Indiana Department of Natural Resources
Division of Forestry

DRAFT
RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **02** Tract: **09**
Tract Acreage: **50** Commercial Forest Acreage: **50**
Forester: **Amanda Smith (for Amy Spalding)** Date: **6/12/2012**

Location
Tract 09 is located in Section 8 of Township 8N, Range 2E of Brown County, Indiana. It is located roughly 6.0 miles southwest of Nashville and 1.38 miles southeast of Belmont, Indiana. The tract is accessible by a firetrail off of Crooked Creek Road.

General Description
This tract is a total of 50 acres with 34.6 acres of Oak-Hickory forest, 11.5 acres of mixed hardwoods, and 3.8 acres of older regeneration openings in Yellowwood State Forest. All 50 acres are considered commercial acres. The tract's timber ranges from small to large sawtimber in size with the older regeneration openings being poletimber.

Several openings have regenerated to YEP and are in severe decline from both the strains of drought and the Tulip Poplar Scale insect outbreak. The overall timber quality of this tract is moderate with some past land use effects of grazing causes some stem rot.

Table 1. Overview of Y0209 Forest Resources in June 2012

Sawtimber	Poletimber	Regeneration
White Oak	Yellow Poplar	Sugar Maple
Black Oak	Sugar Maple	Red Maple
Sugar Maple	Red Maple	*White Ash
Northern Red Oak	Blackgum	American Beech
American Beech	White Oak	Ironwood
Bitternut Hickory	Pignut Hickory	Yellow Poplar
Pignut Hickory	Sassafras	Sassafras
Red Maple	Black Cherry	Bluebeech
Scarlet Oak	Black Oak	Dogwood
Shagbark Hickory	Shagbark Hickory	*White Oak
Yellow Poplar	American Beech	Bitternut Hickory
Black Cherry	Bitternut Hickory	Black Cherry
Blackgum	Black Walnut	Blackgum
Black Walnut	Bluebeech	*Black Oak
Bluebeech	Dogwood	Black Walnut
Dogwood	Ironwood	*Northern Red Oak
Ironwood	Northern Red Oak	Pignut Hickory
Sassafras	Scarlet Oak	*Scarlet Oak

		Shagbark Hickory

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

History

The area including tract 09 was deeded to the State of Indiana in 1956 by the Federal Government. TSI was marked and completed on 12/1976 by a CETA Forester. In March of 1981 a inventory was submitted for tract 9 by Forester Sieg. The inventory found that there were an average of 5,026 BF/ ac of which 1,711 BF/ac were tallied as harvest and 3,315 BF/ac were reserved as growing stock. A timber harvest was recommended which was marked by Forester Duncan and put up for sale on 12/1/1981. A portion of this marking was sold as a veneer sale to the Allender Tree Company for $7,000 by Forester Duncan on 1/13/1982. This sale included 4,436 board feet of prime and 5,410 board feet of sawlog from 24 trees. A sawtimber timber sale of 77,794 board feet was sold to John Jones on 3/10/1982 for $9,918.74. Logging was completed on both sales by 5/27/1982 and road maintenance of Mossup Road was completed on 6/4/1982. TSI was completed in the tract on 12/14/1982 by Forester D. Gray. The north property line of the tract was located and marked with orange paint on 9/11/1989 by Forester Eckart and again in 1999 by Forester Kaina. The current forest resource inventory was completed in May 2012 by Forester Spalding and Intermittent Forester Smith. There was sign of recent windthrow near the top of the ridge.

Landscape Context

Tract 09 is bordered by State Forest on all sides except for the northwest line which is bordered by private property. The most southeastern tip of tract 09 borders with tract 14 which contains a HEE Research Project study plot which will effect what silvicultural practices can be conducted in that corner. The private property is home to an exotic animal farm that is surrounded by tall fencing to keep the animals contained.

