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

State Forest: Jackson-Washington | Compartment: 7 Tract: 3
Forester: Sandy Derringer | Date: 2/11/2015
Management Cycle End Year: 2037 | Management Cycle Length: 20 years

Location
This 67 acre tract is located in section 30, T4N, R4E in Washington County. It is located about 10.5 miles south of Brownstown, IN.

General Description
This 67 acre tract is composed of steep slopes in the southern section that have 2 main ridges forming a "v". The northern section is composed of less steep slopes with a mapped intermittent stream. There is an unmapped intermittent stream that flows north into the mapped intermittent stream. The forest cover type is composed of mixed hardwoods and chestnut oak.

History
This tract is composed of two purchases. The first is from Alice E. Denney as administratrix of the estate of Mary E. Coffey on March 31, 1969. The second is from Erman Hall on February 7, 1997.
A harvest operation was conducted in 1989 from tract 3 and 2. The harvest in this tract consisted of 323 trees and 106 culls containing an estimated 55,111bd.ft. Lines have been located in the past and marked with flagging.

Landscape Context
Land around this tract is mostly forested; both private and state owned. There is a 10 acre private parcel to the north that contains a residence and is surrounded by the State owned property on the north, east and south sides. Scattered rural residential homes are located on Goat Hollow as well as Old 135 and Hwy 135. A few agricultural fields are located east of HWY 135 and to the south of Goat Hollow road as well as Collett Cemetery. The Muscatatuck River is approximately a mile north of the tract. There is also a private lumber mill to the northeast and southwest of the tract.

Topography, Geology and Hydrology
This tract is composed of two ridges that form a "v" with the opening to the north. The ridge running to the northwest is very steep. The slopes on this ridge go down very steep to a flat area that appears to be a side cut and then down again repeating this twice in some areas. The ridge running to the north east has less steep slopes. Near the end of this ridge are rock outcroppings with some loose. An unmapped intermittent stream runs north and flows into the mapped intermittent stream that runs to the west. North of the intermittent stream are less steep fingers going to the southwest. Old unused dirt roadbeds run both ridges. Another road bed that appears to be used by unauthorized

ATV users runs onto state in the area of the intermittent stream crossing it and heading east.
Areas in the drains on the northern end of the ridge running northwest seem to have unstable soil with sloughing off of the soil.
Bedrock in this area is sandstone and siltstone.

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 on hills underlain with limestone bedrock. 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. 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.

Crider silt loam (CoB, CoC2, CoD2) This soil series consists of deep, well drained, moderately permeable soils on uplands. They formed in a loess mantle and the underlying residuum from limestone. Slopes range from 0 to 30 percent. Nearly all of the soil is used for growing crops and pasture. The original vegetation was mixed hardwood forest, chiefly of oaks, maple, hickory, elm, ash, and hackberry. These soils are well suited for trees. There is no major hazards affecting the harvest and planting of trees until you reach a slope in excess of approximately 12%. Once this percent slope is reached special considerations need to be addressed . 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 90 (white oak) to 98 (tulip poplar). Preferred trees to manage for are black cherry, black oak, black walnut, bur oak, chinkapin oak, Kentucky coffeetree, red oak, pecan, shagbark hickory, yellow-poplar, and white oak.

Gilpin silt loam (GID2) This strongly sloping, moderately deep, and well drained soil is on side slopes in the uplands. 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 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, WeD) 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.

Access

To access this tract, go south on HWY 135 from HWY 50 about 10 ½ miles, turn west on Goat Hollow Road and it is approximately one tenth of a mile on the north side of the road. This tract has no access from Goat Hollow Road. Access must be obtained from one of five private landowners that adjoin the state forest in this area.

Boundary

The northern tract boundary also serves as a state boundary line that runs east to a property corner at which point it goes south-east slightly to the top of a ridge. It then follows the ridge line south to a property corner. The tract boundary, also serving as the state boundary, goes south from this corner to another east-west boundary line that lies just short of Goat Hollow Road. This line goes west until it reaches another property corner where it then goes northwest following a ridgeline until it meets another property corner. From this corner the tract/boundary line runs north to the northern tract boundary.

