# Indiana Department of Natural Resources – Division of Forestry

## Resource Management Guide

## (DRAFT)

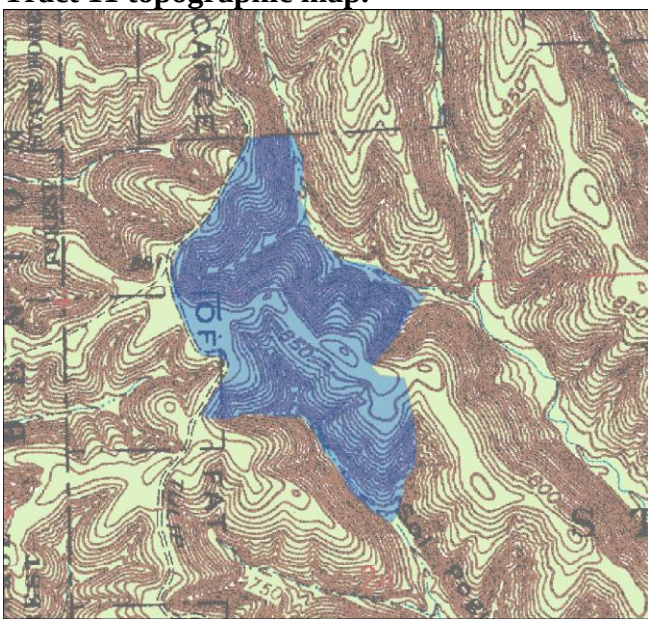
**State Forest:** Yellowwood
**Tract Acreage:** 84
**Forester:** Burgess
**Management Cycle End Year:** 2030

**Tract:** 6420811 Compartment 8 Tract 11
**Forest Acreage:** 84
**Date:** November 16, 2015
**Management Cycle Length:** 15 years

## Location:

Tract 11 is located in Brown County, Washington Township, Section(s) 13 & 24 – T9N – R1E. It is approximately 8 miles west of Nashville and located on Scarce O'Fat Rd.

**Tract 11 topographic map.**



## General Description:

Most of the tract's 84 acres are covered with hardwood forest, especially oak-hickory timber types. Other types present include mixed hardwood, bottomland hardwood, and early successional mixed hardwood The most recent harvest in this tract occurred in 1993. This was primarily a salvage operation which focused on removal of 8 damaged trees. In total, approximately 3,413 b.f. were harvested. Four of the eight trees were windthrown within a year before marking for salvage.

Prior to the salvage harvest the last tract-wide harvest was 1983. This was primarily an improvement cut and light thinning which focused on removal of fire damaged and other lower quality trees. There was also one regeneration opening created totaling .5 acre. TSI was marked in 1983 and focused on cull removal, vine control, and opening completion. It is not noted if TSI was completed. The current overall timber quality within this tract is average to good and consists mainly of medium to large size class. The old regeneration opening is now 32 years old and contain small and poletimber size mixed hardwoods, there are a few grapevines present.

In 1989 a formerly private parcel of 10 acres was purchased adjacent to Tract 11. Three of these acres were added to Tract 11. The ten acres had been clearcut prior to the state's purchase. This 3-acre portion of the tract is now small and polesize timber of Yellow Poplar, Sugar Maple, Red Maple and Largetooth Aspen.

There are many declining overstory trees and evidence of scattered windthrow throughout the tract, resulting in numerous canopy gaps. Most of these down trees are beyond salvaging. Overall the timber quality within this tract is average and consists mainly of medium to large size class. American beech, red maple, and sugar maple dominate the understory and mid canopy.

## History:

- 1976 - TSI - General
- 1976 - Inventory/Cruising
- 1981 - Timber Harvest - Marking
- 1982 - Timber Sale
- 1983 - Timber Harvest
- 1983 - Timber Harvest - Closeout
- 1983 - TSI - General
- 1987 - Boundary/Survey work: marking boundaries
- 1992 - Timber Harvest - Marking
- 1993 - Timber Harvest - Salvage Cut
- 2015 - Inventory

## Landscape Context:

State forest almost completely surrounds the tract and is predominantly Closed-canopy deciduous forest.

Other minor cover/habitat types present include Closed-canopy deciduous/mixed forest, Open water (lakes, ponds, rivers, streams, etc.), Pine/conifer plantations and early successional forest (< 20 years old).

There is one created wildlife pond on the far western portion of the tract. This pond seems to be seasonal as it does not hold water during dry conditions. This pond will be buffered from disturbance from any management activities that could reduce its integrity.

