

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

State Forest: **Yellowwood**  
 Tract Acreage: **44**  
 Forester: **Amanda Smith (for Laurie Burgess)**

Compartment: **11**    Tract: **01**  
 Commercial Forest Acreage: **44**  
 Date: **7/9/2013**

**Location**

Y1101 is located Northeast of the main portion of Yellowwood State Forest in an outholding of YSF along with 5 other tracts in Compartment 11. Y1101 resides in Section 2 of Township 8N, Range 2E of Brown County. It is located roughly 2.8 miles northwest of Nashville and 5.5 miles northeast of Yellowwood Lake.

**General Description**

Y1101 consists of a total of 44 forested acres of which 16 acres are Oak-Hickory forest, 16 acres are of Mixed Hardwood forest, and 12 acres are of upland, oldfield forest in Yellowwood State Forest. All 44 acres are considered commercial forest acreage. Y1101's timber resource ranges from small to large sawtimber in size. The overall timber quality of this Tract is average to above average. A summary of the forest resources in Y1101 in relation to species dominance is noted below in Table 1.

**Table 1. Overview of Forest Resources in Y1101 in June of 2013**

<b>Overstory Sawtimber Layer</b>	<b>Understory Poletimber Layer</b>	<b>Regeneration Layer</b>
Yellow Poplar	Sugar Maple	American Beech
White Oak	Sassafras	Sugar Maple
Northern Red Oak	Shagbark Hickory	Pawpaw
Black Oak	American Beech	Bluebeech
Chestnut Oak	Blackgum	Ironwood
Sugar Maple	Chestnut Oak	Red Elm
Bitternut Hickory	White Oak	Red Maple
Pignut Hickory	Black Oak	Yellow Poplar
White Ash	Yellow Poplar	Basswood
American Elm		Blackgum
Shagbark Hickory		Chestnut Oak
American Beech		Pignut Hickory
Scarlet Oak		*Black Oak
Black Walnut		*Northern Red Oak
Blackgum		*Sassafras
Largetooth Aspen		*Shagbark Hickory
Sassafras		*White Ash
Black Cherry		*White Oak

\* Species not captured in Prism Plots but present within the tract.

