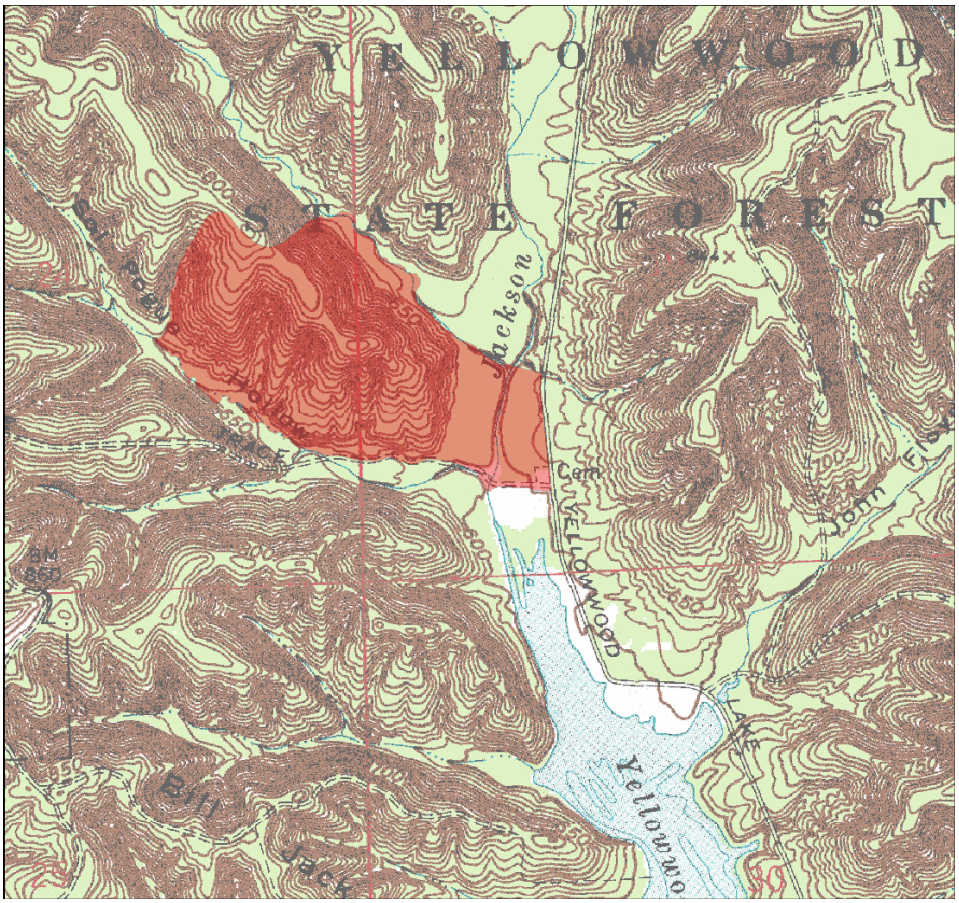
Indiana Department of Natural Resources
Division of Forestry
DRAFT
RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood**
Tract Acreage: **113**
Forester: **Laurie Burgess**
Management Cycle End Year: **2030**

Compartment: **8** Tract: **30**
Commercial Forest Acreage: **113**
Date: **July 2015**
Management Cycle Length: **15 years**

Location
6420830 is located in Section 24 of Township 9N, Range 1E of Brown County. The tract can be accessed via Yellowwood Lake Road or by a ridge passing through Tracts 11 and 12 on the east side of Scarce O'Fat Ridge.

Figure 1. Yellowwood SF Compartment 8 Tract 30



General Description
6420830 is comprised of the following forest types: oak-hickory, chestnut oak, mixed hardwoods, and pine. The timber size ranges from small to large sawtimber. While there are

many quality trees in this tract the overall timber quality is average. A summary of the forest resources in 6420830 in relation to species dominance is noted below in Table 1.

