Indiana Department of Natural Resources
Division of Forestry

Indiana Department of Natural Resources

Resource Management Guides
Morgan-Monroe State Forest
30-day Public Comment Period (October 21, 2025 – November 19, 2025)

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 Morgan-Monroe State Forest.

Compartment 11 Tract 10
Compartment 11 Tract 22
Compartment 11 Tract 23

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.

Morgan-Monroe State Forest	Compartment: 11	Tract: 10
Forester: J. McCoy	Date: 6/12/2025	Acres: 165
Management Cycle End Year: 2045	Management Cycle Length: 20 years	

Location
Tract 6371110, also known as tract 10, is in Morgan County, Indiana, more specifically Washington Township, Sections 10 & 11 – T10N – R1W. The tract is approximately seven miles southwest of Martinsville, Indiana, and is accessible by a gated fire lane off the north side of Chambers Pike Road.

General Description
The majority of the tract's 165 acres are covered with hardwood forests, especially oak-hickory timber types. Other type(s) present include mixed hardwoods in one old regeneration opening.

An improvement timber harvest occurred in 2013. This was a light thinning focused on the removal of lower quality trees. There was a 2.2 acre regeneration opening created during this harvest. Timber stand improvement (TSI) was performed in 2012 and focused on cull removal, vine control, and opening completion. As a result of past efforts, the current overall timber quality within this tract is good and a harvest would support the continued health of the forest. The old regeneration opening is infested with vines. Few trees are free of vines, resulting in many broken tops and limbs, bent and twisted trunks, and uprooted trees. In this opening, stocking and vigor are low and consist mainly of saplings and poles. The regeneration opening is now 13 years old and contains mixed hardwoods species such as sassafras, yellow-poplar, red maple, and sugar maple.

History
- 4/12/1941 – Eastern portion of tract was acquired by the state from Gaston and Mary Nutter.
- 4/23/1942 – Central portion of tract was acquired from Frances and Oscar Fowler.
- 7/12/1984 – Timber harvest volume cruise – estimated 1,767 board feet (BF)/acre harvestable.
- 11/26/1984 – Timber Marking Completed (Forester Breedlove).
- 2/14/1984 – Timber Sale – 242,925 BF sold to Chester E. Hacker for $36,450.
- 12/18/1984 – Logging began.
- 1985 – Timber harvest completed.
- 11/26/1986 – TSI on 11 regeneration openings performed.
- 12/13/2000 – 8 acres of the southwest corner of the tract was acquired from Herb Scroggins.
- 8/20/2012 – Vine TSI – vines cut on crop trees; approx. 75% tract (Forest Int. DeCosta)
- 8/20/2012 – Timber Inventory – estimated 3,247 BF/acre harvestable and 5,357 BF/acre of leave. (Forest Int. DeCosta)
- 7/11/2013 – Timber Sale – 723,701 BF (marked in old tracts 6371108 and 6371110) sold to Phil Etiennes for $262,003.00
- 7/11/2014 - Forester's Verification of Timber Sale Completion (Forester Ramey)
- 6/26/2025 – Forest Inventory – (Foresters Eckhart and McCoy)

Landscape Context
The surrounding landscape near the tract is predominantly closed-canopy deciduous forest. State forest surrounds the tract on the northern, eastern, and southern boundary. The western boundary of the tract is formed by the northbound lane of Interstate 69 (I-69).

Minor cover/habitat types in the surrounding area include early successional forest (< 20 years old), cropland, and developed areas.

Landscape level forest threats include parcelization and development of private land tracts, and introduction of invasive plants that are routinely introduced during home landscaping efforts.

Topography, Geology and Hydrology
The general topography of this region consists of unglaciated, sharply dissected hills, narrow ridges and valleys. The underlying bedrock is Mississippian sandstone, shale, and siltstone.

This tract lies within the Butler Creek – White River sub-watershed. Water resources within this hydrologic boundary are part of the White River watershed.

Riparian features (intermittent streams) are present on portions of the tract. General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the Indiana Logging and Forestry Best Management Practices 2022 BMP Field Guide.

Soils
Typical soils in this area are moderately drained to well drained soils that formed in residuum (formed in place on bedrock). A thin layer of loess covers some of these soils. The major soils in this tract are listed below.

<u>BkF- Brownstown-Gilwood silt loam, 25 to 75 percent slopes</u>
Steep to very steep slopes and moderately deep and shallow well drained soils on side slopes. This tract is comprised of approximately 70% of this soil type along side slopes and presents moderate erosion hazards, severe equipment limitations, moderate to severe seedling mortality, and slight to moderate windthrow damage. Surface runoff of this soil is rapid. Haul roads should be constructed on contours to prevent erosion. The site index for black oak is 50.

<u>Bu- Burnside silt loam, 0 to 3 percent slopes</u>
This soil type is nearly level, deep, well drained on narrow flood plains in sandstone bedrock areas. It is subject to occasional flooding and so presents equipment limitations. This soil is well suited for the growing of yellow-poplar, red oak, and black walnut trees. Erosion, equipment limitations, seedling mortality, and windthrow hazards are all slight for this soil type. This soil has a site index of 95 for yellow-poplar.

<u>WmC- Wellston – Gilpin Silt Loams, 6-20 percent slopes</u>
Moderately sloping to moderately steep, moderately deep and deep, well drained soils on

ridgetops and side slopes. Erosion, equipment limitations, seedling mortality, and windthrow hazards are all slight for this soil type. This soil type occupies approximately 20% of the tract along the ridgetops. Site Index for northern red oak is 81; site index for yellow-poplar is 90.

Access
This tract is accessible via a gated fire lane off Chambers Pike Road. The tract is located approximately one mile behind the gate. Access within the tract is good as the main ridges were used as old skid trails.

Boundary
State Forest land borders this tract to the north, south, and east. These tract boundaries are defined by deep ravines and mapped intermittent streams bisected by the main ridge of the tract. The remaining western boundary is defined by I-69.

No private ownerships border this tract.

Ecological Considerations
This tract contains diverse vegetation and wildlife resources (age, type, structure) conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- old regeneration openings
- scattered mixed hardwood stands
- riparian areas

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

Inventory data for this tract indicates the abundance of snags for 19”dbh exceed maintenance levels; however, they are underrepresented for 5”+ and 9”+. Where opportunities exist, snags in the deficient size class will be created by culling standing trees. It is important to note that these are compartment-level guidelines and that even though the estimated tract data does not quite meet all target levels, overall densities across the compartment meet Division of Forestry guidelines.

Invasive species were noted at the time of inventory. Japanese stiltgrass is present on the fire lanes and scattered on ridgetops within this and adjacent tracts. Control will require the use of a higher capacity vehicle mounted spray unit. Multiflora rose, autumn olive, Amur honeysuckle, and barberry are lightly scattered along the edges of main trails, in openings and canopy gaps,

and throughout riparian areas. Control of these species can be carried out through basal bark, cut stump, or spot spray foliar operations.

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
Although no permanently established recreation trails or developments are present in this tract, there are still several recreational opportunities.

Hunting is permitted on state forests, and this area also offers opportunities for certain types of gathering and wildlife viewing.

The value of these recreation facilities will be given consideration during forest management activities. Where necessary, use may be restricted during activities for user and worker safety reasons.

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
Mesic Oak-Hickory – 143 ac
The cover type (i.e., timber type) on the north and east facing slopes is predominantly mature oak-hickory with mixed hardwoods, such as yellow-poplar, sugar maple, white ash, red maple, and blackgum, interspersed throughout. A mix of diameters is present, but the timber resource consists of a mostly medium to large size class. The understory is dominated by beech and maple.

The south and west facing slopes are dominated with scarlet oak, black oak, and hickory. The understory is dense with greenbrier, sassafras, American beech, and red maple. Except for some larger trees lower on the slopes, the timber resource in these areas consists of a mostly pole to medium sawtimber. Old fire damage is common throughout this cover type.

Overall, oak species account for most of the total volume in the tract, with black, northern red, and white oaks being the most prevalent.

Mixed Hardwoods – 22 ac
This timber type is found mainly in the creek bottoms between the main ridges and includes the previous regeneration open from the 2013 timber harvest. Primary species include yellow-poplar,

sugar maple, red maple, and American beech. Other species present include American sycamore, blackgum, and black walnut. The understory is mostly ironwood, sassafras, maple, and beech.

