

**Resource Management Guides
Clark State Forest
30-day Public Comment Period (July 27, 2026 – August 25, 2026)**

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

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

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

Compartment 11 Tract 5 (repost)
Compartment 11 Tract 6 (repost)
Compartment 10 Tract 9
Compartment 10 Tract 13

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
Compartment 11 Tract 5
Resource Management Guide (repost)
March 11, 2026**

Link to original RMG:

https://www.in.gov/dnr/forestry/files/fo-CSF_C10_T4_C11_T5_6_C15_T3.pdf

Compartment 11 Tract 5 (repost)

Identified as 6301105

<https://gisdata.in.gov/portal/apps/experiencebuilder/experience/?id=7f4ae0a948b24fca94025a740ce44a5e>

Since the original forest inventory and finalized resource management guide (RMG) following the original public comment period November 14, 2019, little has changed with the tract. A reassessment of the tract was completed in anticipation of upcoming management activities. There has been some natural mortality, but not substantial, resulting in additional snags. The mortality is likely due to stress from the high stocking levels.

A change that has occurred since the inventory would be an increase in standing volume due to tree growth. The estimated growth rate based on previous inventories suggests 150 to 200 board feet per acre per in annual growth. Using this estimation, and assuming it remained constant since 2019, an estimated 100,725 – 134,300 board feet would be added to the total tract volume estimated in 2019. When considering mortality, net growth may be closer to an estimated 75,000 – 100,000 board feet. The increase in tract volume due to tree growth since 2019 has likely increased the estimated volume to be removed and remain following the timber harvest.

No change in silvicultural prescriptions is warranted.

An ecological management review will be conducted.

**Clark State Forest
Compartment 11 Tract 6
Resource Management Guide (repost)
March 11, 2026**

Link to original RMG:

https://www.in.gov/dnr/forestry/files/fo-CSF_C10_T4_C11_T5_6_C15_T3.pdf

Compartment 11 Tract 6 (repost)

Identified as 6301106

<https://gisdata.in.gov/portal/apps/experiencebuilder/experience/?id=7f4ae0a948b24fca94025a740ce44a5e>

Since the original forest inventory and finalized resource management guide (RMG) following the original public comment period November 14, 2019, little has changed with the tract. A reassessment of the tract was completed in anticipation of upcoming management activities. There has been some natural mortality, but not substantial, resulting in additional snags. The mortality is likely due to stress from the high stocking levels.

A change that has occurred since the inventory would be an increase in standing volume due to tree growth. The estimated growth rate based on previous inventories suggests 150 to 200 board feet per acre per in annual growth. Using this estimation, and assuming it remained constant since 2019, an estimated 73,568 – 98,091 board feet would be added to the total tract volume estimated in 2019. When considering mortality, net growth may be closer to an estimated 50,000 – 75,000 board feet. The increase in tract volume due to tree growth since 2019 has likely increased the estimated volume to be removed and remain following the timber harvest.

No change in silvicultural prescriptions is warranted.

An ecological management review will be conducted.

Clark State Forest
Forester: Will Davis
Management Cycle End Year: 2044

Compartment:10 Tract: 09
Date: June 2024 Acres: 137
Management Cycle Length: 20

Location

Compartment 10, Tract 09, also referenced as 6301009, is in Clark County, Indiana, in Section 9 of Township 1N, Range 6E. The tract is approximately 1.5 miles south of New Liberty, Indiana and 4.5 miles west of Henryville, Indiana.

General Description

The tract has four cover types: mixed hardwoods, dry oak-hickory, beech-maple, and conifer. Mostly mixed hardwoods dominated by yellow poplar in the overstory with white oak, chestnut oak, red maple, and shagbark hickory having a notable presence. The tract is fully stocked in all cover types. The main regeneration is white ash but there are notable chestnut oak, black oak white oak, American beech, yellow poplar, sugar maple, and pawpaw. Management of this tract will aim to lower the stocking through a timber harvest and timber stand improvement (TSI). Other management activities for this tract could include invasive species control and prescribed fire. The main goal is to promote the growth of oak and hickory species in areas where possible and support the continued health of the tract.

History

- 1939 – Land acquired from Charles and Maude Bagshaw
- 1950 – Land acquired from Asa and Auda Casey
- 1975 – Forest Inventory and Resource Management Guide written by P. Wagner
- 1986 – Fire lane created that extended into tract 4
- 1986 – Forest inventory for State Forest Inventory Program
- 1988 – Land acquired from Margaret and William Greene
- 1993 – Forest Inventory and Resource Management Guide written by S. Snyder
- 2006 – Forest Inventory and Resource Management Guide written by J. Winner and D. Rudolph
- 2008 – Timber sale completed, 291,020 board feet harvested by Darlage and Lambring
- 2009 – Timber sale completed, 64,043 board feet harvested by Darlage and Lambring
- 2024 – Forest Inventory by W. Davis
- 2025 – Resource Management Guide written by W. Davis

Landscape Context

The tract is bordered by private land and other Clark State Forest tracts. The landscape is generally forested, but some residential homes are near to the north and south. The Clark State Forest land surrounding the tract is managed for both recreation and forest management.

Topography, Geology and Hydrology

Topography is mostly consistent, ranging between 990 and 1,000 feet above sea level. The most drastic change occurs in the northern portion of the tract where the topography begins to descend. A main ridge enters from the east and exits the tract to the west. The ridge has multiple fingers that split off to the north and south.

The tract is in the Mississippian Borden mapped bedrock formation. The formations constituting the Borden Group are the New Providence, the Spickert Knob, and the Edwardsville. The Borden Group is composed dominantly of gray argillaceous siltstone and of shale. Fine-grained sandstone is common. Interbedded limestones form discontinuous lenses and facies that are minor except for the interval of the Floyds Knob Limestone Member at the base of the Edwardsville Formation.

The tract is also in the eastern portion of the South Fork Blue River Watershed. There are two unnamed mapped intermittent streams that border the tract and no mapped perennial streams. There are multiple drainages within 6301009 which feed the two intermittent streams. The northwest bordering intermittent stream feeds South Poplar Branch, while the southern intermittent stream feeds North Honey Run. General riparian management zone (RMZ) guidelines will be implemented in accordance with the 2022 Indiana Logging and Forestry Best Management Practices Field Guide.

Soils

GgbG (68.8 Ac) - Gilwood-Brownstown silt loams, 25 to 75 percent slopes

This moderately to very steep, moderately deep, well-drained complex is on side slopes in the knobs. It is suited to trees. The hazard of erosion is the main management concern that should be considered when implementing Best Management Practices for Water Quality. Brownstown has a site index of 50 for black oak and Gilwood has not been evaluated.

KxkC2 (33.3 Ac) - Knobcreek-Navilleton silt loams, 6 to 12 percent slopes, eroded

This moderately sloping, deep, well-drained complex is on side slopes in the uplands. It is well suited to trees. Erosion hazards are main management concern that should be considered during implementation of Best Management Practices for Water Quality. Knobcreek has a site index of 76 for Northern red oak and 86 for yellow poplar and Navilleton has not been evaluated for site index.

GgfD (19.9 Ac) - Gilwood-Wrays silt loams, 6 to 18 percent slopes

This gentle to moderately sloping, moderately deep, well-drained complex is found on side slopes of the uplands knobs. The hazard of erosion is the main management concern 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.

