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

State Forest: **Yellowwood** Compartment: **09** Tract: **11**
Tract Acreage: **88** Commercial Forest Acreage: **88**
Forester: **Amanda Smith (for Amy Spalding)** Date: **7/26/2012**

Location
Tract 11 is located in Section 25 of Township 9N, Range 1E of Brown County, Indiana. It is located roughly 1.3 miles west of the Yellowwood State Forest office and 2.4 miles northwest of Belmont, Indiana. The tract is accessible by a firetrail off of the west side of Scarce O' Fat Ridge Road.

General Description
Y0911 consists of a total of 88 forested acres of which 57.8 acres are of Oak-Hickory forest, 27.5 acres of Mixed Hardwood forest, and 3.0 acres of past regeneration or early successional forest in Yellowwood State Forest. All 88 forested acres are considered commercial acreage. Y0911's timber ranges from small to large sawtimber in size. Some of the regeneration openings from the past harvest have regenerated to YEP however are presently in decline due to the strains of persistent drought and the 2012 Tulip Poplar Scale insect epidemic. The overall timber quality of this tract is average. A summary of the forest resources in Y0911 in relation to species dominance is noted below in Table 1.

Table 1. Overview of Forest Resources in Y0911 in June 2012

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

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

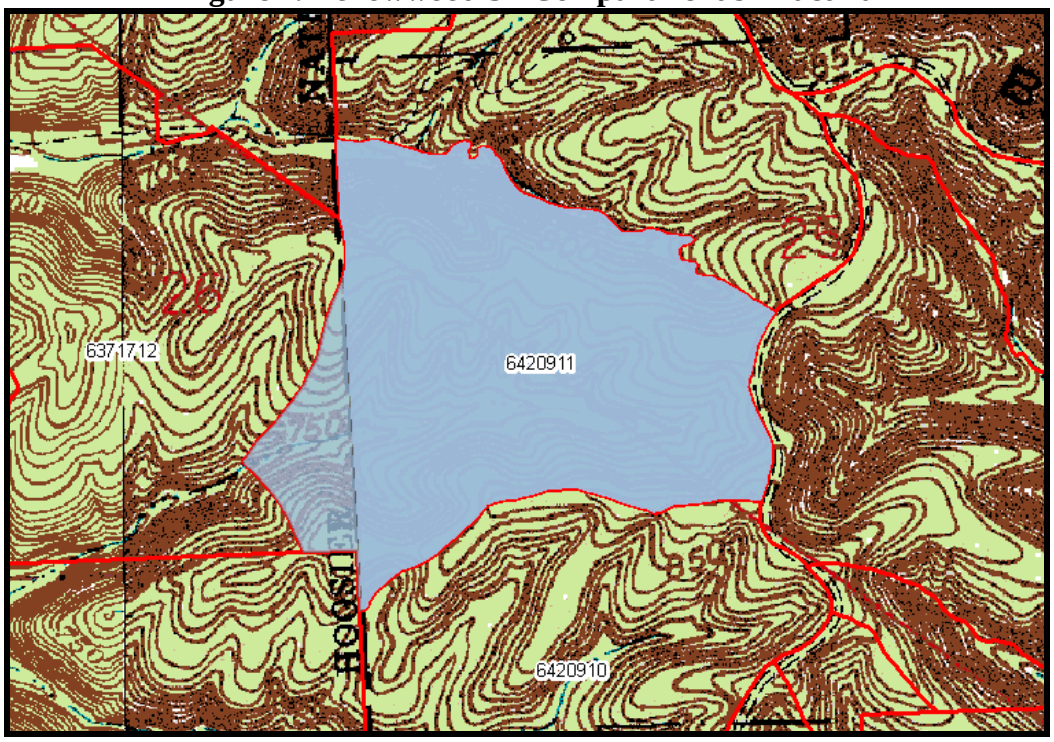
History

The land area that includes Y0911 was deeded to the State of Indiana in 1950 by Betty Jean Mallot and in 1953 and 1965 by the United States Department of Agriculture. The first tract resource inventory (Quickie cruise) was completed in April of 1972 without a named Forester recorded. The inventory summary showed that 1,195 BF/ A was available for harvest and 1,379 BF/A would be left. The second forest resource inventory (FDPS) was completed on 9/30/1981 by Forester Gray . The inventory summary showed that 1,764 BF/ A was available for harvest and 4,217 BF/A would be left. Forester Gray marked a timber sale during December of 1981. This timber sale of 1,338 BF/A was sold to Weston Pulp and Paper for $13,470 on 2/5/1982. Logging was completed on 7/6/1982. TSI was marked on 10/25/1982 by Forester Gray and completed during November of 1982 by Forester Bill Fischer and the YSF field crew. The 1982 timber sale was audited (stumpjump) on 1/18/1983 by Foresters Royer, Fischer, Duncan, and Gray. The property lines of the tract were remarked with orange paint on 2/13/1987 by Forester Unversaw. Road maintenance along Scarce O' Fat Ridge Road was completed on 7/24/1987 by Forester Unversaw. The third and current forest resource tract inventory was completed on June 15, 2012 by Forest Intermittent Amanda Smith.

Landscape Context

The land area around Y0911 consists predominantly of hardwood forests. Tract 11 is bordered by sustainably managed State Forest on all sides except for the northwest corner and the southwest corner which are bordered by privately owned forest property. However, small acreages of farmland, cropland, and a few privately owned residences along Brock Road occur to the west of the tract. Coniferous forests in the form of plantations are also present within the 1 mile area from the center of the Tract. Yellowwood Lake, which is approximately 133 acres in size, is located approximately 1 mile east of the Tract's east boundary.

