

**Resource Management Guides  
Jackson-Washington State Forest  
30-day Public Comment Period (November 13, 2024 – December 12, 2024)**

The Indiana State Forest system consists of approximately 160,251 acres of primarily forested land distributed across the state. These lands are managed under the principle that we're stewards of this land for the future. This work is guided through legislation and comprehensive scientific national and international forest certification standards which are independently audited to help insure long-term forest health, resiliency, and sustainability.

Resource management guides (RMGs) are developed to provide long-term, scientific forest management planning tailored to each forest compartment (300-1,000 acres in size) and tract (10 - 300 acres in size). There are 1,590 tracts across the state forest system statewide. Annually, 50-100 tracts are reviewed, and these guides are developed based on current assessments. Through science-based management practices, we prescribe management actions on select tracts every 15-25 year, diversifying the forested landscape and sustaining ecosystems.

The RMGs listed below and contained in this document are part of the properties annually scheduled forest inventories under review for Jackson-Washington State Forest.

Compartment 2 Tract 3	Compartment 9 Tract 27
Compartment 4 Tract 5	Compartment 10 Tract 8 (repost)
Compartment 5 Tract 10	Compartment 10 Tract 9 (repost)

**To submit a comment on this document, go to:**

<https://www.in.gov/dnr/forestry/state-forest-management/public-comment/submit/>

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 and review posted at:

<https://www.in.gov/dnr/forestry/state-forest-management/public-comment/>

Note: Some graphics may distort due to compression.

Jackson-Washington State Forest  
Forester: Quentin Beahrs & Bailey McIntire (2024)  
Management Cycle End Year: 2044

Compartment: 2      Tract: 3  
Date: 2/7/2018      Acres: 89  
Management Cycle Length: 20 years

### **Location**

This tract, also referred to as 6350203, is located in Jackson County, Indiana, more specifically Township 5 North, Range 5 East, Section 17 in Brownstown Township. This area is located approximately 3.75 miles southeast of Brownstown, Indiana, off State Road 250.

### **General Description**

The tract cover types consist of mixed hardwoods towards the bottoms and oak-hickory on the mid to upper slope; however, there are two small areas near the drainages planted to Eastern white pine. The topography consists of moderate to steep slopes up from the eastern bottomland area.

### **History**

- 1963: 160 acres of land was purchased from John and Mary Vodielingen.
- 1971: Forest management plan was written, timber stand improvement (TSI) and a timber harvest were recommended.
- 1983: Timber harvest occurred, 84,800 bd.ft. of sawtimber volume sold.
- 2001: Tract boundary was changed, and tract acreages were updated for GIS
- 2018: Forest inventory completed

### **Landscape Content**

The land surrounding the tract is Jackson-Washington State Forest, except to the east. East of the tract is privately owned forested ground and open pastures. Within a mile radius of the tract center there are agricultural fields, pasture lands, small ponds, and single-family residences.

### **Topography, Geology and Hydrology**

The topography in the east to southeast portion of the tract is flat to semi-steep rolling hills. From the center to the west and southwest portion of the tract is steep to very steep rolling hills. The geology consists of siltstone and shale bedrock while the tops of the ridges consist of sandstone. This entire tract drains into a mapped intermittent stream, which flows into Horse Lick Creek.

### **Soils**

**Beanblossom silt loam (BcrAW)** This is a deep, well-drained soil that formed in 0 to 24 inches of medium-textured alluvium and the underlying loamy-skeletal alluvium. The Beanblossom soils are on flood plains and alluvial fans below steep and very steep hillslopes. Native vegetation is deciduous forest, dominantly sycamore, elm, hickory, beech, maple, and tulip-poplar. This soil is well suited to trees. Plant competition is moderate. Preferred trees to manage for are bitternut hickory, white oak, sugar maple, and yellow-poplar.

**Berks channery silt loam (BeG)** This steep and very steep, moderately deep, well-drained soil is on side slopes and knolls in the uplands. Slopes can range from 25 to 75 percent. The native vegetation is hardwoods. It is fairly well suited to trees. The equipment limitations, seedling mortality, and the erosion hazard are management concerns. Building logging roads and skid trails on the contour and constructing water bars help to control erosion. North aspects generally are more productive than south aspects. The site indexes for hardwood species range from 70 (white oak) to 90 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

**Coolville silt loam, 12 to 20 percent slopes (CoD)** This moderately well-drained soil has a seasonally high water table at 1.0 to 2.0 ft. and is on side slopes on uplands. Slopes can range from 12 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above bedrock. Available water capacity is moderate (6.6 inches in the upper 60 inches). The pH of the surface layer is 3.5 to 5.5. Bedrock is at a depth of 40 to 60 inches. This soil type has a site index of 66 for northern red oak.

**Gilpin silt loam, 25 to 55 percent slopes (GnF)** This well drained soil has a water table at a depth greater than 40 inches and is on side slopes on uplands. Slopes range from 25 to 55 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderate organic matter content (2.0 to 4.0 percent). Permeability is moderate (0.6 to 2.0 in/hr) in the most restrictive layer above bedrock. Available water capacity is low (4.8 inches in the upper 60 inches). The pH of the surface layer 3.5 to 5.5. Bedrock is at a depth of 20 to 40 inches.

**Kurtz silt loam (KtF)** This series consists of deep, well drained soils on hills. They formed in residuum weathered from interbedded soft siltstone and shale bedrock. Slopes can range from 20 to 55 percent. Native vegetation consists of mixed hardwood with oaks, hickory, beech and yellow-poplar. This soil is well suited to trees. The site index for this soil type is 60 for northern red oak. Preferred trees to manage for are black oak, chestnut oak, persimmon, northern red oak, scarlet oak, shagbark hickory, American beech, sugar maple, and white oak.

**Steff silt loam, rarely flooded (Sg)** This moderately well drained soil has a seasonal high water table at 1.5 to 2.5 ft. and is on flood plains. Slopes are 0 to 2 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is moderate (0.6 to 2 in/hr) in the most restrictive layer above 60 inches. Available water capacity is high (10.8 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5.

**Tilsit silt loam (TIB2, TIC2)** The Tilsit series consists of deep and very deep, moderately well drained soils with a slowly permeable fragipan in the subsoil. Slope ranges from 0 to 15 percent. The potential for surface runoff is negligible to medium. Permeability is moderate in horizons above the fragipan and slow or very slow in the fragipan. About half of the areas are used for corn, small grains, tobacco, truck crops, and hay and pasture. The remainder is in woodland or idle. Native vegetation is primarily oak, hickory, Virginia pine, maple, gum, poplar, dogwood,

beechnut, ironwood, persimmon, and sassafras. These soils are 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. Seedlings survive and grow well if competing vegetation is controlled. The site indexes for hardwood species range from 90 (black oak) to 100 (tulip poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

### **Access**

The tract can be accessed from State Road 250. From State Road 250, travel north on Fire Lane 101 approximately .65 miles. Then, travel west on Fire Lane 133 approximately .4 miles. Then, travel approximately .3 miles north on Fire Lane 130 to the beginning of the tract.

### **Boundary**

The tract boundaries are defined by a main ridge to the west, a drainage ravine that turns into a mapped intermittent stream to the north, a short section of property boundary line to the east, and a small unmapped ephemeral stream to the south.

### **Ecological Considerations**

Wildlife observed during the inventory include American crow, chipmunk, white-tailed deer, American toad, Eastern gray squirrel, opossum, raccoon, and various songbird and woodpecker species. A pair of black vulture fledglings was observed as well as a Northern slimy salamander and ring-necked snake.

The Division of Forestry has developed compartment level guidelines for important wildlife structural habitat features such as snags and legacy trees. Snags are standing dead or nearly dead trees. Snags provide value to a stand in the form of habitat features for foraging activity, den sites, decomposers, bird perching, and bat roosting. Snags eventually contribute to the future pool of downed woody material, which provides habitat for many ground-dwelling species and contributes to healthy soils. Legacy trees are live trees of a certain species and diameter class, that have potential future value to various wildlife species, if retained in the stand. Current assessments indicate the abundance of these habitat features meet or exceed recommended maintenance levels.

The tract is primarily a mixed hardwood forest with the center of the tract being oak-hickory, it also has two small patches of planted Eastern white pines. Grapevine, multiflora rose, silt grass, and Japanese honeysuckle were observed in the tract. Invasive species treatment should be situational based on presence in the surrounding landscape addressing those with the potential to spread following a timber harvest.

A formal Ecological Review process, which includes a search of Indiana's Natural Heritage Database, is part of the management planning process. If Rare, Threatened, or Endangered species were found to be associated with this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the population viability of those species or communities.

## **Recreation**

The major recreational uses of the tract are hiking, horseback riding, and hunting. The White Pine horse trail loop runs through the eastern corner of the tract, and hiking trails 1, 2, and 10 run along the western tract boundary. During any management activity, specifically a timber harvest, portion of these trails will be temporarily closed or re-routed for public safety. Following the management activity the trail will be re-opened to the public.

## **Cultural**

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

## **Tract Subdivision Description and Prescription**

### **Mixed Hardwoods (46 acres)**

Approximately half of this tract is characterized as mixed hardwoods. Chestnut oak is the dominant species with an estimated 2,828 board feet (BDFT) of sawtimber per acre; sugar and red maple, American beech, and yellow-poplar are widespread understory trees. Yellow-poplar at 2,456 BDFT per acre and pignut hickory at 1,461 Bd.ft of sawtimber per acre are the two most prevalent species outside of chestnut oak. These numbers are tract totals not subdivision totals. The bulk of the remaining species in the tract are black oak, sugar maple, and white oak. Single tree and group selection openings should be implemented to release the suppressed white oak, pignut hickory, and chestnut oak that is trying to recruit from the midstory into the overstory.

### **Conifer (4 acres)**

Approximately 4 acres of this tract is characterized as planted Eastern white pine. There were no sample plots that landed within either of the two tree planting areas. However, two plots landed on the edge of these areas allowing some data to be captured for this cover type. The dominant species is Eastern white pine with an estimated tract volume of 377 BDFT per acre of sawtimber. This number is likely low due to no plots landing fully within the planting areas. Native hardwood species have started to grow in the understory and have filled in where openings were created by dying trees or wind throw. The prescribed management recommendation in this subdivision is to remove the remaining pine through patch cut openings, allowing the conversion to native hardwood forests.

### **Dry Oak-Hickory (39 acres)**

The remainder of the tract is characterized as dry oak-hickory cover type. The dominant species in this cover type is chestnut oak. The understory is diverse, including several oak and hickory species, sugar and red maple, and American beech. Towards the bottoms there are good stands of white oak in need of release, an oak shelterwood harvest could benefit this area. The prescribed management recommendation for this subdivision is to conduct an improvement harvest utilizing a combination of single tree and group selection, patch-cuts, and shelterwood to remove poorly formed and declining trees, which would funnel more resources to healthy trees with better form and vigor.

*The current forest resource inventory was completed on 02/07/18 by Quentin Beahrs. A summary of the estimated tract inventory results is located in the table below.*

**Tract Summary Data (trees >11” DBH):**

<b>Species</b>	<b># Sawtimber Trees</b>	<b>Total Bd. Ft.</b>
Chestnut Oak	944	255,341
Yellow Poplar	513	218,614
Pignut Hickory	538	130,004
Black Oak	334	102,969
Sugar Maple	450	98,807
White Oak	231	82,051
Eastern White Pine	112	33,563
Northern Red Oak	66	32,554
Shagbark Hickory	151	31,110
Red Maple	148	28,852
American Beech	165	26,545
Sweetgum	75	11,106
American Sycamore	28	6,389
White Ash	59	5,150
Black Cherry	15	1,282
American Elm	22	1,121
<b>Total</b>	<b>3,850</b>	<b>1,065,458</b>

**Tract Prescription and Proposed Activities**

A timber harvest is recommended for this tract within the next five years. Each subdivision/cover type would utilize a combination of single tree and group selection to reduce overall stem density, release vigorous residual trees, and improve forest health. In the mixed hardwoods subdivision, overstory trees with defect and poor form, vigor, and health should be removed through patch cut openings. This is particularly true in the old pine planting areas. Thinning is necessary in areas of the oak-hickory subdivision with high stocking, leaving trees of good health, form, and vigor. An oak shelterwood harvest in combination with the use of prescribed fire would encourage oak-hickory regeneration and advancement. Prescribed fire will assist in the control of shade tolerant species. Trees in the larger size classes that are declining should be removed to encourage better vigor of the residual stand. Other trees targeted for removal include mixed hardwoods that release oak or hickory trees and mature or over-mature trees with damage or in poor health due to age, disturbance, disease, or other stressors.