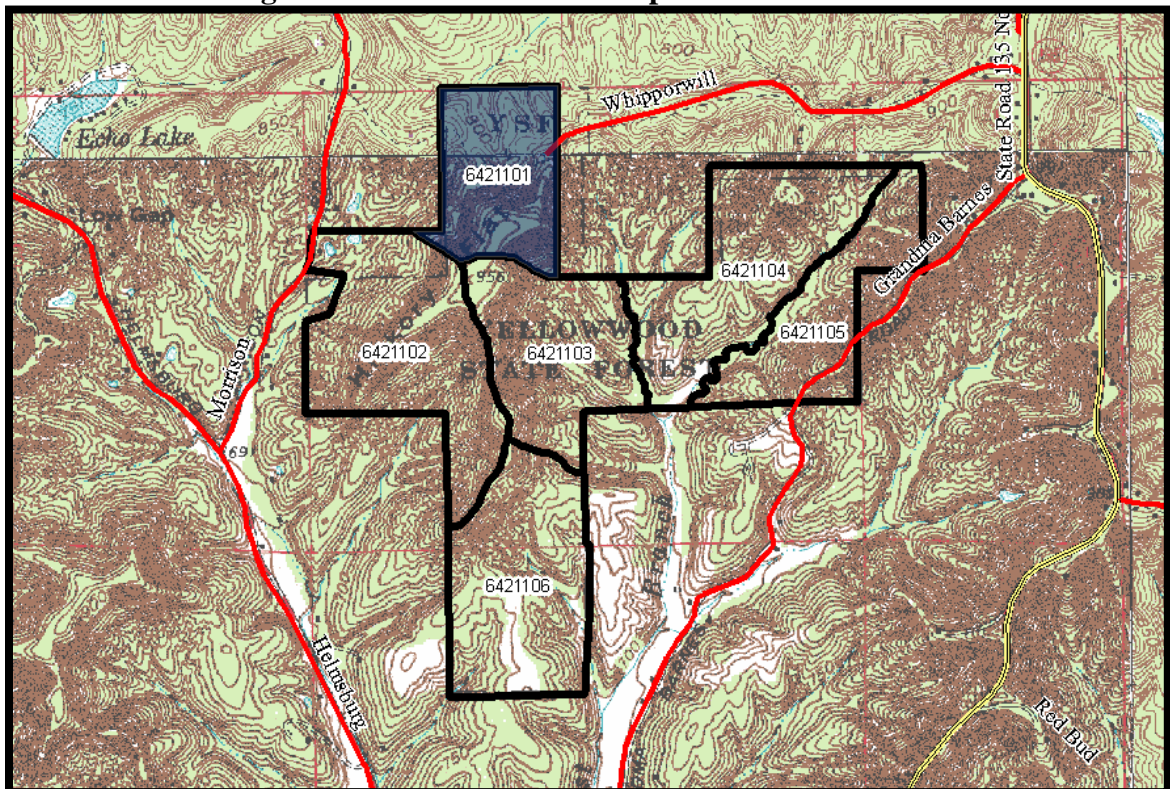
## History

The land area that includes Y1101 was deeded to the State of Indiana in 1940 by the United States Department of Agriculture. Historical aerial photography suggests that prior to government acquisition the valleys and ridgetops were farmed and the sideslopes likely to have been grazed. Y1101 was field reviewed but not inventoried in 1981 by Forester Dwayne Sieg. Forester Lee Eckart updated the eastern boundary line in 1983 to determine if a trespass had occurred. The first Tract resource inventory was completed on June 27, 2013 by Intermittent Forester Amanda Smith.

## Landscape Context

The ridgetop of Y1101 is mostly comprised of upland oldfield species while the sideslopes are composed of Mixed Hardwoods and Oak-Hickory species known to occur in the Brown County Hills Natural Region. The Tract is bordered to the south by the dominantly closed forest canopy of Yellowwood State Forest. Private forested property with dispersed residential buildings borders Y1101 on the north, east, and west boundaries.

**Figure 1. Yellowwood SF Compartment 11 Tract 01**



## Topography, Geology and Hydrology

Y1101 consists of predominantly north, east, and west facing slopes that drain into two mapped intermittent streams, one on each side of the Tract's major ridge. Ephemeral drainages feed into the mapped intermittent stream located north of Y1101 which eventually drains into Beanblossom Creek and then settles into Lake Lemon. In general, these upland soils were formed in residuum from sandstone, siltstone, and shale. Y1101's topography ranges from 0 - 45% slopes with general north, east, and west aspects.

## **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. Consideration should be given 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 type covers roughly 83.4% of Y1101 or 36.7 acres.

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

These moderately sloping to moderately steep, well drained soils are on sideslopes 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 type covers roughly 16.6% of Y1101 or 7.3 acres.

## **Access**

Y1101 is accessed by the State through private property from Whippoorwill Lane. Y1101 can be accessed by the public by either parking off of Morrison Road or Grandma Barnes Road and then walking in across State Forest property. A proposed DHPA roadwork project to be reviewed by the Division of Forestry Archaeologist prior to completing any timber sale roadwork improvements or log yard construction.

## **Boundary**

Y1101 is bordered to the south by other Yellowwood State Forest tracts. Private forested property with dispersed residential buildings borders Y1101 on the north, east, and west. The Tract's private ownership boundaries have been marked and repainted by orange paint along their lines for many years and are currently up to date.

## **Wildlife**

The current inventory was conducted during the late summer of 2013 so summer breeding bird residents were present. Other species or sign observed are documented in the Tract's appendix. Y1101 has an abundant supply of food resources such as soft and hard mast. The mapped intermittent stream that runs through the north central portion of the Tract provides an ephemeral water source for the area during nondroughty periods of the year.

A Natural Heritage Database Review was completed in 2013. If Rare, Threatened or Endangered 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.

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 level basis in order to maintain long-term and quality forest habitats. Crown release performed during timber harvests will stimulate the growth of the selected croptrees and will enhance the vigor of these sawtimber trees. Timber Stand Improvement (TSI) following the harvest is planned which will increase standing snag counts. Management practices conducted on Y1101 will be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations.

### **Communities**

Y1101 is composed of mesic upland hardwoods dominated by Yellow Poplar and Mixed Oaks. The dominant overstory timber species include Yellow Poplar, White Oak, Red Oak, Chestnut Oak and Sugar Maple. Mixed Hickories such as Bitternut, Pignut and Shagbark species are modestly present. The understory contains some Oak but consists mainly of Sugar Maple, Sassafras and American Beech. The ground cover of Y1101 consists of mainly mesic to dry mesic species.

### **Exotic Species**

Japanese Stiltgrass and Multiflora Rose were observed during the inventory. As Brown County is a known location of the plant “virus” rose rosette disease, populations of Multiflora Rose are relatively stable. Control measures may be warranted if populations are located in planned regeneration openings. Eradication of Japanese Stiltgrass is unlikely; however, treatment to accessible areas prior to harvest operations should be considered as well as prompt reseeded of disturbed areas after harvest.

