

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

Jackson-Washington State Forest	Compartment: 05	Tract: 10
Forester: Quentin Beahrs, Ross Danson, Allen Jasowicz, & Krista Jones(2024)	Date: 06/06/2016	Acres: 57
Management Cycle End Year: 2044	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.

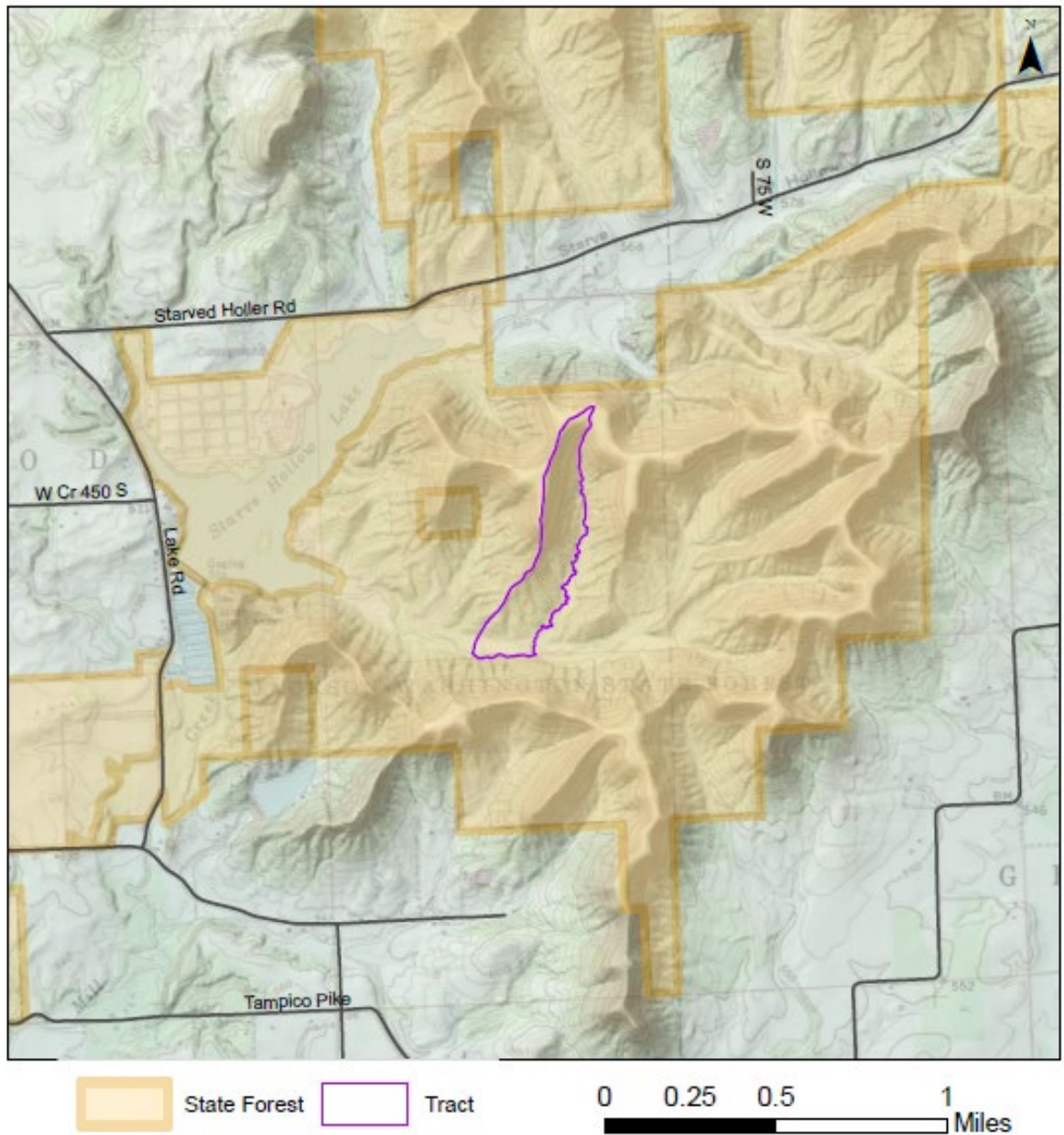
Within two years of the timber harvest, a TSI operation should follow to adequately complete any patch-cut or regeneration openings, reduce the understory in any shelterwoods, release residual crop trees in the remaining tract acreage, and address the deficit of snags within the 9"+ diameter classes.

