

# Indiana Department of Natural Resources – Division of Forestry

**-Draft-**

## Resource Management Guides

### Clark State Forest

The Indiana State Forest system consists of approximately 158,000 acres of primarily forested land. These lands are managed under the principle of multiple use-multiple benefit to provide forest conservation, goods and services for current and future generations. The management is guided by scientific principles, guiding legislation and comprehensive forest certification standards which are independently audited to help insure long term forest health, resiliency and sustainability.

For management and planning purposes each State Forest is divided into a system of compartments and tracts. In general terms compartments are 500-1,000 acres in size and their subunits (tracts) are 50-200 acres in size.

Resource Management Guides (RMGs) are then developed for each tract to guide their management through a 15-25 year management period. There are approximately 1,700 tracts in the State Forest system. During annual planning efforts 50-100 tracts are reviewed and RMGs developed based on current conditions, inventories and assessments.

The RMGs listed below and contained in this document are part of this year's tracts under review for Clark State Forest.

Compartment 10 Tract 4  
Compartment 11 Tract 5  
Compartment 11 Tract 6  
Compartment 15 Tract 3

**To submit a comment on this document, go to:**

[www.in.gov/dnr/forestry/8122.htm](http://www.in.gov/dnr/forestry/8122.htm)

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

<http://www.in.gov/dnr/forestry/3634.htm>.

**Clark State Forest****Forester:** Bartlett**Tract Acreage:** 123**Management Cycle End Year:** 2039**Tract:** 6301004 (Comp 10 Tract 4)**Date:** August 2019**Forested Acreage:** 123**Management Cycle Length:** 20**Location**

Compartment 10 Tract 4 is located in Washington County, Indiana. More specifically, Sections 6, 7, and 8 of Township 1 North, Range 6 East. This tract is approximately 6 miles west of Henryville, Indiana.

**General Description**

The two delineated stands within this tract are mixed hardwoods and oak-hickory. The mixed hardwoods stand is composed of mainly medium sized sugar maple and yellow poplar. The regenerating species in this stand is primarily American beech and red maple. Portions of this stand are not fully stocked, but there is potential for desirable sugar maple and yellow poplar crop trees. The other delineated stand is oak-hickory with the majority of volume being in chestnut oak and white oak. Regenerating species in this stand are ironwood, American beech, oaks, and hickories. This stand is well stocked showing signs of decline in some areas of high/overstocked oaks.

**History**

1940 – Land purchased from Lewellen

1941 – Land purchased from Wade

1942 – Land purchased from Bagshaw

1984 – Boundary marked

1985 – Timber harvest conducted, sold to Mull, 165,425 bd. ft.

1986 – Forest inventory completed

1986 – Road installed on the southern edge of tract

2018 – Forest inventory completed by Bartlett

2019 – Resource Management Guide completed by Bartlett

**Topography, Geology and Hydrology**

The majority of this tract is moderately sloped. On the west part of the tract, the slopes face north and south, while the slopes on the east face east and west. There are several short ridges that provide management access to the tract off of the multipurpose trail. The underlying bedrock of this tract is siltstone with sub lithology of shale, sandstone, and limestone.

This tract is within the Springle Creek-South Fork Blue River watershed. There is one mapped intermittent stream within this tract that flows into Poplar Branch Creek and then into the South Fork Blue River.

**Soils**

Cu- Cuba silt loam, frequently flooded, 0.2 acres

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.

GID2- Gilpin silt loam, 12 to 18 percent slopes, eroded, 3.1 acres

This strongly sloping, moderately deep, well-drained soil is on side slopes in the uplands. It is fairly well suited to trees. The hazard of erosion and equipment limitations are main management concerns which should be considered when planning management activities and implementing Best Management Practices for Water Quality. This soil has a site index of 80 for Northern red oak and 95 for yellow poplar.

GnF- Gilpin-Berks loams, 18 to 50 percent slopes, 83.9 acres

These moderately steep to very steep, moderately deep, well-drained soils are on side slopes in the uplands. Erosion hazards, equipment limitations, and plant competition are the main management concerns. These should be considered 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, 36.2 acres

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.

**Access**

Access along the entire southern border is possible via a multipurpose trail. The multipurpose trail provides management access through gates off of Flatwood Rd. and South Fire lane Rd.

**Boundary**

The entire south border of the tract is adjacent to State Forest property. This boundary is designated by a gravel lane. The north and west sides of the tract share a boundary with private land. There are several no trespassing signs on the approximate property line, but no surveying evidence was found during the inventory.

