4.31	0	4.31
Bitternut Hickory	0	3.24	3.24
Basswood	2.9	0	2.90
Tract Totals(MBF)	**226.59**	**445.69**	**672.28**
Average BF per Acre	**2,943**	**5,788**	**8,731**

Communities

A Natural Heritage Database review was obtained for this tract. If rare, threatened or endangered species were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

Recreation

This tract is easily accessible to recreational visitors as it lies adjacent to Gose Creek Road and Rosenbaum Road. Most visitors utilize the area for recreational opportunities such as: gold panning, hunting, nature study, and mushroom, berry and nut gathering. This area could also serve as accessible areas for school and communal groups to walk through, review and learn about forest management activities.

Exotics

Japanese stiltgrass was noted along the old access lane of the wildlife pond. Proper seed mixtures applied to closeout may also be effective in reducing stiltgrass invasions. No other exotics were

noted during the inventory however black locust and bush honeysuckle are commonly found in the adjacent tracts and may be present. Marking of locust found within the tract is encouraged as well as post harvest TSI treatments in the event smaller trees are discovered. Bush honeysuckle is a probable resident and should be treated whenever encountered to reduce spread.

Cultural

Cultural resources may be present on this tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

Tract Subdivision Description and Silvicultural Prescription

Mixed Upland Hardwood

This is the most dominant cover type within the tract covering approximately 57% of the tract acreage. The majority of the overstory is made up of Yellow Poplar, Sugar Maple, Red Maple, American Beech, White Ash, Sassafras and Largetooth Aspen. The understory and regeneration layers are predominantly Beech/Maple. 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. Sanitation marking of white ash is recommended for this tract to reduce future Emerald Ash Borer breeding areas.

Mixed Oak

This is the second most dominant cover type on tract and covers approximately 43% of the tract acreage. The overstory in this stratum consists of species such as White Oak, Northern Red Oak, Black Oak, Pignut Hickory, Shagbark Hickory, Chestnut Oak, Scarlet Oak and Bitternut Hickory. Both the understory and regeneration layers are dominated by shade tolerant Beech/Maple although they have scattered contributions of oak, hickory and poplar seedlings. As much of the Black Oak and Northern Red Oak is reaching maturity and showing age/site related declines, harvest levels in these species groups is predicted to be high. Removing the less vigorous stems will allow for release of higher quality and longer-lived stems. Both single and group selection harvest methods are recommended to remove lower quality stems and to remove areas of poor quality and overmature timber.

Summary Tract Silvicultural Prescription and Proposed Activities

This tract would benefit from forest management. An improvement cutting utilizing single tree and group selection should be performed across the tract to improve overall stand health and improve croptree spacing. Improvement cuttings are silvicultural treatments to remove poorly formed, forked, diseased stems as well as thinning to improve the spacing and growth of croptrees. Selection harvests are generally prescribed in areas where mature overstory individual trees are marked to release codominant or intermediate crown classed individuals. Group selection openings will be prescribed for areas of inadequate stocking, poor quality, or large patches of overmature & mature timber. Harvest yields from this tract are estimated upwards of 200,000 BF. A combined Tract sale including this tract and M0409 is proposed to be marked and sold during the Fiscal Year 2011-12. Following this sale a Timber Stand Improvement project is planned to complete group selection openings, deaden those trees marked that were not harvested and treat grapevines. Areas where understory release to increase density of advanced oak regeneration (shelterwood) should be noted during marking and incorporated into the post

harvest timber stand improvement plan. The deadening of these trees will also increase the snag count for IN bat as well as create additional habitat and feeding opportunities for cavity and deadwood nesting forest birds. This tract will be up for a new management review & guide in 2030.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Stiltgrass Treatment	Fall 2011
DHPA Review	Fall 2011
Road work rehab & construction	Fall 2011
Mark and Sell Combined Tract Timber Harvest	Winter/Spring 2011-12
Post-Harvest TSI	2012-14
New Management Guide	2030

Attachments (in Tract File)

Gingrich Stocking Charts
Cultural Resource Map
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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