### **Recreation**

Activities on Y1101 include hiking, bird watching, wildlife viewing, hunting, and mushrooming. A posting for restricted access in the event of a future timber harvest is planned so as to reduce interaction of timber harvest operations with recreational values.

### **Cultural**

Cultural resources may be present on Y1101 tract 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 Y1101 is represented in the following Gingrich Stand and Stock Table that follows the Tract Summary Data.

#### **Tract Summary Data**

Total Trees/Ac. = **194 Trees/Ac.**

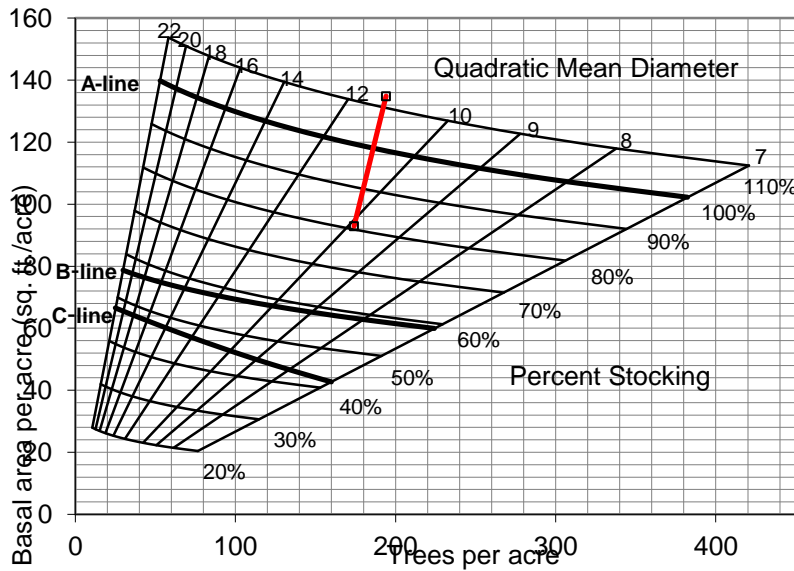
Overall % Stocking = **112%** (Over Stocked)