Figure 1. Yellowwood SF Compartment 9 Tract 10



Topography, Geology and Hydrology
Y0911 is mostly sideslopes except for its northern ridgetop. It's topography ranges from 1 - 75% slopes with about 2/3 of the tract in northerly aspects and the remainder in south aspects. The tract's soils range from 24 – 60 inches in depth to unweathered bedrock. A mapped intermittent develops from the center of the tract and drains into Brummett's Creek which flows into Salt Creek and then ultimately into Lake Monroe. There are several unmapped ephemeral drainages throughout the tract.

Soils
BgF (Berks-Trevlac-Wellston Complex, 20 – 70% slopes) Moderately steep to very steep slopes with well drained soils. This tract is comprised of approximately 51.2% of this soil type and presents moderate to severe erosion hazards, severe equipment limitations, slight to moderate seedling mortality, and slight windthrow hazard. Management considerations should include building haul roads on a contour and constructing waterbars to reduce the erosion hazard.

WaD (Wellston-Berks-Trevlac Complex, 6 – 20% slopes) Moderately sloping to moderately steep. This tract is comprised of approximately 40.1% of this soil type and presents slight risks for erosion hazard and equipment limitation.

BkF (Berks-Weikert Complex, 25 – 75% slopes) Moderately steep to very steep slopes with well drained soils. This tract is comprised of roughly 6.4% of this soil type and has severe erosion hazards, severe equipment limitations, slight to moderate seedling mortality, and slight windthrow hazard. Management considerations should include building haul roads on a contour and constructing waterbars to reduce the erosion hazard.

GpD (Gilpin Silt Loam, 12 – 18% slopes) Moderately sloping to moderately steep slopes. This tract is comprised of approximately 2.3% of this soil type and this soil type represents moderate risks for erosion hazard, equipment limitation, and moderate seedling mortality.

Access
Y0911 is accessible for management purposes by a firetrail off of Scarce O' Fat Ridge Road. Tract 11 is most easily accessed by the public from the end of Sewell Road and traversing through Tract 10 or from long hikes from the N and S ends of Scarce O' Fat Ridge Road. Management access will need to be upgraded for equipment from the long firetrail that proceeds from off of Scarce O' Fat Road. A DHPA roadwork project will need to be reviewed by the Division of Forestry Archaeologist prior to completing any timber sale roadwork improvements. Log trucks and equipment will travel in and out the north end of Scare O' Fat Ridge Road during a timber harvest.

Boundary
Tract 11 is bordered by State Forest on all sides except for the northwest corner and the southwest corner which are bordered by privately owned property. The northwest corner and the southwest property corners have been located and documented. The property lines proceeding from these corners have been marked and repainted by orange paint along the line for many years and are up to date. The northern boundary of Tract 11 is designated by a mapped intermittent stream, the southern boundary is designated by a secondary firetrail, and the eastern boundary runs along the

Compartmental Road for Yellowwood SF Compartments 8 & 9 which is otherwise known as Scarce O' Fat Ridge Road. The west boundary of Tract 11 connects with the east boundary of Tract 6371712 which is in Monroe County and part of Morgan-Monroe SF.

