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

State Forest: Morgan-Monroe
Tract: 6371205
Tract Acreage: 99
Commercial Acreage: 97
Forester: Jones/Ramey
Date: August 18, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15 Years

Location:

Tract 6371205 is located in Monroe County, Washington Township, Section(s) 12 – T10N – R1W. It is approximately 8 miles SW of Martinsville and located just north of Farr Rd.

General Description:

Most of the tract's 99 acres are covered with hardwood forests, especially mixed hardwood timber types. Other type(s) present include planted pine, oak-hickory, and some early successional mixed hardwood The most recent harvest in this tract occurred in 1983.

This was primarily an improvement cut and light thinning over 55 acres which focused on removal of fire damaged, declining and other lower quality trees. Post-harvest timber stand improvement (TSI) was performed in 1984 and focused on cull removal and vine control. As a result, the current overall timber quality within this tract is good in the old harvest area and consists mainly of large to medium sawtimber size class trees. The remaining portion of the tract consists of scattered planted pine, walnut, and small to medium sawtimber size mixed hardwoods.

History:

- 1970 - Timber Sale
- 1983 - Timber Sale: 90,843 bdft., 348 trees, 136 culls / Foley Hardwoods, Inc. - $12,899
- 1984 - TSI - General
- 1992 - Wildlife habitat - permanent wildlife opening establishment
- 2008 - Inventory/Cruising
- 2008 - Resource Management Guide – Bill Hahn
- 2014 - Inventory/Cruising – Jones/Ramey
- 2014 – Merged Tract 6371217 with 6371205 & 6371206
- 2015 - Resource Management Guide – Jones/Ramey

Landscape Context:

The immediate landscape surrounding the tract is predominantly Closed-canopy deciduous forest. The primary block of the State Forest lies to the North and East. Private landownerships dominate to the south with a mix of developed areas, forest and agricultural lands.

Other minor cover/habitat types present include Pine/conifer plantations, Grasslands/Hayfields/Pasture, Developed areas, Open water (lakes, ponds, rivers, streams, etc.).

Landscape level forest threats include parcelization and development of private land tracts, and introduction of invasive plants that are routinely introduced during home landscaping efforts.

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. Karst topographic features typically found west of this region can also be found in this tract. These areas consist of gently sloping and moderately sloping uplands that contain many sinkholes. The underlying bedrock is Mississippian aged limestone.

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.

Soils:

Soils in the north and western portion of the tract 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.
Soils in the south and central portion of the tract are moderately well drained or well drained. These soils formed from a thin layer of loess and underlying limestone bedrock. The major soils in this tract are listed below.

BdB- Bedford silt loam, 2 to 6 percent slopes
This gently sloping, deep, moderately well drained soil is on uplands. There is a fragipan at 1.5-3.5 feet that can restrict root penetration. It is well suited to trees and has a site index of 70 for white oak and 90 for yellow poplar.

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 laying out management activities and implementing Best Management Practices for Water Quality. This complex has a site index of 70 for northern red and black oak.

CaD- Caneyville silt loam, 12 to 18 percent slopes
This strongly sloping, moderately deep, well drained soil is on side slopes of the uplands. This soil is suited to trees. Erosion hazard and equipment limitations are management 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 oak and 80 for yellow poplar.

CrC- Crider silt loam, 6 to 12 percent slopes

This moderately sloping, deep, well drained soil is on narrow and broad convex ridgetops of the uplands. It is well suited to trees. This soil has a site index of 88 for northern red oak and 97 for yellow poplar.

Access:

This tract is accessible via a cable gate on the north side of Farr Rd. The gate is approximately .65 miles straight east from the intersection of Farr and Fish Roads. Access within the tract is achieved primarily through Old Farr Rd at the southeast corner and old lanes and trails. A log landing is located along Old Farr Rd in the southwest corner of adjacent tract 6371209.

Boundary:

This tract has no adjacent private ownerships. The tract boundary is defined by other State Forest tracts. A mapped intermittent stream forms the majority of the west boundary. A small, shallow ravine forms the west boundary. Old Farr Rd. borders the southeast portion of the tract. The remainder of the east boundary is defined by a deep ravine that becomes less pronounced from north to south.

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 mixed hardwood canopy
- contiguous oak-hickory canopy
- scattered planted pine stands
- 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. 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-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.

Special Habitats/Sensitive Areas
Karst features (sinkholes) are present on portions of the tract. In general these areas should be buffered during management activities and applicable forestry BMP'S applied. If an even-age treatment is prescribed that requires residual retention, this retention should be left around features to satisfy both recommendations.

