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

State Forest: Yellowwood
Tract Acreage: 66
Forester: Z. Musser for L. Burgess
Management Cycle End Year: 2030

Tract: Compart 11 Tract 6 (6421106)
Commercial Acreage: 66
Date: June 23, 2015
Management Cycle Length: 15

Location:

Tract 6421106 is located in Brown County, Jackson Township, Section(s) 2 & 11 – T9N – R2E. It is approximately 2 miles Northwest of Nashville, IN and located off of Grandma Barnes Rd.
Figure: Yellowwood State Forest Compartment 11 Tract 6.

General Description:

Most of the tract's 66 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include pine and mixed hardwood. There is no known harvest record for this tract while under state ownership. This is due to difficult access.

History:

- 1999 - Boundary/Survey work: marking boundaries
- 2015 - Boundary/Survey work: marking boundaries
- 06/24/2015 - Inventory/Cruising
- 06/24/2015 - Resource Management Guide

Landscape Context:

The primary block of the State Forest in this compartment lies to the North. Private landownerships adjoin and dominate to the south, east and west with a mix of developed areas, forest and agricultural lands.

The surrounding landscape near the tract is predominantly Closed-canopy deciduous forest.
Other minor cover/habitat types present include Grasslands/Hayfields/Pasture and Developed areas.

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 Clay Lick 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. (65% of tract)

Wellston-Gilpin silt (WeC2) 6 to 20 percent slopes. Moderately sloping to moderately steep, well drained soil. Harvest limitation due to slope and erosion potential. They are well suited to trees. This Complex has a site index of about 71 for northern Red Oak. This soil comprises about 5% of the tract acreage. (30% 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 via Grandma Barnes Rd, however it does not allow direct tract access. Access within the tract is decent, but some steep slopes limit it.

Boundary:

Privately owned property borders this tract to the south, east and west. Private boundaries were last marked in 2015.

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
- pine plantations
- 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. 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: **Forest Snag Density, Preferred Live Roost (legacy) 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 marginally below the target in the larger size category. Legacy trees and standing dead trees (snags) will be given consideration for retention as habitat features. Compartmental values are derived from and updated every 5 years through the Division's Continuous Forest Inventory (CFI) program.

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.

Mesic floodplain forest

Stands of mesic floodplain forests occur throughout the region, although they are not very large in size. This community is located within the floodplain, with soils that are moderately well drained, due to coarse texture or relatively high elevation.

The dominant trees you will find are sugar maple, white oak, bur oak, American elm, slippery elm, and basswood. Other plants and animals characteristic of a mesic floodplain forest are: black walnut, white ash, and eastern mole.

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:

Below is a list of invasive species identified during the inventory. A broad and/or situational approach should be taken with these species. Control measures for these species could be warranted for large scale roadside treatment projects, planned regeneration opening treatments, pre or post harvest TSI projects, etc. Post harvest control of stiltgrass is most easily accomplished through successful seeding of fescue or other competitive non invasive seeding mix.

- **Privet**
- **Japanese Stiltgrass**
- **Autumn Olive**
- **Multiflora Rose**

Recreation:

Although no permanently established recreation areas 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 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 *June 25, 2015* by Intermittent Forester Z. Musser. 22 prism points were examined and sampled over 66 acres (1 point for every 3 acres). A summary of the tract inventory results are located in the table below.

For the purpose of this guide, this tract has only one designated management stratum based on the dominance of its Oak-Hickory cover type. Below is a general tract description and silvicultural prescription.

