Indiana Department of Natural Resources
Division of Forestry

RESOURCE MANAGEMENT GUIDE

Jackson-Washington State Forest — Compartment: 04 — Tract: 04
Forester: Krista Jones — Date: September 17, 2024 — Acres: 36
Management Cycle End Year: 2044 — Management Cycle Length: 20 years

Location

This tract, also referred to as 6350404, 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 three-quarters of the total tract acreage. It occurs throughout the upper, mid, and lower slopes. Mixed hardwoods constitute the remaining acreage, primarily occupying the bottoms along the drainage and a section of ridgetop in the southeast corner of the tract.

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.
- 1940 (May 22): Land acquisition of 40 acres from George and Rosa Mantz.
- 1963 (September 5): Land acquisition of 301 acres from Nellie Peters.
- 1972: Timber sale sold. An estimated 127,120 board feet in 1,021 trees, only a portion of which came from tract 6350404.
- 1992 (April 14): Timber stand improvement. Indiana DNR Division of Fish & Wildlife (F&W) assisted with TSI of 5.4 acres to improve habitat for ruffed grouse.
- 1992 (June 21): Wildlife projects completed by F&W. Three openings ranging from half to one acre in size installed.

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 ridgetop in the northeast that acts as the tract's eastern boundary. Forest covered the remainder of the tract.

Landscape Context

Public forestland in the Brown County Hills Section subregion surrounds the tract. A 10-acre private inholding is situated within half a mile to the south. The compartment within which the tract is located is surrounded by watershed lakes and 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 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 primarily northwest. The degree of slope varies throughout the tract from moderate to steep. A wildlife pond is in the southeast corner of the tract. A mapped intermittent stream, which transitions into a perennial stream half a mile west of State Forest property, drains into the East Fork of the White River near Wayman Ditch.

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 slopes. 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.

Bonnell silt loam (BnwD2/BpD3) The Bonnell series consists of deep, well-drained soils on uplands. Most areas of this soil are used for hay and pasture. These soils are slowly permeable and severely eroded. The use of planting or logging equipment is limited during wet periods. They formed din clayey till that has a mantle of loess as much as 18 inches thick. Slopes range from 10 to 18 percent. Available water capacity is moderate. The organic matter content of the surface layer is low or very low. The upper layer of this soil has a pH of 4.5, making it moderately acidic. However, this soil is fairly well-suited to trees. Seedlings survive and grow well if competing vegetation is controlled and if livestock are excluded from the area. Northern red oak has a site index of 76 on this soil type. Trees to manage for are yellow poplar and various pine species, including Eastern white pine, shortleaf pine, Virginia pine, and loblolly pine.

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 to 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.

Gnawbone silt loam (GmrF) This is a well-drained soil that is found on slopes ranging from 20-60 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 and it has pH of 5.9. With the given pH, trees and woody vegetation which is found in the understory, has a better environment for growth. 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).

Access

The tract may be accessed via Skyline Drive. Take S County Road 50W out of Brownstown. Continue 1.8 miles to the State Forest property boundary where the county road becomes Skyline Drive. 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, which also serves as the Orchard Ridge Loop horse/bike trail. Follow for approximately one mile to reach the southeast corner of the tract.

Boundary

Both the northern boundary and the western boundary are delineated by the same drainage. This drainage begins in the northeast corner of the tract and continues southwest for nearly one mile before emptying into a mapped intermittent stream. A short section of Fire Lane 250 serves as the tract's eastern boundary. The southern boundary is the Orchard Ridge Loop. This features a broad ridgetop that slopes into the bottoms and terminates 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.

Current assessments indicate the abundance of these habitat features meet or exceed recommended maintenance levels.

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.

Invasive species noted in the tract include privet, Japanese honeysuckle, beefsteak plant, multiflora rose, Japanese stiltgrass, and ailanthus. The Japanese stiltgrass and beefsteak plant were found only along the Orchard Ridge Loop, which was treated shortly after the inventory was started. The other invasives are restricted to the ridgetop and upper slopes in the southeast quarter of the tract. None of the invasive species appears to be a problem at this time, although their treatment should occur during timber stand improvement (TSI).

Recreation
Horseback riders frequent the Orchard Ridge Loop. Mountain biking and hiking are other uses of the trail which serves as the tract's southern boundary. Hunting is another major recreational use of the tract. For public safety, recreation within the tract will be temporarily restricted during active management. The tract will re-open following completion of management activities.

