Indiana Department of Natural Resources – Division of Forestry
Draft
RESOURCE MANAGEMENT GUIDE

State Forest: Jackson-Washington Compartment: 7 Tract: 2
Forester: Sandy Derringer Date: 1/23/2015
Management Cycle End Year: 2037 Management Cycle Length: 20 years

Location
This tract is located in part of Section 30 and Section 31, T4N, R4E of Washington County. The tract contains 41 acre. It is approximately 10 miles south of the intersection of State Road 135 and US 50.

General Description
This 41 acre tract is composed of the fingers that run between two main ridges. The ridges run northeast and northwest forming a "v" that opens to the north. It contains a mapped intermittent stream on the north end and an ephemeral and unmapped stream that runs to the north into the intermittent stream. The tract is made up of mixed hardwoods, oak-hickory, chestnut oak, and beech- maple- yellow poplar timber types.

History
The tract is part of a parcel of land obtained from Alice E. Denney, as administratix of the estate of Mary E. Coffey on March 31 1969.
Twenty seven acres of this tract was harvested by Jackson-Washington state forest in 1989 along with timber from tract 3. An estimated volume of 7,665bd.ft was marked in 39 trees and 5 cull trees. The property lines have been located in the past on the east and west side and in the northeast corner between a known corner stone and rebar with a cap. A trespass of a trailer was noted and the owner was asked to relocate it.

Landscape Context
State forest land lies to the north and west of this tract with private ownership to the east and south. The ground to the north and west both state and private is forested. The private property to the east and south is a mixture of scattered rural housing, and agriculture. One 10 acre private parcel, containing a home, is located to the northwest of this tract and is surrounded by state on three sides and their only access is through an easement on the state forest. State Road 135 is also the tract boundary to the east.

Topography, Geology and Hydrology
This tract is mainly composed of fingers that come off ridges forming a "v" running northwest and northeast. It is very steep near where the two ridges meet at the south end of the tract and off the ridge running northwest. The north end of the ridge running northwest has ground sloughing off on the north side. There is an ephemeral that turns into an unmapped intermittent stream that then joins the mapped intermittent stream. The intermittent stream area is fairly flat. The whole tract seems to have geodes. Fossils (crinoid stems, horn corals and corals) were found in the intermittent stream.

The bedrock is composed of sandstone and some limestone in the area of State Road 135.

Soils

Bedford silt loam (BdB) The Bedford series consists of moderately well drained soils formed in loess and the underlying loamy material over a paleosol from clayey residuum. They are very deep soils that are moderately deep to a fragipan. Permeability is moderate above the fragipan and very slow in the fragipan. Slopes range from 0 to 12 percent. Native vegetation is mixed hardwood forest, chiefly oaks, maple, hickory, elm, ash, and hackberry. This soil complex is suited for trees. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. Seedlings survive and grow well if competing vegetation is controlled and if livestock are excluded from area. The site indexes for hardwood species range from 70 (white oak) to 90 (tulip poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, shingle oak, red oak, and white oak.

Berks-Weikert complex (BhF) 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. 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) 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, and yellow-poplar.

Wellston silt loam (WeC2) 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. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. 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, yellow-poplar, and white oak.

Zanesville silt loam (ZaC2) 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

To access this tract go approximately 10 miles south from the intersection of US50 and State Road 135 and the property will be located to the west side of State Road 135. Old unused dirt roadbeds running in the tract are only accessible through private property on the south and northeast.

Boundary

The northern tract boundary is the intermittent stream and then runs northeast up an ephemeral to the property corner. The east line is a private property line until it hits State Road 135 at which point it follows the road until it hits private ownership on the south end of the tract. The west line runs along a ridge top running to the northwest.

Wildlife

Wildlife Habitat Feature Tract Summary

Snags (all species)	Maintenance Level	Optimal level	Inventory	Available above maintenance	Available above optimal
5"+DBH	164	287	291	127	4
9"+DBH	123	246	291	168	45
19"+DBH	20.5	41	33	13	-8

The wildlife habitat feature summary indicates that the 5"DBH and 9" DBH class for snags exceed in both the maintenance and optimal levels. The 19" DBH class is above the maintenance level. Additional snags will be created in each DBH class through post harvest Timber Stand Improvement (TSI).

A Natural Heritage Database review was completed for this tract. If Rare, Threatened or Endangered species (RTE's) 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

A Natural Heritage Database review was completed for this tract. If Rare, Threatened or Endangered species (RTE's) 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.

