

**Resource Management Guides  
Clark State Forest  
30-day Public Comment Period (April 17 – May 16)**

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 Clark State Forest.

Compartment 6 Tract 1  
Compartment 9 Tract 10

**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.

**Clark State Forest**  
**Forester:** Bartlett  
**Tract Acreage:** 143  
**Management Cycle End Year:** 2029

**Compartment:** 6    **Tract:** 1  
**Date:** January 2019  
**Forested Acreage:** 134  
**Management Cycle Length:** 20 years

### **Location**

Compartment 6 tract 1, also known as 6300601, is located in both Clark and Scott County, Indiana, more specifically sections 26 and 35, Township 2N, Range 6E of Monroe and Finley Townships respectively. This tract is approximately 3.5 miles northwest of Henryville, IN.

### **General Description**

The tract is approximately 134 forested acres and contains three delineated cover types: dry oak-hickory, mixed hardwoods, and non-forest. The mixed hardwood overstory is primarily yellow-poplar occurring in the ravines which are common in this tract. The oak-hickory cover type occupies the slopes and ridges consisting of mostly low quality, stressed chestnut oaks.

### **History**

- 1903 Land acquisition to create tract
- 1921 Land acquisition added to the tract
- 1940 – Land acquisition added to the tract
- 1982 – Forest inventory and resource management guide
- 2018 – Forest inventory
- 2019 – Resource management guide

### **Landscape Context**

This tract is located within rural southern Indiana. Within a mile, a majority of the land cover is either agricultural or forested. It is 80% forested within a mile of the tract. A majority of the agricultural fields in the area are cattle fields.

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

There is a flat ridgetop that provides access to most of the tract. The remainder of the tract is steep slopes ranging in degrees of steepness.

There are multiple ephemeral drains that drain into an intermittent stream that continues into Wilcox Lake. General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the Indiana Logging and Forestry 2022 Best Management Practices Field Guide.

### **Soils**

The soils in this area are well-drained. The bedrock for this area is Mississippian shale and siltstone. The major soils are listed below.

BcrAW - Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration, 3.6 acres

This nearly level, deep, well-drained soil is found along alluvial fans and flood plain. It is well suited to trees. Management planning should consider wet times of year. This soil has not been evaluated for site index.

BvoG - Brownstown-Gilwood silt loams, 25 to 75 percent slopes, 63.3 acres

This moderate to very steep, deep, well-drained soil is found sideslopes in the uplands. It is well suited to trees. Equipment limitations and erosion hazards are main management concerns that should be considered during sale layout and implementation of Best Management Practices for Water Quality. Brownstown has a site index of 50 for black oak and gilwood has not been rated.

CwaAQ - Cuba silt loam, 0 to 2 percent slopes, rarely flooded, <1 acre

This nearly level, well-drained soil is on flood plains. It is occasionally flooded for brief periods in the spring which should be considered when planning management activities. It is well suited to trees and has a site index of 100 for yellow poplar.

GgfD - Gilwood-Wrays silt loams, 6 to 18 percent slopes, 16.8 acres

This gently to moderately sloping, moderately deep, well-drained complex is found on side slopes of the uplands knobs. The hazard of erosion is main management concerns that should be considered when implementing Best Management Practices for Water Quality. Wrays has a site index of 70 for white oak and 90 for yellow poplar and Gilwood has not been evaluated.

GmaG - Gnawbone-Kurtz silt loams, 20 to 60 percent slopes, 38.1 acres

This moderately to very steep, moderately deep, well-drained complex is found on side. It is well suited to trees. The hazard of erosion and equipment limitations are main management concerns. These should be considered when planning management activities and implementing Best Management Practices for Water Quality. Kurtz has a site index of 60 for northern red oak and Gnawbone has not been evaluated.

StaAQ - Steff silt loam, 0 to 2 percent slopes, rarely flooded, <1 acre

This nearly level, deep, moderately well-drained soil is on bottom land. It is flooded for brief periods, mainly in winter and spring. It is well suited to trees and has a site index of 88 for black oak and 107 for yellow poplar.

Uaa - Udorthents, cut and filled, <1 acre

These nearly level, deep, poorly drained and somewhat poorly drained soils are found in variable areas. These soils generally consist of mixed loamy or clayey soil in areas that have borrowed for fill materials or in areas of the fill material itself. Onsite investigation is needed to determine specific soil properties affecting land use. This soil has not been evaluated for site index.

### **Access**

Access to this tract is good. Swithback Road, a paved road, traverses along the southern boundary of the tract. This road continues to Wilcox Lake. There is a parking lot on the north side of Wilcox Lake off Pounds Road providing good foot access to the lake and western portion of the tract.

### **Boundary**

This tract borders other Clark State Forest tracts on the south, east, and west. The northern and northwestern boundaries are shared with private landowners.

## Ecological Considerations

This tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife. Habitat types include oak-hickory and mixed hardwoods.

The Indiana DNR Division of Forestry has developed compartment level guidelines for snag tree retention, which is an important wildlife feature. Snags are standing dead or dying trees. Snags provide value in a forest in the form of habitat features for foraging activity, den sites, decomposers, bird perching, bat roosts, squirrel caches, and stores a wide variety of invertebrates. As time passes, these snags fall down and then contribute to the nutrient cycling as downed woody debris (DWD). DWD decomposes providing nutrients for remaining and new vegetative growth as well contributing to the complexity of the forest floor.