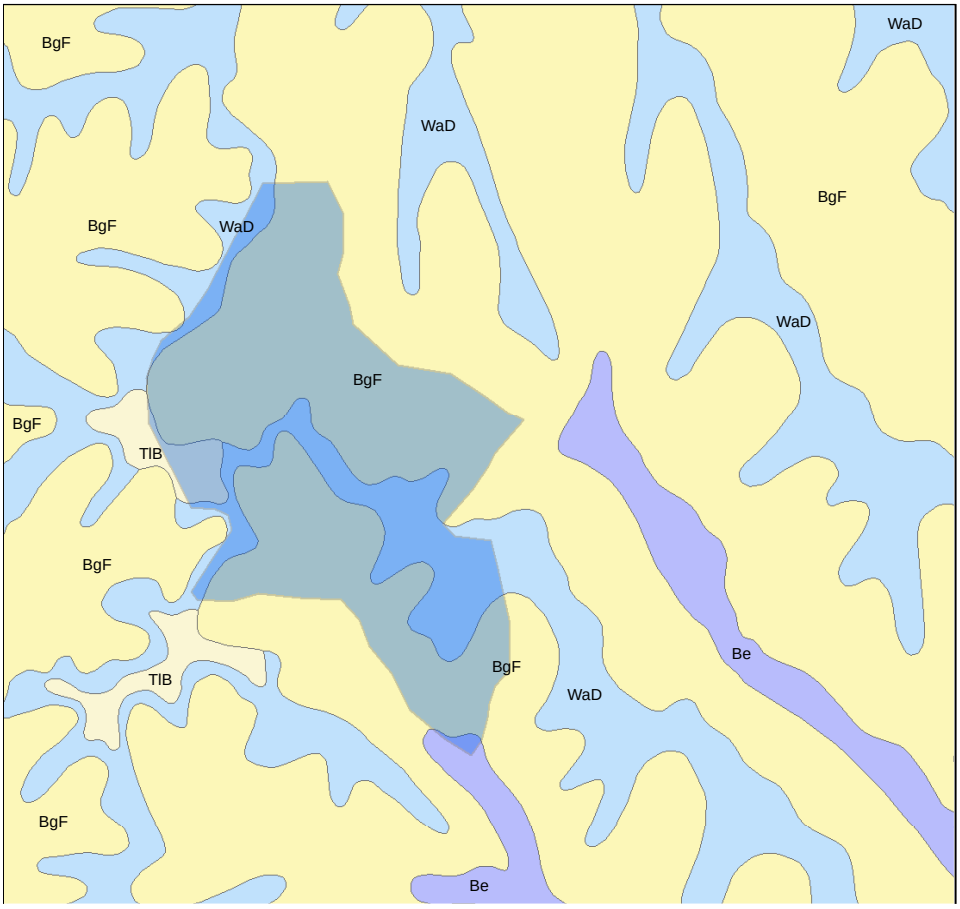
## Topography, Geology, Hydrology:

The general topography of this region consists of unglaciated, sharply dissected hills, narrow ridges and valleys. The underlying bedrock is imbedded siltstone, sandstone and shale.

This tract lies within the North Fork Sale Creek – Jackson Creek subwatershed. Water resources within this hydrologic boundary are part of the North Fork Salt Creek watershed.

## Soils:

**Tract 11 Soils map.**




The major soils in this tract are listed below.
Berks-Trevlac-Wellston complex (BgF) 20 – 70 percent slope. Moderately steep to very steep, well drained soils on hillsides in the uplands. Severe limitations noted for logging due to slope.

Welston-Berks-Trevlac complex (WaD) 6-20 % slopes. Moderately sloping to moderately steep on side slopes and narrow ridge tops. Slight harvest limitations due to slope.

Beanblossom channery silt loam (Be) nearly level and gently sloping, deep, moderately well drained soil is on flood plains, alluvial fans and colluvial benches. Slight to moderate limitations.

Tilsit silt loam (TIB) 2 – 6 percent slope. Gently sloping, deep, moderately well drained soil on the tops of ridges in the uplands. Slight limitations.

## Access:

This tract is accessible via Scarce O'Fat Road (Tulip Tree Rd. to the north). The gate is approximately 3 miles south the intersection of Tulip Tree Rd. and Hwy. 45. Access within the tract is easy from the Scarce O' Fat fire trail.

## Boundary:

Privately owned property borders this tract on just a short portion of the northern line. Private boundaries were last marked in 2015. Most of the tract boundary is defined by other State Forest tracts.

## 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
- contiguous mixed hardwood canopy
- riparian areas
- old regeneration openings
- wildlife pond

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. 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 reduces soil erosion.

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 greatest 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:

The data suggests that the tract meets guidelines for forest stand snag density in 5" and 19", but is slightly deficient in 9". It is important to note that these are compartment level guidelines and that even though the estimated tract data does not quite meet the target level, it is likely that suitable levels are present for this habitat feature in the surrounding landscape.

There may be opportunities to increase this habitat feature. Many low quality/non-merchantable trees could be girdled in a post-harvest timber stand improvement (TSI) operation. This would not only provide an increase in this important habitat feature, but would free up resources and growing space for younger, more vigorous trees.