Wildlife

Snags(all species)	Maintenance Level	Optimal Level	Inventory	Above Maintenance	Above Optimal
5"+ DBH	240	420	223	-17	-197
9"+ DBH	180	360	164	-16	-196
19"+ DBH	30	60	38	8	-22

The wildlife habitat feature summary indicates that the 5"DBH and 9" DBH classes for snags are below the maintenance level. 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).

Evidence of White-tailed deer, raccoon and birds were seen in the tract.

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.

Some multiflora rose was observed in the area where the intermittent stream splits and heads to the northeast. This should be monitored for further spread and possible treatment.

Forest Condition

TM 901 RESOURCE MANAGEMENT GUIDE			
INVENTORY SUMMARY			
		Compartment:	7
State Forest:	Jackson-Washington	Tract:	3
Forester:	Sandy Derringer	Inventory Date:	2/13/15

ACREAGE IN:	
Forest	60
Non-Forest	
Water	
Permanent Openings	
Other Uses	
TOTAL AREA	60

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
Chestnut oak	23,860	86,650	110,510
Sugar maple	5,250	54,010	59,260
American beech	4,410	41,170	45,580
Yellow poplar	0	32,860	32,860
Pignut hickory	0	18,840	18,840
White oak	1,920	16,910	18,830
Northern red oak	2,390	9,820	12,210
Shagbark hickory	0	8,080	8,080
Red maple	0	6,490	6,490
Black oak	2,640	2,950	5,590
White ash	3,290	1,100	4,390
Black walnut	0	2,010	2,010
Honey locust	0	900	900
			0
TRACT TOTALS	43,760	281,790	325,550
PER ACRE TOTALS	729	4,697	5,426

The inventory for this tract showed an estimated total volume of 325,550bd.ft, harvest volume of 43,760bd.ft. and a leave volume of 281,790bd.ft. The estimated per acre tract volumes are 5,426bd.ft.per acre total volume, 729bd.ft.per acre harvest volume and 4697bd.ft.per acre growing stock. The top three species by volume in the harvest category are chestnut oak, sugar maple and American beech. The top three species in the total volume are chestnut oak, sugar maple and American beech. The stocking shows a current stocking at 73% with a reduction to 67% stocking after the harvest. Current basal

area is 89.4sq.ft.per acre with a post harvest basal area estimated at 81.35sq.ft.per acre. The trees per acre will decrease from 117trees per acre to an estimated 112trees per acre after the harvest. The dominate understory in the tract is American beech, sugar maple and chestnut oak with some areas containing yellow poplar and hickories as well. Some areas of this tract had openings created in a past harvest that are beginning to grow up in poplar.

Recreation
This tract is mainly used for 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
American beech-sugar maple-yellow poplar- This subdivision is found mainly along the mapped intermittent stream and the unmapped intermittent stream and continues about 1/3 to 1/2 up the slope especially in the ephemerals. The overstory species in the tract are mainly American beech, sugar maple and yellow poplar. The understory is composed of mainly American beech, sugar maple, yellow poplar and a few scattered oaks and hickories. Most of the trees seem to be of good quality with some poor quality beech by the unmarked intermittent stream.

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 American beech and sugar maple to release the healthy more vigorous trees present. Some American beech can be removed around an old opening on a slope on the east side of the tract to open up the area more. The old opening from a previous harvest is full of several 6-10" yellow poplar. The group selection openings would focus on the removal of poor quality American beech or large areas of American beech next to an opening that could be expanded from a past sale. This will provide more sunlight and nutrient to enhance the development of the residual stand. Within the regeneration openings species likely to occur in the years following removal of the over-story and completion of the openings via post harvest Timber Stand Improvement (TSI) are the following: Yellow poplar, chestnut oak, pignut hickory, and sassafras.

Grapevines in this area would also need to be treated during the TSI.