Wildlife

A Natural Heritage Database review was obtained for this tract. 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 current inventory was conducted during the early summer of 2012 so summer breeding bird residents were present. Songbirds were heard and the following bird species were identified during the inventory:

American Crow	Eastern Phoebe	Red-eyed Vireo
Bluejay	Ovenbird	Tufted Titmouse
Broad-winged Hawk	Pileated Woodpecker	Wild Turkey
Chirping Sparrow	Red-tailed Hawk	Wood Thrush

Other species or sign observed within the tract indicates use by White-tailed Deer, Grey Squirrel, Eastern Chipmunk, Raccoon, Opossum, Coyote and other small mammals. Multiple deer trails were also noted throughout the tract. Tract 11 has an abundant supply of food resources such as soft and hard mast. The mapped intermittent stream that cuts through the center of the tract provides a water source for the area during nondroughty periods of the year.

The Indiana Division of Forestry recognizes the potential to improve the Indiana bat habitat on its lands by implementing comprehensive management practices. These management practices include obtaining data on size, species, and numbers of snag trees (See Table 2). Snag trees and the presence of some specific species of trees are a vital part of the Indiana bat policy as they provide prime roosting sites for maternal colonies. According to the Wildlife Habitat Feature Summary, all levels of snags and legacy trees met or exceeded maintenance levels except for snags in the 9"+ DBH range. This deficit can be reduced during the planned postharvest TSI project by girdling a number of trees in this size range.

Table 2. Live Legacy Trees* and Snags inventoried June 2012 on Y0911

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	792		1493	701	
20"+ DBH	264		393	129	
Snags (all species)					
5"+ DBH	352	616	864	512	248
9"+ DBH	264	528	203	**-61**	**-325**
19"+ DBH	44	88	68	24	**-20**

*** Species Include:** AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

Communities
The ground cover of this tract consisted of mainly mesic to dry mesic species. Observed species included:

Black Snakeroot	Asst. Grasses	Maple-leafed Viburnum	Solomon Seal
Blackberry	Greenbrier	Mayapple	Spicebush
Canada Violet	Hepatica	Oxalis	Squawroot
Christmas Fern	Jack-In-The-Pulpit	Pawpaw	Stinging Nettle
Cleavers	Jewelweed	Poison Ivy	Virginia Creeper
Dittany	Leeks	Red Raspberry	Waterleaf
Gooseberry	Long Beech Fern	Sedge	Wild Ginger
Grapevine	Maidenhair Fern	Sensitive Fern	Wild Strawberry

Squawroot (Conopholis americana) is a plant that is parasitic on the roots of oak trees. Japanese Stiltgrass and Multiflora Rose were the two invasives observed during inventory. Both were found along the firetrails. Multiflora Rose has become relatively common among the landscape, therefore, only large concentrations should be considered for treatment. With the improved accesses that Scarce O' Fat Ridge and Sewell Roads provide, the eradication of the Japanese Stiltgrass is unlikely. However, the prompt reseeding of exposed surface roads and yarding areas during timber sale closeout can reduce the spread and extent of infestation of stiltgrass.

Recreation
Activities on this tract include horseback riding, hiking, bird watching, wildlife viewing, hunting, and mushrooming. The "X" Horse Trail of YSF travels through a portion of Tract 11. A posting for restricted access or temporary closure in the event of a future timber harvest is planned so as to reduce interaction with timber harvest and recreational values.