CtwB- (11.3 Ac) Crider-Bedford-Navilleton silt loams, 2 to 6 percent slopes

This gently sloping, deep, well-drained soil is on ridgetops in the uplands. It is well suited to trees. Crider has a site index of 90 for white oak and 98 for yellow poplar. Bedford has a site index of 70 for white oak and 90 for yellow poplar. Navilleton has not been evaluated for site index.

SolC2 (2.3 Ac) - Spickert-Wrays silt loams, 6 to 12 percent slopes, eroded

This moderately sloping, deep, moderately well-drained soil is found in side slopes in the uplands and knobs. It is well suited to trees. A fragipan is present at 20 to 36 inches that inhibits drainage. Erosion hazards are a management concern that should be considered when implementing Best Management Practices for Water Quality. Spickert has a site index of 60 for white oak and 100 for yellow poplar and Wrays has a site index of 70 for white oak and 90 for yellow poplar.

BcrAW (0.1 Ac) - Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration

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.

Access

Access is from Flatwood Road and a fire lane, which also serves as the Cross Country Horse Trail. Flatwood Road runs along the eastern border of the tract at the south end. Flatwood Road contains a parking area to access the Cross Country Horse Trail, located on the opposite side of Flatwood Road. Cross Country Horse Trail runs through the middle of the tract and provides access to the tract's entirety. Cross Country Horse Trail is accessible by vehicle, horse, and foot.

Boundary

The tract borders private land to the north, northeast, south, and southwest. To the northwest is tract 6301013 and to the southeast, across Flatwood Road, is 6301010. The southern portion of the eastern border is joined with Flatwood Road. A portion of the northwestern border is joined with one of the intermittent streams. The other intermittent stream enters and touches a small part of the southern border before leaving the tract again. The far western boundary coincides with the Clark-Washington County line.

Ecological Considerations

The tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife species. Habitat types include mixed hardwoods, dry oak-hickory, beech-maple, and conifer. Evidence of several species of wildlife noted at the time of inventory include white-tailed deer, Eastern grey squirrels, Eastern chipmunks, and a variety of woodpeckers and songbirds.

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

In the compartment that includes this tract, inventory data indicate snag densities meet DoF targets in all size classes, including the largest (≥ 19 " dbh). Additionally, legacy tree densities exceed DoF compartment-level targets in all size classes.

The invasive species located within the tract were: Japanese stilt grass, Japanese honeysuckle, bush honeysuckle, ailanthus, paulownia, multi-flora rose, periwinkle, autumn olive, and oriental bittersweet. The two most prevalent invasive species were Japanese honey suckle and multi-flora rose. Overall, there is a moderately high to high invasive species presence. The invasive species concentration is higher near the Cross Country Horse Trail. Invasive species management could

target a particular species such as ailanthus or paulownia due to the threat those species pose to the displacement of native woody species.

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

Recreation

The main recreational opportunity is likely horseback riding. The Cross Country Horse Trail runs through the middle of the tract and multiple horse riders were seen during the time of inventory. Other likely recreational opportunities include hunting, wildlife viewing, and foraging. During periods of active management, it is likely this section of trail will be temporarily closed for public safety.

Cultural

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 activities.

Tract Subdivision Description and Silvicultural Prescription

The current forest resource inventory was completed in the summer of 2024 by Forester W. Davis. A summary of the estimated tract inventory results is below.

Tract Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Yellow poplar	1,486	385,220
Chestnut oak	812	243,260
White oak	520	166,810
Virginia pine	781	98,230
Pignut hickory	329	75,960
Eastern white pine	218	68,470
Red maple	447	58,680
Black oak	161	54,430
Shagbark hickory	266	50,110
Sugar maple	387	47,830
Northern red oak	88	39,610
American beech	166	27,140
Largetooth aspen	247	20,880
Blackgum	166	13,260
Bitternut hickory	39	10,250
Scarlet oak	9	6,610
Black locust	24	4,860
Black Cherry	82	3,380

Eastern red cedar	187	1,680
American elm	68	1,560
Total	6,483	1,378,230

For the purposes of this resource management guide this tract is divided into four management cover types based on forest composition: mixed hardwoods, dry oak-hickory, beech-maple, and conifer.

Mixed hardwoods, 66 Acres

This cover type is the largest in the tract, encompassing approximately 48% of the total tract acreage. The stocking for this cover type is estimated at 94%, classifying it as fully stocked. Yellow poplar makes up about 52% of the total volume for this cover type with chestnut oak being the next highest at about 12%. Yellow poplar is the dominant overstory species with chestnut oak and white oak having a notable presence. The dominant understory tree is American beech, followed by yellow poplar and sugar maple. The dominant regeneration is a mixture of American beech and white ash with yellow poplar having a presence. There is a mixture of oak-hickory regeneration present in some of this cover type. The mortality in these areas is moderately high overall, with a lot of white ash mortality due to the emerald ash borer. The main invasive species present in these areas is Oriental bittersweet with Japanese honeysuckle, Japanese stilt grass, periwinkle, paulownia, ailanthus and multi-flora rose also having a notable presence.

Mixed Hardwoods Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Yellow poplar	1,259	312,870
Chestnut oak	294	76,290
White oak	195	62,730
Virginia pine	322	38,570
Sugar maple	275	28,240
Red maple	116	23,470
Black oak	52	10,540
Northern red oak	4	7,760
Scarlet oak	9	6,610
Largetooth aspen	121	6,180
Blackgum	60	5,920
Pignut hickory	13	4,720
Bitternut hickory	25	4,680
Shagbark hickory	25	4,010
American beech	16	3,170
Black cherry	32	1,330
Total	2,818	597,090

An improvement harvest is recommended for this cover type. The goal is to create an average basal area between 50 and 70, and to improve overall health and diversity. An improvement harvest could remove between 250,000 – 300,000 board feet from this cover type. This could be accomplished with the use of a single tree and group selection harvest, with patch-cut openings. This silvicultural approach should focus on promoting oak-hickory growth in areas where feasible. These tools could also be used to promote other hardwood species such as yellow poplar, sugar maple, blackgum, or black cherry in areas where oak-hickory growth is not feasible. An oak shelterwood harvest could be considered in areas where ample oak is present in the overstory.

Prescribed fire and TSI could be used in these areas to improve the health of the cover type or to promote certain species over others. If prescribed fire is used, the area could be repetitively burned to ensure proper control and continued health in this cover type. Invasive species control could be used in this cover type and is recommended in areas where the timber harvest or TSI creates a larger opening allowing high quantities of light to reach the ground.

Dry Oak-hickory, 44 Acres

This cover type is the second largest at approximately 32% of the tract acreage. The stocking for this cover type is estimated at 96%, classifying it as fully stocked. Chestnut oak makes up about 28% of the total volume for this cover type with white oak being the next closest at about 19%. The overstory is mostly chestnut oak with white oak, pignut hickory, shagbark hickory, and black oak having a notable presence. Sugar maple is the dominant understory tree in this cover type with American beech also having a notable presence. The high presence of overstory oak-hickory species is in turn producing quality regeneration. The regeneration is majority chestnut and white oak. The mortality in the cover type is overall moderate and is mainly Virginia pine mortality due to that species' shorter lifespan and a weaker root system. Other mortality included white ash due to the emerald ash borer. The main invasive species present in these areas are Japanese honeysuckle, multi-flora rose, and Japanese stilt grass.

