

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

Jackson-Washington State Forest
Forester Michael Spalding
Management Cycle End Year: 2041

Compartment 2 Tract 5
Draft Plan Date: September 19, 2013
Management Cycle Length: 28 years

Location

This tract is located in Sections 17, 18, 19, and 20, Township 5 North, Range 5 East, Brownstown Township, Jackson County. The tract is 2 ½ miles southeast of Brownstown and ½ mile northeast of the Jackson-Washington State Forest Office.

General Description

This 63.9 acre tract is influenced heavily by the south and west aspects, and is therefore covered with oak-hickory dominated by chestnut oak.

History

The land that makes up this tract came from separate acquisitions. The majority of the tract came from a 200 acre purchase from Grover Doerr on August 26, 1931. Three other purchases contributed smaller amounts to this tract. The first was a 40 acre parcel purchased from Charles Brandenstein on August 24, 1931 for \$300. The second was another purchase from Grover Doerr of 40 acres on November 23, 1931. The third acquisition was a 160 acre purchase from John and Mary Vondielingen on January 26, 1963.

The first recorded management history of this tract is an inventory and brief management guide from October 1971. At that time the tract was listed as 66 acres, with 32 containing merchantable timber and 34 containing non-merchantable timber. The inventory estimated 3,393 board feet per acre, with 1,697 bd. ft. of that as growing stock. Another inventory and management guide were completed on January 11, 1990. This inventory estimated 3,562 bd. ft. per acre as growing stock and 1,178 bd. ft. as harvest stock. The management plan recommended a timber harvest.

A timber sale was sold to Eric Wheeler on April 9, 1992. This sale contained 74,521 board feet in 477 trees and an additional 260 culls and sold for \$9,600.00 (\$128.82/MBF). The harvest was on 52 acres of the tract.

One of the regeneration openings from the 1992 timber sales was thinned in 2008. Very minor salvage sales were held that included trees from this tract. They were in 2007, 2010, and 2012.

Landscape Context

The area of forestland in which Compartment 2 Tract 5 lies contains approximately 2,100 acres of State Forest ownership. To the southwest of this block of forest across State Road 250 is a block of approximately 2,700 acres of State Forest ownership. With the exception of the office, service area, property residence, and campground, these two blocks are almost entirely forested. Brownstown, approximately 2 ½ miles northwest of

Compartment 2, has not seen significant growth in land area over the last 10 years. Most of the development has been single family homes. Most of the conversion of forestland to homesites in the landscape in the vicinity of Compartment 2 is occurring on Venus Road, approximately one mile north of this tract. Over the past 10 or so years, several acres have been lost to fragmentation due to construction of many new homes and parcelization of larger tracts of forestland. To the east and southeast of the block of forest land containing compartments one and two is land heavily dominated by agriculture and dotted with small remaining woodlots which are areas that were generally too wet to farm. Several of these small woodlots have been pushed into piles and burned within the last 2 to 3 years. The primary threat to the private forestland within the landscape of Compartment 2 will continue to be fragmentation and parcelization due to construction of single family homes.

Topography, Geology and Hydrology

The topography of this tract transitions from very gentle dissected slopes to very steep slopes. The underlying geology consists of siltstone and sandstone. The entire tract is within the watershed of Knob Lake. Water flowing out of Knob Lake drains into a mapped perennial stream that eventually flows into Pond Creek, which then flows into the Muscatatuck River.

Soils

Beanblossom silt loam (BcrAW) (.8 acre) This is a deep, well drained soil that formed in 0 to 24 inches of medium-textured alluvium and the underlying loamy-skeletal alluvium. The Beanblossom soils are on flood plains and alluvial fans below steep and very steep hillslopes. Native vegetation is deciduous forest, dominantly sycamore, elm, hickory, beech, maple, and tulip-poplar. This soil is well suited to trees. Plant competition is moderate. Preferred trees to manage for are bitternut hickory, white oak, sugar maple, and yellow-poplar.

Berks channery silt loam (BeG) (8.3 acres) This steep and very steep, moderately deep, well drained soil is on side slopes and knolls in the uplands. Slopes can range from 25 to 75 percent. The native vegetation is hardwoods. It is fairly well suited to trees. The equipment limitations, seedling mortality, and the erosion hazard are management concerns. Building logging roads and skid trails on the contour and constructing water bars help to control erosion. North aspects generally are more productive than south aspects. The site indexes for hardwood species range from 70 (white oak) to 90 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

Coolville silt loam, 12 to 20 percent slopes (CoD) (7.5 acres) This moderately well drained soil has a seasonally high water table at 1.0 to 2.0 ft. and is on side slopes on uplands. Slopes can range from 12 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above bedrock. Available water capacity is moderate (6.6 inches in the upper 60 inches).

