

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

Jackson-Washington State Forest

Compartment 9 Tract 24

Forester: Michael Spalding

Draft Plan Date: December 21, 2012

Inventory Completion Date: June 18, 2012

Management Cycle End Year: 2037

Management Cycle Length: 24

Location

Compartment 9 Tract 24 is located in Sections 1 and 12 Township 3 North Range 4 East and Sections 6 and 7 Township 3 North Range 5 East in Washington County. The tract lies approximately 9 miles northeast of Salem.

General Description

This 137 acre tract is covered with oak-hickory, mixed hardwoods, and old field sites.

History

The land that makes up this tract was acquired in three different acquisitions. The first was a 435 acre purchase from Hurst Robbins on January 10, 1953. The second was a 213 acre purchase from Guy and Hazel Harrison on July 24, 1958. The third was a 386 acre purchase from Kathryn Lyons and Emelynn Hornbeck on August 5, 1963.

The first recorded management performed in this tract was an inventory from March 1972. At that time, the tract was 133 acres in size. The inventory estimated 2,616 board feet per acre with 1,483 board feet harvest stock and 1,133 board feet growing stock.

A timber sale covering 188 acres was sold on July 15, 1975. The sale covered the entire area of this tract in addition to parts of some of the surrounding tracts. The sale contained 148,448 board feet in 1,097 trees. The top three species harvested by volume were chestnut oak, American beech, and northern red oak. Paul Wheeler bought the sale for \$4,553.44 (\$30.67/MBF).

Landscape Context

The dominant land use within the landscape surrounding this tract is forestland. This is primarily due to this tract's location in the center of Jackson-Washington State Forest's largest landholding. Currently, the amount of early successional forest habitat in this area is relatively low as most of the abandoned fields from prior to State of Indiana ownership have become closed canopy forest, and harvesting in the Back Country area is restricted to single-tree selection. Surrounding this large block of forestland are crop fields, watershed lakes, and single-family residences. Some increase in construction of homes has been seen in the area, but the distance to municipalities and poor economic conditions have kept those to a minimum. Also, several timber harvests have occurred on the private lands surrounding the State Forest. Most appear to have been diameter limit high-grade harvests, while some have been harvested with long-term forest management as a directive.

Topography, Geology and Hydrology

The topography of this tract consists of broad flat ridge tops, moderately steep south-facing slopes, and a steep north-facing slope. The underlying geology consists largely of siltstone and shale.

Seven-tenths of a mile of mapped intermittent stream is located in the center of this tract. As with all Indiana State Forest timber sales, Best Management Practices are required as part of the timber sale contract in order to minimize sediments reaching the stream. This stream eventually flows into a perennial stream that is a tributary of Delaney Lake.

Soils

Berks-Weikert complex (BhF) (78.9 acres) This soil series is steep to very steep, well-drained soils are on side slopes in the upland areas. The Berks soil is moderately deep, and the Weikert soil is shallow. They are about 55% Berks soil and 35% Weikert soil. The two soils occur as areas so intricately mixed that mapping them separately is not practical. This soil complex is suited for trees. The erosion hazard, the equipment limitations, seedling mortality, windthrow hazard, and plant competition are concerns in managing the woods. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. The site indexes for hardwood species range from 50 (black oak) to 70 (white oak). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

Burnside silt loam (Bu) (12.7 acres) This series consists of deep, well-drained soils that formed in 30 to 61 centimeters (12 to 24 inches) of medium-textured alluvium and the underlying loamy-skeletal alluvium. These soils are on flood plains and alluvial fans. It is occasionally flooded for brief periods in the spring. Native vegetation is deciduous hardwoods. This soil is well suited for trees. Plant competition is moderate. Seedlings survive and grow well if competing vegetation is controlled by cutting, girdling, or spraying. The site index for hardwood species is 95 for yellow-poplar. Preferred trees to manage for are bitternut hickory, white oak, red oak, black walnut, sugar maple, and yellow-poplar.

Cuba silt loam (Cu) (.3 acre) This series consists of very deep, well-drained soils that formed in acid, silty alluvium. These soils are on flood plains, flood-plain steps and natural levees. Slope ranges from 0 to 3 percent. Native vegetation is mixed hardwood forest. This soil is well suited to trees. No major hazards or limitations affect planting or harvesting. The site indexes for hardwood species is 100 (yellow-poplar). Preferred trees to manage for are bitternut hickory, white oak, red oak, black walnut, sugar maple, and yellow-poplar.

