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

Compartment 10 Tract 2

State Forest: Morgan-Monroe
Tract: 6371002
Tract Acreage: 123
Commercial Acreage: 123
Forester: Jones/Ramey
Date: June 15, 2015
Management Cycle End Year: 2030
Management Cycle Length: 15

Location:

Tract 1002 is located in Monroe County, Washington Township, Section(s) 4, T10N – R1W. It is approximately 12 miles north of Bloomington, Indiana and located east of Burma Rd.

General Description:

Most of the tract's 123 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include mixed hardwoods.
The most recent harvest in this tract occurred in 2004. This was primarily a salvage operation which focused on removal of a small pocket of tornado damaged trees. In total, approximately 6 acres were harvested. In area of severe damage, many to most trees have broken tops and limbs, bent and twisted trunks, or are completely uprooted. Mortality in most of the opening is high and stocking and vigor are low.

History:

- 1942-1950 - Acquisition
- 1982 - Inventory/Cruising
- 1982 - Timber Harvest - Special Cut - white oak veneer 8931 bf sold to G.R. Wood, Inc. $11,676.00.
- 1982 - Timber Harvest – 183,676 bf sold to Foley Hardwoods $16,898.00
- 1984 - TSI - Completed
- 2002 - Miscellaneous – Tornado damage
- 2004 - Timber Harvest - Special Cut – salvage sale 30,900 bf sold to R. Booe and Son Hardwood $4,000.00.
- 2014 - Inventory/Preliminary Prescription – Forester McGuckin
- 2015 - Resource Management Guide – Forester Jones/Ramey

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. 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:

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.

Hd- Haymond silt loam, frequently flooded
This nearly level, deep, well drained soil is on floodplains. It is well suited to trees. Management activities should consider wet times of year. This soil has a site index of 90 for white oak and 100 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 north of Burma road, approximately 1.5 miles west of SR 37.

Boundary:

Privately owned property borders all sides of this tract. Private boundaries were last reviewed and repainted in 2013.

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 mixed hardwood canopy
- contiguous oak-hickory canopy
- 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 roost tree density category, but are deficient in all diameter classes within the snag 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. Additionally, 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.

A Natural Heritage Database review was completed for this tract in July 2015. 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:

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 7/18/14 by Forester McGuckin. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 114 **Trees/Ac.**	Overall % Stocking = 82% **Stocking**
BA/A = 99.8 **Ft²/Ac.**	Sawtimber Trees/Ac. = 40 **Trees/Ac.**
Present Volume = 9,109 **BF/Ac.**	Harvest Volume = 1,922 **Bd. Ft. /Ac.**

SPECIES	# of Sawtimber Trees	Total Bd. Ft.
White Oak	1,083	250,740
Sugar Maple	1,102	194,140
Black Oak	566	146,250
Northern Red Oak	468	134,610
Yellow Poplar	235	90,560
Scarlet Oak	400	83,870
Pignut Hickory	414	64,730
White Ash	229	52,940
American Beech	241	35,630
Shagbark Hickory	82	28,530
American Sycamore	27	15,030
Basswood	100	9,660
Blackgum	74	5,580
Chinkapin Oak	15	4,180
Black Walnut	19	3,940
TOTAL	5,055	1,120,390

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

The timber type is predominantly mature oak-hickory with mixed hardwoods, such as yellow-poplar, sugar maple, white ash, red maple, 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 size classes. Oak and hickory species account for the majority of the total volume in the tract, with white oak and black oak being the most prevalent. The understory is dominated by beech-maple.

Prescriptions

This stand 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 stand. 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.

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 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 6371002. 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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