The inventory estimated 11,970 board feet per acre, with a total potential harvest volume of 238,896 – 443,664 board feet from the entire tract. The prescribed harvest will reduce the stocking level from approximately 100% to 78%, which is well above the B-line. Following the harvest TSI is recommended to complete any openings created and remove any remaining understory and overstory trees not removed by the harvest inhibiting oak and hickory regeneration.

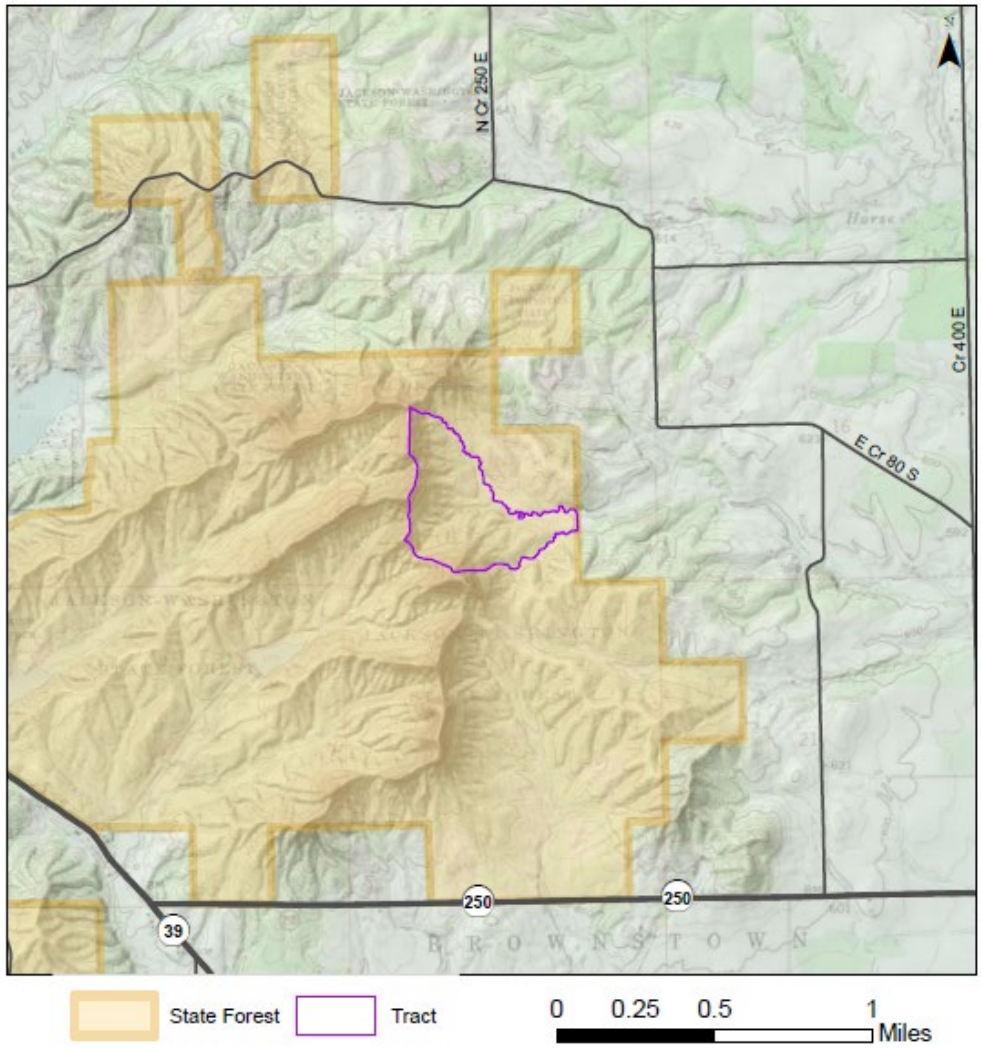
During and after completion of the proposed management activity best management practices (BMP’s) will be implemented in to minimize negative impacts to the soil and streams. This tract should receive another inventory and management guide 20 years following the completion of

the timber harvest. The proposed management activity should have little to no impact on wildlife communities, including the Indiana bat, within or near the tract.

**Proposed Activities Listing**

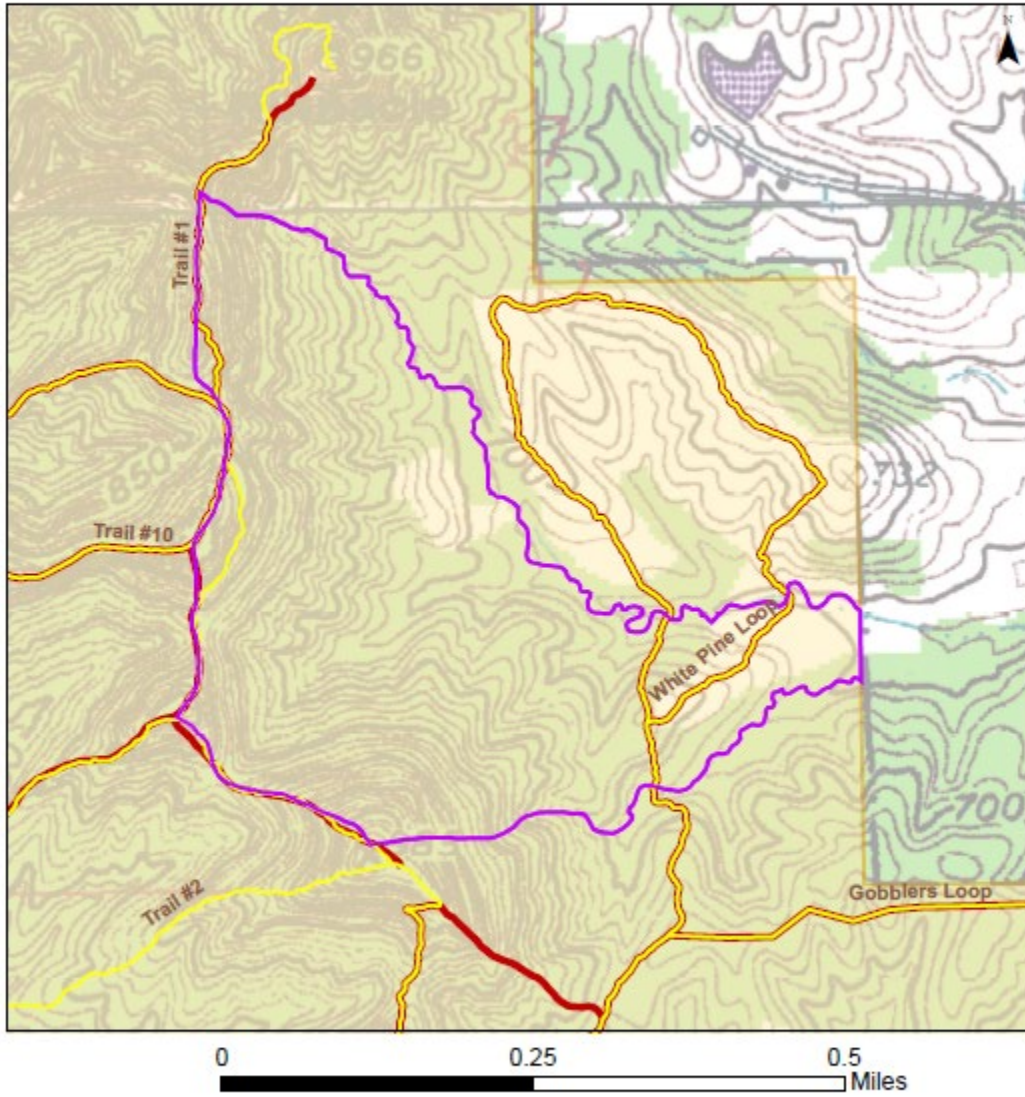
<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Per-harvest TSI and/or invasive treatments	2024-2025
Timber harvest	2024-2025
Post-harvest TSI/ shelterwood	2025-2030
Prescribed Fire	2027-3200
3-year regeneration opening review	three years after harvest
Next forest inventory	2044

Jackson-Washington State Forest  
Location Map  
Compartment 2 Tract 3



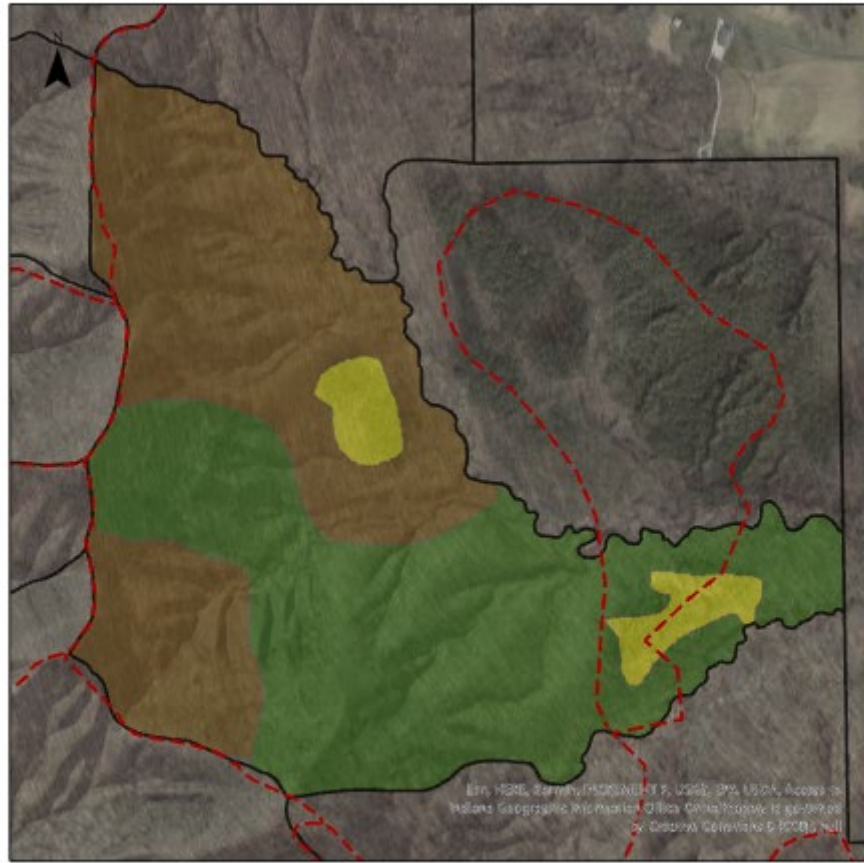


Jackson-Washington State Forest  
Compartment 2 Tract 3  
Tract Map



- Recreation Trail
- Fire Lane
- Tract boundary
- State Forest

# Jackson-Washington State Forest Compartment 2 Tract 3 Cover Types Map



0 0.13 0.25  
Miles

- Legend**
- Dry Oak-Hickory
  - Mixed Hardwoods
  - Conifer
  - Tract Boundary
  - Wildlife Ponds
  - Fire Lanes

Jackson-Washington State Forest                      Compartment: 04                      Tract: 06  
Forester: Ross Danson & Krista Jones(2024) Date: February 7, 2018                      Acres: 72  
Management Cycle End Year: 2044                      Management Cycle Length: 20 years

### **Location**

This tract, also referred to as 6350406, is located approximately 2.5 miles southwest of Brownstown, Indiana, in Section 27, T5N, R4E, Driftwood Township, Jackson County, Indiana.

### **General Description**

The entirety of the tract is forested. Oak-hickory is the dominant cover type, accounting for nearly ninety percent of the total tract acreage. It occurs throughout the upper, mid, and lower slopes. Mixed hardwoods constitute the remaining acreage, occupying the ridgetop in the northeast quarter of the tract. White ash remains only as snags or coarse woody debris in either subdivision.

### **History**

- 1932 (July 17): Land acquisition of 301 acres from Emil and Edna Heller.
- 1936 (February 7): Land acquisition of 56 acres from C. H. and L. L. Bundy.
- 1939 (December 20): Land acquisition of 60 acres from Emma and Wacker Gossman.
- 1963 (September 5): Land acquisition of 301 acres from Nellie Peters.
- 1971 (June): Forest inventory and management guide. This inventory only encompassed 32 acres in the southern portion of the tract. It estimated 2,268 board feet per acre, with 1,155 board feet as harvest stock and 1,113 board feet as growing stock.
- 1984 (December 13): Forest inventory and management guide. As with the previous inventory, the 1984 inventory only encompassed 32 acres in the southern portion of the tract. It estimated 4,808 board feet per acre, with 959 board feet as harvest stock and 3,844 board feet as growing stock.
- 2018 Forest inventory

Based on aerial photography, a few acres of land in the southwest quarter of the tract were cleared and may have been used for farming and/or grazing. An orchard was also present on the northeast ridgetop. Forest covered the remainder of the tract.

