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

Compartment 12 Tract 13

State Forest: Morgan-Monroe
Tract: 6371213
Tract Acreage: 80
Forest Acreage: 80
Forester: Ramey / Jones
Date: October 8, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 6371213 is located in Monroe County, Benton Township, Section(s) 19 – T 10 N – R 1 E. It is approximately 10 miles north of Bloomington, In and located north of Anderson Road.

General Description:

Most of the tract's 80 acres are covered with hardwood forests, especially oak-hickory timber types.
Other type(s) present include mixed hardwood and mixed pine.
A harvest was marked in this tract in 1988. However, there is no known harvest record for this tract while under state ownership. This is due to poor access.

This was tract was marked primarily as an improvement cut and light thinning which focused on removal of fire damaged, declining mature and other lower quality trees. Current inventory indicates there are many declining overstory trees and evidence of scattered windthrow throughout the tract, resulting in some canopy gaps. Overall the timber quality within this tract is good and consists mainly of medium to large sawtimber size class. American beech and red/sugar maples dominate the understory and mid canopy. There were also 6 regeneration openings marked totaling 7.3 acres.

History:

- 1950-51 - Acquisition
- 1987 - Inventory/Cruising
- 1987 - Boundary/Survey work
- 1987 - Boundary: marking boundaries
- 1987 - Timber Harvest - Marking
- 1988 - Timber Sale not sold did not meet minimum
- 1994 – Boundary corners marked posts set
- 2008 – Boundary remarked
- 2013 – Boundaries repainted
- 2015 - Inventory/Cruising
- 2015 - Resource Management Guide

Landscape Context:

The surrounding landscape near the tract is predominantly closed-canopy deciduous forest. The primary block of the State Forest lies to the north. Private landownerships dominate to the south, east and west, with a mix of developed areas, forest and agricultural lands.

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.

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 and Lazy Lake) 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.

EkF- Elkinsville silt loam, upland, 20 to 40 percent slopes
This moderately steep to very steep, deep, well drained soil is on terraces which are in steep areas adjacent to bottom lands. It is well suited to trees. Equipment limitations and erosion hazards are concerns that should be considered during management activities and implementation of Best Management Practices for Water Quality. This soil has a site index of 90 for white oak and 98 for yellow poplar.

Ba- Bartle silt loam
This nearly level, deep, somewhat poorly drained soil found on flats on stream terraces. It is well suited to trees and has a site index of 75 for white oak and 85 for yellow poplar.

Access:

There are no accessible roads into the tract. This tract is accessible thru tract 6371210 and then on foot into the northeast corner of 6371213. The gate is approximately 1.5 miles east the intersection of Old SR 37 and Farr roads. Access within the tract is poor.

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.

Privately owned property borders this tract. Private boundaries were last reviewed in 2013 and last marked in 2013.

State lines were surveyed in 1987. Property corners are marked with steel posts.
The west and north lines border the Wheeler Mission with the northwest corner being Lazy Lake.
The east is the Demshar property and the south is Ayers property.

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
- pine plantations
- riparian areas

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 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 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.

- Multiflora Rose
- Japanese Stiltgrass

Recreation:

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

The following lakes/ponds are located in this tract:

- Lazy Lake

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 9/11/15 by Forester Jones. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 151 **Trees/Ac.**
BA/A = 144.8 **Ft²/Ac.**
Present Volume = 14,321 **BF/Ac.**
Overall % Stocking = 116% **Stocking**
Sawtimber Trees/Ac. = 58 **Trees/Ac.**
Harvest Volume = 4,000-4,500 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Yellow Poplar	1,503	349,080
White Oak	547	180,800
Northern Red Oak	362	163,240
Eastern White Pine	829	116,550
American Beech	526	76,700
Sugar Maple	666	66,240
Black Oak	149	46,690
Largetooth Aspen	50	29,040
Pignut Hickory	117	26,110
Bitternut Hickory	72	21,970
American Sycamore	43	17,690
Red Maple	46	17,410
Shagbark Hickory	63	11,880
White Ash	85	11,190
Black Cherry	41	6,500
Chinkapin Oak	26	3,800
Black Walnut	12	770
TOTAL	5,137	1,145,660

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 – 73.5 ac

The timber type 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. Yellow-poplar and oak species account for the majority of the total volume in the tract, with white and red oak being the most prevalent. The understory is dominated by beech-maple.

