RESOURCE MANAGEMENT GUIDE

DRAFT

State Forest: Morgan-Monroe **Compartment:** 18 **Tract:** 17
Forester: Amy Zillmer **Date:** May 11, 2010
Management Cycle End Year: 2029 **Management Cycle Length:** 20 yrs

Location

This tract is located in the Sections 14 and 11 T8N, R1E Salt Creek Township of Monroe County. This tract is approximately 7.5 miles east from the city of Bloomington and on the eastern side of the Lake Monroe Watershed.

General Description

This tract consists of 83 acres of which all are considered commercial. Xeric oak-hickory is prevalent across tract.

Table 1. Canopy structure on 6371817 listed by relative abundance from February 2010 inventory

Regeneration	Understory	Overstory
Sugar Maple	White Oak	White Oak
Red Maple	Sugar Maple	Chestnut Oak
American Beech	Chestnut Oak	Black Oak
Blackgum	Red Maple	Scarlet Oak
Chestnut Oak	Yellow Poplar	Pignut Hickory
Dogwood	Black Oak	Yellow Poplar
Ironwood	American Beech	Northern Red Oak
Sassafras	Sassafras	Red Maple
	Basswood	Sugar Maple
	Bitternut Hickory	Bitternut Hickory
	Scarlet Oak	

History

This tract consists of portions of the Carlson acquisition (purchased from Ruth Carlson in 2002) and land purchased from Clyde and Helen Burch in 1974.

Past management on the Carlson area included TSI in 1974. A harvest was conducted in 1985 along with follow up TSI in 1991.

An inventory was completed for this tract on February 2010. 29 points were conducted over 83 acres (1 point per 2.86 acres). The findings of this of this inventory are highlighted in this report.

Landscape Context
This land purchase joined existing blocks of the Morgan-Monroe State Forest, so closed canopy forest is prevalent. Much of the surrounding landscape is also managed by Fish and Wildlife for the Army Corp of Engineers. Land types include closed canopy forest, open water, and floodplains. Agricultural fields and houses dot the landscape.

Topography, Geology and Hydrology
The tract consists of a main ridge that slopes towards the southern boundary of the tract and splits into two fingers. East and west facing slopes are most common. Ephemeral and unmapped intermittent drainages move surface water toward Goodley Branch which drains into North Fork Salt of the Monroe Reservoir. The underlying geology of this area is most likely a combination of siltstone, shale, and sandstone.

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 southern bottomlands. 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. This soil holds a 95 site index.

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.

Access
There is a well established firelane along Ferris Ridge that extends to the North of the tract. Also, an old road borders to the south.

Boundary
The southern boundary of this tract is a property line with the Army Corp. of Engineers. Carsonite posts marking line are located at elevation points along this south line. The rest of the tract is surrounded by State property. The northern boundary follows the Ferris Ridge firelane. The eastern boundary follows a drainages south of firelane to property boundary.

Wildlife and Plant Communities
Ongoing wildlife management has been occurring to the south of tract since 1998. Rex Watters, a Wildlife Specialist for the DNR, has bush hogged this area several times to maintain early successional habitat. Some woody wildlife plantings (wild plum, pin oak, shumard oak) were planted in 2005 with varied success due to high flood waters. Future plans for plant food plot strips are being considered. All plans include maintaining this area for early successional habitat. This area floods annually in the spring from the backwaters of the Monroe Reservoir.

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 and Ecological Assessment report that are stored in tract file. The Natural Heritage Database did not report any rare, threatened or endangered species within tract boundaries. However, several sightings of the Timber Rattlesnakes were reported within the area.

Crotalus horridus or the Timber Rattlesnake is a species of special concern in Indiana. This species suffers from triad of obstacles: habitat destruction and fragmentation, sport hunting, forest maturation, and road mortality. Future management activities will most likely employ group selection harvesting. A proposed harvest would increase the tract's horizontal heterogeneity as well as increase viable breeding grounds for the snakes in this area.

<u>Indiana Bat 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.

