

# Indiana Department of Natural Resources – Division of Forestry

## Draft

### Resource Management Guide

#### Compartment 5 Tract 6

**State Forest:** Morgan-Monroe

**Tract Acreage:** 61

**Forester:** Ramey / Jones

**Management Cycle End Year:** 2030

**Tract:** 6370506

**Commercial Acreage:** 61

**Date:** September 28, 2015

**Management Cycle Length:** 15

#### **Location:**

Tract 6370506 is located in Monroe County, Benton Township, Section(s) 4 – T 10 N – R 1 E. It is approximately .5 miles north of Forest Headquarters and located west of Main Forest road .

#### **General Description:**

Most of the tract's 61 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include mixed hardwood.

There is no known harvest record for this tract while under state ownership. This is due to historic pre-State Forest land uses and the lack of merchantable harvest volume when inventoried in 1975. This tract is located with the property safety zone area and relatively closed to the Mason Ridge campground. There are many declining overstory trees and evidence of scattered windthrow throughout the tract. Overall the timber quality within this tract is good and consists mainly of medium to large sawtimber size class. American beech and red/sugar maples dominate the understory and mid canopy.

#### **History:**

- 1930 - Acquisition
- 1938 - Tree Planting CCC Jack pine
- 1975 - Inventory/Cruising
- 1976 - Miscellaneous – cutting Locust posts
- 2015 - Inventory/Cruising
- 2015 - Resource Management Guide

#### **Landscape Context:**

State forest completely surrounds the tract is predominantly Closed-canopy deciduous forest.

Other minor cover/habitat types present include early successional forest (< 20 years old) and pine/conifer plantations.

## **Topography, Geology, Hydrology:**

The general topography of this region consists of unglaciated, sharply dissected hills, narrow ridges and valleys. The underlying bedrock is Mississippian sandstone, shale, and siltstone. This tract lies within the Little Indian Creek subwatershed. Water resources within this hydrologic boundary are part of the Butler Creek-White River watershed.

Riparian features (intermittent streams) are present on portions of the tract. General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the *Indiana Logging and Forestry Best Management Practices Field Guide*.

## **Soils:**

Typical soils in this area are moderately drained to well drained soils that formed in residuum (formed in place on bedrock). A thin layer of loess covers some of these soils. The major soils in this tract are listed below.

### BkF- Berks-Weikert complex, 25 to 75 percent slopes

This complex consists of steep and very steep, moderately deep and shallow, well drained soils on side slopes of the uplands. Erosion hazard, equipment limitations, and seedling mortality are concerns in management due to slope and depth to bedrock. These factors should be considered when planning management activities and implementing Best Management Practices for Water Quality. This complex has a site index of 70 for northern red and black oak.

### BdB- Bedford silt loam, 2 to 6 percent slopes

This gently sloping, deep, moderately well drained soil is on uplands. There is a fragipan at 1.5-3.5 feet that can restrict root penetration. It is well suited to trees and has a site index of 70 for white oak and 90 for yellow poplar.

### WmC- Wellston-Gilpin silt loams, 6 to 20 percent slopes

These moderately sloping to moderately steep, well drained soils are on side slopes and ridgetops in the uplands. They are well suited to trees. This complex has a site index for northern red oak of 71 in the Wellston and 80 in the Gilpin.

## **Access:**

This tract is accessible via Magoose firelane road. The gate is approximately .5 miles north of Forest Headquarters and west of Main Forest road. Access within the tract is good.

## **Boundary:**

This tract has no adjacent private ownerships. The tract boundary is defined by other State Forest tracts. The northeast edge of the tract borders Magoose firelane road, and the northwest and south tract boundaries are defined by steep ravines and an intermittent creek. The east edge of the tract borders the property's utility line corridor and is parallel to the Main Forest road.

## Wildlife:

A prevalence of wildlife resources are found on this tract. This tract contains diverse vegetation conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- scattered mixed hardwood stands
- riparian areas

Hard mast trees such as oaks, hickories, and American beech provide food source to squirrels, turkey, and white-tailed deer. Canopy gaps are varied in size but all present similar, dense vegetation that favors wildlife preferring this habitat structure. Such vegetative species include sassafras, grapevine, and other early successional shrubs.