Gilpin silt loam (GID2) (5.6 acres) This strongly sloping, moderately deep, and well-drained soil is on side slopes in the uplands. This soil is fairly well suited to trees. The erosion hazard, the equipment limitations, and plant competition are the main concerns in the management of wooded areas. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. During wet periods, roads tend to be slippery and ruts form easily. Seedlings survive and grow well if competing vegetation is controlled by cutting, girdling, or spraying. The site indexes for hardwood species

range from 80 (red oak) to 95 (yellow- poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

Wellston silt loam (WeC2) (6.1 acres) This series consists of deep or very deep, well-drained soils formed in silty material from loess and from fine-grained sandstone or siltstone and with bedrock at depths of 40 to 72 inches. Wellston soils are on nearly level to steep uplands in areas of acid sandstone, siltstone, or shale bedrock; but are most common on ridgetops. Slope ranges from 0 to 50 percent but are dominantly 4 to 18 percent. Native vegetation consisted of oak, hickory, dogwood, tulip poplar, and cherry. This soil is fairly well suited to trees. The erosion hazard, the equipment limitations, and plant competition are the main concerns in the management of wooded areas. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. During wet periods, roads tend to be slippery and ruts form easily. Seedlings survive and grow well if competing vegetation is controlled. The site indexes for hardwood species is 81 (red oak) and 90 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, persimmon, red oak, scarlet oak, shagbark hickory, sugar maple, yellow-poplar, and white oak.

Zanesville silt loam (ZaB, ZaC2) (33.8 acres) This gently sloping, deep, moderately well-drained or well-drained soil is found on ridge tops on the uplands. The soil is well suited to trees. Plant competition is moderate. Seedlings survive and grow well if competing vegetation is controlled by cutting, girdling, or spraying. The site index for this soil ranges from 70 (white oak) to 90 (yellow-poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, persimmon, scarlet oak, red oak, and white oak.

Access

From the intersection of West Point Road and Pull Tight Road, travel along Mail Route Road for approximately 2.5 miles to the southeast corner of the tract. The farthest access into the tract is another .6 mile northwest along Mail Route Road. Fire Lanes 711 and 713 provide access along the east-west ridge tops within the sale.

Boundary

The northern and southern boundaries follow east-west oriented ridge tops. The eastern boundary follows a ridge top and lies west of Mail Route Road. The western boundary follows an ephemeral drainage from the north that eventually drains into an intermittent stream. There are no private property lines in or around this tract.

Wildlife

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.

The number of snags estimated during the inventory exceed even the optimal level for all size classes for this tract.

Indiana Bat Snag Guidelines

Snags (all species)	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above
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					Optimal
5"+ DBH	548	959	2553	2005	1594
9"+ DBH	411	822	1251	840	429
19"+ DBH	68.5	137	158	90	21

Communities

This tract is covered by typical forest types of mixed hardwoods and oak-hickory. Two very small potential glade barren areas noted during forest inventory work and will be avoided by harvests

A very small patch of Japanese knotweed was discovered near the eastern end of the tract. This needs to receive a foliar treatment of 3% glyphosate during the months of July, August, or September.

Recreation

Hunting and hiking are the two primary recreational uses of this tract. Approximately 1.7 miles of the Knobstone Trail is located either in the tract or adjacent to the tract boundary. That section of the trail would need to be closed or re-routed during the harvest operation. Hunting is also popular in this tract due to its easy access. This tract is in the Back Country Area, and therefore management is restricted to single-tree selection.

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.

Tract Subdivision Description and Silvicultural Prescription

Oak-Hickory (80.9) – This subdivision transitions from nearly pure stands of pole-size chestnut oak on the dry upper slopes to high quality oak-hickory stands on the lower slopes. The higher-quality oak-hickory stands are dominated by medium to large sawtimber white, red, and black oaks and pignut and shagbark hickories. Basal area for this area ranges from 60 to 180, with most areas being around 110 to 120. A harvest should be conducted to release the higher quality, vigorous oak and hickory trees. Trees harvested should include mixed hardwoods that release oak or hickory, most ash trees, fire and/or grazing damaged trees, drought stressed trees, wind damaged trees, some mature and over-mature trees, and other intermediate trees needed to release residual trees. Following the harvest, this area will have a full stocking of vigorous oak and hickory trees.

