Indiana Department of Natural Resources
Division of Forestry

RESOURCE MANAGEMENT GUIDE

Jackson-Washington	Compartment: 8 Tracts: 19
Forester: Quentin Beahrs	Date: July 2016
Management Cycle End: 2046	Management Cycle Length: 30 years

Location

This tract, also known as 6350819, is located in sections 9 and 16, T 3 N, R 4 E in the Monroe political township of Washington County. It is just half a mile south of Plattsburg off State Road 135.

General Description

This tract encompasses approximately 44 acres of mostly forested land. The southwest corner of the tract is planted in warm season grasses. The northwest appears to have been an old field area let to grow naturally following farming or pasture use. The general cover type of the remaining portion of the tract is mixed hardwood forests.

History

This tract was purchased in two separate parcels. The first parcel was purchased from Elvin and Alice Nolan on March 16, 1955 totaling approximately 100 acres.

The second parcel was purchased on May 16, 2000 from Larry and Kathy L. Burton totaling 284 acres.

There was an inventory completed in 1997 and a management guide written as part of the state acquisition preparation. In that management guide it states that a portion of the property was harvested by the previous owners in the mid to late 1990's. The inventory summary was for 47 acres with an estimated harvest volume of 59 bd. ft. per acre, and a growing stock of 967 bd. ft. per acre for a total of 1,026 bd. ft. per acre. The top two species, by volume, were American beech and Black cherry.

In 2001, following the land purchase from Larry and Kathy L. Burton, the property lines were surveyed. As a result of the land purchase tract boundaries within the compartment were modified and a new tract added.

In 2004, Timber Stand Improvement (TSI) work was contracted and completed in the mixed hardwoods subdivision of the tract.

Landscape Context

The surrounding area consists of flat ridge tops with slopes ranging from moderate to steep. Forestland dominates the area with scattered agriculture fields. The area surrounding the tract to the north, east, and south is Jackson-Washington State Forest. Adjacent to the tract on the west side is private forestland. There is an agricultural field adjacent to the northwest corner of the tract. There are a few single family residences within a mile radius of the tract center.

Topography, Geology and Hydrology

The southwest corner of the tract is a flat ridge top that was planted in warm season grasses in 2003. This land slopes gently from 5-30% to the east to a valley bottom where a mapped intermittent stream forms the eastern and part of the northern tract boundary. This mapped intermittent stream flows east to Delaney Creek which flows north to the Muscatatuck River. The Muscatatuck River then flows west into the East Fork of the White River. The parent material consists of siltstone, shale, sandstone, and limestone.

Soils

Berks-Weikert complex (BhF) The site indexes for hardwood species range from 50 (black oak) to 70 (white oak). 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. Seedlings survive and grow well if competing vegetation is controlled and if livestock are excluded from area. Because of the windthrow hazard, harvest methods should not isolate the remaining trees or leave them widely spaced. Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

Burnside silt loam (Bu) The site index for hardwood species is 95 for yellow-poplar. 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. Most areas are used as pasture or woodland. Some areas are cleared and used as cropland. 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. Preferred trees to manage for are bitternut hickory, bur oak, pin oak, red maple, shingle oak, and swamp white oak.

Crider silt loam (CoB, CcC2, CoD2) The site indexes for hardwood species range from 90 (white oak) to 98 (tulip poplar). 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. 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. Preferred trees to manage for are black cherry, black oak, black walnut, bur oak, chinkapin oak, Kentucky coffeetree, red oak, pecan, shagbark hickory, sugar maple, yellow-poplar, and white oak.

Hagerstown-Caneyville silt loam (HeD2) The site indexes for hardwood species range from 68 (white oak) to 90 (tulip poplar). These strongly sloping, well drained soils are on side slopes in the uplands. The Hagerstown soil is deep, and the Caneyville soil is moderately deep. The two soils occur as areas so intricately mixed that mapping them separately is not practical. The native vegetation is hardwoods and most areas are wooded. These soils are well suited to trees. The equipment limitations, plant competition, and the erosion hazard are management concerns. 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. North aspects generally are more productive than south aspects. Preferred trees to manage for are black cherry, black oak, bur oak, chestnut oak, chinkapin oak, scarlet oak, red oak, pignut hickory, shagbark hickory, sugar maple, tuliptree, and white oak.

Access

Access to this tract is good from State Road 135. Approximately 3.5 miles south of the Muscatatuck River off State Road 135 is a public parking area with a gated fire-access road. The fire-access road provides access to the tract. Once in the tract, two ridges that run east-west can be used to access the majority of the stand.

Boundary

The western boundary of this tract is surveyed property line that has been marked with orange carsonite posts. Much of it runs along an old fence line surrounding an agricultural field. The southern boundary is a tract boundary shared with compartment 8 tract 18 (6350818). On the ridge top the line follows the boundary of the hardwoods tree planting, it then follows a steep drainage to the south and east until it meets the

mapped intermittent stream. The boundary then follows the creek north to form the eastern and northern tract boundaries.

Wildlife

A diverse assortment of wildlife resources are found on this tract conducive to providing habitat for a variety of wildlife species. Habitat includes:

- mixed hardwood stands with varied structure
- small warm season grass opening
- small early successional forest area
- riparian areas

Hard mast trees such as oaks, hickories, and American beech provide food source to both game and non-game species. The openings are varied in size but all present similar, dense vegetation that favors wildlife preferring this habitat structure. Such vegetative species include sassafras, grapevine, and other early successional shrubs.

Snags (standing dead or dying trees), are an important wildlife habitat features in Indiana's forests. They are used by a wide range of species as essential habitat features for foraging activity, nest/den sites, decomposers (e.g., fungi and invertebrates), bird perching and bat roosting. Additionally, snags are an important contributor to the future pool of downed woody material. Downed woody debris provides habitat and protection for many species and contributes to healthy soils.

Forest wildlife species depend on live trees for shelter, escape cover, roosting and as a direct (e.g., mast, foliage) or indirect (e.g., foraging substrate) food resource. The retention of live trees within various diameter classes is of particular concern to habitat specialists such as the Indiana bat.

The Division of Forestry has developed compartment level guidelines for two important wildlife structural habitat features. Current assessments indicate the abundance of these habitat features meet or exceed recommended base levels in all diameter classes.

The prescribed management will maintain or enhance the relative abundance of these features.

Wildlife Habitat Feature Tract Summary

Snags (all species)	Maintenance level	Optimal level	Inventory	Available above maintenance	Available above optimal
5"+ DBH	176	308	576	400	268
9"+ DBH	132	264	406	274	142
19"+ DBH	22	44	49	27	5

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.

Ecological Considerations

Significant numbers of multiflora rose, Japanese honeysuckle, and grapevine were observed in the northern half of the tract and along the border of the field. The multiflora rose stretches further south than the other invasive species, while the Japanese honeysuckle is mainly north of the field. Ailanthus was observed scattered throughout the tract.

