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

State Forest: Morgan-Monroe
Tract: 6370612- Compartment 6 Tract 12
Tract Acreage: 66
Commercial Acreage: 66
Forester: Ramey / Jones
Date: September 28, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 6370612 is located in Monroe County, Benton Township, Section(s) 9,10 – T 10 N – R 1 E. It is approximately 5 mile south of Martinsville and located east of Main Forest road.

General Description:

Most of the tract's 6370612 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include mixed hardwood and a small Red Pine plantation

The most recent harvest in this tract occurred in 1991.

This was primarily an improvement cut and light thinning which focused on removal of fire damaged and other lower quality trees, this sale included salvage operation which focused on removal wind thrown damaged trees as a result of the serve wind storms of 1990. There were no records or observed regeneration openings from the harvest. As a result of past efforts, the current overall timber quality within this tract is good and consists mainly of medium sawtimber size class.

History:

- 1930 - Acquisition
- 1932 - Tree Planting CCC red pine 2 acres.
- 1976 - Inventory/Cruising
- 1990 – Timber Storm Damage
- 1991 - Timber Salvage - Marking
- 1991 - Timber Sale combined with tract 11& 13
- 1991 - Timber Sale 207,146bf sold to Helmsburg Sawmill, Inc. for $28,000
- 1992 - Timber Harvest - Closeout
- 2014 - Inventory/Cruising
- 2015 - Resource Management Guide

Landscape Context:

State forest completely surrounds the tract and is predominantly central hardwood, deciduous forest, predominately closed canopy.

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 Main Forest road. The gate is approximately 3.5 miles northeast from the intersection of Old SR 37 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 west side of the tract borders the Main Forest road, the southern line is Draper Cabin road and the northeast line is defined by a steep ravine 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
- contiguous mixed hardwood canopy
- riparian areas
- pine plantations

Hard mast trees such as oaks, hickories, and American beech provide food source to squirrels, turkey, and white-tailed deer. The 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 exceed recommended base levels in all diameter classes in the snag density category. Habitat features exceed recommended base levels in the smallest and largest diameter classes within the roost tree category, but are slightly deficient in the mid level 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.

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.

Red Pine Plantation
The tract includes an approximately 1-2 acre red pine planting that was observed, but not captured in the inventory tally. It was established in the 1930's to help restore forests on abandoned, wornout farmlands. This is a pole to small sawtimber size stand that is stagnant and in general decline. These remnants offer some habitat diversity, but as will eventually fade from the stand. Red pine is not a native species to Indiana.

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 and roads are located in this tract:

- Mason Ridge Trail
- Draper Cabin Road

These are important recreation features on the property and will be given consideration during resource management planning and implementation. Trails may be temporarily closed or rerouted during active management periods.

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 7/18/14 by Foresters Jones and Ramey. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 103 **Trees/Ac.**
BA/A = 115.8 **Ft²/Ac.**
Present Volume = 13,601 **BF/Ac.**
Overall % Stocking = 91% **Stocking**
Sawtimber Trees/Ac. = 43 **Trees/Ac.**
Harvest Volume = 4,000-4,500 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Yellow Poplar	578	184,330
Northern Red Oak	358	150,010
Chestnut Oak	472	143,710
Black Oak	304	127,040
White Oak	416	124,380
Pignut Hickory	189	26,000
Scarlet Oak	81	23,610
White Ash	84	21,940
Red Maple	145	18,260
Shagbark Hickory	94	17,900
Sugar Maple	111	17,430
Black Walnut	58	13,210
Basswood	62	11,700
Largetooth Aspen	55	7,980
Bitternut Hickory	21	5,660
Sassafras	77	4,510
TOTAL	3,105	897,670

For the purpose of this guide, this tract has only one designated management stratum 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 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, yellow-poplar and oak species account for the majority of the total volume in the tract, with yellow-poplar and red oak being the most prevalent.

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 - 75 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.

Red Pine Thinning

Though not native to this area, pine does have aesthetic and moderate habitat value. Due to the small size and high visibility of this stand, it will be managed with the goal of slowly converting this area to an uneven-aged, mixed hardwood stand. A free thinning is prescribed for this stand. This will include a combination of low, selection, and possibly geometric/row thinning. Individual trees targeted for removal should include the following: suppressed and intermediate trees that are likely to drop out from competition before the next rotation; pine trees that are overtopping or competing with young quality hardwoods, wind-damaged trees; drought-stressed trees; and possibly trees that need to be removed to achieve a desired spacing or for logistical reasons.

