

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

Jackson-Washington State Forest
Forester Michael Spalding
Management Cycle End Year 2040

Compartment 10 Tract 15
Draft Plan Date September 12, 2013
Management Cycle Length 27 years

Location

This tract is located in Sections 7 and 18, Township 3, North Range 5 East, Gibson Township, Washington County. Salem is approximately 8 ½ miles southwest of this tract.

General Description

This 70.8 acre tract is covered with oak-hickory forest type heavily dominated by chestnut oak and old field mixed hardwoods with some planted pine.

History

The land that makes up this tract was acquired in two land purchases. The first was a 240 acre purchase from Thurman and Nora Saylor on September 19, 1957. The second was a 410.2 acre purchase from Willard and Ruby Lykins on March 27, 1963.

A letter from Ernel Lewis of Lewis Lumber Company in Bedford dated June 15, 1962 states that they had completed harvesting timber from the Lykins' property. A report by the Division of Forestry dated June 11, 1962 states "Approximately 350 acres has been cut over within the last three years. This area is now supporting approximately 1,000 board feet per acre and with good reproduction. The remainder has approximately 2,400 board feet per acre." The report also stated that no fire damaged was observed, although it appears now that some trees have old fire damage. The reporter recommended planting 12 open acres to shortleaf or red pine in 1964, which appears to have been accomplished. The only management performed in this tract since it was acquired was an inventory and brief management guide from April 1971. At this time, the tract was listed as 72 acres, with 56 containing merchantable timber and 16 acres of non-merchantable timber. The merchantable acreage was estimated to contain 1,045 board feet per acre, with 748 of that as harvest stock. The forester stated that the chestnut oak was too small and poorly formed to constitute a timber harvest in the near future. TSI was also not recommended.

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 ridges and moderately steep side slopes. All of the aspects are south or west facing. Even those slopes that are partially facing north or east still have a west or south influence. The underlying geology consists of siltstone, sandstone, and shale. This entire tract flows into ephemeral and intermittent streams that drain into Spurgeon Lake. Any water flowing out of Spurgeon Lake eventually drains into the Muscatatuck River.

Soils

Berks-Weikert complex (BhF) (40.7 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. 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) (8.6 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.

Wellston silt loam (WeC2, WeD) (3.7 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 (ZaC2) (17.7 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 Pulltight Road and Mail Route Road travel north .9 mile on Mail Route Road to Firetrail 750. Travel west on Firetrail 750 for approximately ¼ mile to the beginning of the tract. The tract boundary then follows this Firetrail for another .35 mile west.

Boundary

The northern boundary is Firetrail 750. The eastern boundary is an ephemeral stream for its southern half and a ridge top for its northern half. The southern boundary is an intermittent stream. The western boundary is an ephemeral stream that merges into an intermittent stream as it travels from north to south.

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 by the inventory exceeds both the maintenance and optimal level for all three size classes. Post-harvest TSI could create additional snags through deadening culls of any size and thinning stands of smaller trees.

Indiana Bat Habitat Snag Guidelines					
				Available	Available
Snag	Maintenance	Optimal	Inventory	Above	Above
Size Class	Level	Level	Estimate	Maintenance	Optimal
5"+ DBH	283	496	692	409	196
9"+ DBH	212	425	547	334	122
19"+ DBH	35	71	75	40	5

Communities

This tract is primarily dominated by dry oak-hickory forests with a dense greenbrier layer. Smaller influences of mixed hardwoods and more mesic sites can be found in very small areas along the streams and bottoms of the slopes. The ridge tops are covered with

planted pine and naturally regenerated hardwoods after they were abandoned from farming decades ago.

