

**Resource Management Guides  
Owen-Putnam State Forest  
30-day Public Comment Period (June 20 – July 19, 2023)**

The Indiana State Forest system consists of approximately 160,251 acres of primarily forested land. These lands are managed under the principle of multiple use-multiple benefit to provide forest conservation, goods, and services for current and future generations. The management is guided by scientific principles, guiding legislation and comprehensive forest certification standards which are independently audited to help insure long term forest health, resiliency, and sustainability.

For management and planning purposes each State Forest is divided into a system of compartments and tracts. In general terms compartments are 300-1,000 acres in size and their subunits (tracts) are 10 - 300 acres in size. Resource Management Guides (RMGs) are then developed for each compartment or tract to guide their management through a 15-25 year management period. There are approximately 1,600 tracts in the State Forest system. During annual planning efforts 50-100 tracts are reviewed and RMGs developed based on current conditions, inventories and assessments.

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

Compartment 5 Tract 6 (Prescribed Fire RMG)

Compartment 5 Tract 8

Compartment 7 Tract 7

Compartment 9 Tract 9

**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.

Fire has been present on the landscape since the arrival of the first peoples in North America. Native Americans commonly used fire to influence their landscape with agriculture, hunting, and making woodlands easier to travel. In the early 1900s, the country went through a period where fire was viewed as the enemy of nature and was extinguished wherever it was found. It was not realized until the end of that century, that the natural systems in Indiana evolved with fire and require it to thrive, especially many of our oak-hickory dominated forests.

Prescribed fire is used widely as a management tool to meet various management objectives. These objectives may be fuel reduction, returning fire to an ecosystem, improving wildlife habitat, or to maintain or enhance ecological communities such as oak-hickory forests. When administered by trained professionals prescribed fire can be an effective and efficient management tool. Research continues to provide valuable information for managers and indicates the benefits of prescribed fire outweigh negative effects.

Use of prescribed fire within the central hardwood region can be used to reduce the density of shade tolerant species such as beech and maple, maintain or enhance wildlife habitat, reduce leaf litter to provide conditions more favorable for the establishment (i.e., germination) of species like oak and hickory, release nutrients being held in dead plant matter, and lower fuel loads to help minimize the risk of uncontrolled large-scale wildfires.

Compartment 5 tract 6, also known as 6380506, is located south of Surber Road in Owen County, Indiana. Tract 6 encompasses approximately 111 acres of upland forestland, consisting of mostly oak-hickory and mixed hardwoods cover types. Since state acquisition in 1963, there has been two timber harvests. In 2000, a management harvest removed an estimated 152,101 bd. ft. The top species removed were yellow poplar, white oak, and red oak. In 2018, a management harvest removed an estimated 285,922 bd. ft. The top species removed were yellow poplar, white pine, and white oak. The 2017 forest inventory data indicated that oak was 29% of the overstory while hickory was 12%, for a total of 41% of the stand. However, less than 1% of the regeneration was oak and hickory.

Owen-Putnam State Forest continuous forest inventory (CFI) data estimates there are 1.9 million trees present in the understory with a diameter less than 5" DBH. American beech and sugar maple represent 51% of those understory trees, while oak and hickory species combined represent only 2%.

A low intensity prescribe fire regime is recommended for this tract to enhance conditions suitable for oak and hickory regeneration and advancement. The prescribe fire would be executed during the dormancy period on a 3-5 year cycle. Fire does not occur uniformly throughout a tract for various reasons. Often, roads, trails, streams, or other natural features serve as fire breaks for safety and efficiency of the operation. While more mesic areas of the tract may not carry a fire or be excluded, the focus will be areas of dominant oak and hickory overstory and old regeneration openings. Further, the fire will assist with invasive species control while increasing herbaceous plants and diversity of the understory. Fire is the most cost-effective management tool in reducing shade tolerant understory on a landscape approach.

There are no recreational trails within this tract. However, there is a fire lane that runs through the center of the tract which serves as access for hunters with disabilities who have obtained a permit through Fish & Wildlife and Owen-Putnam State Forest office. Hunting is likely the most common recreational activity within this tract. A prescribe fire will create beneficial habitat for a diverse assemblage of game

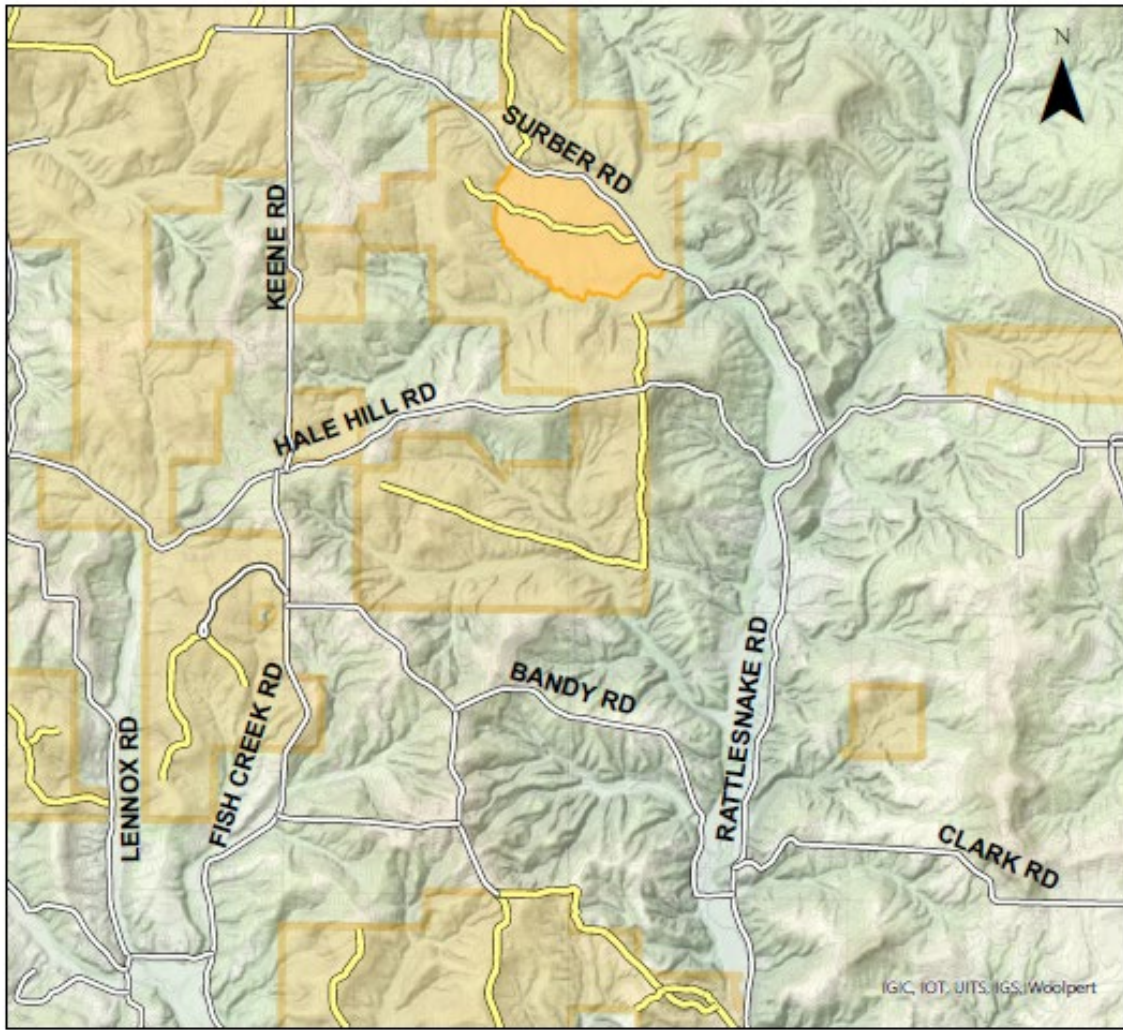
and non-game wildlife species. It is unlikely a prescribed fire in this tract would restrict hunting access due to the time of year the fire is administered (i.e., no hunting seasons).

Smoke management is part of any prescribed fire planning process. Consideration for the residential homes and county roads in the area will be a part of that planning process.

Cultural resources may be present, but their location is protected. Adverse impacts to significant cultural resources will be avoided during the prescribed fire.

A Natural Heritage Database review was completed for this area. If Rare, Threatened or Endangered species (RTE's) were identified or encountered for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

# Owen-Putnam State Forest Compartment 5 Tract 6 Prescribed Fire Location Map

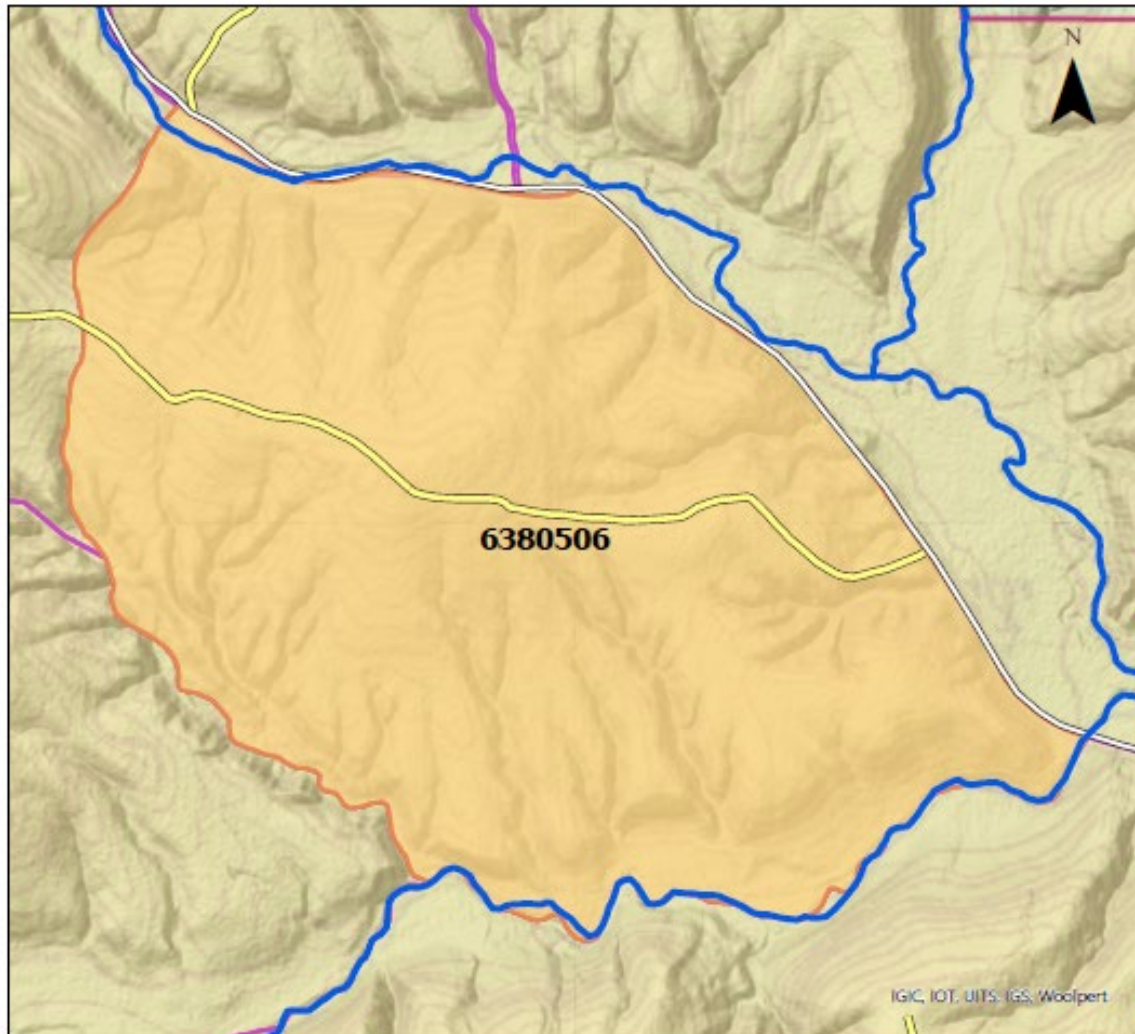


0 0.75 1.5 3 Miles

## Legend

- |                        |            |             |
|------------------------|------------|-------------|
| Prescribed Fire Tracts | Fire Lanes | SF Boundary |
| 6380506                | RoadsINDOT |             |

# Owen-Putnam State Forest Compartment 5 Tract 6 Prescribed Fire Map



0 0.13 0.25 0.5 Miles

## Legend

Prescribed Fire  
Tracts

6380506

Fire Lanes

RoadsINDOT

Tract Boundary

SF Boundary

Mapped  
Streams

Owen-Putnam State Forest  
Forester: Bob Lindemuth  
Management Cycle End Year: 2041

Compartment: 05      Tract: 08  
Date: 10/18/2021      Acres: 76  
Management Cycle Length: 20 years

### **Location:**

The tract, also known as 6380508, is located in Owen County, Indiana. More specifically, the tract is in Section 15, Township 11 North, Range 4 West, Morgan Township. This tract is located on the east side of Keene Road, approximately 8 miles Northwest of Spencer.