Forest Condition

TM 901 RESOURCE MANAGEMENT GUIDE			
INVENTORY SUMMARY			
		Compartment:	8
State Forest:	Jackson-Washington	Tract:	19
Forester:	Beahrs, Danson, Jasowicz	Inventory Date:	7/1/16

ACREAGE IN:	
Forest	38.4
Non-Forest	
Water	
Permanent Openings	5.8
Other Uses	
TOTAL AREA	44.2

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
Yellow Poplar	11,610.00	60,170.00	71,780.00
Sugar Maple	0.00	21,380.00	21,380.00
American Beech	3,610.00	16,340.00	19,940.00
Shagbark Hickory	2,420.00	14,600.00	17,020.00
Northern Red Oak	0.00	18,280.00	18,280.00

Black Cherry	3,940.00	8,810.00	12,750.00
White Oak	980.00	10,170.00	11,150.00
White Ash	4,400.00	5,630.00	10,030.00
Sassafras	0.00	9,480.00	9,480.00
Pignut Hickory	0.00	7,270.00	7,270.00
Red Maple	0.00	5,120.00	5,120.00
American Sycamore	0.00	2,530.00	4,420.00
Black Oak	0.00	2,250.00	2,250.00
Eastern Redcedar	0.00	1,770.00	3,730.00
River Birch	0.00	1,700.00	1,700.00
Black Walnut	0.00	1,240.00	2,930.00
TRACT TOTALS	26,960.00	186,730.00	219,230.00
PER ACRE TOTALS	610.00	4,240.00	4,980.00

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

SPECIES	TOTAL VOLUME
Yellow Poplar	71,780.00
Sugar Maple	21,380.00

American Beech	19,940.00
Shagbark Hickory	17,020.00
Northern Red Oak	18,280.00
Black Cherry	12,750.00
White Oak	11,150.00
White Ash	10,030.00
Sassafras	9,480.00
Pignut Hickory	7,270.00
Red Maple	5,120.00
American Sycamore	4,420.00
Black Oak	2,250.00
Eastern Redcedar	3,730.00
River Birch	1,700.00
Black Walnut	2,930.00
TRACT TOTALS	**219,230.00**
PER ACRE TOTALS	**4,980.00**

The 2016 inventory shows an average volume of 4,980 board feet per acre and an average basal area of 76.6 sq. ft. per acre in this tract. There is an average of 148 trees per acre. These values indicate that current stocking for this tract is at 67%. Inventory data suggests removal of 17,000 – 55,000 bdft.

The southern half of the tract is in good condition. The grass field is growing well and seems to be neither succeeding into a more forested stage nor intruded upon by

invasive species. Though the forestland does have a few areas with invasive species and a few declining trees, it is doing well but could benefit from an improvement harvest.

The old field on the northern half of the tract, however, is not in as good a condition as the southern. A few trees have grown in to the field, but the tree cover is relatively thin. Instead, invasive species, particularly grapevine and multiflora rose, along with Japanese honeysuckle, have taken over the area in thick tangles of vine. These vines prevent the regeneration of new trees and threaten the health of existing trees.

Recreation

There is pubic access to the tract from State Road 135. The primary recreation uses for the tract include mushroom hunting and small game, turkey, and deer hunting.

During the proposed management activities, specifically timber harvesting, public access into the tract will be restricted for safety reasons. Access into the area will be permitted following the completion of the harvest.

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

Warm-Season Grasses: 5.8 acres. This field was planted in 2003 with warm season grasses to provide interior open area for wildlife. Only a few trees, primarily American sycamores, are growing within this subdivision. Recommendations for this area is to plant upland hardwood species.

Old Field: 9.9 acres. This area was an old grazing field. Though there are few trees growing in the area, there is a wide variety of overstory species, including black cherry,

river birch, yellow poplar, black walnut, honey locust, and sycamore. Understory species include yellow poplar, honey locust, eastern red cedar, sassafras, eastern redbud, sugar maple, and hackberry. This area is overrun with invasive species, particularly multiflora rose, grapevine, Japanese honeysuckle, and ailanthus has been observed. Control of these invasive species should be the highest priority for this subdivision before implementing other management activities. After invasive species have been removed, this area should be considered for an enrichment planting of oak.

Mixed Hardwoods: 28.5 acres. This subdivision covers most of the tract. It is composed primarily of yellow poplar, sugar maple, white and red oak, and shagbark hickory, though black cherry, American beech, white ash, and sassafras are fairly represented, as well. The understory is fairly diverse, though there are a few areas with many beech stems which may out-compete other species in the future. Multiflora rose can be found in areas running down ridges in this subdivision, and ailanthus was observed in the northeast section of the subdivision and in a band winding down the southeast boundary of the subdivision and into tract 18. This subdivision is in overall good health, though a light harvest in the near future would benefit key tree species. As this is not of the same urgency as the invasive species control, the invasive species should be removed prior to the timber harvest.

Tract Prescription and Proposed Activities

Treating the invasive species in the old field should be of higher priority over the next 2-3 years. The warm season grass field should be mowed or burned every 3-5 years or preferably planted to hardwood species. Once invasive species management has been implemented, a light harvest should be performed to remove damaged and declining trees to provide resources for healthier trees and regeneration of shade intolerant species. After the harvest, timber stand improvement (TSI) should be performed to prevent American beech from out-competing other trees.