### **Landscape Context**

Public forestland in the Brown County Hills Subregion surrounds the tract. Adjacent to the tract's southern boundary is a 10-acre private inholding of forest. The compartment within which the tract is located is surrounded by small watershed lakes, privately-owned forest and crop fields. Several timber harvests have occurred on private lands within the last 15 years. Most appear to have been diameter limit high-grade harvests. Few include regeneration openings, none of which are substantial. Much of the compartment is closed-canopy forest. However, the amount of early successional forest habitat has been slowly improving in the last decade through sustainable timber harvesting. Development in the area is limited to single-family residences and some new construction. Brownstown, Indiana, is located within 2.5 miles of the tract.

## **Topography, Geology and Hydrology**

Located within the Highland Rim Natural Region, the tract's underlying geology consists mostly of siltstone. Aspect is mostly southwest. Two ephemeral drainages, which descend to a mapped intermittent stream, section the tract into thirds. The mapped intermittent stream transitions to a perennial stream half a mile west of State Forest property before draining into the East Fork of the White River. The degree of slopes varies throughout the tract from moderate to steep, with the steepest grades in the northern half of the tract.

## **Soils**

**Brownstown channery silt loam (BvmG)** This soil series is generally found on hills, knobs, or side slopes. It formed from a loamy-skeletal residuum that was over a Mississippian sandstone and shale mix. You will typically find this soil series on slopes ranging from 25-75% and it is a deep and well-drained soil. Seedlings have a moderate chance of survival with amount of available water being the primary limiting factor. Trees or woody vegetation commonly found include: chestnut oak, pawpaw, dogwood, and greenbrier. Trees to manage for are blackgum, black oak, bur oak, white oak, chestnut oak, eastern white pine, shingle oak, bald cypress, persimmon, southern red oak and Virginia pine. Black oak has a site index of 50. Available water capacity is moderate (6.6 inches in the upper 60 inches). The upper layer of this soil is mildly toxic (pH of 4.5). The organic matter in the upper surface is low with only 2.5% and there is a high chance of organic matter depletion.

**Coolville silt loam (CoD, ComD)** This moderately well drained soil has a seasonally high water table at 1.0 to 2.0 ft. and is on side slopes on uplands. Slopes can range from 12 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above bedrock. Available water capacity is moderate (6.6 inches in the upper 60 inches). The pH of the surface layer is 3.5 to 5.5. Bedrock is at a depth of 40 to 60 inches. This soil type has a site index of 66 for Northern red oak.

**Gnawbone silt loam (GmrF)** This is a well-drained soil that is found on slopes ranging from 20 to 60 percent. Geographically, this soil is found on hilltops and side slopes. Trees and other woody vegetation will be typically found growing in the understory. The seedlings have a moderate chance of survival with available water being the primary limiting factor. Trees that should be managed for on this soil are blackgum, black oak, bur oak, eastern white pine, scarlet oak, shingle oak, white oak, baldcypress, chestnut oak, persimmon, southern red oak and Virginia pine. The surface layer of this soil has a pH of 4.3 making this soil moderately acidic. Three percent of the surface layer is organic matter which is relatively low. Available water capacity is moderate (9.6 inches in the upper 60 inches). The soil is poorly suited for equipment operability mostly because of slope being a concern. However, with BMPs being implemented and restriction of logging activities during certain weather patterns, this can be mitigated.

**Kurtz silt loam (KtF, KxzG)** This series consists of deep, well-drained soils on hills. They formed in residuum weathered from interbedded soft siltstone and shale bedrock. Slopes can range from 20 to 55 percent. Native vegetation consists of mixed hardwood with oaks, hickory, beech and yellow-poplar. This soil is well suited to trees. The site index for this soil type is 60

for Northern red oak. Preferred trees to manage for are black oak, chestnut oak, persimmon, Northern red oak, scarlet oak, shagbark hickory, American beech, sugar maple, and white oak.

**Spickert silt loam (SoaB2; SoaC2)** The Spickert silt loam series is generally found on soil series of 6 to 12%. This is a moderately well-drained soil series that from a loess that was over a silty residuum, all of which was over Mississippian siltstone. Only 2% of the surface layer is comprised of organic matter. It has a pH of 5.9, which creates a better environment for trees and woody vegetation in the understory. There is a moderate amount of storage capacity (9 inches) for water in the upper 60 inches. This soil has a site index of 100 (yellow poplar) and 90 (black oak).

**Stonehead silt loam (SsC2) (SukC2)** This series consists of deep and very deep moderately well-drained soils formed in loess and the underlying residuum weathered from soft shale or soft siltstone bedrock. Slopes range from 4 to 12 percent. Native vegetation is mixed hardwoods with oaks, hickory, beech, maple, and tulip-poplar as the major species. This soil is well suited for trees. Prolonged seasonal wetness hinders logging activities and planting of seedlings. The equipment limitations, seedling mortality, windthrow hazard, and plant competition are management concerns. The potential productivity or site index for this soil type is 90 for Northern red oak. Preferred trees to manage for are black oak, chestnut oak, common persimmon, northern red oak, scarlet oak, shagbark hickory, sugar maple, yellow-poplar and white oak.

#### **Access**

The tract may be accessed via Skyline Drive. Take S County Rd 50W out of Brownstown. Continue 1.8 miles to the State Forest property boundary where the county road becomes Skyline Dr. Follow for an additional half mile before turning south at the second switchback onto Fire Lane 240. At the first intersection, head north on Fire Lane 250 or the Orchard Ridge Loop Horse Trail. Follow for approximately 1 mile to reach the northeast corner of the tract.

#### **Boundary**

The southern tract boundary consists of a mapped intermittent stream and a 140-foot section of property line that separates State Forest land and a 10-acre private inholding. The line is identified with pink flagging. Both the northern and the western boundary are delineated by the Orchard Ridge Loop Horse Trail. The eastern tract boundary begins at the broad ridgetop in the northeast corner of the tract, sloping south into the bottoms before terminating at the mapped intermittent stream.

#### **Ecological Considerations**

The Division of Forestry has developed compartment level guidelines for important wildlife structural habitat features such as snags and legacy trees. Snags are standing dead or nearly dead trees. Snags provide value to a stand in the form of habitat features for foraging activity, den sites, decomposers, bird perching, and bat roosting. Snags eventually contribute to the future pool of downed woody material, which provides habitat for many ground-dwelling species and contributes to healthy soils. Legacy trees are live trees of a certain species and diameter class, that have potential future value to various wildlife species, if retained in the stand.

Inventory data for Compartment 04 Tract 06 indicates the abundance of snags 5”+ DBH is below target maintenance levels. Where opportunities exist, snags in the deficient size class will be created by culling standing trees. It is important to note that these are compartment-level guidelines and that even though the estimated tract data does not quite meet all target levels, its likely they meet or exceed in neighboring tracts. So, while tract-levels may be lower than the surrounding area, overall densities across the compartment meet Division of Forestry guidelines.

Scattered ailanthus, Japanese stiltgrass, multiflora rose, and Japanese honeysuckle are present in the mixed hardwoods subdivision on the ridgetop and its upper slopes. Some Japanese stiltgrass was observed along the mapped intermittent stream in the oak-hickory subdivision. None of the invasive species appear to be an issue at this time. However, monitoring should continue during any management activities and treatment should occur as soon as practical given available resources.

A formal Ecological Review process, which includes a search of Indiana’s Natural Heritage Database, is part of the management planning process. If Rare, Threatened, or Endangered species were found to be associated with this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the population viability of those species or communities.

### **Recreation**

Hikers and horseback riders frequent the Orchard Ridge Loop Horse Trail, which acts as the tract’s northern and western boundary. Hunting is another major recreational use of the tract. For public safety, access within this tract will be temporarily restricted during active management.

### **Cultural**

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

### **Tract Subdivision Description and Silvicultural Prescription**

**Mixed Hardwoods** (4 acres) This subdivision occurs on the ridgetop and its uppermost slopes in the northeast corner of the tract. The most common overstory species include red maple, sugar maple, black cherry, yellow poplar, American elm, and sassafras. A few Northern red oak, black oak, and chestnut oak are present as well. A portion of the overstory sugar maple has been damaged by the sugar maple borer. Any trees with insect damage should be removed to improve the overall health and resiliency of the stand. In addition, several trees in the overstory are in poor health and exhibiting reduced vigor due to age. Single tree and group selection, or patch-cuts may be used to remove poorly formed, damaged, unsound, or declining trees that are in direct competition with healthier, more vigorous trees. Group selection and patch-cuts may also be used to promote the establishment of shade-intolerant species.

**Dry Oak-Hickory** (68 acres) This subdivision constitutes the vast majority of the tract. Chestnut oak is the dominant overstory species by abundance and volume on the upper slopes. The lower slopes transition to white oak. In the riparian area near the mapped intermittent stream, the overstory is largely comprised of white oak and pignut hickory. Other overstory species include yellow poplar, American sycamore, black gum, pignut hickory, American beech, black cherry, red maple, and sugar maple. Some sugar maple stems exhibited damage from the sugar maple

borer across this subdivision as well. In several areas, the shade from a dense beech-maple mid- and understory is so complete that there is no herbaceous layer or woody seedlings present. Isolated pockets of oak and hickory regeneration are present but relegated to a few canopy gaps where direct sunlight is able to reach the forest floor. These canopy gaps have been created from white ash mortality or the blowdown of overstory oak. Other seedlings include white ash, sassafras, pawpaw, and black cherry. To improve the oak-hickory component in the understory and midstory, this subdivision should receive one or more shelterwood harvests. Each would have an average target basal area of between 40 and 50 and be combined with prescribed fire. When compared to single tree selection, shelterwoods increase the likelihood of oak and hickory seedling survival and better encourage their recruitment from lower canopy strata into the overstory. Fire and single tree and group selection, or patch-cuts should be implemented in any areas that are not part of a shelterwood to further promote oak-hickory regeneration, reduce stocking, and release healthier trees with better form.

*The current forest resource inventory was completed on 02/07/18 by Ross Danson. A summary of the estimated tract inventory results is located in the table below.*

**Tract Summary Data (trees >11” DBH):**

<b>Species</b>	<b># Sawtimber Trees</b>	<b>Total Bd. Ft.</b>
Chestnut oak	1,269	209,940
White oak	664	179,610
Black oak	350	94,610
Pignut hickory	256	49,910
Northern red oak	143	33,910
Yellow poplar	34	23,810
Shagbark hickory	87	15,880
Sugar maple	141	14,860
American sycamore	33	10,870
White ash	19	6,660
Red maple	48	4,570
American beech	26	3,740
Black cherry	36	3,650
Sassafras	17	1,890
<b>Total:</b>	<b>3,123</b>	<b>653,910</b>

**Tract Prescription and Proposed Activities**

This tract should be harvested within the next 5 years. This harvest could be in conjunction with an adjacent tract or as a standalone harvest. Single tree and group selection, or a combination of both may be used in either subdivision to reduce stocking and improve the overall health, quality, and vigor of the stand. Single tree selection should focus on releasing crop trees of any hardwood species that are of better form, vigor, and quality. Patch-cuts may be necessary in the mixed hardwoods. One or more shelterwood harvest should be implemented in the oak-hickory subdivision to promote oak-hickory seedling establishment, survival, and recruitment into the overstory. Given the slope aspect of the mixed hardwoods subdivision, along with its total size

and proximity to surrounding mature oak-hickory forest, it may be included within the shelterwood harvest. Trees targeted for removal should include mixed hardwoods that release oak and hickory trees; drought-stressed trees; damaged trees or those with defect; mature or over-mature trees that are declining due to age, disturbance, insects, or disease; and any intermediate trees needed to release vigorous residual trees. Timber stand improvement (TSI) of the midstory should be completed following a harvest and a low-intensity prescribed fire regime should be developed for the tract to reduce competition from shade tolerant species and encourage successful oak and hickory seedling establishment. The inventory estimated 9,104 board feet per acre, with a total potential harvest volume of 120,890 to 216,000 board feet. The top three harvest species by volume include chestnut oak, black oak, and white oak. This harvest will maintain the oak-hickory component in the tract and result in a healthier, more vigorous stand.