There is one regeneration opening dominated with yellow-poplar, maple, and sassafras. Most of the yellow-poplar regeneration in this opening was found to have modest decline and mortality due to the tuliptree scale infestation and severe droughts that occurred in 2012. The opening is approximately 12 years old and encompasses approximately 2 acres. This area is infested with grapevines, resulting in many broken tops and limbs, bent and twisted trunks, and uprooted trees. This area consists mainly of sapling and small pole sized trees.

The current forest resource inventory was completed on 6/12/25 by Foresters J. McCoy and L. Eckhart. A summary of the estimated tract inventory results is located in the table below.

Tract Summary Data

Total Trees/Acre = **101**
Sawtimber Trees/Acre = **36**
Present Volume = **9,650** BF/Acre
Basal Area = **91** Ft^2/Acre

Tract Summary Data (trees >11" DBH):

Species	**# Sawtimber Trees**	**Total Bd. Ft.**
White Oak	1,590	489,500
Northern Red Oak	877	288,272
Black Oak	771	327,126
Sugar Maple	615	57,716
Basswood	431	54,858
Pignut Hickory	339	81,874
Yellow Poplar	322	109,750
Black Cherry	187	23,061
Shagbark Hickory	162	29,979
Scarlet Oak	147	49,460
American Beech	129	20,360
Red Maple	114	13,452
American sycamore	75	18,136
Sassafras	47	3,170
Black Walnut	41	5,039
White Ash	22	2,520
Norway Spruce	14	4,039
Blackgum	12	2,467
Total:	**5,895**	**1,580,779**

Summary Tract Silvicultural Prescription and Proposed Activities
Overall, this tract is well stocked, and a managed timber harvest is prescribed. The following silvicultural prescriptions are recommended.

Selection & Improvement/Thinning Cutting

A combination of selection, improvement and thinning cuttings are prescribed in this tract. The goal is to improve growth and vigor on the highest quality and most vigorous oak, hickory and mixed hardwood stems. This should be accomplished primarily through singletree selection and release thinning. Individual trees targeted for removal should include the following: competing mixed hardwoods; suppressed trees; trees damaged by past fire or grazing; wind-damaged trees; drought-stressed trees; and any other dominant or co-dominant trees that are overtopping or suppressing quality growing stock. The residual stocking in these areas should remain above the B-line (65 - 70 sqft/acre) according to the Gingrich stand density chart for upland hardwoods. Vine control and non-commercial thinning is recommended in the old regeneration opening.

Small group selections or patch-cuts may be implemented in areas dominated with poor growing stock, creating a component of mixed hardwood regeneration, young forest and important early successional habitat. Low thinning may also be utilized in denser, even-aged areas with large amounts of suppressed and intermediate trees that are likely to drop out from competition. This method can also be employed to reduce the density of shade tolerant species such as sugar maple, red maple, and American beech to establish and promote advanced oak-hickory regeneration.

Oak Shelterwood

An oak shelterwood method is prescribed for this stand. This is the removal of the lower canopy, shade tolerant trees present in most state forest stands under the main canopy that prevents the regeneration of the main canopy species, particularly oaks and hickories.

The method that can be done most inexpensively and extensively is the use of prescribed fire. It is believed that oak will become established under the moderate light conditions this would create, while more shade intolerant species will not receive sufficient light for competitive growth.

The second method involves using TSI with herbicides to deaden all lower canopy, shade tolerant trees. This should only be done in areas with less disturbance of the main canopy from management operations and in areas where a heavy seed crop has produced numerous new seedlings to work with.

If/when the regeneration has achieved some size, the over story can be removed. The oak and hickory regeneration should be sufficiently well established to compete strongly with other species that will respond.

Prescribed Fire

If time and resources allow, prescribed fire will be used as a management tool for this tract. While exact timing of the prescribed fire is dependent upon weather and fuels conditions, most burns are conducted in the fall or spring. Prescribed fire can be used as a tool in oak-hickory ecosystems to restore, maintain, and regenerate the trees, shrubs, and herbaceous layers associated with them. This restoration and maintenance will then have the effect of supporting

the wildlife that depends on oak-hickory ecosystems for survival. In most Midwestern oak-hickory forests, an abundance of deer, lack of fire, and dense understory shading has and is currently causing a change in the forest. This mesophication effect is occurring due to these historically more open forests and woodlands being filled in with shade tolerant species such as sugar maple, red maple, and American beech. The result is a change in forest composition and a reduction in or total loss of the natural herbaceous and shrub layers that would have historically dominated these sites, which were subjected to periodic fires, both natural and those caused by humans. The goals of the proposed prescribed fire are to create conditions conducive to oak regeneration and recruitment while opening the mid story and understory up for the appropriate herbaceous and woody plants associated with oak-hickory ecosystems.

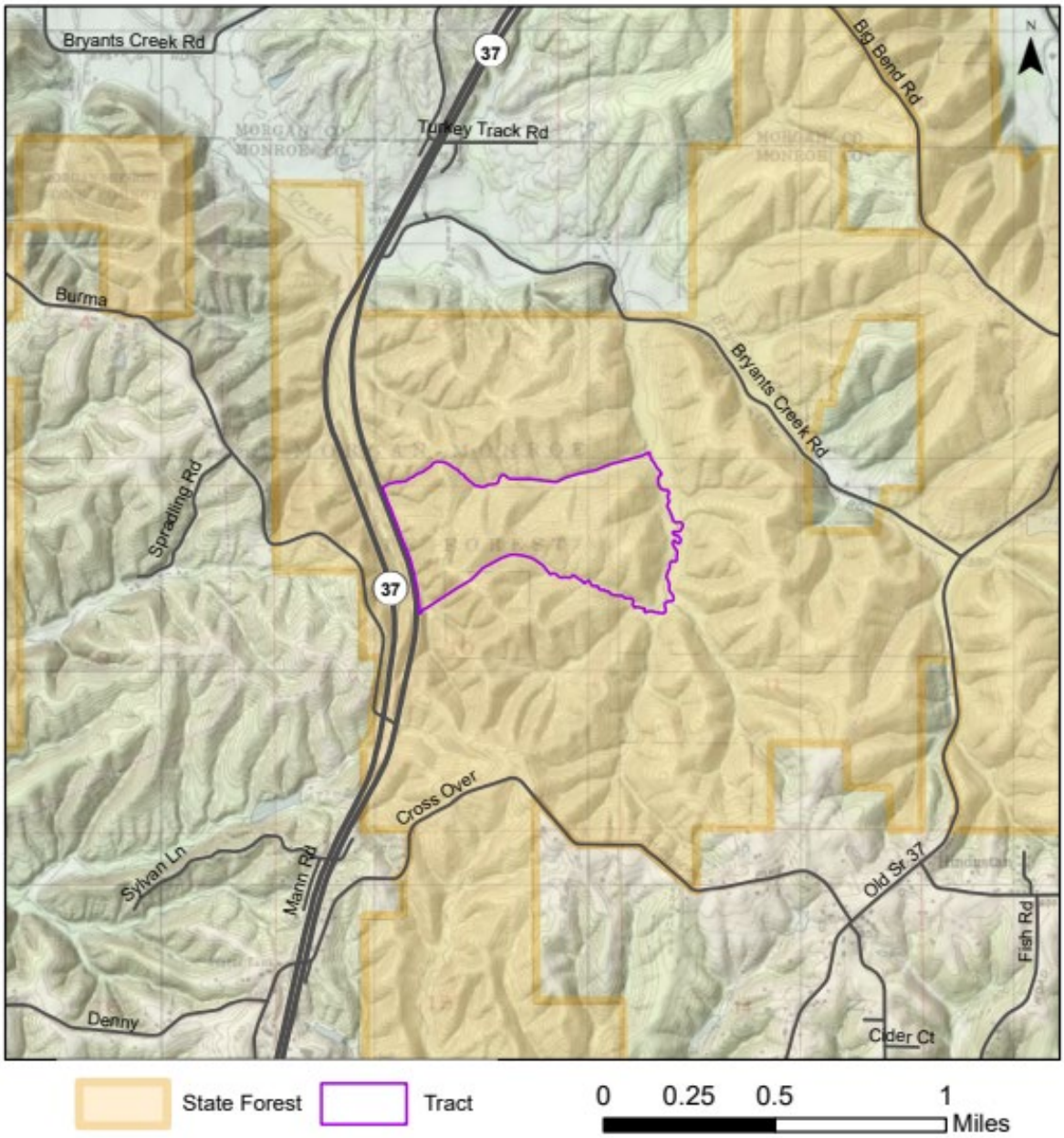
Timber Stand Improvement (TSI)

Various TSI practices are prescribed for the entire tract. The TSI should focus on releasing oaks, hickories and quality mixed hardwoods, controlling grapevines in select areas, reducing the density of shade tolerant species and potential invasive work. As the stand develops/ages, other silvicultural prescriptions may become more viable options. Below is a general guideline for this work.