Legacy trees of a particular species suitable as live roost trees for the Indiana bat are well represented in the 11" size category, but is slightly deficient in the 20" size class. It is important to note that these are compartment level guidelines and that even though the estimated tract data does not quite meet the target level, it is likely that suitable levels are present for this habitat feature in the surrounding landscape. As vigorous trees are released through management and the stand ages it is expected that legacy trees will continue to grow into this size class, thus exceeding this compartment level target for the tract.

Legacy trees and standing dead trees (snags) will be given consideration for retention as habitat for the Indiana bat and other wildlife as defined by the Resource Management Strategy for the Indiana bat on State Forest Property and the Management Guidelines for Compartment-level Wildlife Habitat 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 November 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:

No exotic or invasive species were observed during the November 2015 inventory. Given the broad range of invasive species that exist across the landscape, it is likely that at least scattered populations are present in the tract. If or when any are identified, they will be documented and appropriate prescriptions proposed at that time.

## Recreation:

Hunting is permitted on State Forest property and this area also offers opportunities for certain types of gathering, and wildlife viewing. The “Z” horsetrail follows along Scarce O’Fat firetrail which is the western boundary of Tract 11.

Trails will be given consideration during management activities. They may be closed temporarily for safety considerations.

## 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 November 13, 2015 by Forester Burgess. A summary of the estimated tract inventory results are located in the table below.

| | |
|---|---|
| Total Trees/Ac. = 102 **Trees/Ac.** | BA/A = 76 **Ft²/Ac.** |
| Present Volume = 527,604 board feet | Harvest Volume = 150,000-210,000 board feet |

For the purpose of this guide, this tract has only one designated management stratum based on the dominance of its Oak-Hickory/Mixed hardwood cover type. However, there are small pockets of various other cover types that are worth mentioning. Below is a general tract description and silvicultural prescription.

## Descriptions

***Oak-Hickory/Mixed Hardwood***

The timber type is predominantly mature oak-hickory with some 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 large size class. Oak and hickory species account for the majority of the total volume in the tract, with chestnut oak and white oak being the most prevalent. The understory is dominated by Sugar Maple.

***Oak-Hickory/Chestnut-Scarlet***

The timber type on the north and east slopes is predominantly mature oak-hickory with some 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. The understory is dominated by beech and maple.

The south and west slopes are dominated with chestnut and scarlet oak. The understory is dense with greenbrier, blackgum, 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 pole to medium sawtimber size class. Old fire damage is common throughout this cover type.

Overall, oak and hickory species account for the majority of the total volume in the tract, with white oak and chestnut oak being the most prevalent.

***Old Regeneration Openings***

There is one old regeneration opening dominated with yellow-poplar, maples, and largetooth aspen. The opening is approximately 32 years old and approximately one-half acre.

***Chestnut Oak***

The timber type is predominantly chestnut and scarlet oak. A higher stocking of other oak and hickory species as well as mixed hardwoods is more common lower on the slopes and into the stream bottoms; however, the extent of those other species is not large enough to delineate separately. The understory is dense with greenbrier, blackgum, sassafras, American beech, and red maple. With the exception of some larger individuals lower on the slopes, the timber resource consists of a mostly poletimber to small sawtimber size class. Old fire damage is common throughout this cover type.

***Mixed Hardwood***

The timber type is predominantly mixed hardwoods with some oak-hickory present. Primary species include white oak, yellow-poplar and sugar maple. A mix of diameters are present, but the timber resource consists of a mostly large size class. The understory is dominated by maple and American beech.

***Bottomland Hardwoods***

The timber type is predominantly bottomland hardwoods. Primary species include red oak, American sycamore and black cherry. The timber resource consists of a mostly large size class. The understory is dominated by sugar maple.

## Prescriptions

Portions of this tract are well stocked while other portions are low to inadequate stocking. A timber sale is prescribed to reduce stocking as well as regenerate the areas of low stocking. This tract is a buffer tract for the Hardwood Ecosystem Experiment. 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.

Small group selections may be implemented in areas dominated with poor growing stock. Regeneration openings, if any, will be on less than 5% of the tract. 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. Harvest design will be reviewed with HEE project staff to help ensure compatibility with nearby research projects.

***TSI***

A Timber Stand Improvement (TSI) is prescribed for the 1993 opening and any openings created within the planned harvest. Work should include the following:

- Grapevine Control
- Croptree Release
- Regeneration Opening Completion
- Coppicing

## Schedule:

| *Proposed Management Activity* | *Proposed Period* |
|---|---|
| Timber Marking | 2016-17 |
| Road/Landing Work | 2016-17 |
| Timber Sale | 2016-17 |
| Timber Sale Closeout | 2016-18 |
| BMP Review | 2016-18 |
| Post Harvest TSI/Invasive Treatments | 2016-18 |
| Regeneration Success Review | 2022 |
| Reinventory and Management Guide | 2030 |

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

http://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.