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

State Forest: Morgan-Monroe
Tract: 6371003 (Comp 10 Tract 3)
Tract Acreage: 100
Forest Acreage: 95
Forester: Jones/Ramey
Date: September 29, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 6371003 is located in Monroe County, Washington Township, Section(s) 4, 5 – T10N – R1W. It is approximately 7 miles southwest of Martinsville and Burma Rd cuts northwest through the northeast portion of the tract.

General Description:

Most of the tract's 100 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include mixed hardwood, pine, and early successional mixed hardwood
The most recent harvest in this tract occurred in 1993.

This was primarily an improvement cut and light thinning which focused on removal of fire damaged and other lower quality trees. There were also 11 regeneration openings created totaling 5.1 acres. TSI was performed in 1995 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 a medium to large sawtimber size class. The old regeneration openings are now 22 years old and contain poletimber size mixed hardwoods.

History:

- 1984 Tract Inventory
- 1987 Road work done, property line surveyed, and public parking added
- 1993 Timber marked and sold to Crone Lumber (170,920 BF)
- 1994-95 TSI marked and performed
- 1996 Boundary remarked
- 2012 Boundary remarked
- 2014 Inventory
- 2015 Resource Management Guide

Landscape Context:

The surrounding landscape near the tract is predominantly closed-canopy deciduous forest. Other minor cover/habitat types present include early successional forest (< 20 years old). Private landownerships dominates the surrounding landscape 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. 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 north and east portion of the tract lies within the Burkhart Creek-White River subwatershed. Water resources within this hydrologic boundary are part of the Butler Creek-White River watershed.

This south and west portion of the tract lies within the Indian Creek-Beanblossom Creek subwatershed. Water resources within this hydrologic boundary are part of the Beanblossom Creek watershed.

Soils:

Typical soils in this area 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 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.

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 cable gates on both sides of Burma Rd. The gates are approximately 2 miles northwest of the intersection of State Road 37 and Burma roads. Access within the tract is good. The tract is located on both sides of Burma Rd, with the majority on the southwest side.

Boundary:

Privately owned property borders most of the tract. Private boundaries were last reviewed and marked in 2013.
Burma Road forms the very most northern boundary.

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
- old regeneration openings
- 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 within the snag density category, but are deficient in all diameter classes within the roost tree category. 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-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. 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.*

A Natural Heritage Database review was completed for this tract on 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:

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 7/17/14 by Forester McGuckin. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 99 **Trees/Ac.**
BA/A = 104 **Ft²/Ac.**
Present Volume = 10,119 **BF/Ac.**
Overall % Stocking = 82% **Stocking**
Sawtimber Trees/Ac. = 41 **Trees/Ac.**
Harvest Volume = 3,000-3,500 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
Yellow Poplar	1,234	319,150
Black Oak	698	247,160
White Oak	248	101,760
Pignut Hickory	362	68,510
Sugar Maple	332	61,470
Shagbark Hickory	378	43,670
Scarlet Oak	165	37,390
Northern Red Oak	117	33,590
American Beech	84	29,590
Largetooth Aspen	79	21,190
Eastern White Pine	142	16,690
White Ash	93	13,300
Sassafras	53	8,090
Red Pine	30	5,250
Basswood	21	5,100
TOTAL	4,036	1,011,910

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 – 87.5 acres

The timber type is predominantly mature oak-hickory with some mixed hardwoods, such as yellow-poplar, sugar maple, white ash, aspen, and American beech more common on north and east slopes. 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 yellow-poplar and black oak being the most prevalent. The understory is dominated by beech and maple.

Old Regeneration Openings – 5 acres

There are numerous 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 22 years old and total roughly 5 acres.

White Pine – 2.5 acres

The timber type is planted white pine and is located at the north end of the tract along Burma Road. The stand 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, black cherry and white ash.

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 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.