The pH of the surface layer is 3.5 to 5.5. Bedrock is at a depth of 40 to 60 inches. This soil type has a site index of 66 for northern red oak.

Gilpin silt loam, 25 to 55 percent slopes (GnF) (24.6 acres) This well drained soil has a water table at a depth greater than 40 inches and is on side slopes on uplands. Slopes can range from 25 to 55 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderate organic matter content (2.0 to 4.0 percent). Permeability is moderate (0.6 to 2.0 in/hr) in the most restrictive layer above bedrock. Available water capacity is low (4.8 inches in the upper 60 inches). The pH of the surface layer 3.5 to 5.5. Bedrock is at a depth of 20 to 40 inches.

Kurtz silt loam (KtF) (22.7 acres) This series consists of deep, well drained soils on hills. They formed in residuum weathered from interbedded soft siltstone and shale bedrock. Slopes can range from 20 to 55 percent. Native vegetation consists of mixed hardwood with oaks, hickory, beech and yellow-poplar. This soil is well suited to trees. The site index for this soil type is 60 for northern red oak. Preferred trees to manage for are black oak, chestnut oak, persimmon, northern red oak, scarlet oak, shagbark hickory, American beech, sugar maple, and white oak.

Access

From the intersection of US Highway 50 and State Road 250 in Brownstown, travel east on State Road 250 for 2.2 miles to Camp Road. This is main entrance into Jackson-Washington State Forest. Travel 1 mile on Camp Road to the southwest corner of the tract.

Boundary

This tract is triangular in shape. The southern boundary is an ephemeral stream that transitions into an intermittent stream as it travels from east to west. The northwest boundary is an ephemeral stream. The northeast boundary is a ridgetop and travels along a saddle about half way along the boundary.

Wildlife

As displayed in the table below, the number of snags estimated in this tract for all three size classes far exceeds both the maintenance and optimal level. These snags that fell within the inventory plots were mostly beyond salvaging for a timber harvest, so they are likely to all remain. Additional snags may also be created through the proposed post-harvest timber stand improvement.

Indiana Bat Habitat Snag Guidelines					
Snag	Maintenance	Optimal	Inventory	Available Above	Available Optimal
Size Class	Level	Level	Estimate	Maintenance	Optimal
5"+ DBH	232	406	563	331	157
9"+ DBH	174	348	563	389	215
19"+ DBH	29	58	143	114	85

A Natural Heritage Database Review is part of the management planning process. 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.

Communities

This tract ranges from dry to mesic oak-hickory forest. The driest areas are dominated by chestnut oak, while the more mesic areas are dominated by mixed oak and hickory. One paulownia tree was discovered in an old regeneration opening. This should be treated with a basal bark application of Garlon.

Forest Condition

This tract is currently fully stocked with a 95% stocking level. The proposed harvest would drop the stocking to 70%, which is still fully stocked and well above the b-line. The inventory estimated approximately 558,900 board feet on this entire tract, with 449,590 as growing stock and 109,310 board feet as harvest stock. Chestnut oak was estimated to be 84,500 board feet of that harvest volume. The inventory estimate of per acre volume was 9,686 board feet, with 1,894 as harvest stock and 7,792 as growing stock.