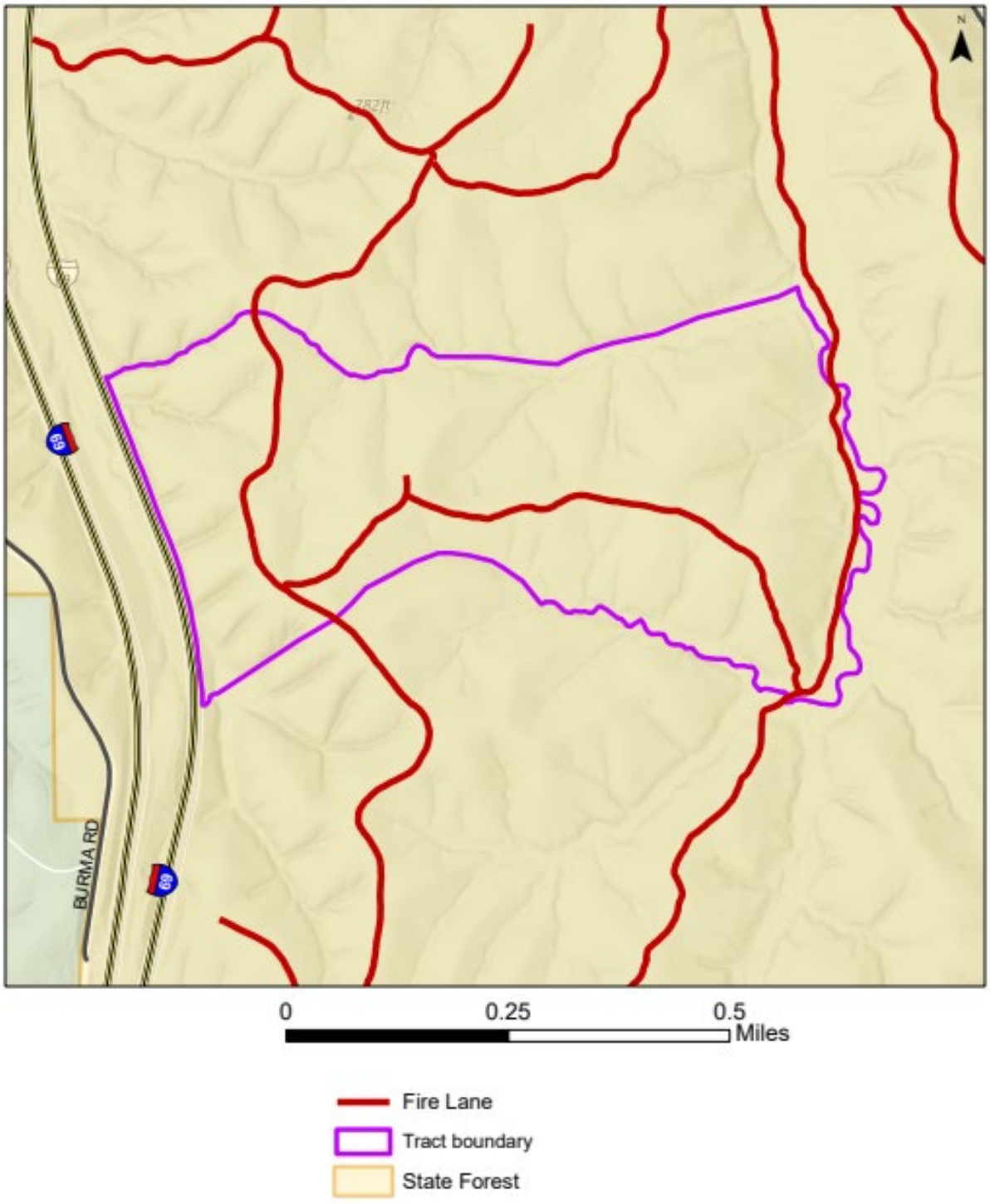
- Vine Control – Pre-harvest in potential openings, of pre or post-harvest in old openings
- Crop tree Release – Pre or post-harvest in old regeneration openings
- Regeneration Opening Completion – Post-harvest
- Snag Creation – Post-harvest, likely included in opening completion
- Exotic Control – Pre & Post-harvest control as needed

Proposed Management Activity	*Proposed Date*
Pre-harvest TSI/ Invasive Treatments	2025-2026
Timber Marking	2025-2026
Road/Landing Work	2025-2026
Timber Sale	2025-2026
Timber Sale Closeout	2026-2027
BMP Review	2026-2027
Post-harvest TSI/Invasive Treatments	2026-2027
3-year regeneration opening review	Three years after harvest
Next forest inventory	2045

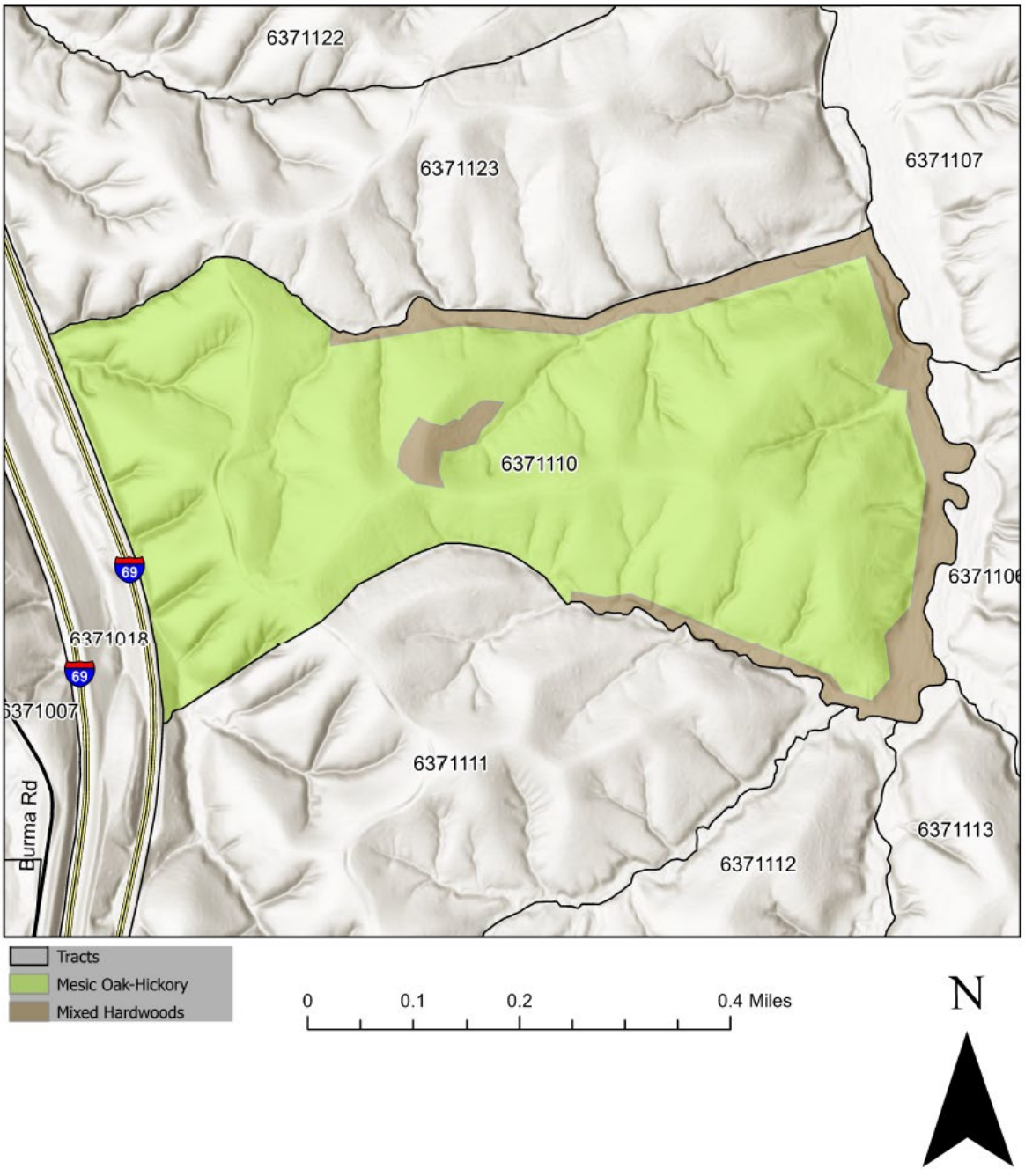
Morgan-Monroe State Forest
Location Map
Compartment 11 Tract 10



Morgan-Monroe State Forest
Compartment 11 Tract 10
Tract Map



Morgan-Monroe State Forest
Compartment 11 Tract 10
Cover Type Map



Morgan-Monroe State Forest	Compartment: 11	Tract: 22
Forester: Cole Jones	Date: 04/07/2025	Acres: 100
Management Cycle End Year: 2045	Management Cycle Length: 20 years	

Location
Tract 6371122, also referred to as tract 22, is in Morgan County, Indiana, Washington Township, Section 16 – T11N – R1E. The tract is approximately 1.5 miles south of Martinsville, Indiana, and is accessible via a gated fire lane off Chambers Pike Road.