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

Tract Subdivision Description and Prescription
Dry Oak-Hickory (28 acres)
This subdivision, cover type, constitutes the majority of the tract. The overstory is comprised mostly of white oak. Other overstory species include chestnut oak, pignut hickory, black oak, shagbark hickory, sugar maple, Northern red oak, yellow poplar, red maple, and American beech. Overall quality is average to excellent. The black oak in the overstory, however, is in poor health, exhibiting reduced vigor, and declining due to age. In addition, the chestnut oak on steep upper slopes exhibits poorer form and quality as well. A proportion of overstory trees are unsound with visible damage (i.e., butt rot). Damage from the sugar maple borer is also present on several overstory sugar maple. Single-tree selection may be used to remove damaged, unsound, or declining trees in this subdivision that are in direct competition with healthier, more vigorous trees.

The midstory is frequently dominated by sugar maple and tends to be dense on the lower slopes. Some suppressed white oak, chestnut oak, Northern red oak, and pignut hickory poles are present as well and showing signs of stress. A few have epicormic sprouts and several have already experienced mortality from hypoxylon canker. Trees without the canker may be released with TSI.

The understory is dense in areas and consists of sugar maple, American beech, ironwood, or a combination of all three. There is a good component of all oak and hickory species in the regeneration layer. However, no advance regeneration of oak or hickory is present. This may be

remedied by using prescribed fire to reduce competition from more shade tolerant species. Other seedlings include white ash, sugar maple, yellow poplar, red elm, sassafras, pawpaw, and black cherry. This subdivision would benefit the most from 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 the lower canopy strata into the overstory. Prescribed fire and single-tree and group selection, or patch-cuts should be implemented in any areas that are not part of a shelterwood to promote oak-hickory regeneration, reduce stocking, and release healthier trees with better form.

Mixed Hardwoods (8 acres)
This subdivision occurs primarily in the bottoms along the drainage and the ridgetop in the southeast corner of the tract. Stocking is variable but lower than that of the oak-hickory subdivision. This is partially due to white ash mortality in the overstory, which has created a more open canopy structure in some areas. The most common overstory species are yellow poplar and sugar maple. Others include white oak, red maple, American sycamore, Northern red oak, black oak, blackgum, shagbark hickory, and American beech. While overstory trees tend to fall within the smaller diameter size classes, there are exceptions of over-mature stems scattered throughout that are significantly declining due to age. This is particularly true of yellow poplar and black oak. To capture this mortality, these trees may be removed from the stand using single-tree and group selection, or patch-cuts to promote vigorous growth of residual trees. Or the black oak may be left for inclusion into the shelterwood harvest prescribed for the oak-hickory subdivision.

Overall quality in the mixed hardwoods ranges from poor to average. Although relatively straight, numerous trees have some kind of defect. The hickories, however, are sound with excellent form. In addition, 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. The small openings created in 1992 by the Division of Fish & Wildlife have regenerated to yellow poplar. These trees are classified as small sawtimber and have good form. However, their growth has slowed significantly due to intraspecific competition and suppression from moderate to heavy grapevine. To improve vigor, these trees should be thinned via single-tree selection and the grapevine should be controlled during post-harvest TSI.

The density of the understory and midstory is variable throughout the subdivision. Both are comprised almost entirely of sugar maple and/or American beech, with pawpaw and spicebush dominating in the bottoms near the drainage. Where the understory and midstory are dense, the abundance and diversity of herbaceous plant species and woody seedlings is severely limited. Prescribed fire and post-harvest TSI are needed to reduce each of these two canopy layers. Ironwood and pawpaw make up most of the regeneration within this subdivision. Some American beech, sassafras, ash, pignut hickory, sugar maple, red maple, white oak, sweetgum, black oak, and red elm are present as well. Although oak and hickory species are not well-represented in the regeneration layer, the understory, or the midstory, the slope aspect of this subdivision along with its proximity to surrounding mature oak-hickory forest is conducive for management activities that promote their establishment.

The current forest resource inventory was completed on 09/19/24 by Krista Jones. A summary of the estimated tract inventory results is located in the table below.

