

Indiana Department of Natural Resources
Division of Forestry
RESOURCE MANAGEMENT GUIDE

Clark State Forest
Forester: Cody Moore
Management Cycle End Year: 2044

Compartment: 2
Date: June 26, 2024
Management Cycle Length: 20 years

Tract: 15
Acres: 59

Location

Compartment 2, tract 15, also known as 6300215, is located in Scott County, Indiana. This tract lies in the southwest corner of section 16, Township 2 North of Range 6 East. 6300215 has two intermittent streams running along its boundaries. One runs along the northern boundary and the other runs along parts of the eastern boundary. Taylor Road makes up the entirety of the eastern boundary of the tract.

General Description

This tract is being divided into two cover types: mesic oak-hickory and mixed hardwoods, with the mixed hardwoods being in the northeastern low-lying areas. The dominant overstory tree species are chestnut oak and white oak. This tract last experienced a harvest in 1981 which consisted entirely of single-tree selection. The hardwood forests now have high stocking and large higher quality trees that are reaching the age where mortality is becoming a concern. Across each cover type, regeneration is primarily beech and maple. Management in this tract will aim to capture mortality, lower the stocking to promote forest growth, and provide the residual structure needed to regenerate desired forest types. The mesic oak-hickory cover type will have a focus on catering to the healthier vigorous oaks. The mixed hardwoods cover type will have a focus on increasing diversity with a cover type favoring yellow-poplar and oaks.

History

- 1941 – Land acquisition from Weaver, Amy V.
- 1981 – North and west property line ran, marked with orange paint and flagging
- 1981 – Timber sale consisting of 54,211 board feet (bdft) sold to Housewoods Inc.
- 1988 – North and west property line ran. Northwest corner was not found.
- 1988 – New method cruise – 1,481 bdft/acre
- 2000 – Land acquisition from Just, Glen & Rachel & Kenneth; Bledsoe, Mark & Kay
- 2000 – Inventory and Management plan done by Forester, David Pyle (964 bdft/acre harvest)
- 2024 – Inventory and Management plan done by Forester, Cody Moore

Landscape Context

This tract is bordered by state property on the north, south, and east sides. The western edge is bordered by private property. To the north, there are thousands of acres of forested lands within Clark State Forest. The Clark State Forest Back Country Area is north of the tract; an undeveloped area managed for older forest conditions with longer management cycles. To the east and south there is approximately a quarter mile of forested lands within Clark State Forest before it becomes privately owned. Once privately owned property begins in these directions, it is more forested land

for approximately a half mile before reaching some rural areas and small agricultural fields. To the west, there is approximately a quarter mile of privately owned forests before going back to forests within Clark State Forest. This being considered, within a mile of the tract, 80% of the land is forested, 15% is rural areas and agricultural fields, and the remaining 5% is open bodies of water in the form of privately owned lakes.

Topography, Geology, and Hydrology

The topography of this tract is moderate. There is a total of approximately 140 feet of elevation change from the lowest to the highest points in the tract. To the northeast, there is a low-lying area consisting of 0-2% slopes. Apart from this area, slopes range from 3-25%. All the fingers within the tract head downhill towards the northeastern bottoms. That being the case, most slopes are east and northeast facing.

6300215 is in the Mississippian Borden mapped bedrock formation. The formations constituting the Borden Group are the New Providence Shale, 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.

Tract 6300215 is located in the Little Ox Creek watershed. There are two unnamed mapped intermittent streams that flow through this tract. The northern intermittent stream runs along the northern border of the tract until adjoining the other intermittent stream that runs along the eastern edge of the tract. After these streams meet, they flow north into Little Ox Creek. Little Ox Creek eventually flows into a privately-owned lake a half mile north of the tract. General riparian management zone (RMZ) guidelines will be implemented throughout 6300215 in accordance with the Indiana Logging and Forestry Best Management Practices 2022 BMP Field Guide.

Soils

GmaG (48 Ac) - Gnowbone-Kurtz silt loams, 20 to 60 percent slopes

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

WhcD (8 Ac) - Wellrock-Gnowbone silt loams, 6 to 20 percent slopes

This strongly sloping, deep, well-drained soil is on side slopes in the uplands. It is well suited to trees. Erosion hazards are a management concern that should be considered when implementing Best Management Practices for water quality. Wellrock has a site index of 90 for yellow poplar and 70 for white oak. Gnowbone has not been evaluated for site index.