**Exotics**

Invasive species are very scarce within this tract. There is a moderate amount of Japanese stiltgrass, oriental bittersweet, and Japanese honeysuckle on the multipurpose trail on the southern boundary of the tract. A small number of multiflora rose stems are present in areas that have pockets of Virginia pine. These should be managed with a situational approach. If found during management, priority should be given to the control of ailanthus, oriental bittersweet, and Amur honeysuckle.

**Recreation**

Hunting is permitted within this tract. The major use of this tract for recreation is horseback riding. There is a day ride parking area to the east of this tract that allows easy access to the horse trail system. Other recreational opportunities in this tract include foraging, hiking, and wildlife viewing.

## Cultural

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

## Wildlife

This tract contains diverse vegetation and wildlife resources (age, type, structure) conducive to providing habitat for a variety of wildlife species. Habitat types include: oak-hickory canopy, mixed hardwood canopy, and riparian areas.

A Natural Heritage Database Review was completed for this tract. If Rare, Threatened or Endangered species (RTE's) were identified for this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

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

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Snag 5"+ DBH	508	889	990	482	101
Snag 9"+ DBH	381	762	645	264	-117
Snag 19"+ DBH	64	127	191	127	64
*Selected Tree Species:	AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO				

Inventory data for Compartment 10 Tract 4 shows that all Division of Forestry guidelines for snags are met, with exception to the above optimal level for snags 9"+. The prescribed management will maintain the relative abundance of these features.

## Tract Prescription and Proposed Activities

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

### Tract Summary Data

Total acres = 123	Overall % stocking = 68% (fully stocked)
Total trees per acre = 76	Present volume per acre = 6,829 bd. ft.
Basal area per acre = 87 ft <sup>2</sup>	

Species	Bd. ft. per acre
Chestnut oak	2,035
White oak	1,088
Sugar maple	1,050
Yellow poplar	875
Pignut hickory	373
American beech	348
Virginia pine	341
Black oak	193
Shagbark hickory	152
White ash	104
Northern red oak	94
Red maple	55
Black walnut	48
Black cherry	36
Sassafras	19
Blackgum	18
<b>Total</b>	<b>6,829</b>

For the purpose of this guide, the tract is divided into two management stratum based on the overstory composition. Below is a general tract description and silvicultural prescription.

#### Oak-hickory

The oak-hickory stand occupies the south facing slopes and the top of the flat ridge on the eastern side of the tract. Overstory trees have an average of 18" DBH with some trees having a DBH of 24"-26". The regenerating species are mainly: beech, ironwood, maples, and occasional oak and hickories. The canopy is crowded and dieback is present.

Trees per acre	92
Basal area per acre	104 ft <sup>2</sup>
Stocking	82%

Species	Bd. ft. per acre
Chestnut oak	4,551
White oak	2,242
Pignut hickory	472
Sugar maple	322
Black oak	199
Virginia pine	148
American beech	122
Northern red oak	61
Yellow poplar	43
Shagbark hickory	14
Total	8,174

This stratum is fully stocked and a timber harvest is recommended. The goal of the timber harvest is to promote the growth of crop trees while removing stressed, lower quality competitors. A single tree selection harvest is recommended to accomplish this goal. Crop trees should be selected based on: species, health, and vigor. Crop trees are prescribed to be released on at least two sides.

Group and patch selections should be implemented in areas with considerable overstory mortality. The goal of these openings is to encourage the establishment of oak and hickory regeneration. These patches will also create early successional wildlife habitat.

In areas with desirable seed trees and poor regeneration, a shelterwood may be implemented. The goal of this management is to create an area with partial shade to promote the regeneration of oak species. A treatment of the shade tolerant midstory is required for this management strategy. The midstory may be treated with either a chemical, mechanical, and/or cultural method.

A prescribed fire is a cost effective option to decrease the abundance of beech and maple in the midstory.

#### Mixed Hardwoods

This overstory is present on north facing slopes. The overstory trees are of good quality. The average overstory tree has a DBH of approximately 14"-18" with few trees being >24". Regeneration in this stratum consists of beech and maple.