Topography, Geology and Hydrology

Tract 09 is situated on the northeast side of a ridge running southeast to northwest. Topography ranges from 1 - 70% slopes with predominantly north to northeast aspects. The area's soils range from 36 – 60 inches in depth. The underlying geology of this tract is a combination of sandstone, siltstone, and limestone bedrock material. A mapped intermittent runs the length of the northeast boundary which runs into the North Fork of Salt Creek. There are several unmapped ephemeral drainages throughout the tract. The tract is within the lower east fork of the White River watershed.

Soils

Be (Beanblossom channery silt loam, 1 – 3% slopes) Minor slopes and well drained soils with moderate available water capacity that occasionally flood. This tract is comprised of less than 1% of this soil type.

BgF (Berks-Trevlac-Wellston complex, 20 – 70% slopes) Moderately steep to very steep slopes and well drained soils. This tract is comprised of approximately 75% 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 water bars to prevent erosion.

WaD (Wellston-Berks-Trevlac complex, 6 – 20% slopes) Moderately sloping to moderately steep. This tract is comprised of approximately 24.5% of this soil type and presents slight risks for erosion hazard and equipment limitation.

Access
The tract is accessible by a firetrail off of Crooked Creek Road that is being maintained for the HEE Research Project. The portion of the firetrail that goes beyond the HEE Research Project area and runs along the southwestern edge of tract 09 may need some road rehabilitation to accommodate modern harvesting equipment. A DHPA roadwork project will need to be reviewed by the Division of Forestry Archaeologist prior to timber sale roadwork improvements. This can be coordinated with Tract 10 as these tracts are to be harvested together.

Boundary
The tract is bordered by State Forest to the south, east, and west and by private property to the north. The northern boundary is marked by orange paint on the trees and the adjacent private landowner has erected a large fence along the edge of their property. The northeast boundary is designated by the mapped intermittent stream while the southwest boundary is designated by the firetrail. The west boundary of tract 09 connects with tract 6420210 which will be proposed for harvest in conjunction with tract 09.

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 forest resource inventory was conducted during the late spring of 2012 so breeding summer bird residents were present. The following bird species were detected during the inventory:

Pileated Woodpecker	Red-tailed Hawk	Ovenbird
Tufted Titmouse	Red-eyed Vireo	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. Tract 09 has an abundant supply of food sources such as soft and hard mast. The mapped intermittent stream that runs the length of the northeast boundary of tract 09 provides a seasonal water source for the area during wetter seasons of the year.

The Indiana Division of Forestry recognizes the potential to improve 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. Snag trees and some specific species of trees are a vital part of the Indiana bat policy as they are 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 improved by applying post harvest TSI by girdling a number of trees in this size range.

Table 2. Live Legacy Trees* and Snags inventoried May 2012 on 6420209

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					

11"+ DBH	450		1420	970	
20"+ DBH	150		460	310	
Snags (all species)					
5"+ DBH	200	350	940	740	590
9"+ DBH	150	300	64	**-86**	**-236**
19"+ DBH	25	50	36	11	**-14**

*** 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:

Virginia Creeper	Grapevine	Maple-leafed Viburnum	Spicebush
Poison Ivy	Christmas Fern	Maidenhair Fern	Sensitive Fern
Hepatica	Greenbrier	Wild Ginger	Sedge
Beebalm	Stinging Nettle	Squawroot	Dittany
Squawroot			

Japanese Stiltgrass and Multiflora Rose were two invasives observed during inventory. Both were found along the firetrail. Multiflora Rose has become naturalized in the landscape, therefore, only large concentrations should be considered for treatment. With the heavy use of this area, eradication of the Japanese Stiltgrass is unlikely. However, treatment to accessible areas prior to harvest operations should be conducted to reduce seed production.

Recreation

Activities on this tract probably include hiking, bird watching, wildlife viewing, hunting, and mushrooming.