Tract Summary Data (trees >11" DBH):

Species	# Sawtimber Trees	Total Bd. Ft.
White oak	254	96,920
Chestnut oak	397	73,190
Yellow poplar	172	70,760
Sugar maple	184	36,390
Pignut hickory	190	34,590
Black oak	33	25,110
Red maple	66	16,560
Shagbark hickory	73	15,600
Northern red oak	11	11,770
American sycamore	47	10,090
American beech	62	6,980
Scarlet oak	26	6,630
Blackgum	47	3,750
White ash	12	3,390
Persimmon	34	1,530
Total:	**1,608**	**413,260**

Tract Prescription and Proposed Activities

This tract should receive a harvest within the next 5 years. This could be in conjunction with the adjacent tracts or as a standalone harvest. Single-tree selection, 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 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 acreage, its occurrence as smaller, incongruous stands, and its proximity to surrounding mature oak-hickory forest, the forester may choose to include it within a 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. 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. A low-intensity prescribed fire regime should be developed for the entire tract to further promote successful oak and hickory seedling establishment by reducing competition from shade tolerant species and promoting seed germination. This harvest will reduce the stocking level from approximately 82% to 50%, which is at the C-line. This dip can be attributed to a shelterwood harvest needed in the oak-hickory subdivision where the average basal area will be necessarily lower than some other silvicultural systems. The inventory estimated 11,479 board feet per acre, with a total potential harvest volume of 98,767 to 232,685 board feet from the

entire tract. The top three harvest species by volume include white oak, yellow poplar, and chestnut oak. This harvest will maintain the oak-hickory component in the tract and result in a healthier, more vigorous stand.

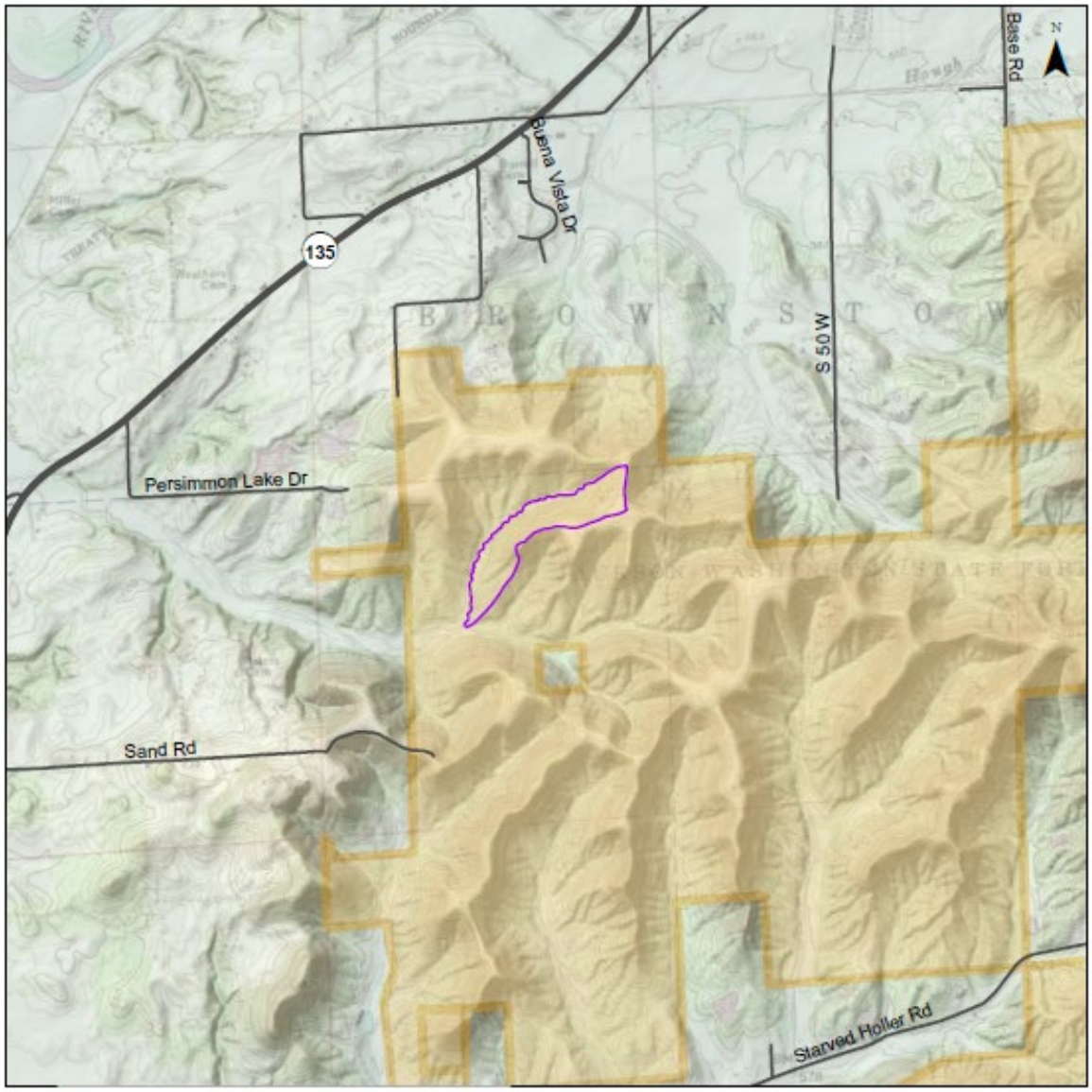
Any invasive plant species present in patch-cuts or shelterwoods should be treated prior to the harvest. During and after completion of the timber harvest, best management practices (BMPs) will be implemented to minimize soil erosion.