BcrAW (3 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

6300215 can be accessed by vehicle and by foot. The south and southeastern boundary of the tract runs along Taylor Road. Taylor Road ends at a gate which is the start of a fire lane which also serves as a disabled hunter trail. This disabled hunter trail runs north along the remainder of the eastern border of 6300215.

Boundary

6300215 is surrounded by Clark State Forest on all sides but the western border. The western border being a north/south private property line that runs approximately half a mile. The tracts that border 6300215 are 6300403 to the east and 6300213 to the north.

Ecological Considerations

This tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife species. Habitat types include mesic oak-hickory, mixed hardwoods, and riparian areas. Evidence of several types of wildlife were noted at the time of inventory including deer sign, turkey feathers, Eastern box turtles, and a variety of woodpeckers and songbirds.

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.

In the compartment that includes this tract, inventory data indicate snag densities exceed Division of Forestry “optimal” targets in all size classes. Additionally, legacy tree densities exceed Division of Forestry compartment-level targets in all size classes by a comfortable margin.

Very few invasive species were noted at the time of the inventory, but they did include Amur, also known as bush honeysuckle, and autumn olive, stiltgrass, and multiflora rose. All the invasive species found were along Taylor Road and the fire lane, thus invasive species management could focus on treating along the roadsides and keeping the invasive species from spreading to new areas. Seed producing woody species could be treated prior to any harvest to help minimize spread. Also, post-harvest monitoring should occur to control the more prevalent species that are active in the seed bank like Amur honeysuckle and autumn olive.

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 population viability of those species or communities.

Recreation

The main form of recreation that occurs within 6300215 is likely to be hunting. There is a gravel parking lot at the end of Taylor Road that showed a lot of activity during the deer season of 2024-2025 along with the disabled hunter trail that goes along the border of the tract. Other recreational opportunities presented in this tract include hiking, wildlife viewing, and foraging.

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

The current forest resource inventory was completed in June of 2024 by Forester C. Moore. and forestry intern I. Hyde. A summary of the estimated tract inventory results is located in the table below.

Tract Summary Data (Trees > 11" DBH)

Category	Estimate
Tract Acres (Forested)	59
Gingrich Stocking Percent (%)	79
Trees Per Acre	103
Basal Area Per Acre (SQFT)	95.9
Volume Per Acre (BDFT)	8,187

Tract Summary Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Chestnut oak	1,202	225,390
White oak	739	174,530
Scarlet oak	87	27,860
Northern red oak	29	14,520
Red maple	97	14,440
American beech	75	9,140
Yellow-poplar	55	7,600
Pignut hickory	51	5,160
Black gum	53	2,550
Sugar maple	12	1,860
Total:	2,400	483,050

For the purposes of this resource management guide, this tract is being divided into two management cover types based on forest composition: mesic oak-hickory and mixed hardwoods.

Mesic Oak-Hickory, 55 acres

This cover type is located all throughout the tract, making up approximately 93% of the tract acreage. The slopes within this cover type are mostly gradual 5-25% slopes which are east and northeast facing. Percent stocking is estimated at 78%, classifying it as fully stocked. Chestnut oak and white oak make up most of the merchantable volume followed by scarlet oak and northern red

oak. Overstory mortality in this cover type is very high, mainly taking the form of uprooted and overcrowded trees within the 20-30" dbh size class. There were high numbers of white oak mortality noted along the drainages, mainly the 24" dbh size class. The dominant regeneration in these areas of mortality tends to yellow-poplar around the drainages and oak-hickory on the ridgetops. This demonstrates that the seed bank would respond well to more light reaching the forest floor. The herbaceous layer is mostly spicebush and greenbrier.

