Indiana Department of Natural Resources
Division of Forestry
RESOURCE MANAGEMENT GUIDE

Clark State Forest **Compartment:** 10 **Tract:** 14
Forester: Amy Oehlman and Dustin Alwine **Date:** 8/27/2021 **Acres:** 137
Management Cycle End Year: 2044 **Management Cycle Length:** 20 years

Location

Compartment 10, tract 14 (also known as 6301014) is located in Washington County, Indiana, in Polk Township approximately 8 miles west of Henryville, Indiana. The tract borders the Pekin Community Saddle Club. The tract is in section 8 of Township 1 North, Range 6 East.

General Description

This 137-acre tract has five cover types: mesic-oak-hickory, mixed hardwoods, conifer, tree planting, and non-forest. This tract is majority mixed hardwoods. The tree planting site is assumed to be around 15 years old the time of inventory, no records were found to confirm this. The dominant overstory species throughout the tract is chestnut oak. Other notable overstory species are white oak and sugar maple. Regeneration is predominantly American beech, red maple, and sugar maple. The majority of the tract is fully stocked with mostly mid-quality trees with some high-quality mixed in. Invasive species presence in this tract is very high with the most severe areas being near the horse trails. There are pockets of desirable oak and hickory regeneration throughout but mostly in the mesic oak-hickory cover type. Other notable regeneration is American beech, sugar maple, and yellow poplar. Management of this tract will aim to lower the stocking via a timber harvest and timber stand improvement (TSI) activities in locations throughout. The main goal is to promote the growth of oak and hickory species in areas where it is possible to do so.

History

1940 – Land acquired from Lewellen
1941 – Land acquired from Lewellen
1941 – Land acquired from Vest
1984 – Property boundary marked
1989 – Timber sold to Mull Lumber Co., 247,721 bdft (6301007)
Included portions of the current tract 6301014
1990 – Land acquired from Green
1990 – Timber stand improvement performed (6301007)
Included portions of the current tract 6301014
1993 – Timber harvest, no sale
1994 – Timer sold to Wright Timber and Veneer, 158,070 bdft
1987 – Access improvements
1989 – Property boundary marked
1990 – Planted locust and black raspberry was cleared.

1993 – Property boundary marked (east-west line)
2000 – Forest inventory and management guide by David Pyle (6301006)
Included portions of the current tract 6301014
2000 – Timber sold to Ivan Sparks, 136,229 bdft (6301006)
Included portions of the current tract 6301014
2019 – Tract boundary changes in 6301006, 6301007, 6301008, and 6301014
2021 – Inventory and Resource Management Guide completed by Hanners and Alwine
2024 – Resource Management Guide updated and submitted for review by Davis

Landscape Context

There are two disjointed portions which make up 6301014. The southern smaller portion consists of about 17 acres of the total tract acreage and lies along Honey Run Road. The land to the north, east, and west of this portion is private property which appears recreational. The land to the south is Clark State Forest. The northern larger portion lies along Schnieders Road. The land to the north and to the west of the northern portion of this tract are also part of Clark State Forest. The land to the east is private property which appears largely residential. Overall, the area is predominantly forested, both state and private. There are scattered residential homes and small agricultural fields.

Topography, Geology and Hydrology

6301014 encompasses one major ridge that results in north and south facing slopes, primarily. The top of the ridge lays flat with moderate to steep slopes running toward the drainages.

6301014 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.

6301014 is in the southern half of the South Fork Blue River watershed. There are two streams that run through this tract. To the north, North Honey Run forms the northmost boundary of the tract. This stream connects to the South Fork Blue River via Whiskey Run. The other stream passes through the northern edge of the southern piece of the tract and then flows into Whiskey Run as well.

These areas, including sections of mapped intermittent streams within the tract, will be managed following the 2022 Best Management Practices (BMP) field guide.

Soils

CoB- Crider silt loam, 2 to 6 percent slopes

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

CoC2- 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.

Cu- 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.

GnF- Gilpin-Berks loams, 18 to 50 percent slopes
These moderately steep to very steep, moderately deep, well-drained soils are on side lopes in the uplands. Erosion hazards, equipment limitations, and plant competition are the main management concerns. These should be considered when 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.

WeC2- 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.

WeD- Wellston silt loam, 12 to 18 percent slopes
This strongly sloping, deep, well-drained soil is on side slopes adjacent to drainageways in the uplands. This soil is fairly well suited to trees. Erosion hazards and equipment limitations are management concerns that should be considered when planning sale layout and implementing Best Management Practices for Water Quality. This soil has a site index of 71 for northern red oak and 90 for yellow poplar.