Table 2. Legacy Trees inventoried February, 2010 on 6371817

Size Classes	Maintenance Level	Inventory	Available For Removal
11"+ DBH	747	1638	891
20"+ DBH	249	208	-41

**** 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 February, 2010 on 6371817

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
5"+ DBH	332	581	508	176	-73
9"+ DBH	249	498	401	152	-97
19"+ DBH	41.5	83	28	-14	-55

Table 4. Cavity Trees inventoried February, 2010 on 6371817

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
7"+ DBH	332	498	1057	725	559
11"+ DBH	249	332	898	649	566
19"+ DBH	41.5	83	327	285	244

Currently this tract is meeting all habitat guidelines except for 20" + DBH legacy trees and 19" + DBH snags. These deficiencies are indicative of the current size classes of tract. As the trees continue to grow and thin themselves, these numbers will increase over time. Although a harvest will most likely reduce the number of live legacy in the 20" + DBH size class below guidelines, it will also thin out the overstocked 11"-19" size classes. This improvement cutting will allow higher quality stems to grow into this larger size class for the next rotation.

Snags should be maintained in the 19" + DBH size class unless they present a safety hazard.

Exotics

Japanese stiltgrass was noted along Ferris Ridge. Treatment along Ferris Ridge is recommended during appropriate months. Following any roadwork, disturbed trails and yards be should seeded promptly to minimize new colonization. Multi-flora rose was noted in several areas across tract. Some spot treatment could occur during marking.

Recreation

This tract does not have any established recreational features. Likely uses of this tract include hunting, hiking, wildlife viewing, and gathering.

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

Table 5. Estimated harvest/leave volume (Doyle) from February 2010 inventory of 6371817

Species	Harvest	Leave	Total
White Oak	13430	147630	161070
Chestnut Oak	27450	83400	110850
Yellow Poplar	30280	21900	52190
Black Oak	33150	16840	49990
Scarlet Oak	19540	28240	47780
Pignut Hickory	2250	29070	31320
Northern Red Oak	0	12300	12300
Bitternut Hickory	0	9140	9140
Red Maple	0	2600	2600
Sugar Maple	0	2290	2290
Totals	**126100**	**353410**	**479530**

Oak-Hickory
Oak-hickory is the most dominant cover type across tract covering the majority of the side slopes and ridgetops. The inventory indicated that this section contained 5,616 BF/ac with 1,351 BF/ac being harvestable and 4,265 BF/ac left as growing stock. There are 96 square feet of basal area per acre and this area is fully stocked (86%).

Currently the stand is dominated by white oak, chestnut oak, scarlet oak, pignut hickory, and black oak. The majority of these species are moderate quality. The understory is dominated by shade tolerant species such as sugar maple and American beech with extremely xeric sites leaving notable amounts oak regeneration (mostly chestnut with some black oak, white oak, and scarlet oak) and pole sized hickory. Stands with inadequate stocking levels or poor quality could benefit from regeneration treatment.

In general, harvest stock is high in black oak, chestnut oak, and scarlet oak. Many of the black oaks are experiencing decline. The chestnut oak could benefit from general thinning to improve spacing to release higher quality stems and improve growing conditions. Moderate to higher quality white oak could be released when able. Regeneration in areas of poor stocking or quality could be implemented across tract where needed.

Mixed Hardwoods

This stratum occupies the lower bottomlands of the tract. The inventory estimated 6,550 BF/acre with 2,327 BF/ac being harvestable and 4,223 BF/ac left as growing stock. Dominant overstory species included yellow poplar, white oak, pignut hickory, and sugar maple. The understory has heavy levels of sugar maple and American beech, although poplar and hickory were also noted in smaller amounts. The regeneration layer is almost completely dominated by American beech, maple, and yellow poplar. This stratum is located along the tract's sideslopes and holds 100 square feet of basal area and is currently fully stocked (100%).

Thinning from above and below to favor higher quality stems is recommended. The thinning objective should focus on removing over mature poplar and releasing higher quality stems.

Summary Tract Silvicultural Prescription and Proposed Activities
Although this area could benefit from a harvest, it is recommended that the stand be reevaluated in 10 years to allow the stand to increase in growth of overall removable volume. Light TSI to release crop trees and vine control in the old canopy gaps would be beneficial. The tract will be ready for a new management guide in 2020.

Proposed Management Activity	*Proposed Date*
Light TSI work	2010/2011
New Inventory/Management Guide	2020

Attachments (in Tract File)

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

To submit a comment on this document, click on the following link:
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