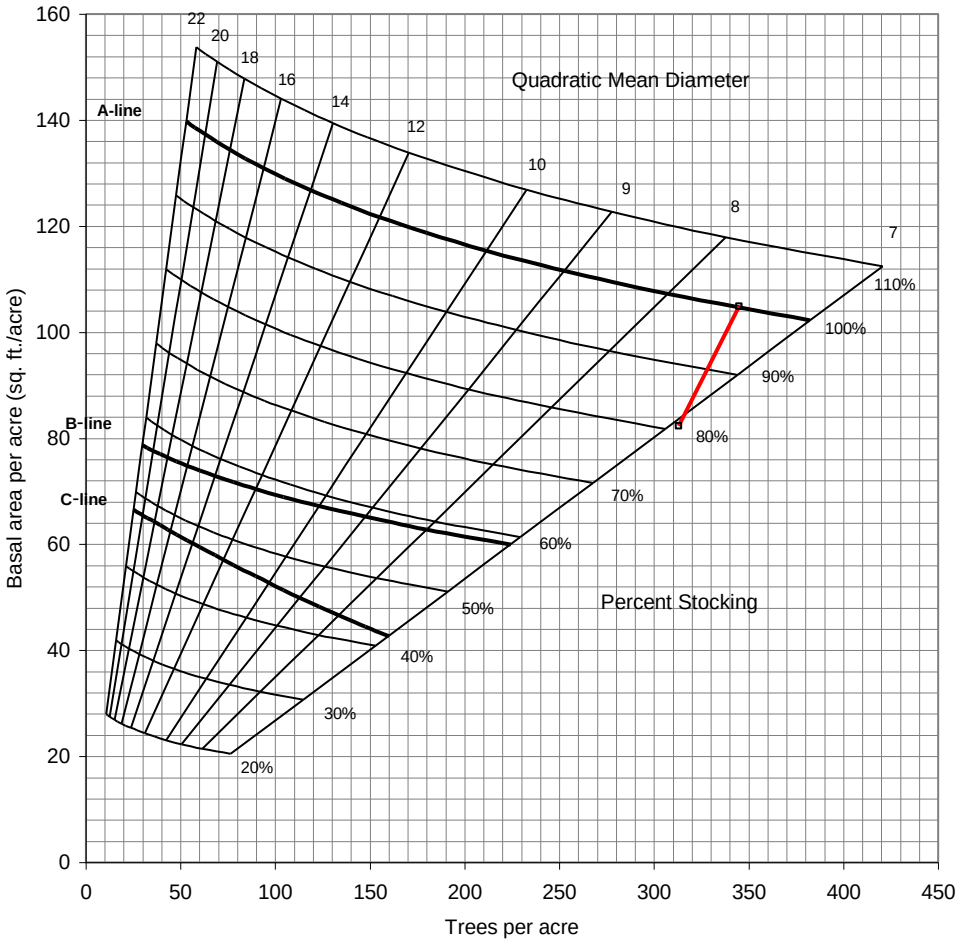
Cultural

Cultural resources may be present on this tract but their locations are 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

Y0209 Tract Summary Data in May 2012

Total Trees/Ac. = **345**
BA/A = **104.9 Sq. Ft./Ac.**
Present Volume/Ac. = **8,599 Bd. Ft./Ac.**
Harvest Volume/Ac. = **2,078 Ft./Ac.**
Residual Volume/Ac. = **6,521 Bd. Ft./Ac.**
Overall % Stocking = **100%** (Fully Stocked)
Sawtimber & Quality Trees/Ac. = **38**



Summary Tract Silvicultural Prescription and Proposed Activities

The current resource inventory was completed on May 22, 2012 by Forester Amy Spalding and Intermittent Forester Amanda Smith. 26 prism points were completed over 50 acres (1 point for every 1.92 acres). A tract summary of the inventory is given above and a species contribution of the summary is given in Table 3 below. From these data, this tract is fully stocked and would benefit from a timber harvest. A portion of this tract serves a buffer tract for one of the HEE's Unevenaged Research Core which is Management Unit #7. Guidelines for harvests in buffer tracts have been established by the Division of Forestry in order to preserve the integrity of the research conducted within the HEE Research Core areas. These guidelines include limiting the number, size, and placement of group selection openings, as well as general recommendations for stand stocking of the residual stand in harvested buffer tracts. The proposed timber sale on this tract is expected to yield upwards of 100 MBF. The tract's forest resource is composed of 3 different stands which are mentioned below.