Trees per acre	64
Basal area per acre	73 ft <sup>2</sup>
Stocking	59%

Species	Bd. ft. per acre
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Sugar maple	1,616
Yellow poplar	1,522
American beech	524
Virginia pine	491
Pignut hickory	296
Shagbark hickory	260
White oak	190
Black oak	188
White ash	186
Northern red oak	120
Red maple	98
Black walnut	86
Chestnut oak	79
Black cherry	64
Sassafras	34
Blackgum	31
Total	5,785

This stratum near canopy closure (60% stocking). There are portions of this stratum that would benefit from a harvest, and others that do not have adequate stocking to warrant a harvest at this time.

A single tree selection method is prescribed in areas with sufficient stocking to release select yellow poplar and sugar maple. These crop trees will be selected based on form, health, vigor, and surrounding stocking.

Areas where adequate stocking is lacking a pre-commercial thinning is recommended. This thinning would identify and release future crop trees based on health, vigor, form, and species.

Areas that do not have desirable growing stock and lack desired regeneration -are great locations to implement regeneration openings. These openings will provide wildlife habitat in the form of young forest and may benefit from enrichment plantings of oak and hickory-

### **Invasive species management**

The area along the multipurpose trail is prescribed to have invasive species management performed. Invasive species do not occur very far into the forest, but oriental bittersweet, Japanese honeysuckle, and Japanese stiltgrass are established along the trail.

### **Grape vine treatment**

There are pockets in the mixed hardwood stratum that have a large amount of grape vines. It is recommended that these vines be treated before the canopy is opened by the harvest.

**Prescribed fire**

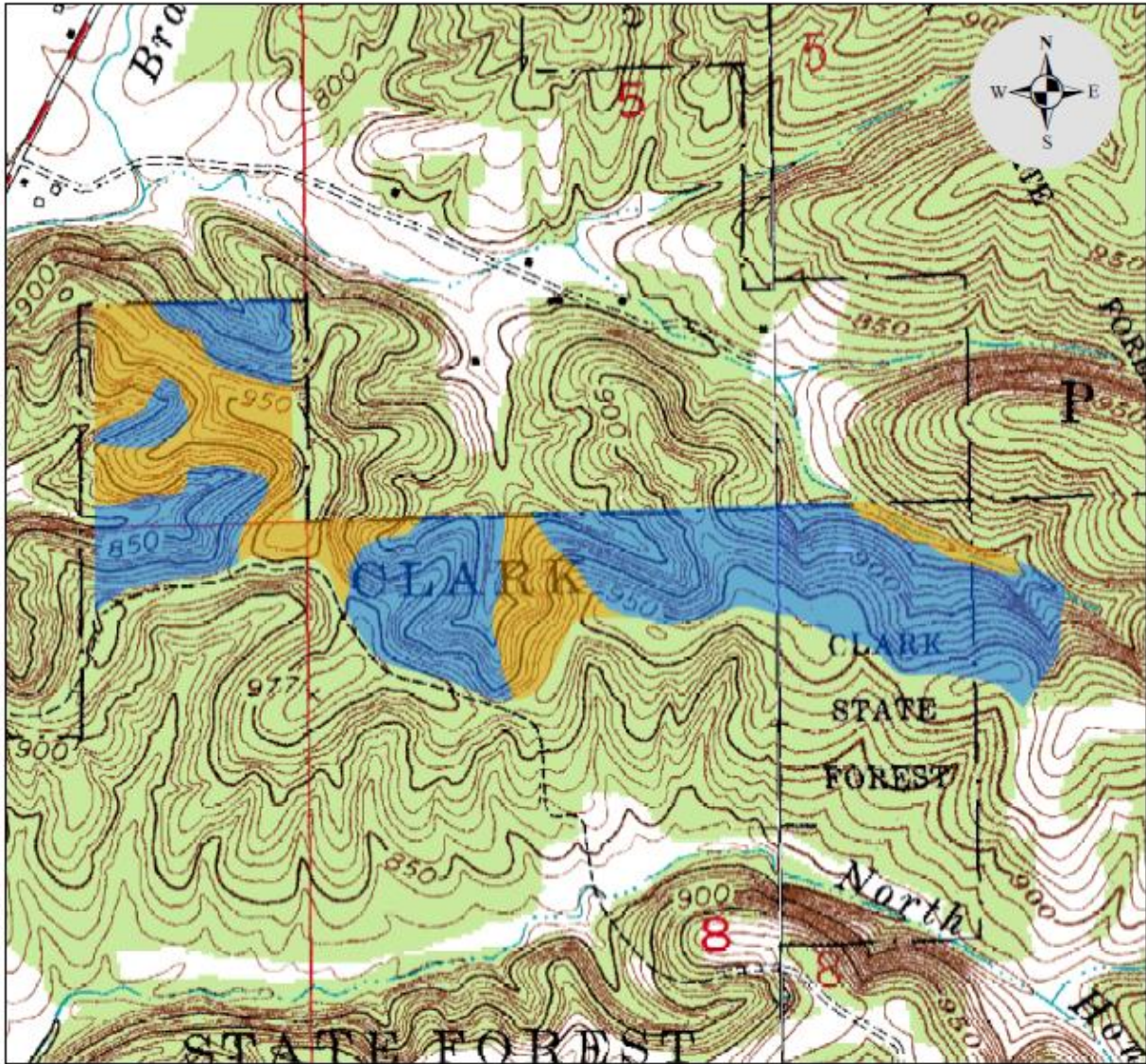
Use of prescribed fire in this tract as a form of midstory management should be considered as an option to reduce the abundance of shade tolerant species while encouraging the regeneration of oak and hickory species.