Access
The southern portion of 6301014 can be accessed by vehicle via Honey Run Road, the inner of this portion is only accessible via foot. The northern portion of 6301014 can be accessed by vehicle via Schnieder Road and by vehicle, horseback, or foot via the Cross Country Horse Trail and the Saddle Club Connector Horse Trail.

Boundary
The larger northern portion of 6301014 is bordered by private property on the east and south sides and bordered by 6301006 to the north and 6301007 to the west. Within the larger portion of the tract, there is a 0.5-acre inholding along South Schnieder Road. The smaller southern portion of 6301014 is bordered to the north, east, and west by private property. The southern boundary is 6301101.

Ecological Considerations
This tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife. Habitat types include mesic oak-hickory, mixed hardwoods, conifer, tree planting, and non-forest.

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 dying trees. Snags provide value to a stand in the form of habitat features for foraging activity, den sites, decomposers, bird perching, and bat roosting. Snags eventually contribute to the future pool of downed woody material. Downed woody debris provides habitat for many species and contributes to healthy soils. 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 DoF targets at all size classes. Additionally, legacy tree densities exceed DoF compartment-level targets at all size classes by a comfortable margin.

Invasive species are prevalent in 6301014. The most prolific invasive species in this tract is Oriental bittersweet. It is found throughout this tract but is most prevalent in the tree planting cover type, along the horse trails, and areas where mortality is high. Japanese stiltgrass is the second most prevalent and is found mainly along the streams in this tract but has traveled into the tree plantation, horse trails, and some open areas creating a monoculture on the forest floor. Other invasive species to note are Japanese honeysuckle, ailanthus, and Bradford pear (i.e., Callery pear).

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 form of recreation in this tract is likely horse riding on the Cross Country Horse Trail and the Saddle Club Connector Horse Trail. The Pekin Community Saddle Club is adjacent to this tract, therefore; the Saddle Club Connector Horse Trail is likely the more used trail. Other recreation opportunities presented in this tract include hiking, wildlife viewing, foraging, or hunting. For public safety, recreational activities would be temporarily altered within the tract during active management.

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 August of 2021 by Forester Dustin Alwine and Amy Oehlman. A summary of the estimated tract inventory results is located in the table below.

Tract Summary Data (trees >11”DBH):

Species	Sawtimber Trees	Total Bd. Ft.
Chestnut oak	1,013	284,900
White oak	415	143,300
Sugar maple	659	130,180
Yellow-poplar	448	125,640
Pignut hickory	321	68,920
Scarlet oak	145	64,970
American beech	268	59,614
Black oak	190	50,066
Red maple	259	40,920
Virginia Pine	216	40,510
Blackgum	73	12,116
Black walnut	89	9,120
Basswood	27	8,340
Shagbark hickory	39	6,750
Black cherry	31	6,450
American sycamore	7	5,387
White ash	31	5,070
Total	4,231	1,062,253

For the purpose of this guide and managing this tract, it will be divided into five cover types based on forest composition they include: mesic-oak-hickory, mixed hardwoods, conifer, tree planting, and non-forest

Mesic Oak-Hickory, 49 acres

This cover type is the second largest and is fully stocked at 92%. Chestnut oak is the dominant overstory species and makes up over half of the total merchantable volume within the cover type. Other prevalent overstory species included white oak, black oak, and scarlet oak. The mortality in this cover type varied throughout, in general there was moderate mortality from a variety of species. Regeneration varied in this cover type as well. Many areas showed advanced maple regeneration with a heavy ground cover of beech seedlings. Oak regeneration was not prevalent except in a few scattered open areas. A wide variety of invasive species were found in this cover type including Japanese stiltgrass, Japanese honeysuckle, autumn olive, and Oriental bittersweet. These occurrences were generally of a few scattered stems with a couple small established populations of Oriental bittersweet.

Trees per acre: 105	Percent stocking: 92
Basal area:117.6	Volume per acre: 10,298

Species	Volume per acre
Chestnut oak	5,596
White oak	2,453
Black oak	1,028
Pignut hickory	359
Scarlet oak	303
Yellow-poplar	271
Sugar maple	237
American beech	51
Total	10,298

Pre- and post-harvest invasive species control should be considered. With the stocking being higher up in the fully stocked section, there are some nice trees that could be released from competition. The understory is composed of more shade tolerant species that are creating competition for more desirable species. The goal is to keep this as an oak-hickory cover type for the foreseeable future. To do this, the oaks and hickories will need a competitive advantage by the removal of less desirable shade tolerant species. Mid-story removal is recommended due to most of the mid-story being undesirable and can be completed by chemical methods, mechanical methods, or with prescribed fire. If prescribed fire is used, periodic burns may be necessary to recruit, retain, and advance oak and hickory within this cover type.