	Maintenance Level	Inventory	Available Above Maintenance
Snags 5”+	496	1,041	545
Snags 9”+	372	747	375
Snags 19”+	62	99	37

Snags in this tract exceeded maintenance levels for all three size classes by significant margins.

Invasive species observed were Japanese stiltgrass, multiflora rose, and Amur honeysuckle. Stiltgrass was the most consistent invasive species present and found near the horse trail. An occasional multiflora rose and Amur honeysuckle were seen within the tract. These should be managed with a situational approach.

There are two man made wildlife ponds within this tract. General maintenance of these ponds will occur such as removal of invasive species and addressing level/dam issues, but both will be avoided during management activities following all BMP riparian management zone guidelines as addressed in the 2022 BMP field guide.

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.

## Recreation

This tract has multiple recreation opportunities due to its location and water feature. Wilcox Lake can be accessed from two locations. A parking lot below the dam off Pounds Road offers foot access to the lake while Swithback Road provides access to the shallow upper region where a canoe or kayak could be launched. A small section of horse trail runs along the southwest corner but is only inside the tract for approximately 1/10<sup>th</sup> of a mile. Hunting and fishing are permitted within the tract. Management activities within the tract will not impact use of Wilcox Lake.

## Cultural

This tract was reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on this tract, but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management activity.

### Tract Subdivision Description and Silvicultural Prescription

The current forest resource inventory was completed in June 2018 by Forester Bartlett. A summary of the estimated tract inventory results are located in the table below.

Total acres = 134	Overall % stocking = 73%
Total trees per acre = 113	Present volume per acre = 5,916 bd. ft.
Basal area per acre = 90 sq. ft.	Harvest volume per acre = 1,377 bd. ft.

Species	# of Sawtimber Trees	Total Bd. Ft.	Bd. Ft. per acre
Chestnut Oak	2,701	383,106	2,859
White Oak	444	94,068	702
Yellow Poplar	266	84,286	629
Black Oak	184	55,610	415
Sugar Maple	446	53,466	399
Pignut Hickory	262	37,520	280
Virginia Pine	170	33,366	249
Scarlet Oak	163	22,914	171
Northern Red Oak	60	19,966	149
American Beech	36	3,350	25
Black Cherry	12	2,948	22
Black Walnut	157	2,144	16
<b>Total</b>	<b>4,760</b>	<b>792,744</b>	<b>5,916</b>

#### *Mixed Hardwoods – 40 acres*

The mixed hardwood cover type is fully stocked at 60% and a harvest is recommended for this area. A single tree selection harvest is recommended to release the higher quality yellow-poplar that exist in the ravines. Residual c trees should be selected based on health, quality, and species.

Basal are per acre (square feet)	72.9
Trees per acre	101
Approximate stocking	60%

Species	Bd. Ft. per acre
Yellow Poplar	2,073
Chestnut Oak	1,000
Sugar Maple	820
White Oak	492
Pignut Hickory	467
Black Oak	230
Scarlet Oak	217

Species	Bd. Ft/Acre
Virginia Pine	195
Northern Red Oak	102
American Beech	90
Black Walnut	56
<b>Total</b>	<b>5,742</b>

*Dry Oak-Hickory – 94 acres*

The dry oak-hickory cover type is fully stocked at 79%. A harvest is recommended for this area which is showing mortality in the chestnut oaks. Continuous Forest Inventory (CFI) data indicates chestnut oak has the highest mortality among tree species across Clark State Forest. An improvement harvest is prescribed to remove these trees in decline while providing space for healthy trees. Group selections or patch-cuts are prescribed to be performed in areas where considerable overstory dieback occurs. Preference to these selections are areas that have desirable regeneration. The goal of these patch-cuts is to create early successional habitat, young forests, while encouraging the regeneration of oak and hickory species.

Basal are per acre (square feet)	96.8
Trees per acre	118
Approximate stocking	79%

Species	Bd Ft/per acre
Chestnut Oak	3,578
White Oak	783
Black Oak	486
Virginia Pine	270
Sugar Maple	236
Pignut Hickory	208
Northern Red Oak	167
Scarlet Oak	153
Yellow Poplar	71
Black Cherry	31
<b>Total</b>	<b>5,983</b>

*Non-forest – 9 acres*

This area includes Wilcox Lake, Wilcox Lake’s dam and the public parking area north of Wilcox Lake.

Other considerations

**Regeneration evaluation** – Three to five years after the completion of the timber harvest, a regeneration inspection will be performed. This inspection identifies any regeneration or invasive concerns, addressing them as deemed necessary.

**Timber stand improvement (TSI)** – If needed, TSI should be performed within two years of timber harvest completion. The objective would be to complete openings, remove species marked for harvest but not removed or trees inhibiting desirable regeneration objectives, and manage invasive species.