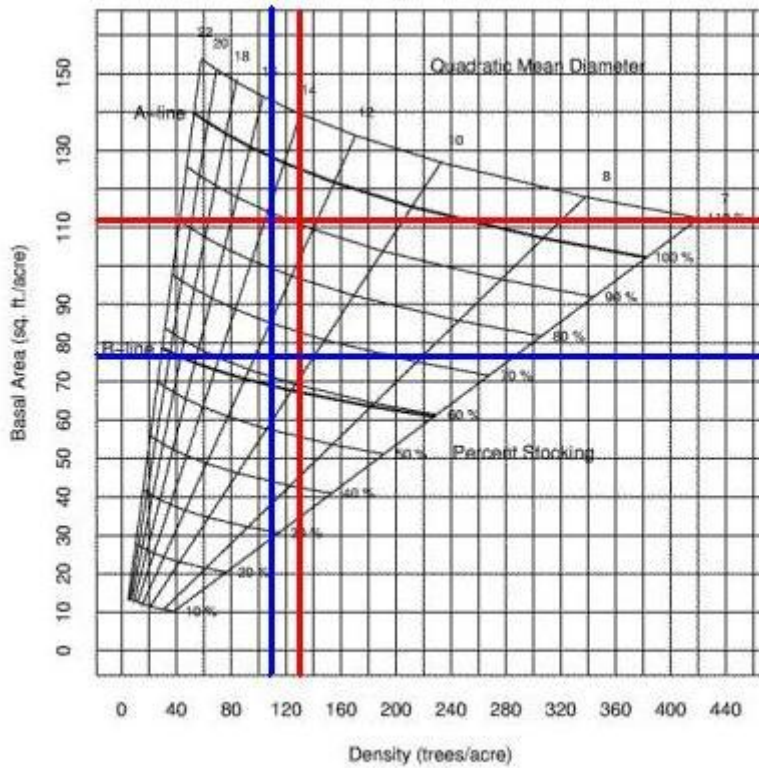
Forest Condition

This tract currently has a very high stocking as displayed on the stocking guide. The proposed harvest would reduce the stocking, but remain the fully stocked B-line. Some of the areas in this tract are overstocked with pole-size to small sawtimber size chestnut oak. Other areas are fully stocked and have many trees that are defective, likely from old fire damage. The damage causing the defects could also have been caused from grazing or timber harvesting prior to purchase of this land by the State of Indiana. There are many healthy, higher quality trees that will benefit through increased growing space and nutrient, light, and water use from the reduction of stocking. The inventory data is listed below as well and summarizes the timber volumes for this tract.

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Stocking Guide

Compartment 10 Tract 16



Estimated Pre-Harvest Data in Red

Total Basal Area per Acre = 111.1 square feet per acre
 Total Number Trees per Acre = 132
 Average Tree Diameter = 12.5 inches DBH
 Percent Stocking = 91%

Projected Post-Harvest Data in Blue

Total Basal Area per Acre = 78.2 square feet per acre
 Total Number Trees per Acre = 108
 Average Tree Diameter = 11.5 inches DBH
 Percent Stocking = 64%

**TM 901
RESOURCE MANAGEMENT GUIDE**

**INVENTORY
SUMMARY**

		Compartment:	10
State Forest:	Jackson-Washington	Tract:	15
Forester:	Spalding	Inventory Date:	February 7, 2013

ACREAGE IN:

Commercial Forest	70.8
Other	0
TOTAL AREA	70.8

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
chestnut oak	38,640	128,260	166,900
northern red oak	2,130	47,810	49,940
black oak	6,070	43,110	49,180
yellow-poplar	36,070	8,650	44,720
white oak	0	42,130	42,130
sugar maple	11,670	25,610	37,280
white ash	17,710	0	17,710
red maple	14,710	0	14,710
pignut hickory	0	12,280	12,280
scarlet oak	0	10,280	10,280
American beech	3,830	3,650	7,480
basswood	6,500	0	6,500
blackgum	4,570	0	4,570
black cherry	1,430	1,460	2,890
American sycamore	0	2,840	2,840
red elm	2,230	0	2,230
sassafras	1,850	0	1,850
largetooth aspen	1,510	0	1,510
shagbark hickory	0	1,250	1,250
TRACT TOTALS	148,920	327,330	476,250
PER ACRE TOTALS	2,103	4,623	6,727

Recreation

Hunting and hiking are the two primary recreational uses of this tract. A section of the Knobstone Trail follows Firetrail 750 within this tract, and that section of the trail would need to be closed or rerouted during the harvest operation. Another section of the trail is in the valley bottom along the intermittent stream. Hunting is also popular in this tract due to its easy access. Firetrail 750 is also the handicap hunter trail, and efforts would need to be made to work around this as well. This tract is in the Back Country Area and therefore the management will be affected due to the restriction of single-tree selection placed on the Back Country Area.