An improvement harvest is also recommended for this cover type. The goal is to bring down the basal area to 60-80. This could be accomplished with the use of an oak shelterwood, single tree and group selection, patch-cuts openings, or combination. Invasive species control is advised for the high presence areas and is recommended in areas where the timber harvest or TSI activity creates a regeneration opening allowing high quantities of light to reach the ground.

Mixed hardwoods, 72 acres

This cover type is the largest and is fully stocked at 93%. This cover type was primarily found on the ridgetops and north facing slopes within the tract. Mortality was low to moderate in most areas. Sugar maple and yellow poplar were the most dominant overstory species. Regeneration was almost exclusively American beech with some maple. The ground cover near the riparian areas was a mixture of ferns and Japanese stiltgrass. Drier areas within the cover type still had a presence of Japanese stiltgrass and some Oriental bittersweet. Oriental bittersweet was prevalent where the mixed hardwoods cover type borders the tree plantation.

Trees per acre:105	Percent stocking: 93
Basal area: 117.6	Volume per acre: 8,098

Species	Volume per acre
Sugar maple	1,796
Yellow-poplar	1,758
American beech	893
Scarlet oak	785
Pignut Hickory	709
Red Maple	589
White oak	327
Virginia pine	235
Blackgum	190
Black Walnut	143
Chestnut oak	128
Shagbark hickory	106
Black Cherry	101
American Sycamore	84
White ash	79
Total	8,098

Pre- and post-harvest invasive species control should be considered. The overstory is truly mixed. A light improvement harvest is recommended for this cover type. The goal is to bring down the basal area to 60-80 and to promote a diverse, healthy cover type.

A selective harvest using single tree and group selection is recommended. Some areas may benefit from mid-story removal or patch-cut openings. Mid-story removal can be completed by chemical methods, mechanical methods, or with prescribed fire. If prescribed fire is used, periodic burns may be necessary. An oak shelterwood could be prescribed in some locations of this cover type. 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.

Conifer, 4 acres

This cover type is the next to smallest and is found in two small areas on the edge of the ridge tops within the tract. One area is located along Honey Run Road and the other is located on the west half of the northern larger piece of the tract. Virginia pine, presumed native, made up more than half of the overstory within this cover type with a mixture of hickory, oak, and maple interspersed. This cover type had very high pine mortality and thus, is understocked. Some areas showed minimal regeneration, while others showed dense American beech regeneration.

Trees per acre: 3	Percent stocking: 10
Basal area: 2.7	Volume per acre: 4,697

Species	Volume per acre
Virginia pine	2,792
Pignut hickory	671
Chestnut oak	453
Red maple	421
Total	4,697

Pre- and post-harvest invasive species control should be considered. Due to current condition and age of the Virginia pine, a patch-cut opening is recommended to allow native hardwood species to regenerate naturally or through an enrichment tree planting. Equipment could be used in tree plantings in areas where the topography is feasible and can access the areas via the Saddle Club Connecter Horse Trail for the northern portion of 6301014 and Honey Run Road for the Southern Portion. Areas of harsher terrain or lesser access will need to be hand planted. Tree plantings will consist of desirable hardwood species if feasible, such as native oaks or hickories. Some Virginia pine may be retained where applicable.

Tree Planting, 10 acres

This cover type occurred along the main ridge on the east half of the northern piece of the tract. It appears this area was previously cleared and used for agriculture prior to state ownership. The planting consists of black cherry, white oak, persimmon, tulip-poplar, and black walnut in an eight foot by eight foot spacing. Other naturally occurring species that were found within this cover type included yellow-poplar, smooth sumac, and sugar maple. The trees in the plantation tended to be less than six inches in diameter and approximately 30 feet tall. This cover type had a significant presence of Oriental bittersweet and Japanese stiltgrass. Japanese honeysuckle was also present.

The desired future condition is a healthy cover type with an overstory composition of hardwoods with improved spacing. To achieve this condition TSI is recommended to improve spacing, address vines, release desired tree species and manage invasive species. There are some scattered trees that could be removed through the timber harvest, but overall TSI will be the main prescription for this cover type.

Non-forest, 2 acres

The non-forest cover type is the smallest cover type. The non-forest cover type is located in the southeast corner of the tract and is mostly an open grassy area. Pre- and post-harvest invasive species control can be considered in this area where applicable.

Summary Tract Silvicultural Prescription and Proposed Activities

Management recommendations in this tract could begin with preharvest 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 regeneration. 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, where applicable. This could be done by using a combination of single tree and group selection, an oak shelterwood, or patch-cut openings. A conversion from pine to native hardwoods is possible where appropriate. Post-harvest TSI could be used to complete any openings created, address invasive species, and release trees not released through the timber harvests. It is recommended that a total of 325,000 – 375,000 board feet be removed from 6301014. This number can vary based on current conditions of the tract.