**Schedule:**

<u>Proposed Activities Listing</u>	<u>Proposed Date</u>
Invasive species management	2020-2021
Grape vine treatment	2020-2021
Timber marking and sale	2020-2022
Prescribed fire regime	2021+
3 year regeneration opening evaluation	2024-2025
Inventory and management guide	2039



# Clark State Forest Compartment 10 Tract 4 Stand Map



**Clark State Forest****Tract Acres:** 222**Forester:** Bartlett**Management Cycle End Year:** 2039**Tract:** 6301503 (Comp 15 Tract 3)**Forested Acreage:** 222**Date:** August 2019**Management Cycle Length:** 20 years**Location**

Compartment 15 tract 3 is located in Clark County, Indiana. More specifically, this tract is located within Section 33 and 34 of Township 1 North, Range 6 East. This tract is located to the northeast of Deam Lake.

**General Description**

The three delineated stratum within this tract are: mixed hardwoods, oak-hickory, and upland oak-hickory. The mixed hardwood stand has a considerable amount of Virginia pine blowdown which contributes to the stand's low stocking. The volume in this stand is primarily made up of yellow-poplar and Virginia pine. The oak-hickory stand is predominantly white oak. The third delineated stand is upland oak-hickory. This stand has the highest stocking of the three and the volume is distributed between white oak, chestnut oak, and Virginia pine.

All three of these stands have areas of advanced regeneration of chestnut oak, white oak, and pignut hickory. The remaining areas' regeneration consists of American beech, maples, sassafras, and scattered oaks.

**History**

1939 – Land purchased from Butts

1986 – Forest inventory performed for state inventory system

1997 – Forest inventory completed

1997 – Timber sale 85,495 bd. ft. sold to Worley Lumber Co.

2000 – Horse trail rehabilitation

2019 – Forest inventory completed by Alwine/Bartlett

2019 – Resource management guide completed by Bartlett

**Topography, Geology and Hydrology**

The topography within this tract varies greatly – from steep slopes to flat bottomlands. There is one ridge along the northern boundary that runs east and west. There is a knob in the southern portion of the tract that makes up the rest of the tract's slopes.

The bedrock below this tract is siltstone with a sub-lithology is shale, sandstone, and limestone.

The west portion of the tract is within the Big Run-Muddy Fork watershed while the eastern portion is within the Blue Lick Creek watershed. All of the west facing slopes drain into Thomas Branch Creek and then quickly join with Deam Lake. Water that travels down the east facing slopes continues east into an unnamed intermittent stream. This intermittent flows into Bowery Creek. General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the Indiana Logging and Forestry Best Management Practices.

### **Access**

Access to and within this tract is excellent. There are three ways to access the tract. The gate off Flower Gap Road, the gate off Reed Road, and the multipurpose trail north of Deam Lake all provide relatively quick access.

### **Boundary**

The majority of the tract adjoins other Clark State Forest tracts to the south, west, and north with geographical land features serving as the tract boundary. The eastern boundary adjoins private land.