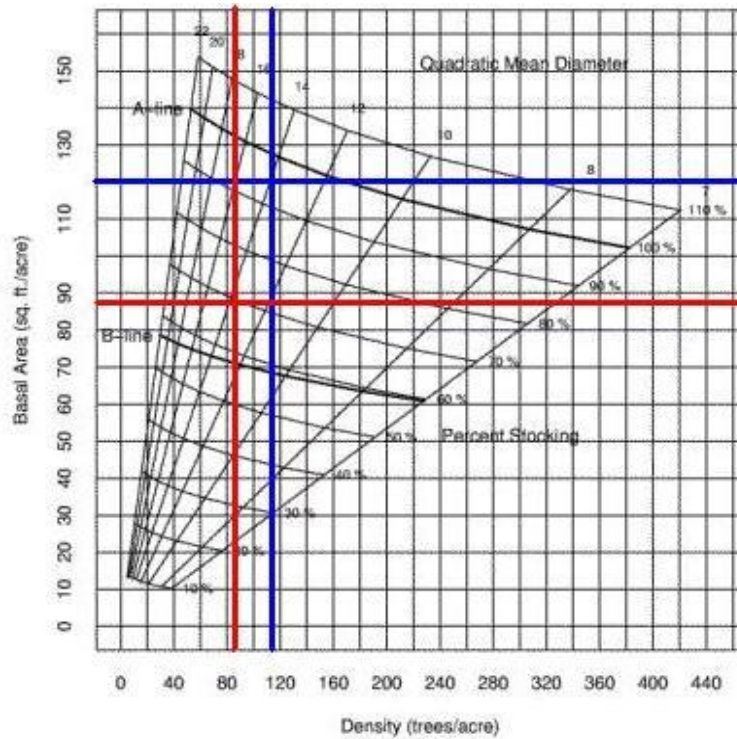
TM 901 RESOURCE MANAGEMENT GUIDE			
INVENTORY SUMMARY			
		Compartment:	2
State Forest:	Jackson-Washington	Tract:	5
Forester:	Michael Spalding	Inventory Date:	February 8, 2013
ACREAGE IN:			
Forest	57.7		
CCC PicnicArea	6.2		
TOTAL AREA	63.9		

(Estimated Tract Volumes for Commercial Forest Area-Bd.Ft., Doyle Rule)

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
chestnut oak	84,500	247,600	332,100
white oak	0	100,560	100,560
sugar maple	7,910	22,570	30,480
pignut hickory	0	22,200	22,200
northern red oak	3,510	11,660	15,170
yellow-poplar	0	14,550	14,550
black oak	3,140	11,010	14,150
American beech	2,590	10,470	13,060
white ash	3,300	6,250	9,550
red maple	4,360	0	4,360
hackberry	0	2,720	2,720

TRACT TOTALS	109,310	449,590	558,900
PER ACRE TOTALS	1,894	7,792	9,686

Stocking Guide Compartment 2 Tract 5



Estimated Pre-Harvest Data in Blue

Total Basal Area per Acre = 120.1 square feet per acre
 Total Number Trees per Acre = 115
 Average Tree Diameter = 14 inches DBH
 Percent Stocking = 95%

Projected Post-Harvest Data in Red

Total Basal Area per Acre = 87.3 square feet per acre
 Total Number Trees per Acre = 86
 Average Tree Diameter = 13.9 inches DBH
 Percent Stocking = 70%

Recreation

The recreational use of this tract is very high due to the picnic area, playground, proximity to the campground and the hiking trails. Hiking trails 1 and 2 both travel

through this tract. The recreational facilities and trails would need to be temporarily closed during any harvesting activities.

Cultural

Cultural resources may be present, but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during management or construction activities

The “Jackson-Washington State Forest Picnic Area” was entered into the National Register of Historic Places on January 2, 1997. There are also the remnants of the base of an old firetower on the peak of the hill in the northwest corner of the tract. These two sites will not be disturbed during the proposed harvest activities. Harvesting may occur in the vicinity of the picnic area; however, no structures will be disturbed.

Tract Description, Prescription, and Proposed Activities

Oak-Hickory (57.7 acres) This area transitions from nearly pure chestnut oak at the top of the slopes to mixed oak and hickory at the bottom of the slopes. There are some areas of mixed hardwoods on the lower slopes as well, but these areas are not large enough to delineate separately. There is substantial mortality in this area due to the looper epidemic in the early to mid 2000’s and multiple drought and wind events from 2007-2012. The mortality is more severe in some sections of this area, while other sections are fully to overstocked. Much of the chestnut oak is small to medium sawtimber of average quality, but on better soils within this subdivision, there are many larger and higher quality chestnut oak stems. The oak and hickory timber found on the lower slopes is generally medium to large sawtimber and good to excellent quality, likely from many of the lower quality stems being removed through the previous harvest. This area should be marked for harvest using single tree and group selection. The single tree selection should focus on retention and release of the healthiest and highest quality oak and hickory trees by harvesting mixed hardwoods, damaged and defective trees, mature and overmature trees, drought-stressed trees, and other suppressed and co-dominant trees. One particular area on the westernmost slope of the tract should be marked for a regeneration opening. This area contains many defective trees, likely from old grazing and fire, as well as many mature and over-mature trees. Other regeneration openings may be necessary in areas of low stocking in order to begin a new fully-stocked stand of trees. This harvest should occur within the next 5 years. The paulownia tree may be treated either before or while marking the timber harvest. The abundance of snags located in this tract will remain mostly unchanged due to this not being a salvage operation, giving plenty of opportunity for Indiana bat habitat. As required with all State Forest timber harvests, best management practices will be implemented to reduce the amount of sediment reaching Knob Lake. The future stand should contain a healthy composition of mature oak and hickory trees as well as a lesser component of mixed hardwoods. The regeneration openings from the previous harvests are dominated by mixed hardwoods including yellow-poplar, black cherry, and red maple. It is expected that the proposed regeneration openings will contain a similar composition. Within two years following completion of the timber harvest, post-harvest timber stand improvement should be performed to deaden any culls not taken by the logger, complete any regeneration openings, and