Other considerations

Regeneration evaluation – Three years after the completion of the timber harvest, a regeneration inspection will be performed to ensure that desired regeneration is occurring within the harvest area. If deemed unsatisfactory, mitigations will be made.

Timber stand improvement (TSI) – TSI could be performed post-harvest. TSI is prescribed to complete regeneration openings, remove species inhibiting desirable regeneration, and address problem occurrences of invasive species.

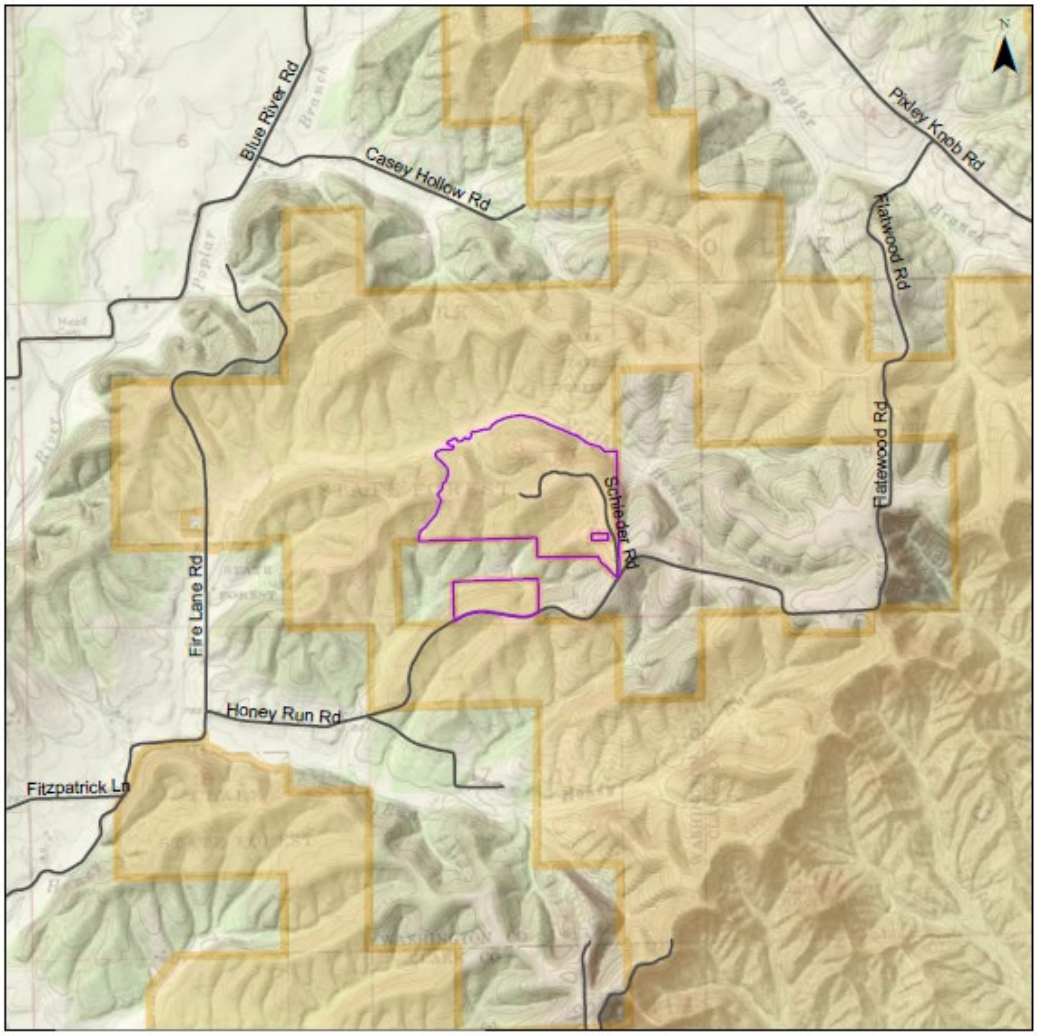
Best management practices (BMP) – During and after completion of the proposed management activity, BMPs will be implemented and monitored in order to minimize soil erosion.

Guide revision – This tract should receive another inventory and management guide approximately 20 years following the completion of this inventory.

Prescribed fire – A regime of prescribed fire may be started within this tract to reduce the abundance of shade tolerant species in the midstory and to help control invasive species as well as to promote a more open forest structure.

Proposed Management Activity	**Proposed Date**
Pre-harvest TSI and invasive species work	2024-2025
Timber Harvest	2025-2026
Post-harvest TSI and invasive species work	Within 2 years of harvest
3-year regeneration opening review	Three years after harvest
Prescribed fire	2026+
Next forest inventory	2044

Clark State Forest
Location Map
Compartment 10 Tract 14



Clark State Forest
Compartment 10 Tract 14
Cover Types Map