### **General Description:**

This tract is 76 acres and is dominated by closed canopy mixed hardwoods, with small pockets of the oak-hickory cover type. There is a diverse mix of 14 species of sawtimber-sized trees, although half of the stand volume is made up of just 4: yellow poplar, sugar maple, pignut hickory, and American beech. The midstory is a mix of 16 species of pole timber-sized trees, mostly sugar maple, sassafras, yellow poplar, and largetooth aspen. The understory is equally diverse with 18 species noted in the inventory. The overall health of the tract is good, although it could benefit from an improvement harvest by harvesting trees in poor health, suppressed, and poorly formed trees, thereby releasing future crop trees.

### **History**

- 84 acres were purchased on January 9, 2014 from Don E. Marsh and Marilyn L. Marsh.
- 76 of the 84 acres that was purchased in 2014 became compartment 5 tract 8.
- In August 2021, the tract was inventoried, and resource management guide written.

The southernmost and the northeastern portions of the tract show evidence of recent timber harvesting, while the remainder of the tract shows some signs of light harvest activity.

### **Landscape Context**

This tract lies in a rural, primarily forested area with scattered agriculture and residences. Directly to the east of this tract lies the remainder of compartment 5, extending for approximately 0.9 miles. To the north, south, and west lie private, mostly forested property. There are no anticipated future land use changes to the surrounding area.

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

The topography of this tract is gently rolling side slopes on various aspects, with about 70% of those aspects being southern. Two ridgetops occurring directly to the north and south of the tract.

The geology of the tract consists of 12 different soil series with the majority of the tract composed of the Solsberry silt loam soil series. The parent material of the Solsberry soil series is loess over loamy till. Other soil parent materials within this tract include fine-silty loess over loamy pedisidiment over paleosol till, loess over loamy residuum, loamy colluvium and/or clayey residuum, thin fine-silty noncalcareous loess over loamy residuum weathered from sandstone and shale, loamy alluvium, and loess over loamy residuum over shale.

There is one mapped intermittent stream in this tract, which originates to the west of the tract and flows from the west to the east into a private lake that was dammed up. Several scattered, ephemeral drainages also occur in this tract. During any management activities tops will be removed from the intermittent stream and best management practices (BMPs) for riparian areas will be followed.

## **Soils**

### AloB2- Ava silt loam, 2 to 6 percent slopes, eroded

This gently sloping, deep, moderately well drained is on knolls and narrow ridgetops and on sideslopes along drainage ways in the uplands. It is well suited to trees and has a site index of 75 for white oak and 90 for yellow poplar.

### CkkB2- Cincinnati silt loam, 2 to 6 percent slopes, eroded

This gently sloping, deep, well-drained soil is on side slopes in the uplands. It is well suited for trees. This soil has a site index of 80 for northern red oak.

### HepG- Hickory-Adyeville complex, 35 to 60 percent slopes

This very steep, deep, well-drained soil is on dissected till plains over interbedded shale, siltstone, and sandstone. It is fairly well suited to trees. Erosion hazards and equipment limitations are main management concerns due to slopes. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality This soil has a site index of 85 for white oak and 95 for yellow poplar.

### HeuE- Hickory-Wellston silt loams, 18 to 25 percent slopes

This moderately steep, deep, well-drained soil is on dissected till plains over interbedded shale, siltstone, and sandstone. It is well suited to trees. Erosion hazards and equipment limitations are main management concerns due to slopes. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality This soil has a site index of 85 for white oak and 95 for yellow poplar.

### PryB- Potawatomi silt loam, 1 to 3 percent slopes

This gently sloping, deep, moderately well drained soil is found on ridgetops in the uplands. It is well suited to trees. Equipment limitations and seedling mortality are concerns that should be considered when planning management activities. This soil has a site index of 80 for white oak and 93 for yellow poplar.

### SneC2- Solsberry silt loam, 6 to 12 percent slopes, eroded

This moderately sloping, deep, moderately well drained soil is on the side slopes of the uplands. It is well suited to trees. Windthrow hazards are a concern that should be considered during management planning. This soil has a site index of 80 for northern red oak.

### SneC3- Solsberry silt loam, 6 to 12 percent slopes, severely eroded

This moderately sloping, deep, moderately well drained soil is on the side slopes of the uplands. It is well suited to trees. Windthrow hazards are a concern that should be considered during management planning. This soil has a site index of 80 for northern red oak.

SneD2- Solsberry silt loam, 12 to 18 percent slopes, eroded

This strongly sloping, deep, moderately well drained soil is on the side slopes of the uplands. It is well suited to trees. Erosion hazards, equipment limitations, and windthrow hazards are management concerns that should be considered during planning and implementation of Best Management Practices for Water Quality. This soil has a site index of 80 for northern red oak.

SneD3- Solsberry silt loam, 12 to 18 percent slopes, severely eroded

This strongly sloping, deep, moderately well drained soil is on the side slopes of the uplands. . It is well suited to trees. Erosion hazards, equipment limitations, and windthrow hazards are management concerns that should be considered during planning and implementation of Best Management Practices for Water Quality. This soil has a site index of 80 for northern red oak.

TtaG- Tulip-Tipsaw complex, 25 to 60 percent slopes

This moderately and very steep, moderately deep to deep, well drained complex is found on sideslopes in the uplands. It is suited to trees. Erosion hazards, equipment limitations, and seedling mortality are management concerns that should be considered when planning sale layout and implementing Best Management Practices for Water Quality. Tulip has a site index of 80 for northern red oak and 95 for yellow poplar and Tipsaw has a site index of 70 for northern red and black oak.

WhfD2- Wellston silt loam, 12 to 18 percent slopes, eroded

This strongly sloping, well-drained soil is on narrow ridgetops and on side slopes of the uplands. It is well suited to trees. This soil has a site index of 71 for northern red oak and 90 for yellow poplar.

WpuAV- Wirt silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration

This nearly level, deep, well-drained soil is found on natural levees and floodplain steps on flood plains. It is well suited to trees. Equipment limitation and seedling mortality are management concerns that should be considered when planning management activities. This soil has a site index of 105 for yellow poplar.

ZamC3- Zanesville silt loam, soft bedrock substratum, 6 to 12 percent slopes, severely eroded

This moderately sloping, deep, moderately well drained or well-drained soil is on side slopes adjacent to drainage ways in the uplands. It is well suited to trees and has a site index of 69 for white oak and 90 for yellow poplar.

**Access**

To access the tract from Spencer, Indiana travel west on State Road 46 to Fish Creek Road. Travel north on Fish Creek Road to Hale Hill Road. Turn right onto Hale Hill Road and turn immediately left onto Keene Road. The tract begins after approximately 0.3 miles on the eastern side of Keene Road. Access within the tract is good with existing skid trails already established.

**Boundary**

Private property borders this tract along the northern, southern, and western boundaries. The western boundary follows Keene Road, agricultural land, and hardwood forest. The northern boundary line follows agricultural land and hardwood forest. Part of the eastern boundary line



follows an ephemeral drainage to the south and separates C5T8 from C5T4, while the other section of eastern boundary is a state forest property line. The state forest boundary line was identified using field evidence such as corner stones or rebar and GPS handheld units when no field evidence was identified. Property lines are typically painted with orange paint or flagged when there is a lack of evidence.

**Ecological Considerations**

A diverse assortment of wildlife resources are found in this tract. This provides habitat for a variety of wildlife species. Habitat includes:

- Scattered oak-hickory canopy
- Contiguous mixed hardwood canopy
- An intermittent and several ephemeral streams

Hard mast trees such as oaks, hickories, and American beech provide a food source to both game and non-game species. Forest wildlife species depend on live trees for shelter, escape cover, roosting, and as a direct (e.g. mast, foliage) or indirect (e.g. foraging substrate) food resource. The retention of live trees within various diameter classes is of particular concern to habitat specialists.

The Division of Forestry has developed compartment level guidelines for important wildlife structural habitat features known as snags. Snags are standing dead or dying 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. Downed woody debris provides habitat for many species and contributes to healthy soils.

Snags (All Species)	Maintenance Level	Inventory	Available Above Maintenance
Snag 5"+ DBH	304	200	-104
Snag 9"+ DBH	228	200	-28
Snag 19"+ DBH	38	0	-38

Inventory data for compartment 5 tract 8 shows that snags 5"+, 9"+, and 19"+ are below target maintenance levels.

It is important to note that these are compartment guidelines and that even though the estimated tract data does not quite meet all target levels, it is likely that suitable levels are present for these habitat features in the surrounding landscape. The prescribed management will maintain or enhance the relative abundance of these features.

A Natural Heritage Database Review is part of the management planning process. If Rare, Threatened, or Endangered communities were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

**Communities**

This plant community is typical of southern and eastern aspect slopes of Owen County. Understory diversity consists of many shrubs and small non-commercial trees such as

bluebeech/American hornbeam, flowering dogwood, greenbrier, hophornbeam, ironwood, pawpaw, spicebush, and blackhaw.

Exotic/invasive species multiflora rose, autumn olive, Japanese spirea, and Japanese stiltgrass are present in and around this tract in patches of light to moderate densities. These species commonly occur throughout the county. Control measures can be taken during post-harvest timber stand improvement (TSI), to treat problem occurrences before their populations expand.

**Recreation**

Recreational use of this tract is low. There are no recreation trails or parking lots near or within this tract. If there is any recreational use of this tract, it would likely be hunting from adjacent private landowners or access from Keene Road. During any management activity, specifically a timber harvest, access to this tract will be restricted due to safety concerns. Following the management activity, the tract will be reopened to public use.

**Cultural**

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

**Tract Subdivision Description and Silvicultural Prescription  
Forest Condition**

A current forest resource inventory was completed on 08/05/2021 by Forester Bob Lindemuth. A summary of the estimated tract inventory results are located in the table below.