Oak-Hickory Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Chestnut oak	487	147,310
White oak	320	99,340
Pignut hickory	309	68,060
Shagbark hickory	241	46,100
Black oak	109	43,890
Northern red oak	84	31,850
American beech	150	23,970
Sugar maple	112	19,590
Yellow poplar	84	16,500
Virginia pine	90	11,930
Bitternut hickory	14	5,570
Blackgum	17	4,000
Eastern redcedar	187	1,680
Total	2,204	519,790

An improvement harvest is recommended for this cover type with the goal of creating an average basal area of 60-80. An improvement harvest could remove between 200,000 – 250,000 board feet from this cover type. This could be accomplished with the use of a single tree and group selection harvest, and patch-cut openings. Invasive species control is advised and is recommended in areas where the timber harvest or TSI creates a larger opening allowing high quantities of light to reach the ground.

The goal is to keep this as an oak-hickory cover type for the foreseeable future. To do this, the oak and hickory regeneration would benefit from a competitive advantage. A shelterwood harvest is ideal in areas with advanced oak regeneration and ample oak seed trees. This advantage can also be obtained by removing non-oak-hickory species that compete with the oak-hickory species. This could be completed by TSI or prescribed fire. If prescribed fire is used, the area could be repetitively burned to ensure that the non-oak-hickory species are properly controlled.

Conifer, 16 Acres

This cover type is the next-to-smallest at approximately 12% of the tract acreage. Its percent stocking is estimated at 102%, which qualifies it as overstocked. Eastern white pine makes up most of the total volume in this cover type at about 36% with Virginia pine being the next highest at about 23%. These two species also dominate the overstory of this cover type. The most prominent understory tree in this cover type is the American beech. The regeneration in these areas mainly include Virginia pine, Eastern white pine, chestnut oak, and American beech. Mortality in this cover type is moderately high with most of the mortality being Virginia pine due to the species having a shorter lifespan and a weaker root system. The main invasive species in this cover type is Japanese honeysuckle.

Conifer Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Eastern white pine	218	68,470
Virginia pine	353	44,480
Chestnut oak	31	19,660
Yellow poplar	45	16,530
Red maple	120	15,500
Largetooth aspen	126	14,700
Black locust	24	4,860
Blackgum	68	2,170
Black cherry	50	2,050
American elm	68	1,560
Total	1,103	189,980

An improvement harvest could be used to manage the cover type and bring the basal area down to 50-70. An improvement harvest could remove between 100,000 – 150,000 board feet from this cover type. This could be accomplished with the use of a single tree and group selection harvest, utilizing patch-cut openings where appropriate. These silvicultural methods should focus on

promoting oak-hickory growth in areas where feasible. These methods could also be used to promote other hardwood species such as yellow poplar, blackgum, American elm, or black cherry in areas where oak-hickory growth isn't feasible.

The dominant conifer species in this cover type are mainly un-even aged and have not been managed in a way that the specific species need to thrive. White pine is not a native species to Clark State Forest, and the current condition and age of the Virginia pine is less than ideal. A complete removal of the overstory pines in these areas could be conducted by four separate patch-cut openings. This could be followed by a tree planting of oak and hickory species. This management would provide early successional habitat while converting the stand to native hardwoods. Equipment could be used in tree plantings in areas where the topography is feasible and access using the Cross Country Horse Trail. Another option could be to remove the pines and allow natural regeneration to occur. This option should be considered to a greater extent in areas where desirable hardwoods species such as chestnut oak, yellow poplar, and black cherry are present.

Prescribed fire and Timber Stand Improvement (TSI) could be used in these areas as tools to improve the health of the cover type or to promote certain species over others. If prescribed fire is used, the area could be repetitively burned to ensure proper control and continued health in this cover type. Invasive species control could be used in this cover type and is recommended in areas where the timber harvest or TSI creates a larger opening allowing high quantities of light to reach the ground.

Beech-Maple, 11 Acres

This cover type is the smallest portion of the tract at approximately 8% of the tract acreage. The stocking for this cover type is estimated at 71%, classifying it as fully stocked. Yellow poplar makes up most of the total volume for this cover type at about 55% with red maple being the next highest at about 28%. Red maple is the dominate overstory species. The understory is mainly made up of American beech and red maple. Regeneration for this cover type consists mainly of American beech and white ash. Mortality for this cover type is overall high and mainly consists of downed Virginia pine due to the species having a shorter lifespan and a weaker root system. Other mortality to note included white ash due to the emerald ash borer. The main invasive species found in this cover type are Japanese stilt grass, Japanese honeysuckle, and multi-flora rose.

**Beech-Maple Summary Data (trees
>11"DBH):**

Species	# of Trees	Total Bdft
Yellow poplar	98	39,320
Red maple	211	19,710
White oak	5	4,740
Virginia pine	16	3,250
Pignut hickory	7	3,180
Blackgum	21	1,170
Total	358	71,370

An improvement harvest is recommended for this cover type with the goal of creating an average basal area of 50-60. An improvement harvest could remove between 20,000 – 40,000 board feet from this cover type. This could be accomplished with the use of a single tree and group selection harvest, with patch-cut openings. Where possible, these silvicultural methods could be used to transition this cover type to an oak-hickory or mixed hardwoods cover type. If transition is chosen, these tools should focus on promoting oak-hickory growth in areas where feasible but could also be used to promote mixed hardwood species such as yellow poplar or blackgum.

Due to the smaller size and poor health of this cover type, a complete removal of the beech-maple overstory in these areas could be conducted by three separate patch-cut openings. This could be followed by a tree planting of oak and hickory species. This management would provide early successional habitat while converting the stand to desirable native hardwoods. Equipment could be used in tree plantings in areas where the topography is feasible and access from the Cross Country Horse Trail. Another option could be to allow for natural regeneration to occur. This should be considered to a greater extent in areas where desirable hardwood species such as yellow poplar, white oak, and pignut hickory are present. Conversion of these areas not only would improve the timber value but would also increase or improve wildlife habitat and conditions.