Forest Condition

TM 901 RESOURCE MANAGEMENT GUIDE			
INVENTORY SUMMARY			
		Compartment: 7	
State Forest:	Jackson-Washington	Tract: 2	
Forester:	Sandy Derringer	Inventory Date:	1/23/15
ACREAGE IN:			
Forest	41		
Non-Forest			
Water			
Permanent Openings			
Other Uses			
TOTAL AREA	41		
(Estimated Tract Volumes for Commercial Forest Area-Bd.Ft., Doyle Rule)			

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
Chestnut oak	38,110	97,950	136,060
Sugar maple	24,490	23,090	47,580
American beech	11,460	26,000	37,460
Yellow poplar	2,750	19,520	22,270
White oak	2,700	18,260	20,960
Pignut hickory	0	20,300	20,300
White ash	13,830	0	13,830
Northern red oak	0	12,510	12,510
Shagbark hickory	0	10,060	10,060
Black oak	1,700	2,520	4,220
Black walnut	0	2,780	2,780
			0
TRACT TOTALS	95,040	232,990	328,030
PER ACRE TOTALS	2,318	5,683	8,001

The inventory for this tract showed an estimated total volume of 328,030bd.ft, harvest volume of 95,040bd.ft and a leave volume of 232,990bd.ft. The estimated per acre volumes are 8,001bd.ft.per acre total volume, 2,318bd.ft.per acre harvest volume and 5,683bd.ft.per acre growing stock. The top three species by volume in the harvest category are chestnut oak, sugar maple and white ash. The top three species in the tract by total volume are chestnut oak, sugar maple and American beech. The stocking shows current stocking at 66% with a reduction to 46% stocking after the harvest. Current basal area is 86.5sq.ft.per acre with a post harvest basal area estimated at 61.28sq.ft.per acre.

This area seems very open with scattered large yellow poplar and American beech. There are no visible stumps indicating a past heavy harvest. The trees per acre will decrease from 63 trees per acre to an estimated 47trees per acre after the harvest. The dominate understory in the tract is American beech and sugar maple with some of the dryer ridgetops having chestnut oak also.

Recreation
Primary recreational use of this tract is hunting.

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

Tract Subdivision Description and Prescription
Mixed hardwoods

Beech –Maple – Yellow poplar – The overstory species in this tract consist of mainly American beech with some sugar maple and yellow poplar. The understory is American beech and sugar maple and the regeneration is mainly American beech. This timber type is located in the area of the unmapped intermittent stream and the ephemerals that run into it.
The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The single tree selection will focus on removal of poor quality, competing and overmature American beech and sugar maple to release the healthy more vigorous tree present. The group selection would be to remove pockets of low quality American beech to encourage growth of other species such as oak and hickory to spread down the slopes farther. This will provide more sunlight and nutrient to enhance the development of the forest that remains. Within the regeneration openings species likely to occur in the years following removal of overstory and completion of the openings via post harvest timber stand improvement (TSI) are the following: Yellow poplar, hickories, white oak, black oak, and chestnut oak.

Mixed Hardwoods - This area makes up the northern end of the tract containing the intermittent stream, the northern hillside south of the stream on the ridgetop on the west side of the tract and the beginning of the ephemeral on the south side of the tract. The overstory consists of American beech, sugar maple, yellow poplar, white ash, pignut hickory, shagbark hickory, sycamore, and some red oak. There were some large American beech and yellow poplar in the area of the intermittent stream. Understory trees were American beech, sugar maple, sycamore and oak. Regeneration was mainly American beech and sugar maple.
The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The single tree selection will focus on removal of poor quality, competing and overmature trees such as

the American beech, to release the healthy more vigorous trees present. This will provide more sunlight and nutrient to enhance the development of the forest that remains. White ash with any signs of Emerald Ash borer should be removed due to a next to zero survival rate. Other white ash will be left in the tract. Within the regeneration openings species likely to occur in the years following removal of overstory and completion of the openings via post harvest timber stand improvement (TSI) are the following: American beech, yellow poplar and sugar maple.

Oak-Hickory – This area is about a third of the way down the slopes on the finger of the ridge running northeast. The overstory is composed of chestnut oak, black oak, red oak, white oak, and pignut hickory. The understory is composed of chestnut oak, pignut hickory, and sugar maple. Regeneration is American beech and sugar maple.