**Tract Summary Data (trees >14”DBH):**

Species	# Sawtimber Trees	Total Bd. Ft
Yellow Poplar	231	57,532
Sugar Maple	380	52,516
Pignut Hickory	183	40,280
American Beech	140	38,684
Northern Red Oak	103	28,120
White Oak	113	21,508
Sassafras	162	20,976
Red Maple	62	18,316
Largetooth Aspen	63	17,176
Shagbark Hickory	89	13,756
American Sycamore	7	5,092
Black Cherry	37	3,800
White Ash	42	3,040
Blackgum	12	2,736
<b>TRACT TOTALS</b>	<b>1,624</b>	<b>323,532</b>

### **Mixed Hardwoods (76 acres)**

This cover type is characterized by the diverse species composition. This cover type covers the entire tract and is 72% stocked with 186 trees per acre and an average basal area of 87.6 ft<sup>2</sup> per acre. The stand volume is currently estimated at 4,257 bd. ft. per acre. The dominant species is yellow poplar (18%), followed by sugar maple (16%), pignut hickory (12%), American beech (12%), northern red oak (9%), white oak (7%), red maple (6%), sassafras (6%), and largetooth aspen (5%). The midstory (pole sized timber) consists of primarily sugar maple (16%), sassafras (15%), tulip poplar (15%), largetooth aspen (11%), black cherry (11%), American beech (8%), black locust (6%), and red maple (5%).

This stand has areas of higher quality sugar maple and American beech. Within the stand there are areas of over mature yellow poplar, sugar maple with rot or hollowness, likely originating from sugar maple borer damage, and areas of problematic vines.

The portion of this stand south of the mapped intermittent stream (24 acres) was relatively low in volume, consisting of mainly sawtimber to pole-size largetooth aspen, and pole-sized black cherry and black locust. It appears to have been heavily harvested before state acquisition. Management recommendations for this area would be TSI only.

The recommended management activity for the remainder of the tract is to conduct an improvement harvest, utilizing single tree and group selection. This activity will target poorly formed individuals, trees declining in health, and trees with a small live crown. This will give the healthier trees with good form and larger live crowns more available resources above and below ground. Where conditions warrant, group selection may be utilized to regenerate shade intolerant species and create young forest habitat. When possible, selection should favor releasing desired future crop trees.

The top species for removal in this stand are sugar maple, yellow poplar, largetooth aspen, and American beech. The harvest volume for this stand is estimated at 1,000 to 1,750 bd. ft. per acre. This harvest will also allow pole-sized oak and hickory to be released, further increasing their percentage of canopy cover. Following the timber harvest, TSI should be conducted to complete the silvicultural prescription. TSI will concentrate on completion of regeneration openings, crop tree release, and reduction of problem vines.

### **Desired Future Condition**

The objective for this cover type is to provide for multiple economic and ecological services, specifically a quality hardwood timber stand dominated by mid- and late-seral species, while providing diverse habitat structure, hard mast, and mid to late-seral habitat for wildlife.

### **Summary Tract Silvicultural Prescription and Proposed Activities**

The proposed management activity is to conduct an improvement harvest to promote the overall health, vigor, resiliency, and quality of the stand. This improvement harvest will utilize single tree and group selection or patch-cut silviculture. The purpose of single tree selection is to remove trees with poor form and health, drought stressed or wind damaged trees to promote a healthier growing forest. It will also target declining ash from Emerald ash borer, mature and over mature trees where present, and other intermediate trees needed to release residual crop

trees. Young, vigorous ash will be retained for possible resistant features. Group selection will be used to target groups of trees that fit the above description growing together.

Within two years of the timber harvest, a TSI operation should follow to release crop trees that were not adequately released during the harvest and complete regeneration openings. Additionally, TSI should be utilized to control targeted invasive species in the stand and deaden a small percentage of low value trees to create snags for wildlife.

A prescribed fire regime in this stand is also recommended in the more oak-hickory dominated portions of the tract. In these areas, the overstory is dominated by oaks and hickories, while the regeneration present is mostly sugar maple and beech. A prescribed fire of low to moderate intensity would reduce fuel loads, prepare a more receptive seedbed to those trees that prefer mineral soil, discourage and reduce the presence of shade tolerant species like beech and maple, and promote oak and hickory regeneration. Thick-barked species like oak are likely to survive a prescribed burn, while thin-barked species such as beech and maple are not. Dormant season prescribed burning have shown to be a cost-effective tool to regenerate oak-hickory forest types throughout the Central and Eastern United States.

During and after completion of the proposed management activity best management practices (BMP's) will be implemented to minimize soil erosion. This tract should receive another inventory and management guide 20 years following the completion of the timber harvest.

#### **Effect of Prescription on Tract Properties:**

Landscape: Landscape forest patterns will remain similar to the current situation due to this tract being kept in a forested condition.

Soils: The management activities prescribed in this plan should have minimal impact on soils in this tract. Some soil disturbance is likely during harvesting, but this should be confined to landings and main skid trails. These areas will be properly closed out according to Indiana's BMPs to minimize the impact of management activities on soils.

Hydrology: Hydrology should not be permanently affected by management on this tract. Water quality and yield should not be altered if BMPs are followed during harvest. BMP use will be contractually required of management operators and monitored by property foresters.

Wildlife: Snags and coarse woody debris should remain at viable levels in the stratum and should continue to provide habitat. Managing to recruit newly established or released oaks and hickories will help to ensure that this important food source is available into the foreseeable future. Regeneration openings, such as prescribed have been shown to be of less of an issue from nest predators and generalist species as compared to hard edges such as public roadways, utility corridors and crop field edges. Placement of regeneration openings away from hard edges can minimize these potential impacts. The prescribed activity will promote wildlife diversity and enhance habitat structural components.

Additionally, management activities involving a timber harvest should not affect this habitat long-term from the perspective of any wildlife utilizing it due to the maintenance of a forested habitat

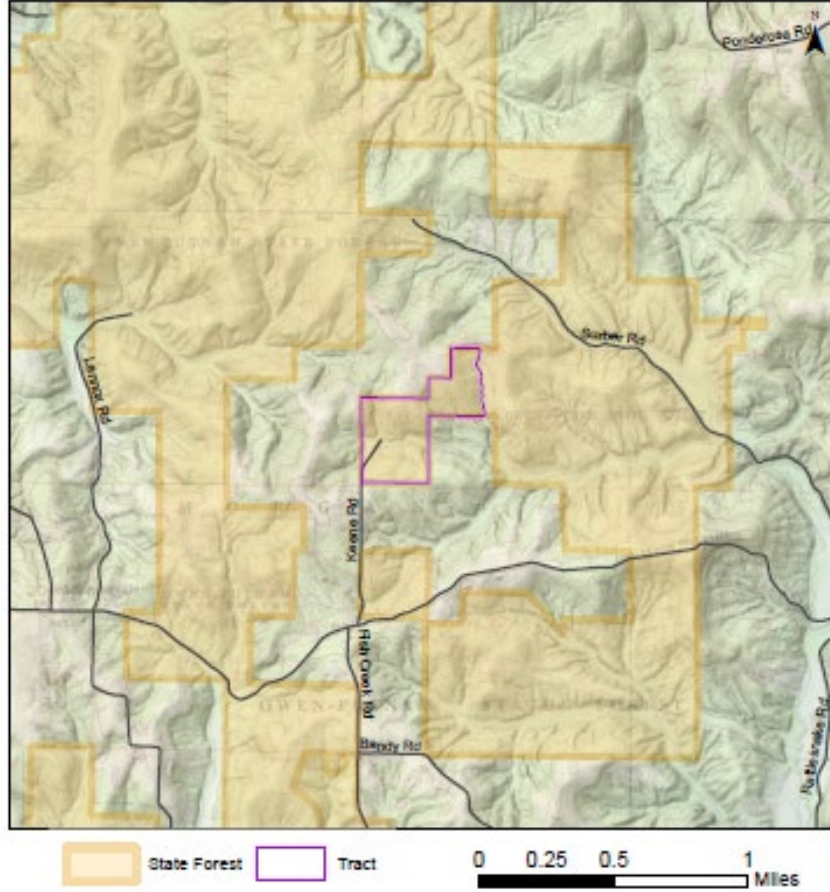
on the tract. Creation of regeneration openings will create early successional habitat that will be beneficial to certain groups of wildlife dependent upon this habitat. Likely, early successional habitat created with such management will also benefit a wider segment of wildlife species that preferentially utilize such habitat for feeding and cover more so than later successional stage habitat.

Recreation: Hunting by locals through private property access or Keene Road would likely be the only recreation within this tract due to limited public access. Hunting would benefit from forest management by improving the health of the residual trees thus promoting an increase in hard mast, understory plant diversity, and young forest habitat. For user safety, hunting access to this tract may be temporarily restricted during management activities.

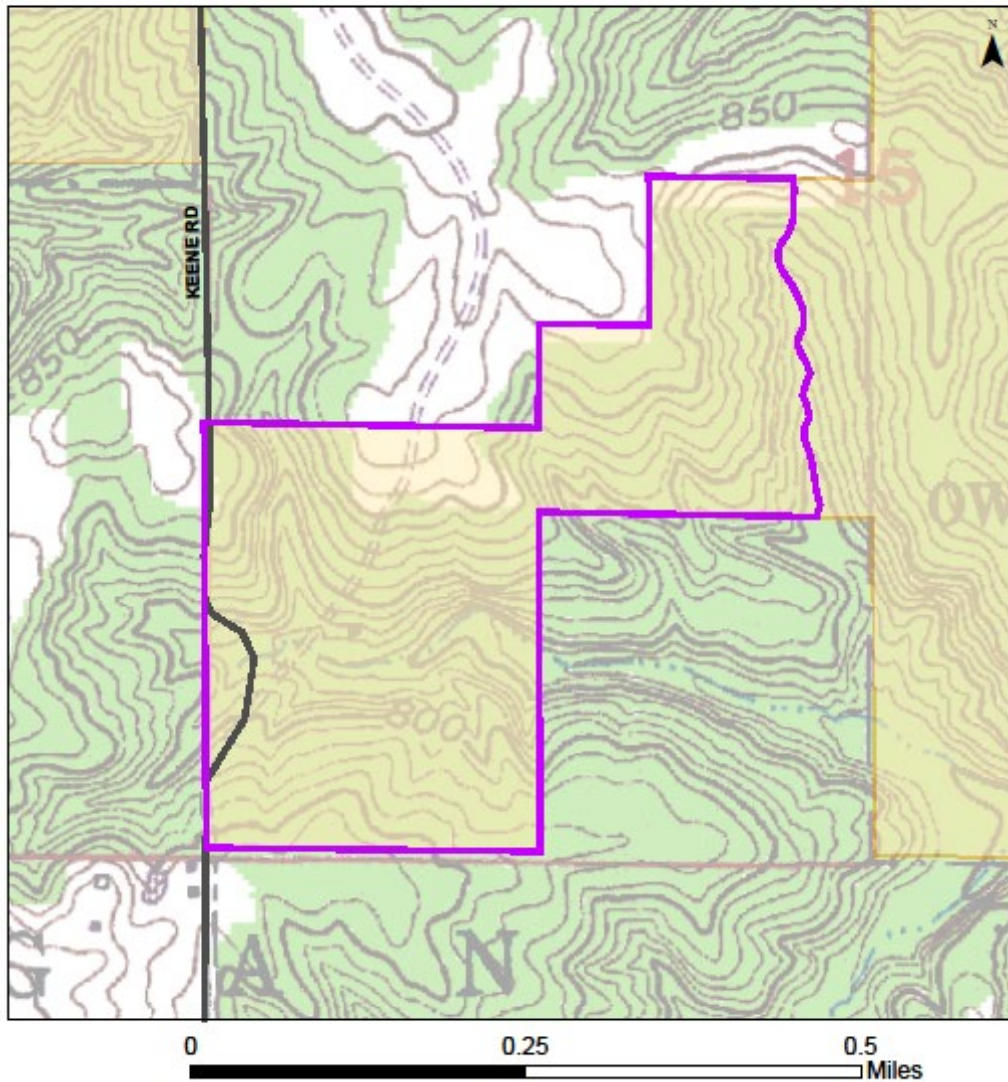
**Proposed Activities Listing**



<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Management Guide	2021-2022
Treat vines and invasive plants	2022-2023+
Mark and Sell Timber Sale	2023-2027
prescribe fire	2024-2028+
Post-harvest Timber Stand Improvement	1-2 years after harvest
Forest Growth and Periodic Monitoring	3 years post-harvest
Inventory and Management Guide	20 years after

