Indiana Department of Natural Resources - Division of Forestry

DRAFT

'RESOURCE MANAGEMENT GUIDE`

State Forest: **Morgan-Monroe** Compartment **16** Tract **12**
Total Tract Acreage: **77** Commercial Acres: **76**
Forester: **Joshua Kush** Date: **April 14, 2011**
Management Cycle End Year**: 2030** Management Cycle Length: **20 years**

Location

This tract is located in Sections 29&30, T9N, R1E, of Monroe County, Indiana. It is east of Bloomington, IN. approximately 0.8 miles on S.R. 45N onto to N Mt. Gilead Road and turning onto E. Deckard Road. Access to the tract is off a gravel road that lies northwest of the tract's boundary. E. Deckard Road is part of the west boundary of the tract.

General Description

This tract is 77 acres of predominantly mixed hardwoods. Three dominant timber stand types are present: Oak-Hickory, mixed hardwoods and mixed pine. One of the 2 pine stands within the tract is a 10 acre plantation of mostly stagnant Red Pine with emerging mixed hardwoods. The other pine stand is quality White Pine that resides in the bottomlands adjacent to and proceeding into Tract 22. The Oak-Hickory stands are approaching maturity with many large quality individuals present. The tract as a whole is overstocked at 137%. Roadways along the tract's boundary and entry into the tract restrict contribute to the 1 acre of noncommercial forest land. The 2010 field inventory is characterized in Table 1.

Table 1. Species composition by relative abundance from June 2010 inventory on 6371612

Sawtimber	**Poletimber**	**Regeneration**
White Oak	Red Pine	American Beech
Yellow Poplar	Sugar Maple	Sugar Maple
Black Oak	Sassafras	Sassafras
Northern Red Oak	White Oak	Yellow Poplar
Sugar Maple	Yellow Poplar	
American Beech	American Beech	
White Ash	White Ash	
Bitternut Hickory	Largetooth Aspen	
American Sycamore	Pignut Hickory	
Pignut Hickory	Red Maple	
Basswood	Red Oak	
Largetooth Aspen	Black Oak	
Scarlet Oak	Shagbark Hickory	
Shagbark Hickory	Basswood	
Red Maple	Blackgum	
Red Pine	Red Elm	
Eastern White Pine		
Black cherry		
Sassafras		
Black Walnut		

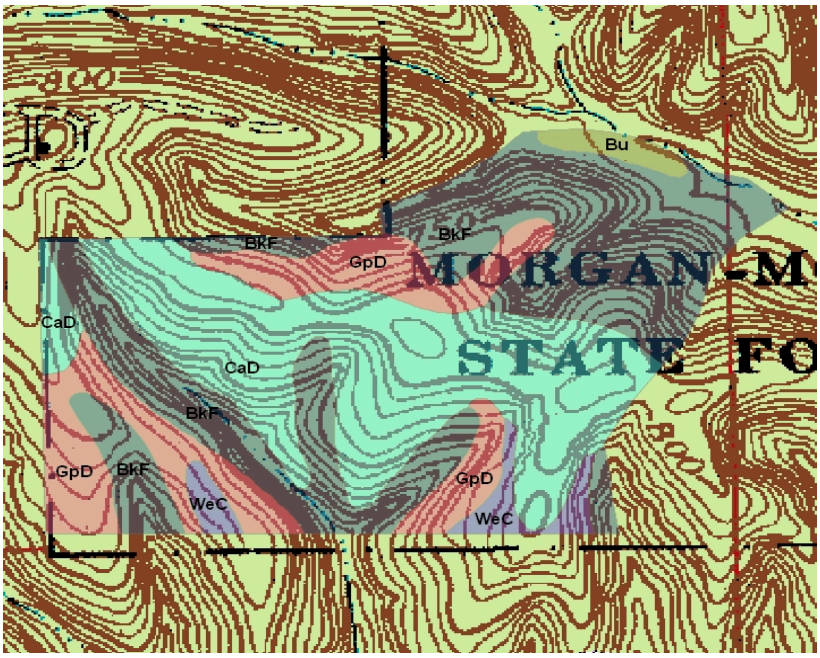
History
This area of State Forest was acquired from a private land owner in 1950. One recorded timber sale was sold to Crone Lumber in 1978 of 60,950BF. A survey request was sent by Forester Vadas in 1987. The SW1/4 of Section 30 was surveyed by DNR Surveyor Bob Vollmer to clarify the north south line along the western boundary. Following the survey completion in May of 1987, the survey plat was also sent to Philip Boshears and filed with the Monroe County Surveyor as well as in the MC16 T12 tract file.

An inventory was completed in 1994 by Forester Vadas determining a growing stock of 311,247 Board Feet and harvestable stock of 274,607 Board Feet. A timber harvest was planned but was not marked or carried out due to access issues. Boundary line work was also completed by Forester Vadas in 1995 of 3/8 mile on the southern line and ¼ mile on the western part of the tract.

An inventory was completed in June 2010 by Forester Joshua Kush. The results of which are highlighted in the report below.