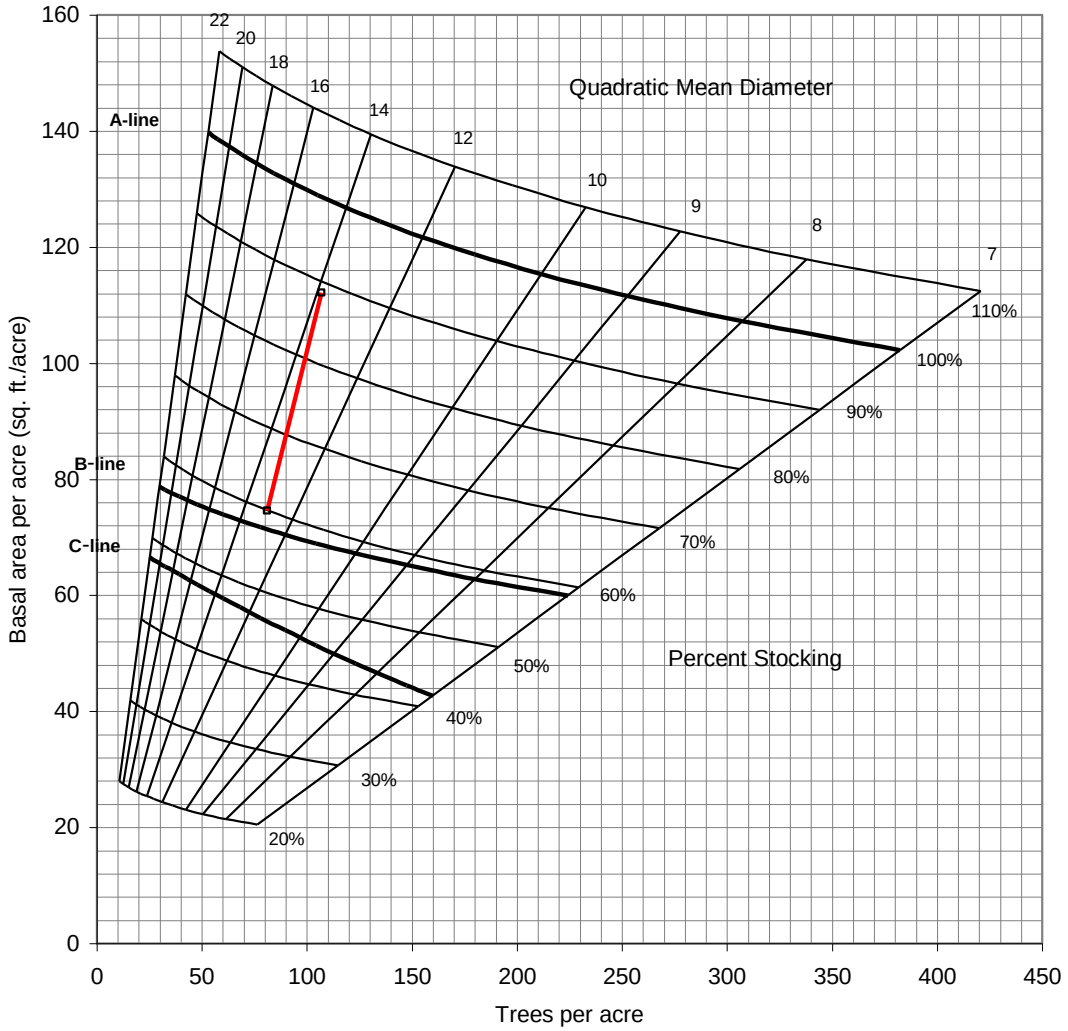
Cultural
Cultural resources may be present on this tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities as prescribed by the Division of Forestry Archaeologist.

Tract Subdivision Description and Silvicultural Prescription

The overall stand structure for this tract is represented in the following Gingrich Stand and stock table that follows the individual stand summary.

Tract Summary Data

Total Trees/Ac. = **408**
Overall % Stocking = **89%** (Fully Stocked)
BA/A = **127.6 Sq. Ft./Ac.**
Sawtimber & Quality Trees/Ac. = **48**
Present Volume = **10,287 Bd. Ft./Ac.**
Harvest Volume = **3,827 Bd. Ft./Ac.**
Residual Volume/Ac. = **6,460 Bd. Ft./Ac.**



Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed on June 15, 2012 by Intermittent Forester Amanda Smith. 32 prism points were completed over 88 acres (1 point for every 2.75 acres). A tract summary of the inventory is given above and a species breakdown of the summary is given in Table 3 below. This tract is fully stocked and would benefit from a timber harvest. The proposed timber sale on this tract would likely yield 300 MBF. The tract's forest resource is composed of 3 different stands that are based on major timber types are mentioned below.

Oak-Hickory Stand

As the Oak-Hickory component of the Eastern Hardwood Ecosystem provides the most significant wildlife, timber resource, and value the retention of these stands is important in the Property's longterm timber management program. The Oak-Hickory timber type covers roughly 66% of the tract or about 57.8 acres. The overstory is dominated by WHO, BLO, REO, SCO, and PIH with an average basal area of 117.6 square feet per acre. Singletree selection is 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 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 should be used to create regeneration openings where there is an abundance of advanced regeneration of oak and hickory seedlings or where the overstory has low stocking and should be regenerated. It was observed that some WHO crowns are experiencing decline this year. This decline could be from the past two years of drought or from a late spring frost at the beginning of this growing season. The affected WHO will need further observation to determine if they will recuperate from this crown decline.