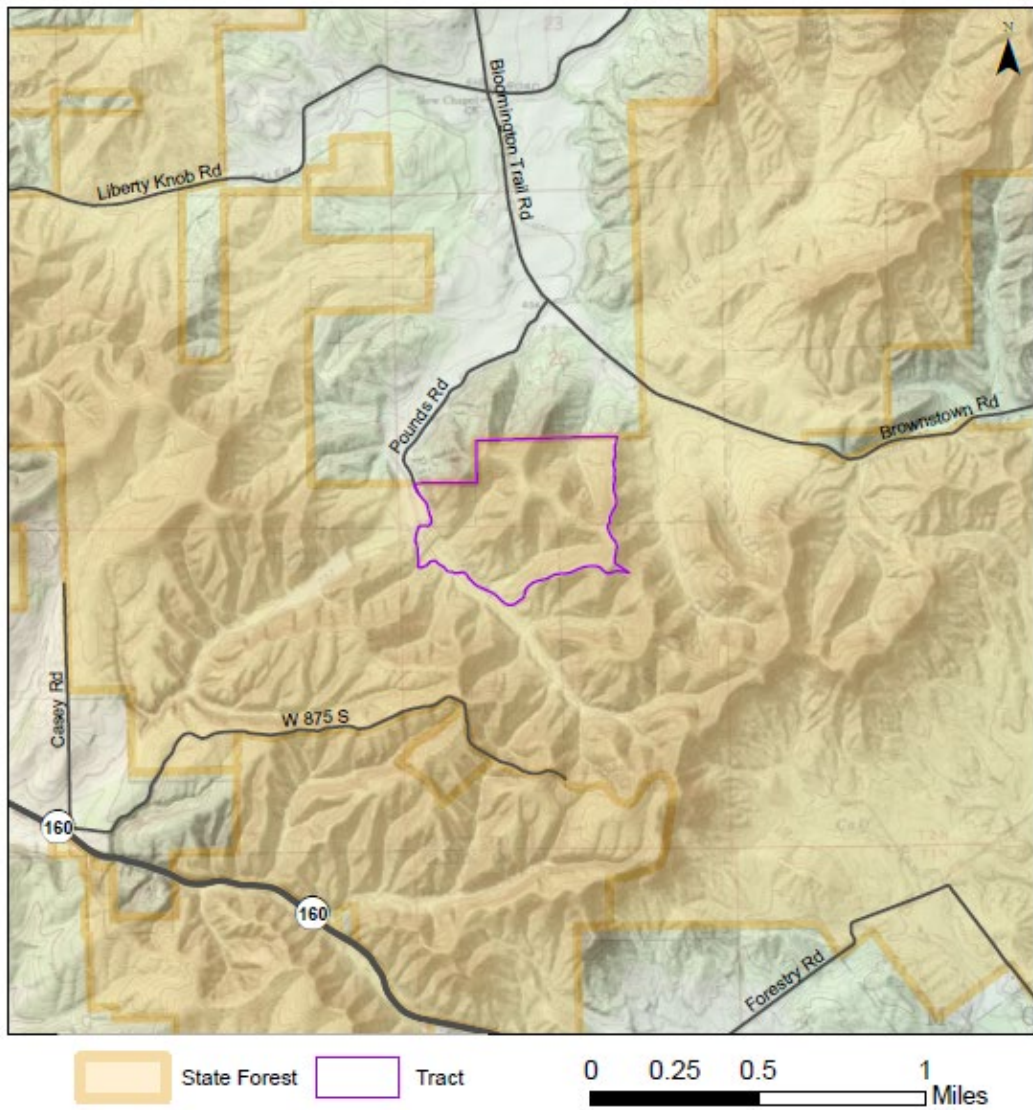
**Best management practices (BMP)** – During and after completion of the proposed management activity, BMPs will be implemented to minimize soil displacement and protect waterways.

**Guide revision** – This tract should receive another inventory and a management guide be written 20 years after the completion of this inventory.

**Prescribed fire** – A regime of prescribed burns may be started within this tract to reduce the abundance of the shade tolerant species in the midstory while improving conditions more favorable for seedling establishment and advancement of intermediate and shade intolerant species. These prescribed burns would additionally assist in the control of invasive species.