A Natural Heritage Database review was completed for this tract in 8/8/2013. 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.

- **Multiflora Rose**
- **Autumn Olive**
- **Japanese Stiltgrass**
- **Privet**

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 above. 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 highly competitive non-invasive seeding mixture.

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 *12/5/14* by Forester Jones/Ramey. 25 prism points were examined and sampled over 99acres (1 point for every 4 acres). An estimate of the summary of the tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 104 **Trees/Ac.**
BA/A = 98.3**Ft²/Ac.**
Present Volume = 8,989 **BF/Ac.**
Overall % Stocking = 80% **Stocking**
Sawtimber/Ac. = 46 **Trees/Ac.**
Harvest Volume = 2,000 – 3,000 **Bd. Ft. /Ac.**

SPECIES	# Trees	Total Bd. Ft.
Yellow Poplar	976	363,770
Virginia Pine	700	155,090
Eastern White Pine	374	81,390
Sugar Maple	568	74,480
Black Cherry	152	32,070
Hackberry	232	21,980
Redmaple	220	20,710
White Ash	162	19,890
Black Walnut	97	17,050
Black Oak	105	16,310
Honeylocust	123	11,410
Black Locust	265	10,940
American Elm	110	10,790
Largetooth Aspen	39	10,330
Chinkapin Oak	55	7,960

Shagbark Hickory	55	7,960
American Sycamore	48	7,390
American Beech	168	7,160
White Oak	39	6,730
Sassafras	62	6,520
TOTAL	**4,550**	**889,930**

This tract has two primary management units (stands). Below is a list, approximate acreages, general stand descriptions and silvicultural prescriptions.

Descriptions

Mixed Hardwood - 50

The timber type is predominantly mixed hardwoods with some oak-hickory present at the northwest portion of the tract. Primary species include yellow-poplar, sugar maple, red maple, white ash, and some oaks and hickories. A mix of diameters are present, but the timber resource consists of a mostly medium to large sawtimber size class. Quality is quite variable throughout the stand, with the yellow-poplar and oaks/hickories consistently have the highest quality. The understory is dominated by beech, maple, and ash.

Mixed Pine Plantation – 48 ac

The timber type is predominantly planted mixed pine and is located in the south, central, and eastern portions of the tract. Pine timber present includes scattered Virginia and white pine. The species are not mixed, but grouped across the area. Much of the remaining white pine is open grown and fair to poor quality, with most being in the medium to large sawtimber size class. Mixed hardwoods such as yellow-poplar, black cherry, sassafras, ash, and maple have moved in. The Virginia pine is stagnant and in general decline, with the majority in the pole to small sawtimber in size. There is a larger component of mixed hardwoods present in these areas.

Permanent Wildlife Openings - < 1 ac

This area was created in 1992 by Forestry Wildlife. It is located in the central portion of the tract. Although this area was originally established and designated as a permanent wildlife opening, it hasn't been maintained in quite some time. It can now be more accurately described as a small early successional forest patch as it is now grown up with 5 – 10 year old yellow-poplar, sassafras, and other mixed hardwoods.

Prescriptions

This majority of the tract is well stocked and a managed timber harvest is prescribed. The following silvicultural prescriptions are recommended.

Mixed Hardwood Areas - 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 according to the Gingrich stand density chart for upland hardwoods. This translates to approximately 70-75 sq ft/acre.

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.

Scattered White & Virginia Pine Areas – Pine-to-Hardwood Conversion

Due to the poor condition of this stand, a conversion to native hardwoods is prescribed. This should be accomplished primarily through an even-age method such as clearcutting. If areas exist that are interspersed with a sufficient stocking of vigorous dominant, co-dominant, and intermediate mixed hardwoods, a singletree and group selection cutting of the pine is recommended. A light improvement cutting of the hardwood trees may necessary. 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. Areas clustered with good growing white pine may be managed through a combination of low, selection and possibly geometric/row thinning.

Entire Tract – Sanitation Cutting(EAB)

Emerald Ash Borer has been detected in Indiana State Forests and is killing ash trees. 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.