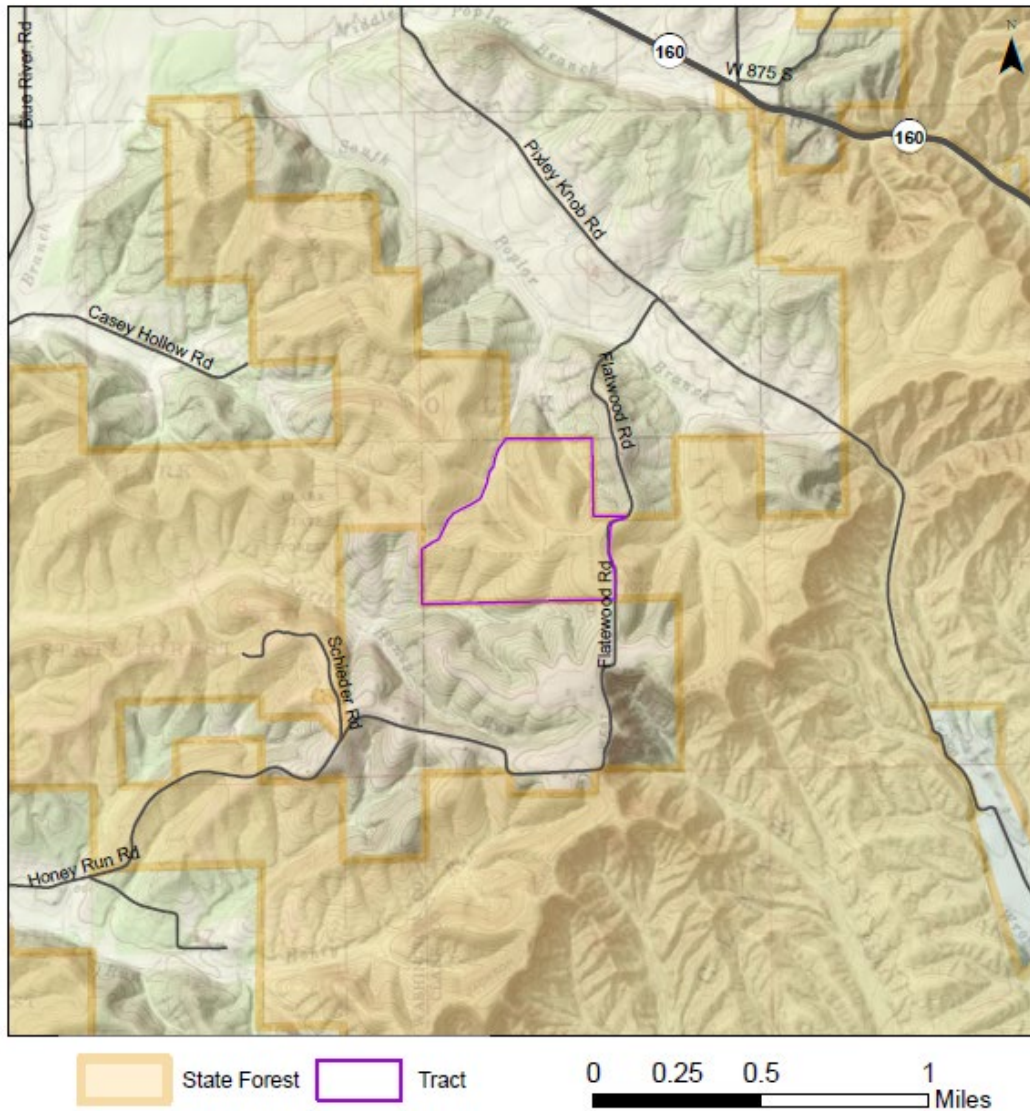
Prescribed fire and TSI could be used in these areas as tools to improve the health of the cover type or to promote certain species over others. If prescribed fire is used, the area could be repetitively burned to ensure proper control and continued health in this cover type. Invasive species control could be used in this cover type and is recommended in areas where the timber harvest or TSI creates a larger opening allowing high quantities of light to reach the ground.

Summary Tract Silvicultural Prescription and Proposed Activities

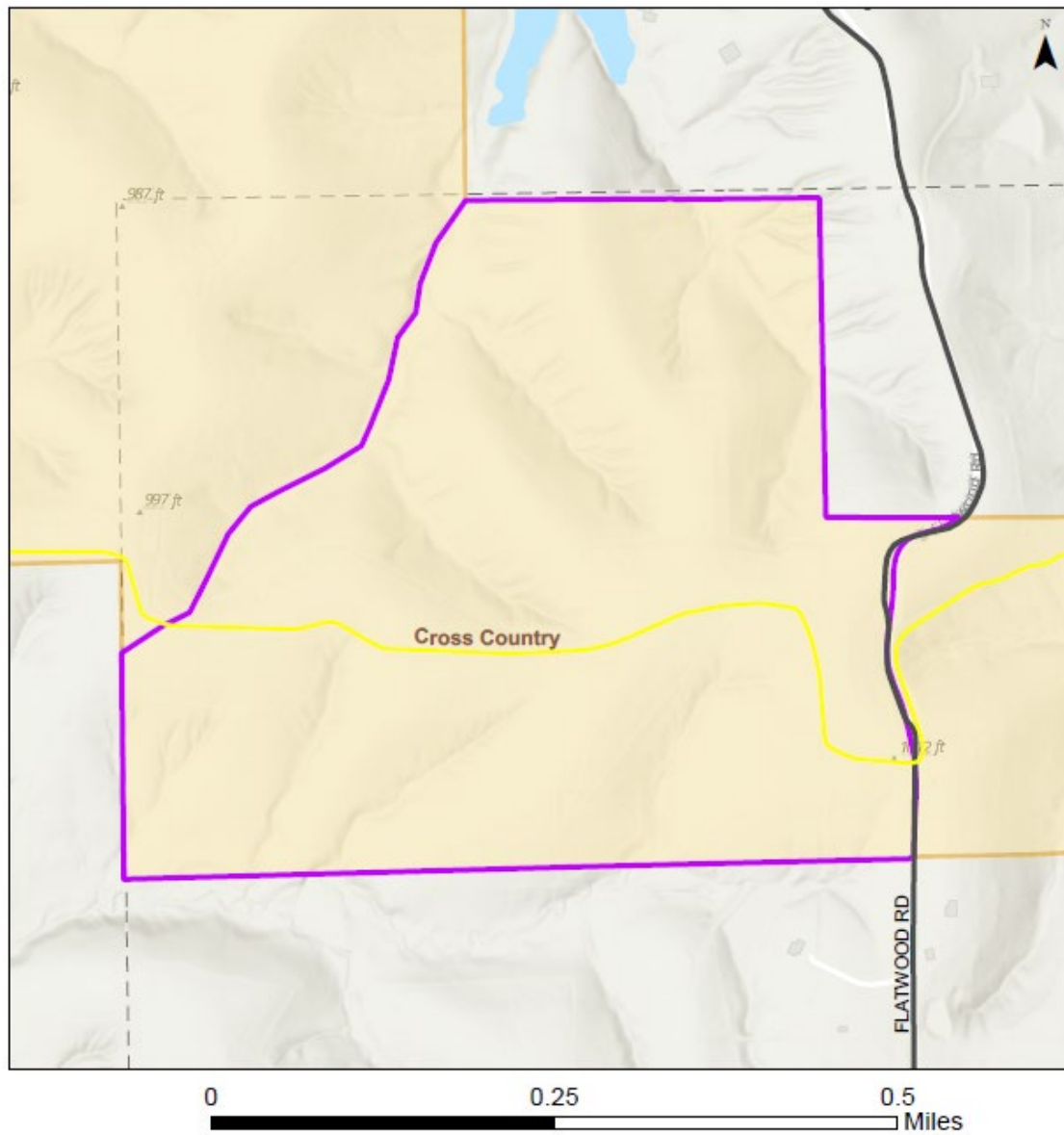
The following recommendations would support the continued health of the tract. Management could begin with pre-harvest invasive species control. This control could be used to limit seed producing populations or reduce less pervasive invasive species. Pre-harvest TSI could be utilized to help promote desirable regeneration such as oak or hickory species. A timber harvest is recommended to lower the basal area, improve regeneration conditions, or to transition an area of the tract from one cover type to another. An improvement harvest could remove an estimated 570,000 and 740,000 board feet from the tract. This could be done using single tree and group selections, with patch-cut openings and oak shelterwoods where appropriate. Post-harvest TSI and invasive species control could be used to enhance the fitness of certain species and ensure the success of the tract. Prescribed fire is recommended throughout most of the tract to improve the understory and enhance the fitness of the desirable hardwood species.