release any trees not sufficiently released through the harvest. Twenty years after completion of the harvest, this tract should be inventoried, and a new management guide should be written at that time.

CCC Picnic/Playground Area (6.2 acres) Most of this area is not commercial forest; however, it does have some commercial forest included in it that was not included in the inventory. Any trees that are hazards or at risk of creating a hazard in the future may be included in the proposed timber sale as well.

Proposed Activities Listing

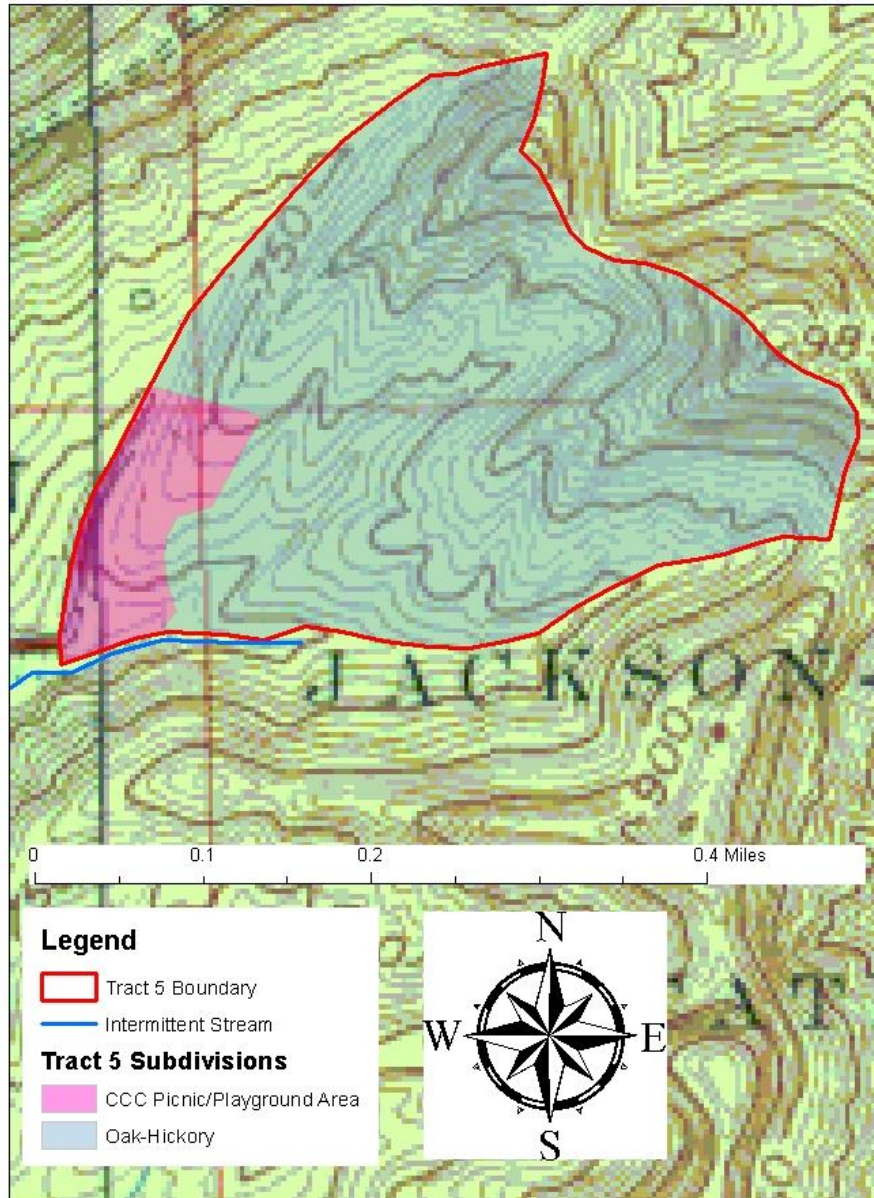
Treat paulownia tree	2014-2019
Mark and sell timber harvest	2014-2019
Post-harvest timber stand improvement	2016-2021
Review any openings greater than one acre for regeneration	2021-2023
Inventory and management plan	2036-2041