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

Species	# of Trees	Total Bdft
Chestnut oak	1,168	218,220
White oak	727	171,060
Scarlet oak	87	27,860
Northern red oak	29	14,520
Red maple	49	7,570
Pignut hickory	51	5,160
American beech	21	2,280
Yellow-poplar	37	1,440
Black gum	37	850
Total:	2,206	448,960

Stocking is high in this cover type, which can be attributed to the high density of stems per acre. It should be noted that the inventory taken in 2000 had a basal area of approximately 94 which is one square foot per acre lower than the basal area measured in the most recent inventory in 2024. This basal area not changing can be contributed to the high mortality throughout the tract. As trees got bigger, trees kept dying, resulting in the basal area staying approximately the same. A selective harvest would be ideal for the majority of this cover type. This selective harvest would focus primarily on capturing mortality and releasing crop trees. There may be areas of high mortality, poor quality trees, and ideal oak regeneration, that a regeneration opening could be implemented. In most sites affected by mortality along the ridgetops, ideal oak regeneration was found.

An improvement harvest is recommended for this cover type. The goal is to bring down the basal area from approximately 95 to 60-65. This could be accomplished with the use of a shelterwood harvest or a single-tree selection harvest. Mid-story removal can be completed by chemical methods, mechanical methods, or with prescribed fire. If prescribed fire is used, the area could be repetitively burned at 3 to 5-year intervals to ensure the mid-story is properly controlled. A selective harvest along with patch-cut openings could also be used to promote and improve the cover type as it is. Invasive species control is not required but could be used before a harvest. Invasive species control is also recommended in areas where the timber harvest or timber stand improvement (TSI) activity creates a canopy gap opening allowing high quantities of light to reach the ground. It is recommended to remove between 200,000 to 250,000 board feet from this cover type.

Mixed Hardwoods, 4 acres

This cover type is found in the northeast corner of the tract, where the two intermittent streams come together. Mixed hardwoods make up 4 acres of the tract which is approximately 7% of the tract acreage. Most of the canopy trees in this cover type are either chestnut oak, red maple,

American beech, or yellow-poplar. The only other species that were present in measurable amounts were white oak, sugar maple, and blackgum. The percent stocking is 86, classifying this cover type as fully stocked. Most of this cover type consists of large American beech and red maple, which contributes to the lack of diversity. The yellow-poplar, white oak, and chestnut oak are of nice quality. These species are ideal and should be managed for in this cover type. Without management, this cover type would see a continued decline in diversity, with shade tolerant species contributing to the growth of more shade tolerant species. With forest management, biodiversity could be improved, benefiting wildlife and timber quality. The herbaceous layer is mostly spicebush. Invasive species are a concern in this cover type, mostly being found near the fire lane and the streams.

Mixed Hardwoods Data (trees >11"DBH):

Species	# of Trees	Total Bdft
Chestnut oak	34	7,170
Red maple	48	6,870
American beech	54	6,860
Yellow-poplar	18	6,160
White oak	12	3,470
Sugar maple	12	1,860
Black gum	16	1,700
Total	194	34,090

Stocking is high in this cover type, which can be attributed to the dense American beech in the northeast, near the fire lane. This area could benefit from a patch-cut opening, as this cover type has proven there are yellow-poplar in the seed bank that would respond well to more sunlight and disturbance. This regeneration opening could be improved through pre-harvest or post-harvest TSI, targeting the understory American beech. Before any timber management occurs, the invasive species near the fire lane could be treated to prevent further spread. Near the uphill edges of this cover type, there are some larger oaks that could be harvested to capture mortality. This could also contribute to increasing the sunlight reaching the forest floor and releasing higher quality oak trees in the area, as these oaks are rather short-bodied with large tops.

A selective harvest, mid-story removal, and patch-cut openings could be used throughout for a possible transition to an oak-hickory cover type or to promote regeneration. The goal in the mixed hardwoods cover type is to bring down the basal area to 60-65. This basal area could be lower if a large regeneration opening is implemented. Mid-story removal can be completed by chemical methods, mechanical methods, or with prescribed fire. If prescribed fire is used, the area could be repetitively burned at 3 to 5-year intervals to ensure the mid-story is properly controlled. A selective harvest along with patch-cut openings could also be used to promote and improve the cover type as it is. Invasive species control is advised for the high presence areas and is recommended in areas where harvest or TSI creates a regeneration opening allowing high quantities of light to reach the ground. This harvest could remove 15,000 – 25,000 board feet.

Summary Tract Silvicultural Prescription and Proposed Activities

Management recommendations in this tract could begin with pre-harvest invasive species control that could be used to limit seed producing populations or reduce less pervasive invasive species.

