

Indiana Department of Natural Resources – Division of Forestry

Draft

Resource Management Guide

State Forest: Morgan-Monroe

Tract Acreage: 117

Forester: Ramey / Jones

Management Cycle End Year: 2030

Tract: 6371202 Compartment 12 Tract 2

Commercial Acreage: 117

Date: October 3, 2015

Management Cycle Length: 15

Location:

Tract 6371202 is located in Monroe County, Benton Township, Section(s) 12 – T 10 N – R 1 W, Section(s) 7 – T 10 N – R 1 E. It is approximately 6 miles south of Martinsville, In and located on Main Forest road.

General Description:

Most of the tract's 117 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 1995.

This was primarily an improvement cut and light thinning which focused on removal of fire damaged and other lower quality trees. There were also 6 regeneration openings created totaling 7 acres. TSI was performed in 1996 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 19 years old and contain poletimber size mixed hardwoods.

History:

- 1930-33 - Acquisition
- 1974 - Timber Sale 65,940bf sold to Dan Cramer for \$4720.50 (combined with 6371201)
- 1988 - Inventory/Cruising
- 1988 - Resource Management Guide
- 1993 - Wildlife habitat - permanent wildlife opening establishment/maintenance
- 1995 - Timber Sale 95,242bf sold to Crone Lumber Co. for \$18,460.00
- 1996 - TSI - General
- 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 closed-canopy deciduous/mixed forest, Pine/conifer plantations, wildlife pond, early successional forest (< 20 years old).

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 Burkhart Creek-White River 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 Main Forest road. The gate is approximately .5 miles east the intersection of Old SR 37 and Main Forest road roads. 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 north part of the tract borders Main Forest road, the east and west defined by moderately steep ravines and the southern part of this tract borders an 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
- old regeneration openings
- pine plantations
- riparian area
- permanent wildlife 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.

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 and categories except the smallest size class for live roost tree. 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 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
- Privet

Recreation:

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

The following recreational facilities are located in this tract:

- Construction of a combination bike/pedestrian trail is planned paralleling Main Forest Road in 2016-18

The values of these recreation facilities will be given consideration during forest management activities. Where necessary use may be restricted during activities for user and worker safety reasons.

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 7/15/15 by Forester Musser. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 122 **Trees/Ac.**

BA/A = 98 **Ft²/Ac.**

Present Volume = 6,858 **BF/Ac.**

Overall % Stocking = 81% **Stocking**

Sawtimber Trees/Ac. = 37 **Trees/Ac.**

Harvest Volume = 1,500-2,000 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Yellow Poplar	862	227,620
Black Oak	699	210,650
Sugar Maple	1,177	116,420
White Oak	328	72,420
Pignut Hickory	218	27,930
Shortleaf Pine	162	26,310
Virginia Pine	143	20,790
Chestnut Oak	54	14,920
Shagbark Hickory	103	13,500
Sassafras	181	12,700
Eastern White Pine	49	9,160
American Sycamore	96	8,870
Bitternut Hickory	18	4,400
American Beech	77	4,360
Black Walnut	20	4,260
Red Elm	29	2,480
Black Cherry	33	2,330
White Ash	107	2,321
TOTAL	4,356	781,441

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 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 sawtimber size class. Yellow-poplar and oak species account for the majority of the total volume in the tract, with yellow-poplar and black oak being the most prevalent. The understory is dominated by beech-maple.

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 19 years old and total roughly 7 acres.

Mixed Pine Plantations

The timber type is predominantly planted mixed pine and is located in the north central and northeastern portions of the tract. Pine timber present includes Virginia pine, shortleaf pine, and white pine. The species are relatively mixed throughout the area. The red and Virginia pine is located in the northwest section. The few scattered white pine and shortleaf pine trees are doing well; containing medium and large sawtimber trees that have good height. The Virginia pine is stagnant and in general decline and are mainly pole to small sawtimber in size. There is a large component of mixed hardwoods in this area, mainly yellow-poplar.

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 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.

Pine Thinning/Improvement Cutting

Though not native to this area, pine does have aesthetic and moderate habitat value. In general, the pines that do well on our State Forest properties are eastern white pine, shortleaf pine, and loblolly pine. Due to the small size and location of this stand along the newly constructed hike-bike trail a free thinning is prescribed for this stand, with the goal of slowly converting this area from nonnative planted pine to native hardwoods. Individual trees targeted for removal should include the following: suppressed and intermediate trees that are likely to drop out from competition; dominant or co-dominant pine trees that are overtopping or competing with quality hardwoods, trees damaged by past fire; wind-damaged trees; drought-stressed trees; and possibly trees that need to be removed that are potential hazards for the hike-bike trail.