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 6370612. 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 croptree release operations
- 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:

Proposed Management Activity	*Proposed Period*
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

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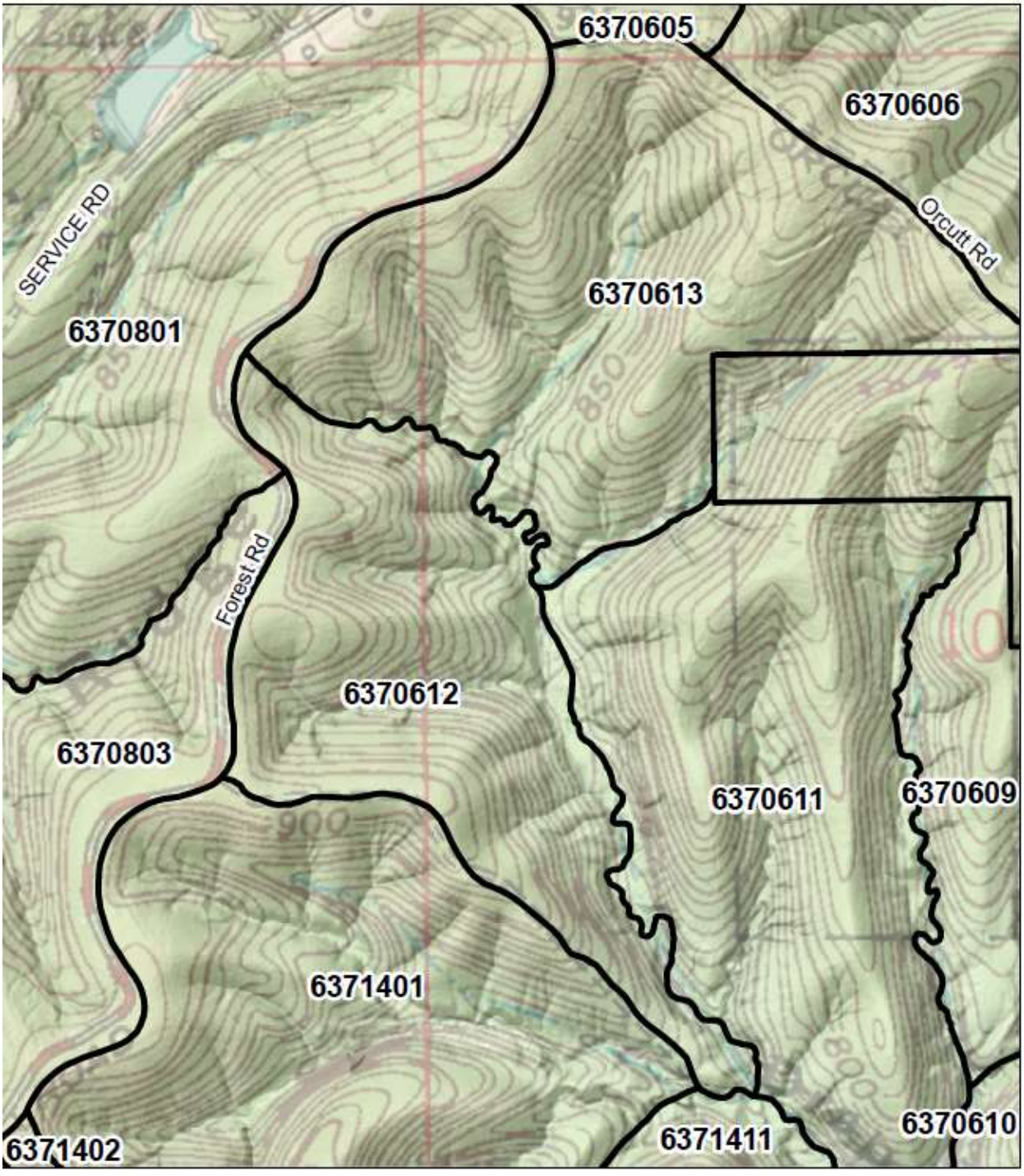
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