Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: Morgan-Monroe **Compartment:** 04 **Tract:** 09
Forester: William Capello(for D. Ramey) **Date**: August 22, 2010
Management Cycle End Year: 2030 **Management Cycle Length:** 20 years

Location

This tract is located in Sections 33 & 34 of T11N, R1E in the south portion of Morgan County along the Morgan-Monroe County lines. Tract is located approximately 1 mile north of the Morgan-Monroe State Forest Headquarters and borders the east side of Rosenbaum Road.

General Description

The 49 acre tract sits in Morgan County, just north of the Morgan-Monroe county line. There are approximately 47 acres of commercial forestland. Approximately 2 acres are in the utility line. The west to northwest boundary of the tract is Rosenbaum Road. The east boundary is shared with Tract 6370402. The south boundary is shared with Tract 6370401. The majority of the tract consists of mixed oak and White Oak – hickory stands. The 2010 inventory data (Noted in Table 1) lists the frequency within each category of tracts forest composition in descending order of dominance.

Table 1. Species composition from July 23, 2010 inventory on 6370409

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

History

This tract was acquired in two purchases by the State in 1931. This tract originally was included in a larger Tract 9 in the 1970's in Old Compartment 11 of 92 acres (included current Tract 401). At that time Old Compartment 11 Tract 9 was inventoried by the quickcruise method and the Tract had 2295 BF/A of Present volume and 1241 BF/A of Harvest volume. In the early 1980's

the Tract was reconfigured into Compartment 4 Tract 2 and that tract was now 139 acres. No inventory was completed on that tract. In 1989 the current Tract 9 was created from dividing Old Tract 2 into Tracts 9 & 2 of their present configurations. In 1990 windstorms damaged most of Meetinghouse ridge and a timber salvage sale was marked across M0301, 10, 12 & M0409. This combined Tract sale of 153,320 BF was sold to Joel Hawkins on July 30, 1991 for $22,075. An individual tract tally was kept separate for Tract 9 and this sale included 851 trees (+496 culls) at an estimated volume of 199,140. The current tract 9 inventory was completed on July 23, 2010 by Forest Intermittent William Capello. The results of this inventory are highlighted in this report.

Landscape Context

This tract is completely surrounded by other tracts of closed canopy, hardwood stands within Morgan-Monroe State Forest. A utility right of way lies across the road in adjacent Compartment 3 and comprises the majority of permanent wildlife opening habitat that is nearby. Morgan-Monroe State Forest's recreational campgrounds and the Scout Ridge Nature Preserve lie within 1 mile south and southeast of the tract.

Topography, Geology and Hydrology

This tract has two main ridges with elevations ranging from 910' on the northwest boundary down to a mapped intermittent stream at 750' in the southeast section of the tract. The first ridge is located in the northern half of the tract and runs southeast along the northeast boundary. The second ridge runs north and south on the west half of the tract. 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 dominant bedrock materials. Water resources from this tract drain into Happy Hollow and from there into Robertson Creek into Indian Creek which flows into the White River.

Soils

This tract is mostly Berks Channery and Zanesville silt loams.

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 restricts root development.		
Yellow	*Slight, Slight, Slight, Slight.		
	*Management Concerns: Erosion Hazard, Equipment Limitations, Seedling Mortality, Windthrow Hazard.		

Access

The tract has 2 major access points. These are both located on the east side of Rosenbaum road. The north access is a cable gate whereas the southwest access is a wooden posted area. All of this tract lies in Morgan County and lies just outside the posted Public Safety No Hunting area which is established on the Morgan/Monroe County line.

Boundary

This tract is completely surrounded by Morgan Monroe State Forest property tracts; there are no private land boundaries. Rosenbaum road borders the tract from the northwest down to the southwest boundary. An ephemeral and intermittent stream constitute the south and northeast boundaries. The Main Recreational & Facility Safety zone for campers and recreators exists along the south line of this 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 snag trees. Snag trees that include 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 6370409.

Size Classes	Maintenance Level	Inventory	Available For Removal
11"+ DBH	441	1116	675
20"+ DBH	147	295	148

**** 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.

Table 3. Snag Trees inventoried July 28, 2009 within 6370409.

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
5"+ DBH	196	343	842	646	499
9"+ DBH	147	294	200	53	-94
19"+ DBH	24.5	49	0	-25	-49

Table 4. Cavity Trees inventoried July 28, 2009 within 6370409.

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
7"+ DBH	196	294	0	-196	-294
11"+ DBH	147	196	0	-147	-196
19"+ DBH	24.5	49	0	-25	-49

Analysis:

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. M0409 Volume Estimates (BF-Doyle) July 28, 2009 Inventory data

Species	Harvest (BF)	Leave (BF)	Total Volume (BF)
Northern Red Oak	437	1008	1445
Black Oak	429	949	1378
Chestnut Oak	143	1223	1366

Yellow Poplar	131	1044	1175
White Oak	52	1091	1143
Sugar Maple	220	77	297
Shagbark Hickory	23	170	193
American Beech	147	45	192
White Ash	154	23	177
Pignut Hickory	35	106	142
Sassafras	47	58	105
Largetooth Aspen	0	26	26
Red Elm	19	0	19
Tract BF Totals	**90,013**	**285,180**	**375,242**
Total BF Per Acre	**1837**	**5820**	**7658**

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 Rosenbaum road. Most visitors utilize the area for recreational opportunities such as: gold panning, hunting, nature study, mushroom, berry and nut gathering. This area could also serve as an area for school groups to visit and learn about forest management activities.

Exotics
There were no exotics noted during the inventory however black locust and bush honeysuckle are commonly found in the tracts to the west and north. 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 Oak-Hickory

This is the most dominant cover type on the tract, covering approximately 74% of the tract. The majority of the overstory is made up of mixed oaks and hickories. The understory and regeneration layers are predominantly Beech/Maple. Due to the unfavorable regeneration in stands, 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. Otherwise the poletimber marking of AMB & SUM could be included in the sale marking to

increase the potential for advance oak regeneration establishment. Sanitation marking of white ash is recommended for tract to reduce Emerald Ash Borer breeding areas.

Mixed Hardwoods

This is the second most dominant cover type on tract and covers approximately 26% of the tract. The overstory in this stratum consists mainly of mixed hardwood species. Dominant species include Yellow-poplar, Sugar Maple, American Beech and White Ash. Both the understory and regeneration layers are dominated by shade tolerant Beech/Maple although they have occurrences of oak, hickory and poplar seedlings. Removal of 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. An improvement cutting will remove poorly formed, mature stems, as well as improve the spacing between croptrees to increase the growth of the residual stand. Group selection regeneration openings will be implemented in areas of inadequate stocking, poor quality, or mature stands of timber. A combined Tract sale including this tract and M0312 is proposed to be marked and sold during the Fiscal Year 2011-12. Harvest yields from this tract are estimated to approaching 90,000 BF. 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*
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
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 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.

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