Indiana Department of Natural Resources – Division of Forestry
Draft
Resource Management Guide

State Forest: Morgan-Monroe
Tract: 6370106 (Comp 1 Tract 6)
Tract Acreage: 90
Commercial Acreage: 90
Forester: Ramey / Jones
Date: September 24, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 6370106 is located in Morgan County, Washington Township, Section(s) 21 – T 11 N – R 1 E. It is approximately 1.5 miles north of Rosembaum road and west of Hatfield Ridge road.

General Description:

Most of the tract's 90 acres are covered with hardwood forests, especially oak-hickory timber types.
Other type(s) present include mixed hardwood.
The most recent harvest in this tract occurred in 1999.

This was primarily an improvement cut and light thinning which focused on removal of fire damaged and other lower quality trees. There were also 8 regeneration openings created totaling 6.3 acres. TSI was performed in 2002 and focused on cull removal, vine control, and opening completion. As a result, the current overall timber quality within this tract is good and consists mainly of medium sawtimber size class. The old regeneration openings are now 15 years old and contain poletimber size mixed hardwoods.

History:

- 1929,31 - Acquisition
- 1996 - Road Construction / Maintenance on Hatfield road
- 1998 - Inventory/Cruising
- 1999 - Timber Sale sold to Kinser Timber 163,840bf for $39,000.
- 2002 - TSI: Grape vine control
- 2014 - Inventory/Cruising
- 2015 - Resource Management Guide

Landscape Context:

The surrounding landscape near the tract is predominantly Closed-canopy deciduous forest. The primary block of the State Forest lies to the north and east, with a small portion to the west. Private landownerships dominate to the west and south with a mix of developed areas, forest and agricultural lands.

Other minor cover/habitat types present include Closed-canopy deciduous/mixed forest.

Landscape level forest threats include parcelization and development of private land tracts, and introduction of invasive plants that are routinely introduced during home landscaping efforts.

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.

BfG- Berks channery silt loam, 35 to 80 percent slopes
This is a very steep, moderately deep, well drained soil on side slopes and nose slopes of strongly dissected uplands. It is suited to trees. Equipment limitations and erosion hazards are concerns that should be considered during management planning and implementation of Best Management Practices for Water Quality. This soil has a site index of 70 for northern red and black oak.

ZaC- Zanesville silt loam, 6 to 12 percent slopes
This moderately sloping, well drained soil is moderately deep to a fragipan. It is on side slopes of the loess covered uplands. It is suited to trees. The fragipan can limit rooting depth. This soil has a site index of 68 for northern red oak.

GpD- Gilpin silt loam, 12 to 18 percent slopes
This strongly sloping, moderately deep, well drained soil is on convex, dissected uplands. It is well suited to trees. Erosion hazards, equipment limitations, and plant competition are the main management concerns. These should be considered when during management planning and implementation of Best Management Practices for Water Quality. This soil has a site index of 73 for northern red oak and 95 for yellow poplar.

Access:

This tract is accessible via Hatfield Ridge road. The tract is approximately 1 miles north of the intersection of Rosenbaum roads and Hatfield Ridge gate roads. Access within the tract is good.

Boundary:

This tract has no adjacent private ownerships. The tract boundaries adjoin other State Forest tracts and are defined by deep ravines and mapped intermittent streams. The east side borders Hatfield Ridge road.

Wildlife:

This tract contains diverse vegetation and wildlife resources (age, type, structure) conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- scattered mixed hardwood stands
- old regeneration openings
- riparian areas

Hard mast trees such as oaks, hickories, and American beech provide food source to squirrels, turkey, and white-tailed deer. The openings 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 for live roost trees, but is slightly deficient for snag densities in all size classes. It is important to note that these are compartment level guidelines and that even though the estimated tract data does not quite meet all target levels; it is likely that suitable levels are present for this habitat feature in the surrounding landscape. 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.

A Natural Heritage Database review was completed for this tract in September 2015. 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. Priority control should be given to ailanthus and if identified, 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
- Ailanthus

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.

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 *8-2014* by Forester McGuckin. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 166 **Trees/Ac.**
BA/A = 107 **Ft²/Ac.**
Present Volume = 7,560 **BF/Ac.**
Overall % Stocking = 91 **Stocking**
Sawtimber Trees/Ac. = 43 **Trees/Ac.**
Harvest Volume = 1,300-1,700 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
White Oak	1,667	240,270
Black Oak	958	197,460
Scarlet Oak	578	108,080
Yellow Poplar	136	43,850
Northern Red Oak	162	37,430
Pignut Hickory	175	22,900
Sugar Maple	92	12,830
Chestnut Oak	72	11,030
Black Cherry	20	4,220
American Beech	23	2,350
TOTAL	**3,883**	**680,420**

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

Descriptions

Oak-Hickory – 90 acres

The timber type on the north and east slopes is predominantly mature oak-hickory with some 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 white oak and black oak being the most prevalent.