Mixed Hardwoods (33.9 acres) – This subdivision contains a wide diversity of tree species including white, red, black, and chestnut oaks, pignut and bitternut hickories, sugar and red maples, American beech, yellow-poplar, white ash, basswood, black cherry, black walnut, and blackgum. The overall quality of timber is good to excellent. While the size generally ranges from pole to large sawtimber, this subdivision contains a high stocking of mature to over-mature large sawtimber trees. Many of the yellow-poplar trees were showing signs of drought stress, with some having already died from multiple drought years. This stand should be maintained as

a high-quality mixed hardwoods area into the future. In order to accomplish this, a single-tree selection harvest should be performed to release the most vigorous and highest quality trees. Trees targeted for removal should include mature and over-mature yellow-poplar, drought-stressed yellow-poplar, wind damaged trees, trees with old fire or grazing damage, and any other trees needed to release the residual trees. Most of the ash trees should be harvested in advance of the emerald ash borer, which has already been located in this county.

Old Field Mixed Hardwoods and Pine (22.8 acres) – This subdivision contains a combination of planted pine and naturally regenerated hardwoods in old abandoned fields. Although none appear in the inventory data, red pine was planted in most of the southern areas of this subdivision, and most are now dead. The few that are not dead are very stagnated. White pine was also planted in these areas. While much of the white pine are larger and appear to be healthier, some of the dominant trees are dying from an unknown cause. Beetles, disease, drought, or a combination could be the cause of the mortality. Naturally regenerated hardwoods include largetooth aspen, white ash, red maple, sassafras, and an occasional oak. The size of trees mostly ranges from pole to small sawtimber, and the quality tends to be average to poor. Once again, due to the restriction placed on this tract by being in the Back Country Area, this subdivision can receive only single-tree selection. Objectives of this harvest should be to release the oak trees present, to harvest any pine that release native hardwood trees, and to harvest most of the ash trees. Within one or two harvest cycles, this area should begin to develop into a higher-quality mixed hardwoods area.

Summary Tract Silvicultural Prescription and Proposed Activities

The Japanese knotweed patch should be treated within the next two years. A timber harvest should be marked and sold within the next three years. Due to the tract's Back Country Area's recreation designation, harvesting will be limited to single tree selection only. Actual harvest intensity will likely be less than noted in the tract inventory as recommended for harvest and marking will retain a cohort of older trees and trees in larger diameter classes. Trees targeted for removal should include the following: mixed hardwoods that release oak or hickory, fire and/or grazing damaged trees, drought stressed trees, wind damaged trees, some mature and over-mature trees, other intermediate trees needed to release residual trees, and any pine that release native hardwood trees. Most of the ash trees should be harvested in advance of the emerald ash borer, which has already been located in this county. This harvest is estimated to remove 2,446 board feet of 7,695 board feet per acre, for a total estimated harvest of 335,060 board feet. The stocking level would be maintained above the fully stocked b-line. This tract should receive another inventory and management guide 20 years following completion of the timber harvest.

Proposed Activities Listing

<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Treat Japanese knotweed	2013-2014
Mark and Sell Timber Sale	2013-2015
Post-harvest Timber Stand Improvement	2015-2017
Inventory and Management Guide	2037

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.

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INVENTORY SUMMARY			
		Compartment:	9
Jackson-Washington State Forest		Tract:	24
Forester:	Michael Spalding	Date:	June 18, 2012

