Indiana Department of Natural Resources - Division of Forestry

RESOURCE MANAGEMENT GUIDE

DRAFT

State Forest Morgan Monroe **Compartment** 14 **Tract** 20
Forester Joshua Kush **Date** June 21, 2010
Management Cycle End Year 2040 **Management Cycle Length** 20 years

Location

This tract is located in Section 1&12, T10N, R1E, Brown County, Indiana. It is approximately 14 miles on 45N of Bloomington IN to a left on Bear Creek Road 5 miles. Tract is highly accessible with Bear Creek Road being the south and west boundary.

General Description

This 35 acre tract is predominately mixed hardwoods with possible limited access to 3 acres of the tract. Overstory hardwoods range from med to large sawtimber size classes. This tract holds a large amount of Chestnut Oak, Yellow Poplar, and White Oak timber. The southern part of the tract contains a modest population of invasive Japanese honeysuckle. Commercial forest on this tract is restricted to 34 acres as the landing and cultural site decreased the harvestable area by 1 acre. The 2010 field inventory identifies the following species in the tract's timber strata with the tree species listed in order by dominance.

Table 1. Species composition by relative abundance from June 2010 inventory on 6371420

Overstory	**Understory**	**Regeneration**
Chestnut Oak	Sugar Maple	American Beech
White Oak	Yellow Poplar	Sugar Maple
Yellow Poplar	American Beech	Yellow Poplar
Black Walnut	Sassafras	Sassafras
Sassafras	Chestnut oak	Red Maple
Sugar Maple	Redbud	White Ash
Northern Red Oak	Pignut Hickory	Red Elm
Black Oak	Red Maple	Hackberry
Red Maple	Basswood	Bitternut Hickory
Bitternut Hickory	White Oak	
American Beech	White Ash	
White Ash	Black Oak	
Scarlet Oak	Red Elm	
Shagbark Hickory		
Red Elm		

History

Forester David Williams completed an inventory on 10-22-74. He found 2698 bf/ac residual and harvesting 3537 bf/ac.

Forester James Ackard completed a timber sale on 12-6-1974 of 40,080 bf. He sold 260 trees to Hope Hardwoods totaling 60.50 mbf.

TSI was completed on the tract by CETA workers during July of 1975.

Forester Lee Eckart ran the east boundary adjacent to the Keith Stillers property on July 15, 1983.

Forester Unversaw completed storm damage recon on 5-17-90. The recon showed moderate and scattered damage. The tract was not recommended for a salvage sale due to scattered damage.

The most current 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. Pockets of Sassafras and Yellow poplar exist throughout the tract. Black walnut is prevalent along the southern ridge line. Quality is variable within the tract with Chestnut Oak comprising the most prominent standing volume species. In some areas scattered blowdown from the 90's has allowed natural release to stems.

Topography, Geology and Hydrology

This tract is made up of short north and south facing finger ridges. Small ephemeral drainages direct water flow into a mapped intermittent stream near the South East and East boundary. The soils within this tract are most likely derived from a combination shale, sand, and siltstone bedrock complex.

Soils

WeC2-Wellston-Gilpin silt loams, 6 to 20 % slopes, eroded (4acres)
This soil is found along the tract's ridges. It is formed from loess over loamy residuum over shale. It is well drained with a moderate available water holding capacity. In general the soil is well suited to trees. Only slight equipment limitations exist. Wellston-Gilpin has a SI of 71 in northern red oak, a land capability class of IVe, and a woodland ordination symbol of 4A.

HkF-Hickory silt loam, 20 to 70 % slopes.

This moderately steep to very steep, deep well drained solid is on side slopes in the uplands. The Hickory soil has a high available water capacity and is moderately permeable. In general this soil is well suited to woodlands. Limitations are minor but entails all Best Management Practices be applied before, during, and after harvest to mitigate limitations. Land capability classification is Vlle, and a woodland ordination symbol of 5R.

BgF-Berks-Trevlac-Wellston complex, 20 – 70% slopes (20 acres)
This Complex is found on side slopes along the tract's main ridge. It is formed from a combination of siltstone interbedded with sandstone and shale. It has a very low available water capacity and is moderately rapidly permeable. This soil is well suited to woodlands, and has some limitations to harvest. Employing standard BMP regulations such as waterbars or contour shaping for haul roads mitigate these limitations. Other special logging methods, such as uphill yarding with cables can be beneficial when using rubber tired or crawler tractors. This Complex holds a SI of 70 in northern red oak, a land capability class of VIIe, and woodland ordination symbol of 4R.

Access
This tract is accessible from Bear Creek Road and makes up the southern and west tract boundary.

Boundary
The southwestern and western boundaries of the tract is Bear Creek Road. The east and southern boundaries are painted property boundaries. The boundaries are scheduled to be remarked in Fiscal Year 2010-11.

Wildlife

The Kirtland's Snake (Clonophis kirtlandii) was sighted near this tract in 1997.
The Kirtland's Snake is on the Indiana endangered species list. This snake is a reclusive reptile that lives in grassy areas and stays under objects or underground. It's main food sources are earthworms and slugs. Sighted near the tract on August 19, 1999 is the Timber Rattlesnake (Crotalus horridus).

