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

State Forest: Morgan-Monroe
Tract: 6370311(Compartment 3 Tract 11)
Tract Acreage: 53
Forest Acreage: 53
Forester: Jones/Ramey
Date: September 25, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 6370311 is located in Morgan County, Washington Township, Section(s) 33 – T11N – R1E. It is approximately 5 miles south of Martinsville and located on Gose Creek Rd.

General Description:

Most of the tract's 52 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include mixed hardwood, and 2 acres of planted Norway spruce.
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 7 regeneration openings created totaling 2.1 acres. TSI was performed in the openings and focused on vine control and opening completion. The vine control was implemented as a pre-harvest operation and no chemical was used. As a result of this past management, 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. Vines are present in many of the openings, but the areas are not completely infested.

History:

- 1929, 1933 – State Acquisition
- 1931 - Tree Planting 1000 Norway Spruce
- 4/16/82 - Timber Sale in old C3T2 (60,680 bd ft. for $6,830.00)
- 1990 - Miscellaneous – C3T2 split into C3T2 and C3T11
- 11/6/97 - Resource Management Guide
- 2/3/98 - TSI: Grape vine control
- 5/26/99 - Timber Sale (55,820 bd ft. for $12,100.00)
- 8/9/2000 - Firewood Cutting - Public
- 8/3/15 - Inventory/Cruising
- 8/3/15 - Resource Management Guide

Landscape Context:

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

Other minor cover/habitat types present on the landscape include early successional forest (< 20 years old), open water (lakes, ponds, rivers, streams, etc.), 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.

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.

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.

ZaB- Zanesville silt loam, 1 to 6 percent slopes
This gently sloping, deep, moderately well drained or well drained soil is on uplands. It is well suited to trees. This soil has a site index of 69 for white oak and 90 for yellow poplar.

Access:

This tract is accessible via cable gates off of Gose Creek Rd. The gates are approximately 3,500 ft NW of the intersection of Rosenbaum and Gose Creek roads. Access within the tract is good, with no particularly remarkable limitations to resource management.

Boundary:

This tract has no adjacent private ownerships. The tract boundary is defined by other State Forest tracts.

The north tract boundary is formed by Gose Creek Rd. The south boundary is delineated by a mapped intermittent stream. The east and west boundaries are defined by deep ravines.

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
- riparian areas
- old regeneration openings

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.

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 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. 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. However, these species are prevalent throughout the county and eradication is not feasible.

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.

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 8/3/15 by Forester Musser. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 120 **Trees/Ac.**
BA/A = 96 **Ft²/Ac.**
Present Volume = 7,915 **BF/Ac.**
Overall % Stocking = 79% **Stocking**
Sawtimber Trees/Ac. = 40 **Trees/Ac.**
Harvest Volume = 1,500–2,000 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Chestnut Oak	948	163,100
Black Oak	354	87,420
White Oak	382	71,100
Northern Red Oak	188	44,220
Scarlet Oak	137	28,190
Yellow Poplar	11	7,760
Pignut Hickory	19	5,180
Blackgum	26	3,960
Sugar Maple	23	3,460
Shagbark Hickory	23	2,750
American Beech	33	2,360
Totals	**2,144**	**419,500**

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

The timber type on the north and east slopes is predominantly mature oak-hickory with some mixed hardwoods, such as yellow-poplar, sugar maple, blackgum, and American beech, more common on north and east slopes. 1,000 Norway spruce were planted in the 1930's and are located in the bottom area at the south end of the tract. A mix of diameters are present, but the timber resource consists of a mostly medium sawtimber size class. The understory is dominated by beech and maple.

The characteristically drier 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 black oak being the most prevalent.