Pre-harvest TSI could be utilized to help promote oak or yellow-poplar regeneration. A 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. This could be done by using single-tree selections, shelterwood harvests, or patch-cut openings. Post-harvest TSI and a prescribed fire regime could be used to promote and ensure success. It is recommended that a total of 215,000 – 275,000 board feet be removed from 6300215.

Proposed Activities Listing

Proposed Management Activity

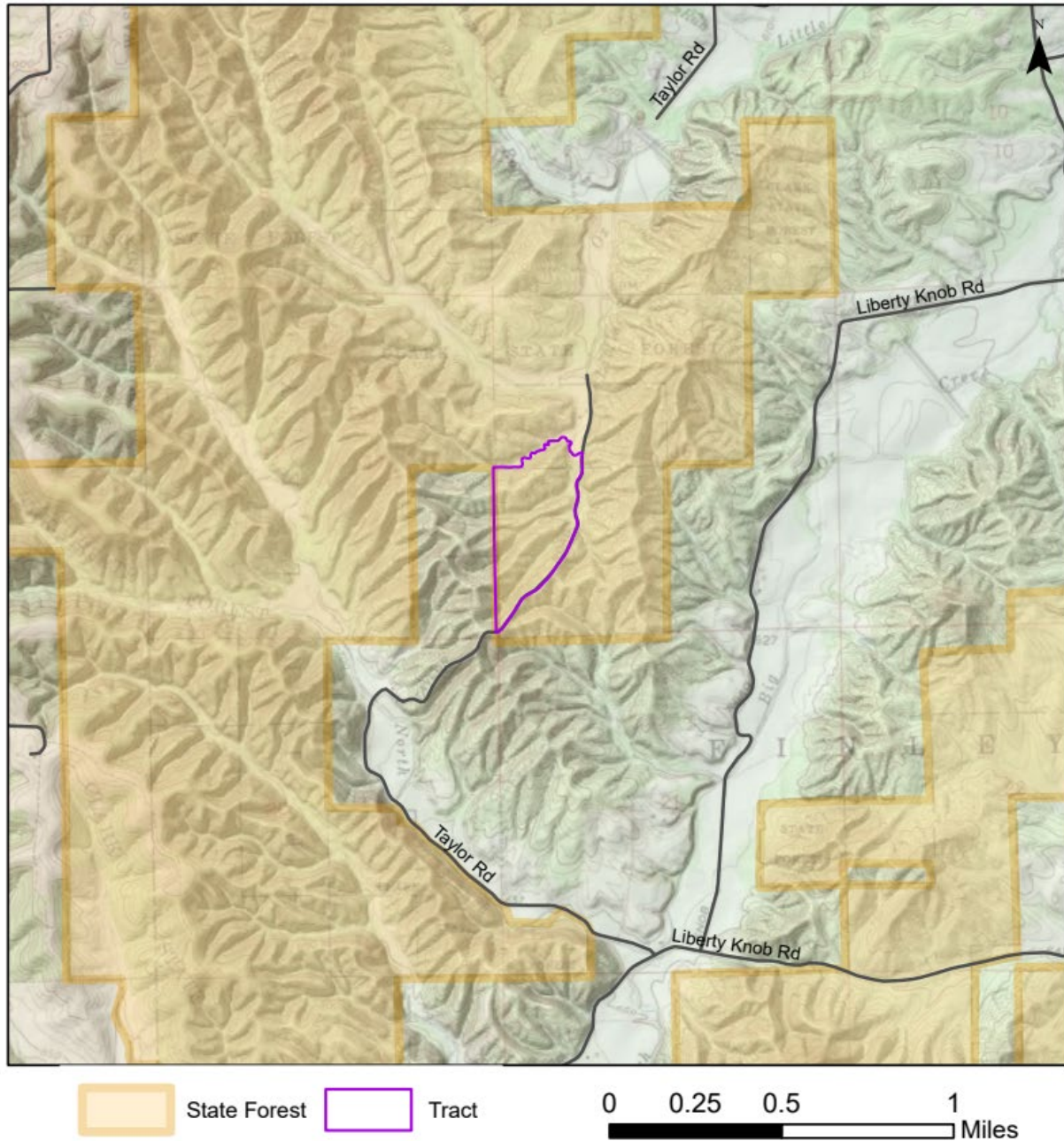
Pre-harvest TSI/invasive species control
Timber Harvest
Post-harvest TSI/invasive species control
3-year regeneration review
Prescribed fire regime
Next forest inventory