Owen-Putnam State Forest  
Location Map  
Compartment 5 Tract 8

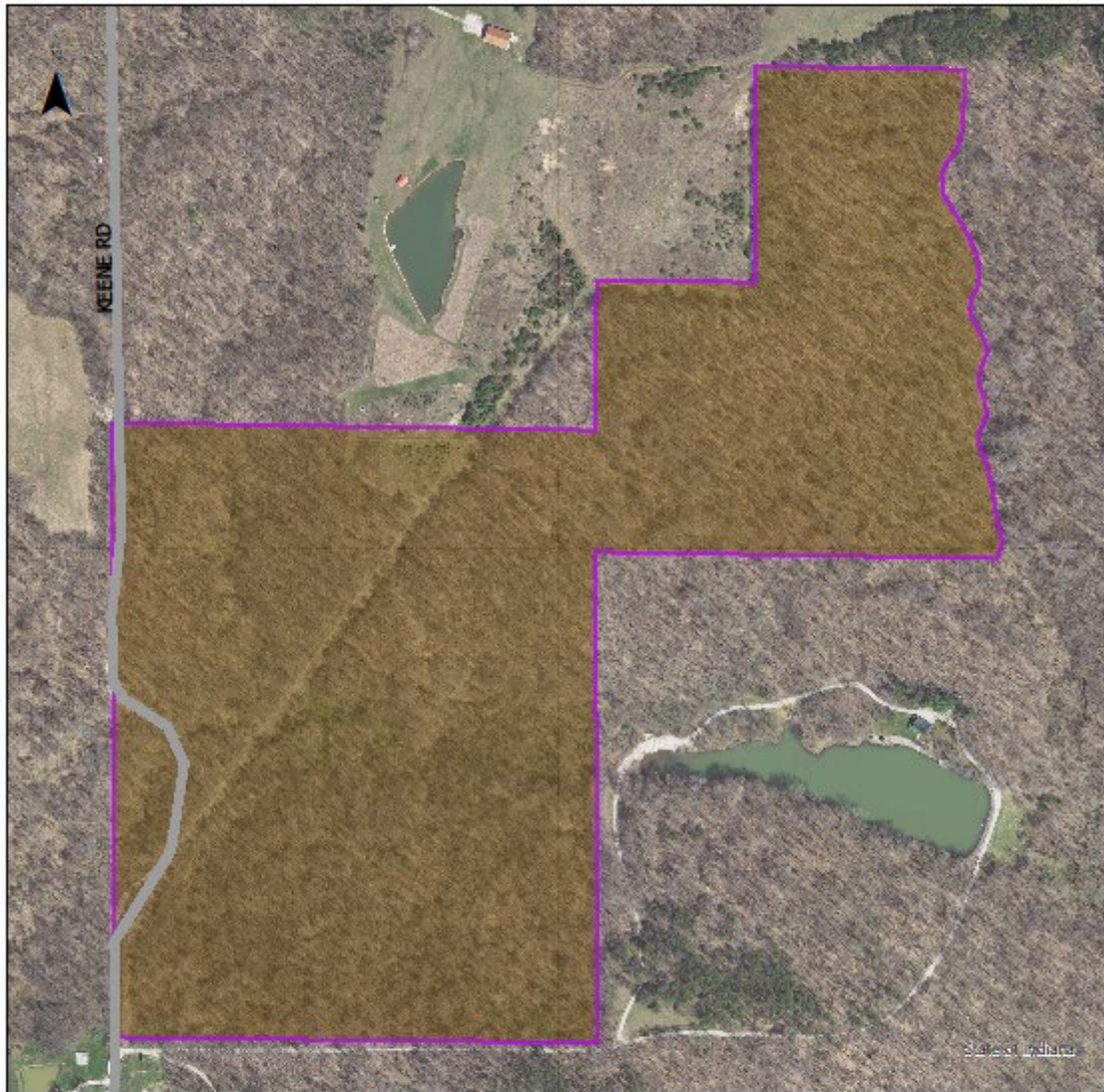


# Owen-Putnam State Forest Compartment 5 Tract 8 Tract Map



 Tract boundary       State Forest

# Owen-Putnam State Forest Compartment 5 Tract 8 Cover Types Map



- Public roads
- Tract Boundary
- Mixed Hardwoods

0 0.13 0.25 Miles



Owen-Putnam State Forest  
Forester: Bob Lindemuth  
Management Cycle End Year: 2042

Compartment: 07      Tract: 07  
Date: 9/19/2022      Acres: 41  
Management Cycle Length: 20 years

### **Location**

This tract, also known as 6380707, is located in Owen County, Indiana. Most of the tract is in section 25, Township 11 North, Range 4 West of the Montgomery township. Approximately 0.3 acres of this tract is located in section 26, Township 11 North, Range 4 West of the Montgomery township. This tract is surrounded by private land and is located north of Clark Road and east of Rattlesnake Road, approximately 5.5 miles northwest of Spencer, Indiana.

### **General Description**

This 41-acre tract is a mixed hardwood forest largely dominated by yellow poplar. A wide variety of species occurs within this tract including northern red oak, largetooth aspen, sassafras, white oak, chinkapin oak, and others.

### **History**

- On July 27, 1953, 40.5 acres was purchased from Albert McCoy for \$0. This became compartment 8 tract 5.
- Early tract changes following land acquisitions converted compartment 8 tract 5 to compartment 7 tract 7.
- In 2005, an inventory was conducted. Data estimated the tract contained 8,750 bd. ft. per acre. The top 3 species by volume were yellow poplar, northern red oak, and white oak.
- In 2015, a forest inventory and resource management guide (RMG) were completed. Data estimated the tract contained 7,504 bd. ft. per acre. The top 3 species by volume were yellow poplar, white oak, and northern red oak.
- In 2022, a forest inventory and RMG was completed. Data estimated the tract contained 13,334 bd.ft. per acre, totaling 546,690 bd.ft. for the whole tract. The top 3 species by volume were yellow poplar, northern red oak, and largetooth aspen.

### **Landscape Context**

This tract lies in a rural area of primarily hardwood forestland, with scattered agriculture and residences on the flatter ground. The density of residential development increases to the east. This tract is surrounded by private forestland and an agricultural field. There are no anticipated future land use changes.

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

This tract is located between 4 ridgetops to the northeast, southeast, northwest and southwest directions. Slopes are generally northern and southern aspects.

This tract is bisected by an intermittent stream that flows to the southwest, where it empties into Rattlesnake Creek approximately 0.5 miles southwest from where it exits the tract. Several ephemeral drainages also exist in the tract. During management activities best management practices (BMPs) for riparian areas will be followed.

The tract contains 9 different soil series. Parent materials of these soils include loess over loamy outwash over paleosol loamy outwash, loamy alluvium, loamy colluvium and/or clayey residuum, thin fine-silty noncalcareous loess over loamy residuum weathered from sandstone and shale, fine-silty loess over clayey residuum weathered from shale over loamy residuum weathered from sandstone and shale, and loess over loamy residuum.

## **Soils**

### GabG- Gallimore-Chetwynd complex, 25 to 70 percent slopes

This is steep and very steep, deep, well drained complex is on dissected outwash plains. It is well suited to trees. Equipment limitations, erosion hazard, and windthrow hazards are management concerns that should be considered during soil planning and implementation of Best Management Practices for Water Quality. Chetwynd has a site index of 88 for northern red oak and 99 for yellow poplar and Gallimore has a site index of 98 for northern red oak and yellow poplar.

### PlfB2- Pike silt loam, 2 to 6 percent slopes, eroded

This is a gently sloping, deep, well-drained soil on low knolls and shoulder slopes of dissected outwash plains and moraines. It is well suited to trees and has a site index of 90 for white oak and 98 for yellow poplar.

### PrwAV- Pope fine sandy loam, 0 to 2 percent slopes, frequently flooded, very brief duration

This nearly level, deep, well-drained soil is found in the flood plains. It is well suited to trees. Equipment limitations and seedling mortality are concerns that should be considered when planning management activities. This soil has a site index of 80 for white oak and 96 for yellow poplar.

### TtaG- Tulip-Tipsaw complex, 25 to 60 percent slopes

This moderately and very steep, moderately deep to deep, well drained complex is found on sideslopes in the uplands. It is suited to trees. Tulip has a site index of 80 for northern red oak and 95 for yellow poplar and Tipsaw has a site index of 70 for northern red and black oak.

### TtcE- Tulip-Wellston-Adyeville silt loams, 18 to 25 percent slopes

This strongly sloping to steep, deep, well drained complex is found on sideslopes in the uplands. It is suited to trees. Tulip has a site index of 80 for northern red oak and 95 for yellow poplar, Wellston has a site index of 81 for northern red oak and 90 for yellow poplar, and Adyeville has a site index of 64 for northern red oak.

### WhfD2- Wellston silt loam, 12 to 18 percent slopes, eroded

This strongly sloping, well-drained soil is on narrow ridgetops and on side slopes of the uplands. It is well suited to trees. This soil has a site index of 71 for northern red oak and 90 for yellow poplar.

### ZamB2- Zanesville silt loam, soft bedrock substratum, 2 to 6 percent slopes, eroded

This gently sloping, deep, moderately well drained or well-drained soil is on uplands. It is well suited to trees. This soil has a site index of 69 for white oak and 90 for yellow poplar.

ZamC3- Zanesville silt loam, soft bedrock substratum, 6 to 12 percent slopes, severely eroded  
 This moderately sloping, deep, moderately well drained or well-drained soil is on side slopes adjacent to drainage ways in the uplands. It is well suited to trees and has a site index of 69 for white oak and 90 for yellow poplar.

ZamD2- Zanesville silt loam, soft bedrock substratum, 12 to 18 percent slopes, eroded  
 This strongly sloping, deep, moderately well drained soil is on narrow side slopes in the uplands. It is fairly well suited to trees. A fragipan is present that can limit rooting depth. Erosion hazards and equipment limitations are main concerns that should be considered when planning management activities. It has a site index of 69 for white oak and 90 for yellow poplar.

**Access**

Currently this tract has no direct vehicle or public access. Access within the tract is good.

**Boundary**

The tract boundaries also serve as state forest boundary lines. All boundary lines were identified using field evidence such as corner stones, survey rebar, or historic fences and GPS handheld units when no field evidence was identified. Boundary lines are typically painted when sufficient evidence is identified or flagged when evidence is lacking.

**Ecological Considerations**

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

- Scattered oak-hickory canopy
- Contiguous mixed hardwood canopy
- An intermittent stream
- Hard mast trees such as oaks, hickories, and American beech provide a food source to both game and non-game wildlife species.

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

The Division of Forestry has developed compartment level guidelines for important wildlife structural habitat features known as snags. Snags are standing dead or dying 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. Downed woody debris provides habitat for many species and contributes to healthy soils.

<b>Snags (All Species)</b>	<b>Maintenance Level</b>	<b>Inventory</b>	<b>Available Above Maintenance</b>
<b>Snag 5"+ DBH</b>	164	817	653
<b>Snag 9"+ DBH</b>	123	448	325
<b>Snag 19"+ DBH</b>	21	49	28

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

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

A Natural Heritage Database Review is part of the management planning process. If Rare, Threatened, or Endangered communities were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

This tract consists of the mixed hardwood community type, with the main trees being yellow poplar, various oak species, and hickories. Understory diversity consists of spicebush, viburnums, greenbrier, pawpaw, and blackberry, among others.

