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

State Forest: Morgan-Monroe
Tract: 6370406 Compartment 4 Tract 6
Tract Acreage: 85
Commercial Acreage: 85
Forester: Ramey / Jones
Date: September 25, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 6370406 is located in Morgan County, Washington Township, Section(s) 24,27 – T 11 N – R 1 E. It is approximately 1.2 miles Northeast of Rosenbaum road and is located on Reynolds Ridge road.

General Description:

Most of the tract's 85 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 attributed to poor access.

There are many overstory trees of declining health and evidence of scattered windthrow throughout the tract, resulting in numerous canopy gaps. 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. Over 40% of this tract has slopes in the 35-80% slope range.

History:

- 1941 - Acquisition
- 1967 - Boundary/Survey
- 1987 - Boundary work: marking boundaries
- 1995 – Resource Reconnaissance
- 2001 - Inventory/Cruising
- 2002 - Resource Management Guide
- 2014 - Inventory/Cruising
- 2015 – Boundary work: remarking boundaries
- 2015 - Resource Management Guide

Landscape Context:

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

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 Sand Creek-Indian Creek subwatershed. Water resources within this hydrologic boundary are part of the Indian Creek 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.

Ba- Banlic silt loam
This is a nearly level, deep, somewhat poorly drained soil on very low terraces. It is rarely flooded. This soil is well suited to trees and has a site index of 75 for white oak and 90 for yellow poplar.

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.

GpC- Gilpin silt loam, 6 to 12 percent slopes
This moderately sloping, moderately deep, well drained soil is on highly dissected uplands. It is on narrow ridgetops and shoulder slopes of broader ridgetops. It is well suited to trees. This soil has a site index of 73 for northern red oak and 95 for yellow poplar.

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.

GpE- Gilpin silt loam, 18 to 25 percent slopes
This is a moderately steep, moderately deep, well drained soil on highly dissected uplands. It is on very narrow ridgetops and lower shoulder slopes of broader ridgetops and head slopes of drainageways. It is suited to trees. Erosion hazards, equipment limitations, and plant competition are the main management concerns. These should be considered during management planning

and implementation of Best Management Practices for Water Quality. This soil has a site index of 80 for northern red oak and 95 for yellow poplar.

Wa- Wakeland silt loam, frequently flooded
This is a nearly level, deep, somewhat poorly drained soil on narrow to moderately broad flood plains of creeks. It is well suited to trees. Management planning should consider wet times of year. This soil has a site index of 90 for pin oak and yellow poplar.

WfC- Wellston silt loam, 6 to 12 percent slopes
This moderately sloping, well drained soil is on narrow ridgetops and on side slopes of the uplands. It is well suited to trees. This soil has a site index of 71 for northern red oak and 90 for yellow poplar.

Access:

This tract is accessible via Reynolds Ridge road. The access gate is approximately 1 mile from the intersection of Rosenbaum road and Main Forest roads. Access within the tract is good.

Boundary:

Privately owned property borders this tract. Private boundaries were last reviewed in 2015 and last marked in 2015. The tract boundaries to the north and east borders private ownership. The tract borders state to the south and west and is defined by a deep relief and intermittent creek.

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.

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. 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.

- Multiflora Rose
- Japanese Stiltgrass

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 7/28/14 by Forester McGuckin. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 115 **Trees/Ac.**
BA/A = 105.3 **Ft²/Ac.**
Present Volume = 9,909 **BF/Ac.**
Residual Volume/Ac. = 7,459 **BF/Ac.**

Overall % Stocking = 86% **Stocking**
Sawtimber Trees/Ac. = 43 **Trees/Ac.**
Harvest Volume = 2,500-3,000 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Yellow Poplar	370	162,600
White Oak	841	160,690
Sugar Maple	855	152,280
Black Oak	377	96,690
Scarlet Oak	375	65,470
Northern Red Oak	152	54,490
White Ash	66	29,180
American Sycamore	148	27,160
American Beech	208	23,930
Shagbark Hickory	138	21,740
Black Walnut	82	15,160
Blackgum	82	14,710
Pignut Hickory	66	13,790
Largetooth Aspen	19	4,410
Totals	**3,779**	**842,300**

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 is predominantly mature oak-hickory with some mixed hardwoods, such as yellow-poplar, sugar maple, white ash, red maple, and American beech, more common on north and east slopes. A mix of diameters are present, but the timber resource consists of a mostly medium to large sawtimber size class. Oak species, yellow-poplar and sugar maple account for the majority of the total volume. The understory is dominated by beech-maple.