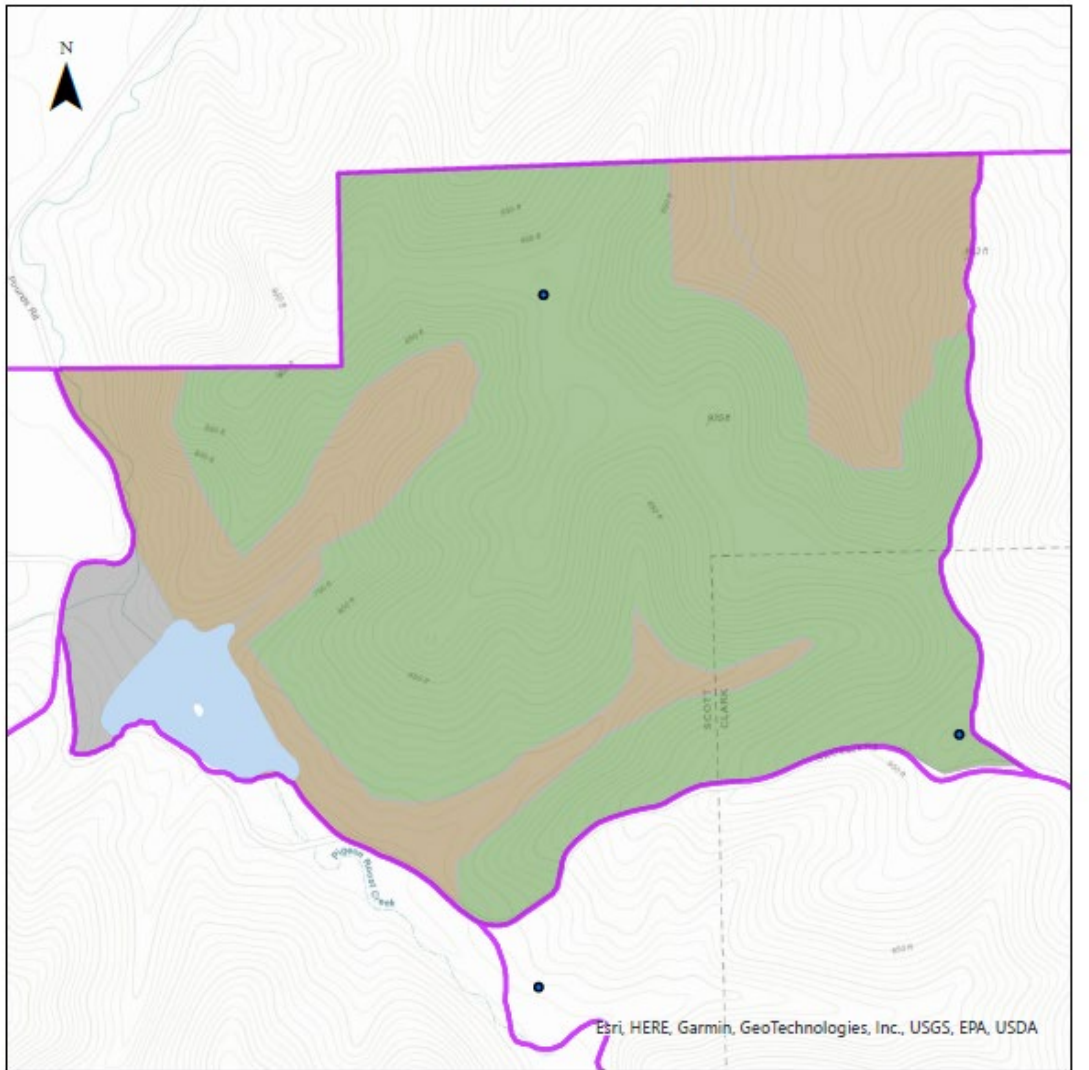
<b>Proposed Management Activity</b>	<b>Proposed Date</b>
Invasive species management	2022-2023
Timber harvest	2022-2025
Post-harvest TSI and invasive species management	Within 2 years post-harvest
Post-harvest regeneration inspection	3-5 years post-harvest
Prescribed fire regime	2025+
Re-evaluate tract	2042

Clark State Forest  
Location Map  
Compartment 6 Tract 1





# Clark State Forest Compartment 6 Tract 1 Cover Types Map



- Dry Oak-Hickory
- Mixed Hardwoods
- Non-forest
- Wilcox Lake

- Wildlife Ponds
- Tract Boundary
- Wilcox Lake

**Clark State Forest**  
**Forester:** Alwine and Hanners  
**Management Cycle End Year:** 2041

**Compartment:** 9    **Tract:** 10  
**Date:** August 2021    **Acres:** 164  
**Management Cycle Length:** 20 years

### **Location**

Compartment 9, tract 10 (6300910) is located in Clark County on the east side of Pixley Knob Road. This is about 3 miles west of Henryville, Indiana. More specifically this tract is in sections 10 and 15, T1N, R6E of Monroe Township.

### **General Description**

This tract is comprised of three cover types: mesic oak-hickory, dry oak-hickory, and mixed hardwoods. White oak and chestnut oak are the dominant overstory species. The regeneration in this tract is primarily oaks, maples, and American beech. Invasive species present include Japanese stilt grass, with some multiflora rose and Japanese honeysuckle, which is concentrated primarily in areas of pine mortality. The long-term forest management goals of this tract are to encourage and promote oak and hickory species.

### **History**

- 1924 – Land acquired from Mathew and Ida Dunlevy
- 1927– Land acquired from Robert Grubenmann
- 1927– Land acquired from Lewis C. and Laura B.
- 1987– Inventory completed for State Forest Inventory Program
- 2007– Inventory conducted and Management Guide written by Rudolph
- 2017– Southwest Boundary marked
- 2021– Inventory completed by Hanners and Alwine
- 2022 – Management guide completed by Hanners and Alwine

### **Landscape Context**

The northern half of this tract borders other Clark State Forest tracts, while the southern half borders private land. The private land on the southwest is primarily residential with some small agricultural fields. The private land to the southeast is all forested. Approximately 90% of the land within a mile radius of the tract is forested.

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

This tract has one moderately sloping ridge that runs from the northwest to the southeast corners of the tract. This ridge is comprised of south facing fingers off the larger knob just north of this tract. The slopes coming off the ridge are moderate and lightly sloped toward the two main drainages to the east and west of the main ridge. The most level portion of the tract occurs on the southern edge.

This tract is in the north most section of the Silver Creek watershed. Two intermittent streams pass through this tract: Wrong Branch and Hilltop Run. The two intermittent streams flow into Right Branch Blue Lick Creek which runs into Blue Lick Creek which runs into Silver Creek. The 2022

Best Management Practice field guide will be followed during implementation of forest management activities within this tract to minimize the potential for direct impacts to the watershed.