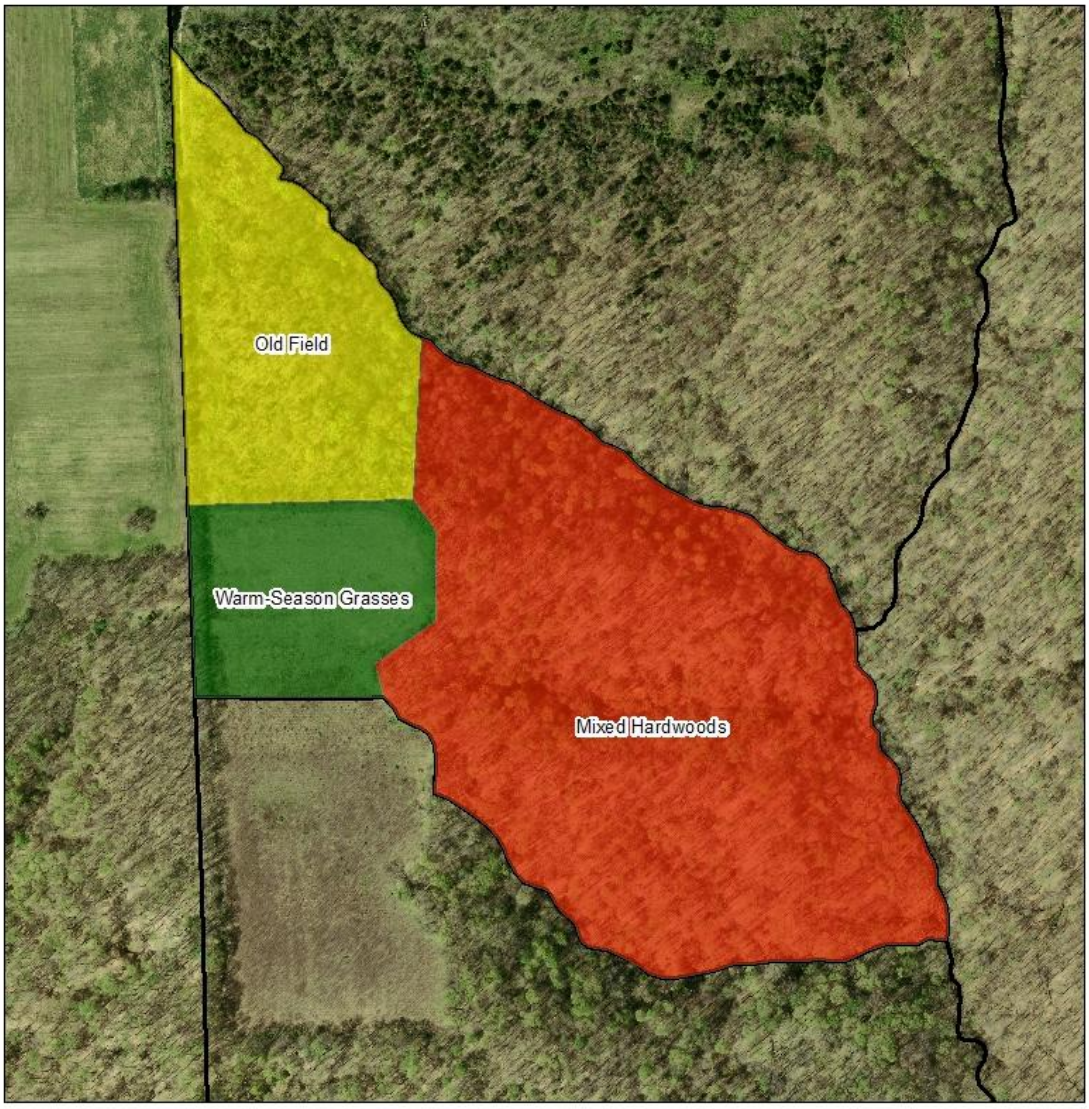
Prescribed activities should have little to no effect on soils, hydrology, or wildlife and bat populations.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mow/burn grass field	every 5 years
Convert grass field to forestland	2017-2020
Invasive species management	2017-2020
Mark and sell timber	2021-2023
Post-harvest timber stand improvement	2023-2025
Inventory and management guide	2046