Landscape Context
The most dominant cover type on the landscape is closed canopy forest. This tract is a mixed hardwood forest with some pine plantations. The diversity of the hardwood species and softwood (pine) species noted above in Table 1 create great potential for the advancement of wildlife & forest resources. Modest coniferous stocking is mostly lacking in most State Forest holdings. This tract is a modest sized outholding of State Forest with numerous residential developments from the outer edges of Bloomington to the west and south. As such this tract provides a mosaic of forest and wildlife habitats within a modest distance from suburban and urban communities.

Topography, Geology and Hydrology
This tract is made up of short northeast and southwest facing finger ridges. Small ephemeral drainages direct water flow into the mapped intermittent streams that drain into the perennial stream that is named Kerr Creek. Kerr Creek eventually drains into Stephens Creek that flows into the headwaters of Monroe Reservoir. The underlying geology of this tract is most likely a combination of shale, sandstone, and siltstone parent material.



Soils

BkF Berks-Weikert complex 25 – 75% slopes Sandstone-Bedrock at 38".
SI – 70 Well drained. Most areas in woodland. Soil suited to trees. Severely limited to dwellings with basements due to slope and bedrock.
Brown Moderate, severe, moderate, slight.

Bu Burnside silt loam. Nearly level. Sandstone-Bedrock at 44".
SI – 95 Well drained. Many areas pasture or crops. Soil suited to trees. Limited for building sites due to flooding. Absorption fields limited.
Orange Slight, Slight, Slight, Slight.

CaD Caneyville silt loam 12 – 18% slope Limestone-bedrock at 35".
SI – 70 Well drained. Woodland best use for this soil. Soil suited to trees. Severely limited for dwellings due to steepness of slope
Purple Moderate, Moderate, Slight, Slight.

GpD Gilpin silt loam 12 – 18 % slope Sandstone-bedrock at 36".
SI – 73 Well drained. Most areas wooded. Soil well suited to trees. Erosion major hazard. Permeability moderate. Severely limited to buildings and absorption fields.
Blue Slight, Slight, Slight, Slight.

WeC Wellston-Gilpin silt loam 6 – 12% slopes Sandstone-shale bedrock
SI –71 at 50". This is a moderately sloping well drained soil found in most woodland areas on narrow ridgetops and sideslopes. This soil is well suited for tree growth as long as preferred species are not outcompeted. Severely limited to building sites due to steepness of slopes.
Green Slight, Slight, Slight, Slight.

(Building skid trails on the contour and constructing waterbars are measures taken to reduce erosion potential. SI = Site Index.)

Access

This tract is modestly accessible via a county gravelled road to the northwest part of the boundary. Legal access to this tract was confirmed by the Quarter Section (30) survey completed by Vollmer in 1987 which showed the true property line coexisting with the old roadbed on the west boundary. A modest stream crossing and new skidtrail is planned to access the central tract ridgetop. This proposed skidtrail will allow access into the center of Tract 12 as well as into Tract 13. Access into both tracts will provide the public easier access into the center of both Tracts.

Boundary

This tract is surrounded by private property on the north, west and south portions. The east boundary is State Forest Tract 22. Boundaries were first marked in 1987, have been kept up to date and are planned to be remarked FY2010.

Wildlife

A Natural Heritage Database search was conducted and is in the tract file. This database mentioned reports of trailing arbutus, a locally rare plant, in nearby tracts. This species tends to be found on drier aspects that tend to have oak overstories. No other wildlife species of high concern were noted. If any endangered or threatened species are located they will be documented, protected and buffered from any resource management activity. The tract does provide a variety of habitats for many species. Sightings of white-tailed deer, chipmunks, and numerous songbirds were noted in the tract. This forested site with its larger oak canopies provides steady & annual food sources in the form of hard and soft mast. Permanent water sources are available from nearby streams and from a small pond on an adjacent neighboring private property.

<u>Indiana Bat Habitat 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 in June of 2010 on 6371612

Size Classes	Maintenance Level	Inventory	Available For Removal
11"+ DBH	693	2202	1509
20"+ DBH	231	644	413

**** 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 in June of 2010 on 6371612

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
5"+ DBH	308	539	257	-51	-282
9"+ DBH	231	462	122	-109	-340
19"+ DBH	38.5	77	0	-39	-77

Table 4. Cavity Trees inventoried in June of 2010 on 6371612

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
7"+ DBH	308	462	102	-206	-360
11"+ DBH	231	308	53	-178	-255
19"+ DBH	38.5	77	0	-39	-77

Currently this tract is showing a small deficiency in snags. This is not uncommon in many forested stands as dead timber tends to be ephemeral and fall or blow down quickly. As this stand continues to grow, additional stems will advance into the next size class and contribute to the total snag count through competition. Timber Stand Improvement (TSI) work in post harvest treatments can also improve these figures.