Any invasive plant species present in patch-cuts or shelterwoods should be treated prior to the harvest.

During and after completion of the timber harvest, best management practices (BMPs) will be implemented to minimize soil erosion. The Indiana Logging and Forestry Best Management Practices 2022 BMP Field Guide will be followed.

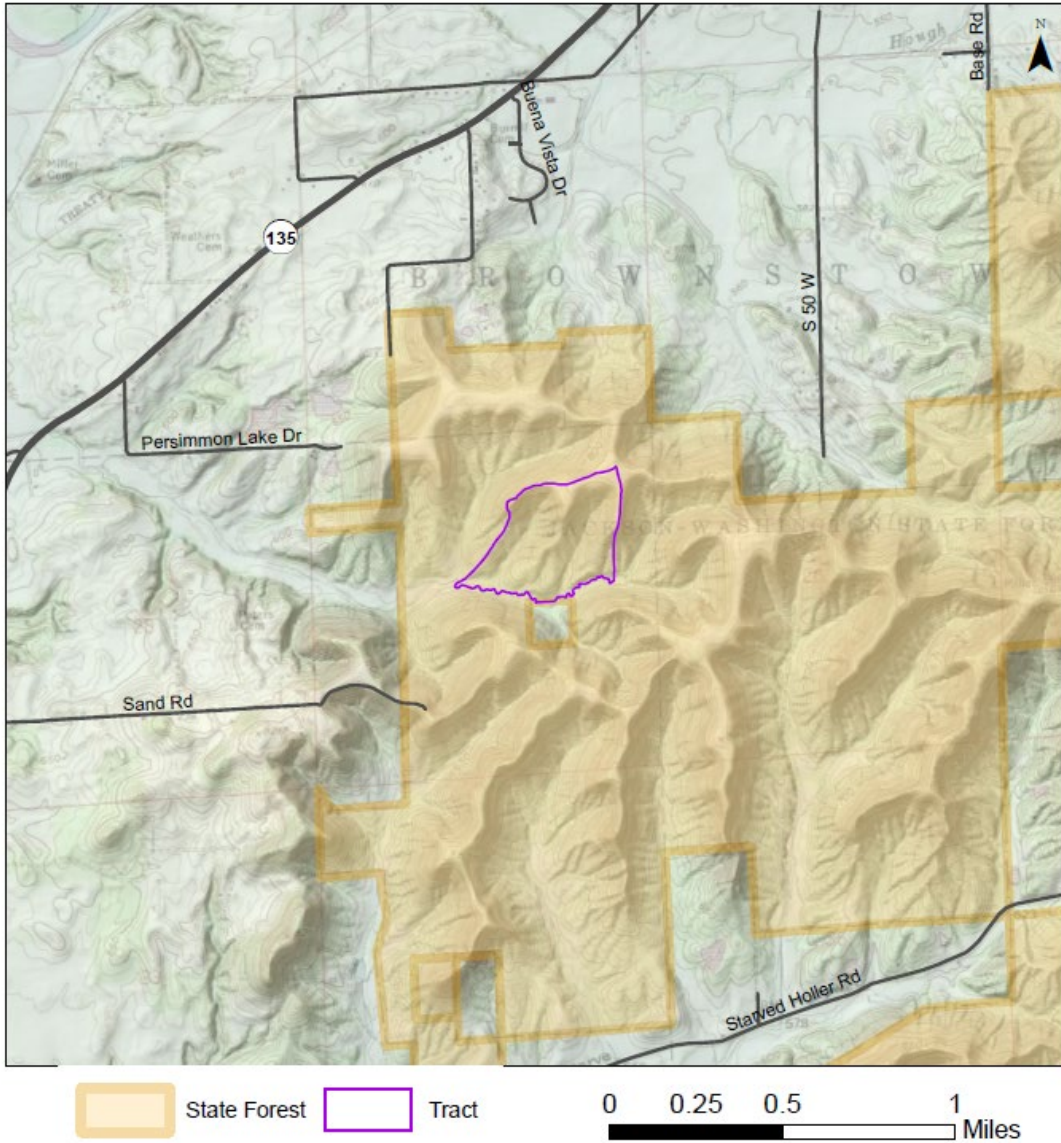
Within two years of the timber harvest, a TSI operation should follow to adequately complete any group or patch-cut openings, reduce the understory in any shelterwoods, release residual crop trees in the remaining tract acreage, and address the deficit of snags within the 5”+ diameter classes.

**Proposed Activities Listing**

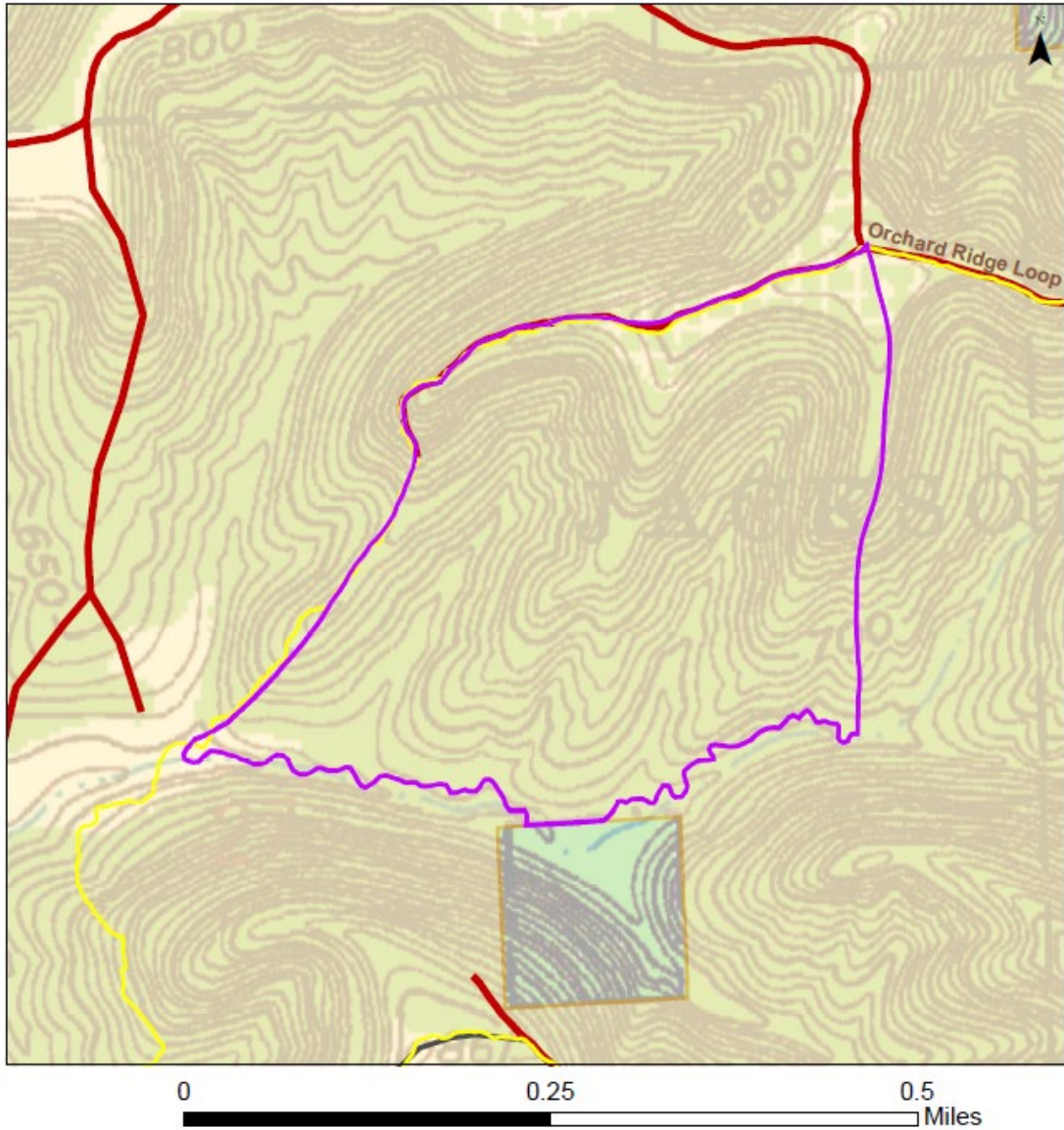
<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Mark and sell timber	2024-2029
Pre-harvest TSI and/or invasives as needed	2029-2030
Timber harvest	2030-2034
Post-harvest TSI and/or invasives	1-2 years after harvest
Prescribed fire regime	3-5+ years after shelterwood establishment cut and/or 1-2+ years after post-harvest TSI
3-year regeneration opening review	three years after harvest
Next forest inventory	2044



Jackson-Washington State Forest  
Location Map  
Compartment 4 Tract 6

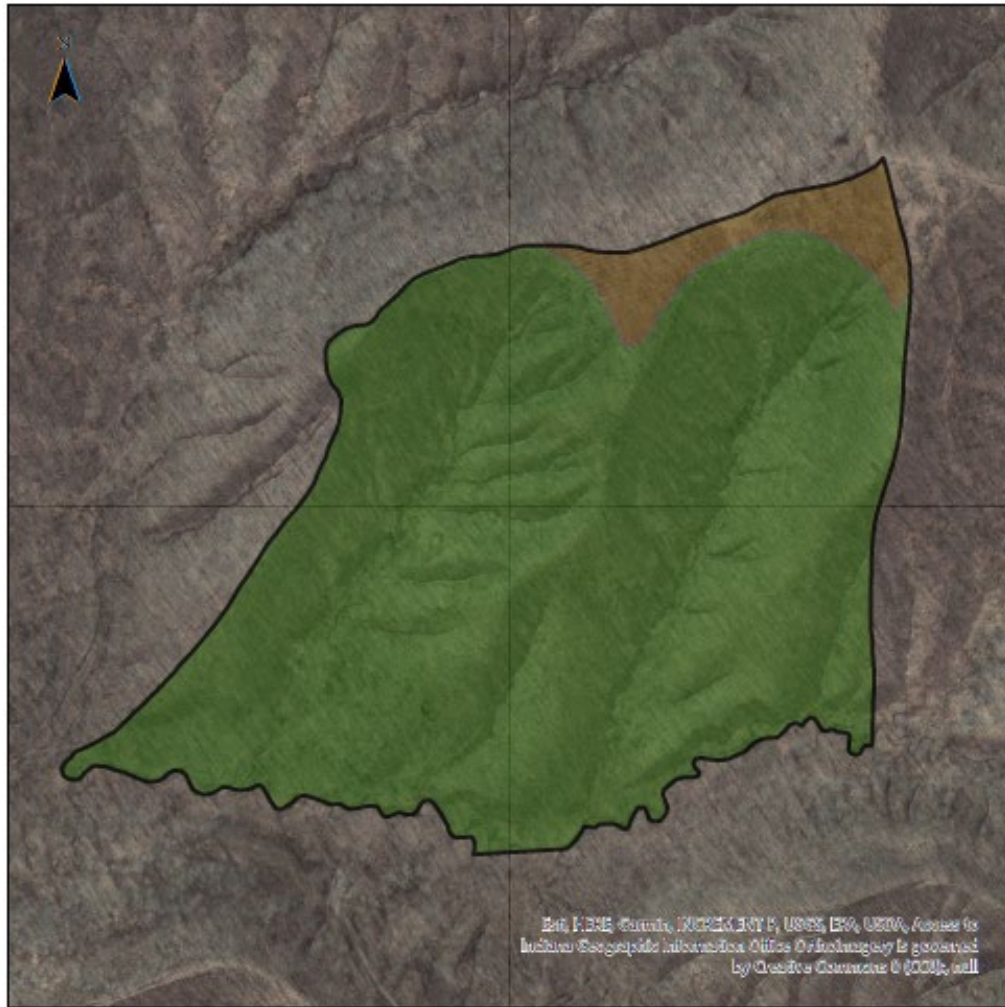


Jackson-Washington State Forest  
Compartment 4 Tract 6  
Tract Map



-  Recreation Trail
-  Fire Lane
-  Tract boundary
-  State Forest

# Jackson-Washington State Forest Compartment 04 Tract 06 Cover Types Map



0 0.13 0.25 Miles

## Legend

-  Dry Oak-Hickory
-  Mixed Hardwoods
-  Tract Boundary
-  Wildlife Ponds

Jackson-Washington State Forest  
Forester: Quentin Beahrs, Ross Danson,  
Allen Jasowicz, & Krista Jones(2024)  
Management Cycle End Year: 2044

Compartment: 05      Tract: 10  
Date: 06/06/2016      Acres: 57  
Management Cycle Length: 20 Years

### **Location**

This tract, also referred to as 6350510, is located 4.5 miles south of Brownstown, Indiana, and 1.5 miles east of Starve Hollow Lake in Section 3, T4N, R4E, Driftwood Township in Jackson County, Indiana.