The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The single tree selection will focus on removal of poor quality, competing and overmature trees to release the healthy more vigorous oak and hickory trees present. The group selection openings will focus on removal of areas with a lot of butt rot or scattered large yellow poplar and white oak. Within regeneration openings species likely to occur in the years following removal of overstory and completion of the openings via post harvest timber stand improvement (TSI) are the following: sugar maple, yellow poplar, white ash and some oaks.

Chestnut oak – This area is the upper section on the ridge running to the northwest, but comprises more of the ridge that runs to the northeast. The overstory is mostly Chestnut oak. The understory contains sugar maple, American beech, red oak, black oak, and pignut hickory. Regeneration is composed of American beech, sugar maple and sassafras with an occasional white ash and chestnut oak.
The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The single tree selection will focus on removal of poor quality, competing and overmature chestnut oak to release the healthy more vigorous oak trees present. Group selection openings will focus on removal of groups of poor quality and dying chestnut oak. Within regeneration openings species likely to occur in the years following removal of overstory and completion of the openings via post harvest timber stand improvement (TSI) are the following: sugar maple, yellow poplar, hickories and chestnut oak.

Tract Prescription and Proposed Activities
Although the basal area of this tract is near the lower level of a fully stocked stand, the prescribed managed harvest would benefit the stand and still leave the basal area of the tract at an appropriate level. The large, over mature American beech and yellow poplar have suppressed the growth of other trees. The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The single tree selection will focus on removal of poor quality,

competing and over mature trees to release the healthy more vigorous trees present. This will provide more sunlight and nutrient to enhance the development of the forest that remains. The regeneration openings will focus on the removal of pockets of low quality American beech and areas of poor quality dying chestnut oak. Within the regeneration openings species likely to occur in the years following removal of overstory and completion of the openings via post harvest timber stand improvement (TSI) are the following: American beech, sugar maple, yellow poplar, sassafras, hickories and oaks. Much of the white ash will be removed during the harvest with some to remain in the tract even after post harvest TSI. Best management practices will be implemented during and after the harvest to minimize impact on soil and water resources.

Follow the harvest with TSI to deaden culls, release future crop trees and reduce the amount of American beech and Sugar maple competing with the oak regeneration. TSI would also focus on the removal of grapevines present. Another inventory will be performed in approximately 20 years.

Proposed Activities Listing

Proposed Management Activity	**Proposed Date**
Mark, harvest and sell timber	2015 – 2016
Post-harvest TSI	2017 – 2018
Regeneration monitoring > 1 acre in size	2018 – 2020
Inventory and management plan	2037

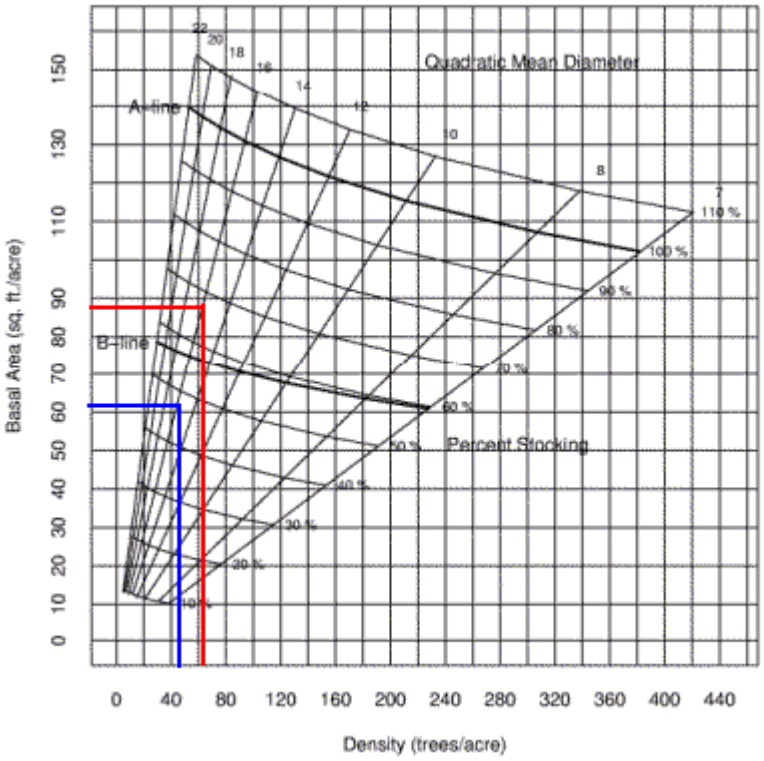
Use the link below to submit a comment on this document:

www.in.gov/dnr/forestry/8122.htm

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.

