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

State Forest: Morgan-Monroe
Tract: 6371206
Tract Acreage: 122
Commercial Acreage: 122
Forester: Jones/Ramey
Date: August 19, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15 Years

Location:

Tract 6371206 is located in Monroe County, Washington Township, Section(s) 12, 13 – T10N – R1W. It is approximately 8 miles SW of Martinsville and located just north of Farr Rd.

General Description:

Most of the tract's 122 acres are covered with hardwood forests, especially mixed hardwood timber types. Other type(s) present include oak-hickory, and planted white pine.
The most recent harvest in this tract occurred in 1977.

This was primarily an improvement cut and light thinning over 77 acres which focused on removal of fire damaged and other lower quality trees. Pre-harvest or follow up TSI was not performed. As a result, the current overall timber quality within the selectively marked area is good, but many low quality trees not cut during the harvest are still present. The remaining area of the current tract has no harvest history during state ownership. Much of this is planted white pine and old field composed of small to medium size mixed hardwood species.

History:

- 1932-1942 - Tree Planting - South end
- 1977 - Timber Sale; 107,630 bdft, 319 trees, 46 culls / Wooley Lbr. Co. - $15,078.55
- 1989 - Timber Harvest - Special Cut – 79 White Pine Posts
- 1994 - Inventory/Cruising
- 1994 - Resource Management Guide
- 1999 - Road Construction / Maintenance

Landscape Context:

The surrounding landscape near the tract is predominantly Closed-canopy deciduous forest. Smaller private landownerships border the tract at its Southwest corner. 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, and 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 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 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.

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.

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 on the north side of Farr Rd. The gate is approximately .65 miles straight east of the intersection of Farr and Fish Roads. Access within the tract is achieved primarily through a firelane located along the western edge of the tract. A log landing is located in the southwest corner.

Boundary:

This tract has adjacent private ownerships at the southwest corner. These lines are defined by Farr Rd. to the south and the firelane at the west. The remainder of the tract boundary is defined by other State Forest tracts. The majority of the east boundary is formed by a deep ravine and mapped intermittent stream. This ravine becomes less defined near the south end of the tract and turns east, forming the boundary between M1206 and the south of end of M1205. The north boundary is delineated by another mapped intermittent stream. The west boundary is defined by a deep ravine to the north and eventually ends near the central portion of this boundary. A firelane forms the remainder of the west line south to Farr Road.

Wildlife:

A prevalence of wildlife resources are found on this tract. 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
- Planted white pine plantations
- riparian areas

Hard mast trees such as oaks, hickories, and American beech provide food source to squirrels, turkey, and white-tailed deer. Canopy gaps are varied in size but all present similar, dense vegetation that favors wildlife. 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 soil health.

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
Numerous small to medium sized sinkholes were located at the south end 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 8/8/13. 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. A brief description, prioritization, and specific control and application methods are discussed in the appendix. 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 highly competitive non-invasive seeding mixture.

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

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. 30 prism points were examined and sampled over 122 acres (1 point for every 4 acres). A summary of the tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 119 **Trees/Ac.**
BA/A = 122 **Ft²/Ac.**
Present Volume = 11,782 **BF/Ac.**
Overall % Stocking = 98% **Stocking**
Sawtimber/Ac. = 46 **Trees/Ac.**
Harvest Volume = 3,000 – 4,000 **Bd. Ft. /Ac.**

SPECIES	# Trees	Total Bd. Ft.
Yellow Poplar	1,254	465,190
Eastern White Pine	1,104	315,690
Northern Red Oak	316	135,870
White Oak	427	84,430
Black Oak	266	80,980
Black Walnut	288	71,770
Sugar Maple	523	70,970
American Sycamore	170	52,510
Largetooth Aspen	157	38,960
White Ash	140	23,960
Sassafras	237	17,400
Basswood	72	14,060
American Elm	120	12,430
Shagbark Hickory	83	11,540
Pignut Hickory	26	8,780
Redmaple	80	8,260
Black Locust	58	4,760
Virginia Pine	32	3,820

Red Elm	87	3,700
Honeylocust	15	2,950
American Beech	18	2,810
Hackberry	37	2,650
Black Cherry	14	2,170
Blackgum	141	1,804
TOTAL	**5,665**	**1,437,464**

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

Descriptions

Oak-Hickory – 60 ac

The timber type is predominantly oak-hickory and is located in the north half of the tract. Primary species include red oak, black oak, white oak, and hickories. The ridge top in this area is actually old field and is more dominated with mixed hardwoods such as yellow-poplar, sugar maple, and sassafras. 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 Hardwoods / White Pine Plantations – 62 ac

This entire area was cropland/pasture 70 years ago. The current timber type is now a mosaic of homogenous white pine stands and mixed hardwood stands. The mixed hardwoods are the result of failed pine plantings and natural succession of old fields. It is dominated with species such as yellow-poplar, black cherry, sassafras, ash, and maple. The understory is blanketed with multiflora rose. Overall quality is fair to poor as many of mature trees are open grown and grapevines are prevalent throughout the area. The pine stands consists of almost pure white pine that is doing very well; containing medium and large sawtimber trees that have good height, with some occasional mixed hardwoods moving in. Hardwoods in these areas consist mostly of black cherry, yellow-poplar, and white ash.