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**

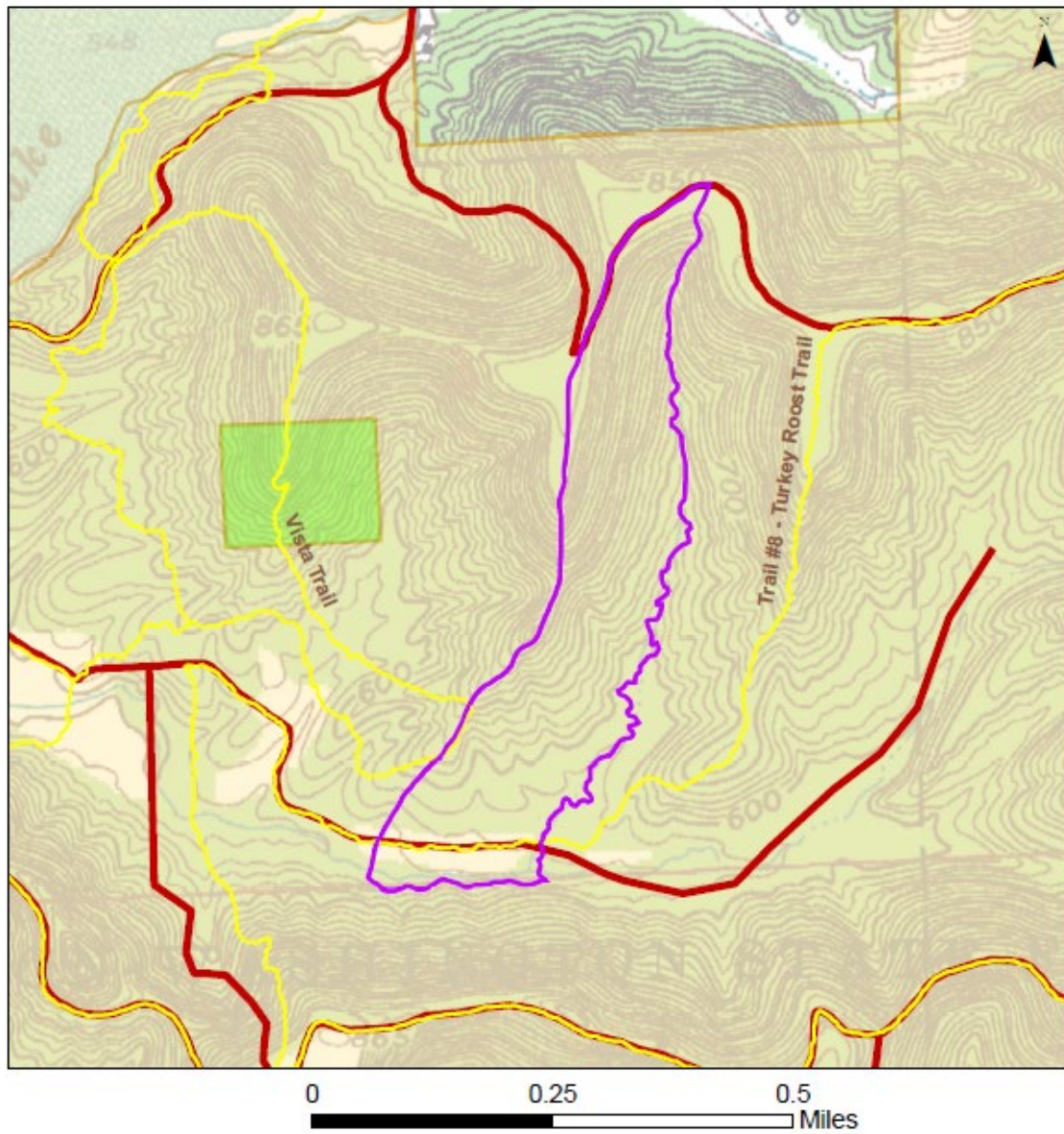
<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Mark and sell timber	2024-2027
Pre-harvest TSI and/or invasives as needed	2027-2028
Timber harvest	2028-2032
Post-harvest TSI and/or invasives	1-2 years after harvest
Prescribed fire regime	1-2+ years after post-harvest TSI
3-year regeneration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