1) Oak-Hickory Stand

The Oak-Hickory timber type component covers roughly 69% of the tract or about 34.6 acres. The overstory is dominated mostly by WHO, BLO, REO, SCO, and BIH with an average basal area of 98.9 square feet per acre. Singletree selection marking is proposed to remove lower quality stems as well as mature to overmature stems to release growing stock of higher quality, more vigorous stems. Likewise, careful selection marking of co-dominant stems will help to thin and improve overall

croptree spacing. Lower quality trees that are low-forking, leaning, in overtopped/suppressed intermediate crown positions, have epicormics or are deformed trees are planned to be marked in an improvement cutting. Group selection marking may be applied to create regeneration openings where there is an abundance of advanced regeneration of oak and hickory seedlings in the understory or where the overstory has poor stocking with little future in value increase. It was observed during the inventory that several WHO crowns were 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 the 2012 growing season. These affected WHO will need further review by a forester to determine if they will recuperate from this crown decline.

2) Mixed Hardwoods Stand

The mixed hardwoods timber type component covers roughly 23% of the tract or about 11.5 acres. The overstory is dominated mostly by SUM, REM, AMB, YEP, BLW, SHH, BIH, BLC, WHA, and WHO, with an average basal area of 71.7 square feet per acre. Singletree selection marked is proposed to remove lower quality stems and mature to overmature trees which will help to improve croptree 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 higher quality wildlife habitat. Improvement cuts in this component will also be applied to remove low-forking, leaning, overtopped & suppressed intermediates as well as fire damaged and declining mixed hardwood trees. Group selection openings may be used to create regeneration openings within the stand. A goal of 10% regeneration of the tract to meet longterm Forest Certification standards is more properly applied in this component thereby conserving the oak-hickory stands. 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. As Sugar Maple borer damage was noted in the tract in both the mixed hardwoods and the oak hickory stands the marking of these individuals should be done.

3) Old Opening Stands

Old regeneration openings created through past group selections cover roughly 7.7% of the tract or about 3.8 acres. These areas are dominated mostly by YEP with an average basal area of 75.0 square feet per acre. The YEP regeneration was observed to be in modest decline as a result of the past two years of drought and the Tulip Poplar Scale insect epidemic that has been occurring in 2012. The affected YEP will need review prior to the tract's post harvest TSI project preparations.

Table 3. Volume Estimates: Yellowwood State Forest Compartment 2 Tract 09
(May 2012 Inventory Data)

Species	Harvest	Leave	Total
White Oak	28,060	164,130	197,190
Black Oak	27,040	35,770	63,170
Northern Red Oak	19,330	46,940	66,270
Scarlet Oak	6,920	7,670	14,590
American Beech	6,260	24,160	30,420
Shagbark Hickory	2,440	3,630	6,070
Sugar Maple	1,290	9,050	22,510
Red Maple	560	950	1,520
Bitternut Hickory	0	9,040	9,040

Pignut Hickory	0	8,010	8,010
Yellow Poplar	0	361	6,050
Black Walnut	0	3,010	3,010
Blackgum	0	210	210
Tract Totals (Bd. Ft.)	**91,900**	**312,931**	**428,060**
Per Acre Totals (Bd. Ft./Ac.)	**1,838**	**6,259**	**8,561**

Proposed Activities Listing

Proposed Management Activity	*Proposed Period*
DHPA Request	Summer 2012
Invasives Treatment	Summer 2012
Timber Marking (in conjunction with 6420210)	Summer 2012
Timber Sale (in conjunction with 6420210)	Fall 2012
Post Harvest Timber Stand Improvement Project	2013-2015
Reinventory and New 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

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