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

**State Forest:** Morgan-Monroe
**Tract:** 6370519(Compartment 5 Tract 19)
**Tract Acreage:** 115
**Commercial Acreage:** 115
**Forester:** Ramey / Jones
**Date:** September 24, 2015
**Management Cycle End Year:** 2030
**Management Cycle Length:** 15

## Location:

Tract 6370519 is located in Monroe County, Benton Township, Section(s) 5 – T 10 N – R 1 E. It is approximately 5 miles south of Martinsville, 1 mile west of Main Forest road.

## General Description:

Most of the tract's 115 acres are covered with hardwood forests, especially oak-hickory timber types.
Other type(s) present include mixed hardwood.
The most recent harvest in this tract occurred in 1991.

> This was primarily an improvement cut and light thinning which focused on removal of fire damaged and other lower quality trees, this sale included salvage operation which focused on removal wind thrown damaged trees as a result of the serve wind storms of 1990. There were 6 regeneration openings created totaling 6.1 acres. As a result, the current overall timber quality within this tract is good and consists mainly of medium sawtimber size class. The old regeneration openings are now 22 years old and contain poletimber size mixed hardwoods.

## History:

- 1929 - Acquisition
- 1938 - Tree Planting CCC black locust
- 1941 - Tree Planting CCC black walnut and sugar maple
- 1975 - Inventory/Cruising
- 1990 –Storm Damage
- 1991 - Boundary work: marking boundaries
- 1991 - Timber Salvage marking
- 1991 - Timber Sale 68,390bf sold to Crone Lumber Co. for $4,256
- 1991 - Timber Harvest - Closeout
- 2014 - Boundary: re marking boundaries
- 2014 - Inventory/Cruising
- 2015 - Resource Management Guide

## Landscape Context:

The surrounding landscape near the tract is predominantly Closed-canopy deciduous/mixed forest. The primary block of the State Forest lies to the north and east. Private landownerships dominate to the south 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 Little Indian Creek subwatershed. Water resources within this hydrologic boundary are part of the Butler Creek-White River watershed.

Riparian features (intermittent streams) 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.

<u>BkF- Berks-Weikert complex, 25 to 75 percent slopes</u>
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.

<u>WmC- Wellston-Gilpin silt loams, 6 to 20 percent slopes</u>
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.

<u>Bu- Burnside silt loam, occasionally flooded</u>
This nearly level, deep, well drained soil is on floodplains. It is occasionally flooded for brief periods in the spring. It is well suited to trees. This soil has a site index of 95 for yellow poplar.

## Access:

This tract is accessible via 6370508 off Magoose firelane road. The gate is approximately 1 mile from the intersection of Magoose lane and Main Forest road. Access within the tract is fair.

## Boundary:

Privately owned property borders this tract on the western and southern boundaries. Private boundaries were last reviewed in 2014 and last marked in 2014.

The majority of the remaining tract boundaries adjoin other State Forest tracts and are generally defined by deep ravines and mapped intermittent streams.

## 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
- riparian areas
- old regeneration openings
- old field scrub areas

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.

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 exceed recommended base levels in smaller diameter class within the snag category, but are slightly deficient in the larger size class. Habitat features exceed recommended base levels in largest diameter class within the roost tree category, but are slightly deficient in the smaller size classes. 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 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. 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. However, these species are prevalent throughout the county and eradication is not feasible.

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 7/11/14 by Forester McGuckin. A summary of the estimated tract inventory results are located in the table below.

### Tract Summary Data

Total Trees/Ac. = 112 **Trees/Ac.** Overall % Stocking = 79% **Stocking**
BA/A = 97.3 **Ft²/Ac.** Sawtimber Trees/Ac. = 42 **Trees/Ac.**
Present Volume = 8,437 **BF/Ac.** Harvest Volume = 2,000-2,500 **Bd. Ft. /Ac.**

| SPECIES | # of Sawtimber Trees | Total Bd. Ft. |
|---|---|---|
| Yellow Poplar | 1,265 | 295,810 |
| Black Oak | 894 | 215,490 |
| Scarlet Oak | 457 | 99,280 |
| Eastern White Pine | 381 | 87,630 |
| White Oak | 350 | 76,150 |
| Pignut Hickory | 354 | 51,400 |
| Sugar Maple | 291 | 44,820 |
| Chestnut Oak | 316 | 35,740 |
| Northern Red Oak | 63 | 24,620 |
| American Beech | 91 | 9,360 |
| Black Walnut | 93 | 8,570 |
| Blackgum | 74 | 8,360 |
| Black Cherry | 61 | 6,180 |
| Largetooth Aspen | 30 | 3,600 |
| White Ash | 35 | 3,260 |
| TOTAL | 4,755 | 970,270 |

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 on the north and east slopes is predominantly mature oak-hickory with mixed hardwoods, such as yellow-poplar, sugar maple, white ash 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. The understory is dominated by beech and maple.