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 create additional snags for wildlife habitat.

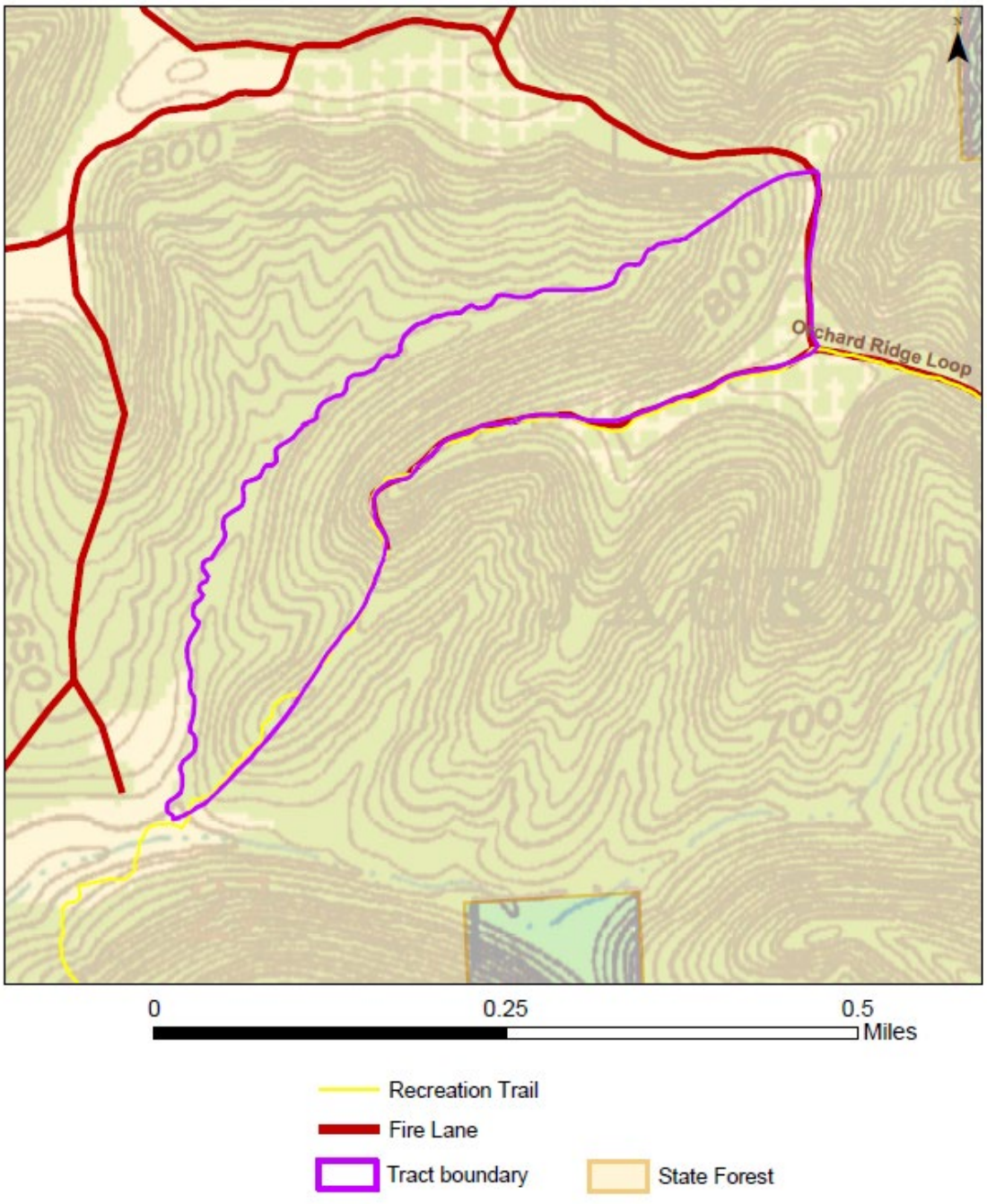
Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mark and sell timber	2024-2029
Pre-harvest TSI and/or invasive species management	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 review	Three years after harvest
Next forest inventory	2044