### **General Description**

The tract is entirely forested. Mixed hardwoods and oak-hickory constitute the two major cover types. The acreage of mixed hardwoods and oak-hickory is approximately equivalent, with the former restricted to the northern half of the tract and the latter restricted to the southern half.

### **History**

- 1935 (December 22): Land acquisition of 165 acres from Jackson County Board of Commissioners.
- 1942 (March 22): Land acquisition of 40 acres from Brownstown Ln & Tr Co Exd.
- 1962 (June 4): Land acquisition of 40 acres from Hanover College Trustees.
- 1987 (June 24): Forest inventory. This estimated 6,725 board feet per acre, with 4,170 board feet as harvest stock and 2,555 as growing stock.
- 1990 (December 20): Prime timber sale sold. An estimated 5,222 board feet in 11 trees.
- 1991 (March 21): Timber sale sold. An estimated 299,635 board feet in 1,609 trees and 512 culls.
- 2001 (May 26): Change in tract boundary and acreage. Size of tract was reduced.
- 2006 (January 30): Timber stand improvement completed.
- 2015 (February 10): Ash salvage sale sold. An estimated 102,658 board feet in 376 trees, only a few of which were taken from this tract.
- 2016 Forest inventory

Based on aerial photography, the land in the southern portion of this tract near the mapped intermittent stream was historically used for farming and/or grazing. Forest covered the remainder of the tract.

### **Landscape Context**

The tract is nestled within a 2,100-acre block of public land, the majority of which is State Forest property. The remaining acreage comprises Starve Hollow State Recreation Area (SRA) (i.e., 285 acres). Starve Hollow SRA is located approximately 1.5 miles to the west of the tract and features a 145-acre lake, rent a camp cabins, hiking trails, and full hookup and electric camping opportunities. Watershed lakes, single-family residences, smaller woodlots, and agricultural fields may be found on the private lands adjacent to this block of public land.

### **Topography, Geology and Hydrology**

The tract features southeast-facing slopes that originate from a north-south ridge in the northern half of the tract. Two mapped intermittent streams, which drain into Starve Hollow Lake, flow

along the southern and eastern tract boundaries. The tract is located within the Brown County Hills Section of the Highland Rim Natural Region. Underlying geology consists mostly of siltstone.

## **Soils**

**Beanblossom silt loam (BcrAW)** This is a deep, well-drained soil that formed in 0 to 24 inches of medium-textured alluvium and the underlying loamy-skeletal alluvium. The Beanblossom soils are on flood plains and alluvial fans below steep and very steep hillslopes. Native vegetation is deciduous forest, dominated by sycamore, elm, hickory, beech, maple, and tulip-poplar. This soil is well suited to trees. Plant competition is moderate. Preferred trees to manage for are bitternut hickory, white oak, sugar maple, and yellow-poplar.

**Berks channery silt loam (BeG)** This steep and very steep, moderately deep, well-drained soil is on side slopes and knolls in the uplands. Slopes can range from 25 to 75 percent. The native vegetation is hardwoods. It is fairly well-suited to trees. The equipment limitations, seedling mortality, and the erosion hazard are management concerns. Building logging roads and skid trails on the contour and constructing water bars help to control erosion. North aspects generally are more productive than south aspects. The site indexes for hardwood species range from 70 (white oak) to 90 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

**Coolville silt loam, 12 to 20 percent slopes (CoD)** This moderately well-drained soil has a seasonally high water table at 1.0 to 2.0 ft. and is on side slopes on uplands. Slopes can range from 12 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above bedrock. Available water capacity is moderate (6.6 inches in the upper 60 inches). The pH of the surface layer is 3.5 to 5.5. Bedrock is at a depth of 40 to 60 inches. This soil type has a site index of 66 for Northern red oak.

**Gilpin silt loam, 25 to 55 percent slopes (GnF)** This well-drained soil has a water table at a depth greater than 40 inches and is on side slopes on uplands. Slopes range from 25 to 55 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderate organic matter content (2.0 to 4.0 percent). Permeability is moderate (0.6 to 2.0 in/hr) in the most restrictive layer above bedrock. Available water capacity is low (4.8 inches in the upper 60 inches). The pH of the surface layer 3.5 to 5.5. Bedrock is at a depth of 20 to 40 inches.

**Hickory loam (HrE)** This well-drained soil has a water table at a depth greater than 40 inches and is on side slopes on uplands. Slopes are 15 to 45 percent. The native vegetation is hardwoods. The surface layer is loam and has moderate organic matter content (2.0 to 4.0 percent). Permeability is moderate (0.6 to 2 in/hr) in the most restrictive layer above 60 inches. Available water capacity is high (10.1 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5.

**Steff silt loam (Sg)** This moderately well-drained soil has a seasonal high water table at 1.5 to 2.5 ft. and is on flood plains. Slopes are 0 to 2 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0

percent). Permeability is moderate (0.6 to 2 in/hr) in the most restrictive layer above 60 inches. Available water capacity is high (10.8 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5.

**Stonehead silt loam (SsC2)** This series consists of deep and very deep, moderately well-drained soils formed in loess and the underlying residuum weathered from soft shale or soft siltstone bedrock. Slopes range from 4 to 12 percent. Native vegetation is mixed hardwoods with oaks, hickory, beech, maple, and tulip-poplar as the major species. This soil is well suited for trees. Prolonged seasonal wetness hinders logging activities and planting of seedlings. The equipment limitations, seedling mortality, windthrow hazard, and plant competition are management concerns. The potential productivity or site index for this soil type is 90 for Northern red oak. Preferred trees to manage for are black oak, chestnut oak, common persimmon, Northern red oak, scarlet oak, shagbark hickory, sugar maple, yellow-poplar, and white oak.

**Tilsit silt loam (TIB2, TIC2)** The Tilsit series consists of deep and very deep moderately well-drained soils with a slowly permeable fragipan in the subsoil. Slope ranges from 0 to 15 percent. The potential for surface runoff is negligible to medium. Permeability is moderate in horizons above the fragipan and slow or very slow in the fragipan. About half of the areas are used for corn, small grains, tobacco, truck crops, and hay and pasture. The remainder is in woodland or idle. Native vegetation is primarily oak, hickory, Virginia pine, maple, gum, poplar, dogwood, beech, ironwood, persimmon, and sassafras. These soils are 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. Seedlings survive and grow well if competing vegetation is controlled. The site indexes for hardwood species range from 90 (black oak) to 100 (tulip poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

### **Access**

The tract may be accessed via Starve Hollow Road. Follow State Road 250 east from Brownstown, Indiana, for approximately 1.5 miles. Turn south onto S. County Road 100 E. Continue for 2 miles before heading west onto E. County Road 350 E. At the intersection, turn north onto E. County Rd 340 S. or Starve Hollow Road. Follow for approximately 2.25 miles before turning south on Fire Lane 310. At the Y, continue southeast on Fire Lane 320 for an additional half mile to arrive at the tract.

### **Boundary**

The outline of the tract resembles a narrow finger that is oriented north to south. The northern boundary runs concurrent with Fire Lane 320 for a short distance along a ridgetop. The tract's western boundary follows this ridgetop south to a mapped intermittent stream, which acts as the southern boundary. This stream intersects the tract's second mapped intermittent stream to the east. At their confluence, the eastern boundary of the tract begins. It follows the stream north up the drainage to intersect with Fire Lane 320 at the top of the ridge.

### **Ecological Considerations**

The Division of Forestry has developed compartment level guidelines for important wildlife structural habitat features such as snags and legacy trees. Snags are standing dead or nearly dead trees. Snags provide value to a stand in the form of habitat features for foraging activity, den sites, decomposers, bird perching, and bat roosting. Snags eventually contribute to the future pool of downed woody material, which provides habitat for many ground-dwelling species and contributes to healthy soils. Legacy trees are live trees of a certain species and diameter class, that have potential future value to various wildlife species, if retained in the stand.

Inventory data for Compartment 05 Tract 10 indicates the abundance of snags 9”+ DBH is below target maintenance levels. Where opportunities exist, snags in the deficient size class will be created by culling standing trees. It is important to note that these are compartment-level guidelines and that even though the estimated tract data does not quite meet all target levels, its likely they meet or exceed in neighboring tracts. So, while tract-levels may be lower than the surrounding area, overall densities across the compartment meet Division of Forestry guidelines.

Invasive species observed in the tract include ailanthus, paulownia, beefsteak plant, Japanese stiltgrass, multiflora rose, and Japanese barberry. Most of the invasives are restricted to within a few hundred feet of the fire lane. The ailanthus and paulownia, however, occur in isolated locations throughout the tract. While none of the invasives appear to be a problem at this time, their treatment should occur as time and resources allow.

A formal Ecological Review process, which includes a search of Indiana’s Natural Heritage Database, is part of the management planning process. If Rare, Threatened, or Endangered species were found to be associated with this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the population viability of those species or communities.

### **Recreation**

The main recreational use of the tract is hunting. A short 0.15-mile section of Turkey Roost Trail cuts across the southern portion of the tract in the bottoms near the mapped intermittent stream. Another hiking trail known as the Vista Trail follows along the western tract boundary for approximately 300 feet before looping back towards the west. For public safety, access within this tract will be temporarily restricted during active management. These small sections of trail may be rerouted or closed during active management for public safety.

### **Cultural**

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

### **Tract Subdivision Description and Silvicultural Prescription**

**Mixed Hardwoods** (29 acres) This subdivision is located in the northern half of the tract. Sugar maple and yellow poplar are the dominant overstory trees. Other species within this subdivision include American beech and red maple, along with a few scattered overstory oaks and hickories.

Its understory is dominated by dense spicebush and pawpaw, with some American beech and sugar and red maple stems. Little to no other woody regeneration is present. Several acres of the subdivision appear to have been marked as a regeneration opening in a previous timber harvest; this area features higher stocking and consists entirely of small sawtimber tulip poplar with average quality and form. These should be thinned, with removal targeting any poorly-formed stems, to reduce stocking and thereby improve the vigor of the residual trees. In addition, numerous overstory trees throughout the subdivision are declining due to age, defect, disease, or insects. These should be removed via single tree selection, canopy gaps, or patch-cut openings. Doing so will improve the overall health and resiliency of the stand. To increase the oak-hickory component in this subdivision, prescribed fire and timber stand improvement (TSI) should follow the harvest. In areas without oak or hickory in the overstory, single tree selection should focus on releasing crop trees of any hardwood species that are of better form, vigor, and quality.

**Dry Oak-Hickory (28 acres)** This subdivision is restricted to the southern half of the tract. Chestnut oak and white oak are the dominant species in the overstory. Stocking is significantly lower along the ridge and its upper slope where chestnut oak occurs and is experiencing mortality. Some of the larger diameter overstory white oak is declining as well, with what appears to be past grazing, skidding, or fire damage to the butt logs of several trees. Other overstory species include Northern red oak, sugar maple, tulip poplar, black oak, pignut hickory, red maple, and shagbark hickory, many of which are in poor health, have defect, or are declining due to age, damage from wind, disease, and other stressors. These trees, in addition to those with low vigor or of poor quality or form, should be selected for removal via either single tree selection or patch-cut openings. This will improve light conditions on the forest floor and increase nutrient availability to residual trees. Sugar maple and American beech are the dominant mid- and understory species in this subdivision. These are outcompeting oak and hickory poles that are trying to recruit into the overstory. TSI following a harvest should focus on releasing the oak-hickory component in the midstory. The regeneration layer in this subdivision was variable. However, numerous oak and hickory seedlings are present throughout, mostly in canopy gaps that have been created in the overstory from blowdown or ash mortality. These seedlings would benefit from release. This may be accomplished through single tree selection, a shelterwood harvest, and/or prescribed fire.