General Description
The majority of the 100 acres are covered with hardwood forests, especially oak-hickory cover types. Other cover types include mixed hardwoods in old regeneration openings.

The most recent harvest in this tract occurred in 2005, removing an estimated 161,716 board feet from tracts 22 and 23. One 8.9 acre regeneration opening was established in tract 23 and one 0.8 acre opening was created in tract 22.

History
- 1931 - Land Acquisition
- 1941 – Land Acquisition
- 1974 – Land Acquisition
- 1984 - Timber Harvest, 160,380 board feet in 776 trees
- 1987 – General timber stand improvement (TSI)
- 2005- Timber Harvest, 161,716 board feet
- 2009 - General TSI and opening completion)
- 2010 – Boundary - Marking Boundaries (Repaint)
- 2015 – Boundary - Marking Boundaries (Repaint)
- 2016 - Forest Inventory/Cruising
- 2025 – Forest Inventory/Cruising

Landscape Context
The surrounding landscape near the tract is predominantly closed-canopy deciduous forest. The primary block of the state forest lies to the east. The western boundary of the tract is formed by the northbound lane of Interstate 69 (I-69). Indiana Department of Transportation (INDOT) mitigation land borders the tract on the northern boundary with a mix of developed, forested, and agricultural lands.

Other minor cover/habitat types present include early successional forest (< 20 years old), cropland, and developed areas.

Landscape level forest threats include parcelization and development of private land tracts, and introduction of invasive plants that are routinely introduced during home landscaping efforts.

Topography, Geology and Hydrology
The general topography of this region consists of unglaciated, sharply dissected hills, narrow ridges and valleys. The underlying bedrock is Mississippian sandstone, shale, and siltstone.

This tract lies within the Butler Creek – White River sub-watershed. Water resources within this hydrologic boundary are part of the White River watershed.

Riparian features (intermittent streams) are present on portions of the tract. General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the Indiana Logging and Forestry Best Management Practices 2022 Field Guide.

Soils
Typical soils in this area are moderately drained to well drained soils that formed in residuum (formed in place on bedrock). A thin layer of loess covers some of these soils. The major soils in this tract are listed below.

BkF- Brownstown-Gilwood silt loam, 25 to 75 percent slopes
Steep to very steep slopes and moderately deep and shallow well drained soils on side slopes. This tract is comprised of approximately 70% of this soil type along side slopes and presents moderate erosion hazards, severe equipment limitations, moderate to severe seedling mortality, and slight to moderate windthrow damage. Surface runoff of this soil is rapid. Haul roads should be constructed on contours to prevent erosion. The site index for black oak is 50.

WyqD- Wrays-Gilwood silt loams, 6 to 20 percent slopes
These moderately sloping to moderately steep, well drained soils are on side slopes and ridgetops in the uplands. They are well suited to trees.

Access
This tract is accessible via a gated fire lane off Chambers Pike Road. The tract is located approximately three miles behind the gated fire lane. Access within the tract is good as the main ridges were used as skid trails during prior timber harvests.

Boundary
The tract is bordered to the north by property currently owned by INDOT and to the west by I-69. The boundary to the west is marked by a chain link fence. The property to the north is not currently accessible to the public. The east and south borders follow a drainage separating tract 22 from tract 23 (i.e., 6371123)

Ecological Considerations
This tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- old regeneration openings
- scattered mixed hardwood stands

- riparian areas

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

Inventory data for Compartment 11 Tract 22 shows that 5"+ snags exceed target maintenance levels, while 9"+ and 19"+ snags do not meet target maintenance levels.

Where opportunities exist, snags in the deficient size class will be created by culling standing trees. It is important to note that these are compartment-level guidelines and that even though the estimated tract data does not quite meet all target levels, they may meet or exceed across the entire compartment. So, while tract-levels may be lower than the surrounding area, overall densities across the compartment meet Division of Forestry guidelines.

Invasive species were noted at the time of inventory. Japanese stiltgrass is present on the fire lanes and scattered on ridgetops within this and adjacent tracts. Control will require the use of a higher capacity vehicle mounted spray unit. Multiflora rose, autumn olive and barberry are lightly scattered along the edges of main trails, in openings and canopy gaps, and throughout riparian areas. Control of these species can be carried out through basal bark, cut stump, or spot spray foliar operations.

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

Although no permanently established recreation trails or developments are present in this tract, there are still several recreational opportunities.

Hunting is permitted on state forest property and this area also offers opportunities for certain types of gathering and wildlife viewing.

The value of these recreation facilities will be given consideration during forest management activities. Where necessary, use may be restricted during activities for user and worker safety reasons.

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
Mesic Oak-Hickory – 90 ac
The cover type (i.e., timber type) throughout much of the tract is mesic oak-hickory, with white oak, black oak, and northern red oak being the dominant overstory species. Other species present in the overstory include but are not limited to pignut hickory, yellow-poplar, and sugar maple. Shade tolerant species like sugar maple, red maple, and American beech abound in the understory and into the midstory, allowing very little sunlight to reach the forest floor.

The tract shows a capability of growing quality examples of oak-hickory species, so care should be taken to ensure a healthy supply of these for years to come. Where appropriate, management should focus on enhancing current oak-hickory stands through proven silvicultural methods such as single-tree and group selection, patch-cut openings, and/or shelterwood harvesting. Oak-hickory forests are important to endangered species such as the cerulean warbler, timber rattlesnake, and Indiana bat, while also being beneficial to more common wildlife species like wild turkeys.

Oak-hickory forests are well adapted to the use of prescribed fire. Low intensity prescribed fires kill shade tolerant species in the midstory and understory and clear thick layers of leaf litter. This helps oak and hickory seedlings to take root in the bare soil, and increased sunlight reaching the forest floor helps them compete with other species. Parts of the tract would be well suited to prescribed burning, where logistically feasible. If time and resources allow trained professionals within the division of forestry should incorporate prescribed fire into the tract's management cycle.

Mixed Hardwoods– 10 ac
Mixed hardwood stands are, as the name implies, areas where any one timber type does not accurately describe the timber present. The areas of mixed hardwoods in the tract are of varying age classes as well. Early successional stands of yellow-poplar and black cherry exist in regeneration openings created during the prior management cycle. Cool, shaded bottomlands and slopes with deep soils provide ideal growing conditions for mesic species like sugar maple and black walnut. Oak-hickory species may be present in these stands but are not the dominant species.

Silvicultural methods such as single-tree and group selection work well in areas where the goal is to maintain the current stand, while patch-cut openings can be used to "reset" an area. Within a year or two of harvesting a patch cut the forest floor is often carpeted with fast growing shade intolerant species such as yellow-poplar, black cherry, American sycamore, and bigtooth aspen. Fruiting shrubs like blackberry and black raspberry are common as well. Within a few more years, the area is well established with saplings and briars providing valuable food and cover for many species of wildlife. These thickets are havens for wildlife species like American woodcock

and eastern box turtles, while the abundance of fruiting shrubs provide food for birds like the scarlet tanager.

The current forest resource inventory was completed on 04/07/2025 by Forester C. Jones. A summary of the estimated tract inventory results is in the table below.