Common animals in this community are the eastern chipmunk, white-tailed deer, wild turkey, and eastern grey squirrel.

Invasive plants observed during the forest inventory included multiflora rose, autumn olive, and Japanese stiltgrass. The invasive plants were primarily located around the edges of the tract. Very few invasive plants were observed in the interior of the tract. These will be dealt with on a situational approach.

## **Recreation**

Recreation within the tract is limited due to no direct public access or parking. Hunting is likely the primary use with hunters gaining permission to access to the tract through adjacent private lands.

## **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 Silvicultural Prescription**

### **Forest Condition**

*A current forest resource inventory was completed in September of 2022 by Forester Bob Lindemuth. A summary of the estimated tract inventory results are located in the table below.*

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

<b>Species</b>	<b># Sawtimber Trees</b>	<b>Total Bd. Ft</b>
Yellow Poplar	514	198,730
Northern Red Oak	268	134,220
Largetooth Aspen	184	55,860
Sassafras	193	23,920
White Oak	76	17,930
Chinkapin Oak	91	17,800

Shagbark Hickory	51	16,120
Black Walnut	36	15,300
Bitternut Hickory	46	13,110
Black gum	39	11,260
Black Cherry	44	10,310
Red Maple	24	8,750
Sugar Maple	43	5,990
American Beech	53	5,360
Black Locust	20	5,040
American Sycamore	7	4,270
Pignut Hickory	9	2,720

### **Mixed Hardwoods (41 acres)**

This cover type is characterized by the diverse species composition, with 17 different tree species identified with a 11” dbh or greater. This tract is 98% stocked, with 114 trees per acre (greater than 6” dbh) and a basal area of 123ft<sup>2</sup>/acre. The dominant species in the overstory is yellow poplar, followed by northern red oak, largetooth aspen, and sassafras. The midstory (pole sized timber) consists of sugar maple, yellow poplar, sassafras, and American beech. The understory (submerchantable) is dominated by American beech and sugar maple.

There is a substantial amount of mortality within this tract, especially with the largetooth aspen and sassafras. This mortality can be seen in the snag data collected and displayed in this RMG.. Further, some of the mature yellow poplar is experiencing crown dieback. Most of the other tree species in the tract are mature to overmature. The tract as a whole is predominantly closed canopy, with little sunlight reaching the forest floor. Evidence of this can be found in the regeneration data collected in the inventory which shows that 90% of the regeneration is shade tolerant species.

For these reasons, the recommended management activity is to conduct an improvement harvest, utilizing single tree and group selection or patch cut openings. This harvest will target poorly formed trees, trees declining in health, and trees with small live crowns. This will give the healthier trees with good form and larger live crowns more available resources above and below ground. Where conditions warrant, group selection/patch cuts may be utilized to promote the regeneration of shade intolerant species and create young forest habitat. When possible, tree selection should favor releasing desired healthy trees with good form and large live crowns.

The top tree species for removal in this tract include yellow poplar, largetooth aspen, northern red oak, and sassafras. The harvest volume for this tract is estimated at 4,000 to 5,300 bdf. per acre of the total 13,334 bdf. per acre. Following the timber harvest, timber stand improvement (TSI) should be conducted to complete the silvicultural prescription. TSI will concentrate on completion of any regeneration openings established, desirable tree release not accomplished

through the harvest, and reduction of problematic vines. Additionally, TSI should be utilized to control targeted invasive species and deaden a small percentage of low value trees to create additional snags for wildlife while reducing shade tolerant understory species.

#### Desired Future Condition

The objective for this cover type is to provide for multiple economic and ecological services, specifically a quality hardwood timber stand dominated by mid- and late-seral species, while providing diverse habitat structure, hard mast, and mid to late-seral habitat for wildlife.

### **Summary Tract Silvicultural Prescription and Proposed Activities**

The proposed management activity is to conduct an improvement harvest to promote the overall health, vigor, resiliency, and quality of the tract. This improvement harvest will utilize single tree and group selection or patch-cut silviculture. The purpose of single tree selection is to remove trees with poor form and health, drought stressed or wind damaged trees to promote a healthier growing forest. It will also target mature and over mature trees where present and other intermediate trees needed to release residual desirable trees. Young, vigorous ash will be retained for possible resistant features. Group selection will be used to target groups of trees that fit the above description growing together.

Preferably within two years of the timber harvest, a TSI operation should follow to release crop trees that were not adequately released during the harvest and complete regeneration openings. Additionally, TSI should be utilized to control targeted invasive species and deaden a small percentage of low value trees to create snags for wildlife. TSI may also be used to remove the shade tolerant understory around the oak-hickory overstory to promote the regeneration of oak and hickory.

During and after completion of the proposed management activity best management practices (BMP's) will be implemented to minimize soil erosion. This tract should receive another inventory and management guide 20 years following the completion of the timber harvest.

#### **Effect of Prescription on Tract Properties:**

Landscape: Landscape forest patterns will remain similar to the current situation due to this tract being kept in a forested condition.

Soils: The management activities prescribed in this plan should have minimal impact on soils in this tract. Some soil disturbance is likely during harvesting, but this should be confined to landings and main skid trails. These areas will be properly closed out according to Indiana's BMPs to minimize the impact of management activities on soils.

Hydrology: Hydrology should not be permanently affected by management on this tract. Water quality and yield should not be altered if BMPs are followed during harvest. BMP use will be contractually required of management operators and monitored by property foresters.

Wildlife: Snags and coarse woody debris should remain at viable levels in the stratum and should continue to provide habitat. Managing to recruit newly established or released oaks and hickories

will help to ensure that this important food source is available into the foreseeable future. Regeneration openings, such as prescribed have been shown to be of less of an issue from nest predators and generalist species as compared to hard edges such as public roadways, utility corridors and crop field edges. Placement of regeneration openings away from hard edges can minimize these potential impacts. The prescribed activity will promote wildlife diversity and enhance habitat structural components.

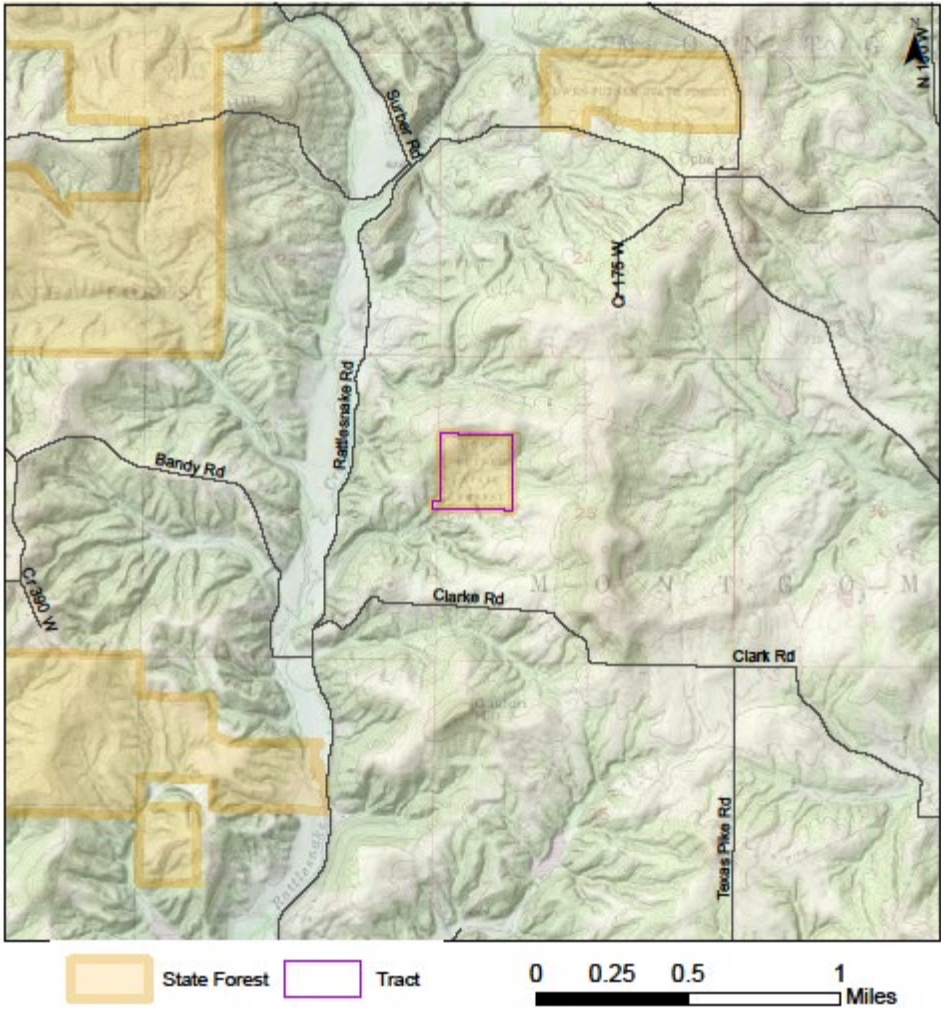
Additionally, management activities involving a timber harvest should not affect this habitat long-term from the perspective of any wildlife utilizing it due to the maintenance of a forested habitat on the tract. Creation of regeneration openings will create early successional habitat that will be beneficial to certain groups of wildlife dependent upon this habitat. Likely, early successional habitat created with such management will also benefit a wider segment of wildlife species that preferentially utilize such habitat for feeding and cover more so than later successional stage habitat.

Recreation: Hunting is possibly the only form of recreation within this tract. Hunting would benefit from forest management by improving the health of the residual trees thus promoting an increase in hard mast, understory plant diversity, and young forest habitat. For user safety, hunting within this tract will be temporarily restricted during management activities.

**Proposed Activities Listing**

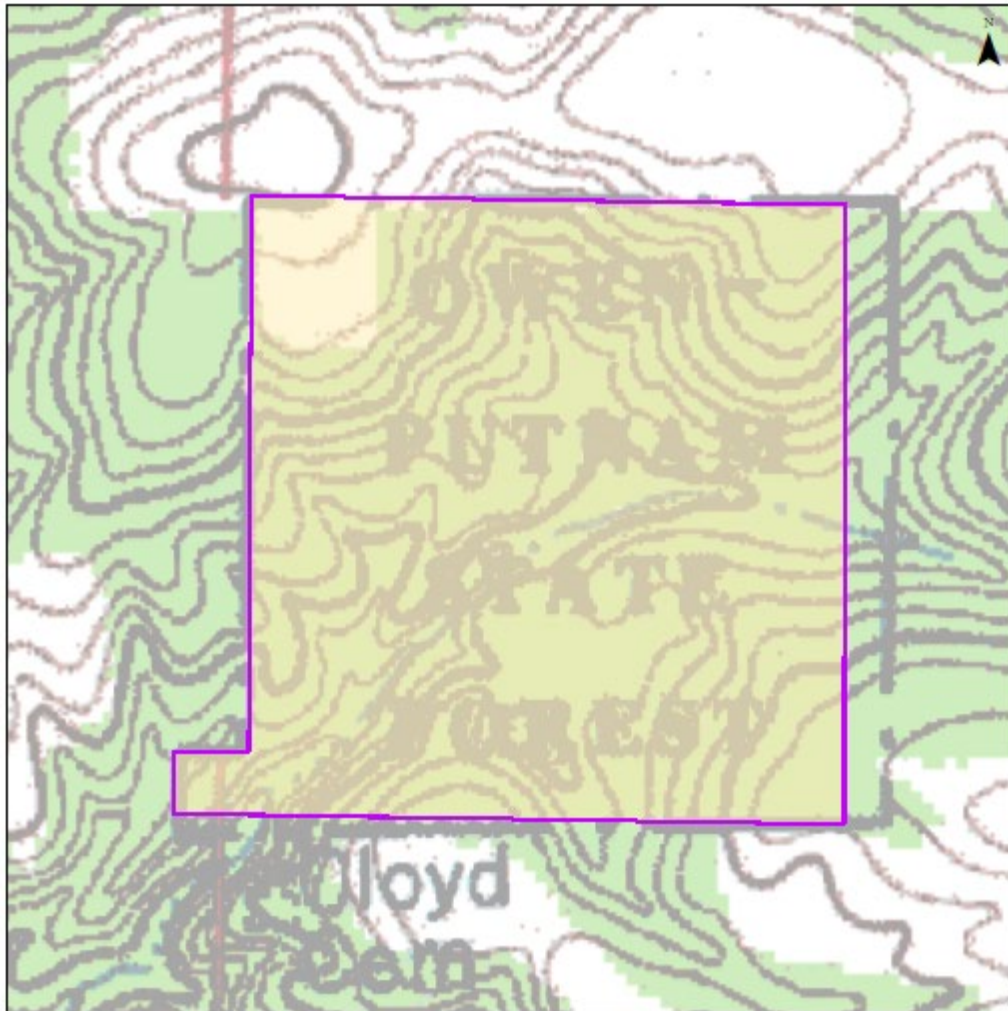
<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Management Guide	2022
Treat vines and invasive species	2023 - ongoing
Mark and Sell Timber Sale	2023 - 2027
Post-harvest Timber Stand Improvement	1-2 years following harvest
Forest Growth and Periodic Monitoring	3 years post-harvest - 2042
Inventory and Revise Management Guide	20 years following harvest