Old Regeneration Openings

Within the stratum 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. These are natural occurrences over time, but this recent event was the most severe in some time. The openings are approximately 26 years old and total roughly 2.1 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 to be accomplished primarily through singletree selection and release thinning. Individual trees targeted for removal 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. 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. This will also allow ash seed to be captured and new seedlings generated before the loss of seed bearing 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 6370311. Work should include the following:

- Grapevine Control – Pre-harvest in potential openings, Post-harvest in old openings
- Croptree Release – Post-harvest in old openings
- Regeneration Opening Completion – Post-harvest
- Large Snag Creation – Post-harvest as part of opening completion and crop tree release strategies
- 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	2017-2018
Timber Marking	2017-2018
Road/Landing Work	2017-2018
Timber Sale	2018
Timber Sale Closeout	2018-2020
BMP Review	2018-2020
Post Harvest TSI/Invasive Treatments	2019-2021
Regeneration Success Review	2025
Reinventory and Management Guide	2030

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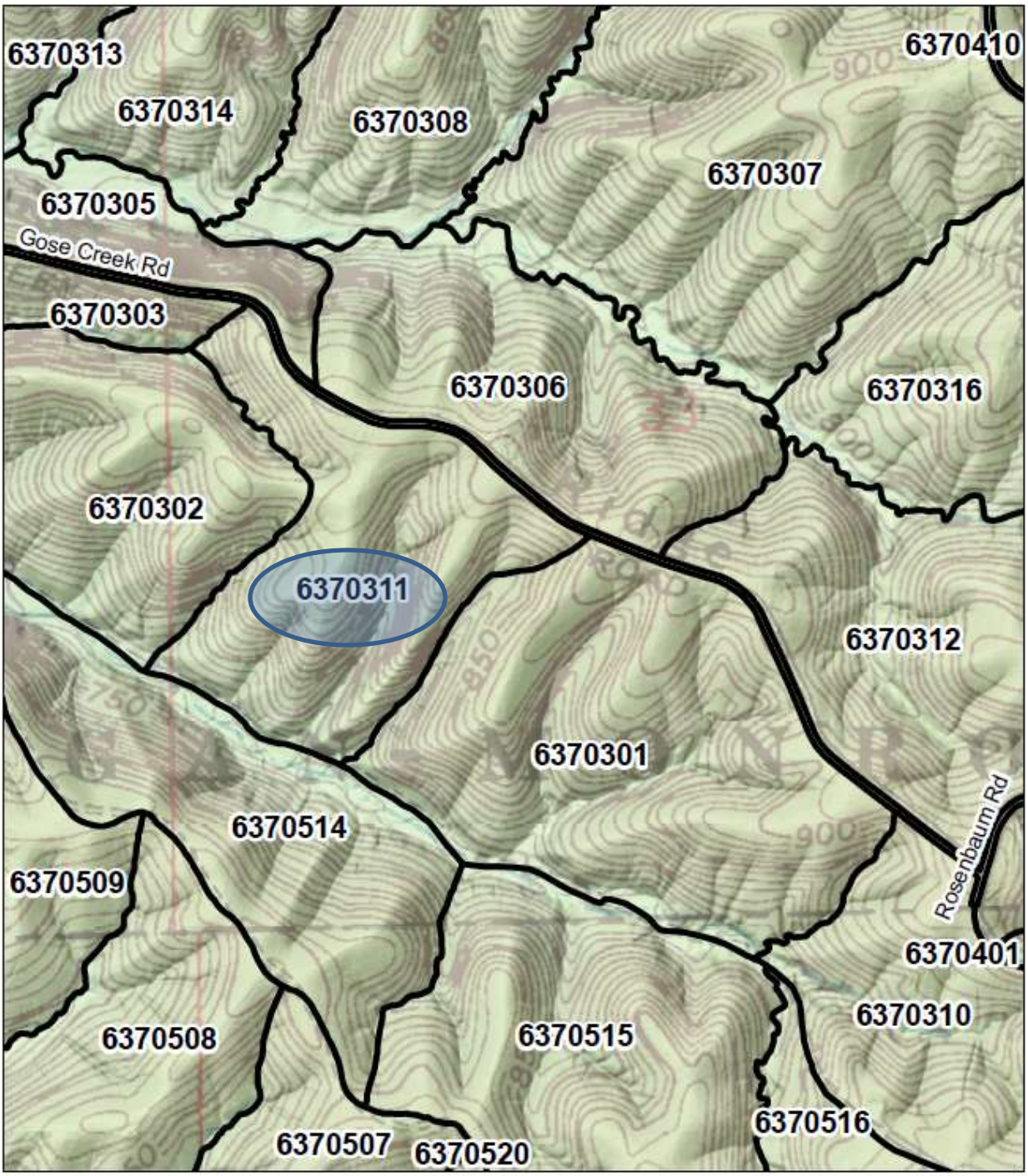

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