Old Regeneration Openings

There are numerous old regeneration openings dominated with yellow poplar, maples, and sassafras. The majority of yellow poplar regeneration in these openings were found to have modest decline and mortality due to the yellow poplar scale infestation and severe droughts that occurred in the last 5 years. The openings are approximately 15 years old and total roughly 6.3 acres.

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 according to the Gingrich stand density chart for upland hardwoods. This translates to approximately 65 - 70 sqft/acre.

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 the majority of ash trees before they die and decay. 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 6370106. Work should include the following:

- Grapevine Control – Pre-harvest in potential regeneration openings
- Croptree Release – Post-harvest in old regeneration openings
- Regeneration Opening Completion – Post-harvest
- Large Snag Creation – Post-harvest, likely included in opening completion
- Exotic Control – Pre & Post-harvest control of ailanthus likely needed

Schedule:

Proposed Management Activity	*Proposed Period*
Pre-Harvest TSI/ Invasive Treatments	2016-17
Timber Marking	2017
Road/Landing Work	2016-17
Timber Sale	2017
Timber Sale Closeout	2018-19
BMP Review	2019-20
Post Harvest TSI/Invasive Treatments	2019-20
Regeneration Success Review	2023-24
Reinventory and Management Guide	2030

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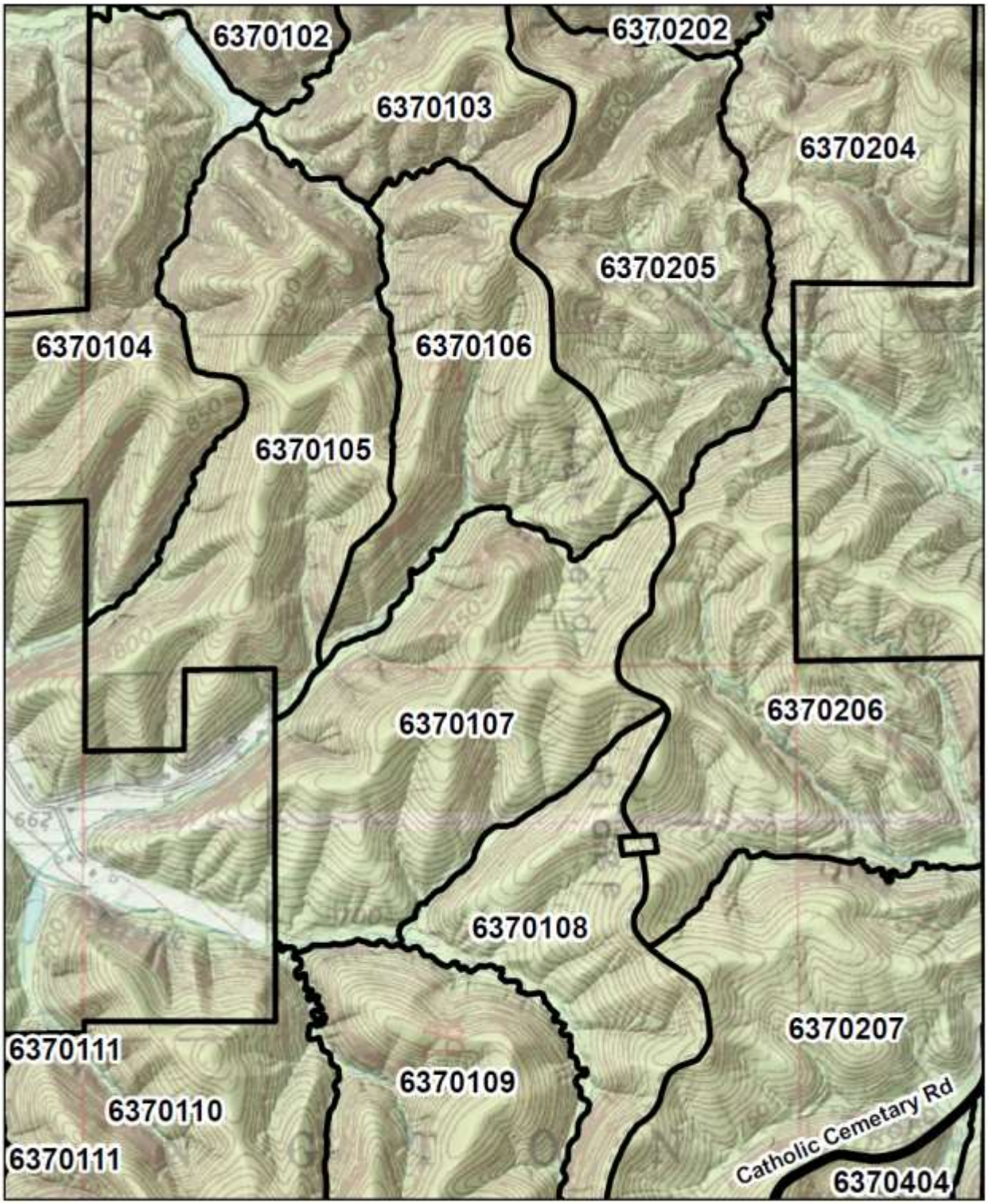
6370106



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