BA/A = **107.2 Sq. Ft./Ac.**

Sawtimber & Quality Trees/Ac. = **55 Trees/Ac.**

Present Volume = **12,955 Bd. Ft./Ac.**

**Table 3. Gingrich Stand and Stock Table for Y1101 in June 2013**

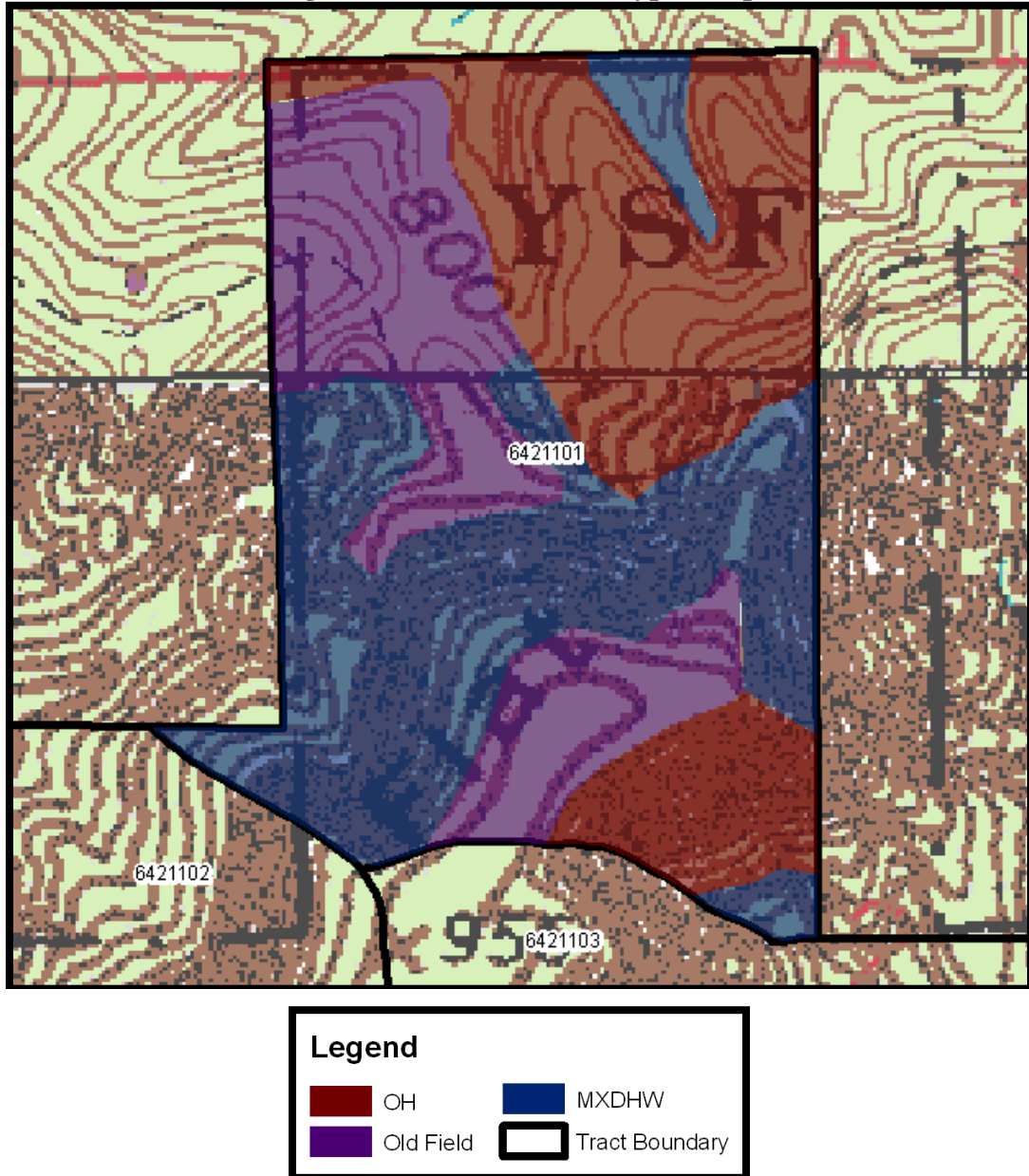


**Summary Tract Silvicultural Prescription and Proposed Activities**

The current forest resource inventory was completed on June 27, 2013 by Intermittent Forester Amanda Smith. 25 prism points were sampled over 44 acres (1 point for every 1.76 acres). A summary of the forest resource inventory is given above and a species breakdown of the summary is given in Table 3 below. Y1101 is over stocked and would benefit from a timber harvest. Y1101’s forest resource is composed of 3 different Stratums (Figure 2.) based on the 3 major timber types and its past history as mentioned below.

The Indiana guidelines for Best Management Practices (BMP’s) will be followed during timber harvest activities to maintain water quality. Portions, or all, of Y1101 will be submitted for postharvest TSI and/or invasive control work in a postharvest TSI project. A field review for regeneration opening success is planned 3-4 years after opening TSI completion.

**Figure 2. Y1101 Stratum Types Map**



**Oak-Hickory Stratum**

As the Oak-Hickory component of the Eastern Hardwood Ecosystem provides the most significant wildlife, timber resource, and value the retention of this Stratum is important in the Property’s longterm timber management objectives. The Oak-Hickory timber type covers 36.4% of Y1101 or about 16.0 acres. The overstory is dominated by WHO, CHO, BLO, and NRO with an average basal area of 129.9 square feet per acre. The understory layer consists of mainly SUM, WHO, CHO, PIH, REO, and AMB. The regeneration layer consists of mainly SUM, AMB, SHH, CHO, WHO, and PIH. Singletree and selection cuttings are prescribed to remove lower quality stems and mature to overmature trees to release a growing stock of high quality, more vigorous stems. Likewise, careful selection by free thinning of co-dominant stems will help



to improve overall croptree spacing. Lower quality trees that include low-forking, leaning, overtopped/suppressed intermediates, epicormically sprouting, and deformed trees are planned to be marked for removal in an improvement cutting. Group selection(s) may be prescribed in areas of low quality stems, disease/damaged stems, low basal area, or maturity to help maintain long-term forest regeneration and sustainability.

### **Mixed Hardwoods Stratum**

The Mixed Hardwoods component of the Eastern Hardwoods Ecosystem can be very variable in their composition and thereby have more complex prescriptions. The Mixed Hardwoods timber type covers 36.4% of Y1101 or about 16.0 acres. The overstory is dominated by YEP, SUM, NRO, BLO, and WHO with an average basal area of 132.8 square feet per acre. The understory layer consists of mainly SUM, YEP, AMB, WHO, BAS, BLC, and SHH. The regeneration layer consists of mainly SUM, AMB, YEP, WHA, PAP, BLG, and SHH.