Snags (standing dead or dying trees), are an important wildlife habitat features in Indiana's forests. They are used by a wide range of species as essential habitat features for foraging activity, nest/den sites, decomposers (e.g., fungi and invertebrates), bird perching and bat roosting. Additionally, snags are an important contributor to the future pool of downed woody material. Downed woody debris provides habitat and protection for many species and contributes to healthy soils.

Forest wildlife species depend on live trees for shelter, escape cover, roosting and as a direct (e.g., mast, foliage) or indirect (e.g., foraging substrate) food resource. The retention of live trees with certain characteristics (legacy trees) is of particular concern to habitat specialists such as species of conservation need like the Indiana bat.

In concert with various agencies and organizations, the DoF has developed compartment level guidelines for two important wildlife structural habitat features: **Forest Snag Density, Preferred Live Roost Trees**. Current assessments indicate the abundance of these habitat features meet or exceed recommended base levels in all diameter classes. The prescribed management will maintain or enhance the relative abundance of these features.

## Communities:

Listed below are the general community types found in this tract.

### *Dry upland forest*

Dry upland forests occur on steep ridges at the crests of river bluffs and at the edges of escarpments throughout Indiana, but are most common on bedrock outcrops in the Shawnee Hills and Highland Region. The soils are very dry and poorly developed because of steep, exposed slopes or because of bedrock, gravel, or sand at or near the surface. In a dry upland community, trees tend to grow slowly, but contain a well-developed understory and groundlayer.

Dominant trees in this community include chestnut oak, scarlet oak, post oak, black oak, and red maple. Characteristic plants include pignut hickory, broom moss, and pincushion moss. Ground skinks, five-lined skinks, fence lizards, and summer tanager are some of the animals you would find.

### *Dry-mesic upland forest*

Dry-mesic upland forests are one of the most prevalent forest communities in Indiana. This community occupies an intermediate position along a soil moisture gradient. Trees grow well, but the canopy is usually more open than in mesic forests.

The dominant trees found are white oak, red oak, and black oak. Other plants and animals characteristic of this community are: shagbark hickory, mockernut hickory, flowering dogwood, hop hornbeam, blackhaw, broad-headed skink, white-footed mouse, eastern chipmunk.

### ***Mesic upland forest***

Mesic upland forests are found throughout the state, but are most common in hilly regions where slopes and aspect reduce excessive evaporation and wildfire. They generally occur on north-facing slopes, in ravines, and on level soil with moderately high available moisture. Ideal soil moisture conditions tend to result in dense overstories and, in undisturbed stands, an understory of shade-tolerant species.

Sugar maple, American beech, yellow-poplar, red oak, and basswood are the typical dominant trees in a mesic upland forest. Other plants that are found in this community include pawpaw, Ohio buckeye, blue beech, bitternut hickory, red mulberry, and bladdernut. Tiger salamanders, wood frogs, and wood thrushes are some animals commonly found.

A Natural Heritage Database review was completed for this tract in 9/18/15. If Rare, Threatened or Endangered (RTE) 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.

### **Exotic and Invasive Species:**

Below is a list of invasive species identified during the inventory. These species are common and widespread throughout the region. If identified, priority control should be given to ailanthus and bush honeysuckle. These would be treated as soon as practical, with individuals and smaller areas being targeted if needed. A broader and/or situational approach should be taken with the species noted below. Control measures for these species could be warranted for larger scale road & trailside treatment projects, planned regeneration openings, pre or post-harvest TSI projects, etc. Post-harvest control of stiltgrass is most easily accomplished through successful seeding of fescue or other highly competitive non-invasive seeding mixture.

- Japanese Stiltgrass
- Multiflora Rose

### **Recreation:**

Although no permanently established recreation trails or developments are present in this tract, there are still several recreational opportunities.

Hunting is permitted on State Forest property and this area also offers opportunities for certain types of gathering and wildlife viewing.

This area is located within the safety zone and posted for no hunting due to nearby recreational and facility safety concerns.

### **Cultural:**

This tract was reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on this tract but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

## **Tract Description and Silvicultural Prescription:**

The current forest resource inventory was completed on 9/14/15 by Forester Ramey. A summary of the estimated tract inventory results are located in the table below.