Stocking Guide

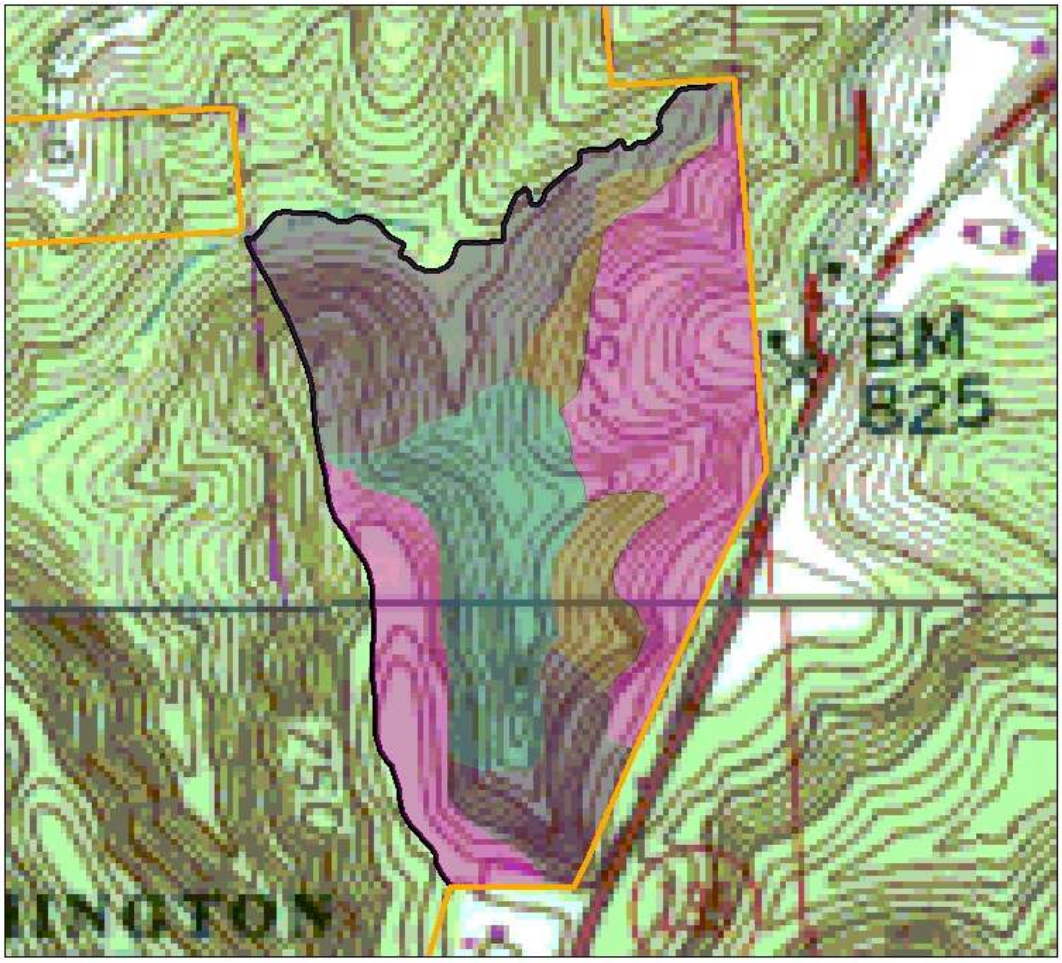
Compartment 07 Tract 02
41 acres



Pre-Harvest Inventory Data in Red
(Sub merchantable trees excluded)
Total BA/A = 86.5 sq.ft. per acre
Total #trees/acre = 63 trees per acre
Avg. tree diameter = 15.9 inches
Percent stocking = 66%

Post-Harvest Inventory Data in Blue
(Sub merchantable trees excluded)
Total BA/A = 61.28 sq.ft. per acre
Total #trees/acre = 47 trees per acre
Avg. tree diameter = 15.1 inches
Percent stocking = 46%