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 Prescription

Oak-Hickory (57.0 acres) – This subdivision is dominated heavily by chestnut oak. Northern red oak, black oak, and white oak are more commonly found in areas where soils improve on the lower slopes. Pignut and shagbark hickories as well as scarlet oak are found throughout, but are not as dominant as the other oak species. Common mixed hardwood species include sugar maple, yellow-poplar, red maple, and white ash. The size of timber ranges from pole to large sawtimber. Most of the chestnut oak is pole to small sawtimber in size. Fire damage is common throughout this entire tract. Most of the yellow-poplar present is drought stressed from multiple drought events over the past several years. The ash trees present in here are at a high risk from emerald ash borer, which is already present in Washington County. The quality in this subdivision ranges widely from very poor to excellent. The understory is dominated by American beech, sugar maple, red maple, and blackgum. These four species make up 89% of all trees 5.4” DBH and smaller estimated by the inventory for the tract. The regeneration layer is heavily dominated by greenbrier throughout most of the subdivision except along the lowest parts of the slopes and along the intermittent streams. In order to maintain this oak-hickory stand in a healthy and vigorous condition the following trees should be targeted for removal: drought-stressed and off-site yellow-poplar, ash, fire-damaged trees, some mature and over-mature trees. Mixed hardwood species should also be harvested in locations that provide release to residual oak or hickory trees. Although some areas are in need of regeneration openings, harvesting will be restricted to single-tree selection only due to the recreational designation of the back country area.

Old Field (13.7 acres) – This subdivision contains some planted white and shortleaf pines, although none of the pine fell within any of the inventory plots. Common hardwood species included red maple, yellow-poplar, eastern redcedar, and sassafras. This subdivision contains some good quality pole-sized oak trees as well. Many of the yellow-poplar in this subdivision are drought-stressed. Many of the trees in this subdivision are pole-sized with a few scattered trees that are larger and were more open-grown in the past. Much of this subdivision would benefit from a regeneration opening,

but the recreational designation of the back country area allows for single-tree selection harvesting only in this tract. This subdivision should receive a harvest to release the healthiest highest quality residual trees. Ash trees as well as over-mature and drought-stressed yellow-poplar should also be harvested from this subdivision.

Tract Prescription and Proposed Activities

A timber harvest should be marked and sold in this tract within the next five years. This harvest should focus on thinning overstocked stands of smaller trees, harvesting trees with fire and wind damage, harvesting drought-stressed trees, harvesting much of the ash volume, and harvesting mixed hardwoods that release oak and hickory trees. 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 harvest stock and marking will retain a cohort of older trees and trees in larger diameter classes. This harvest will leave this tract with a fully-stocked stand of healthier and higher quality trees dominated primarily by oak and hickory with lesser amounts of mixed hardwoods as well. Best management practices, as required on all Indiana State Forest timber sales, will help to minimize the impacts to soil and water quality and to minimize the amount of sediment reaching the streams. There is an abundance of snags present for Indiana bat habitat, and additional snags may be created through post-harvest TSI. This harvest should be combined with the adjacent tract 17 due to the consistencies of the history and timber present. During the harvesting activities, the Knobstone Trail will be re-routed for public safety. Following completion of the timber harvest, post-harvest TSI may be completed to control grape vines, deaden marked culls not taken by the loggers and release targeted trees not fully released by the harvest. Twenty years after the completion of the post-harvest TSI, this tract should be inventoried and a new management guide written.