A fair amount of Y1101's YEP stocking appeared to be in modest decline as a result of the past three years of drought and the Tulip Poplar Scale insect infestation that occurred in the late spring of 2012. Affected YEP will need careful review when the tract is marked as mortality is expected. Sugar Maple borer damage was noted in understory SUM throughout both the Mixed Hardwoods stratum and the Oak-Hickory stratum. In time this pest girdles the bole of the tree that results in the stem breaking apart during moderate and severe windstorms. The removal of these stems would be classified as a combination improvement and sanitation cutting.

Singletree and selection cuttings are prescribed to remove lower quality stems and mature to overmature trees which will help to improve croptree spacing. The marking objective within this Stratum should consider Oak and other species of significant wildlife value as the best croptrees for future conservation. An improvement cutting is therefore prescribed to release Oaks, Hickories and Black Walnuts from crown competition of lesser-quality timber species. The longterm result of these prescribed cuttings will increase timber quality and wildlife habitat diversity. Improvement cuttings in this area will also be applied to remove low-forking, leaning, overtopped/suppressed intermediates, epicormically sprouting, and deformed trees. Group selection(s) may be prescribed in areas of low quality, disease/damaged stems, low basal area, or maturity to help maintain long-term forest regeneration and sustainability. Planned regeneration openings will most likely return to Mixed Hardwoods with a strong component of YEP.

### **Oldfield Successional Stratum**

This Stratum covers 27.3% or about 12.0 acres of Y1101 with an average basal area of 144.8 square feet per acre. The overstory is dominated by an early successional cover type containing YEP, BLO, NRO, WHO, CHO, and WHA. The understory layer consists of mainly BLO, REO, CHO, WHO, SAS, SUM, PIH, BIH, and WHA. The regeneration layer consists of mainly SUM, AMB, SHH, YEP, CHO, and PIH. The timber quality of this Stratum tends to be low; however its longterm management is very important. This Stratum originates from abandoned croplands or pastured fields wherein early successional species and processes have reforested disturbed areas. This natural process usually results in some areas containing quality and modest amounts of oak regeneration which can eventually develop into Oak-Hickory cover types. Singletree and group selection cuttings are prescribed to remove poor form, lower quality, mature to overmature trees to release of higher quality, more vigorous stems. Group selection(s) may be prescribed in

areas of low quality, disease/damaged stems, low basal area, or maturity to help maintain long-term forest regeneration and sustainability. The creation of group selection openings can salvage declining and poor quality timber resources as well as create early successional wildlife habitat. Planned regeneration openings will most likely return to Mixed Hardwoods with a strong component of YEP however the presence of advance Oak regeneration in the Stratum's understory can become stimulated through release. Overall, marking objectives within this Stratum should consider Oak and other species of significant wildlife value as the best croptrees for future conservation. Areas where high quality Mixed Hardwood poletimber have emerged and entered the Stratum canopy may be prescribed TSI for croptree release and grapevine removal in the planned postharvest Timber Stand Improvement project.

Given the recent inventory and growth of this Tract's forest resources, Y1101 is suitable for a 15 year management cycle wherein growth and development of the forest resources are reevaluated by a forest inventory every 15 years. A timber sale is proposed for Y1101 possibly in conjunction with adjacent tracts Y1102 and Y1103 in FY2013-2014.

**Table 3. Overview of Sawtimber Volume Estimates in Y1101 in June of 2013**

<b>Species</b>	<b>Bd. Ft. Volume</b>
Yellow Poplar	167,740
White Oak	119,180
Northern Red Oak	63,780
Black Oak	62,620
Chestnut Oak	56,190
Sugar Maple	27,270
Bitternut Hickory	11,320
Pignut Hickory	10,710
White Ash	9,490
American Elm	9,390
Shagbark Hickory	8,740
American Beech	7,890
Scarlet Oak	5,770
Black Walnut	4,030
Blackgum	2,780
Largetooth Aspen	2,060
Sassafras	1,340
Black Cherry	1,040
<b>Tract Volume Totals (Bd. Ft.)</b>	<b>571,340</b>
<b>Total Volume Per Acre (Bd. Ft./Ac.)</b>	<b>12,985</b>



## Proposed Activities Listing

<b><u>Proposed Management Activity</u></b>	<b><u>Proposed Period</u></b>
DHPA timber sale project review	CY2013
Roadwork Rehabilitation	CY2013-2014
Timber Marking & Invasive Evaluation	CY2013-2014
Timber Sale	FY2013-2014
Postharvest TSI & Invasives Follow-up	CY2014-2018
Regeneration Opening Review	CY2018-2020
Reinventory and Management Guide	CY2027

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

[http://www.in.gov/surveytool/public/survey.php?name=dnr\\_forestry](http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry)

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.