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

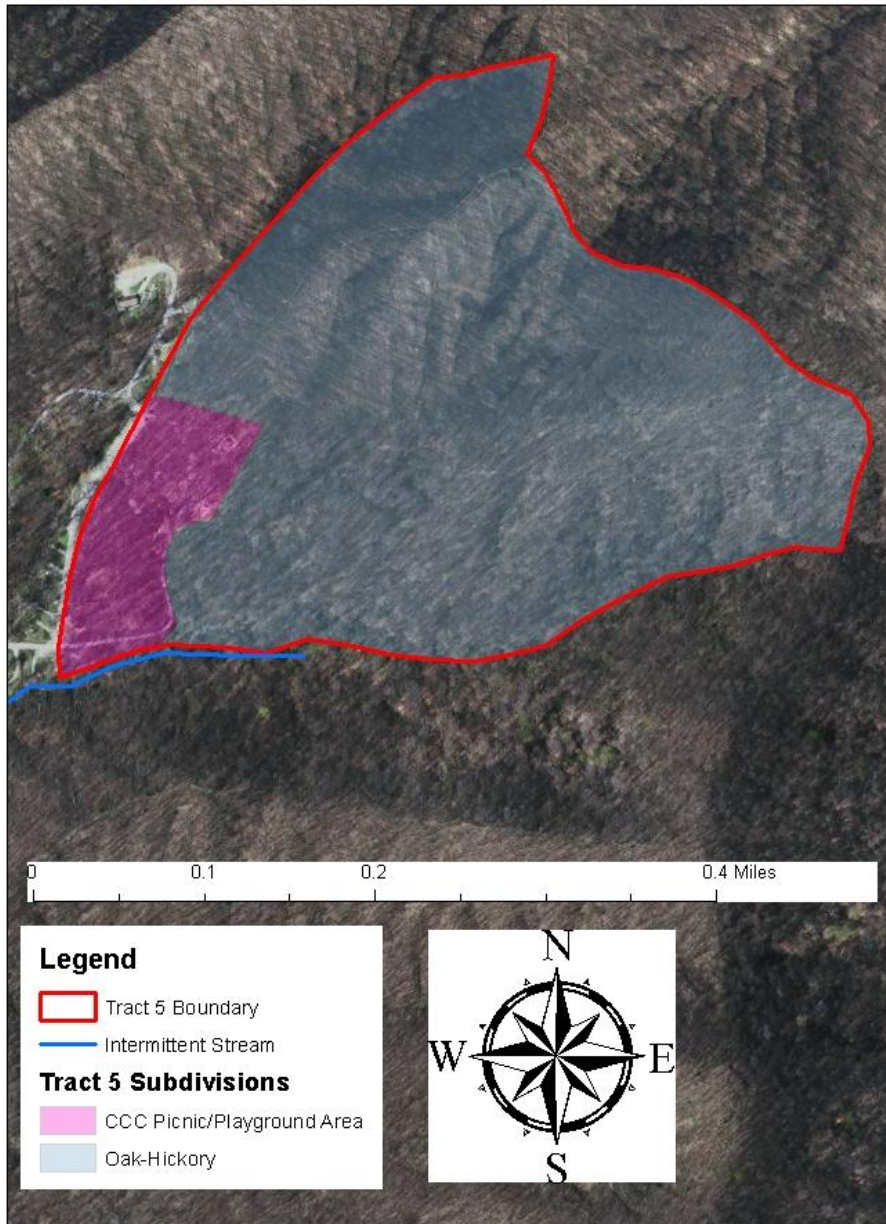
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

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.

Tract Subdivisions
Jackson-Washington State Forest
Compartment 2 Tract 5



Tract Subdivisions
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Soils Map
Jackson-Washington State Forest
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