Pine Plantation – 6.5 ac

The timber type is planted eastern white pine and is located in two areas. The smaller stand (1.5 ac) is located in the center of the tract and the larger area (5 ac) is located in the southeast corner of the tract. The stand(s) 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 primarily of yellow-poplar, aspen, cherry and maples. These areas were likely planted sometime in the 1940's to 1950's.

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 (75-80 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 good condition of this stand, it will be managed and enhanced until maturity. 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.

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 6371213. 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 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:

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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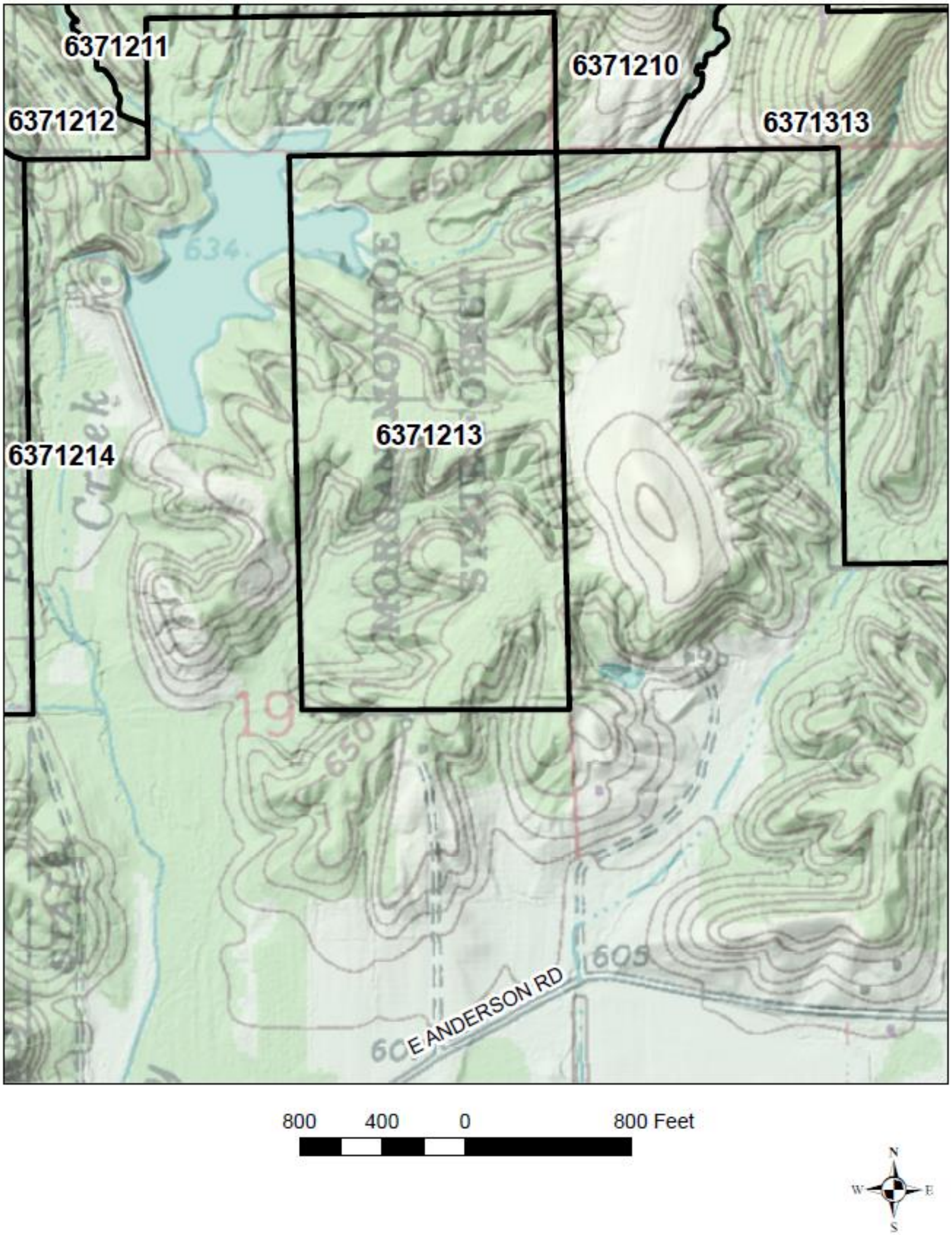

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