To submit a comment on this document, go to: www.in.gov/dnr/forestry/8122.htm

Jackson-Washington State Forest
Compartment 8 Tract 19
Tract Subdivision

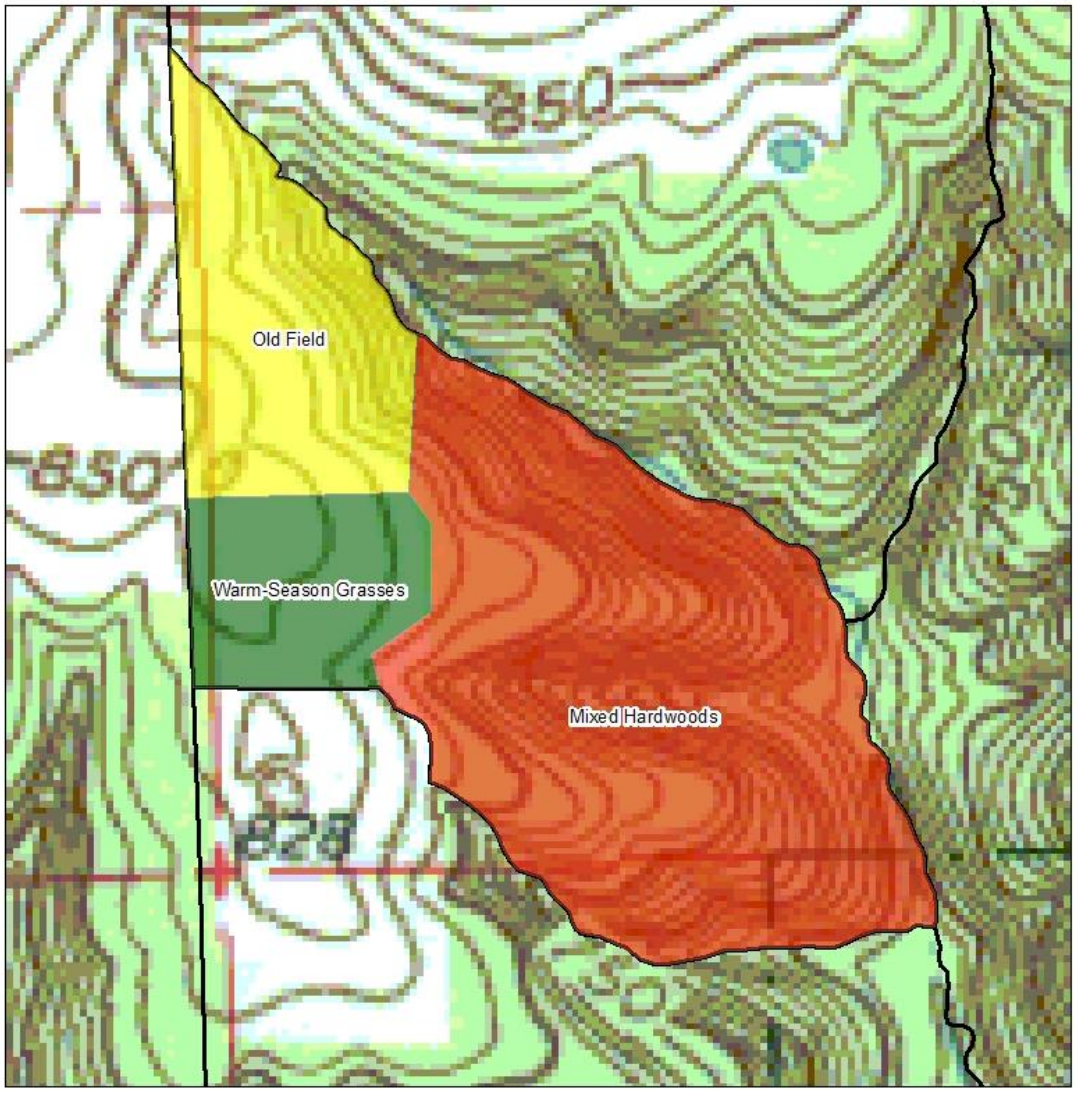


Legend
Covertype
- Mixed Hardwoods
- Old Field
- Warm-Season Grasses

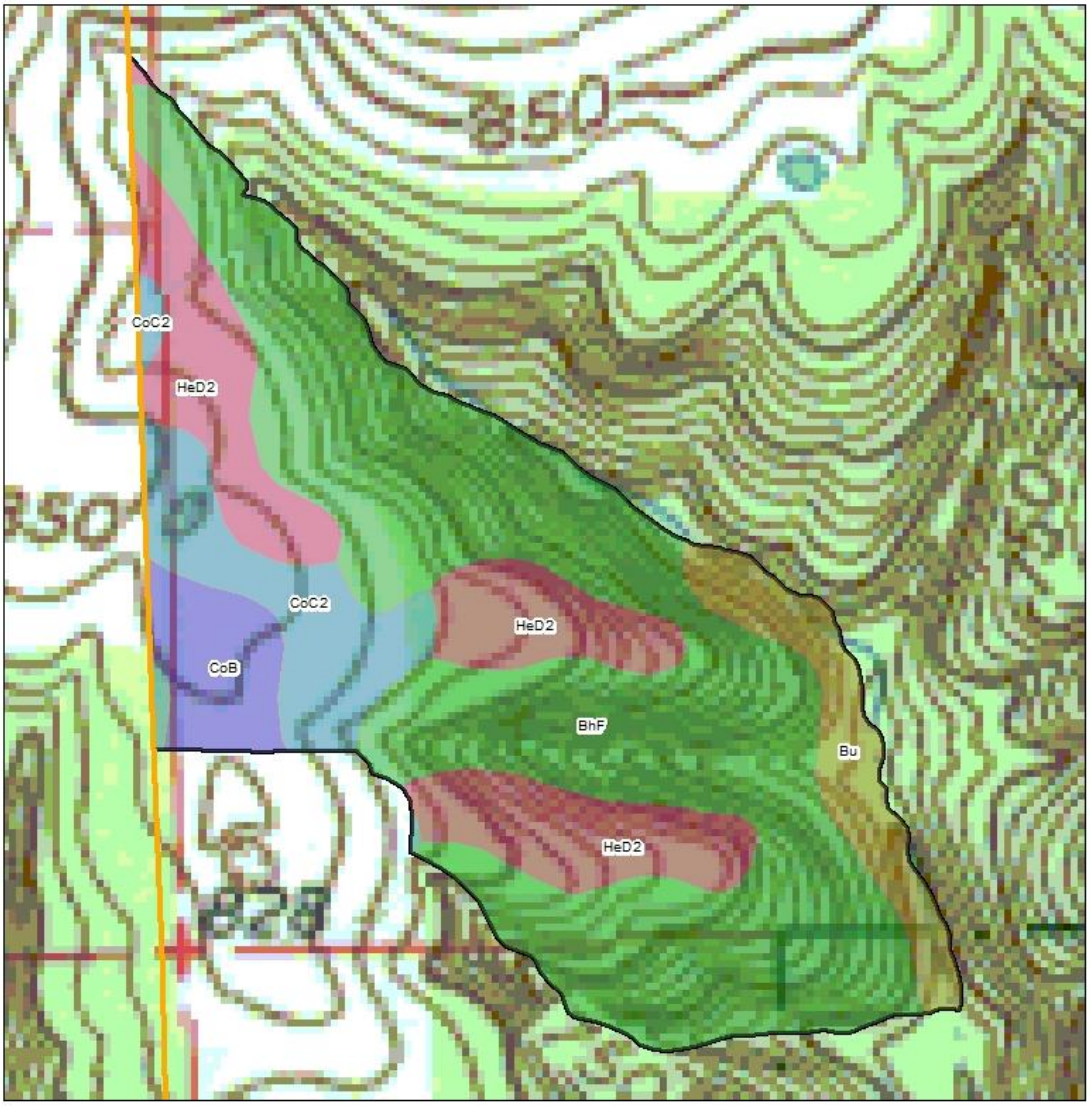
0 0.05 0.1 0.2 Miles

N

Jackson-Washington State Forest
Compartment 8 Tract 19
Tract Subdivision



Soils Map
Jackson-Washington State Forest
Compartment 8 Tracts 19



Legend

6350819 Soils

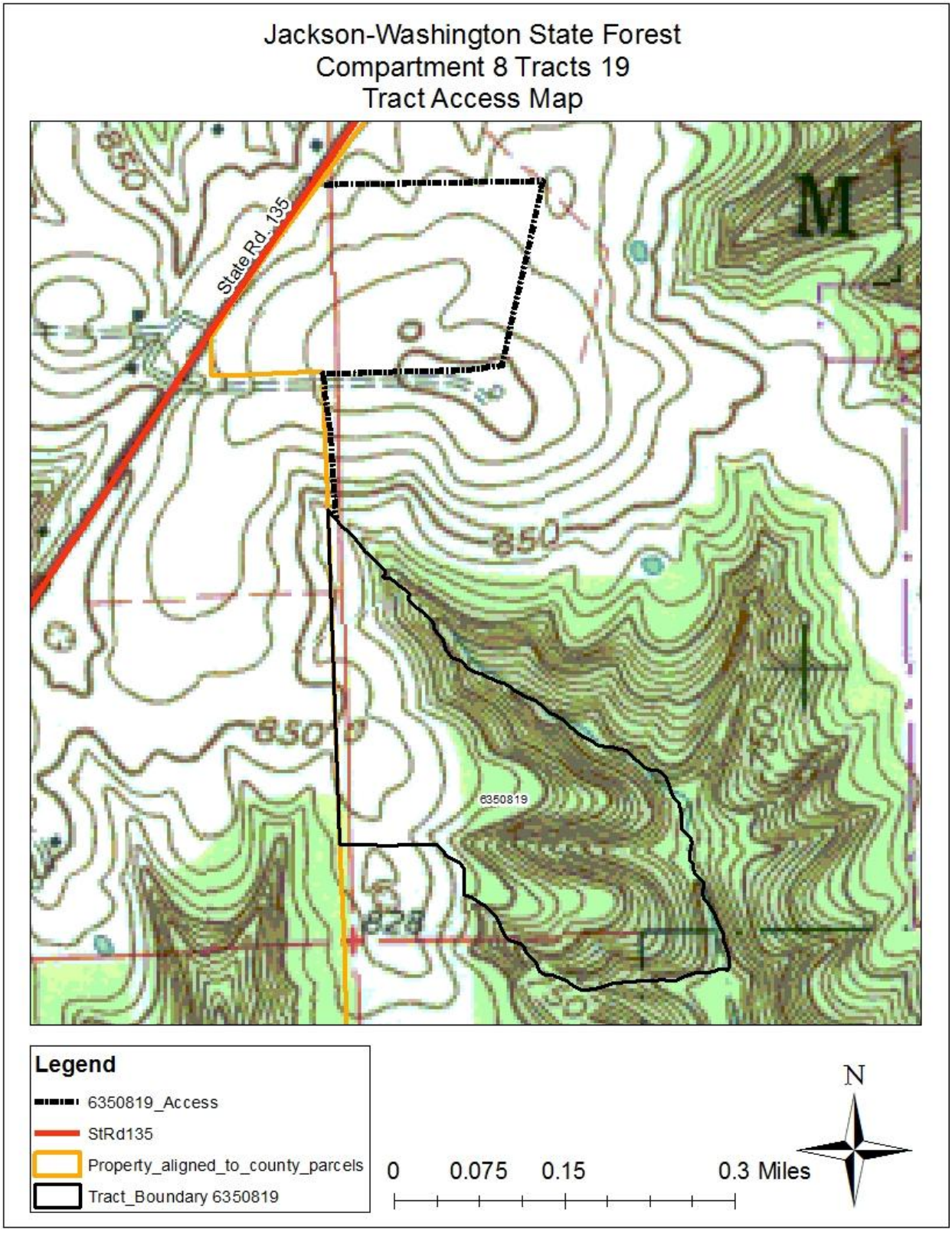
- BhF
- Bu
- CoB
- CoC2
- HeD2

Tract_Boundary 6350819

Property_aligned_to_county_parcels

0 0.0375 0.075 0.15 Miles

N



Indiana Department of Natural Resources – Division of Forestry

RESOURCE MANAGEMENT GUIDE

Jackson-Washington	Compartment:08 Tract 18
Forester: Beahrs, Danson, Jasowicz	Date: July 18, 2016
Management Cycle End Year: 2041	Management Cycle Length: 25

Location

The tract, also known as 6350818, is located in Washington County, Indiana, more specifically Township 3 North Range 4 East, Section 16 in Monroe Township. This area is located approximately 13 miles south of Brownstown off of Hwy 135.

General Description

This 72 acre tract has a mixed hardwoods cover type that includes a 5 acre tree planting.

History

The acreage of this tract was acquired through two state land acquisitions, 1955 and 2000.

In 1955, the state purchased 100 acres from Elvin and Alice Nolan, part of that acreage makes up the eastern portion of the tract.

In 2000, the state purchased 284 acres from Larry and Kathy Burton, and part of that acreage makes up the western portion of the tract. Due to the 2000 land acquisition tract boundaries were modified in 2001 adding 5 acres to the tract, bringing the total tract acreage to approximately 72 acres.

Approximately 30 acres on the eastern portion of the tract was inventoried in 1974; the inventory estimated 2,619 bdft. per acre. There have been no timber harvests on the eastern portion of the tract since acquired by the state in 1955. The western portion of the tract was harvested in the mid to late 1990's, prior to state ownership; an inventory was completed in the western portion of the tract in 1997 estimating 920 bdft. per acre.

A small portion of the tract in the northwestern corner was managed for row crops prior to the state purchase in 2000. In 2001, that acreage (5 acres) was planted with mixed hardwood species. This planting was made possible through a Hardwood Forestry Fund grant.

Landscape Context

The area to the north and east is Jackson-Washington State Forest. These areas are agricultural fields and forestland. Adjacent to the tract on the south and west is private forestland. Within close proximity to the west side of the tract is private agricultural fields. There are a few single family residences within a mile radius of the tract center.

Topography, Geology and Hydrology

Most of the tract contains a south/southeast aspect. There's a relatively flat ridge top in the northwest corner that moves downward in a southeasterly direction. There are several

ephemeral drains that originate at various points along the ridge. A south flowing intermittent stream makes up the eastern boundary of the tract. Just south of the tract boundary the stream turns east and flows towards Delaney Creek. There's another mapped intermittent stream, flowing towards Delaney Creek, that crosses the southern portion of the tract. The parent material of the tract consists of siltstone, shale, sandstone, and limestone.

Soils

Berks-Weikert complex (BhF) The site indexes for hardwood species range from 50 (black oak) to 70 (white oak). 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. Seedlings survive and grow well if competing vegetation is controlled and if livestock are excluded from area. Because of the windthrow hazard, harvest methods should not isolate the remaining trees or leave them widely spaced. Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