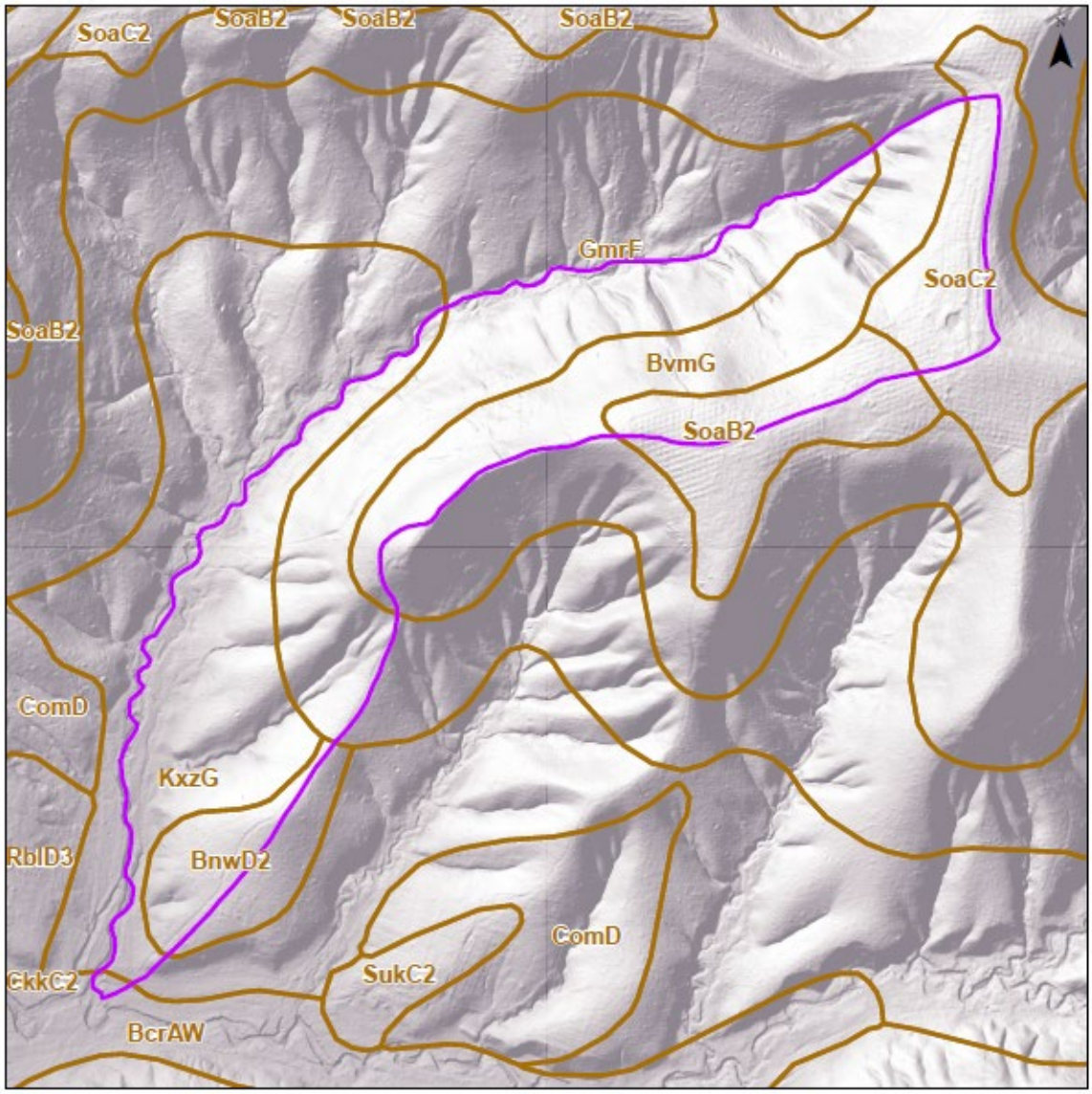
Jackson-Washington State Forest
Location Map
Compartment 4 Tract 4