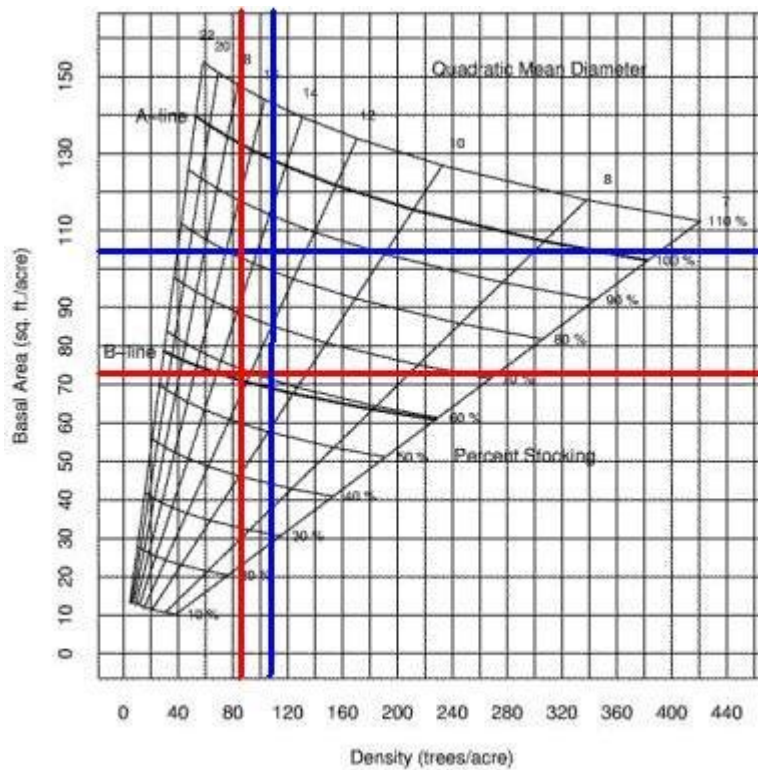
ACREAGE IN:	
Commercial Forest	137
Non-Commercial	0
TOTAL AREA	137

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
chestnut oak	84,710	226,730	311,440
yellow-poplar	105,990	73,050	179,040
white oak	3,170	151,640	154,810
northern red oak	15,020	112,250	127,270
white ash	62,030	0	62,030
sugar maple	11,020	30,490	41,510
black oak	5,560	35,480	41,040
basswood	5,430	28,750	34,180
pignut hickory	0	16,620	16,620
red maple	7,780	6,330	14,110
American beech	8,550	5,520	14,070
bitternut hickory	0	10,980	10,980
scarlet oak	3,070	5,720	8,790
black cherry	5,090	3,170	8,260
American sycamore	2,290	5,860	8,150
largetooth aspen	7,250	0	7,250
blackgum	0	6,620	6,620
black walnut	3,060	0	3,060
eastern white pine	2,890	0	2,890
sassafras	2,150	0	2,150
TRACT TOTALS	335,060	719,210	1,054,270
PER ACRE TOTALS	2,446	5,250	7,695

Stocking Guide

Compartment 9 Tract 24



Estimated Pre-Harvest Data in Blue

Total Basal Area per Acre = 105 square feet per acre

Total Number Trees per Acre = 107

Average Tree Diameter = 13.2 inches DBH

Percent Stocking = 84%

Projected Post-Harvest Data in Red

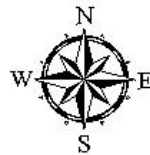
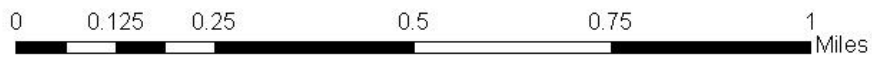
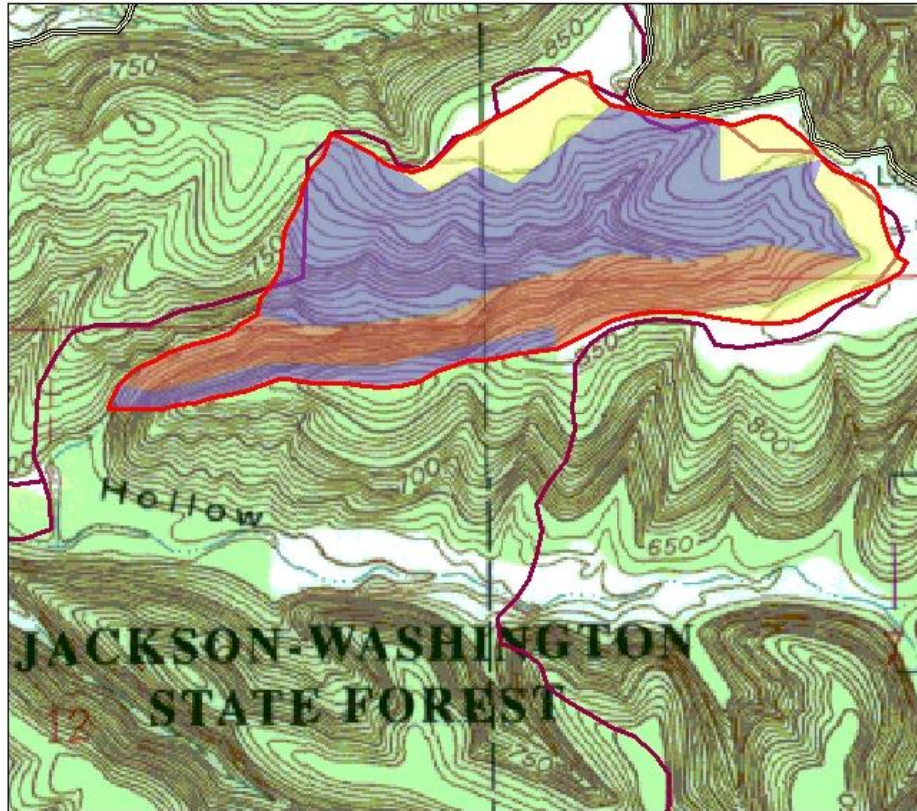
Total Basal Area per Acre = 73 square feet per acre