### **Tract Summary Data**

Total Trees/Ac. = 89 **Trees/Ac.**  
 BA/A = 124 **Ft<sup>2</sup>/Ac.**  
 Present Volume = 13,139 **BF/Ac.**

Overall % Stocking = 96% **Stocking**  
 Sawtimber Trees/Ac. = 54 **Trees/Ac.**  
 Harvest Volume = 2,500-3,000 **Bd. Ft. /Ac.**

<b>SPECIES</b>	<b># of Sawtimber Trees</b>	<b>Total Bd. Ft.</b>
Chestnut Oak	831	184,190
White Oak	512	149,850
Black Oak	448	126,440
Yellow Poplar	234	96,510
Sugar Maple	331	45,210
Northern Red Oak	44	34,930
Scarlet Oak	151	34,020
Pignut Hickory	92	22,590
Shagbark Hickory	88	17,980
White Ash	107	17,490
American Beech	97	15,600
Sassafras	134	13,840
American Elm	86	10,710
Black Cherry	86	9,220
American Sycamore	22	8,960
Black Walnut	39	5,560
Red Maple	55	4,520
Basswood	14	3,870
<b>TOTAL</b>	<b>3,371</b>	<b>801,490</b>

For the purpose of this guide, this tract has only one designated management stand based on the dominance of its oak-hickory cover type. Below is a general tract description and silvicultural prescription.

## **Descriptions**

### **Oak-Hickory/Mixed Hardwood**

The timber type on the north and east slopes is predominantly mature oak-hickory with mixed hardwoods, such as yellow-poplar, sugar maple, white ash, red maple, and American beech interspersed throughout. A mix of diameters are present, but the timber resource consists of a mostly medium to large sawtimber size class. The understory is dominated by beech and maple.

The south and west slopes are dominated with chestnut and scarlet oak. The understory is dense with greenbrier, sassafras, American beech, and red maple. With the exception of some larger individuals lower on the slopes, the timber resource in these areas consists of a mostly poletimber to medium sawtimber size class. Old fire damage is common throughout this cover type.

Overall, oak species account for the majority of the total volume in the tract, with chestnut oak and white oak being the most prevalent.

## **Prescriptions**

This tract is well stocked and a managed timber harvest is prescribed. The following silvicultural prescriptions are recommended.

### **Selection & Improvement/Thinning Cutting**

A combination of selection, improvement and thinning cuttings are prescribed in this tract. The goal is to improve growth and vigor on the highest quality and most vigorous oak, hickory and mixed hardwood stems. This should be accomplished primarily through singletree selection and release thinning. Individual trees targeted for removal should include the following: competing mixed hardwoods; suppressed trees; trees damaged by past fire or grazing; wind-damaged trees; drought-stressed trees; and any other dominant or co-dominant trees that are overtopping or suppressing quality growing stock. The residual stocking in these areas should remain above the B-line (70 - 75 sqft/acre) according to the Gingrich stand density chart for upland hardwoods.

Small group selections may be implemented in areas dominated with poor growing stock, creating a component of young forest and important early successional habitat. Low thinning may also be utilized in denser, even-aged areas with large amounts of suppressed and intermediate trees that are likely to drop out from competition. This method can also be employed to reduce the density of shade tolerant species such as sugar maple, red maple, and American beech in an attempt to establish and promote advanced oak-hickory regeneration.

### **Sanitation Cutting(EAB)**

Emerald Ash Borer has been detected in Indiana State Forests and is killing ash trees throughout the forest. Numerous trees are dying and more are showing signs of EAB infestation. When an infected ash tree dies, the wood quickly starts to breakdown and decay; by the second year following death, the wood is too far degraded to be utilized for commercial wood products. A sanitation harvest is prescribed to utilize ash trees before they die and decay. This prescribed management will also allow ash seed to be captured in the seedbed and new seedlings generated before the loss of seed bearing ash trees to EAB. Many ash trees will not be utilized due to the rapid spread of EAB and mortality of ash across the infested landscape.