Proposed Management Activity	Proposed Date
Invasive species control and preharvest TSI	2025-2027
Fire lane maintenance	2025-2027
Timber harvest	2026-2028
Post-harvest TSI and invasive species control	Within 2 years of harvest
Post-harvest regeneration review	Three years after harvest
Prescribed fire regime	2028+
Next forest inventory	2045

Clark State Forest
Location Map
Compartment 10 Tract 9



Clark State Forest Compartment 10 Tract 9 Tract Map



- Recreation Trail
- Tract boundary
- State Forest

Clark State Forest Compartment 10 Tract 09 Cover Types Map



-  Tract Boundary
-  Dry Oak-Hickory
-  Mixed Hardwoods
-  Beech-Maple
-  Conifer

0 0.13 0.25
Miles

Clark State Forest
Forester: Will Davis
Management Cycle End Year: 2044

Compartment:10 Tract: 13
Date: July 2024 Acres: 102
Management Cycle Length: 20

Location

Compartment 10, Tract 13, also referenced as 6301013, is in Clark and Washington Counties in Indiana. The tract is in Sections 4, 5, 8, and 9 of Township 1N, Range 6E. The tract is approximately 1.5 miles south of New Liberty, Indiana and 4.5 miles west of Henryville, Indiana.

General Description

The tract has three cover types: mixed hardwoods, dry oak-hickory, and beech-maple. The tract is mostly mixed hardwoods and dry-oak-hickory and fully stocked in all cover types. Yellow poplar makes the majority of the overstory in this tract with chestnut oak having a notable presence. The main regeneration is white ash but there is notable white oak, chestnut oak, black oak, American beech, and Eastern redbud regeneration. Management of this tract will aim to lower the stocking through a timber harvest and timber stand improvement (TSI) activities throughout the tract. Other management activities for this tract could include invasive species control and prescribed fire. The main goal is to sustain the presence of oak and hickory and promote regeneration and growth where it is possible.

History

- 1939 – Land acquired from Charles and Maude Bagshaw
- 1940 – Land acquired from Rufus Matthews
- 1940 – Land acquired from Ollie Mull
- 1940 – Land acquired from Lee Lewellen
- 1988 – Land acquired from Margaret and William Greene
- 1994 – Fire lane maintenance
- 1995 – Forest Inventory and Resource Management Guide written by S. Derringer
- 1995 – Resource Management Guide written by D. Pyle
- 1996 – Timber sale completed, 88,342 board feet harvested by Worley Lumber Company
- 2007 – Forest Inventory and Resource Management Guide written by J. Winner
- 2008 – Timber sale completed, 291,020 board feet harvested by Darlage and Lambring
- 2009 – Timber sale completed, 64,043 board feet harvested by Darlage and Lambring
- 2024 – Forest Inventory by W. Davis
- 2025 – Resource Management Guide written by W. Davis

Landscape Context

The tract is bordered by private land and other Clark State Forest tracts. The landscape is generally forested, but some residential homes are near to the northeast, northwest, and south. The Clark State Forest land surrounding the tract is managed for both recreation and forest management.

Topography, Geology and Hydrology

Topography ranges from around 850 to around 990 feet above sea level. The most drastic change occurs in the eastern portion of the tract where the topography begins to descend. The tract consists

of one main ridge that enters from the south and exits the tract to the north. The ridge has multiple fingers that split off, mainly to the west.

The tract is in the Mississippian Borden mapped bedrock formation. The formations constituting the Borden Group are the New Providence, the Spickert Knob, and the Edwardsville. The Borden Group is composed dominantly of gray argillaceous siltstone and of shale. Fine-grained sandstone is common. Interbedded limestones form discontinuous lenses and facies that are minor except for the interval of the Floyds Knob Limestone Member at the base of the Edwardsville Formation.

The tract is also in the eastern portion of the South Fork Blue River Watershed. There are three unnamed mapped intermittent streams that border the tract. There are multiple drainages within 6301013 which feed the intermittent streams. The northwestern and western bordering intermittent streams feed South Fork Blue River, while the eastern intermittent stream feeds South Poplar Branch. General riparian management zone (RMZ) guidelines will be implemented in accordance with the 2022 Indiana Logging and Forestry Best Management Practices Field Guide.

Soils

GnF (54.7 Ac)- Gilpin-Berks loams, 18 to 50 percent slopes

These moderately steep to very steep, moderately deep, well-drained soils are on side slopes in the uplands. Erosion hazards, equipment limitations, and plant competition are the main management concerns. These should be considered during sale planning, layout, and implementation of Best Management Practices for Water Quality. This soil has a site index of 80 for northern red oak and 95 for yellow poplar.

GgbG (20 Ac) - Gilwood-Brownstown silt loams, 25 to 75 percent slopes

This moderately to very steep, moderately deep, well-drained complex is on side slopes in the knobs. It is suited to trees. The hazard of erosion is the main management concern that should be considered when implementing Best Management Practices for Water Quality. Brownstown has a site index of 50 for black oak and Gilwood has not been evaluated.

WeC2 (12.2 Ac) - Wellston silt loam, 6 to 12 percent slopes, eroded

This moderately 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

SolC2 (8.1 Ac) - Spickert-Wrays silt loams, 6 to 12 percent slopes, eroded

This moderately sloping, deep, moderately well-drained soil is found in side slopes in the uplands and knobs. It is well suited to trees. A fragipan is present at 20 to 36 inches that inhibits drainage. Erosion hazards are a management concern that should be considered when implementing Best Management Practices for Water Quality. Spickert has a site index of 60 for white oak and 100 for yellow poplar and Wrays has a site index of 70 for white oak and 90 for yellow poplar.

CoC2 (3.7 Ac) - Crider silt loam, 6 to 12 percent slopes, eroded

This moderately sloping, deep, well-drained soil is on uplands. It is well suited to trees. This soil has a site index of 87 for black oak and 98 for yellow poplar.

KxkC2 (2.1 Ac) - Knobcreek-Navilleton silt loams, 6 to 12 percent slopes, eroded

This moderately sloping, deep, well-drained complex is on side slopes in the uplands. It is well suited to trees. Erosion hazards are main management concern that should be considered during implementation of Best Management Practices for Water Quality. Knobcreek has a site index of 76 for Northern red oak and 86 for yellow poplar and Navilleton has not been evaluated for site index.

Cu (1.5 Ac) - Cuba silt loam, frequently flooded

This nearly level, deep, well-drained soil is on bottom land. It is well suited to trees. Management activities should consider wet times of year. This soil has a site index of 100 for yellow poplar.

Access

Access is by a fire lane which also serves as the Cross Country Horse Trail. The Cross Country Horse Trail runs through the far southern portion of the tract and provides access along the entire southern border. The Cross Country Horse Trail is accessible by vehicle, horse, and foot.

Boundary

The tract borders private land to the northwest, northeast, and south. To the north is tract 6301003, to southeast is tract 6301009, at the far southwest corner is tract 6301006, and to the west is 6301004. Intermittent streams border portions of the tract to the north, east, and west. The far southern tip of the southern border coincides with the Clark-Washington County line.