Table 1. Species composition from the July 2015 inventory in 6420830

Overstory	Midstory	Regeneration Layer
White Oak	**Red Maple**	**American Beech**
Chestnut Oak	**Chestnut Oak**	**Sugar Maple**
Black Oak	**American Beech**	**Sassafras**
Yellow Poplar	*White Oak*	**Red Maple**
Sugar Maple	*Blackgum*	**Blackgum**
Bitternut Hickory	*Sugar Maple*	*American Elm*
Northern Red Oak	*Shagbark Hickory*	*Bitternut Hickory*
Scarlet oak	*Pignut Hickory*	*Dogwood*
Red maple	*Scarlet Oak*	*Ironwood*
Pignut Hickory	*Sassafras*	
Shagbark Hickory	*Black Oak*	
American Sycamore	*American Elm*	
White Ash		
American Beech		

Bold – Species that comprise ≥ 10% of the total BA in each structural class
Italicized - Species that comprise ≤ 10% of the total BA in each structural class

History
6420830 is part of a large block of land deeded by the United States Department of Agriculture in 1953 to Yellowwood State Forest. Historical aerial photography suggests that prior to government acquisition, the valleys and ridgetops were farmed and the side slopes likely to have been grazed.

- January 1975 - Forester Ackard, Timber sale sold of 81,5006 bf. 478 trees. Sold to Bill Pool
- June 1975 – CETA Forester. TSI completed
- December 1976 - Foresters Williams, Inventory
- July 1982 - Forester Gray. – recon of regeneration response from 1975 harvest
- February 1987 - Forester Unversaw – Powerline maintenance by REMC
- May 1995 - Forester Eckart – Tract inventory

Landscape Context
6420830 is surrounded by other Yellowwood State Forest tracts on all sides. The majority of the landscape is comprised of closed canopy State Forest land. Lake Lemon (1,650 acre man-made reservoir) is 4.25 miles to the northwest of the tract and in a different watershed The tract's intermittent stream eventually runs to Jackson Creek which leads into Yellowwood Lake (133 acre man-made lake).

Topography, Geology and Hydrology
6420830 contains a central ridge running northwest to southeast then drops off to bottomland planted to pine with some naturally regenerated hardwoods. The tract's topography ranges

from 0 - 60% slopes with predominating aspects being south, north and east. The underlying soils range from 27-72 inches in depth to sandstone and/or shale bedrock. A mapped blue line stream is located at portions of the north and the south of the tract as well as within the tract's eastern acreage. The tract also contains several ephemeral drainages between finger ridges. Water resources from 6420830 drain into Jackson Creek, which drains into Yellowwood Lake which is ¼ mile South of the tract. Yellowwood Lake is an important part of Yellowwood State Forest for recreation and flood control. Management activities will consider impacts to water resources and include measures to address potential impacts.

Soils

BgF- Berks-Trevlac-Wellston Complex, 20 to 70 percent slopes

These moderately steep to very steep well drained soils are on hillsides in the uplands. They are fairly well suited to trees. Erosion hazards and equipment limitations are the main management concerns due to slope. Slope considerations are needed during sale planning and implementation of Best Management Practices for Water Quality. This Complex has a site index of about 70 for Northern Red Oak. This soil comprises about 85% of the tract acreage.

WaD - Wellston-Berks-Trevlac Complex, 6 to 20 percent slopes

These moderately sloping to moderately steep, well drained soils are on side slopes and narrow ridgetops in the uplands. They are well suited to trees. Seedling mortality can be an issue on the south facing Berks soils due to droughty conditions. This Complex has a site index of about 70 for northern Red Oak. This soil comprises about 10% of the tract acreage.

WeC2 - Wellston-Gilpin silt 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.

Access

Public and resource management accesses into 6420830 are available via Tulip Tree Road south of State Road 45. Access is also available from Yellowwood Lake Road, which is the eastern boundary of the tract.

Boundary

The tract is surrounded by Yellowwood State Forest on all sides. The eastern boundary is Yellowwood Lake Road, and all other boundaries are formed by combinations of ephemeral and intermittent drainages.

Wildlife

Wildlife resources in 6420830 are abundant. This tract contains habitat suitable for a wide variety of wildlife species. The tract currently consists of closed canopy deciduous forest dominated by mixed hardwoods, yellow-poplar, and oak-hickory. These tracts supply abundant food resources that include soft and hard mast.