Tract Summary Data

Sawtimber Trees/Acre = **104**

Present Volume = **10,239** BF/Acre

Basal Area = **103.4** Ft²/Acre

Tract Summary Data (trees >11" DBH):

Species	# of Sawtimber Trees	Total Bd. Ft.
White Oak	1,154	400,329
Black Oak	658	224,824
Northern Red Oak	400	134,951
Scarlet Oak	389	69,652
Yellow-Poplar	262	60,005
Pignut Hickory	416	44,970
Sugar Maple	435	26,499
Shagbark Hickory	148	18,821
Red Maple	180	12,992
American Beech	122	10,129
Bitternut Hickory	54	8,136
Bigtooth Aspen	76	5,745
American Elm	89	4,503
Black Cherry	41	2,352
Total	4,424	1,023,908

Summary Tract Silvicultural Prescription and Proposed Activities

Overall, this tract is well stocked, and a managed timber harvest is prescribed. The following silvicultural prescriptions are recommended.

Selection & Improvement/Thinning Cutting

A combination of selection, improvement and thinning cuttings are prescribed in this tract. The goal is to improve growth and vigor on the highest quality and most vigorous oak, hickory and mixed hardwood stems. This should be accomplished primarily through single-tree selection and release thinning. Individual trees targeted for removal should include the following: competing mixed hardwoods; suppressed trees; trees damaged by past fire or grazing; wind-damaged trees; drought-stressed trees; and any other dominant or co-dominant trees that are overtopping or suppressing quality growing stock. The residual stocking in these areas should remain above the B-line (65 - 70 sqft/acre) according to the Gingrich stand density chart for upland hardwoods. Vine control and non-commercial thinning is recommended in the old regeneration openings where harvesting is likely not to occur due to stocking and age.

Small group selections may be implemented in areas dominated by poor growing stock, creating a component of mixed hardwood regeneration, young forest and important early successional habitat. Low thinning may also be utilized in denser, even-aged areas with large amounts of suppressed and intermediate trees that are likely to drop out from competition. This method can also be employed to reduce the density of shade tolerant species such as sugar maple, red maple, and American beech to establish and promote advanced oak-hickory regeneration.

Patch-Cut Openings

Patch-cutting involves cutting all the trees within an area of 10 acres or less. Patch cuts can be used in areas of mature timber to reset secondary forest succession and create small areas of early successional forest. This method has been used with success in previous timber harvests, both within the tract and in neighboring tracts. Yellow-poplar and black cherry often dominate regeneration openings, but oak, hickory, and maple trees are often found around the edges of the opening.

Oak Shelterwood

An oak shelterwood method is prescribed for areas that have an existing oak overstory and other specific site characteristics (e.g., site quality, soils, aspect, etc.) to allow oaks to outcompete faster growing shade tolerant species. This is the removal of the mid and lower canopy shade tolerant trees that prevents the regeneration of the main canopy species, particularly oaks and hickories.

The method that can be done most inexpensively and extensively is the use of prescribed fire. It is believed that oak will become established under the moderate light conditions this would create, while more shade intolerant species will not receive sufficient light for competitive growth.

The second method involves using TSI with herbicides to deaden all lower canopy, shade tolerant trees. This should only be done in areas with less disturbance of the main canopy from management operations and in areas where a heavy seed crop has produced numerous new seedlings to work with.

When the regeneration has achieved some size, the over story can be removed. The oak and hickory regeneration should be sufficiently well established to compete strongly with other species that will respond.

Prescribed Fire

If time and resources allow, prescribed fire will be used as a management tool for this tract. While exact timing of the prescribed fire is dependent upon weather and fuels conditions, most burns are conducted in the fall or spring. Prescribed fire can be used as a tool in oak-hickory ecosystems to restore, maintain, and regenerate the trees, shrubs, and herbaceous layers associated with them. This restoration and maintenance will then have the effect of supporting

the wildlife that depends on oak-hickory ecosystems for survival. In most Midwestern oak-hickory forests, an abundance of deer, lack of fire, and dense understory shading has and is currently causing a change in the forest. This mesophication effect is occurring due to these historically more open forests and woodlands being filled in with shade tolerant species such as sugar maple, red maple, and American beech. The result is a change in forest composition and a reduction in or total loss of the natural herbaceous and shrub layers that would have historically dominated these sites, which were subjected to periodic fires, both natural and those caused by humans. The goals of the proposed prescribed fire are to create conditions conducive to oak regeneration and recruitment while opening the mid story and understory up for the appropriate herbaceous and woody plants associated with oak-hickory ecosystems.

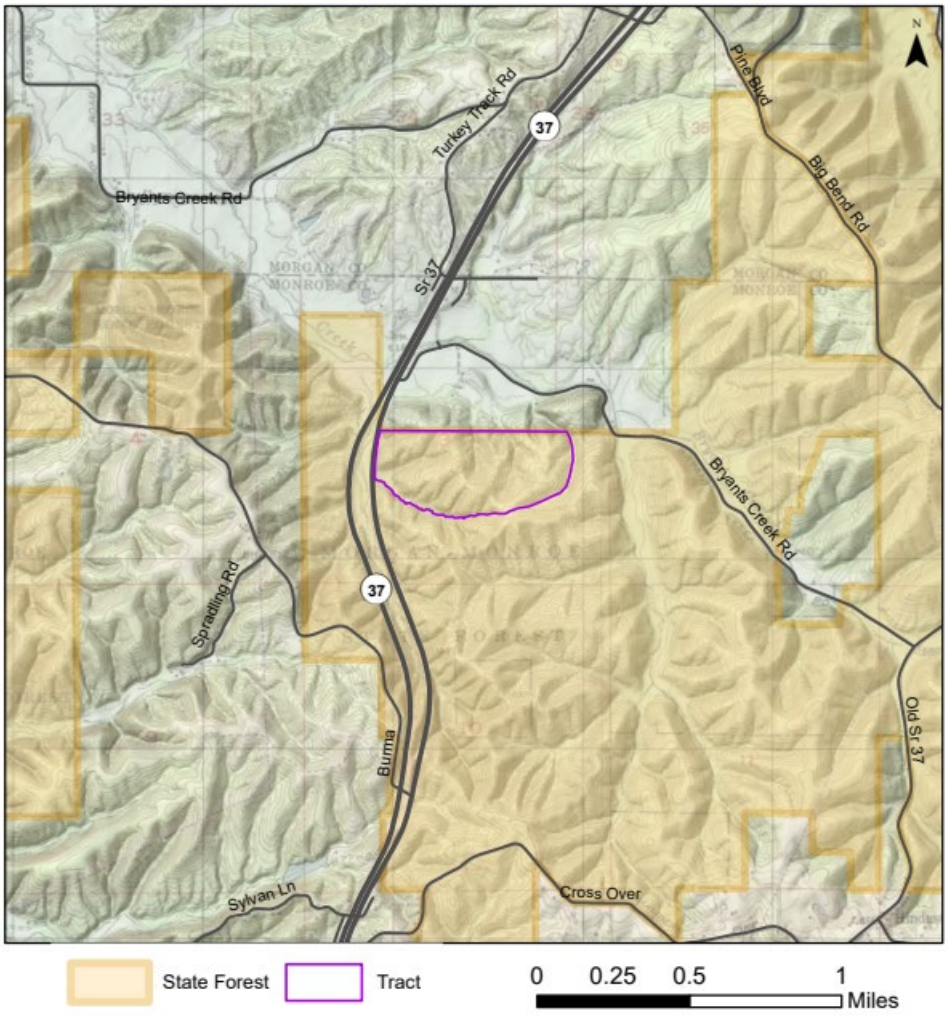
Timber Stand Improvement (TSI)

Various TSI practices are prescribed for the entire tract. The TSI should focus on releasing oaks, hickories and quality mixed hardwoods, controlling grapevines in select areas, reducing the density of shade tolerant species and potential invasive work. As the stand develops/ages, other silvicultural prescriptions may become more viable options. Below is a general guideline for this work.