## **Soils**

### BcrAW- Beanblossom silt loam, 1 to 3 percent slopes, rarely flooded, 11 acres

This nearly level, deep, well-drained soil is found along alluvial fans and flood plain. It is well suited to trees. Management planning should consider wet times of year. This soil has not been evaluated for site index.

### ComC- Coolville silt loam, 6 to 12 percent slopes, 24.8 acres

This moderately sloping, deep, moderately well-drained soil is on side slopes in the uplands. It is well suited to trees. Erosion hazards are concerns that should be considered during implementation of Best Management Practices for Water Quality. This soil has a site index of 66 for northern red oak.

### ConD- Coolville-Rarden complex, 12 to 18 percent slopes, 36.2 acres

These strongly sloping, deep, moderately well-drained soils are found on side slopes in the uplands. It is well suited to trees. Erosion hazards are concerns that should be considered during implementation of Best Management Practices for Water Quality. Coolville has a site index of 66 for northern red oak and Rarden has a site index of 71 for black oak

### DbrG- Deam silty clay loam, 20 to 55 percent slopes, 0.1 acres

This moderately to very steep, deep, well-drained soil is on side slopes in the uplands. It is suited to trees. Equipment limitations and erosion hazards are concerns that should be considered during sale layout and implementation of Best Management Practices for Water Quality. This soil has not been evaluated for site index.

### GmaG- Gnawbone-Kurtz silt loams, 20 to 60 percent slopes, 79 acres

This moderately to very steep, moderately deep, well-drained complex is found on side. It is well suited to trees. The hazard of erosion and equipment limitations are main management concerns. These should be considered when planning management activities and implementing Best Management Practices for Water Quality. Kurtz has a site index of 60 for northern red oak and Gnawbone has not been evaluated.

### PcrB2- Pekin silt loam, 2 to 6 percent slopes, eroded, 2 acres

This gently sloping, deep, moderately well-drained soil is on alluvial terraces. It is well suited to trees and has a site index of 70 for white oak and 85 for yellow poplar.

### PcrC2- Pekin silt loam, 6 to 12 percent slopes, eroded, 4.2 acres

This moderately sloping, deep, well-drained soil is found on side slopes adjacent o drainageways on alluvial terraces. It is well suited to trees and has a site index of 70 for white oak and 85 for yellow poplar.

WedB2- Weddel silt loam, 2 to 6 percent slopes, eroded, 6.9 acres

This gently sloping, deep, moderately well-drained soil is found on shoulders and summits in the till plains. It is well suited to trees and has a site index of 65 for white oak and 75 for yellow poplar.

**Access**

The western boundary of this tract is Pixley Knob Road which provides easy access to enter the tract. Parking is available across the road from this tract at the Pixley Knob Trail Head for the Knobstone Trail. A small section of the Knobstone Trail between mile markers 9 and 10 pass through the northwest corner of the tract.

**Boundary**

Approximately half of this tract is bordered by other Clark State Forest tracts. Tract 6301011 is to the west, across Pixley Knob Road. Tract 6300909 is to the north, and tract 6300908 is on the northeast border. The southern half of the tract is bounded by private property. A cornerstone at the southwestern boundary corner was found in 2017 when marking boundary lines in this area.

**Ecological Considerations**

This tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife species. Habitat types include: mesic oak-hickory, dry oak-hickory, and mixed hardwoods.

The Indiana DNR Forestry Division has constructed a set of division level standards for snag tree retention, an important wildlife feature. Snags are standing dead or dying trees. Snags provide value in a forest in the form of habitat features for foraging activity, den sites, decomposers, bird perching, bat roosts, squirrel caches, and stores a wide variety of invertebrates. As time passes, these snags fall and contribute to the nutrient cycling as downed woody debris (DWD). DWD decomposes providing nutrients for remaining and new vegetative growth as well contributing to the complexity of the forest floor.

	Maintenance Level	Inventory	Available Above Maintenance
Snags 5”+	316	1,649	1,333
Snags 9”+	237	1,130	893
Snags 19”+	39.5	122	82

Snags in this tract exceeded maintenance levels for all three size classes.

A variety of invasive species were observed in the tract. Japanese stiltgrass was the most abundant, it was found along many ephemeral streams and in wet flat areas. Multiflora rose and Japanese honeysuckle were also observed and concentrated primarily in areas of pine mortality. A few tall stems (10+ ft) of ailanthus were found and locations recorded. Treating these invasive species to minimize the potential for advancement should be completed prior to a timber harvest. Japanese stiltgrass could be treated where logistically feasible.

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.

### Recreation

Recreation in this tract is likely hiking the Knobstone Trail and hunting. The section of Knobstone Trail located within this tract is short and may require the trail to be temporarily rerouted for public safety during active forest management. Once management activities have concluded the trail would return to its original location.

### Cultural

This tract was reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on this tract, but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

### Tract Subdivision Description and Silvicultural Prescription

The current inventory was completed in the summer of 2021 by foresters Hanners and Alwine. An overview of the inventory results is located in the table below. During the forest inventory, stems 4 inches diameter at breast height (DBH) and greater were measured. Plots were established on a random grid and used a variable radius plot (10 BAF) to tally trees. This tract had 46 plots, about 1 plot every 4 acres. Only trees 11 inches and larger at DBH and merchantable are included in the volume summaries and listed as “Sawtimber Trees.”