Jackson-Washington State Forest
Compartment 7 Tract 2
Tract Subdivision Map



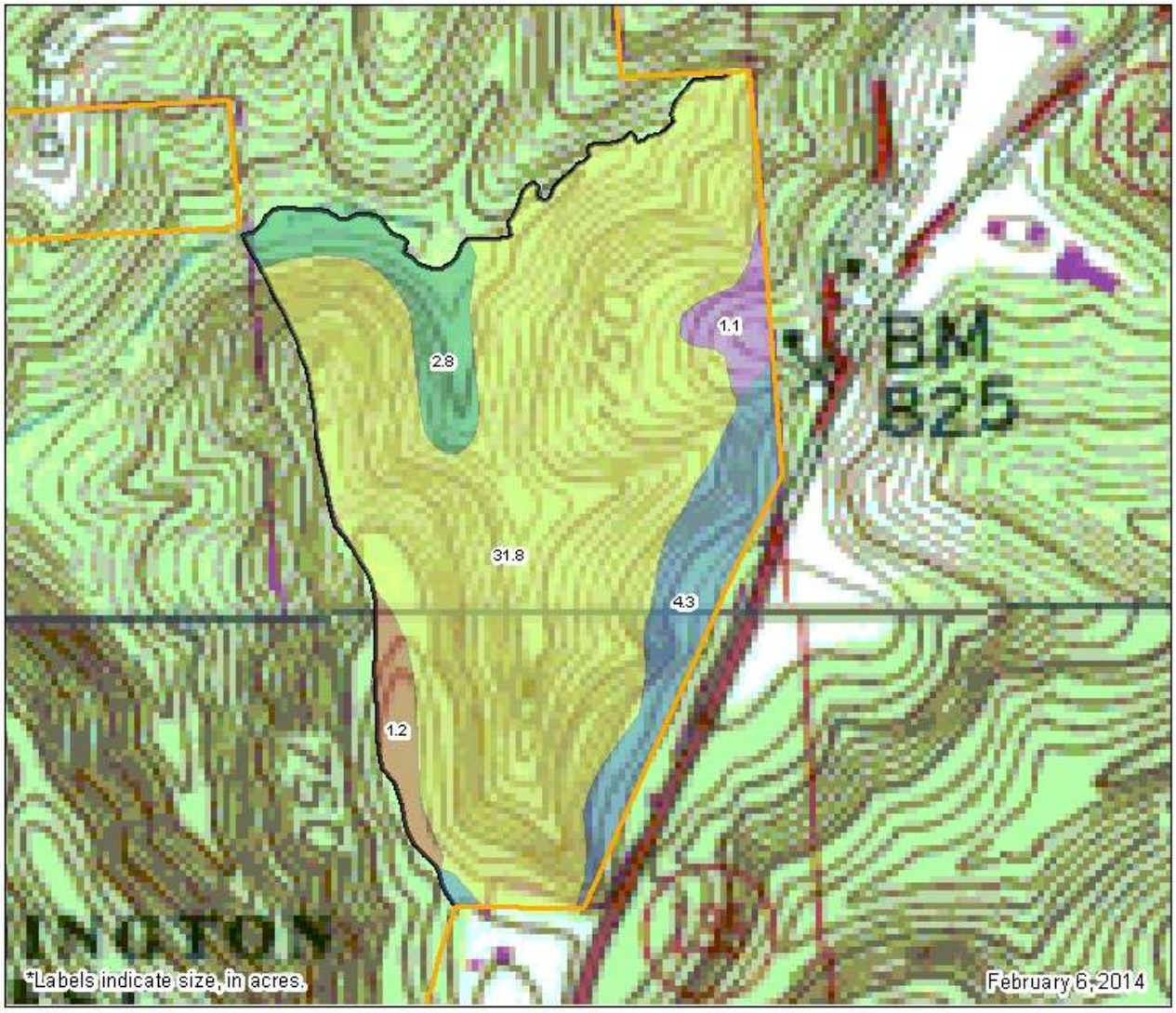
Legend

- American beech, sugar maple, yellow-poplar
- Chestnut oak
- Mixed hardwoods
- Oak-hickory
- Tract Boundary
- Property Boundary

0 220 440 880 Feet

N
W E
S

Jackson-Washington State Forest
Compartment 7 Tract 2
Soils Map



Legend

Soils

- BdB
- BhF
- Bu
- WeC2
- ZaC2
- Property Boundary
- Tract Boundary

0 230 460 920 Feet

N
W E
S