Proposed Activities Listing

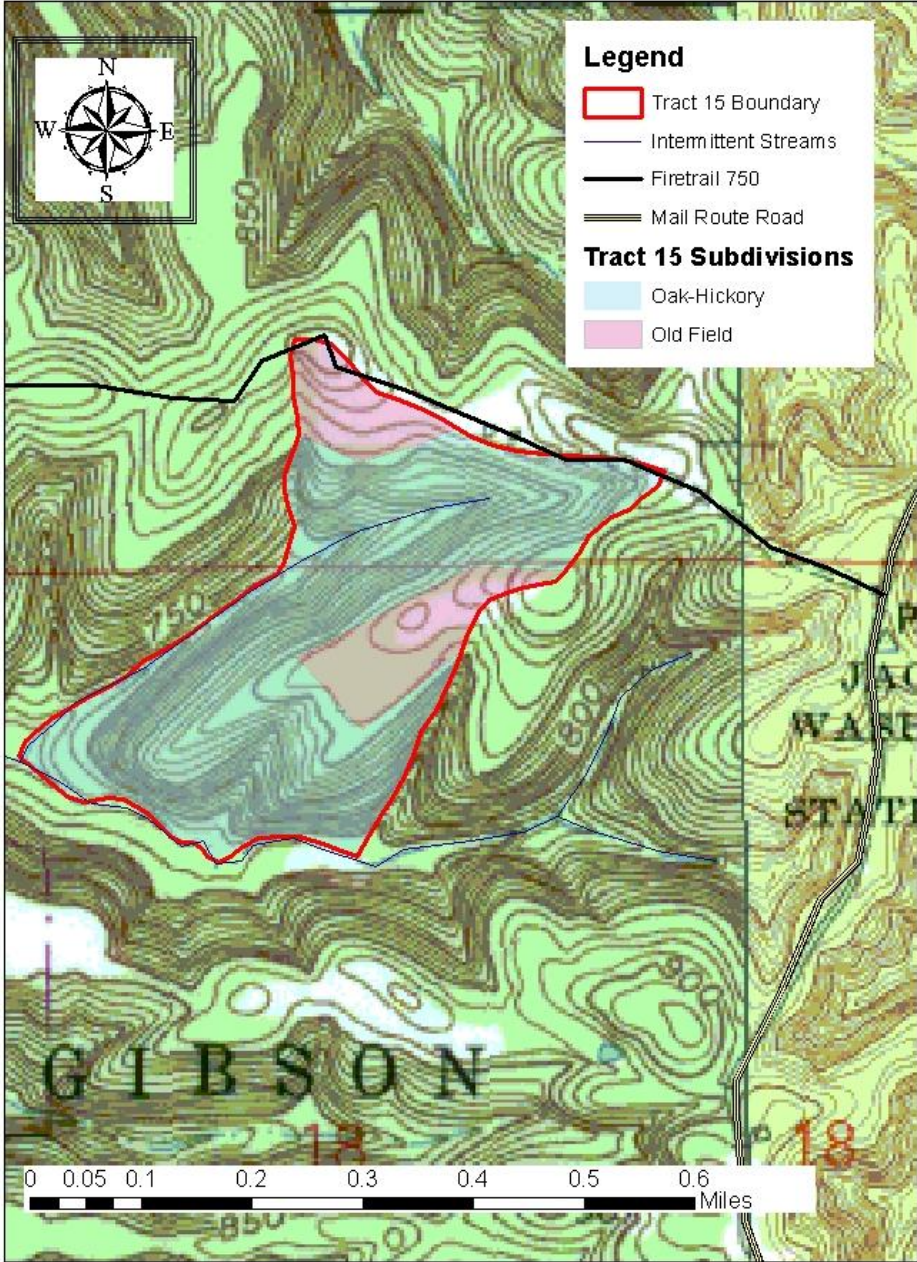
<i>Proposed Activity</i>	<i>Planned Timeline</i>
Mark and sell timber harvest with Tract 17	2014-2018
Post-harvest timber stand improvement	2016-2020
Inventory and management guide	2036-2040