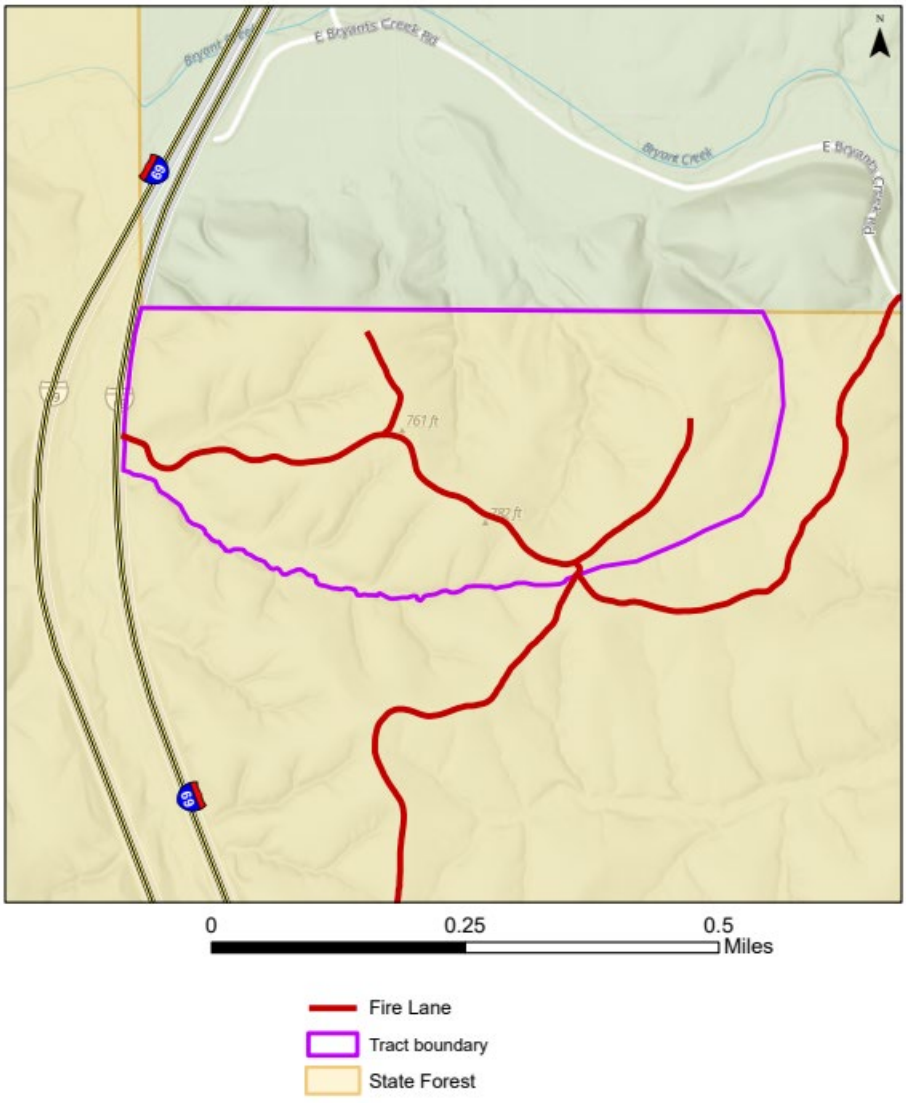
- Vine Control – Pre-harvest in potential openings / pre or post-harvest in old openings
- Croptree Release – Pre or post-harvest in old regeneration openings
- Regeneration Opening Completion – Post-harvest
- Snag Creation – Post-harvest, likely included in opening completion
- Exotic Control – Pre & Post-harvest control as needed

Proposed Management Activity	*Proposed Date*
Pre-harvest TSI/ Invasive Treatments	2025-2026
Timber Marking	2025-2026
Road/Landing Work	2025-2026
Timber Sale	2025-2026
Timber Sale Closeout	2025-2027
BMP Review	2025-2027
Post-harvest TSI/Invasive Treatments	2025-2027
3-year regeneration review	Three years after harvest
Next forest inventory	2045

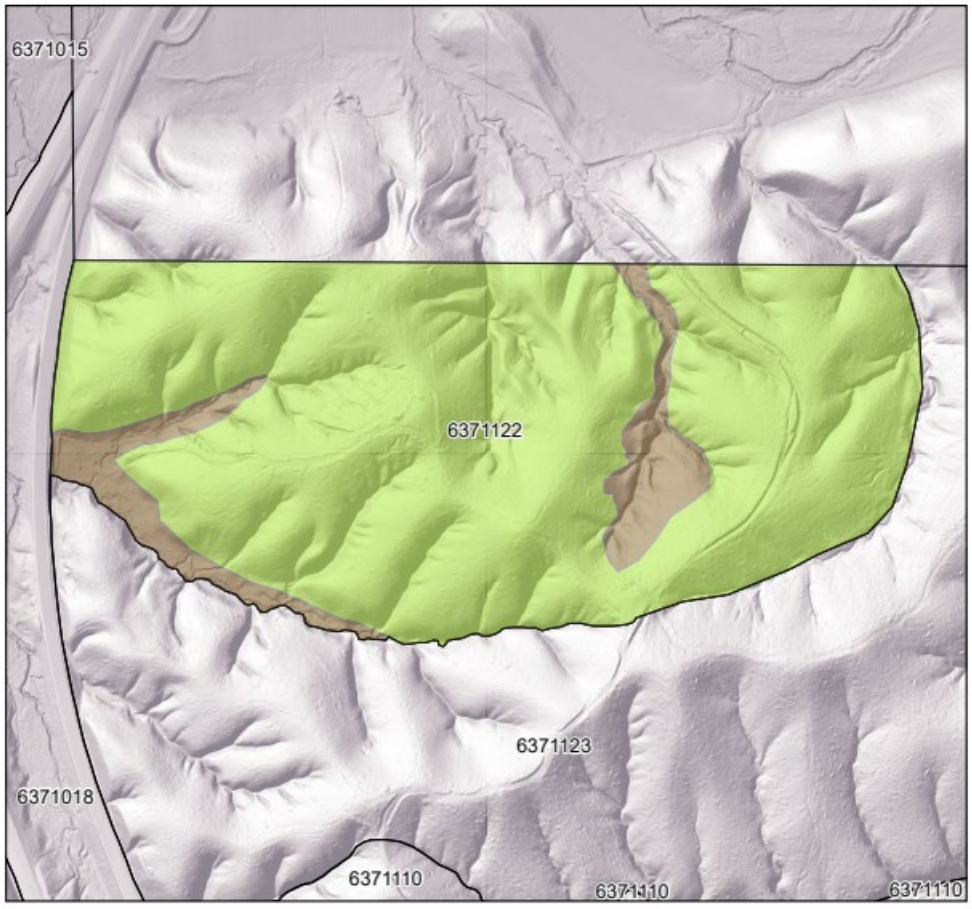
Morgan-Monroe State Forest
Location Map
Compartment 11 Tract 22



Morgan-Monroe State Forest
Compartment 11 Tract 22
Tract Map



Morgan-Monroe State Forest
Compartment 11 Tract 22
Cover Types Map



CoverType
- Mesic Oak-Hickory
- Mixed Hardwoods

Tracts
- Tracts

0 0.05 0.1 0.2 Miles

N

Morgan-Monroe State Forest	Compartment: 11	Tract: 23
Forester: Cole Jones	Date: 04/10/2025	Acres: 141
Management Cycle End Year: 2045	Management Cycle Length: 20 years	

Location
Tract 6371123, also referred to as tract 23, is in Morgan County, Indiana, Washington Township, Section 16 – T11N – R1E. The tract is approximately 1.5 miles south of Martinsville, Indiana and is accessible via a gated fire lane off Chambers Pike Road.

General Description
The majority of the 141 acres are covered with hardwood forests, especially oak-hickory cover types. Other type(s) present include mixed hardwoods in old regeneration openings.

The most recent timber harvest in this tract occurred in 2005. An estimated 161,716 board feet were marked in tracts 22 and 23. One 8.9 acre regeneration opening was established in tract 23 and one 0.8 acre opening was created in tract 22.

History
- 1931 – Land Acquisition
- 1986 - Boundary/Survey work: marking boundaries
- 1994 - Forest Inventory/Cruising
- 1994 - Timber Harvest – Marking & TSI Completed – no herbicides used
- 1995 - Timber Sale of 167,703 board feet Sold to Foley Hardwoods, Inc.
- 1996 - Timber stand improvement (TSI)– General (Opening Completion)
- 2005 – Timber Sale, 161,716 board feet sold in combined sale with tract 22
- 2010 – Boundary - Marking Boundaries (Repaint)
- 2015 – Boundary - Marking Boundaries (Repaint)
- 2016 - Forest Inventory/Cruising
- 2016 – Resource Management Guide Created – not posted
- 2025 – Forest Inventory/Cruising

Landscape Context
The surrounding landscape near the tract is predominantly closed-canopy deciduous forest. The primary block of the state forest lies to the east. The western boundary of the tract is formed by the northbound lane of Interstate 69 (I-69). Private landownerships border the tract on the northeastern boundary with a mix of developed (i.e., residences), forested, and agricultural lands.

Other minor cover/habitat types present include early successional forest (< 20 years old), cropland, and developed areas.

Landscape level forest threats include parcelization and development of private land tracts, and introduction of invasive plants that are routinely introduced during home landscaping efforts.