Entire Tract - TSI

Timber Stand Improvement (TSI) work is prescribed for 6371205. Work may include the following:

- Grapevine Control - Pre-harvest control in potential regeneration openings and pine to hardwood conversion areas
- Croptree Release – Accomplished primarily through harvest operations, but may be prescribed for post-harvest operations
- Regeneration Opening Completion – Post-harvest
- Large Snag Creation – Post-harvest
- Coppicing – Post - harvest
- Exotic Control – Pre-harvest control in potential regeneration openings; Post-harvest control as needed

Schedule:

Proposed Management Activity	*Proposed Period*
Pre-Harvest TSI/ Invasive Treatments	2015 - 2016
Timber Marking	2015 - 2016
Road/Landing Work	2015 - 2016
Timber Sale	2016
Timber Sale Closeout	2018
BMP Review	2018
Post Harvest TSI/Invasive Treatments	2018-2019
Regeneration Success Review	2022 - 2023
Reinventory and Management Guide	2030

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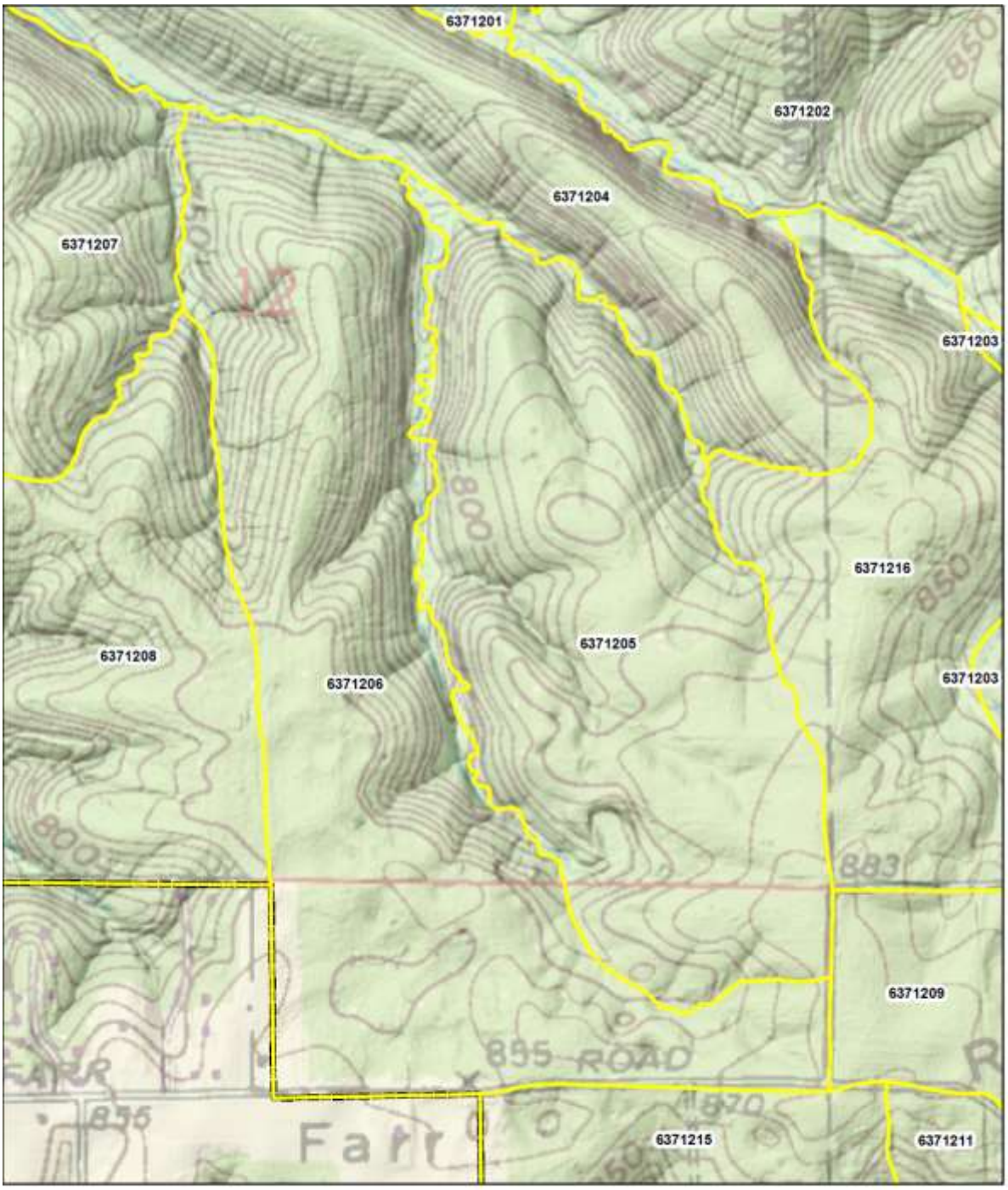
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