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

Compartment 13 Tract 7

State Forest: Morgan-Monroe
Tract: 6371307
Tract Acreage: 130
Forest Acreage: 130
Forester: Jones/Ramey
Date: October 2, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 6371307 is located in Monroe County, Benton Township, Section(s) 17 – T10N – R1E. It is approximately 7.5 miles south of Martinsville and located south of Main Forest Rd.

General Description:

Most of the tract's 130 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include early successional mixed hardwood and 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 13 regeneration openings created totaling 6.8 acres. TSI was performed in 2001 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 16 years old and contain poletimber size mixed hardwoods.

History:

- 1929,1930 - Acquisition
- 1934 - Tree Planting; Red Pine & Norway Spruce
- 1978 - Timber Sale: Sold to Harry Moore, 42 acres, 99 trees, 17,425 BF, $1,394
- 1998 - Inventory/Cruising
- 1998 - Resource Management Guide
- 1999 - Timber Sale: Sold to Cruse, 1,120 trees, 321 culls, 201,347 BF, $37,500
- 2001-2002 - 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 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 Honey Creek-Beanblossom Creek subwatershed. Water resources within this hydrologic boundary are part of the Beanblossom 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.

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 a cable gate and firelane off of Main Forest Road. The gate is approximately 2.8 miles southeast of the intersection of Old SR 37 and Main Forest 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 boundary is delineated by two small, east-west facing ravines that form the border with tract 6371306. The remaining boundaries are formed 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
- 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.

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 most diameter classes in each category, but are slightly deficient in the largest 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 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. These species are common and widespread throughout the region. 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
- Trail impacts will be considered in the planning and implementation of forest resource management activities. This may include modified harvest intensities, visual management, risk tree management and trail routing.

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 8/28/15 by Forester Jones. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 130 **Trees/Ac.**
BA/A = 98 **Ft²/Ac.**
Present Volume = 8,789 **BF/Ac.**
Overall % Stocking = 81% **Stocking**
Sawtimber Trees/Ac. = 45 **Trees/Ac.**
Harvest Volume = 3,000-3,500 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Scarlet Oak	1,094	283,310
Chestnut Oak	1,507	240,740
Black Oak	657	191,500
White Oak	761	155,000
Northern Red Oak	175	41,100
Yellow Poplar	151	34,210
Black Walnut	343	29,280
American Sycamore	103	29,050
Pignut Hickory	229	27,550
Sugar Maple	195	20,580
White Ash	67	16,000
Bitternut Hickory	139	15,130
Norway Spruce	57	9,430
Blackgum	69	8,010
Red Maple	62	7,450
American Beech	51	7,080
Black Cherry	56	6,000
Largetooth Aspen	24	5,910
Basswood	30	4,350
Red Elm	53	2,070
TOTAL	5,823	1,133,750

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, 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 scarlet oak and chestnut oak being the most prevalent.

Old Regeneration Openings

Within the stratum there are numerous small 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 16 years old and total roughly 6.8 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 fully stocked 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.

Emerald Ash Borer

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 ash trees before they die and decay. This 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 6371307. 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 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:

Proposed Management Activity	*Proposed Period*
Three Lakes Trail maintenance as needed	2016-2030
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

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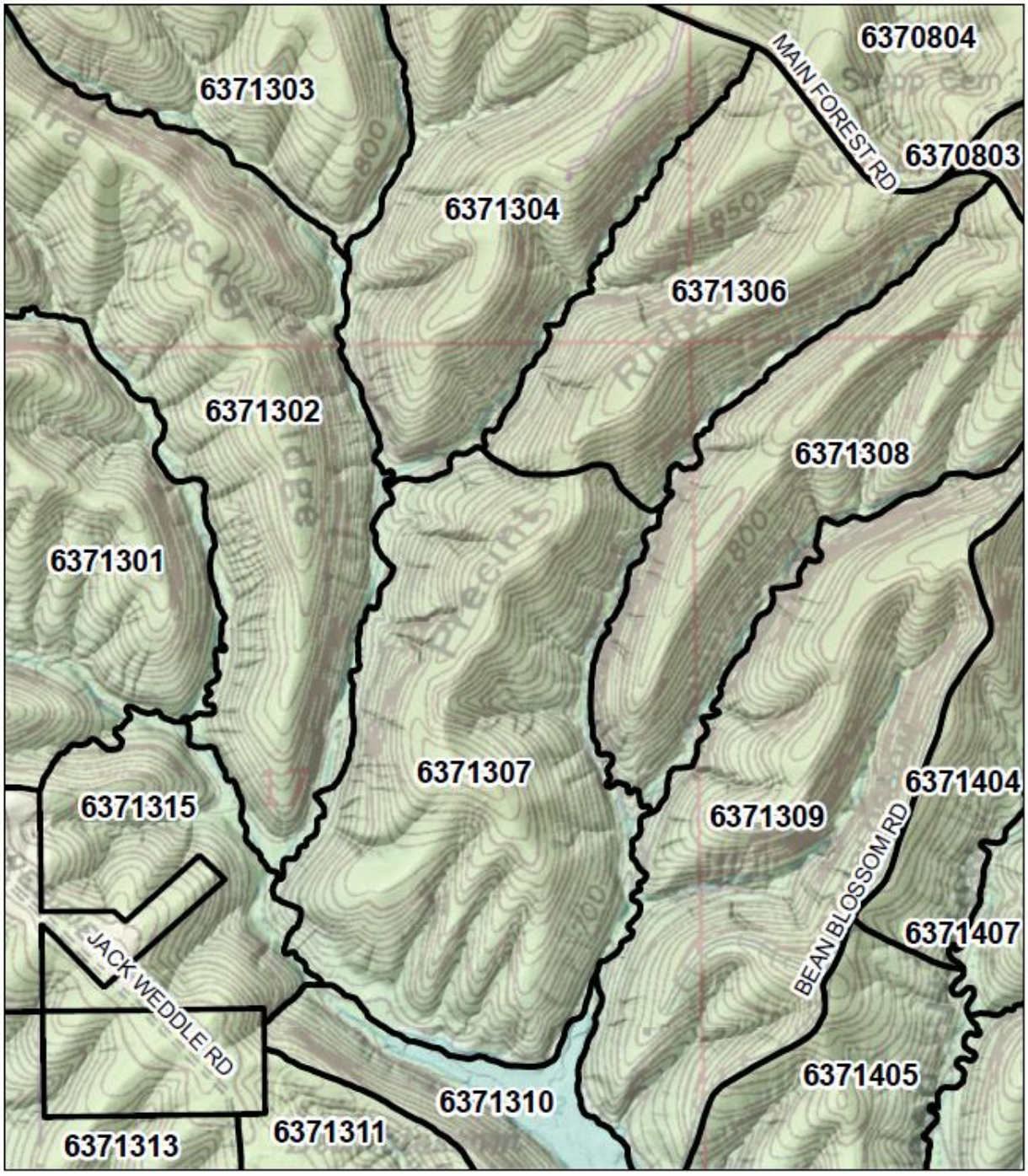

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