Prescriptions

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

Entire Tract – Selection & Improvement/Thinning Cutting

A combination of selection, improvement and thinning cuttings are prescribed throughout the entire 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.

Small to large group selections may be implemented in areas dominated with poor growing stock, particularly in the mixed hardwood areas at the south end of the tract. This will create 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.

White Pine Plantations – 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 good condition of these stands, they will be managed for and enhanced for this rotation. 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; 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 to achieve a desired spacing or for logistical reasons.

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

A Timber Stand Improvement (TSI) is prescribed for 6371206. Work may include the following:

- Grapevine Control – Pre-harvest control in potential openings
- 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
- Exotic Control – Pre-harvest multiflora rose control in potential 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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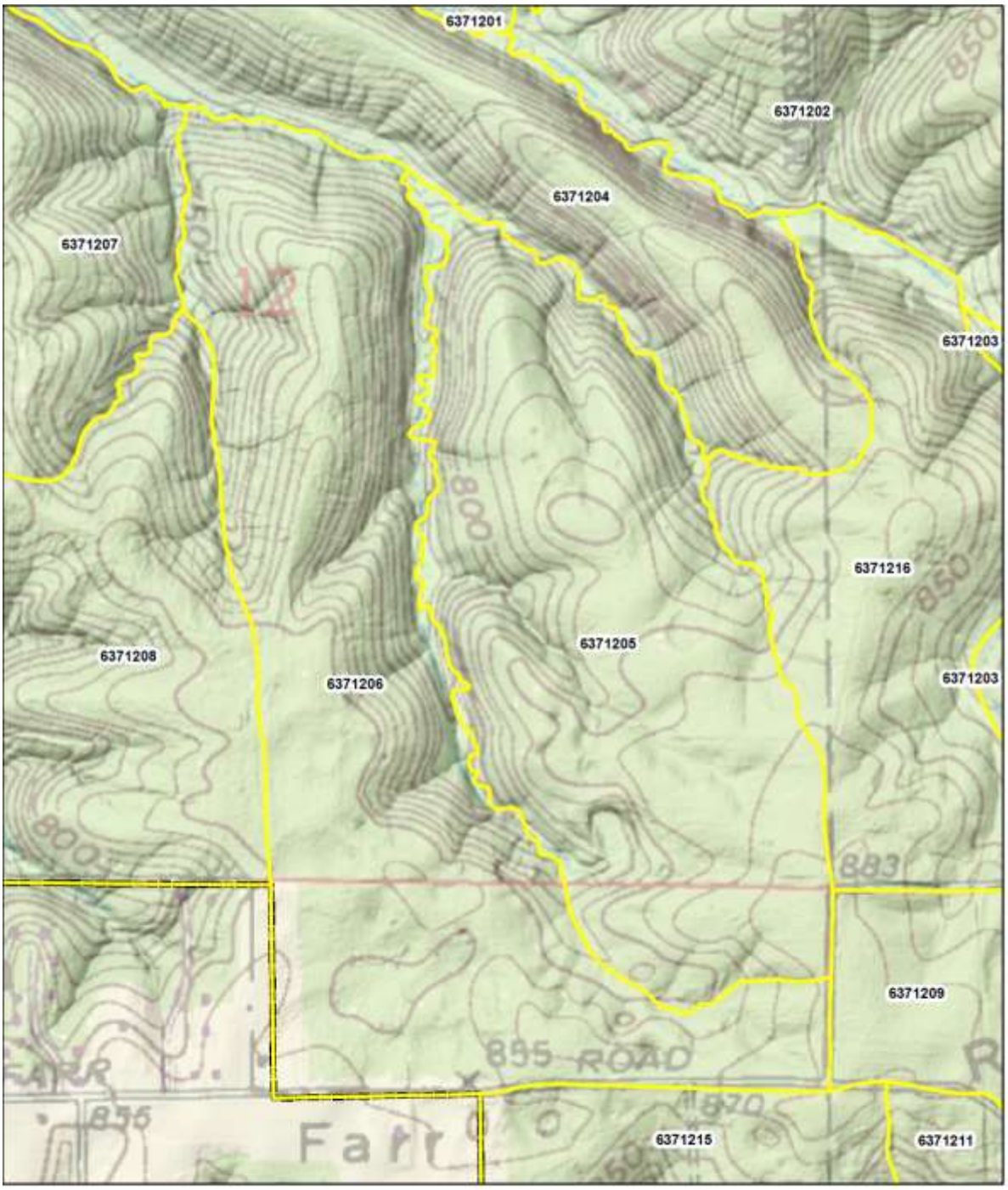
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