A Natural Heritage Database Review was completed for 6420830. If Rare, Threatened or Endangered species (RTE's) were identified for this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

The Division of Forestry has instituted procedures for conducting forest resource inventories so that the documentation and analysis of live tree and snag tree densities are examined on a compartment and tract level basis in order to maintain long-term and quality forest habitats.

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.

Crown release performed during the planned timber harvest will stimulate the growth of the selected residual trees and will enhance the vigor of those trees. Timber Stand Improvement (TSI) following the harvest is planned, which will increase standing snag counts. Management practices will be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations.

Communities
6420830's ridgetops and side slopes are comprised mostly of upland hardwoods dominated by oak-hickory and mixed hardwoods. Overstory species include white oak, chestnut oak and black oak. The understory consists mainly of red maple, chestnut oak, and American beech. The ground cover consists of mainly mesic to dry mesic species. There is a pine stand of approximately 16 acres of White pine with some hardwoods that have entered the stand since time of planting.

Exotic Species
Japanese stiltgrass was noted during the inventory. This may be treated along accessible areas if resources allow. This species is widespread throughout the landscape, and although some site specific management is possible, control or eradication of this species is not feasible

Recreation
Recreational activities that occur in 6420830 could include bird watching, wildlife viewing, hunting, and mushrooming. No hiking trails are located within the tract.

Cultural Resources

All portions of 6420830 were reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on 6420830 but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

Tract Subdivision Description and Silvicultural Prescription

The overall stand structure for 6420830 is represented in the following Table (Table 2) that follows the individual Tract Summary. This table was based on inventory results for the 97 acres of hardwoods within the tract and does not contain results from the 16 acre pine stand.

Tract Summary Data

Total Trees/Ac. = **143 Trees/Ac.** Overall % Stocking = **73% (Stocked)**
BA/A = **85 Sq. Ft./Ac.** Sawtimber & Quality Trees/Ac. = **20 Trees/Ac.**
Present Volume = **6,261 Bd. Ft./Ac.**

Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed in July 2015 by Forester Laurie Burgess. 35 prism points were sampled over 113 acres (~1 point for every 3 acres). A tract summary of the forest resource inventory is given above and a present volume by species breakdown of the summary is given in Table 3 below. The condition of the tract's yellow-poplar is variable – some trees show decline and dieback in the crown or are already dead due to the drought and scale damage that occurred in 2012 while others show little decline. The majority of the tract is mixed oak-hickory forest type as well as mixed hardwood forest type. There is an eastern white pine plantation of approximately 16 acres in the eastern portion of the tract. While some pine may be included with timber harvesting, much of this pine will be retained. There are several dead pine that are beyond salvage.

Summary Tract Silvicultural Prescription and Proposed Activities

6420830 will be included in the 2016-17 management cycle and will likely be combined with adjacent tracts based upon their inventory completion. Stocking levels are varied across this tract and will therefore determine the management objective as timber marking is conducted; often areas of low stocking are most beneficial for group selection openings to promote a new, diverse and well stocked stand. Other areas noted as over-stocked can be thinned to reach desired stocking levels.

A timber sale is prescribed to reduce stocking in fully stocked and overstocked areas as well as regenerate the areas containing low stocking due to a variety of reason including wind throw and mortality. 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.

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.

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

Table 3. Estimated Present Volumes from July 2015 inventory in 6420830

This table was based on inventory results for the 97 acres of hardwoods within the tract and does not contain results from the 16 acre pine stand.

Species	Total Volume (bd. ft.)
American Beech	26,470
Bitternut Hickory	9,470
Black Oak	153,740
Chestnut Oak	70,110
Northern Rad Oak	19,710
Pignut Hickory	36,010
Red Maple	8,370
Scarlet Oak	47,380
Sugar Maple	13,090
White Oak	146,680
Yellow Poplar	76,270
Tract Total*	***607,300***
Per Acre Total	***6,261***

Proposed Activities Listing

Proposed Management Activity	***Proposed Period***
Timber marking	CY 2017
Timber sale	FY 2017-18
TSI	CY 2018-20
Reinventory and Management Guide	CY 2030

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