*The current forest resource inventory was completed on 06/06/16 by Quentin Beahrs, Ross Danson, and Allen Jasowicz. A summary of the estimated tract inventory results is located in the table below.*

**Tract Summary Data (trees >11” DBH):**

<b>Species</b>	<b># Sawtimber Trees</b>	<b>Total Bd. Ft.</b>
White oak	347	127,770
Chestnut oak	304	98,900
Sugar maple	398	73,690
Yellow poplar	101	48,810
Northern red oak	97	40,860
Black oak	72	29,470
Pignut hickory	108	26,810



American beech	86	20,890
Red maple	84	19,670
Shagbark hickory	57	16,360
White ash	25	8,340
Black walnut	16	3,690
Blackgum	12	2,290
American sycamore	18	1,920
<b>Total:</b>	<b>1,725</b>	<b>519,470</b>

### Tract Prescription and Proposed Activities

This tract should receive a harvest within the next 2 years. This may be a standalone harvest or in conjunction with adjacent tracts. Trees targeted for removal should include mixed hardwoods that release oak and hickory trees; trees that are in declining health due to age, defect, or damage from wind or insects; and any intermediate trees needed to release vigorous residual trees. Both subdivisions require single tree selection to reduce stocking, thereby improving the overall quality and vigor of the stand. Several areas in the oak-hickory subdivision would provide an excellent opportunity for an oak shelterwood harvest. Oak and hickory seedling establishment can also be promoted by running a low-intensity prescribed fire through the tract to reduce competition from the sugar maple and American beech understory. TSI of the midstory should be completed following a harvest in part to encourage the recruitment of suppressed oaks and hickories from the midstory to the overstory. Canopy gaps or patch-cuts should be implemented in either subdivision where there are poorly formed or damaged trees, as well as in areas with trees that are in poor health. Canopy gaps or patch-cuts may also be created to facilitate the regeneration of shade intolerant species, notably oak and hickory. The inventory estimated 9,110 board feet per acre, with a total potential harvest volume of 79,640 to 171,000 board feet from the entire tract. The top three harvest species by volume include sugar maple, white oak, and chestnut oak. This harvest will result in a healthier, more vigorous stand of forest that will be primarily dominated by the oak-hickory cover type.

Any invasive plant species present in patch-cuts or shelterwoods should be treated prior to the harvest.

During and after completion of the timber harvest, best management practices (BMPs) will be implemented to minimize soil erosion. The Indiana Logging and Forestry Best Management Practices 2022 BMP Field Guide will be followed.

Within two years of the timber harvest, a TSI operation should follow to adequately complete any patch-cut or regeneration openings, reduce the understory in any shelterwoods, release residual crop trees in the remaining tract acreage, and address the deficit of snags within the 9”+ diameter classes.

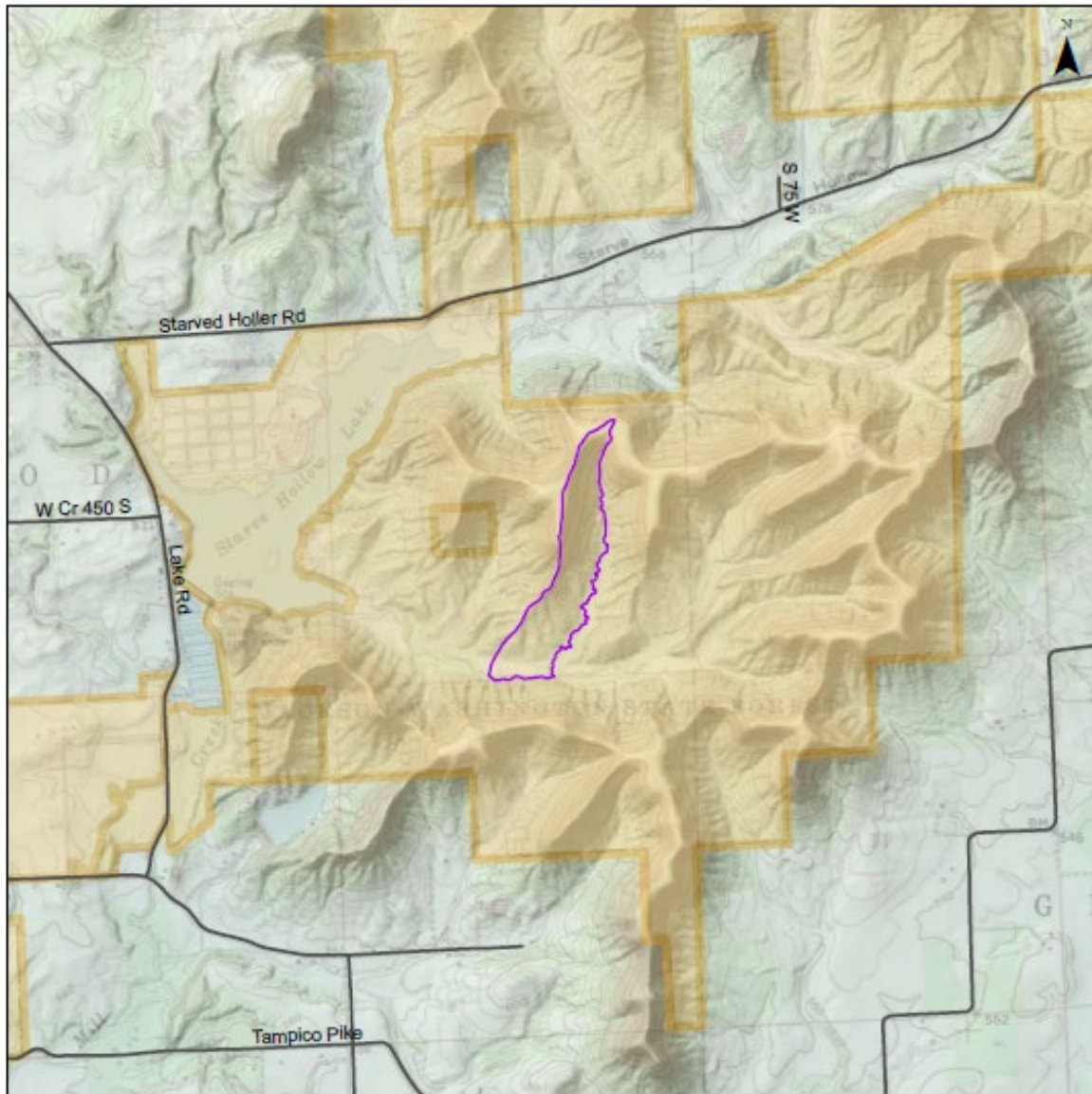
A prescribed fire regime should be developed for the tract and implemented following a harvest and post-harvest TSI. This will improve oak and hickory regeneration success by reducing competition from species that are not as resistant to fire. Fire also improves microclimate

conditions for species that require scarification, sunlight, and contact with bare mineral soil to germinate.

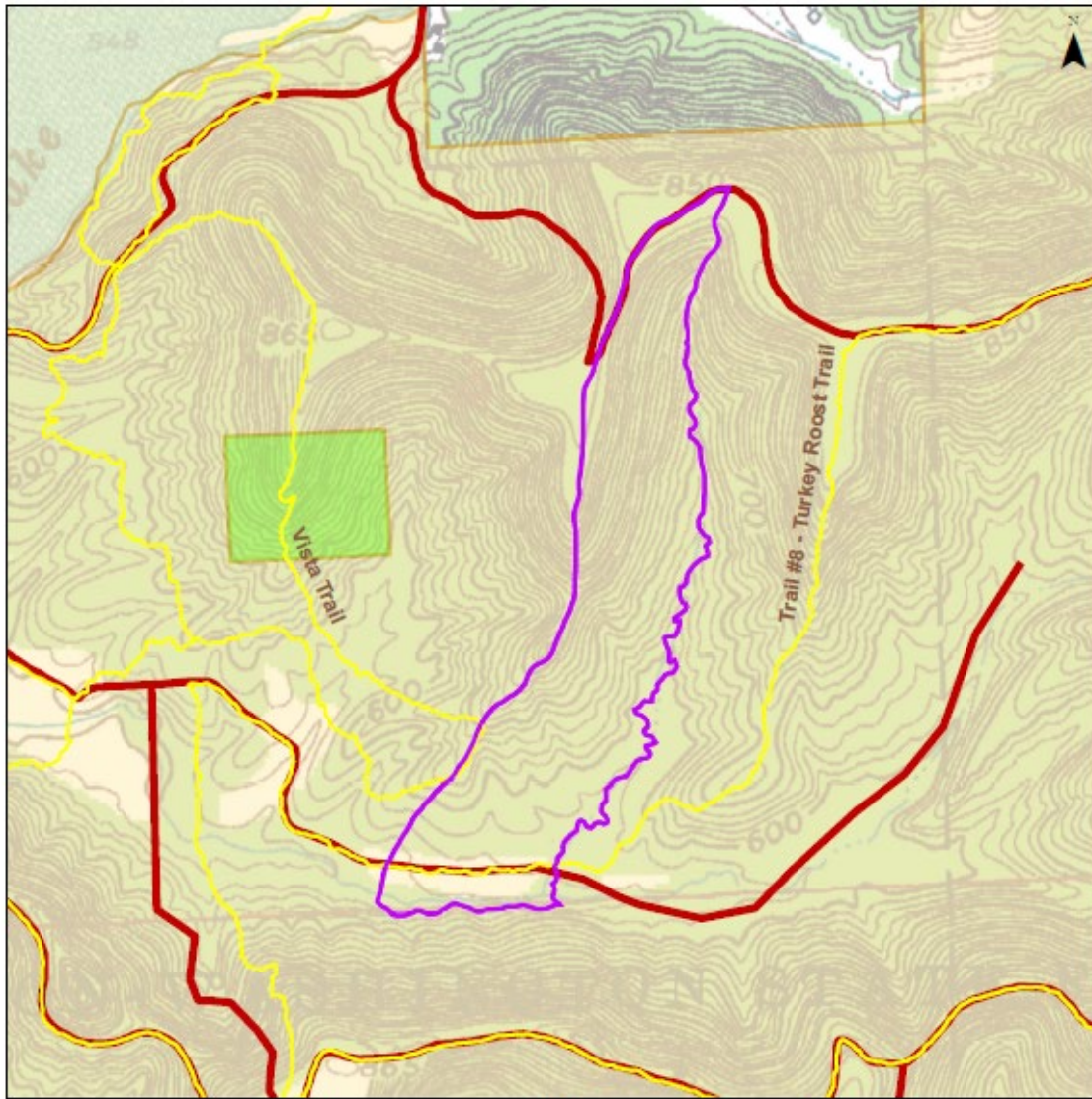
**Proposed Activities Listing**

<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Mark and sell timber	2024-2027
Pre-harvest TSI and/or invasives as needed	2027-2028
Timber harvest	2028-2032
Post-harvest TSI and/or invasives	1-2 years after harvest
Prescribed fire regime	1-2+ years after post-harvest TSI
3-year regeneration opening review	three years after harvest
Next forest inventory	2044