Burnside silt loam (Bu) The site index for hardwood species is 95 for yellow-poplar. 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. Most areas are used as pasture or woodland. Some areas are cleared and used as cropland. 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. Preferred trees to manage for are bitternut hickory, bur oak, pin oak, red maple, shingle oak, and swamp white oak.

Crider silt loam (CoB, CcC2, CoD2) The site indexes for hardwood species range from 90 (white oak) to 98 (tulip poplar). 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. 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. Preferred trees to manage for are black cherry, black oak, black walnut, bur oak, chinkapin oak, Kentucky coffeetree, red oak, pecan, shagbark hickory, sugar maple, yellow-poplar, and white oak.

Hagerstown-Caneyville silt loam (HeD2) The site indexes for hardwood species range from 68 (white oak) to 90 (tulip poplar). These strongly sloping, well drained soils are on side slopes in the uplands. The Hagerstown soil is deep, and the Caneyville soil is moderately deep. The two soils occur as areas so intricately mixed that mapping them separately is not practical. The native vegetation is hardwoods and most areas are wooded. These soils are well suited to trees. The equipment limitations, plant competition, and the erosion hazard are management concerns. 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. North aspects generally are more productive than south aspects. Preferred trees to manage for are black cherry, black oak, bur oak, chestnut oak, chinkapin oak, scarlet oak, red oak, pignut hickory, shagbark hickory, sugar maple, tuliptree, and white oak.

Wellston silt loam (WeC2, WeD) The site indexes for hardwood species is 81 (red oak) and 90 (yellow-poplar). 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. Nearly half of the area is cultivated and used for row crops, grain crops, and hay. Sizable proportions are used for pasture and for woodland. 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 and if livestock are excluded from area. Preferred trees to manage for are black oak, bur oak, cherrybark oak, chestnut oak, persimmon, red oak, scarlet oak, shagbark hickory, sugar maple, yellow-poplar, and white oak.

Access

Access to this tract is good. Just south of Plattsburg is a state parking area located on the east side of State Road 135. From the parking area there is a gated service road that travels east. At the first intersection turn south and continue traveling south until the next intersection. You will transition southwest a short distance before continuing south along the property line until you reach the tract. Once in the tract, an old fire lane on a ridge that generally runs north-south can be used to access most of the stand and two smaller north-south ridges will allow access to the remainder of the stand. A portion of the southern tip of the tract will likely be inaccessible due to a creek crossing and steep terrain.

Boundary
The western and southern boundaries of the tract are all property line. Starting from the northwest corner the line traverses south for approximately 0.34 miles before turning east for approximately 0.25 mile. The line then turns south 0.25 mile, then east approximately 100 yards, then north for 0.20 miles. The line then travels east for approximately 100 yards before ending at the creek bottom. The boundary then follows the creek north. The northern boundary follows a steep western sloping drainage to the top of the ridge then west.