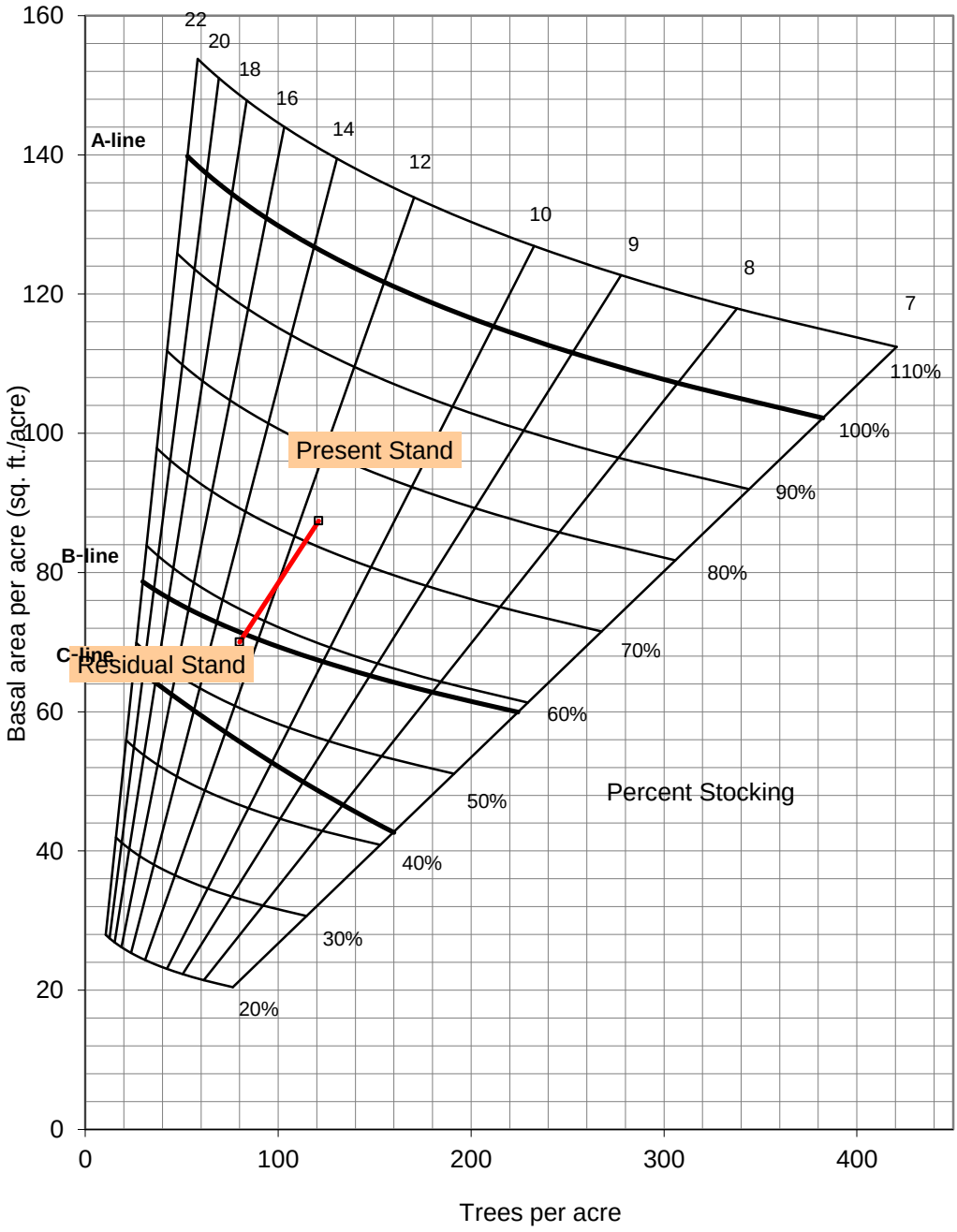
Total Trees/Ac. = 121 **Trees/Ac.** Overall % Stocking = 73% **Stocking**
BA/A = 87.4 **Ft²/Ac.** Sawtimber & Quality Trees/Ac. = 38 **Trees/Ac.**
Present Volume = 5,917 **BF/Ac.**
Residual Volume/Ac. = 4,830 **BF/Ac.**

	Acres		Sq. Ft. per Acre
Hardwood Commercial Forest:	0	Basal Area Sawtimber:	56.5
Pine Commercial Forest:	0	Basal Area Quality:	.4
Noncommercial Forest:	66	Basal Area Poles:	27.4
Permanent Openings:	0	Basal Area Culls:	2.2
Other Use:	0	Sub-merchantable:	1.0
Total:	66	Total Basal Area:	87.4

Tract Summary Data for Y1106 from July 2015 Inventory

Species	Total Volume (bd. ft.)
American Beech	13810
American Elm	3670
American Sycamore	5870
Bitternut Hickory	4400
Black Cherry	1960
Black Oak	67230
Chestnut Oak	60000
Northern Red Oak	23540
Pignut Hickory	12290
Red Pine	46630
Shagbark Hickory	4080
Sugar Maple	18660
Virginia Pine	48590
White Ash	7150
White Oak	58210
Yellow Poplar	14430
Tract Total*	***390,520***
Per Acre Total	***5,920***

Table: Gingrich Stocking Table for 6421106



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 sawtimber size class. Oak and hickory species account for the majority of the total volume in the tract, with Black oak and Chestnut oak being the most prevalent. The understory is dominated by Sugar Maple, American Beech, and in some areas oak.

Homogeneous Pine Plantation

The timber type is planted, non-native Red pine and is located along the ridge tops in the southern half of the tract. The stand consists of almost pure Red pine that is stagnant and in general decline. The Red pine is pole to small sawtimber in size. There is a component of hardwoods present, most notably Ash, Tulip poplar, and Sugar maple.

Prescriptions

This tract is well stocked and a timber sale is prescribed, possibly in combination with adjacent tracts. 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. 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-to-Hardwood Conversion

Due to the poor condition of this stand, a conversion to native hardwoods is prescribed. This should be accomplished primarily through an even-age method such as group selection , or clearcutting of the stagnant Red pine stand. If areas exist that are interspersed with a sufficient stocking of vigorous dominant, co-dominant, and intermediate mixed hardwoods, a singletree and group selection cutting of the pine is recommended. A light improvement cutting of the hardwood trees may be necessary.

Miscellaneous An approximate sawtimber volume of 75,000 to 115,000 bd.ft. is anticipated from Tract 6. This tract will be marked and scheduled for harvest with all or portions of adjacent Tracts 1,2, 3,4, and 5.

Schedule:

Proposed Management Activity	*Proposed Period*
Timber Marking	2016
Road/Landing Work	At time of harvest
Timber Sale	2016
Timber Sale Closeout	2016-18
BMP Review	2016-18
Post Harvest TSI/Invasive Treatments	2016-18
Regeneration Success Review	2022
Reinventory and Management Guide	2036

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