Ecological Considerations

The tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife species. Habitat types include mixed hardwoods, dry oak-hickory, and beech-maple. Evidence of several species of wildlife noted at the time of inventory include white-tailed deer, Eastern grey squirrels, Eastern box turtle, DeKay's brownsnake, Western chorus frog, and a variety of woodpeckers and songbirds.

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

In the compartment that includes this tract, inventory data indicate snag densities meet DoF targets in all size classes, including the largest ($\geq 19"$ dbh). Additionally, legacy tree densities exceed DoF compartment-level targets in all size classes.

The invasive species located within the tract were: oriental bittersweet, Japanese honeysuckle, Japanese stilt grass, burning bush, multi-flora rose, ailanthus, periwinkle, and common lespedeza. The two most prevalent invasive species were oriental bittersweet and Japanese honeysuckle. Overall, there is a high invasive species presence. The invasive species concentration is higher

near the Cross Country Horse Trail. Invasive species management could target a particular species such as oriental bittersweet due to the heavy infestation that poses a threat to native vegetation.

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

Recreation

The main recreational opportunity is likely horseback riding. The Cross Country Horse Trail runs across the southern portion of the tract and multiple horse riders were seen during the time of inventory. Other likely recreational opportunities include hunting, wildlife viewing, and foraging. During periods of active management, it is likely this section of trail will be temporarily closed for public safety.

Cultural

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 activities.

Tract Subdivision Description and Silvicultural Prescription

The current forest resource inventory was completed in the summer of 2024 by Forester W. Davis. A summary of the estimated tract inventory results is below.

Tract Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Yellow poplar	1,206	229,840
Chestnut oak	1,025	155,910
Pignut hickory	486	92,710
Sugar maple	577	76,900
American beech	373	67,300
White oak	200	63,270
Northern red oak	148	56,410
Black oak	143	51,400
Shagbark hickory	367	40,600
Red maple	251	37,090
Virginia pine	176	21,720
Bitternut hickory	29	8,490
Blackgum	76	6,240
Scarlet oak	8	6,000
Black walnut	13	4,600
Black cherry	24	2,670
Sassafras	86	1,980

Hackberry	43	1,380
White ash	43	990
Total	5,274	925,500

For the purposes of this resource management guide this tract is divided into three management cover types based on forest composition: mixed hardwoods, dry oak-hickory, and beech-maple.

Mixed hardwoods, 44 Acres

This cover type is the largest in the tract, encompassing approximately 43% of the total tract acreage. The stocking for this cover type is estimated at 86%, classifying it as fully stocked. Yellow poplar is the dominant overstory species and makes up about 58% of the total volume for this cover type. Pignut hickory has the second most volume but is only about 9% of the total volume. There are a few patches where Virginia pine is dominant in the overstory, but these patches are minimal compared to the yellow poplar's dominance throughout the cover type. The dominant understory tree is American beech with sugar maple, red maple, and yellow poplar having a small presence. The dominant regeneration in this cover type is white ash with American beech, white oak, yellow poplar, and sassafras having a smaller presence. The mortality in these areas is overall moderate, with a lot of white ash mortality due to the emerald ash borer. Other mortality consists mainly of Virginia pine due to the species' shorter lifespan and weaker root system. The main invasive species present in this cover type are Oriental bittersweet and Japanese honeysuckle. Other invasive species common in this cover type include Japanese stilt grass, periwinkle, ailanthus, common lespezea, and multi-flora rose.

Mixed Hardwoods Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Yellow poplar	1,085	206,060
Pignut hickory	165	31,950
Sugar maple	213	23,570
White oak	29	17,070
Northern red oak	54	14,910
Virginia pine	111	13,510
Chestnut oak	28	13,480
Red maple	127	11,590
Scarlet oak	8	6,000
American beech	48	5,790
Black walnut	13	4,600
Black cherry	24	2,670
Sassafras	86	1,980
Blackgum	32	1,800
Hackberry	43	1,380
White ash	43	990
Total	2,109	357,350

An improvement harvest is recommended for this cover type. The goal is to create an average basal area between 50 and 70, and to improve overall health and diversity. An improvement harvest could remove between 125,000 – 175,000 board feet from this cover type. This could be accomplished with the use of a single tree and group selection harvest, with patch-cut openings where needed. This silvicultural approach should focus on promoting oak-hickory growth in areas where feasible. These tools could also be used to promote other hardwood species such as yellow poplar, black cherry, blackgum, or sugar maple in areas where oak-hickory growth is not feasible. An oak shelterwood harvest could be considered in areas where ample oak is present in the overstory.

Prescribed fire and timber stand improvement (TSI) could be used in these areas to improve the health of the cover type or to promote certain species over others. If prescribed fire is used, the area could be repetitively burned to ensure proper control and continued health in this cover type. Invasive species control could be used in this cover type and is recommended in areas where the timber harvest or TSI creates a larger opening allowing high quantities of light to reach the ground.

Dry Oak-hickory, 43 Acres

This cover type is the second largest at approximately 42% of the tract acreage. The stocking for this cover type is estimated at 87%, classifying it as fully stocked. Chestnut oak makes up about 33% of the total volume for this cover type with pignut hickory being the next closest at about 14%. The overstory is mostly chestnut oak with shagbark hickory, pignut hickory, white oak, and black oak having a notable presence. American beech is the dominant understory tree in this cover type with red maple and sugar maple also having a notable presence. The high presence of overstory oak-hickory species is in turn producing quality regeneration. From most prevalent to least prevalent, the oak-hickory regeneration is as follows: chestnut oak, white oak, black oak, shagbark hickory, and Northern red oak. White ash regeneration is also prevalent in this cover type. The mortality in these areas is overall moderate. Most of the mortality is white ash due to the emerald ash borer and Virginia pine due to the species' shorter lifespan and weaker root system. The main invasive species presence in this cover type consists of Oriental bittersweet. Other invasive species common in this cover type include Japanese honey suckle, Japanese stilt grass, ailanthus, and multi-flora rose.

Dry Oak-Hickory Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Chestnut oak	987	138,090
Pignut hickory	321	60,760
White oak	171	46,200
Black oak	136	46,080
Shagbark hickory	339	38,240
Northern red oak	56	21,200
Red maple	93	17,750
Sugar maple	127	16,660
Yellow poplar	74	11,730
Bitternut hickory	29	8,490

Virginia pine	65	8,210
Blackgum	44	4,440
American beech	25	1,430
Total	2,467	419,280

An improvement harvest is recommended for this cover type with the goal of creating an average basal area of 50-70. An improvement harvest could remove between 150,000 – 200,000 board feet from this cover type. This could be accomplished with the use of a single tree and group selection harvest, and patch-cut openings where appropriate. Invasive species control is advised and is recommended in areas where the timber harvest or TSI creates a larger opening allowing high quantities of light to reach the ground.

The goal is to keep this as an oak-hickory cover type for the foreseeable future. To do this, the oak and hickory regeneration would benefit from a competitive advantage. A shelterwood harvest is ideal in areas with advanced oak regeneration and ample oak seed trees. This advantage can also be obtained by removing non-oak-hickory species that compete with the oak-hickory species. This could be completed by TSI or prescribed fire. If prescribed fire is used, the area could be repetitively burned to ensure that the non-oak-hickory species are properly controlled.