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

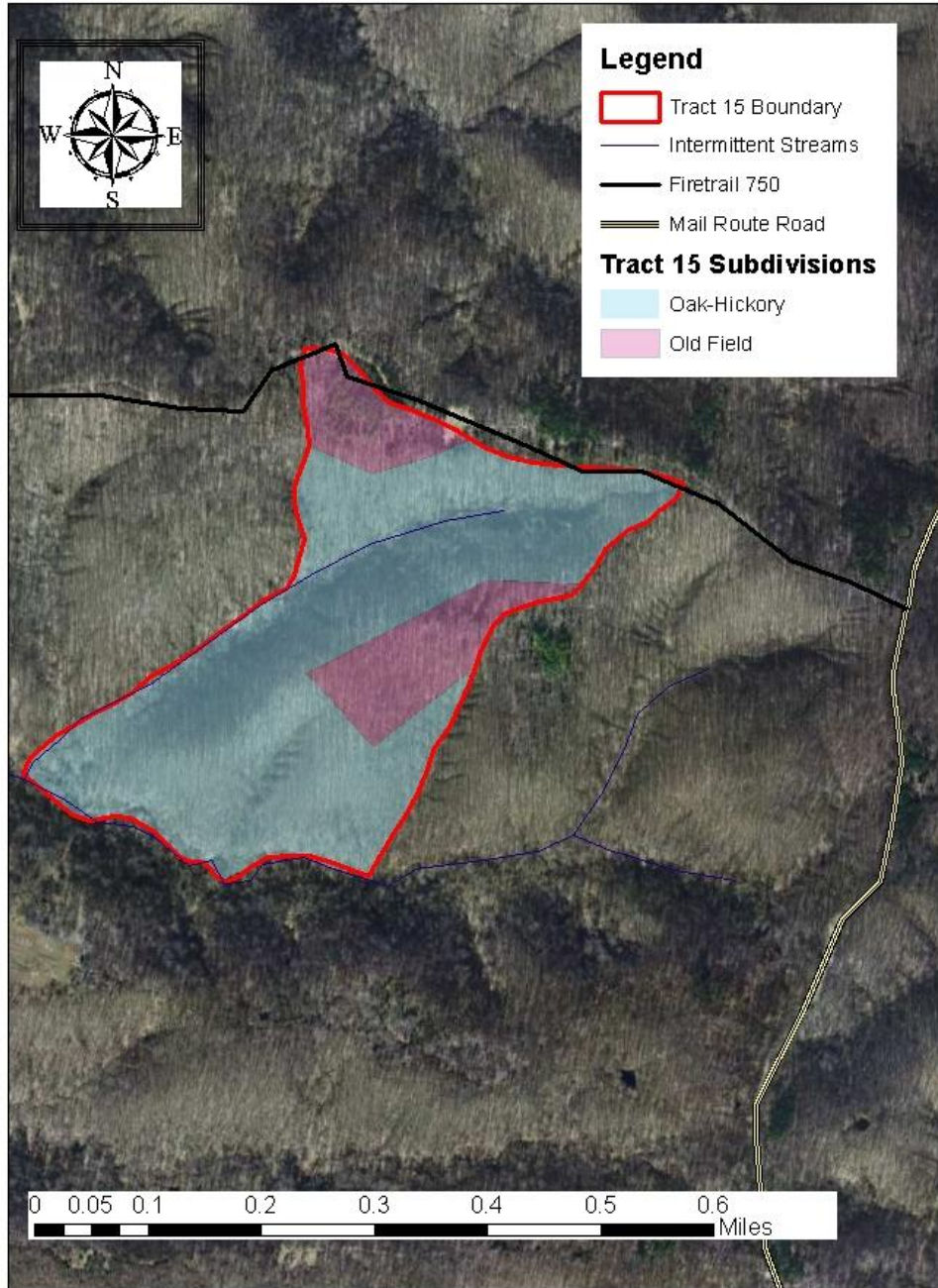
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

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.

Jackson-Washington State Forest
Compartment 10 Tract 15
Tract Subdivisions



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Jackson-Washington State Forest
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Soils Map