Topography, Geology and Hydrology
The general topography of this region consists of unglaciated, sharply dissected hills, narrow ridges and valleys. The underlying bedrock is Mississippian sandstone, shale, and siltstone.

This tract lies within the Butler Creek – White River sub-watershed. Water resources within this hydrologic boundary are part of the White River watershed.

Riparian features (intermittent streams) are present on portions of the tract. General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the Indiana Logging and Forestry Best Management Practices 2022 Field Guide.

Soils
Typical soils in this area are moderately drained to well drained soils that formed in residuum (formed in place on bedrock). A thin layer of loess covers some of these soils. The major soils in this tract are listed below.

BkF- Brownstown-Gilwood silt loam, 25 to 75 percent slopes
Steep to very steep slopes and moderately deep and shallow well drained soils on side slopes. This tract is comprised of approximately 70% of this soil type along side slopes and presents moderate erosion hazards, severe equipment limitations, moderate to severe seedling mortality, and slight to moderate windthrow damage. Surface runoff of this soil is rapid. Haul roads should be constructed on contours to prevent erosion. The site index for black oak is 50.

WyqD- Wrays-Gilwood silt loams, 6 to 20 percent slopes

These moderately sloping to moderately steep, well drained soils are on side slopes and ridgetops in the uplands. They are well suited to trees.

Access
This tract is accessible via a cable gate off Chambers Pike Road. The tract is located approximately three miles behind the cable gate on the fire lane. Access within the tract is good as the main ridges were used as skid trails during prior timber harvests.

Boundary
The tract is bordered to the north by tract 22 (6371122) and a small section of property currently owned by Indiana Department of Transportation (INDOT). To the west by I-69 marked by a chain link fence. The southern boundary is shared with tract 10 (6371110).

Ecological Considerations
This tract contains diverse vegetation and wildlife resources (age, type, structure) conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- old regeneration openings

- scattered mixed hardwood stands
- riparian areas

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

Inventory data for Compartment 11 Tract 23 shows that 5"+ snags are below target maintenance levels, while 9"+ and 19"+ snags exceed target maintenance levels.

Where opportunities exist, snags in the deficient size class will be created by culling standing trees. It is important to note that these are compartment-level guidelines and that even though the estimated tract data does not quite meet all target levels, they may meet or exceed across the entire compartment. So, while tract-levels may be lower than the surrounding area, overall densities across the compartment meet Division of Forestry guidelines.

Invasive species were noted at the time of inventory. Japanese stiltgrass is present on the fire lanes and scattered on ridgetops within this and adjacent tracts. Control will require the use of a higher capacity vehicle mounted spray unit. Multiflora rose, autumn olive and barberry are lightly scattered along the edges of main lane, in openings and canopy gaps, and throughout riparian areas. Control of these species can be carried out through basal bark, cut stump, or spot spray foliar operations.

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

Although no permanently established recreation trails or developments are present in this tract, there are still several recreational opportunities.

Hunting is permitted on state forest property and this area also offers opportunities for certain types of gathering and wildlife viewing.

The value of these recreation facilities will be given consideration during forest management activities. Where necessary, use may be restricted during activities for user and worker safety reasons.

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
Mesic Oak-Hickory – 111 acres
The cover type throughout much of the tract is mesic oak-hickory, with white oak, black oak, and northern red oak being the dominant overstory species. Other species present in the overstory include but are not limited to pignut hickory, yellow-poplar, and sugar maple. Shade tolerant species like sugar maple, red maple, and American beech abound in the understory and into the midstory, allowing very little sunlight to reach the forest floor.

The tract shows the capability of growing quality oak-hickory species, so care should be taken to ensure a healthy supply of these for years to come. Where appropriate, management should focus on enhancing current oak-hickory stands through proven silvicultural methods such as single-tree and group selection, patch cut openings, and/or shelterwood harvesting. Oak-hickory forests are important to endangered species such as the cerulean warbler, timber rattlesnake, and Indiana bat, while also being beneficial to more common wildlife species like wild turkeys.

Oak-hickory forests are well adapted to the use of prescribed fire. Low intensity prescribed fires kill shade tolerant species in the midstory and understory and clear thick layers of leaf litter. This helps oak and hickory seedlings to take root in the bare soil, and increased sunlight reaching the forest floor helps them compete with other species. Parts of the tract would be well suited to prescribed burning, where logistically feasible. If time and resources allow, trained professionals within the division of forestry should incorporate prescribed fire into the tract's management cycle.

Mixed Hardwoods– 30 ac
Mixed hardwood stands are, as the name implies, areas where any one timber type does not accurately describe the timber present. The areas of mixed hardwoods in the tract are of varying age classes as well. Early successional stands of yellow-poplar and black cherry exist in regeneration openings created during the prior management cycle. Cool, shaded bottomlands and slopes with deep soils provide ideal growing conditions for mesic species like sugar maple and black walnut. Oak-hickory species may be present in these stands but are not the dominant species.

Silvicultural methods such as single-tree and group selection work well in areas where the goal is to maintain the current stand, while patch-cut openings or are used to "reset" an area. Within a year or two of harvesting a patch cut, the forest floor is often carpeted with fast growing shade intolerant species such as yellow-poplar, black cherry, American sycamore, and bigtooth aspen. Fruiting shrubs like blackberry and black raspberry are common as well. Within a few more years, the area is well established with saplings and briars providing valuable food and cover for many species of wildlife. These thickets are havens for wildlife species like American woodcock

and eastern box turtles, while the abundance of fruiting shrubs provide food for birds like the scarlet tanager.

The current forest resource inventory was completed on 04/10/2025 by Forester C. Jones. A summary of the estimated tract inventory results is located in the table below.

Tract Summary Data

Sawtimber Trees/Acre = **121**

Present Volume = **8,458** BF/Acre
Basal Area = **108.5** Ft²/Acre

Tract Summary Data (trees >11" DBH):

Species	# Sawtimber Trees	Total Bd. Ft.
White Oak	2,193	576,361
Black Oak	1,049	356,837
Northern Red Oak	653	211,029
Pignut Hickory	610	91,414
Yellow-Poplar	589	89,918
Scarlet Oak	291	49,736
Black Cherry	352	24,398
Sugar Maple	418	17,366
Shagbark Hickory	149	16,643
Black Walnut	104	10,363
American Beech	139	9,684
American Sycamore	29	8,576
Bitternut Hickory	32	7,694
Basswood	36	7,363
Red Maple	139	7,353
Sassafras	45	3,872
Total:	6,827	1,488,606

Summary Tract Silvicultural Prescription and Proposed Activities

Overall, this tract is well stocked, and a managed timber harvest is prescribed. The following silvicultural prescriptions are recommended.

Selection & Improvement/Thinning Cutting

A combination of selection, improvement and thinning cuttings are prescribed in this tract. The goal is to improve growth and vigor on the highest quality and most vigorous oak, hickory and mixed hardwood stems. This should be accomplished primarily through singletree selection and release thinning. Individual trees targeted for removal should include the following: competing mixed hardwoods; suppressed trees; trees damaged by past fire or grazing; wind-damaged trees; drought-stressed trees; and any other dominant or co-dominant trees that are overtopping or suppressing quality growing stock. The residual stocking in these areas should remain above the B-line (65 - 70 sqft/acre) according to the Gingrich stand density chart for upland hardwoods.

Vine control and non-commercial thinning is recommended in the old regeneration openings where harvesting is likely not to occur due to stocking and age.

Small group selections may be implemented in areas dominated by poor growing stock, creating a component of mixed hardwood regeneration, young forest and important early successional habitat. Low thinning may also be utilized in denser, even-aged areas with large amounts of suppressed and intermediate trees that are likely to drop out from competition. This method can also be employed to reduce the density of shade tolerant species such as sugar maple, red maple, and American beech to establish and promote advanced oak-hickory regeneration.

Patch-Cutting

Patch-cutting involves cutting all the trees within an area of 10 acres or less. Patch cuts can be used in areas of mature timber to reset secondary forest succession and create small areas of early successional forest. This method has been used with success in previous timber harvests, both within the tract and in neighboring tracts. Yellow-poplar and black cherry often dominate regeneration openings, but oak, hickory, and maple trees are often found around the edges of the opening.

Oak Shelterwood

An oak shelterwood method is prescribed for areas that have an existing oak overstory and other specific site characteristics (e.g., site quality, soils, aspect, etc.) to allow oaks to outcompete faster growing shade tolerant species. This is the removal of the mid and lower canopy shade tolerant trees that prevent the regeneration of the main canopy species, particularly oaks and hickories.