Wildlife
A diverse assortment of wildlife resources are found on this tract conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- mixed hardwood stands with varied structure
- small Pine pockets
- riparian areas

Hard mast trees such as oaks, hickories, and American beech provide food source to both game and non-game species. The openings are varied in size but all present similar, dense vegetation that favors wildlife preferring this habitat structure. Such vegetative species include sassafras, grapevine, and other early successional shrubs.

Snags (standing dead or dying trees), are an important wildlife habitat features in Indiana's forests. They are used by a wide range of species as essential habitat features for foraging activity, nest/den sites, decomposers (e.g., fungi and invertebrates), bird perching and bat roosting. Additionally, snags are an important contributor to the future pool of downed woody material. Downed woody debris provides habitat and protection for many species and contributes to healthy soils.

Forest wildlife species depend on live trees for shelter, escape cover, roosting and as a direct (e.g., mast, foliage) or indirect (e.g., foraging substrate) food resource. The retention of live trees within various diameter classes is of particular concern to habitat specialists such as the Indiana bat.

The DoF has developed compartment level guidelines for two important wildlife structural habitat features. Current assessments indicate the abundance of these habitat features meet or exceed recommended base levels in all diameter classes. The prescribed management will maintain or enhance the relative abundance of these features.

Snags (all species)	Maintenance Level	Inventory	Available Above Maintenance
5"+DBH	288	562	274
9"+DBH	216	562	346
19"+DBH	36	75	39

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.

Ecological Considerations

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

Species	Total Volume
Sugar Maple	122,420
White Ash	59,720
Yellow Poplar	44,570
American Beech	31,080
Black Cherry	30,400
Northern Red Oak	29,270
White Oak	26,510
Black Oak	12,520
Shagbark Hickory	11,880
Red Maple	10,180
American Elm	8,080
Sassafras	5,890
Pignut Hickory	3,620
Hackberry	2,140
Green Ash	1,930
Basswood	960
TRACT TOTAL	401,170
PER ACRE TOTAL	5,572

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

TM 901 RESOURCE MANAGEMENT GUIDE			
2016 INVENTORY SUMMARY			
Forester:	Danson&Beahrs	Inventory Date:	87/18/16
State Forest:	Jackson-Washington67 acres	Tract:	18
SPECIES	**HARVEST STOCK**	**GROWING STOCK**	**TOTAL VOLUME**
Sugar Maple	14,300	108,120	122,420

White Ash	25,380	34,340	59,720
Yellow Poplar	6,240	38,330	44,570
American Beech	6,350	24,730	31,080
Black Cherry	4,350	26,050	30,400
Northern Red Oak	1,460	27,810	29,270
White Oak		26,510	26,510
Black Oak		12,520	12,520
Shagbark Hickory		11,880	11,880
Red Maple	1,820	8,360	10,180
American elm	3,630	4,450	8,080
Sassafras		5,890	5,890
Pignut Hickory		3,620	3,620
Hackberry		2,140	2,140
Green ash		1,930	1,930
Basswood		960	960
TRACT TOTALS	63,530	337,640	401,170
PER ACRE TOTALS	882	4,689	5,572

The 2016 inventory estimated a total volume of 5,572 bdft. per acre. Total basal area was estimated at 89 sq. ft. with 183 trees per acre. These values indicate current stocking for the tract is 79%. The proposed harvest is estimated to remove 60,000 – 120,000 bdft.

Recreation
There are no recreational trails in or adjacent to this tract. Major recreation uses in 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 hardwood (67 acres)
The majority of the tract is characterized as mixed hardwoods. Sugar maple is the dominant species. The inventory estimated 1,700 bdft. of sugar maple saw timber per acre; sugar maple is also a widespread understory tree in the tract. White ash at 830 bdft. per acre and yellow poplar at 619 bdft. of saw timber per acre, are the two most prevalent species outside of sugar maple. The bulk of the remaining tree species in the tract are American beech, black cherry, northern red oak, white oak, black oak, red maple, and shagbark hickory. The understory is diverse, but sugar maple is the dominant understory tree, followed by American beech.

The prescribed management recommendation is to conduct an improvement harvest that would remove poorly formed and declining trees, which would funnel more resources to healthy trees with good form and vigor. The top species for removal in the proposed harvest are white ash and sugar maple. Additionally, the management recommendation is to create group openings, followed by post-harvest timber stand improvement (TSI) to facilitate oak-hickory regeneration. Patches of grapevine and ailanthus were observed

throughout the mixed hardwood cover type. Multiflora rose is also present, but not as prevalent as grapevine and ailanthus. TSI should be completed prior to the prescribed harvest to control the ailanthus. A situational approach should be used with grapevine and multiflora rose to ensure they remain within manageable levels.

Tree plantation (5 acres)

The tree planting area is diverse with species like bur oak and bitternut hickory not present outside of the planting area. Other species include yellow poplar, sugar and red maple, green ash, sycamore, American elm, American beech, red and black oak, pignut hickory, and red cedar. Most trees inside the planting area are small diameter stems 7 inches in diameter or less. Bur oak and yellow poplar are common overstory species. Yellow poplar is prevalent in the understory but there's a wide diversity of hardwood species emerging in the understory and regeneration layer. TSI should be administered to thin out the invading hardwood species, such as yellow poplar, maple and beech, to facilitate the growth of the planted oak and hickory species. Multiflora rose was common in the planting area and ailanthus was also observed, so TSI should be administered to control these invasive species.

Tract Prescription and Proposed Activities

The proposed management activity is to conduct an improvement harvest to improve the overall health and quality of the stand. This improvement harvest should occur within the next 5-10 years utilizing a combination of single tree and group selection methods. The purpose of the single tree selection is to remove mixed hardwoods that release oak or hickory, drought stressed or wind damaged trees, declining ash from Emerald ash borer, mature and over-mature trees and other intermediate trees needed to release residual crop trees. Group openings will be created to facilitate the regeneration of shade intolerant species, notably oak and hickory. After the openings are created, TSI will be needed to remove the remaining understory and overstory trees that are inhibiting oak and hickory regeneration. Within two years of the timber harvest completion, an aggressive TSI operation should follow to release crop trees that were not adequately released during the harvest, and to adequately complete the group openings. Additionally, TSI should be utilized to control remaining invasive species, and deaden cull trees to create snags for wildlife, such as the Indiana bat. During and after completion of the proposed management activity BMP's will be implemented in order to minimize soil erosion. This tract should receive another inventory and management guide 20 years following the completion of the timber harvest.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Treat ailanthus, grapevine and multiflora rose	2017-2019
Mark and Sell Timber Sale	2022-2023
Post-harvest Timber Stand Improvement	2023-2025
Inventory and Management Guide	2043