## TSI

A Timber Stand Improvement (TSI) is prescribed for 6370506. Work should include the following:

- Grapevine Control – Pre-harvest in potential openings.
- Croptree Release – Post-harvest in openings
- Regeneration Opening Completion – Post-harvest
- Large Snag Creation – Post-harvest as part of opening completion operation
- Coppicing – Post-harvest as part of opening completion operation – limited to young oaks, walnut, yellow-poplar, & black cherry
- Exotic Control – Potential Pre-harvest in openings, Post-harvest as needed

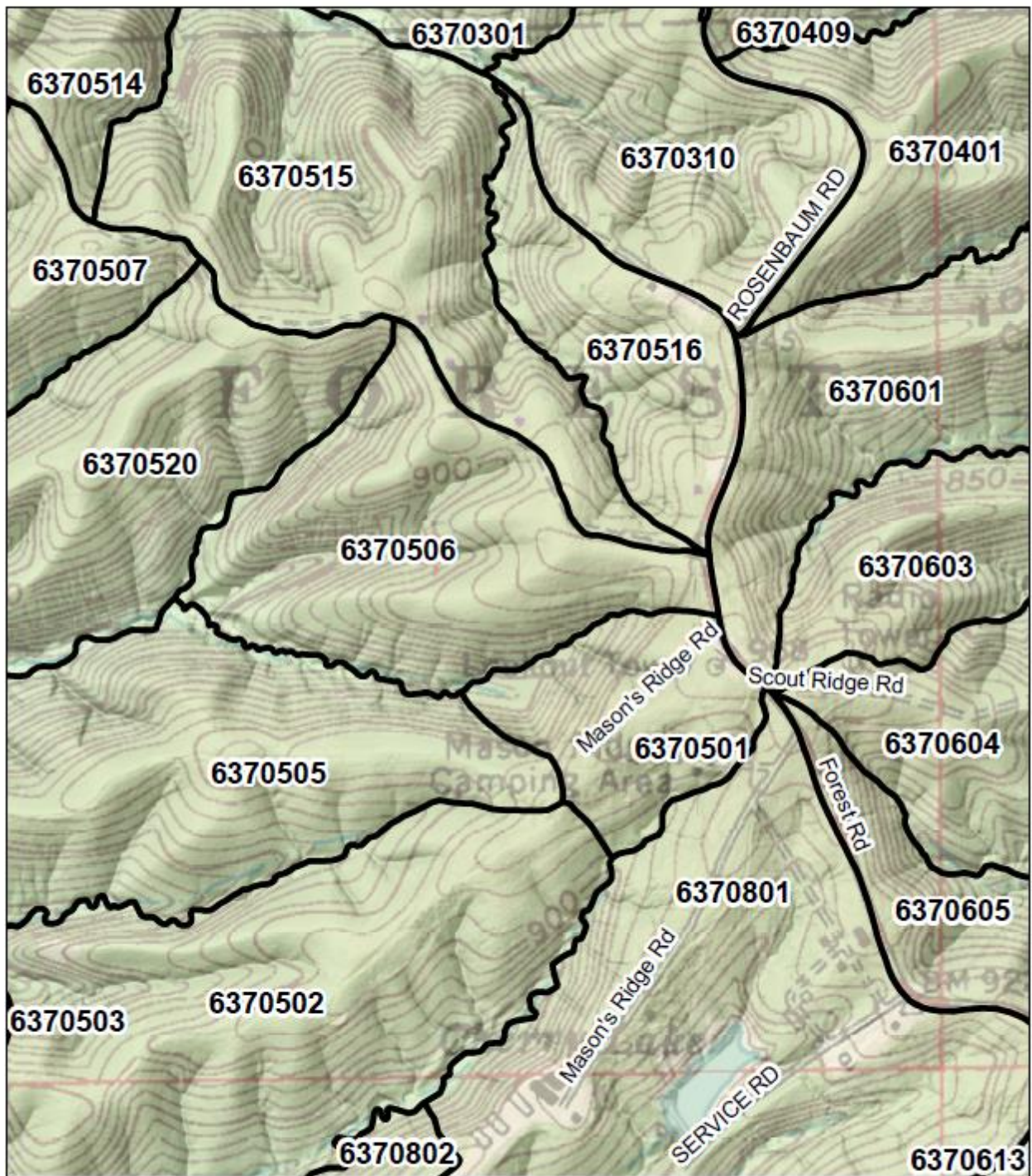
## **Schedule:**

<u>Proposed Management Activity</u>	<u>Proposed Period</u>
Pre-Harvest TSI/ Invasive Treatments	2017-18
Timber Marking	2017-18
Road/Landing Work	2017-18
Timber Sale	2018
Timber Sale Closeout	2018-20
BMP Review	2018-20
Post Harvest TSI/Invasive Treatments	2019-21
Regeneration Success Review	2025
Reinventory and Management Guide	2030

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