

Indiana Department of Natural Resources – Division of Forestry

Draft

Resource Management Guide

State Forest: Morgan-Monroe

Tract Acreage: 121.5

Forester: Jones/Ramey

Management Cycle End Year: 2030

Tract: 6370802- Compartment 8 Tract 2

Forest Acreage: 120

Date: September 29, 2015

Management Cycle Length: 2015

Location:

Tract 6370802 is located in Monroe County, Benton Township, Section(s) 9 – T10N – R1E. It is approximately 6 miles south of Martinsville and located ½ mile southwest of Main Forest Road through Fire Headquarters Compound.

General Description:

Most of the tract's 121 acres are covered with hardwood forests, especially oak-hickory timber types.

Other type(s) present include mixed hardwood and early-mid successional mixed hardwood

The most recent tract wide harvests in this tract occurred in 1989 & 1990.

The 1989 sale was primarily an improvement cut and light thinning which focused on removal of fire damaged and other lower quality trees. There were also 18 small regeneration openings created totaling 8 acres. TSI was performed in 1989 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 to large sawtimber size class. The old regeneration openings are now 26 years old and contain poletimber size mixed hardwoods.

The 1990 sale was a salvage operation which focused on removal of large pockets of wind damaged trees. Many of these areas were located around openings from the 1989 sale, resulting in expanded regeneration openings. In total, approximately 10.3 acres were harvested. These areas are now 25 years old and contain poletimber size mixed hardwoods.

History:

- 1975 - Inventory/Cruising
- 1984 - Inventory/Cruising
- 1989 - TSI - General
- 1989 - Timber Sale – Sold to Jerry Kinser \$62,775; 1,189 trees, 323 culls, 272,130 bd.ft.
- 1990 - Timber Sale, Salvage Cut – Sold to Foley Hardwoods \$2,018.32; 195 trees, 135 culls, 272,130 bd.ft
- 1990 - Miscellaneous – Tract Boundary Change
- 2010 - Timber Harvest - Special Cut for septic field - Sold to Kirkham Hardwoods \$8,178; 84 trees, 7 poles, 1 cull, 20,925 bd.ft.

- 2014 - Inventory/Cruising
- 2014 – Invasive Control – Japanese Stilgrass on old skid trails (5% glyphosate)
- 2014 - 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 Pine/conifer plantations, Early-mid successional forest (< 30 years old) and Developed areas.

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.

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 the Fire Headquarters Lane off of Main Forest Rd. The fence gate is located at the back (southwest) end of the compound and is approximately 0.6 miles southwest of the intersection of Fire Headquarters Lane and Main Forest Road. Access within the tract is good.

Boundary:

This tract has no adjacent private ownerships. The tract boundaries are defined by other State Forest tracts and are generally defined by deep ravines and mapped intermittent streams.

The northeast boundary is formed by the Fire Headquarters Compound (FHQ). The remainder of the tract is delineated by mapped intermittent streams.

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
- 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 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. 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:

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

The following trails are located in this tract:

- Three Lakes Trail- This is a popular hiking trail for forest visitors which will be given due consideration during resource management activities. This may include temporary closure during active management periods.

The eastern portion of this tract is within a property Safety Zone. This area was established for public safety 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 7/17/14 by Forester Jones/Ramey. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 112 **Trees/Ac.**
 BA/A = 115 **Ft²/Ac.**
 Present Volume = 11,891 **BF/Ac.**

Overall % Stocking = 91% **Stocking**
 Sawtimber Trees/Ac. = 48 **Trees/Ac.**
 Harvest Volume = 3,500-4,000 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Chestnut Oak	1,803	413,700
Black Oak	1,022	303,710
White Oak	812	208,650
Scarlet Oak	530	145,370
Northern Red Oak	209	108,650
Yellow Poplar	182	97,370
Pignut Hickory	236	46,880
Sassafras	336	28,480
Red Maple	266	23,990
Sugar Maple	212	21,040
Blackgum	77	18,870
White Ash	42	10,070
American Beech	46	7,730
Black Walnut	15	4,330
TOTAL	5,788	1,438,840

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

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, blackgum, 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 and hickory species account for the majority of the total volume in the tract, with white oak, 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. The openings are approximately 25 years old and total roughly 18.3 acres.

Prescriptions

This tract is well stocked and a managed timber harvest and thinning 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 (75 sqft/acre) according to the Gingrich stand density chart for upland hardwoods.

A similar, but non-commercial thinning and grapevine control is recommended in the 26 year old regeneration openings.

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 6370802. 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 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 and skid trails, Post-harvest as needed

Schedule:

<u>Proposed Management Activity</u>	<u>Proposed Period</u>
Pre-Harvest TSI/ Invasive Treatments	2016-2017
Timber Marking	2016-2017
Road/Landing Work	2016-2017
Timber Sale	2017
Timber Sale Closeout	2017-2019
BMP Review	2017-2019
Post Harvest TSI/Invasive Treatments	2018-2020
Regeneration Success Review	2024
Reinventory and Management Guide	2030

Miscellaneous (*Special Conditions, Unique Areas & Management Units, etc.*) :

- 1.5 ac FHQ septic field located in northeast corner of the tract

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6370802