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Prescribed Fire

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ecosystems to restore, maintain, and regenerate the trees, shrubs, and herbaceous layers associated with them. This restoration and maintenance will then have the effect of supporting the wildlife that depends on oak-hickory ecosystems for survival. In most Midwestern oak-hickory forests, an abundance of deer, lack of fire, and dense understory shading has and is currently causing a change in the forest. This mesophication effect is occurring due to these historically more open forests and woodlands being filled in with shade tolerant species such as sugar maple, red maple, and American beech. The result is a change in forest composition and a reduction in or total loss of the natural herbaceous and shrub layers that would have historically dominated these sites, which were subjected to periodic fires, both natural and those caused by humans. The goals of the proposed prescribed fire are to create conditions conducive to oak regeneration and recruitment while opening the mid story and understory up for the appropriate herbaceous and woody plants associated with oak-hickory ecosystems.

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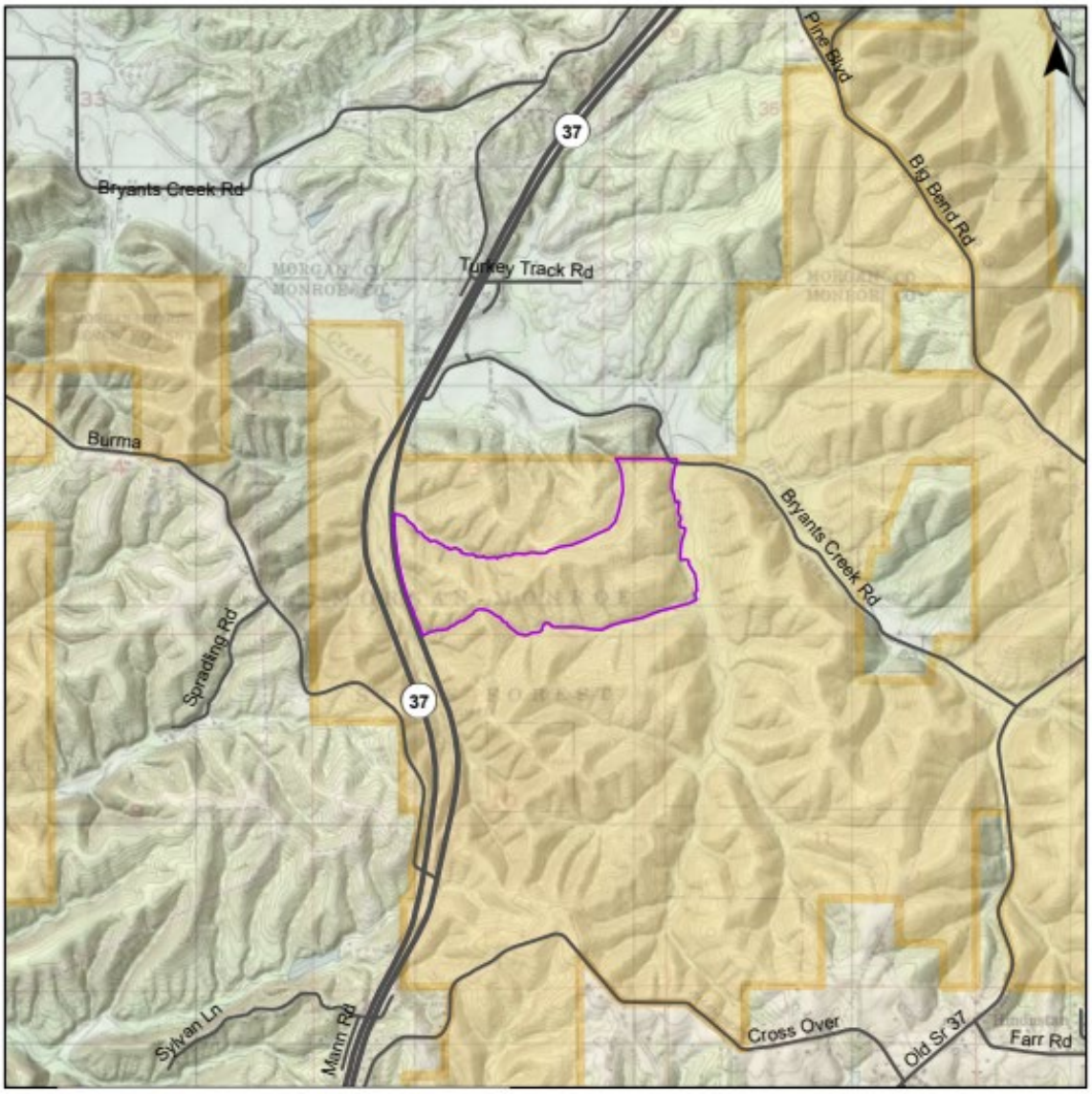
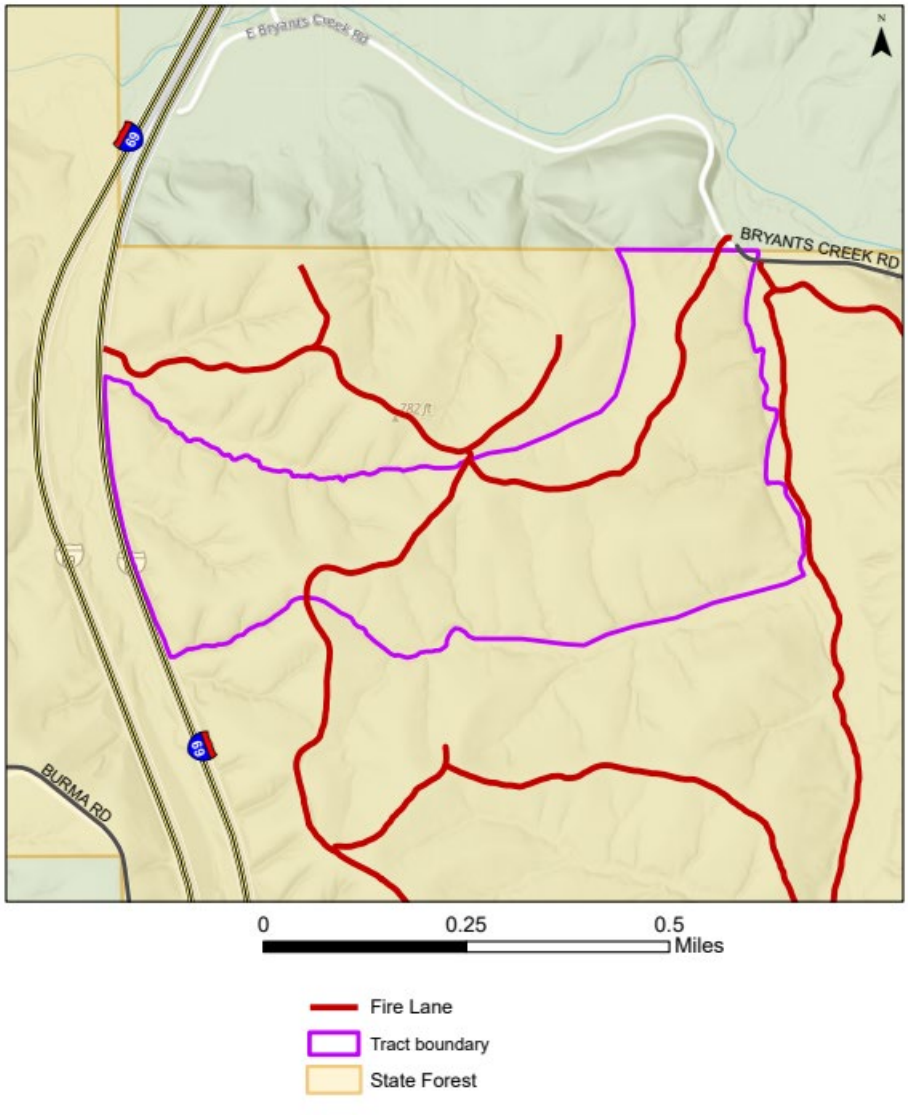
Post -harvest TSI/Invasive Treatments	2025-2027
3-year regeneration review	Three years after harvest
Next forest inventory	2045

Morgan-Monroe State Forest
Location Map
Compartment 11 Tract 23



Morgan-Monroe State Forest
Compartment 11 Tract 23
Tract Map



Morgan-Monroe State Forest
Compartment 11 Tract 23
Cover Types Map