The characteristically drier south and west slopes are dominated with pignut hickory, chestnut, white and scarlet oak. The understory is dense with greenbrier, sassafras, American beech, and red maple. With the exception of some larger individuals lower on the slopes, the timber resource in these areas consists of a mostly poletimber to medium sawtimber size class. Old fire damage is common throughout this cover type.

An approximately 3 acre patch of mature white pine is present in the southwest corner of the tract.

Overall, 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.

***Old Regeneration Openings***

Within the stratum 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. These are natural occurrences over time, but this recent event was the most severe in some time. The openings are approximately 22 years old and total roughly 6.1 acres.

## 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 to be accomplished primarily through singletree selection and release thinning. Individual trees targeted for removal 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 mixed hardwood regeneration, 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. This will also allow ash seed to be captured and new seedlings generated before the loss of seed bearing 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 6370519. 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 and crop tree release strategies
- 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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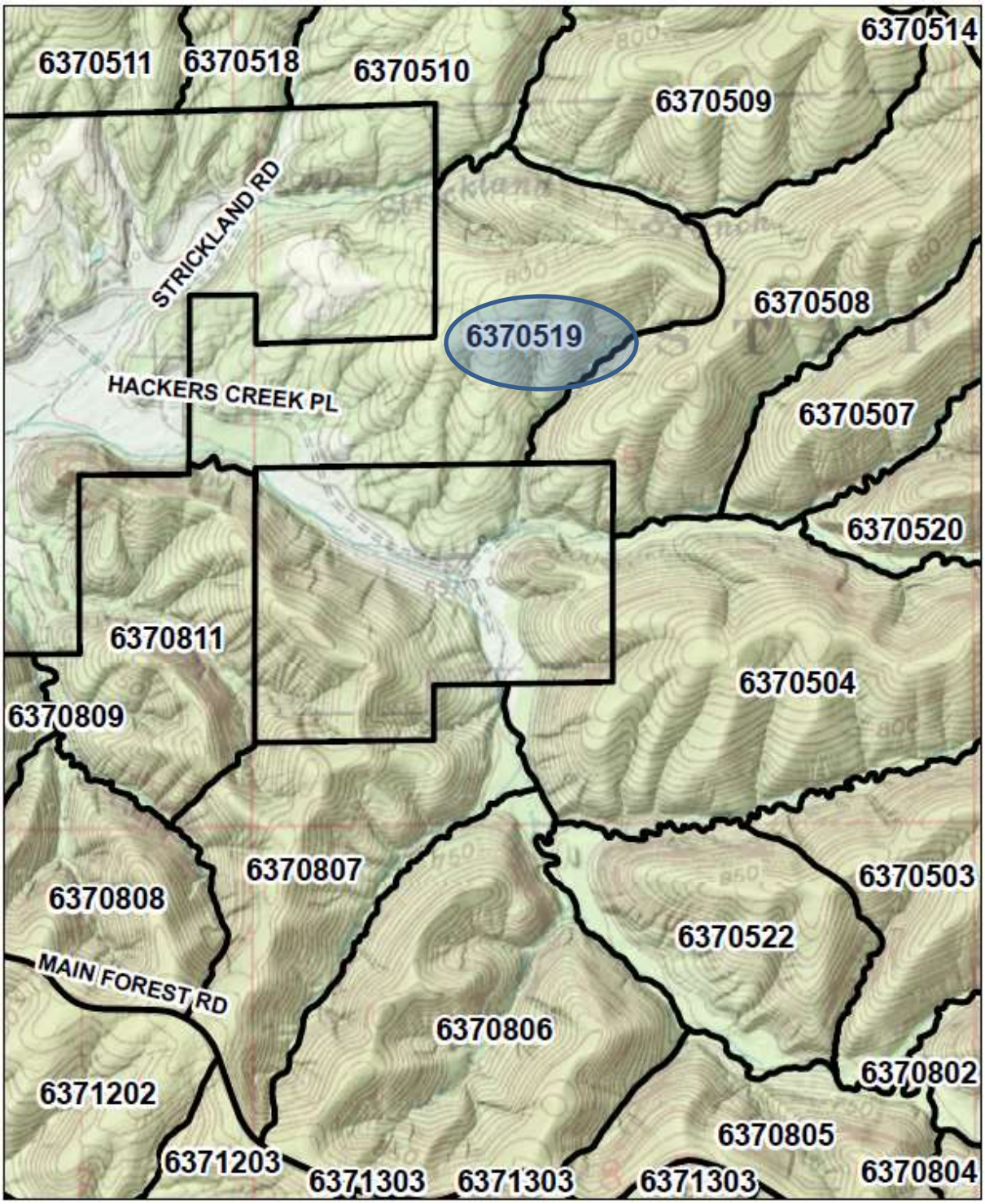
# 6370519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