The tract does provide a variety of habitats for many species. Sightings of whitetail deer, chipmunks, and numerous songbirds were noted on the tract. The forest provides a steady food source in the form of hard and soft mast. Water resources are available from streams and from a small pond on neighboring 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 2010 on 6371420

Size Classes	Maintenance Level	Inventory	Available For Removal
11"+ DBH	315	656	341
20"+ DBH	105	204	99

**** 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 in June 2010 on 6371420

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
5"+ DBH	140	245	198	58	-47
9"+ DBH	105	210	16	-89	-194
19"+ DBH	17.5	35	7	-11	-28

Table 4. Cavity Trees inventoried in June 2010 on 6371420

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
7"+ DBH	140	210	0	-140	-210
11"+ DBH	105	140	0	-105	-140
19"+ DBH	17.5	35	0	-18	-35

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.

Currently this tract is showing deficiency in snags in the 9" + and 19"+ diameter classes. Cavity trees are also showing deficiencies in all three size classes. This may be due to the time of inventory (June) when cavity observation is impeded by leaf cover. As this stand continues to grow, stems will advance into the next size class and contribute to the total snag/cavity count through natural stem mortality. Post harvest Timber Stand Improvement work can also be applied to improve these figures.

Communities

The Natural Heritage Database indicates no records of RTE's (rare, threatened or endangered) species within this tract however there are several records nearby. The following records nearby are from a Natural Heritage Database review dated February 16, 2010: Kirtland's snake 10/06/1997-Timber Rattlesnake 08/19/1999. If these species are noted within the tract their location will be recorded and information will be submitted to the NHD.

Invasive Exotic species

There are patches of bush honeysuckles documented along the tract's southern ridge line. The recommended treatment of bush honeysuckle is foliar spray of Garlon 3A (3-5%).

Throughout the southern ridge line grapevines are also prevalent and they will be treated when croptrees are identified.

Recreation
This tract does not contain any established recreational facilities. Unmapped trails do exist in the tract that may provide recreational hiking throughout the four seasons.

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. Harvest/Leave summary based on June 2010 inventory on 6371420 (Volumes ranking from high to low)

Species	Harvest Stock	Growing Stock	Total
White Oak	6590	65160	**71750**
Chestnut Oak	15530	48180	**63710**
Northern Red Oak	10410	31550	**41960**
Yellow Poplar	18250	21410	**39660**
Black Oak	6830	24420	**31250**
Sugar Maple	5200	7810	**13010**
Sassafras	6440	2680	**9120**
Basswood	4640	3780	**8420**
White Ash	8200	0	**8200**
American Beech	0	8180	**8180**
Red Maple	7770	0	**7770**
Scarlet Oak	4690	1780	**6470**
Black Walnut	610	4260	**4870**
Bitternut Hickory	1470	1310	**2780**
Shagbark Hickory	0	1660	**1660**
Red Elm	0	470	**470**
Total	96630	222650	**319280**
Total Per Acre	2761	6361	**9122**

Currently, this tract averages 9,122 BF/AC with 2,760 BF/AC being designated for harvest and 6,360 BF/AC designated as growing stock. Overall, the tract has 109 square

feet of basal area per acre and is over stocked at 101%. This data suggests that the tract would benefit from forest management as it is currently over stocked.

Summary Tract Silvicultural Prescription and Proposed Activities

This tract is primarily composed of a mixed hardwood stand component. The prominent sawtimber species on the tract are Chestnut Oak, White Oak and Yellow Poplar. By volume Chestnut Oak has the most dominant standing Board foot volume at 60.52 MBF. The understory regeneration layers are dominated with Beech and Maple with some advance regeneration seedlings of Poplar, Oak, and Hickory. Due to this preponderance Beech and Maple layer retaining an modest oak component in the overstory utilizing an improvement cutting by single tree selection would be the best prescription followed by an understory treatment to encourage higher advance Oak /Hickory regeneration. Singletree selection will be used to remove poorly formed, low vigor and mature stems as well as to improve the spacing of selected croptrees. This would increase forest productivity. The southern part of the tract has quality Poplar and some Walnut timber in the midstory, here a light thinning will be prescribed to increase the quality of Black Walnut and release the Poplar. Small group selection openings will be established in poor quality stands or those stands that have mature yet declining in vigor trees. One area noted within the tract was some declining yet mature Sassafras which will be removed in a group selection. This small group selection opening will provide early successional habitat with benefits to birds, deer, and turkey. Treatment of the dense bush honeysuckle understory will be completed in the southern part of the tract along the ridge line. With our Indiana bat guidelines showing a deficiency in 9-19" snags, a post timber stand improvement plan will be established to release croptrees that are not released during the harvest process. Areas where midstory release will benefit valued species will also be incorporated into this post TSI plan. This tract is proposed to be marked and sold during the 2010-11 Fiscal Year. Harvest yields from this tract are estimated at 94,000 BF. As this tract has received little to no active management since the 1970's the timber resource will greatly benefit from additional forest management. Boundary remarking will completed in FY2010-11 prior to the proposed harvest. This tract will be up for reinventory and a new management guide in 2030.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
DHPA Review	Winter 2010-Spring 2011
Timber Marking & Sale	Winter 2010-Spring 2011
Exotic Control/TSI	Spring 2011
Boundary Remarking	Spring 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

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