# Jackson-Washington State Forest Location Map Compartment 5 Tract 10



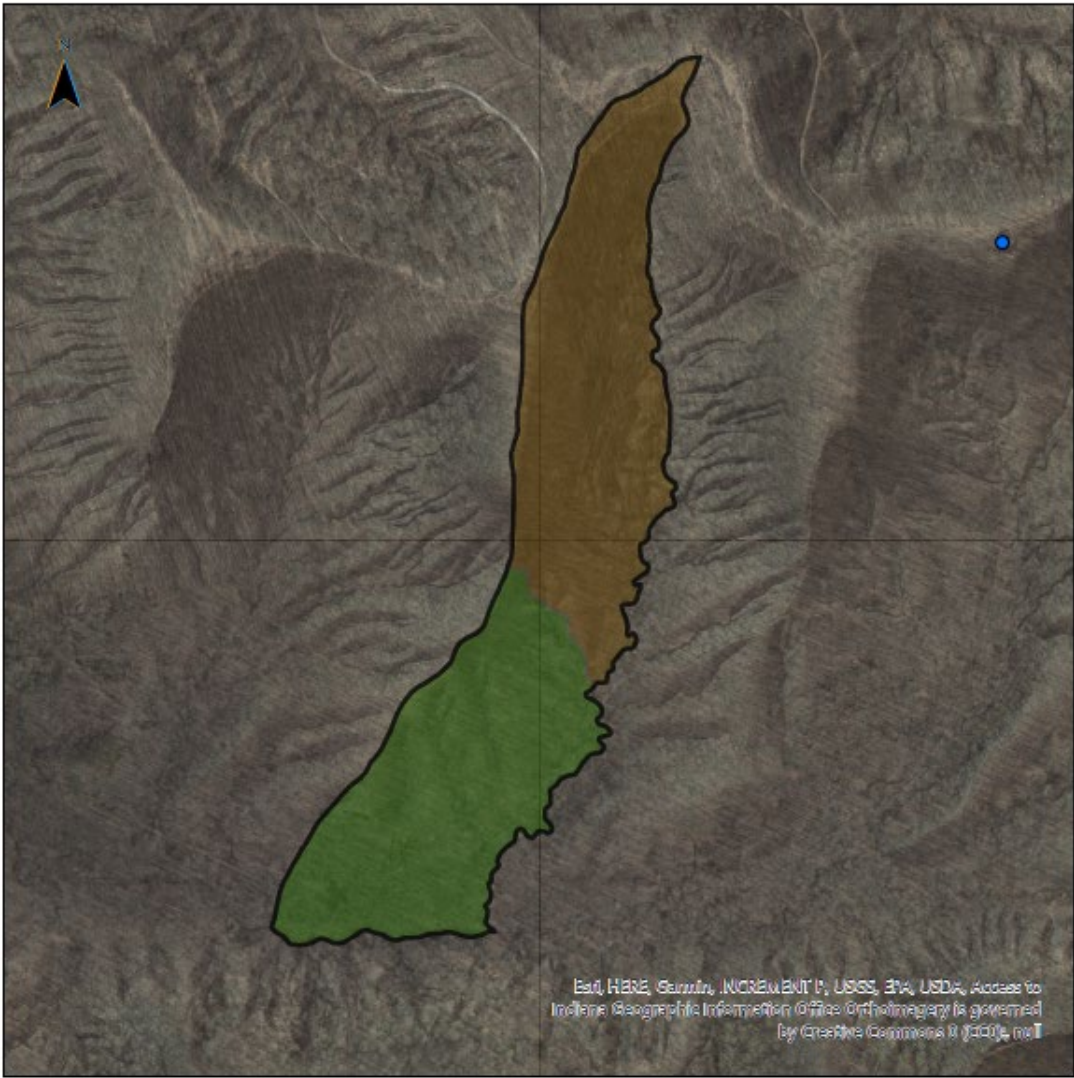
# Jackson-Washington State Forest Compartment 5 Tract 10 Tract Map



0 0.25 0.5  
Miles





- Recreation Trail
- Fire Lane
- Tract boundary
- Nature Preserve
- State Forest

# Jackson-Washington State Forest Compartment 5 Tract 10 Cover Types Map



0 0.13 0.25  
Miles

**Legend**

-  Dry Oak-Hickory
-  Mixed Hardwoods
-  Tract Boundary
-  Wildlife Ponds

Jackson-Washington State Forest  
Forester: Ross Danson, Allen Jasowicz, &  
Krista Jones (2024)  
Management Cycle End Year: 2044

Compartment: 9  
Date: 7/22/2016

Tract: 27  
Acres: 48

Management Cycle Length: 20 years

### **Location**

This tract, also referred to as 6350927, is located immediately south of E. Mount Eden Road in Section 36, T4N, R4E, Monroe Township in Washington County, Indiana.

### **General Description**

The entire acreage of the tract consists of forest. Oak-hickory dominates the upper, mid, and lower slopes of all major finger ridges, with mixed hardwoods occurring only in the bottoms along the stream and in the northeast quarter of the tract. Nearly all ash trees in the tract have succumbed to emerald ash borer and died out of the stand.

### **History**

- 2008: Land acquisition of 160 acres from The Nature Conservancy (TNC) to create the tract.
- 2016 Forest inventory

Based on aerial photography, the land in the tract immediately adjacent to the mapped intermittent stream was historically used for farming and/or grazing. Forest covered the remainder of the tract.

### **Landscape Context**

Public and private forestland surrounds most of the tract. North of the tract is relatively flat due to the presence of the Muscatatuck River. This area is characterized mainly by private ownership consisting of agricultural fields and small woodlots. There are a few single-family residences within a mile radius of the tract center.

### **Topography, Geology and Hydrology**

The tract's western boundary features a broad north-south ridgetop, from which extend three east-facing finger ridges. The degree of slope varies throughout the tract from moderate to steep. A mapped intermittent stream, which drains into the Muscatatuck River, runs along the eastern boundary of the tract. A flat bottomland area buffers the stream in the northeastern corner of the tract. The tract is located within the Knobstone Escarpment Section of the Highland Rim Natural Region. Underlying geology consists mostly of siltstone.

### **Soils**

**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. 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)** 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.

**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. The erosion hazard, the equipment limitations, and plant competition are the main concerns in the management of wooded areas. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. During wet periods, roads tend to be slippery and ruts form easily. Seedlings survive and grow well if competing vegetation is controlled by cutting, girdling, or spraying. The site indexes for hardwood species range from 80 (red oak) to 95 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

**Stendal silt loam (Sf)** This soil series consists of very deep, somewhat poorly drained soils that formed in acid, silty alluvium. These soils are on flood plains and flood-plain steps. Slopes range from 0 to 2 percent. Used mainly for growing corn and soybeans. Some areas are in forest. Native vegetation is dominantly hardwood forest. This soil is well suited to trees. The equipment limitations and plant competition are concerns in managing the woods. Equipment should only be used during dry periods or when the ground is frozen. 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 85 (sweetgum) to 90 (pin oak). Preferred trees to manage for are bur oak, overcup oak, pecan, pin oak, red maple, shellbark hickory, swamp chestnut oak, and swamp 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. 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 are 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.

### **Access**

The tract may be accessed via Mail Route Road. Follow St Rd 39 just south of the Muscatatuck River for approximately 2.4 miles before turning west onto Power Line Rd. In one mile, turn south on Pumpkin Center Road. Follow for another mile and then turn west onto Pull Tight Road and continue for 3 miles to Mail Route Road. Head north on Mail Route Road to its terminus, which also marks the start of Fire Lane 720. Follow this fire lane for an additional mile to the State Forest property line. Continue east along the property line for a tenth of a mile to arrive at the southwest corner of the tract.

E. Mount Eden Road allows for additional access to the tract at its northeast corner provided permission is granted from the adjacent landowner to cross a narrow strip of private ground. The northeast corner may also serve as a log yard for timber skidded from the tract.

### **Boundary**

The property line for the State Forest, painted in orange and flagged in pink, acts as both the northern and the western tract boundary. The eastern boundary of the tract follows a mapped intermittent stream that flows south-southwest. This stream is joined by an ephemeral drain, which serves as the southern tract boundary.

### **Ecological Considerations**

The Division of Forestry has developed compartment level guidelines for important wildlife structural habitat features such as snags and legacy trees. Snags are standing dead or nearly dead trees. Snags provide value to a stand in the form of habitat features for foraging activity, den sites, decomposers, bird perching, and bat roosting. Snags eventually contribute to the future pool of downed woody material, which provides habitat for many ground-dwelling species and contributes to healthy soils. Legacy trees are live trees of a certain species and diameter class, that have potential future value to various wildlife species, if retained in the stand.

Inventory data for Compartment 09 Tract 27 indicates the abundance of snags 5 and 9"+ DBH is below target maintenance levels. Where opportunities exist, snags in the deficient size class will be created by culling standing trees. It is important to note that these are compartment-level guidelines and that even though the estimated tract data does not quite meet all target levels, its likely they meet or exceed in neighboring tracts. So, while tract-levels may be lower than the surrounding area, overall densities across the compartment meet Division of Forestry guidelines.

Invasive species observed in the tract include a small patch of garlic mustard on the northernmost finger ridge. Japanese stiltgrass and some multiflora rose are also present, occurring sporadically in the bottomland area adjacent to the mapped intermittent stream. While none of the invasives appear to be a problem at this time, their treatment should occur as time and resources allow.

A formal Ecological Review process, which includes a search of Indiana's Natural Heritage Database, is part of the management planning process. If Rare, Threatened, or Endangered



species were found to be associated with this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the population viability of those species or communities.

### **Recreation**

The main recreational use of the tract is hunting. No designated recreational trails are present. For public safety, access within this tract will be temporarily restricted during active management.

### **Cultural**

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

### **Tract Subdivision Description and Silvicultural Prescription**

**Dry Oak-Hickory** (37.5 acres) This subdivision is most of the tract, with oaks and hickories dominating the upper, mid, and lower slopes of all major finger ridges. The overstory is comprised mostly of chestnut oak and white oak, with black oak, Northern red oak, and pignut hickory scattered throughout. Overstory species on the upper slopes are showing signs of decline due to past drought and fire damage. Damaged, unsound, or declining trees that are in direct competition with healthier more vigorous trees should be targeted for removal through single tree selection. While tree species and tree size are consistent across finger ridges throughout the subdivision, the northernmost finger ridge is an outlier. A tornado passed through this area in 1990 and set back succession. Here, the largest trees are classified as pole timber at less than 12 inches diameter at breast height. Grapevine is present in the canopies of most of these trees and suppressing their growth. It should be controlled via timber stand improvement (TSI). The midstory consists of a diverse array of species, with a good oak-hickory component. Species include red and sugar maple; shagbark, mockernut, and pignut hickory; chestnut, black and white oak; and sassafras. Many of the midstory oaks and hickories are suppressed and will benefit from release from either TSI or a single tree selection harvest. This subdivision also has many different species of seedlings, including sugar maple, white ash, sassafras, and American beech. Advanced regeneration of oak and hickory species is also present. One or more areas might benefit from an oak shelterwood harvest. This would encourage increased acorn production in the oaks and hickories, as well as provide saplings with additional light needed for continued growth. In addition, overstory trees with low vigor or of poor quality or form should be selected for removal to improve light conditions on the forest floor and increase nutrient availability to residual trees.

**Mixed Hardwoods** (10.5 acres) Species in this subdivision occur only in the bottoms along the mapped intermittent stream in the northeast quarter of the tract. Common overstory trees include sugar maple and American beech, with some scattered sycamore and black walnut. Few oaks and hickories are present. The understory consists predominantly of spicebush, which is able to thrive under a dense sugar maple midstory. Some American beech and pawpaw are also in the understory. Little to no regeneration is present except for a few isolated ash seedlings. Numerous overstory trees are in poor health and declining. These should be removed via single tree selection or patch-cut openings. Doing so will improve the overall health and resiliency of the stand. Prescribed fire, TSI, and single tree selection would help increase the oak-hickory

component in this subdivision by reducing the shade tolerant species in direct competition for limited resources. In areas without oak or hickory, single tree selection should focus on releasing crop trees of any hardwood species that are of better form, vigor, and quality.

*The current forest resource inventory was completed on 07/22/16 by Ross Danson and Allen Jasowicz. A summary of the estimated tract inventory results is located in the table below.*

**Tract Summary Data (trees >11” DBH):**

<b>Species</b>	<b># Sawtimber Trees</b>	<b>Total Bd. Ft.</b>
Chestnut oak	807	149,420
American beech	181	33,330
Sugar maple	185	25,660
Northern red oak	73	23,940
Black oak	139	23,870
White oak	82	13,960
Pignut hickory	85	12,970
American sycamore	41	11,240
Shagbark hickory	50	10,380
Black walnut	41	6,120
Yellow poplar	35	9,760
White ash	12	2,170
Red maple	10	1,250
<b>Total:</b>	<b>1,741</b>	<b>321,070</b>

**Tract Prescription and Proposed Activities**

This tract should receive a harvest within the next 2 years. This may be a standalone harvest or in conjunction with adjacent tracts. Trees targeted for removal should include mixed hardwoods that release oak and hickory trees; trees that are in declining health due to age, drought stress, or damage from grazing, fire, wind, or insects; and any intermediate trees needed to release vigorous residual trees. Both subdivisions require single tree selection to reduce stocking, thereby improving the overall quality and vigor of the stand. Relatively heavier thinning may be necessary among the chestnut oak on the upper slopes. Several of these slopes also provide an excellent opportunity for an oak shelterwood harvest. Oak and hickory seedling establishment can also be promoted by running a low-intensity prescribed fire through the tract to reduce competition from the dense sugar maple understory. TSI of the midstory should be completed following a harvest in part to encourage the recruitment of suppressed oaks and hickories from the midstory to the overstory. Canopy gaps or patch-cuts should be implemented in areas with poorly formed or damaged trees, as well as in areas with trees that are in poor health. The inventory estimated 6,690 board feet per acre, with a total potential harvest volume of 69,410 to 144,000 board feet from the entire tract. The top three harvest species by volume include chestnut oak, American beech, and black oak. This harvest will result in a healthier, more vigorous stand of forest that will be primarily dominated by the oak-hickory cover type.