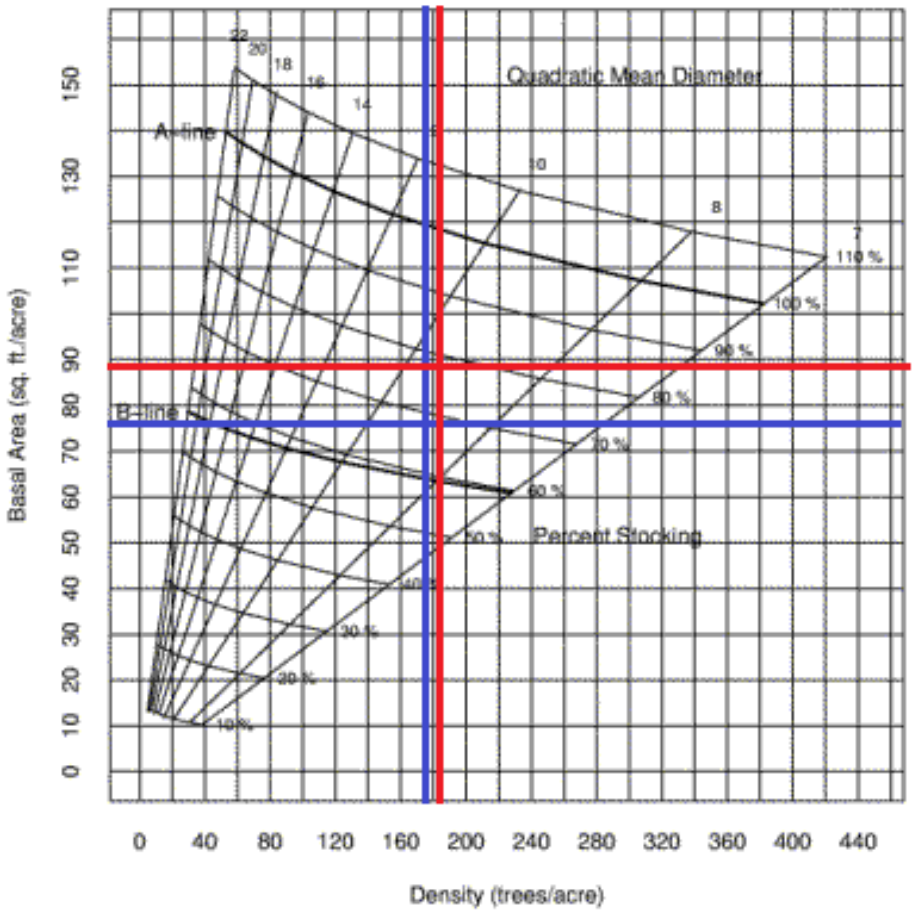
To submit a comment on this document, go to:

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 8 Tract 18



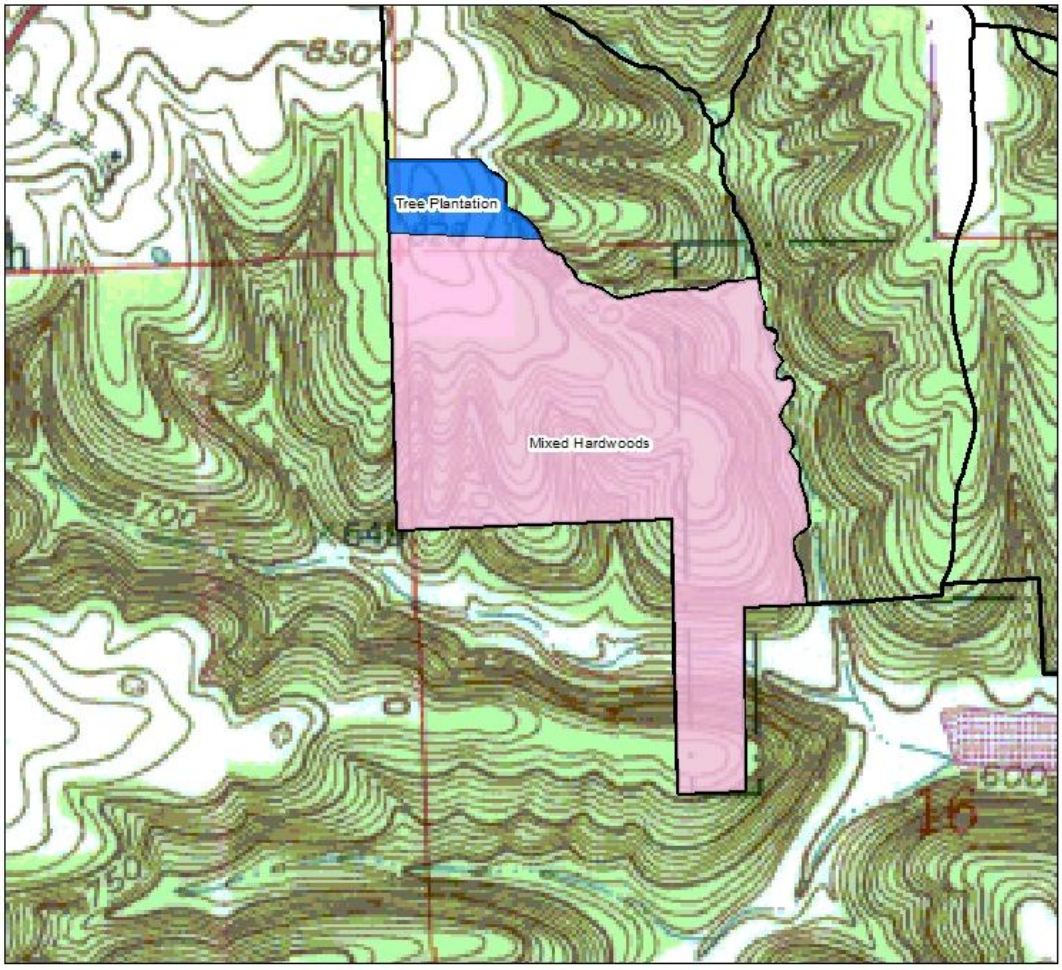
Estimated Pre-Harvest Data

Total Basal Area per Acre = 89.3 square feet per acre
Total Number Trees per Acre = 183
Average Tree Diameter = 9.6
Percent Stocking = 79%

Projected Post-Harvest Data

Total Basal Area per Acre = 75.8
Total Number Trees per Acre = 176
Average Tree Diameter = 9.1
Percent Stocking = 69%