Proposed Date

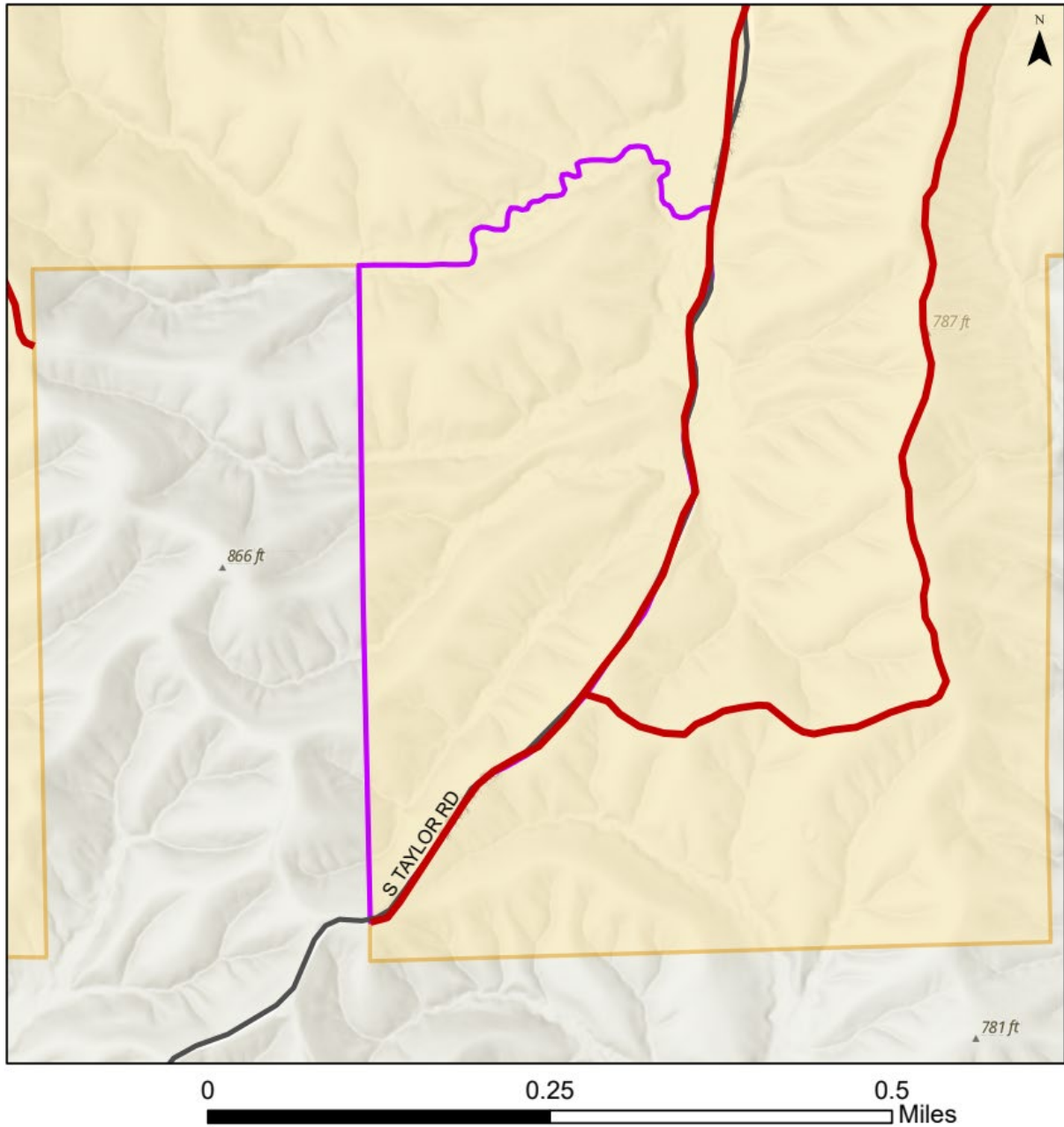
2025-2026
2026-2028
Within 2 years of harvest
Three years after harvest
2026+
2044