Jackson-Washington State Forest
Compartment 4 Tract 4
Tract Map



Jackson-Washington State Forest
Compartment 4 Tract 4
Soils Map



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

0 0.13 0.25 Miles

Legend

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

Indiana Department of Natural Resources
Division of Forestry
RESOURCE MANAGEMENT GUIDE

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 speices 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):

Species	# Sawtimber Trees	Total Bd. Ft.
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
Total:	**3,123**	**653,910**

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.

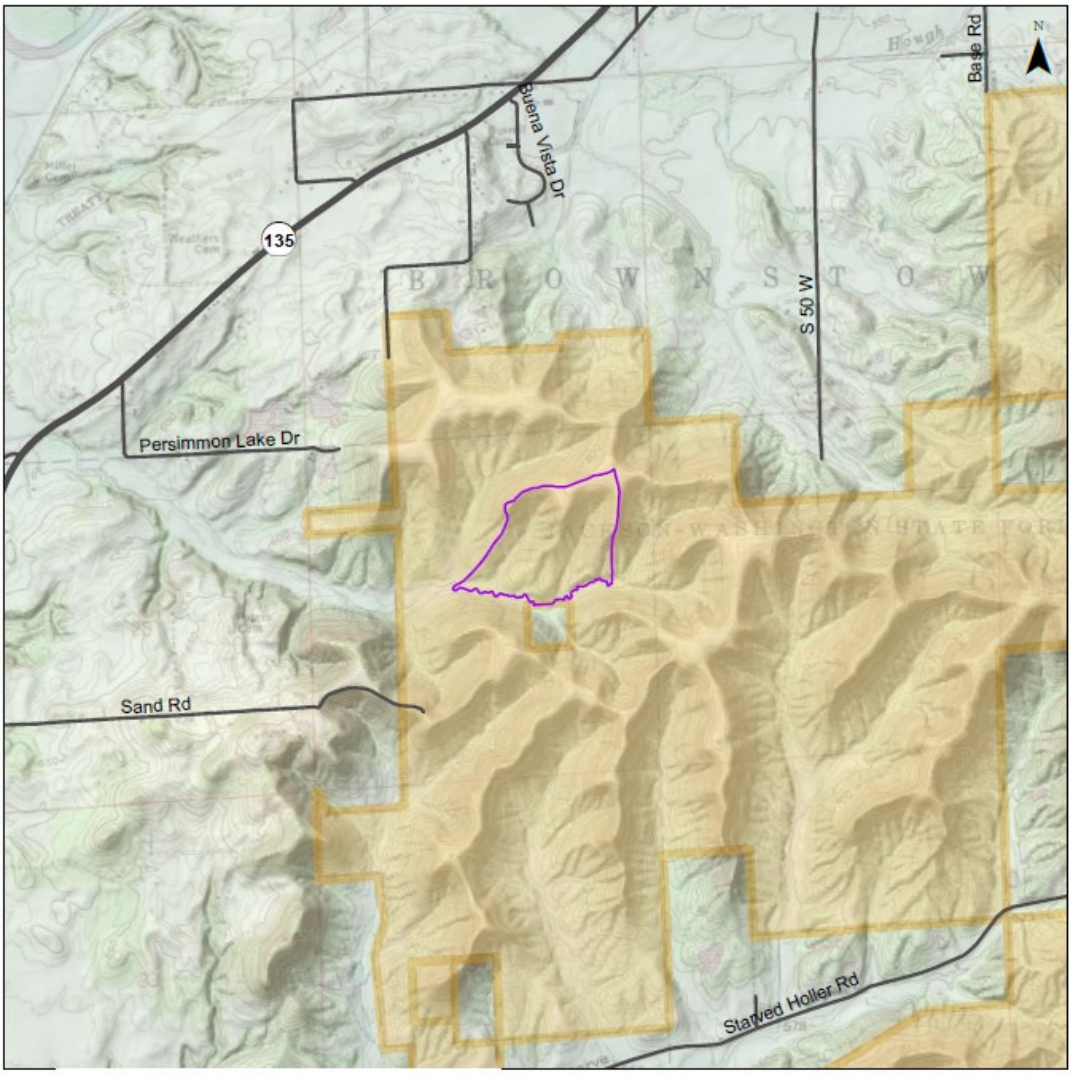
During and after completion of the timber harvest, best management practices (BMPs) will be implemented to minimize soil erosion. The Indiana Logging and Forestry Best Management Practices 2022 BMP Field Guide will be followed.