Mixed Hardwoods Stand

The Mixed Hardwoods component of the Eastern Hardwoods Ecosystem can be very variable in their composition and thereby have more complicated prescriptions. Mixed hardwoods timber type covers roughly 31% of the tract or about 27.5 acres. The overstory is dominated mostly by SUM, REM, AMB, YEP, BLW, SHH, BIH, BLC, WHA, and WHO with an average basal area of 84.5 square feet per acre. Singletree selection can be implemented to remove lower quality stems and mature to over mature trees which will help to improve crop tree spacing. An improvement cutting is prescribed to release quality oaks, hickories and walnuts from crown competition of lesser-valued timber species The result of this cutting will increase timber diversity as well as provide for enhanced wildlife habitat as most of the species within the Mixed Hardwood component are not heavy mast producers nor tend to provide valuable timber resources. Improvement cuttings in this component will also be applied to remove low-forking, leaning, overtopped/suppressed intermediates, epicormically sprouting, and deformed trees. Group selections should be used to create regeneration openings within this subgroup. In order to meet our Property's International Forest Certification goals, group selections will be marked in appropriate areas. Certification standards seek to provide 10% of the tract acreage in regeneration harvests to maintain longterm forest regeneration and sustainability. The Mixed Hardwood stand is often where most of these goals are applied as they tend to have lower Oak-Hickory elements. Planned regeneration openings will most likely return to mixed hardwoods with a strong component of YEP. Overall, marking objectives within this component should consider oak and other species of significant wildlife value as the best croptrees for future conservation. Sugar Maple borer damage was noted in understory SUM throughout both the Mixed Hardwoods stand and the Oak-Hickory stand. In time this pest creates a girdling dead area on the bole of the tree that result 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.

Early Successional Regeneration Stands

Past harvest regeneration openings cover roughly 3% of the tract or about 2.8 acres. These stands are dominated mostly by YEP with an average basal area of 84.5 square feet per acre. The YEP regeneration appeared to be in modest decline as a result of the past two years of drought and the Tulip Poplar Scale insect infestation that occurred in the late spring of 2012. The affected YEP will need careful review prior to the planned post harvest timber stand improvement project as modest mortality is expected. All old regeneration openings should

be scheduled for a 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, this tract is suitable for a 15 year cutting cycle wherein growth and development of the tract is reevaluated by a forest inventory every 15 years. The current inventory indicates a possible harvest of between 250 - 350 MBF. A combined tract timber sale to include YSF C0910 as well as Tracts 12 & 25 of Morgan Monroe SF Compartment 17 is planned for FY12-13.

Table 3. Y0911 Sawtimber Volume Estimates
(June 2012 Inventory Data)

Species	Harvest	Leave	Total
Chestnut Oak	123,720	144,910	268,630
Black Oak	89,300	86,020	175,320
White Oak	14,160	93,680	107,840
Sugar Maple	31,810	28,730	60,540
Yellow Poplar	13,820	36,770	50,590
Scarlet Oak	15,280	33,620	48,900
Pignut Hickory	7,330	38,800	46,130
Northern Red Oak	4,470	32,220	36,690
Red Maple	15,500	10,690	26,190
Bitternut Hickory	0	18,220	18,220
American Beech	12,820	3,380	16,200
White Ash	5,430	4,300	9,730
American Sycamore	0	7,520	7,520
Basswood	0	7,220	7,220
Shagbark Hickory	0	5,730	5,730
Red Elm	0	3,740	3,740
Largetooth Aspen	3,170	0	3,170
Black Walnut	0	3,050	3,050
Blackgum	0	1,370	1,370
Tract Totals (Bd. Ft.)	**336,810**	**559,970**	**896,780**
Per Acre Totals (Bd. Ft./Ac.)	**3,827**	**6,363**	**10,190**

Proposed Activities Listing

Proposed Management Activity	***Proposed Period***
DHPA timber sale project review	Summer 2012
Invasives Treatment	Fall 2012
Timber Marking (in conjunction with 6420910, 6371712, & 6371725)	Fall 2012
Timber Sale (in conjunction with 6420910, 6371712, & 6371725)	Spring 2013
Timber Stand Improvement	CY2014-2017
Reinventory and Management Guide	2027

Attachments (Included in Tract File)

- Topo Map of Tract Features
- Tract Soils Map
- Aerial Photo of Tract
- INHD Review Map
- Stocking Guide Chart
- Printed TCruise Reports

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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.