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 (65 - 70 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 mixed hardwood regeneration, 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 6370406. Work should include the following:

- Grapevine Control – Pre-harvest in potential openings
- Croptree Release – Post-harvest
- Regeneration Opening Completion – Post-harvest
- Large Snag Creation – Post-harvest as part of opening completion and crop tree release 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:

Proposed Management Activity	*Proposed Period*
Pre-Harvest TSI/ Invasive Treatments	2017-18
Timber Marking	2017-18
Road/Landing Work	2017
Timber Sale	2018
Timber Sale Closeout	2020
BMP Review	2021
Post Harvest TSI/Invasive Treatments	2019-20
Regeneration Success Review	2025
Reinventory and Management Guide	2030

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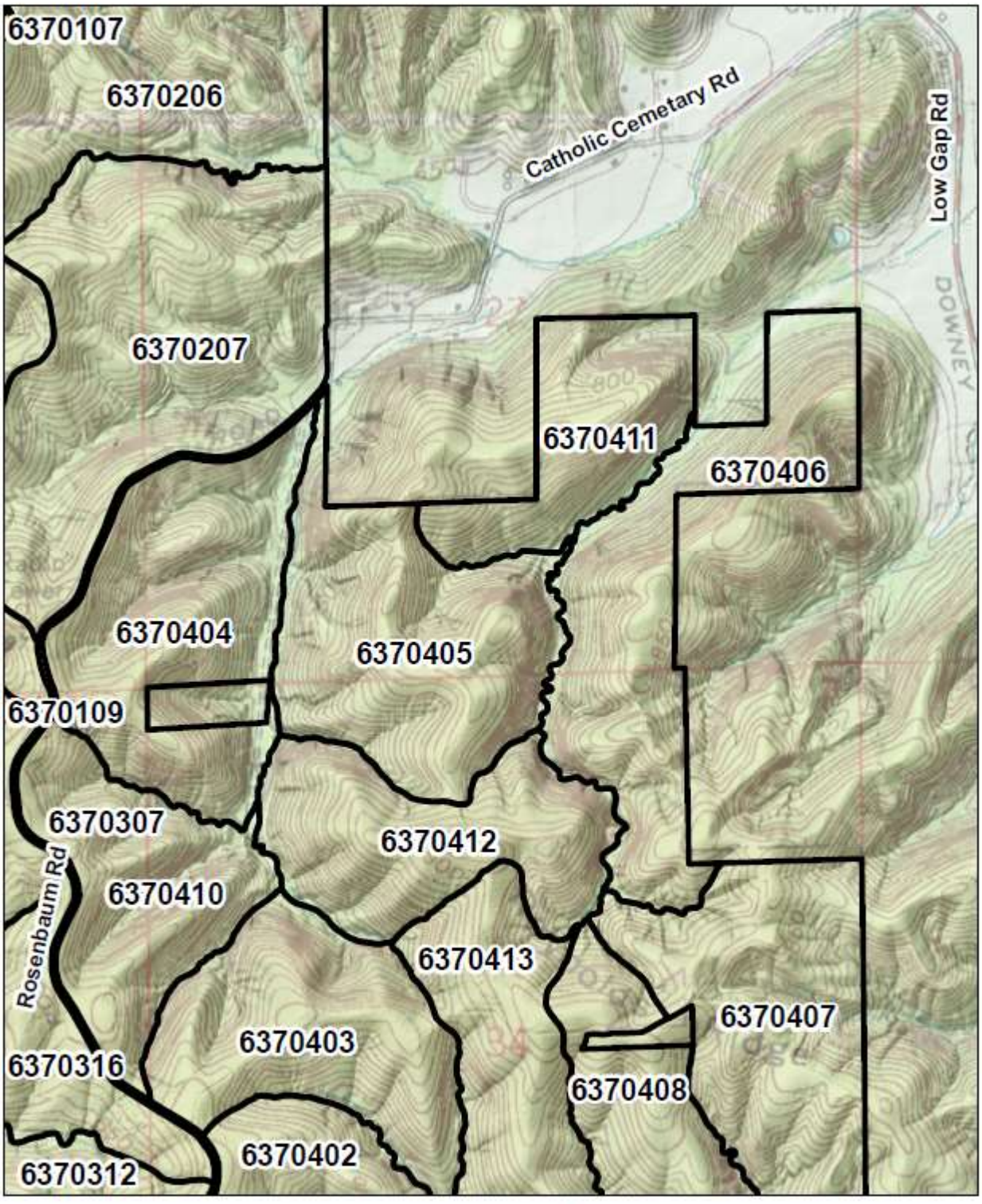
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