Communities

Upon reviewing the Heritage Database Review no known communities have been found within the tract. Trailing Arbutus has been noted in close proximity and will be looked for during further resource management activities. Any Rare, Threatened and Endangered species that are discovered will be documented, protected and buffered from resource management practices. As there are a fair amount of coniferous stems located within the tract an effort will be made to retain those portions of existing stands that are deemed to be of vigorous growth and value for wildlife species.

Recreation

This tract does not contain any established recreational facilities. Recreational trails that originate from private lands do exist into the tract that provides hiking enjoyment through the four seasons. The proposed creation of a skidtrail access into the tract's major ridge as well as the creation of a public parking area along the west road boundary would be key longterm improvements for the public to enjoy the property.

Cultural

No cultural resource sites are known to occur within the tract.

Tract Subdivision Description and Silvicultural Prescription

Harvest/Leave Report Summary

Currently, this tract averages 7,849 BF/A with 4,313 BF/A being designated for harvest and 5,315 BF/A designated as growing stock. The tract has 137 square feet of basal area per acre and is presently overstocked at 123%. The breakdown for the current inventory in 2010 is in Table 5 below.

Table 5. Harvest/Leave summary based on June 2010 inventory in 6371612

Species	Harvest Stock	Growing Stock	Total
White Oak	24420	131380	155800
Yellow Poplar	75780	74110	149890
Black Oak	73470	35170	108640
Northern Red Oak	46090	54500	100590
Sugar Maple	32360	22820	55180
American Beech	16450	8180	24620
White Ash	17510	5190	22700
Bitternut Hickory	3680	16060	19750
American Sycamore	2560	16060	18620
Pignut Hickory	1900	11890	13790
Largetooth Aspen	13000	0	13000
Basswood	9140	780	9920
Scarlet Oak	6610	3070	9680
Shagbark Hickory	0	9230	9230
Red Maple	2730	5180	7910
Red Pine	6380	780	7160
Eastern White Pine	0	5310	5310
Black Cherry	0	3600	3600
Sassafras	0	2970	2970
Black Walnut	0	2950	2950
Total	**332080**	**409230**	**741310**
Total Per Acre	**4313**	**5315**	**9628**

Summary Tract Silvicultural Prescription and Proposed Activities

This tract's timber resource contains stands of quality and mature mixed hardwood timber with a strong mixed oak component. There are a couple of stands in coniferous timber present which includes a 10 acre plantation of poletimber-SST Red Pine and a smaller stand of MST-LST White Pine that extends into Tract 22. Overall, the tract is predominately stocked in WHO, YEP, BLO & REO timber. Quality is excellent in the WHO and BLO species groups with good vigor and size. The selective harvest in 1978 removed 60,950 BF and the harvested area is thriving. Access issues were resolved in 1987 following the tract survey. Forest growth and time have left sizable hardwood timber at a mature age with an understory ready to be released.

Overall, the tract should be prescribed a free thin to improve croptree spacing. Free thinning is generally applied to stands that have a wide diversity of species and size classes. Different silvicultural cuttings are applied to stands usually by a single tree selection marking method. Oak and hickory stands would be prescribed an improvement cutting to release higher quality stems. Selection thinning would be applied to individual mature trees to release adjacent

vigorous croptrees that are in the forest canopy. Large crowned & vigorous oaks and hickories may be retained for seed production in a shelterwood cutting to stimulate advance regeneration for regeneration of the stand at the next cutting cycle. The large Red Pine plantation is currently stagnant in growth with compact spacing, small crowns, and highly overstocked. This plantation will be prescribed a group selection harvest to convert the stand to mixed hardwoods. Portions of the red pine that are of good vigor may be retained for wildlife value. The larger sawtimber White Pine in the bottomland will be thinned to release the better quality, formed & vigorous individuals. Other areas within the tract that have poor stocking, heavy fire damage or disease may be prescribed a group selection regeneration harvest. Overall, the proposed harvest in this tract will allow additional sunlight to penetrate the forest floor which will simulate the development of new ground flora, subsequently increasing nesting and foraging habitat for wildlife. This is essential for game and non-game species as well as continued longterm forest development.

Based on the species and quality of the timber resource within this tract an estimated harvest of up to 300,000 BF is possible. A cutting cycle of 20 years is advised due to the quality and size of the residual timber stand. A combined tract timber sale with Tract 22 is planned for the spring of 2011. Preharvest TSI is prescribed for the north central portion of the tract to remove grapevines. This management practices will occur early in the year of 2011. Post-harvest TSI is also planned following the harvest to complete regeneration openings and deaden timber that was not removed in the harvest operation. This post harvest TSI will increase snags per acre while diversifying diameter distributions of both snags and growing stock trees.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
DHPA Review	Spring 2011
Preharvest Road Construction	Spring 2011
Exotic Control/ grapevineTSI	Spring 2011
Boundary Remarking	Spring 2011
Timber Marking & Sale	Spring-Summer 2011
Post Harvest TSI	2011-2013
Tract Reinventory & Guide	2030

Attachments (in Tract File)

Gingrich Stocking Charts
Ecological Resource Review
Natural Heritage Database Review
Wildlife Habitat Review
Soil Map
TCruise Reports

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 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.