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

State Forest: Yellowwood

Tract: Compartment 11 Tract 4 (6421104)

Tract Acreage: 67

Forest Acreage: 67

Forester: L. Burgess

Date: January 13, 2016

Management Cycle End Year: 2031

Management Cycle Length: 20 years

Location:

Tract 6421104 is located in Brown County, Jackson Township, Section(s) 2 – T9N – R2E. It is approximately 4 miles north of Nashville and located just south of Whippoorwill Rd.

General Description:

Most of the tract's 67 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include old field, and mixed hardwood.

There is no known harvest record for this tract while under state ownership. This is due to poor access.

1. *Declining/Overmature Stand Brief Description* - There are many declining overstory trees and evidence of scattered windthrow throughout the tract, resulting in numerous canopy gaps. Overall the timber quality within this tract is average and consists mainly of medium to large size class. American beech and red/sugar maples dominate the understory and mid canopy.

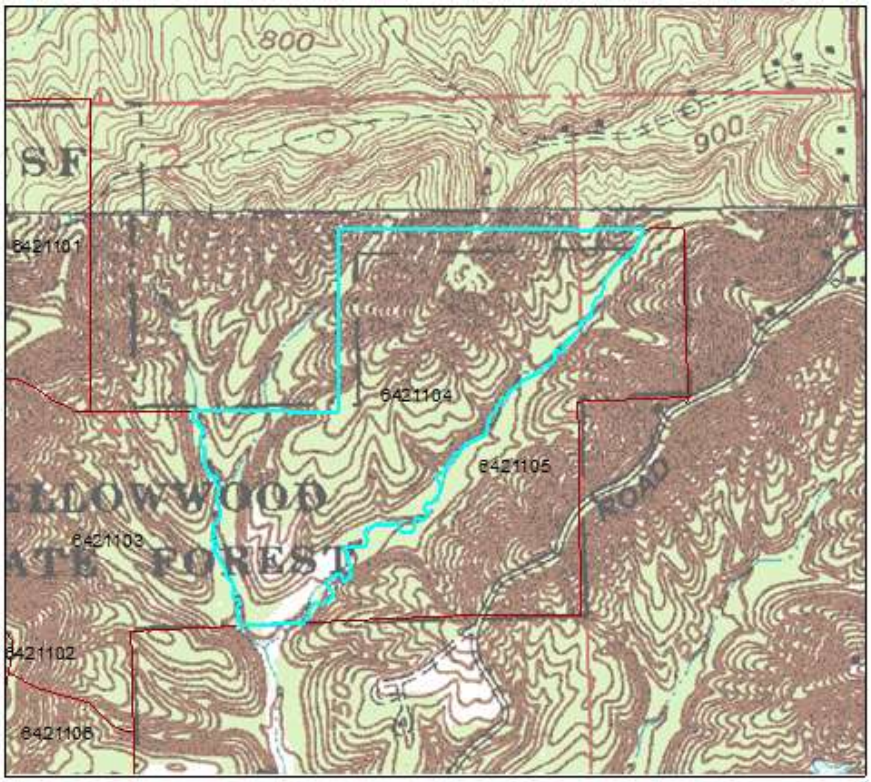

Figure 1. Tract 4

Landscape Context:

State forest adjoins to the east and west of the tract and private woodland property adjoins the tract's north and south boundaries.

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

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

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 East Fork Salt Creek-North Fork Salt Creek subwatershed. Water resources within this hydrologic boundary are part of the North Fork Salt Creek watershed.

Soils:

Typical soils in this area were formed in Wisconsin aged loess and the underlying Illinoian glacial till. 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 (95% of tract).

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 (5% of tract).

Access:

This tract is accessible on foot only from an adjacent tract. A small parking area is available off Grandma Barnes Road then walk in nearly a quarter mile.

Boundary:

This tract has adjacent private ownerships to the north and south. The tract boundary is defined by other State Forest tracts to the east and west. The boundary lines adjacent to private property were remarked in Winter 2015.

Wildlife:

This tract contains diverse vegetation and wildlife resources (age, type, structure) conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- contiguous mixed hardwood canopy
- pine plantations (though the bulk of these planting has dies out. There ae still some pines remaining, primarily Shortleaf pine and Pitch Pine.
- riparian 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**. Structural feature data gathered within this tract indicate snag levels meeting target levels in all diameter classes. And, live roost trees well represented in the 11" size category and somewhat below the target in the larger size category. Compartmental values are derived from and updated every 5 years through the Division's Continuous Forest Inventory (CFI) program. Legacy trees and standing dead trees (snags) will be given consideration for retention as habitat for the Indiana bat and other wildlife.

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 ground layer.

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.

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 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 January 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.

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 January 2015 by Forester Burgess. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 130 **Trees/Ac.**	Overall % Stocking = 65% **Stocking**
BA/A = 75.2 **Ft²/Ac.**	Sawtimber Trees/Ac. = 21 **Trees/Ac.**

Present Volume = 4500 **BF/Ac.**

Species	Total Volume (bd. ft.)
American Sycamore	5,550
Bitternut Hickory	3,980
Black Cherry	5,380
Black Oak	74,600
Chestnut Oak	57,380
Eastern White Pine	10,680
Largetooth Aspen	14,690
Pignut Hickory	2,003
Red Maple	32,010
Scarlet Oak	5,550
Shagbark Hickory	3,110
Shortleaf Pine	12,160
Sugar Maple	2,290
White Ash	7,120
White Oak	37,711
Yellow Poplar	21,560
Tract Total*	***301,500***
Per Acre Total	***4,500***

*****Rounded totals*

This tract has 2 management units (stands). Below is a list, approximate acreages, general stand descriptions and silvicultural prescriptions.

Descriptions

Oak-Hickory/Chestnut-Scarlet

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, red maple, and American beech interspersed throughout. A mix of diameters is 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, 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.

Old Field

This area is located on the west-central ridgetop. This stratum is composed mostly of herbaceous vegetation and scattered saplings, poles and small sawtimber size trees. There are scattered

mixed pines from former planting. These pines have been falling out of the stand and are giving way to the encroaching native hardwoods. Dominant tree species include Pignut Hickory, Largetooth Aspen, Scarlet Oak, and Yellow Poplar.

Prescriptions

Portions of this tract is well stocked in scattered areas 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 both management units. 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 (60 sqft/acre) according to the Gingrich stand density chart for upland hardwoods. Anticipate 85,000 to 120,000 bd.ft. of sawtimber volume.

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.

Miscellaneous This tract will be marked and scheduled for harvest withal or portions of adjacent Tracts 1, 2, 3, 5 and 6.

Schedule:

Proposed Management Activity	*Proposed Period*
Timber Marking	2016
Road/Landing Work	Time of harvest
Timber Sale	2016
Timber Sale Closeout	2016-18
BMP Review	2016-18
Post Harvest TSI/Invasive Treatments	2017
Regeneration Success Review	2021
Reinventory and Management Guide	2035

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