Species	Sawtimber Trees	Total Bd. Ft.
White oak	2,851	553,079
Chestnut oak	1,029	172,487
Black oak	190	55,342
Sweetgum	247	49,019
Scarlet oak	131	35,616
Virginia pine	188	31,739
Red maple	88	14,260
Yellow-poplar	45	13,698
Pignut hickory	73	11,726
Silver maple	15	4,165
American beech	47	3,453
<b>Total</b>	<b>4,904</b>	<b>944,584</b>

For the purpose of this guide and the management of this tract, the tract is divided into three cover types based on forest composition they include: mesic oak-hickory, dry oak-hickory, and mixed hardwoods. Below are the cover type descriptions.

## Descriptions

### *Mesic Oak-Hickory – 132 acres*

This is a fully stocked cover type with a stocking of 74%. This cover type makes up most of the tract acreage. White oak is the dominant overstory species making up almost 75% of the merchantable volume within the cover type. Chestnut oak, black oak, and scarlet oak make up a large portion of the remainder of the volume within the cover type. The mortality in this cover type was variable. Some areas had relatively low mortality and others had pockets of high mortality. The Virginia pine found in this cover type had a very high rate of mortality from blow down, there was some mortality in the black oak, and there was some residual ash mortality. These areas where overstory mortality was high have mixed regeneration of oaks, maples, and beech. Majority of the regeneration found throughout this tract, was a mixture of maple and beech.

Trees per acre: 90	Percent stocking: 74
Basal area: 83.6	Volume per acre: 6,267

Species	Volume per acre
White oak	4,621
Chestnut oak	786
Black oak	375
Scarlet oak	234
Virginia pine	92
Sweetgum	82
American beech	31
Pignut hickory	23
Red maple	23
<b>Total</b>	<b>6,267</b>

### *Dry Oak-Hickory – 17 acres*

Similar to the mesic oak-hickory cover type, this is a fully stocked area at 76%. The main difference between these two cover types is the increased basal area, which increases with the overstory dominance of chestnut oak. When compared to white oak, chestnut oak tends to grow in more dense stands and on drier sites. This cover type also had a component of homogenous Virginia pine that was windblown or standing dead. Virginia pine does not self-thin well or establish deep root systems. This makes them susceptible to widespread mortality once part of the area has started to decline. Most of these areas were filled with dense oak regeneration. Other regeneration throughout the cover type included American beech, sugar maple, red maple, ironwood, and sassafras. Some roundleaf greenbrier and lowbush blueberry was present on ridge tops as well. Some invasive species were present close to the ephemerals in this stand, specifically, Japanese stilt grass and Japanese honeysuckle.

Trees per acre: 87	Percent stocking: 76
Basal area: 94.4	Volume per acre: 5,824

<b>Species</b>	<b>Volume per acre</b>
Chestnut oak	2,872
White oak	1,278
Virginia pine	571
Black oak	457
Scarlet oak	322
Yellow-poplar	128
Pignut hickory	196
<b>Total</b>	<b>5,824</b>

*Mixed Hardwoods – 15 acres*

This cover type occurs in the riparian areas of the tract. Mortality in this stand was moderate. Most of the mortality was from Virginia pine blowdown. Sweetgum was the dominant overstory species. Regeneration in this stand was almost exclusively maples and American beech with occasional oak and ironwood regeneration. This cover type had the highest density of Japanese stilt grass.

Trees per acre: 123	Percent stocking: 68
Basal area: 79.1	Volume per acre: 3,208

<b>Species</b>	<b>Volume per acre</b>
Sweetgum	1,738
Red maple	509
Yellow-poplar	432
Virginia pine	203
Silver maple	181
Pignut hickory	146
<b>Total</b>	<b>3,208</b>

**Prescriptions**

*Mesic Oak-Hickory*

The proposed management for this cover type is to maintain and enhance the oak and hickory species. The overstory is dominated by oak while the regeneration is mostly shade tolerant species with some small pockets of advanced oak regeneration. This cover type is fully stocked and has moderate to relatively high mortality in some areas. The desired future condition is a healthy cover type stocked with oak and hickory species that is being succeeded by oak and hickory species.

A timber harvest is prescribed. The harvest should target declining stems and releasing trees to maintain the oak-hickory cover type. In a majority of this stand, the regeneration is shade tolerant species. These areas should be selectively thinned. In pockets where there is high mortality, small patch cuts could be used to promote regeneration. In areas with existing oak and hickory

regeneration, a shelterwood harvest could be used to improve light to advance saplings and seedlings. Small openings could also be used where the understory is more advanced to release a new cohort of oaks.

Additionally, a midstory removal could be completed to lower the presence of the shade tolerant species while increasing the amount of light for oak and hickory seedlings. This could be done mechanically through chainsaw work, chemically, or through the use of prescribed fire. Prescribed fire would likely be the most cost-effective way to reduce the shade tolerant species. Along with the midstory work, invasive species control could be performed. The post-harvest timber stand improvement (TSI) would remove marked stems remaining post-harvest, treat invasive species, and complete regeneration openings.

#### *Dry oak-hickory*

The proposed management for this cover type is similar to that of the mesic oak-hickory stand. The main difference is that chestnut oaks will likely regenerate here rather than white oak. The oak regeneration in this cover type is generally better than that of the mesic-oak-hickory stand, thus harvesting could be more focused on releasing the regeneration already present. The areas of declining Virginia pine will likely be removed to create small regeneration openings. If naturally occurring regeneration is not suitable, an enrichment planting could be an option.