Beech-Maple, 15 Acres

This cover type is the smallest at approximately 15% of the tract acreage. The stocking for this cover type is estimated at 81%, classifying it as fully stocked. American beech makes up most of the total volume and for this cover type at about 40% with sugar maple being the next highest at about 25%. Those two species can also be found dominating the overstory in this cover type. The understory is mainly made up of American beech with red maple and sugar maple having a presence. There is no dominant species regenerating over others in this cover type. Regeneration consists of American beech, chestnut oak, sugar maple, white oak, white ash, yellow poplar, and pawpaw. Mortality for this cover type is moderately low overall, and the mortality present is mainly white ash due to the emerald ash borer. The main invasive species found in this cover type are Japanese stilt grass, Japanese honeysuckle, multi-flora rose, and Oriental bittersweet.

Beech-Maple Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
American beech	300	60,080
Sugar Maple	237	36,670
Northern red oak	38	20,300
Yellow poplar	47	12,050
Red maple	31	7,750
Black oak	7	5,320
Chestnut oak	10	4,340
Shagbark hickory	28	2,360
Total	698	148,870

An improvement harvest is recommended for this cover type with the goal of creating an average basal area of 30-50. An improvement harvest could remove between 55,000 – 105,000 board feet from this cover type. This could be accomplished with the use of a single tree and group selection harvest, and patch-cut openings where appropriate. Where possible, these tools could be used to transition this cover type to an oak-hickory or mixed hardwoods cover type. If transition is chosen, these tools should focus on promoting oak-hickory growth in areas where feasible but could also be used to promote a mixed hardwood species such as yellow poplar.

Due to the smaller size and poor health of this cover type, a complete removal of the beech-maple overstory in these areas could be conducted by three separate patch-cut openings. This could be followed by a tree planting of oak and hickory species. This management would provide early successional habitat while converting the stand to desirable native hardwoods. Equipment could be used in tree plantings in areas where the topography is feasible and access from the Cross Country Horse Trail. Another option could be to allow for natural regeneration to occur. This should be considered to a greater extent in areas where desirable hardwood species such as yellow poplar, Northern red oak, chestnut oak, black oak, and shagbark hickory are present. Conversion of these areas not only would improve the timber value but would also increase or improve wildlife habitat and conditions.

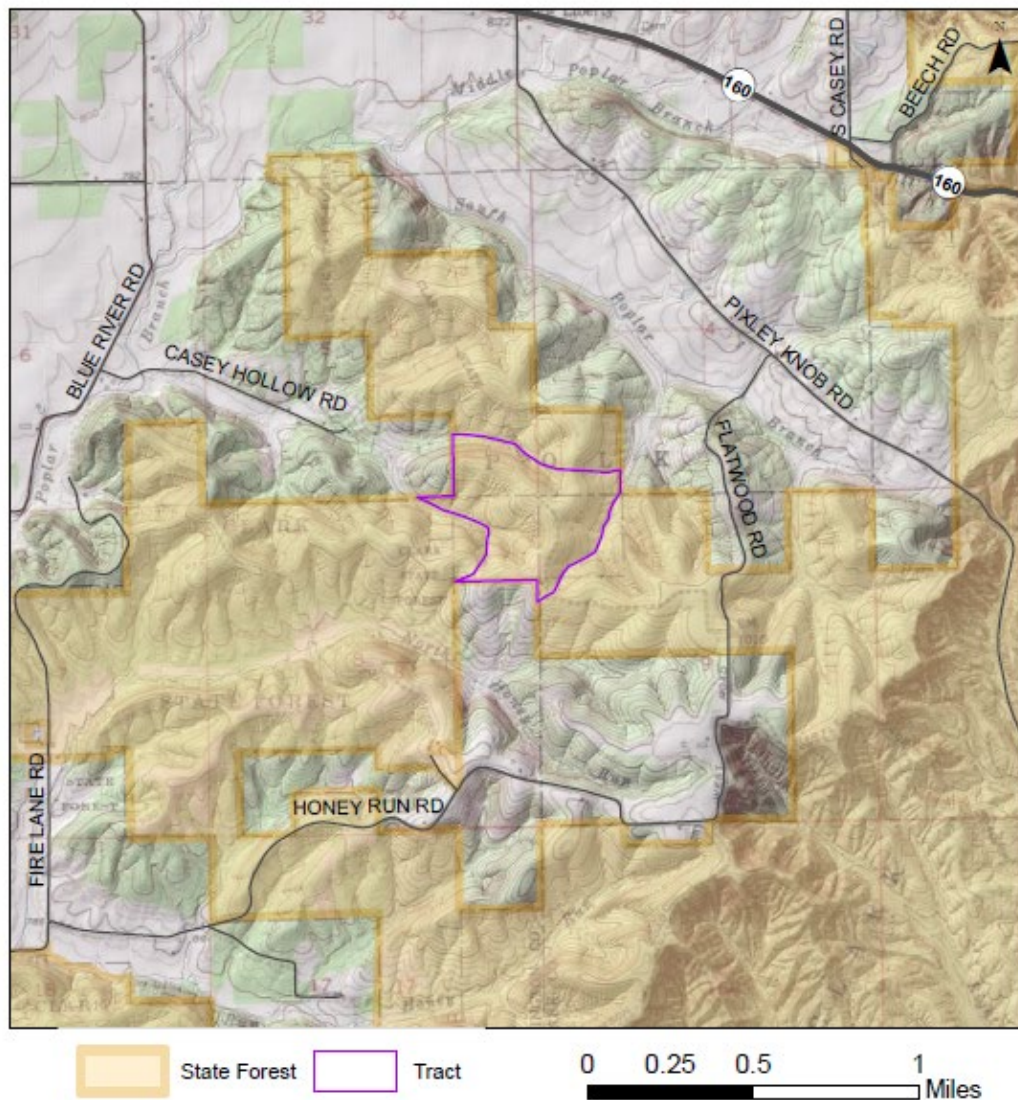
Prescribed fire and TSI could be used in these areas to improve the health of the cover type or to promote certain species over others. If prescribed fire is used, the area could be repetitively burned to ensure proper control and continued health in this cover type. Invasive species control could be used in this cover type and is recommended in areas where the timber harvest or TSI creates a larger opening allowing high quantities of light to reach the ground.