Chestnut oak – This area is mostly on the ridgetops of this tract. The over-story species are mainly chestnut oak, sugar maple, and pignut hickory with a few scattered white and black oak. The understory is composed of chestnut oak, sugar maple, pignut hickory, yellow poplar and white oak. The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The priority would be to remove the lower quality chestnut oak. The single tree selection

would be to remove scattered large over mature and low quality trees competing with the better quality trees. The group selection would be removal of large areas of low quality trees in order to promote the growth of remaining oaks and hickories. 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, chestnut oak, pignut hickory, and sassafras.
Grapevines in this area need to be treated during the timber stand improvement.

Mixed hardwoods – This subdivision is in the northern area of the tract and about midslope in the rest of the tract. The overstory is composed of American beech, sugar maple, white oak, red oak, black oak, chestnut oak, pignut hickory, white ash and yellow poplar. The understory is composed of yellow poplar, American beech, sugar maple and chestnut oak. The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. Most of the subdivision should be harvested to encourage growth of better quality oaks and hickories with removal of low quality, suppressed, and dying species present in the tract.
The single tree selection will focus on the removal of the over mature, poor quality and competing trees in the tract to allow growth of the better quality trees remaining. The group selection harvest will remove areas of poor quality trees near old openings to expand them and remove areas of poor quality trees. This will provide more sunlight and nutrient to enhance the development of the residual stand. Within the regeneration openings species likely to occur in the years following removal of over-story and completion of the openings via post harvest TSI are the following: Yellow poplar, chestnut oak, pignut hickory, and sassafras.

Tract Prescription and Proposed Activities

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 nutrients to enhance the development of the residual stand. Within the regeneration openings species likely to occur in the years following removal of overstory and completion of the openings via post harvest TSI are the following: yellow poplar, chestnut oak, pignut hickory and white ash. Although some white ash will remain in the tract, those trees impacted by the Emerald Ash Borer should be removed. Best management practices will be implemented during and after the harvest to minimize impact on soil and water resources.

The multiflora rose in the tract should be monitored for spread.

Follow the harvest with TSI to deaden culls, release future crop trees and reduce the amount of low quality American beech and Sugar maple competing with the oak and hickory in the understory regeneration. TSI should also concentrate on removal of grapevines in the area. Another inventory will be performed in approximately 20 years following the harvest.