Maps

Clark State Forest Location Map Compartment 2 Tract 15

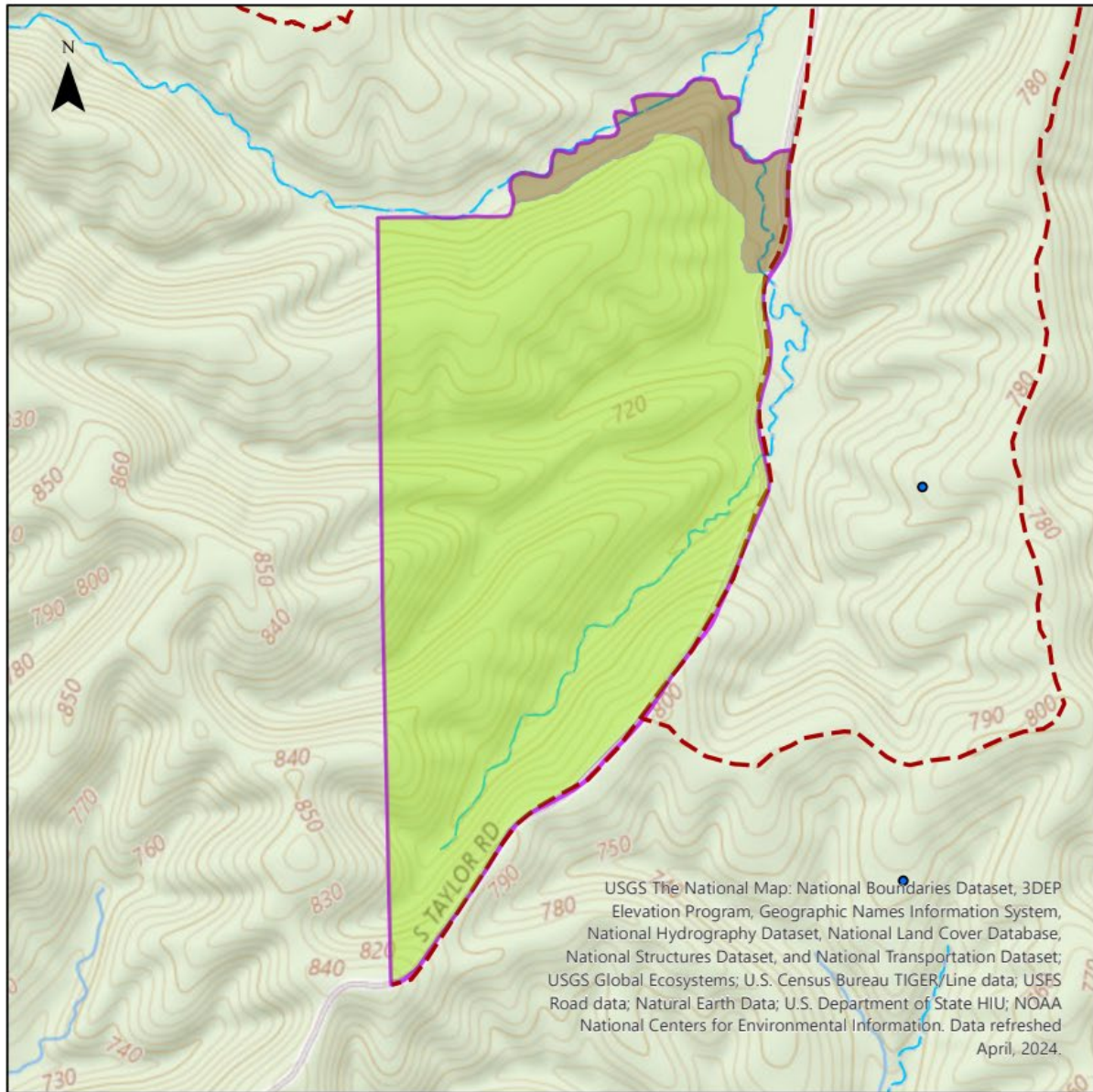


Clark State Forest Compartment 2 Tract 15 Tract Map



- Fire Lane
- Tract boundary
- State Forest

Clark State Forest Compartment 2 Tract 15 Cover Types Map



- Tract Boundary
- Mesic Oak-Hickory
- Mixed Hardwoods
- FireLanes
- Wildlife Ponds

0 0.13 0.25
Miles