Any invasive plant species present in patch-cuts or shelterwoods should be treated prior to the harvest.

During and after completion of the timber harvest, best management practices (BMPs) will be implemented to minimize soil erosion. . The Indiana Logging and Forestry Best Management Practices 2022 BMP Field Guide will be followed.

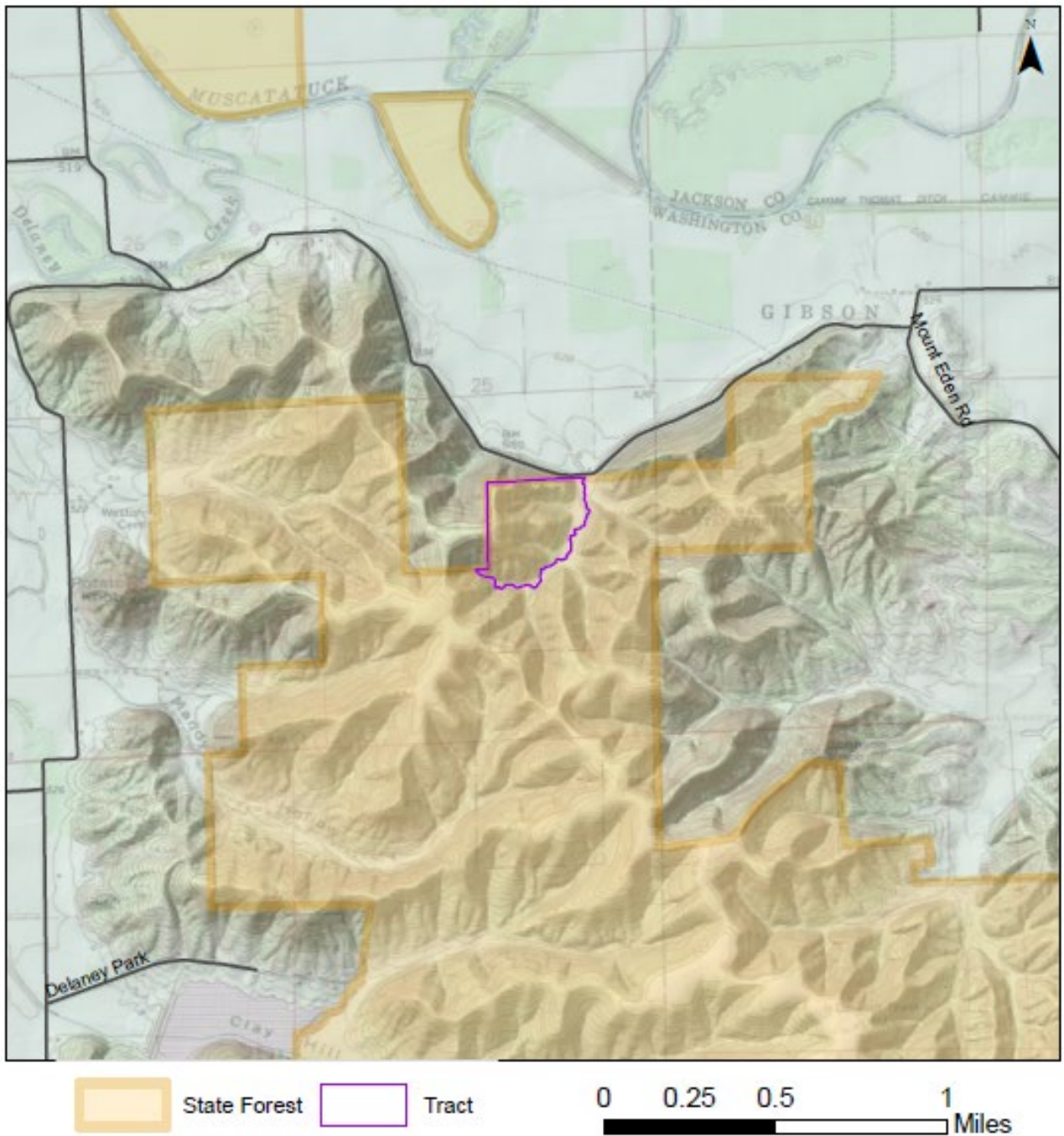
Within two years of the timber harvest, a TSI operation should follow to adequately complete any patch-cut openings, reduce the understory in any shelterwoods, release residual crop trees in the remaining tract acreage, and address the deficit of snags within the 5 to 19”+ diameter classes.

A prescribed fire regime should be implemented following post-harvest TSI. This will improve conditions for oak and hickory regeneration success by reducing competition from shade tolerant species and promoting seed germination.

**Proposed Activities Listing**

<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Mark and sell timber	2024-2026
Pre-harvest TSI and/or invasives as needed	2026-2028
Timber harvest	2030-2032
Post-harvest TSI and/or invasives	1-2 years after harvest
Prescribed fire regime	1-2+ years after post-harvest TSI
3-year regeneration opening review	three years after harvest
Next forest inventory	2044

# Jackson-Washington State Forest Location Map Compartment 9 Tract 27

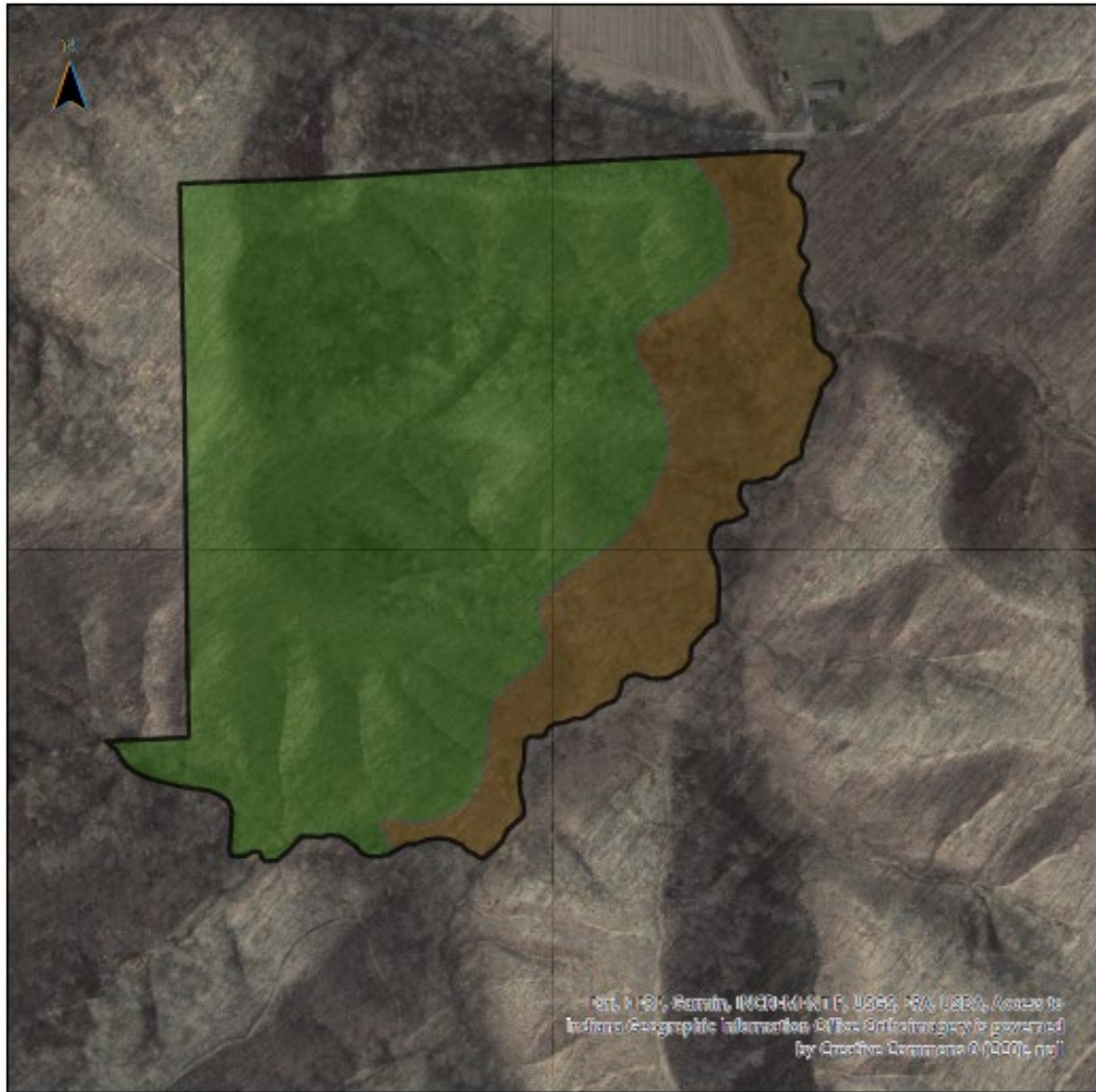


Jackson-Washington State Forest  
Compartment 9 Tract 27  
Tract Map



- Fire Lane
- Tract boundary
- State Forest

# Jackson-Washington State Forest Compartment 9 Tract 27 Cover Types Map



0 0.13 0.25 Miles

## Legend

-  Dry Oak-Hickory
-  Mixed Hardwoods
-  Tract Boundary
-  Wildlife Ponds

**Compartment 10 Tract 8**  
**Resource Management Guide (Amendment)**  
**June 20, 2024**  
**Forester: Bailey McIntire**

Link to original RMG: [Compartment 10 Tract 8](#)

Identified as 6351008: [Property Compartment and Tract Map](#)

**Compartment 10 Tract 8 (amendment)**

During field reconnaissance, some minor changes were noted. Since the 2017 forest inventory most of the ash particularly on the steeper northwestern slopes has declined or died due to Emerald ash borer. This has lowered stocking, but likely minor when considering the annual growth of the stand. Otherwise, minor blowdown across the remainder of the tract was noted emphasizes the need for management.

The 2017 resource management guide (RMG) indicated the entire tract was a mixed hardwoods cover type. From the recent field reconnaissance, the major side slopes appear to be predominately oak-hickory up to what appears to be an old field. These slopes show promise for oak regeneration as areas where blowdown had occurred creating small canopy gaps oak regeneration was observed. Without some additional sunlight, much of this regeneration will not advance to the mid or overstory. Utilizing single tree selection, it is possible to create conditions suitable for advancement for many of these oaks, where appropriate.

The old field area which the Knobstone Trail runs along has many over mature yellow-poplar and black oak that are or soon will be declining. Particularly, along the trail these could pose a risk and should be assessed during management of the tract.

Because this tract is located within the backcountry area of Jackson-Washington State Forest, only single tree selection will be used to remove selected tree base on decline, wind damaged, non-native species, declining ash from Emerald ash borer, and other trees necessary to release more vigorous residual trees.

Estimated harvest volume is expected to be similar to what was estimated in the 2017 RMG.

A follow up ecological review is conducted as part of this review.

**Compartment 10 Tract 9**  
**Resource Management Guide (Amendment)**  
**June 20, 2024**  
**Forester: Bailey McIntire**

Link to original RMG: [Compartment 10 Tract 9](#)

Identified as 6351009: [Property Compartment and Tract Map](#)

**Compartment 10 Tract 9 (amendment)**

During field reconnaissance, blowdown of Virginia pine in the lower slope areas was observed. This could pose a safety risk to the Knobstone trail and should be considered when addressing risk trees while conducting management in this tract. Minor changes in volume are expected due to annual growth of the tract and blown down/decline of trees.

Some woody regeneration is present, being predominately maple and beech, however some oak regeneration was observed throughout. Within the oak-hickory subdivision a few canopy gaps have been created due to declining black oak and chestnut oak. This should be considered when conducting management to capture mortality. These canopy gaps have allowed oak seedlings particularly chestnut and white oak, to develop. Single tree selection could continue to produce these conditions in similar areas and provide enough sunlight to advance them to the mid and overstory.

Because this tract is located within the Jackson-Washington State Forest backcountry area only single tree selection will be used to remove drought stressed or wind damaged trees, non-native species, declining ash from Emerald ash borer, and other trees necessary to release more vigorous residual trees.

Estimated harvest volume is expected to be similar to what was estimated in the 2017 RMG.

A follow up ecological review is conducted as part of this review.