Owen-Putnam State Forest  
Location Map  
Compartment 7 Tract 7



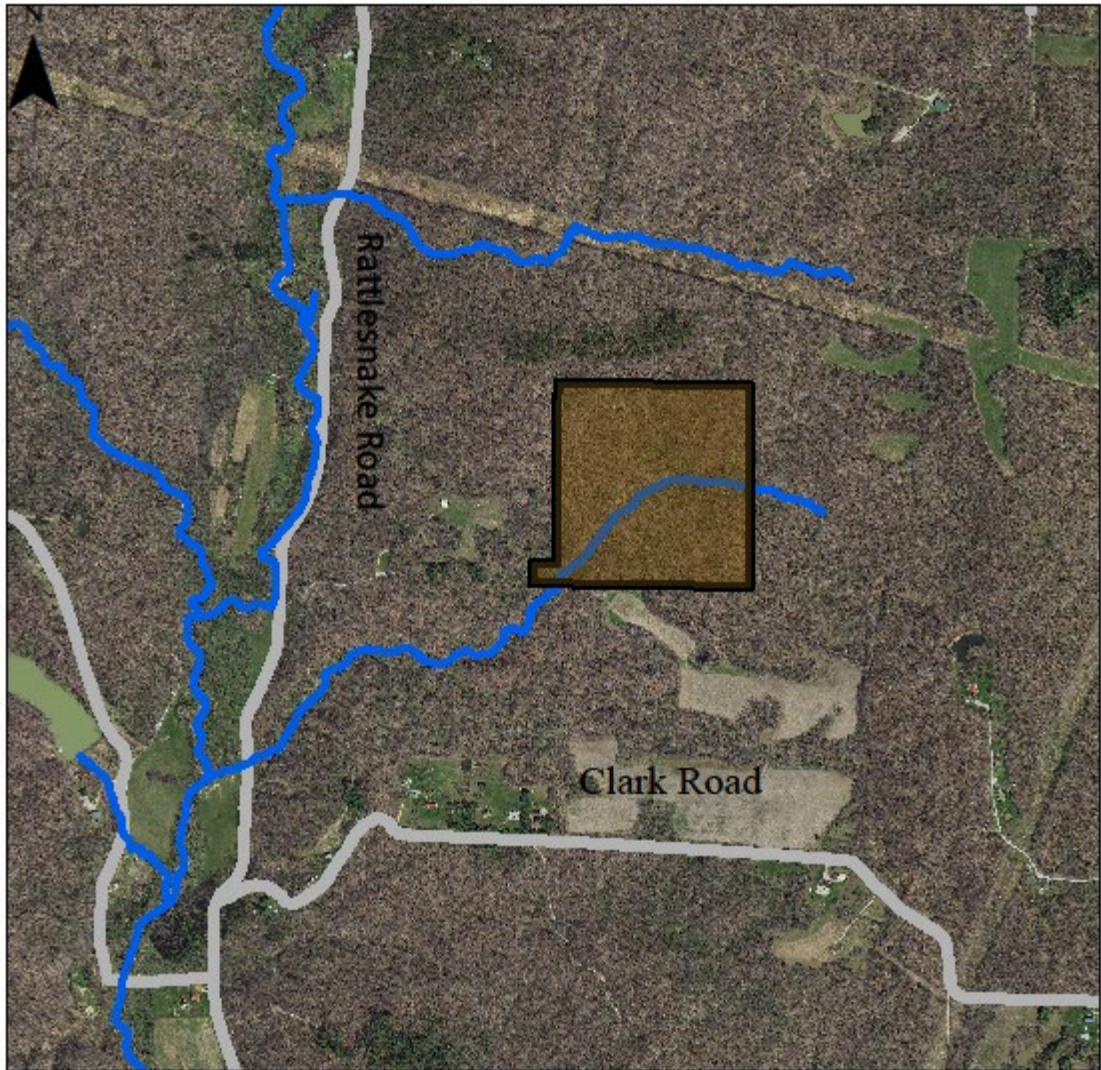


Owen-Putnam State Forest  
Compartment 7 Tract 7  
Tract Map

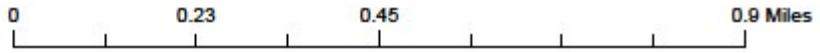


 Tract boundary       State Forest

Owen-Putnam State Forest  
Compartment 7 Tract 7  
Cover Type Map



**Legend**



-  State Forest Boundary
-  Mapped Streams
-  County Roads
-  Mixed Hardwoods

Owen-Putnam State Forest  
Forester: Bob Lindemuth  
Management Cycle End Year: 2042

Compartment: 09      Tract: 09  
Date: 08/04/2022      Acres: 120  
Management Cycle Length: 20 years

### **Location:**

This tract, also known as 6380909, is located in Owen County, Indiana. More specifically, the tract is in sections 9 and 10, Township 10 North, Range 4 West of the Lafayette township. This tract is primarily to the west of Fish Creek Road with a small portion lying east of Fish Creek Road, approximately 4 miles northwest of Spencer, Indiana.

### **General Description:**

This 120-acre tract is a mixed hardwoods forest with multiple-uses, largely dominated by yellow poplar. A wide variety of species occurs in this tract including shagbark and pignut hickory, red maple, Virginia pine, sugar maple, northern red oak, white oak and others. Four acres of the tract are part of the office complex, which includes Fish Creek Campground. A small portion of the tract is more mesic, containing species such as American sycamore and black walnut. This occurs between Fish Creek Road and on both sides of Fish Creek.

### **History**

- On May 8, 1950, 200 acres were purchased for \$3,000 from Thelma & Orville Haltom. A portion of this purchase became compartment 11 tract 2. At some point, compartment 11 tract 2 became compartment 9 tract 9.
- On June 30, 1986, a log sale was conducted by John Goodburn. Six trees and 3 culls with an estimated volume of 1,180 bd. ft. were sold to Dennis Fiddler for \$78.50. These trees were sold to construct the campground and service building.
- On May 4, 2005, a salvage timber sale was conducted following a series of windstorms. This sale was conducted in compartment 6 tract 3, compartment 8 tract 9, and compartment 9 tract 9. The sale brought \$10,333.00 in revenue. An estimated 15,597 bd. ft. in 71 sawtimber trees and 6 culls were sold from compartment 9 tract 9. The top three species cut were red oak, bitternut hickory, and yellow poplar.
- On July 14, 2022, an inventory was conducted and an RMG was developed. Data estimated the tract to contain 10,725 bd. ft. per acre, totaling 1,287,000 bd. ft. The top 3 species according to volume estimates are yellow poplar, white oak, and pignut hickory.

### **Landscape Context**

This tract lies in a rural area of primarily hardwood forestland. The area has a small amount of agriculture and a few residences, mainly concentrated along State Road 46 and Fish Creek Road. To the north of tract 9 lies forested private land and compartment 9 tract 8 of Owen-Putnam State Forest. To the west lies compartment 9 tract 7 of Owen-Putnam State Forest. To the south lies private forestland and an agricultural field. To the east lies private forestland. There are no anticipated future land use changes to the surrounding area.

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

The topography of the area consists of a ridgetop that forms the northern portion of the western boundary of the tract and then runs to the southwest. From this ridgetop, another finger ridge runs to the southeast. The side slopes of the ridges are almost equally divided between

northeastern, eastern, and southern aspects. Approximately 16 acres of the tract to the east of Fish Creek Road are more mesic and flatter.

The tract consists of 13 different soil series. Parent materials of these soils include fine-silty loess over loamy pedisegment over paleosol till, loess over loamy till, loamy residuum over sandstone and shale, loamy colluvium and/or clayey residuum, loamy alluvium, and fine-silty loess over clayey residuum weathered from shale over loamy residuum weathered from sandstone and shale.

The tract drains through several ephemeral drainages into Fish Creek, a perennial stream that flows south to the White River. There is a pond located inside the tract and is located at Fish Creek Campground. During any management activities best management practices (BMPs) will be followed to protect water bodies and stream courses.

## **Soils**

### AloB2- Ava silt loam, 2 to 6 percent slopes, eroded

This gently sloping, deep, moderately well drained is on knolls and narrow ridgetops and on sideslopes along drainage ways in the uplands. It is well suited to trees and has a site index of 75 for white oak and 90 for yellow poplar.

### CkkB2- Cincinnati silt loam, 2 to 6 percent slopes, eroded

This gently sloping, deep, well-drained soil is on side slopes in the uplands. It is well suited for trees. This soil has a site index of 80 for northern red oak.

### HeuE- Hickory-Wellston silt loams, 18 to 25 percent slopes

This moderately steep, deep, well-drained soil is on dissected till plains over interbedded shale, siltstone, and sandstone. It is well suited to trees. Erosion hazards and equipment limitations are main management concerns due to slopes. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality This soil has a site index of 85 for white oak and 95 for yellow poplar.

### HeuF- Hickory-Wellston silt loams, 25 to 35 percent slopes

This moderately steep to steep, deep, well-drained soil is on dissected till plains over interbedded shale, siltstone, and sandstone. It well suited to trees. This soil has a site index of 85 for white oak and 95 for yellow poplar.

### SfoA- Shakamak silt loam, 1 to 3 percent slopes

This very gently sloping, deep, somewhat poorly drained and moderately well drained soil is on ridgetops and along drainageways. A fragipan is present and restricts root development. This soil is well suited to trees and has a site index of 75 for white oak and 90 for yellow poplar.

### SneC2- Solsberry silt loam, 6 to 12 percent slopes, eroded

This moderately sloping, deep, moderately well drained soil is on the side slopes of the uplands. It is well suited to trees. Windthrow hazards are a concern that should be considered during management planning. This soil has a site index of 80 for northern red oak.

SneC3- Solsberry silt loam, 6 to 12 percent slopes, severely eroded

This moderately sloping, deep, moderately well drained soil is on the side slopes of the uplands. It is well suited to trees. Windthrow hazards are a concern that should be considered during management planning. This soil has a site index of 80 for northern red oak.