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 6371003. 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

Miscellaneous (*Special Conditions, Unique Areas & Management Units, etc.*) :

- Burma Rd and a Power Line ROW – 5 acres

Schedule:

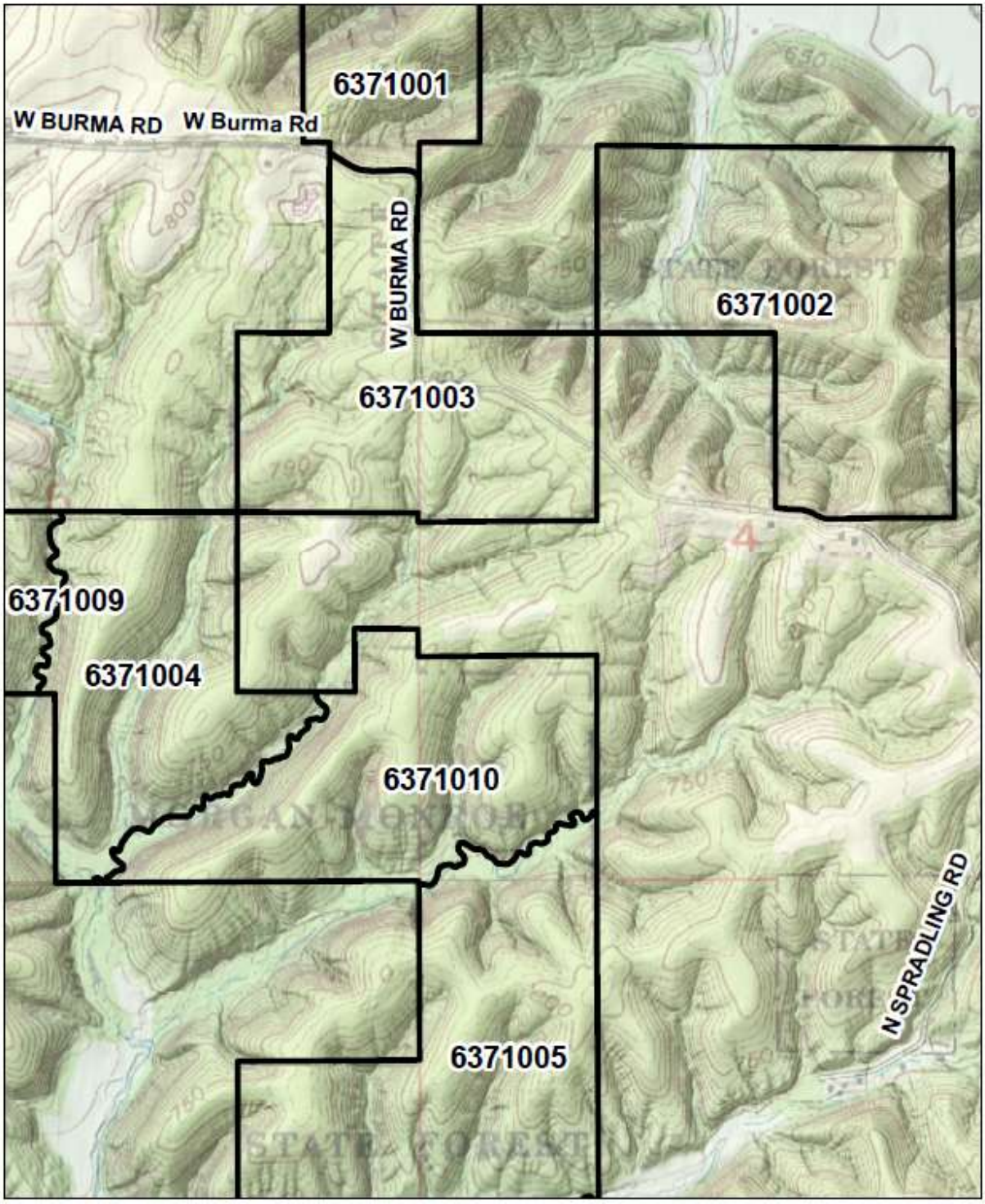
Proposed Management Activity	*Proposed Period*
Pre-Harvest TSI/ Invasive Treatments	2016-2017
Timber Marking	2016-2017
Road/Landing Work	2016-2017
Timber Sale	2017
Timber Sale Closeout	2017-2019
BMP Review	2017-2019
Post Harvest TSI/Invasive Treatments	2018-2020
Regeneration Success Review	2024
Reinventory and Management Guide	2030

To submit a comment on this document, click on the following link:

www.in.gov/dnr/forestry/8122.htm

You must indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered. Note: Some graphics may distort due to compression.

6371003


6371001
W BURMA RD
W Burma Rd
W BURMA RD
6371002
6371003
6371009
6371004
6371010
6371005
N SPRADLING RD
1,100
550
0
1,100 Feet
N
W
E
S