Jackson-Washington State Forest
Compartment 08 Tract 18
Tract Subdivisions



Legend

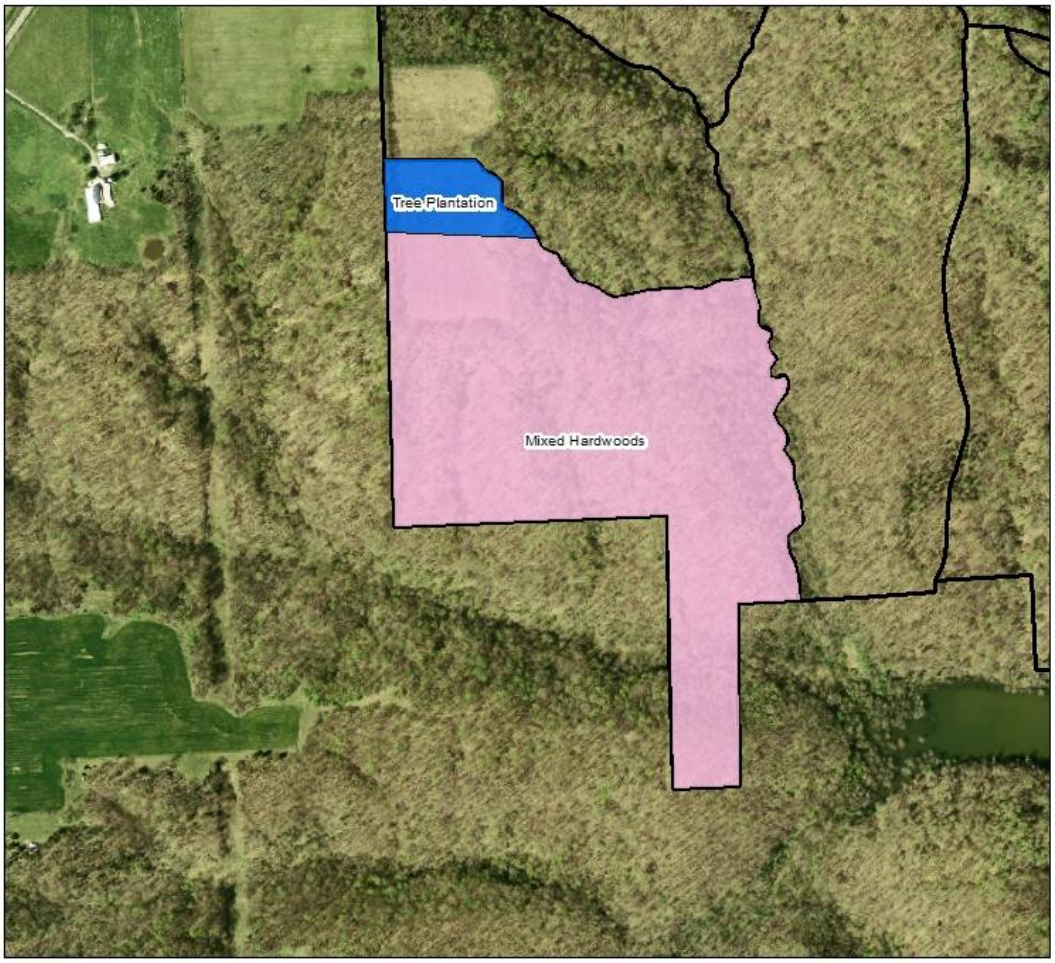
Cover_Type

- Mixed Hardwoods
- Tree Plantation

0 625 1,250 2,500 Feet

N

Jackson-Washington State Forest
Compartment 08 Tract 18
Tract Subdivisions



Legend

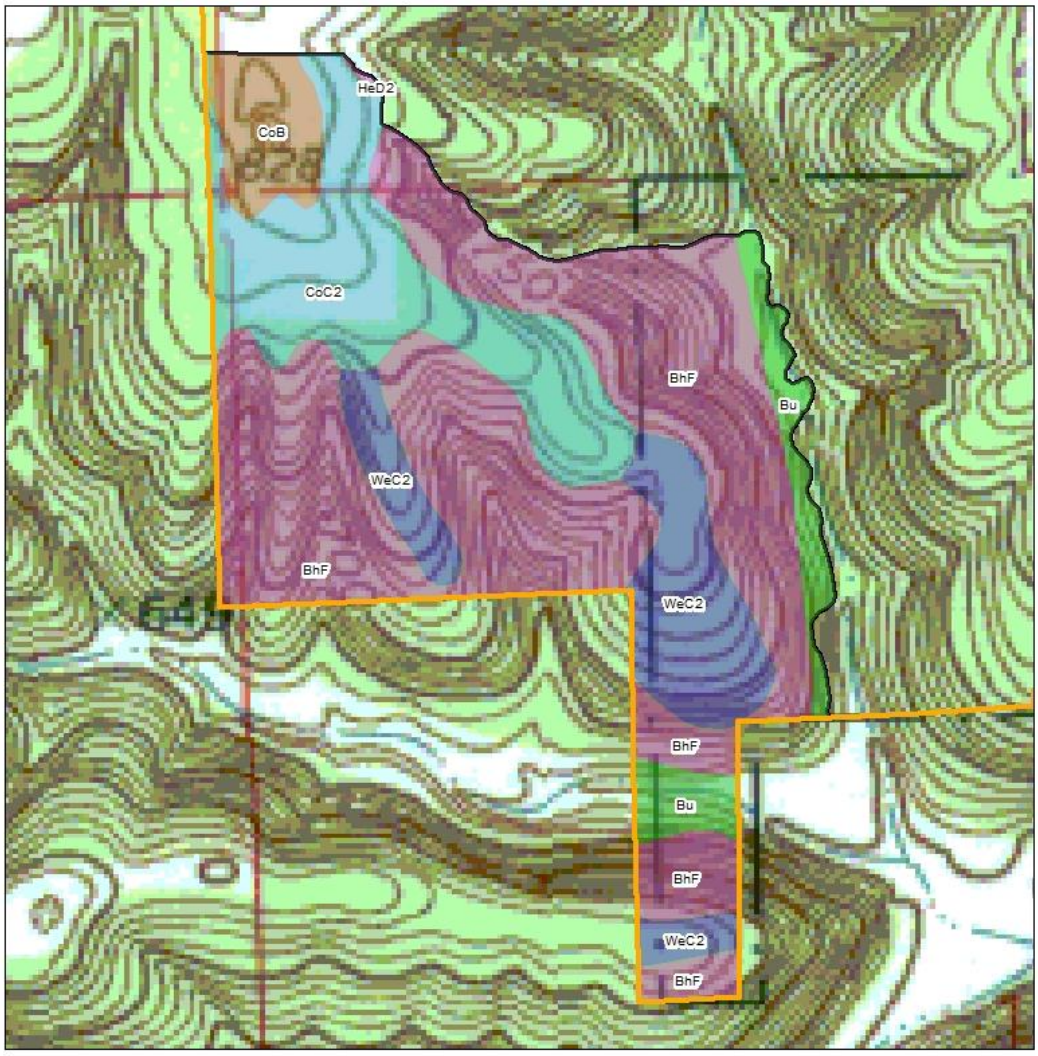
Cover_Type

- Mixed Hardwoods
- Tree Plantation

0 625 1,250 2,500 Feet

N

Soils Map
Jackson-Washington State Forest
Compartment 8 Tracts 18



Legend

6350818 Soils
- BhF
- Bu
- CoB
- CoC2
- HeD2
- WeC2

- Tract_Boundary6350818
- Property_aligned_to_county_parcels

0 0.05 0.1 0.2 Miles

N