TcgG- Tipsaw-Rock outcrop complex, 35 to 70 percent slopes

This steep to very steep, moderately deep, well drained soil is found on the sideslopes in the uplands. It is suited to trees. This soil has a site index of 70 for northern red and black oak.

TtaG- Tulip-Tipsaw complex, 25 to 60 percent slopes

This moderately and very steep, moderately deep to deep, well drained complex is found on sideslopes in the uplands. It is suited to trees. Tulip has a site index of 80 for northern red oak and 95 for yellow poplar and Tipsaw has a site index of 70 for northern red and black oak.

WpuAV- Wirt silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration

This nearly level, deep, well-drained soil is found on natural levees and floodplain steps on flood plains. It is well suited to trees. Equipment limitation and seedling mortality are management concerns that should be considered when planning management activities. This soil has a site index of 105 for yellow poplar.

ZamB2- Zanesville silt loam, soft bedrock substratum, 2 to 6 percent slopes, eroded

This gently sloping, deep, moderately well drained or well-drained soil is on uplands. It is well suited to trees. This soil has a site index of 69 for white oak and 90 for yellow poplar.

ZamC2- Zanesville silt loam, soft bedrock substratum, 6 to 12 percent slopes, eroded

This moderately sloping, deep, moderately well drained or well-drained soil is on side slopes adjacent to drainage ways in the uplands. It is well suited to trees. This soil has a site index of 69 for white oak and 90 for yellow poplar.

ZamC3- Zanesville silt loam, soft bedrock substratum, 6 to 12 percent slopes, severely eroded

This moderately sloping, deep, moderately well drained or well-drained soil is on side slopes adjacent to drainage ways in the uplands. It is well suited to trees and has a site index of 69 for white oak and 90 for yellow poplar.

**Access**

This tract has very good access for management and recreational purposes. For management purposes, the tract is accessed by the fire lane that is gated at the end of the Fish Creek Campground Road. The fire lane also provides recreational access by serving as part of the Poplar Top Trail. The fire lane is also accessible by a second entrance 200 feet north of the office off Fish Creek Road.

**Boundary**

This tract is bordered by compartment 9 tract 8 of Owen Putnam State Forest for 0.4 miles and private land for 0.2 miles on the northern side. The boundary between compartment 9 tract 9 and compartment 9 tract 8 is an ephemeral drainage. Private land borders compartment 9 tract 9 for approximately 0.25 miles on the east side and 0.8 miles on the south side. Compartment 9 tract 7 of Owen Putnam State Forest forms the border on the west side for 0.4 miles. The southwestern

0.2 mile portion of the boundary is the approximate center line of the ridge running from the end of the fire lane to the southwest. The fire lane forms the northwestern portion of the western boundary for approximately 0.2 miles. The state forest boundary line was identified using field evidence such as corner stones, rebar, or historic fences and GPS handheld units when no field evidence was identified. Boundary lines are typically painted when evidence is identified or flagged when evidence is lacking.

**Ecological Considerations**

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

- Scattered oak-hickory canopy
- Contiguous mixed hardwood canopy
- Small drainages and Fish Creek
- Wildlife pond located within the Fish Creek Campground

Hard mast trees such as oaks, hickories, and American beech provide a food source to both game and non-game wildlife species.

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

The Division of Forestry has developed compartment level guidelines for important wildlife structural habitat features known as snags. Snags are standing dead or dying 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. Downed woody debris provides habitat for many species and contributes to healthy soils.

<b>Snags (All Species)</b>	<b>Maintenance Level</b>	<b>Inventory</b>	<b>Available Above Maintenance</b>
<b>Snag 5"+ DBH</b>	480	1255	775
<b>Snag 9"+ DBH</b>	360	1045	685
<b>Snag 19"+ DBH</b>	60	206	146

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

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

A Natural Heritage Database Review is part of the management planning process. If Rare, Threatened, or Endangered communities were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

Most of this tract is of the dry-mesic forest community type, with some isolated, more mesic sites located along lower slopes, and floodplain along the stream. The dominant plants in this community are the yellow poplar, shagbark hickory, pignut hickory, red maple, northern red oak, and white oak. Understory plants included spicebush, greenbriar, bluebeech, flowering dogwood, and ironwood.

Common animals in this community are the eastern chipmunk, white-tailed deer, wild turkey, and eastern grey squirrel.

Invasive species include multiflora rose, autumn olive, Japanese stiltgrass, and Japanese barberry, which are present in and around this tract in patches of light to moderate densities. These species commonly occur throughout the county. Treatment efforts should be taken on a situational approach during preharvest or post-harvest timber stand improvement (TSI).

### **Recreation**

Recreational use of this tract is above average due to Fish Creek Campground occurring within the tract. The campground has 14 sites and is used throughout the recreational season, typically March-October. There is a playground and shelter house available for public use.

Two hiking trails are present in this tract, the Poplar Top Trail, and the Fish Creek Trail. The Poplar Top Trailhead begins from the parking lot of the office. From there, the trail continues uphill on the fire lane to the northwest. It departs the fire lane for 1/3<sup>rd</sup> of a mile and loops to the west where it eventually becomes part of the fire lane again until the trail ends at a wildlife pond. The trail backtracks for 1/10<sup>th</sup> of a mile back to the fire lane that heads southeast to the Fish Creek Campground. The Fish Creek Trail begins near the wildlife pond in the campground and heads downhill to the east where it dead ends at Fish Creek.

Recreational activities including camping, hunting, hiking, fishing, gathering, viewing and interpretation.

Fish Creek Campground will not be closed during management activities. The campground will receive a 100' visual enhancement area (VEA). VEA's are areas where management criteria will be to maintain or enhance the aesthetic values of a forested landscape. The goal is not to conceal forest management activities, but rather moderate its impact. It can also be an opportunity for educational and interpretive use to build a better understanding of the properties forest management activities.

During any management activity, specifically a timber harvest, access to this tract will be restricted due to safety concerns. Following the management activity, the tract will be reopened to public use. The hiking trails will be closed Monday through the end of the day Friday and open on the weekends. The trails will be kept clear of tops and brush. Skid trails will be chosen to minimize the number of trail crossings. Signs will be posted at the trailheads, on the kiosks at Fish Creek Campground, and advertised on the advisories page of the DNR which can be found at <http://www.in.gov/dnr/forestry/properties/advisories/>.

### **Cultural**

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

## Tract Subdivision Description and Silvicultural Prescription

### Forest Condition

*A current forest resource inventory was completed on 8/4/2022 by Forester Bob Lindemuth. A summary of the estimated tract inventory results are located in the table below.*

#### Tract Summary Data (trees >11"DBH):

Species	# Sawtimber Trees	Total Bd. Ft
Yellow Poplar	1,855	540,870
Shagbark Hickory	545	98,590
Pignut Hickory	533	108,680
Red Maple	517	64,700
Virginia Pine	442	53,950
Sugar Maple	349	28,520
Northern Red Oak	318	68,570
White Oak	316	113,270
Black Cherry	295	41,900
Sassafras	281	28,540
American Sycamore	204	43,570
Blackgum	156	21,590
American Beech	137	13,760
Other Pine	65	20,020
Chinkapin Oak	35	9,280
Red Elm	28	7,580
Black Walnut	21	8,850
Bigtooth Aspen	15	6,810
Eastern White Pine	10	7,820
<b>TRACT TOTALS</b>	<b>6,122</b>	<b>1,286,870</b>

### Mixed Hardwoods (120 acres)

This tract is 112% stocked with a basal area of 108.5ft<sup>2</sup>/acre. This tract is largely dominated by yellow poplar, comprising 42% of the total board foot volume of the tract, 540,870 board feet. Although yellow poplar is so prevalent, the tract is still quite diverse with 18 other tree species present. Some dominant and codominant species observed in the overstory consists of white oak with 113,270 board feet, pignut hickory with 108,680 board feet, shagbark hickory with 98,590 board feet, northern red oak with 68,570 board feet, and red maple with 64,700 board feet. The midstory is comprised of mainly yellow poplar, red maple, and sugar maple with lesser amounts of shagbark hickory, black cherry, American beech, black gum, and hackberry. The understory is primarily comprised of American beech, with lesser amounts of sugar maple, bluebeech/American hornbeam, and flowering dogwood.



Much of the tract is closed canopy, leaving little light to reach the forest floor. This does little to promote regeneration and causes competition among the dominant trees in the overstory. An excessive amount of competition leads to mortality, as can be seen by the large number of snags in this tract.

The recommended management activity is to conduct an improvement harvest, utilizing single tree and group selection or patch cut openings. This activity will target poorly formed individuals, defective trees, trees declining in health, and trees with a small live crown. This will give the healthier trees with good form and larger live crowns more available resources above and below ground. Where conditions warrant, group selection may be utilized to regenerate shade intolerant species and create young forest habitat. When possible, selection should favor releasing desired future trees.

The harvest volume for this tract will be 2,000 – 3,000 board feet per acre of the total 10,725 board feet per acre. The top species for removal in this tract include yellow poplar, red maple, and Virginia pine. Following the timber harvest, timber stand improvement (TSI) should be conducted to complete the silvicultural prescription. TSI will concentrate on completion of regeneration openings, desirable tree release, and reduction of problematic vines.

#### **Desired Future Condition**

The objective for this cover type is to provide for multiple economic and ecological services, specifically a quality hardwood timber stand dominated by mid- and late-seral species, while providing diverse habitat structure, hard mast, and mid to late-seral habitat for wildlife.

#### **Summary Tract Silvicultural Prescription and Proposed Activities**

The proposed management activity is to conduct an improvement harvest to promote the overall health, vigor, resiliency, and quality of the stand. This improvement harvest will utilize single tree and group selection or patch-cut silviculture. The purpose of single tree selection is to remove trees with poor form and health, drought stressed or wind damaged trees to promote a healthier growing forest. It will also target mature and over mature trees where present and other intermediate trees needed to release residual desirable trees. Group selection will be used to target groups of trees that fit the above description growing together.

Within two years of the timber harvest, a TSI operation should follow to release desirable trees that were not adequately released during the harvest and complete regeneration openings. Additionally, TSI should be utilized to control targeted invasive species in the stand, deaden a small percentage of low value trees to create snags for wildlife and reduction of the shade tolerant understory.

During and after completion of the proposed management activity best management practices (BMP's) will be implemented to minimize soil erosion. This tract should receive another inventory and management guide 20 years following the completion of the timber harvest.

#### **Effect of Prescription on Tract Properties:**

Landscape: Landscape forest patterns will remain similar to the current situation due to this tract being kept in a forested condition.

Soils: The management activities prescribed in this plan should have minimal impact on soils in this tract. Some soil disturbance is likely during harvesting, but this should be confined to landings and main skid trails. These areas will be properly closed out according to Indiana's BMPs to minimize the impact of management activities on soils.

Hydrology: Hydrology should not be permanently affected by management on this tract. Water quality and yield should not be altered if BMPs are followed during harvest. BMP use will be contractually required of management operators and monitored by property foresters.

Wildlife: Snags and coarse woody debris should remain at viable levels in the stratum and should continue to provide habitat. Managing to recruit newly established or released oaks and hickories will help to ensure that this important food source is available into the foreseeable future. Regeneration openings, such as prescribed have been shown to be of less of an issue from nest predators and generalist species as compared to hard edges such as public roadways, utility corridors and crop field edges. Placement of regeneration openings away from hard edges can minimize these potential impacts. The prescribed activity will promote wildlife diversity and enhance habitat structural components.