Proposed Activities Listing

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

To submit a comment on this document, click on the following link:
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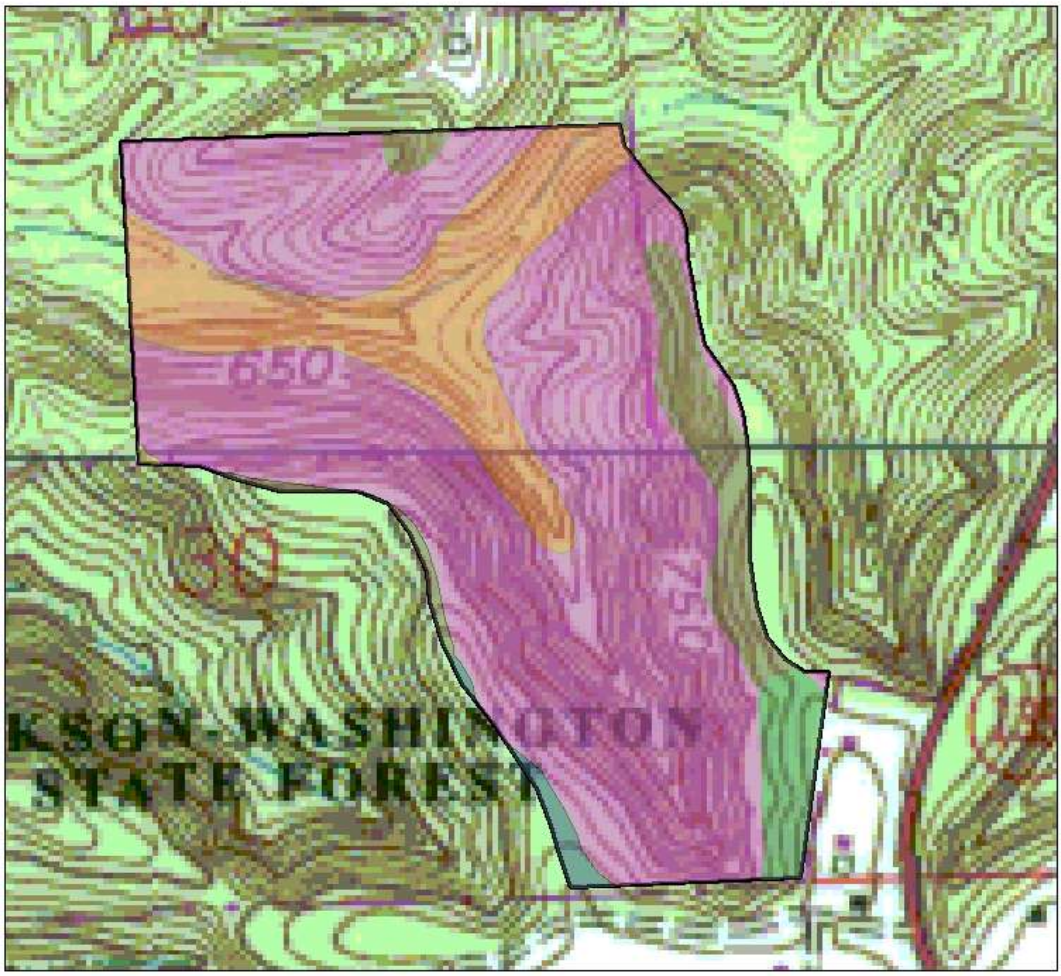
You must indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.
Note: Some graphics may distort due to compression.