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.

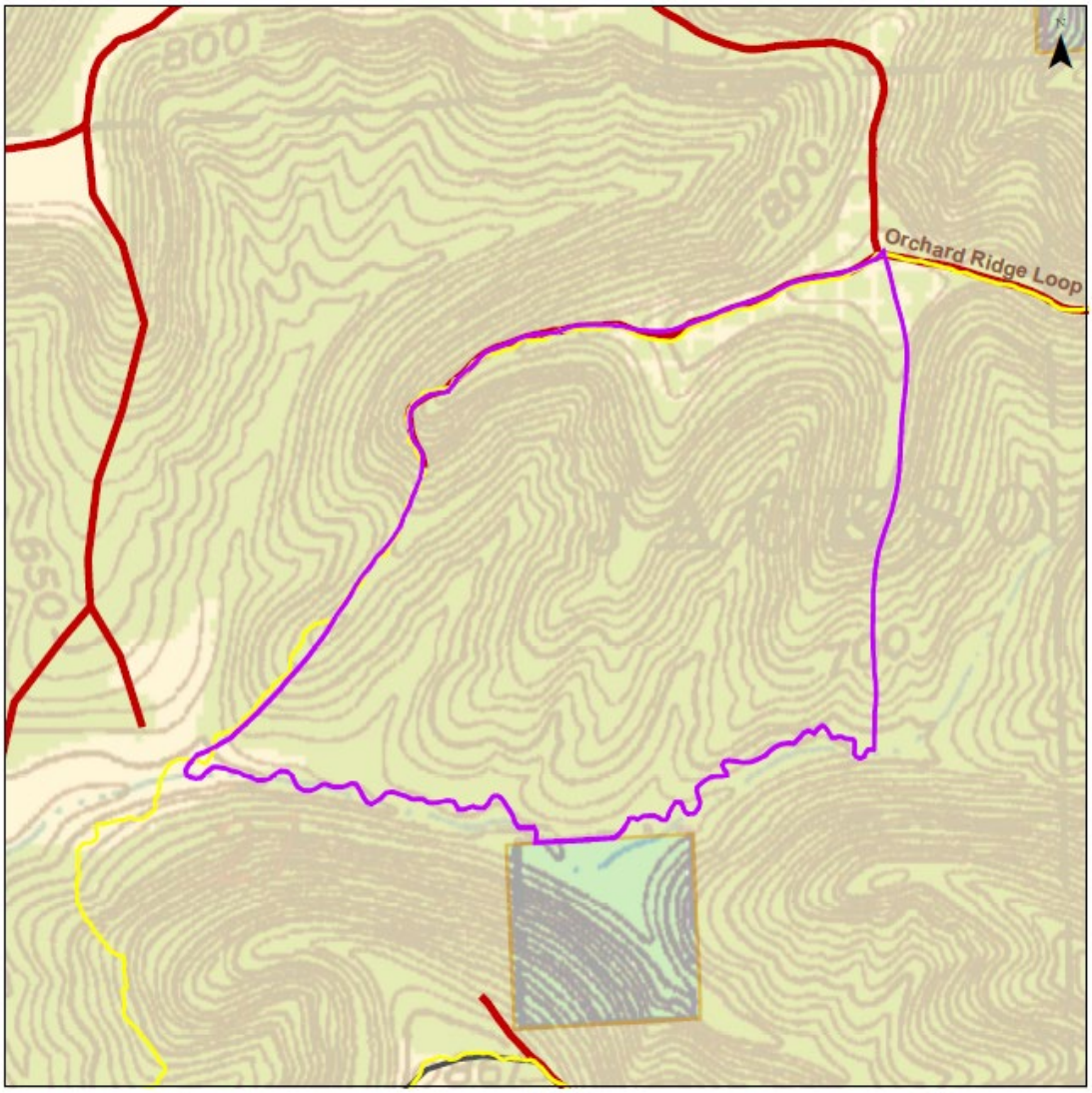
Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
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