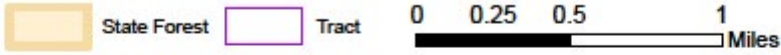
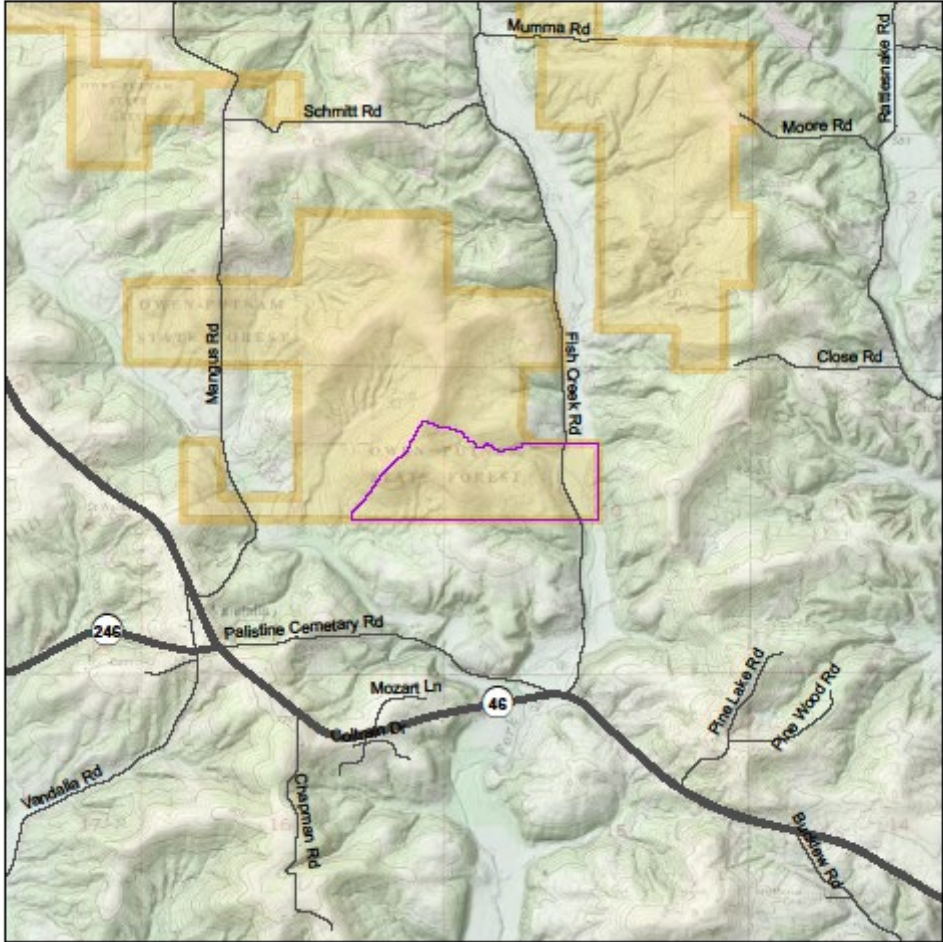
Additionally, management activities involving a timber harvest should not affect this habitat long-term from the perspective of any wildlife utilizing it due to the maintenance of a forested habitat on the tract. Creation of regeneration openings will create early successional habitat that will be beneficial to certain groups of wildlife dependent upon this habitat. Likely, early successional habitat created with such management will also benefit a wider segment of wildlife species that preferentially utilize such habitat for feeding and cover more so than later successional stage habitat.

Recreation: Hunting would benefit from forest management by improving the health of the residual trees thus promoting an increase in hard mast, understory plant diversity, and young forest habitat. For user safety, hunting within this tract will be temporarily suspended during management activities.

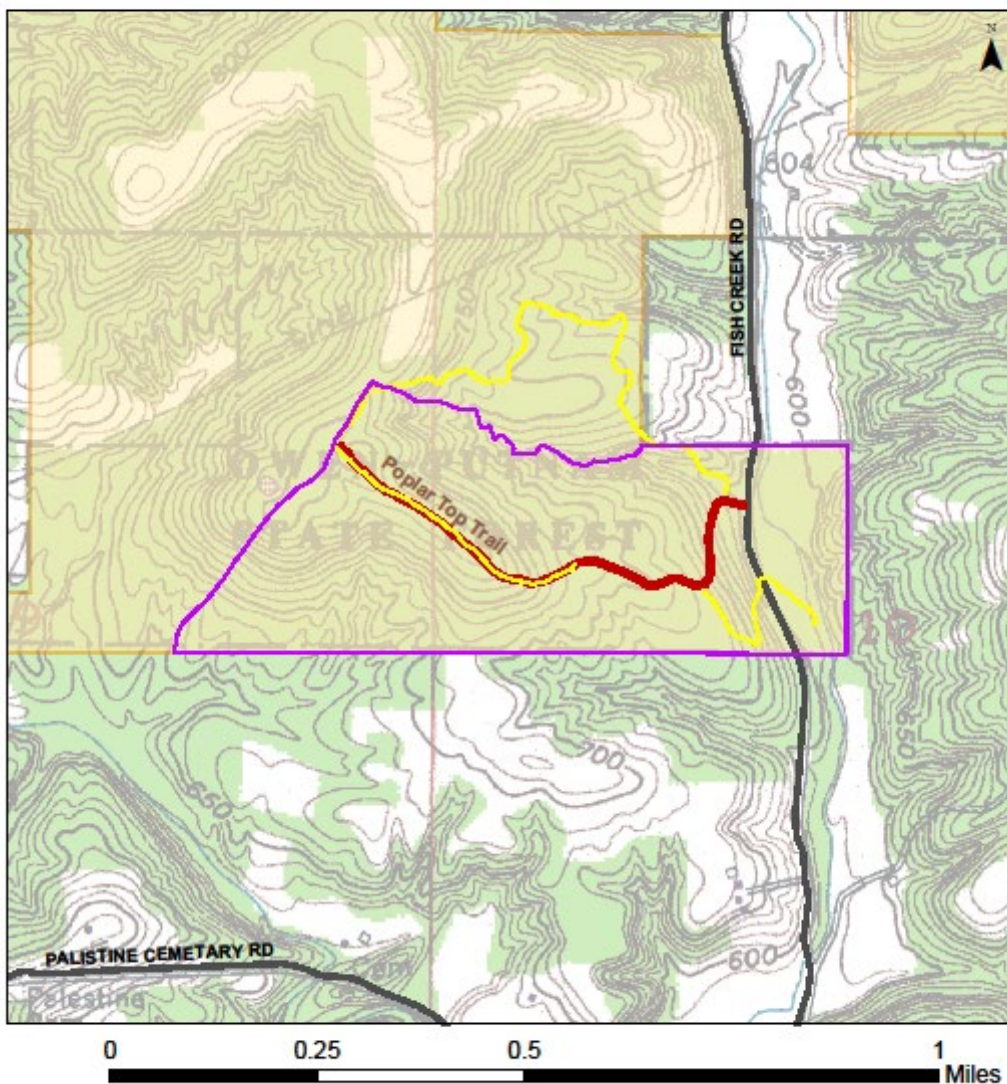
### **Proposed Activities Listing**

<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Management Guide	2022 - 2023
Trail & Recreational Improvements	As needed
Road Improvements	As needed
Treat problematic vines and invasive plants	2022 - 2024
Mark and Sell Timber Sale	2023 - 2027
Post-harvest Timber Stand Improvement	1-2 years after harvest
Periodic Monitoring	3 years post-harvest, periodic after
Inventory and Revise Management Guide	20 years post-harvest

Location Map  
Compartment 9 Tract 9

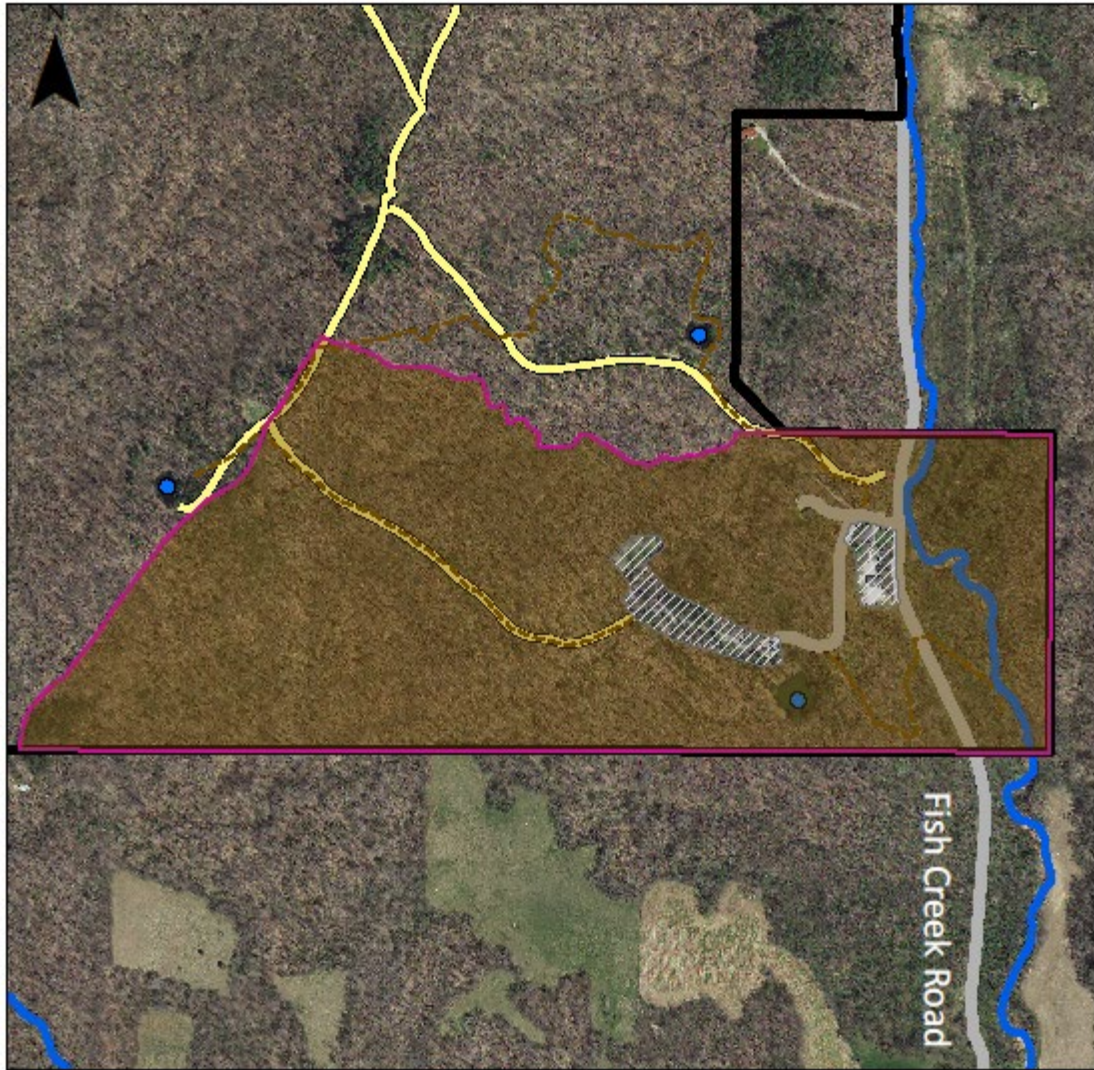


# Owen-Putnam State Forest Compartment 9 Tract 9 Tract Map



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

# Owen-Putnam State Forest Compartment 9 Tract 9 Cover Types Map



## Legend

- |                       |                                  |
|-----------------------|----------------------------------|
| Fire Lanes            | Mixed Hardwoods                  |
| Tract Boundary        | Wildlife Ponds                   |
| State Forest Boundary | Fish Creek Campground and Office |
| Mapped Streams        | County Roads                     |