#### *Mixed hardwoods*

This cover type has a very different species composition than the oak-hickory cover types. Thus, the desired future condition is a healthy cover type with an overstory composition of predominantly yellow-poplar, hickory, maple, and sweetgum. This area should be harvested with the oak-hickory cover types. In areas with Virginia pine blowdown, the harvest should be light and focus primarily on salvaging these trees. The remaining work in this cover type would focus on releasing desired trees through TSI. Hickories should be given priority in release for their wildlife benefits. Other desired tree species for release would be oaks, yellow-poplar, and maple.

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

Overall, the goal for this tract is to promote and sustain the oak-hickory cover types while controlling invasive species. In the first few years of the management cycle, focus will be controlling invasive species preharvest with a focus on minimizing spread to other areas. A timber harvest is prescribed to promote and sustain the cover types that are present. After the harvest is completed, invasive species follow-up and post-harvest TSI will be carried out. TSI will focus on releasing oak and working to reduce the presence of maple, beech, and ironwood regeneration in the oak cover types. A fire regime will be established in the oak cover types to promote a more open midstory. Use of prescribed fire would be post-harvest occurring every 3 - 5 years. This tract could be burned with other surrounding tracts to sustain the oak cover types.

#### Other considerations

**Regeneration evaluation** – Three to five years after the completion of the timber harvest, a regeneration inspection will be performed. This inspection identifies any regeneration or invasive concerns, addressing them as deemed necessary.



**Timber stand improvement (TSI)** – If needed, TSI should be performed within two years of timber harvest completion. The objective would be to complete regeneration openings, remove species marked for harvest but not removed or trees inhibiting desirable regeneration objectives, and manage invasive species.

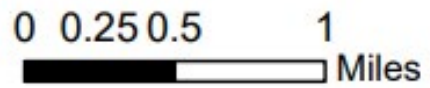
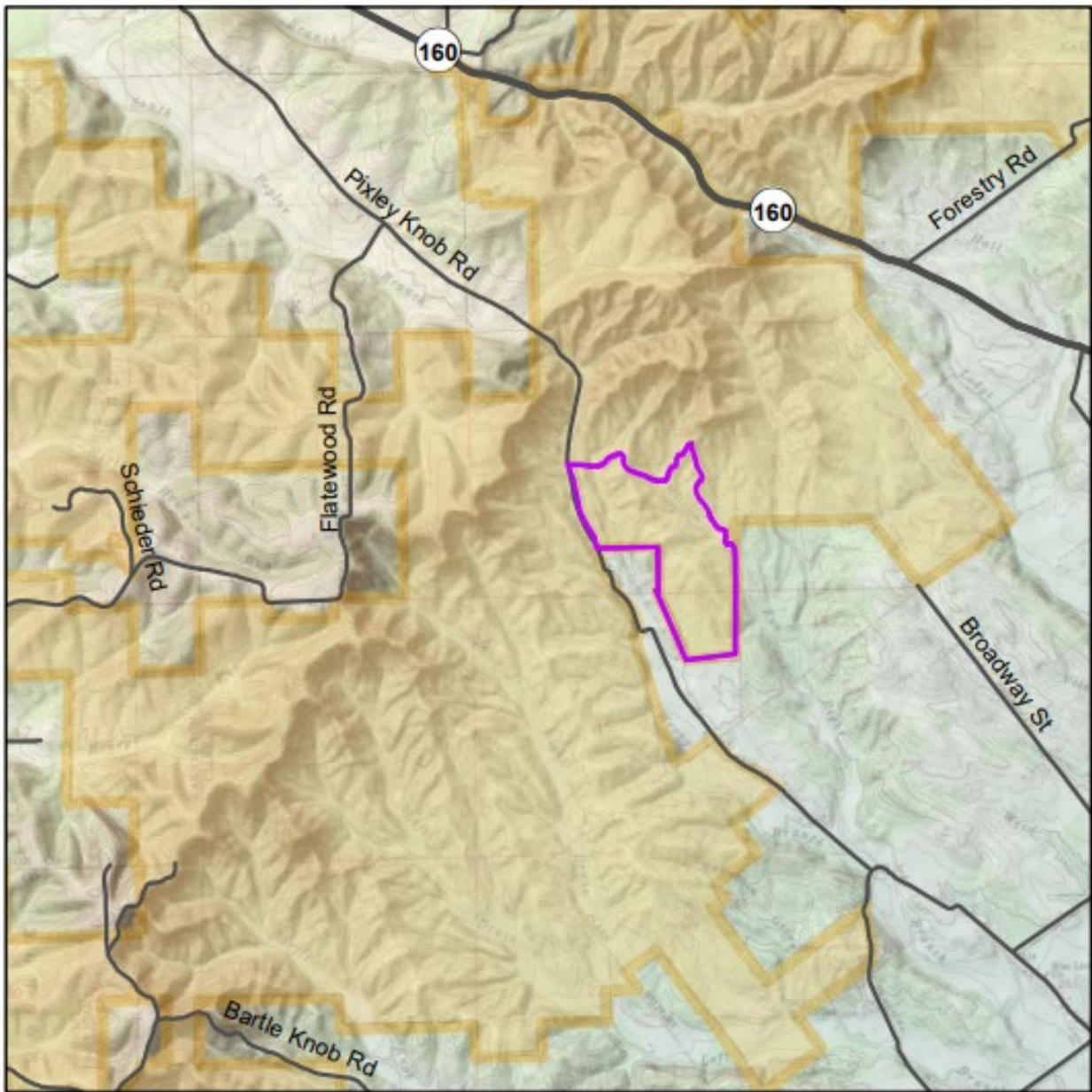
**Best management practices (BMP)** – During and after completion of the proposed management activity, BMPs will be implemented to minimize soil displacement and protect waterways.