Summary Tract Silvicultural Prescription and Proposed Activities

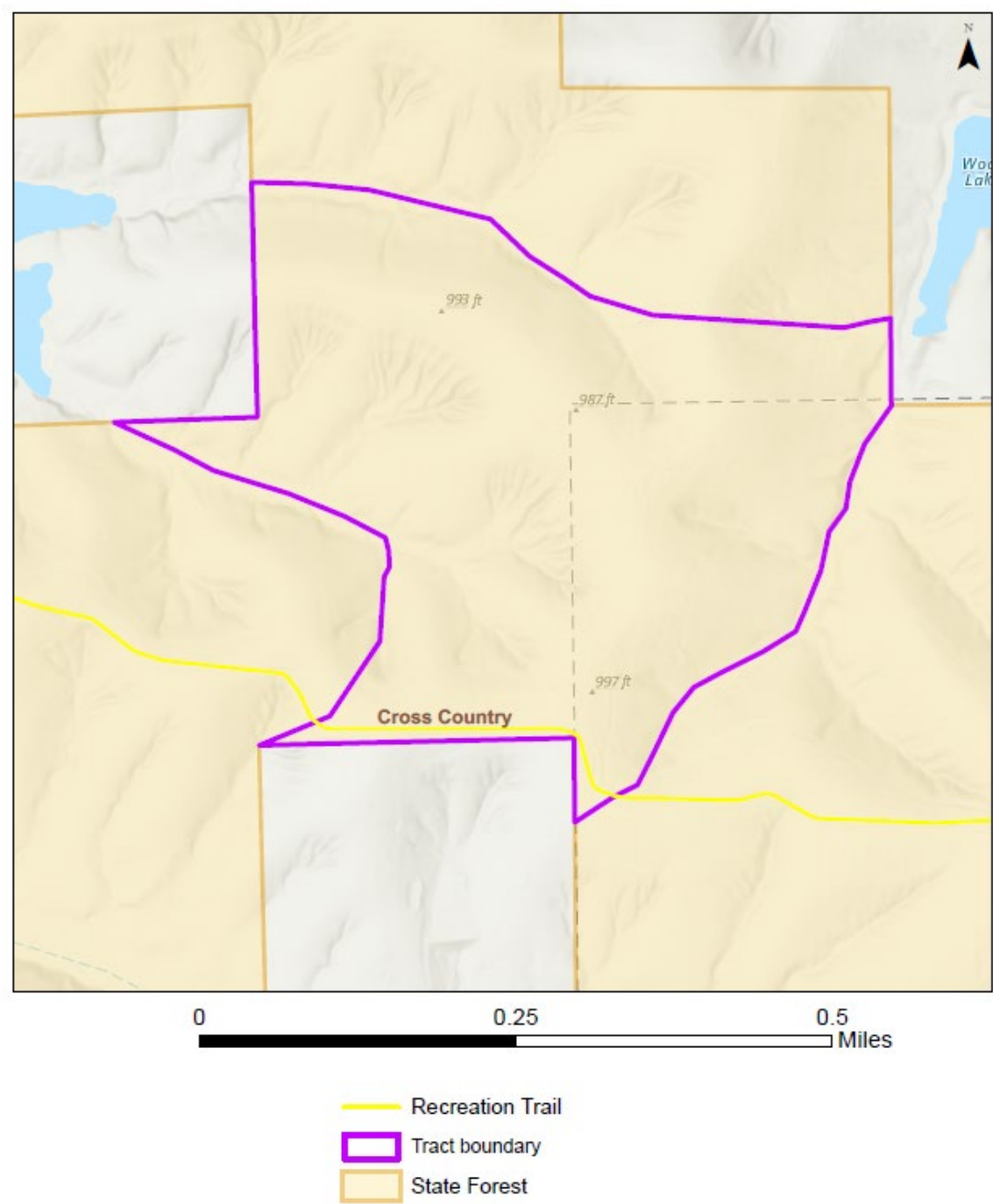
The following recommendations would support the continued health of the tract. Management could begin with pre-harvest invasive species control. This control could be used to limit seed producing populations or reduce less pervasive invasive species. Pre-harvest TSI could be utilized to help promote desirable regeneration such as oak or hickory species. A timber harvest is recommended to lower the basal area, improve regeneration conditions, or to transition an area of the tract from one cover type to another. An improvement harvest could remove an estimated 330,000 and 480,000 board feet from the tract. This could be done using single tree and group selections, oak shelterwood, or patch-cut openings. Post-harvest TSI and invasive species control could be used to enhance the fitness of certain species and ensure the success of the tract. Prescribed fire is recommended throughout most of the tract to improve the understory and enhance the fitness of the desirable hardwood species.

Proposed Management Activity	Proposed Date
Invasive species control and pre-harvest TSI	2025-2027
Fire lane maintenance	2025-2027
Timber harvest	2026-2029
Post-harvest TSI and invasive species control	Within 2 years of harvest
Post-harvest regeneration review	Three years after harvest
Prescribed fire regime	2029+
Next forest inventory	2044

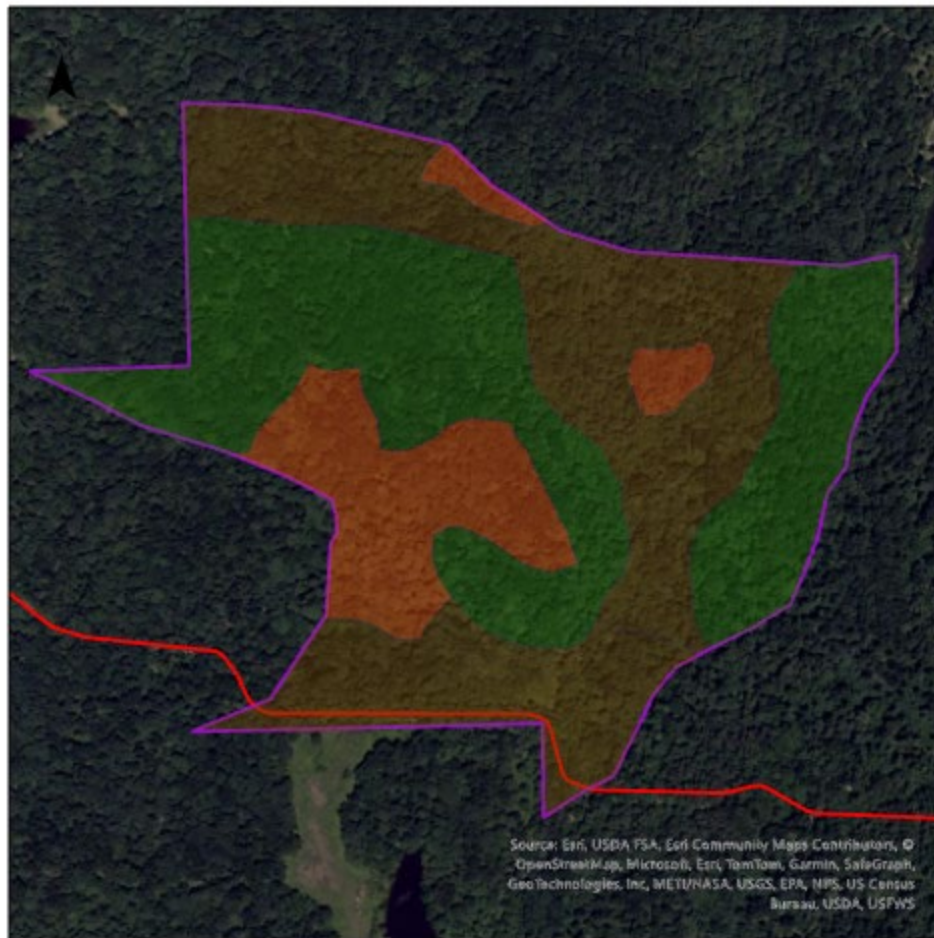
Clark State Forest
Location Map
Compartment 10 Tract 13



Clark State Forest
Compartment 10 Tract 13
Tract Map



Clark State Forest Compartment 10 Tract 13 Cover Types Map



- Dry Oak-Hickory
- Mixed Hardwoods
- Beech-Maple
- Tract Boundary
- Cross Country

0 0.13 0.25
Miles