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. The 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

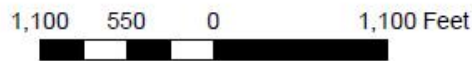
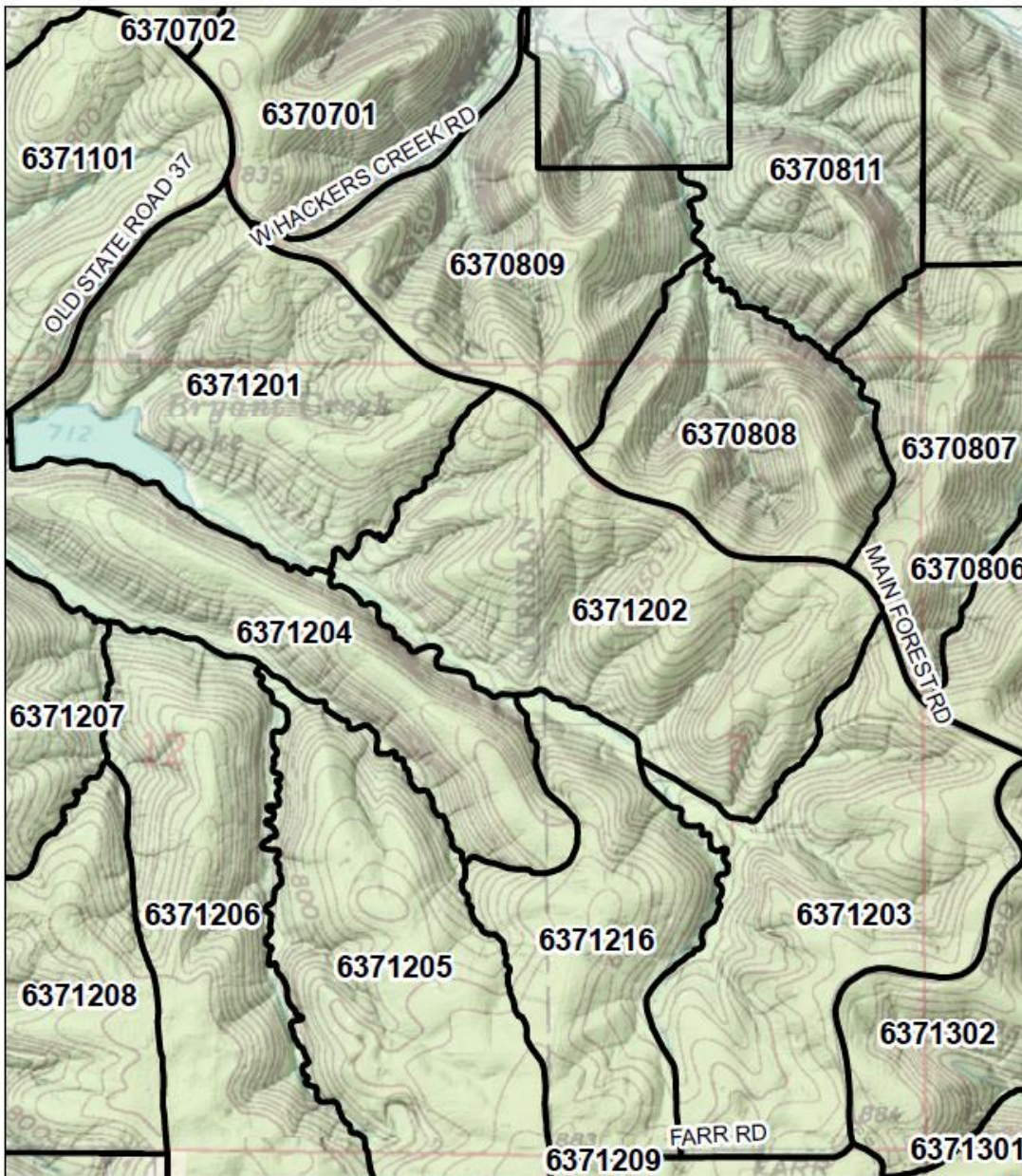
A Timber Stand Improvement (TSI) is prescribed for 6371202. Work should include the following:

- Grapevine Control – Pre-harvest in potential openings / Post Harvest in old openings
- Croptree Release – Post-harvest and in the old regeneration 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.
- 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

6371202



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