Jackson-Washington State Forest
Compartment 07 Tract 03
Soils Map



Legend

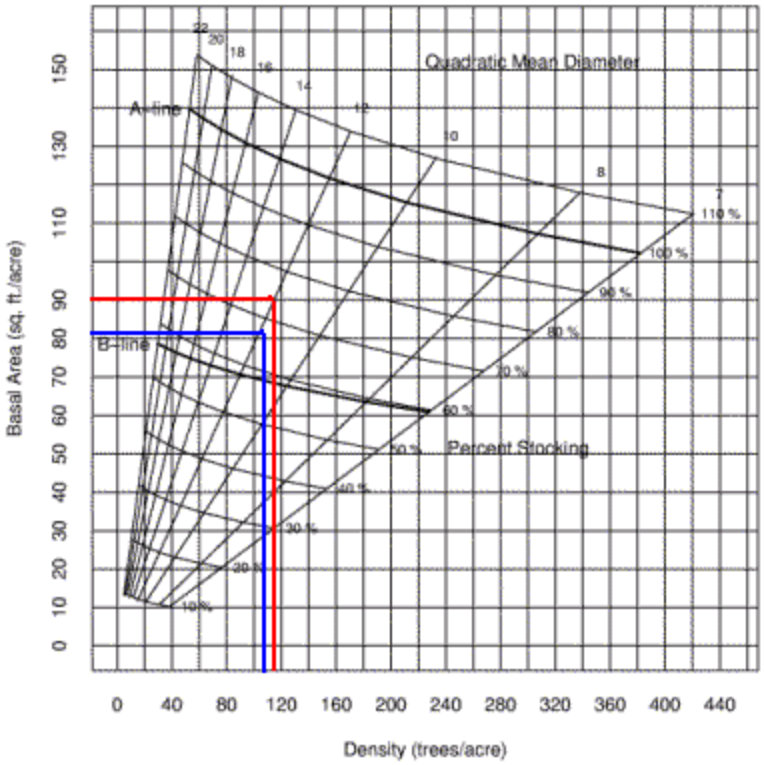
BdB BhF Bu CoC2 GlD2 WeC2

Tract Boundary

N
W E
S

0 270 540 1,080 Feet

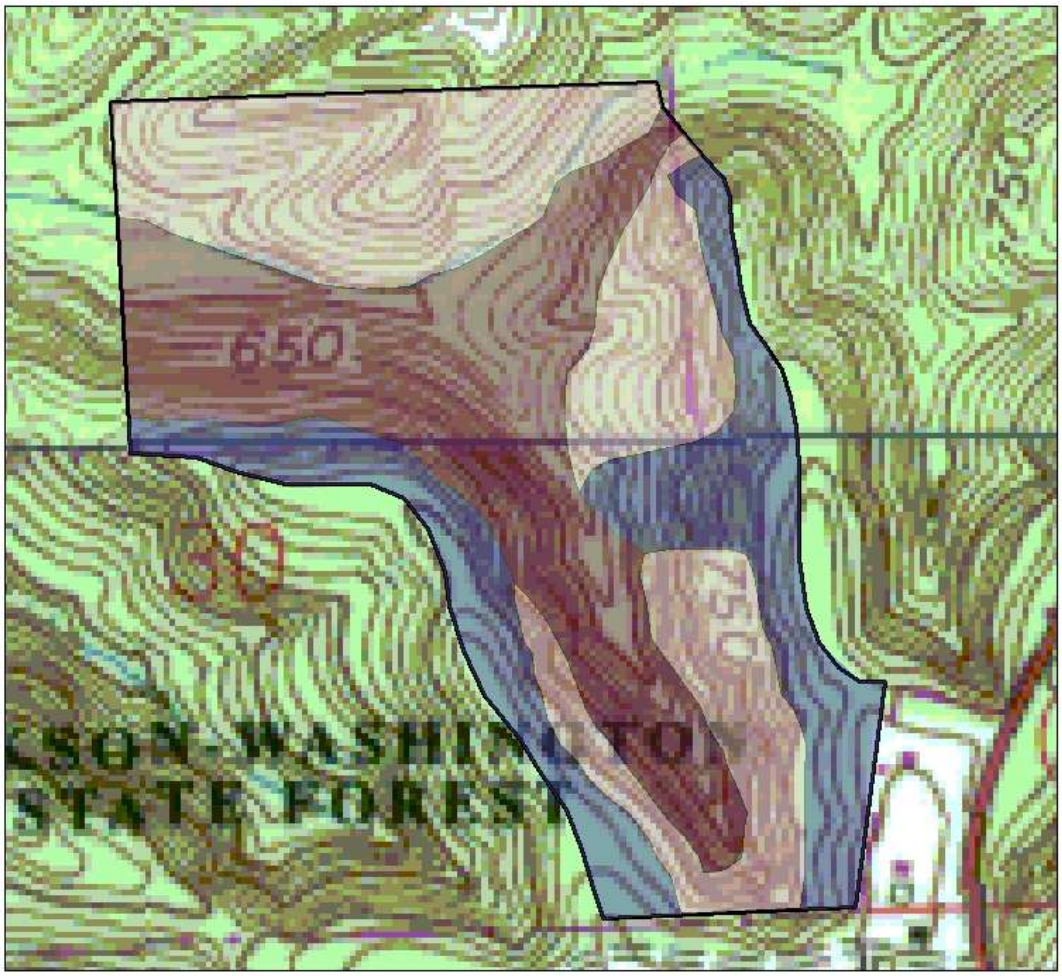
Stocking Guide
Compartment 07 Tract 03
60 acres



Pre-Harvest Inventory Data in Red
Total BA/A = 89.7 sq.ft./AC
Total #trees/acre = 116
Avg. tree diameter = 12 inches
Percent stocking = 73%

Post-Harvest Inventory Data in Blue
Total BA/A = 81.35 sq.ft./AC
Total #trees/acre = 112
Avg. tree diameter = 11.5 inches
Percent stocking = 67%

Jackson-Washington State Forest
Compartment 07 Tract 03
Tract Subdivision



Legend

- American beech-sugar maple-yellow poplar
- Chestnut oak
- Mixed hardwoods
- Tract Boundary

N
W E
S

0 300 600 1,200 Feet