**Guide revision** – This tract should receive another inventory and a management guide be written 20 years after the completion of this inventory.

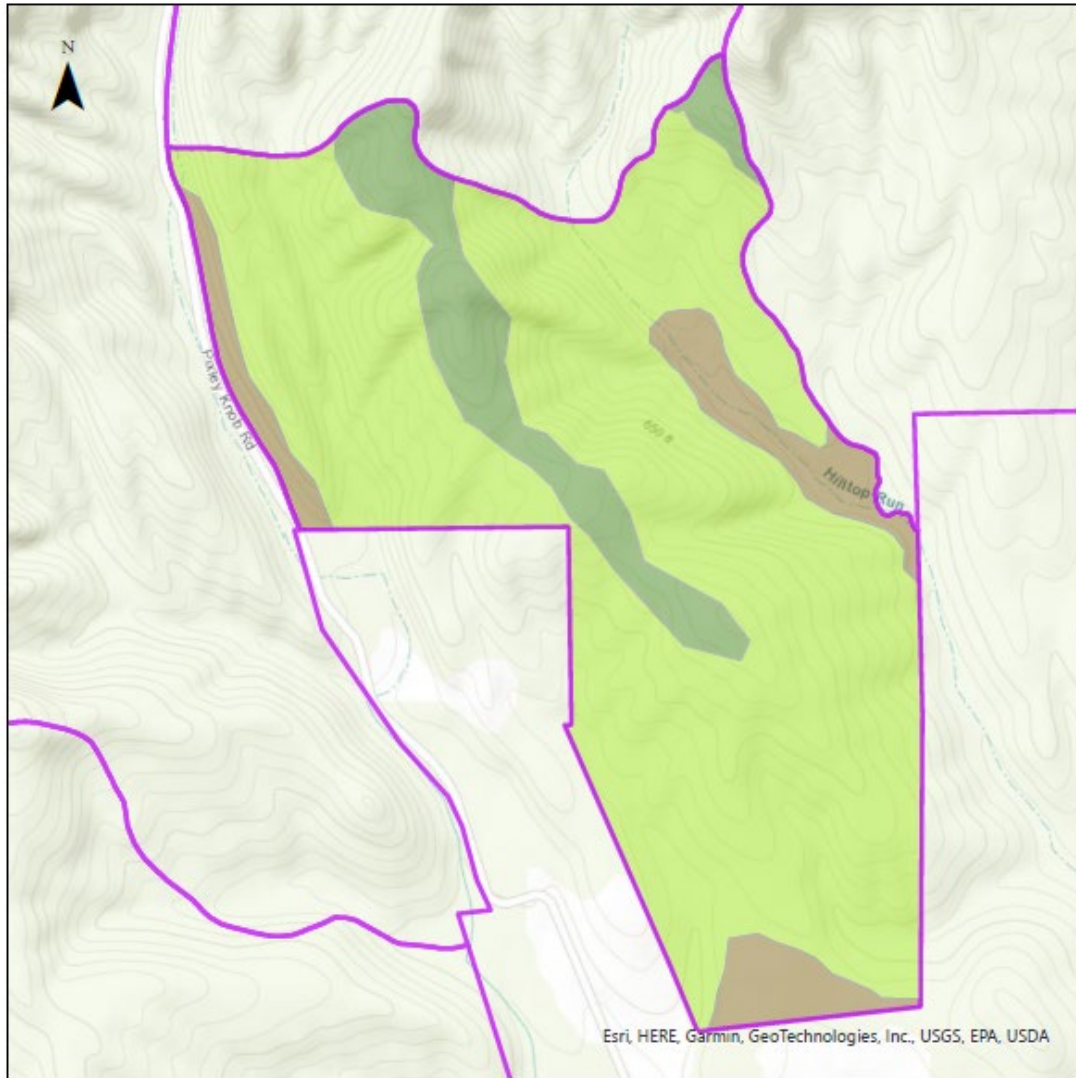
**Prescribed fire** – A regime of prescribed burns may be started within this tract to reduce the abundance of the shade tolerant species in the midstory and to help control invasive species.

<b>Proposed Management Activity</b>	<b>Proposed Date</b>
Invasive species management	2022-2023
Timber harvest	2022-2025
Post-harvest TSI and invasive species management	Within 2 years post-harvest
Post-harvest regeneration inspection	3-5 years post-harvest
Prescribed fire regime	2025+
Re-evaluate tract	2041

# Compartment 9 Tract 10



# Clark State Forest Compartment 9 Tract 10 Cover Types Map



- Dry Oak-Hickory
- Mesic Oak-Hickory
- Mixed Hardwoods

- Wildlife Ponds
- Tract Boundary