0 0.25 0.5 Miles

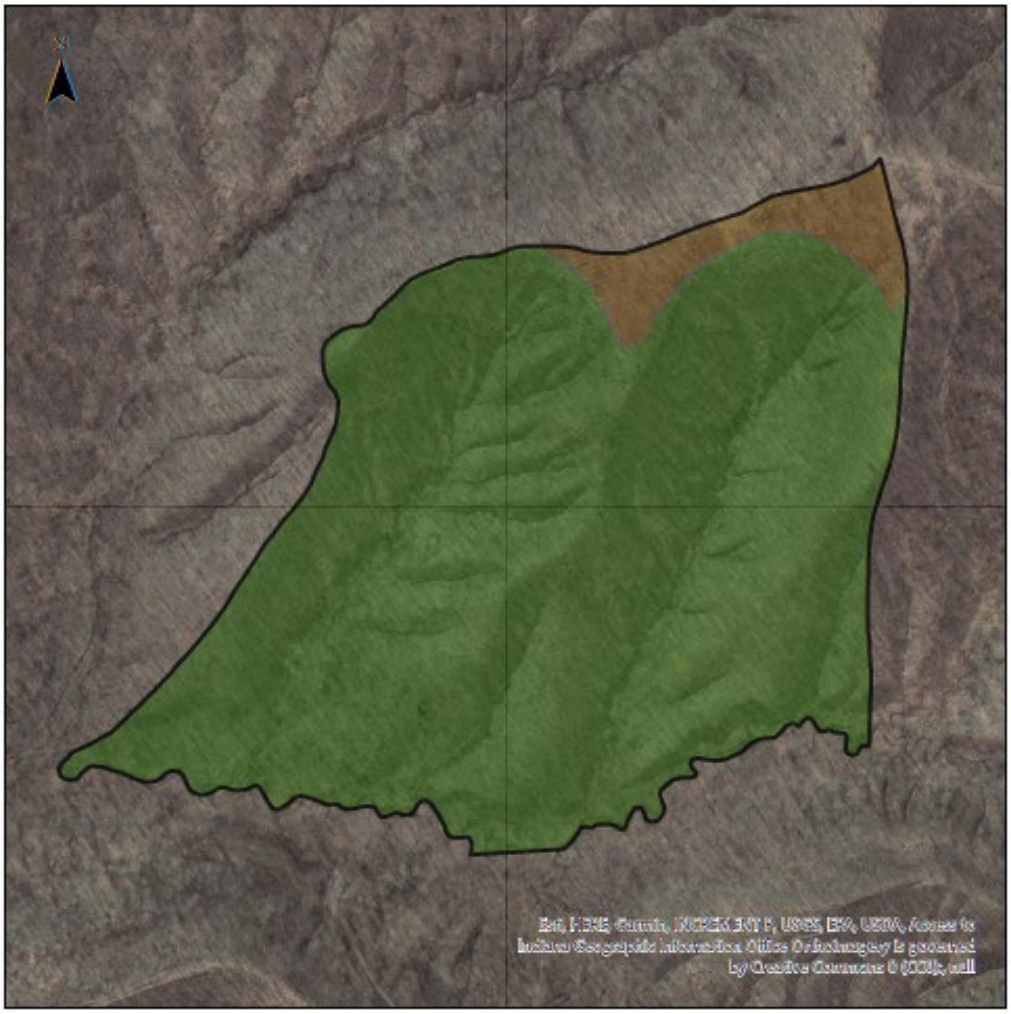
Recreation Trail

Fire Lane

Tract boundary

State Forest

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



Legend

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