Jackson-Washington State Forest  
Location Map  
Compartment 5 Tract 10



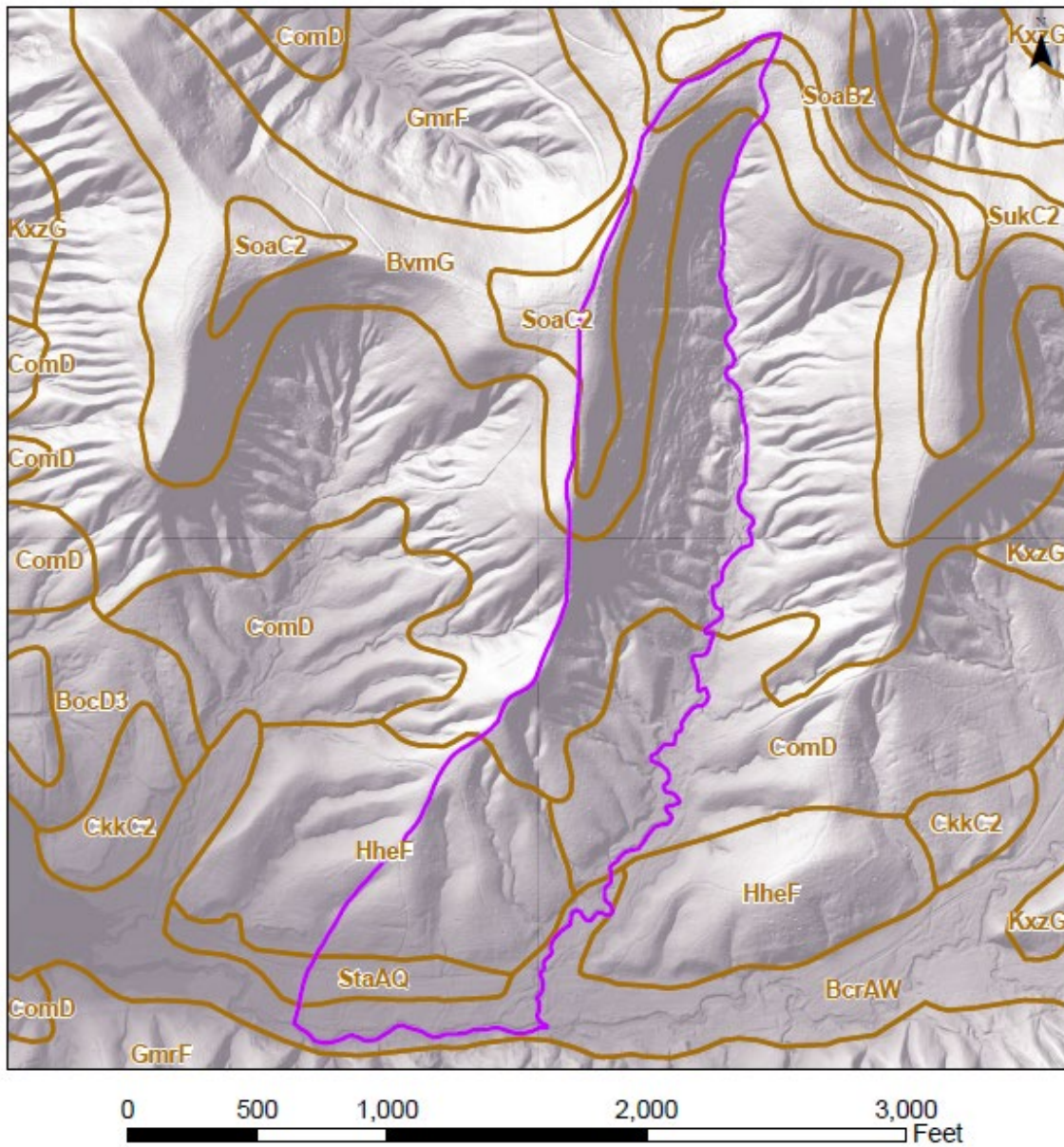


Jackson-Washington State Forest  
Compartment 5 Tract 10  
Tract Map



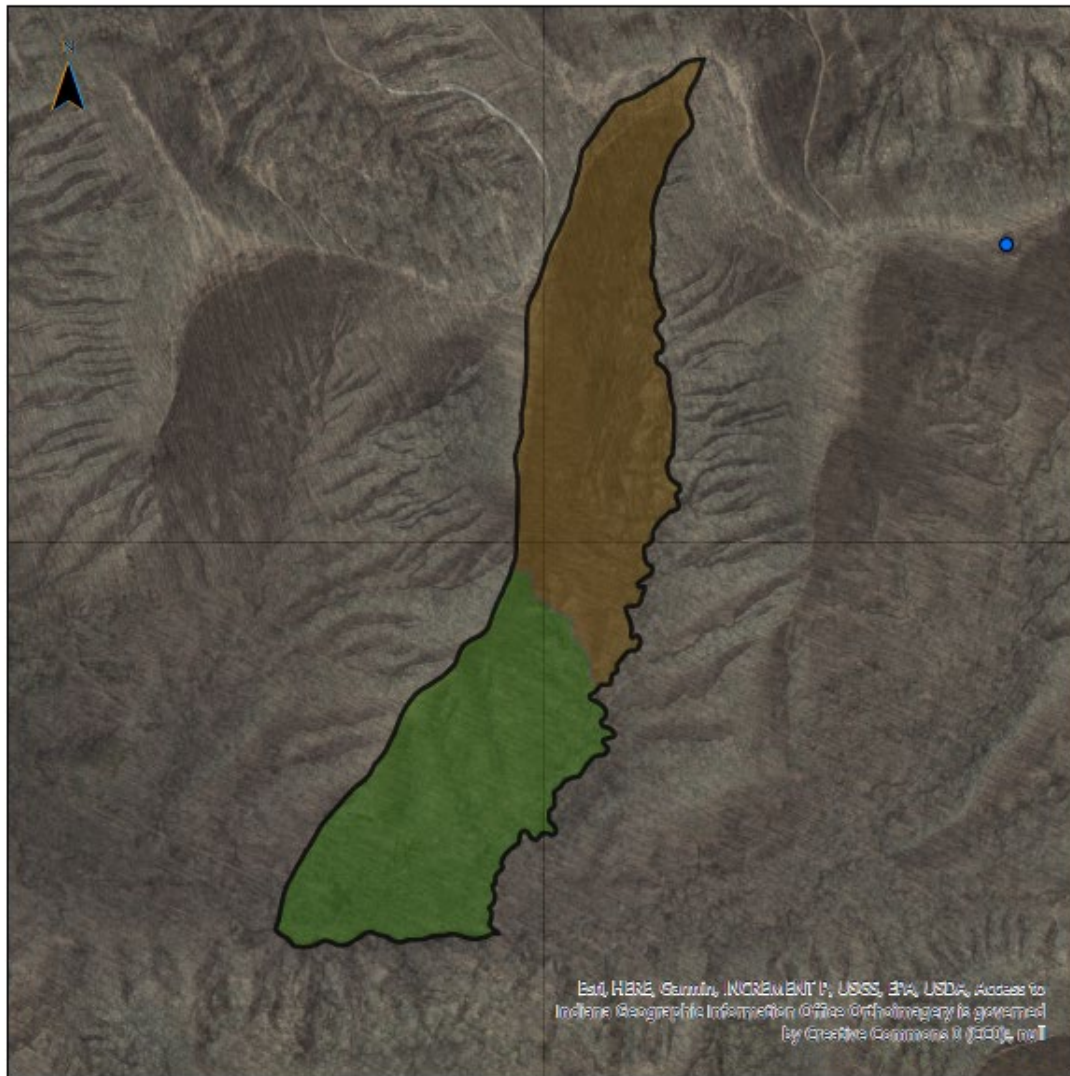
- Recreation Trail
- Fire Lane
- Tract boundary
- Nature Preserve
- State Forest

Jackson-Washington State Forest  
Compartment 5 Tract 10  
Soils Map








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



0 0.13 0.25  
Miles

## Legend

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