Total Number Trees per Acre = 85

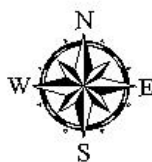
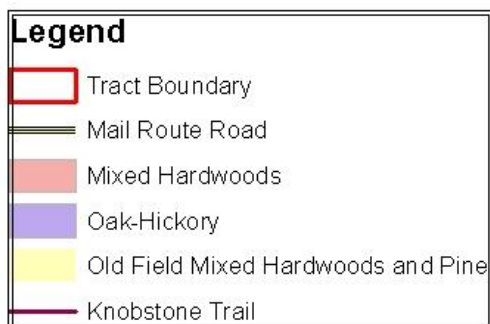
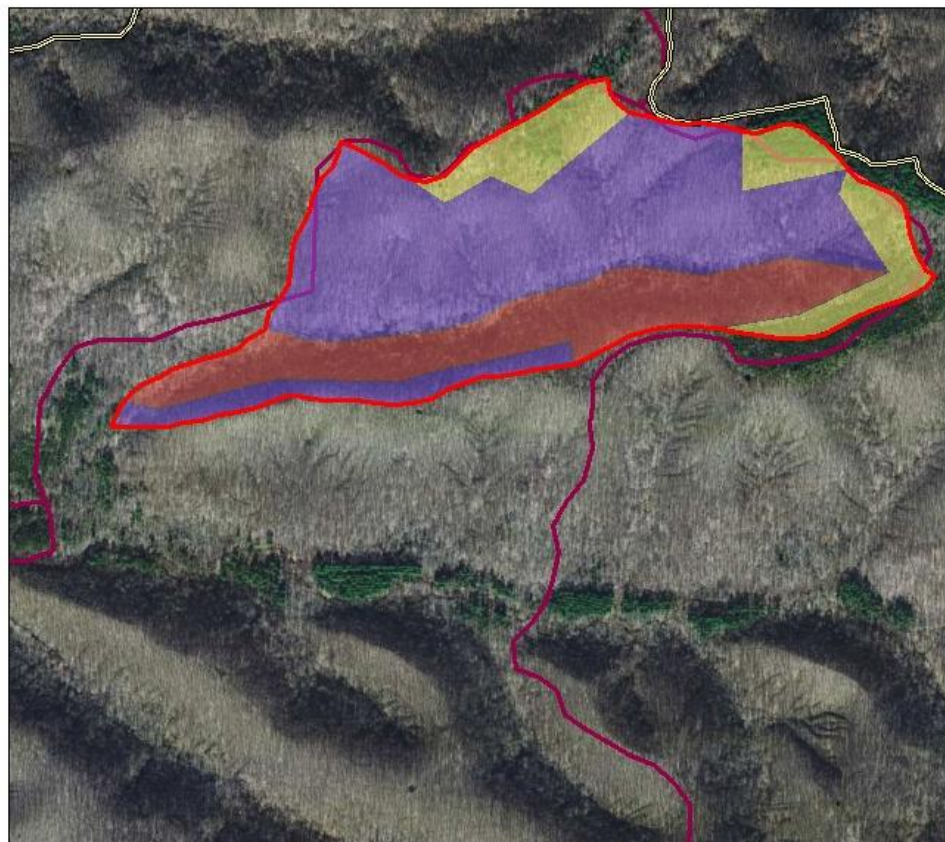
Average Tree Diameter = 12.2 inches DBH

Percent Stocking = 59%

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