### **Soils**

BcrAW- Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration, 30.8 acres

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

ComC- Coolville silt loam, 6 to 12 percent slopes, 9.1 acres

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

ConD- Coolville-Rarden complex, 12 to 18 percent slopes, 110.3 acres

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

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

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

GmaG- Gnawbone-Kurtz silt loams, 20 to 60 percent slopes, 71.5 acres

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

PcrB2- Pekin silt loam, 2 to 6 percent slopes, eroded, 0.8 acres

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

### **Exotics**

Invasive species are moderately abundant within this tract. The multipurpose trails have a heavy component of Japanese stiltgrass. Stiltgrass is present within some of the drainages in the forest. There are patches of multiflora rose, oriental bittersweet, and Japanese honeysuckle in areas of Virginia pine blowdown. These patches are very scattered and have a low abundance of plants. The location of one ailanthus stem was noted during the forest inventory.

The trails can be managed with a UTV sprayer, and the scattered patches can be managed with a backpack sprayer. The proximity to Deam Lake will be taken into consideration when planning and performing invasive species management.

**Recreation**

Recreation is very popular within this tract. There are portions of five multipurpose trails (Cross Country Trail, Deam Lake Loop, Flower Gap Loop, Tree Lane Loop, and Three Hills Trail) within this tract. The Deam Lake Loop is the only multipurpose trail where mountain biking is permitted. The Deam Lake loop is the most used trail due to it providing direct access to the trails from the horse campground.

The Knobstone Trail bisects this tract, but the trail uses existing multipurpose trail for the majority.

**Cultural**

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

**Wildlife**

This tract contains diverse vegetation and wildlife resources (age, type, structure) conducive to providing habitat for a variety of wildlife species. Habitat types include: oak-hickory canopy, mixed hardwood canopy, and riparian areas.

A Natural Heritage Database Review was completed for this tract. If Rare, Threatened or Endangered species (RTE’s) were identified for this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

The Division of Forestry has developed compartment level guidelines for an important wildlife structural habitat features: snags.

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.

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Snag 5"+ DBH	888	1,554	2,564	1,676	1,010
Snag 9"+ DBH	666	1,332	2,002	1,336	670
Snag 19"+ DBH	111	222	268	157	46
*Selected Tree Species:	AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO				

Inventory data for Compartment 15 Tract 3 shows that the abundance of snags exceed maintenance and optimal levels. The prescribed management will maintain the relative abundance of these features.

**Tract Descriptions**

The current forest resource inventory was completed June 2019 by Gary Steffek. A summary of the estimated tract inventory results are located in the table below.

Total acres	222
Basal area per acre (square feet)	89.2
Trees per acre ( >11" DBH)	101
Approximate stocking	72% (fully stocked)
Present volume per acre	5,613 bd. ft.

Species	Total Volume (bd. ft.)
White oak	646,020
Virginia pine	202,464
Yellow poplar	105,672
Chestnut oak	77,034
Scarlet oak	45,732
Red maple	43,290
Pignut hickory	32,190
Sweetgum	24,420
Black oak	22,866
American sycamore	20,424
Shagbark hickory	6,216
Blackgum	5,994
Black walnut	5,994
American beech	4,440
Northern red oak	3,330
<b>Tract Totals (bd. ft.)</b>	<b>1,246,086</b>
<b>Per acre totals (bd. ft.)</b>	<b>5,613</b>

For the purpose of this guide, this tract is divided into three management stratum based on the overstory composition. Below are general tract descriptions.

Mixed hardwoods – 64 acres

Basal area per acre (square feet)	77.4
Trees per acre ( >11" DBH)	106
Approximate stocking	65% (fully stocked)

Species	Bd. ft. per acre
Yellow-poplar	1,429
Virginia pine	614
Red maple	586
White oak	364

Sweetgum	330
American sycamore	277
Scarlet oak	229
Black walnut	81
Blackgum	80
Pignut hickory	73
Shagbark hickory	56
American beech	37
Total:	4,156

The mixed hardwood stratum is located on the southern portion of the central knob and on the bottom portion of slopes adjacent to streams. Virginia pine blowdown was very common within this stratum and is likely to continue. Oak and hickory regeneration was present near the stratum's borders, but the majority of regeneration is beech and maple.

Oak-hickory – 114 acres

Basal area per acre (square feet)	88.1
Trees per acre (>11" DBH)	92
Approximate stocking	71% (fully stocked)

Species	Bd. ft. per acre
White oak	4,899
Virginia pine	296
Chestnut oak	218
Pignut hickory	216
Scarlet oak	182
Black oak	168
Northern red oak	33
Shagbark hickory	22
American beech	16
Total:	6,050

The oak-hickory stratum is almost entirely white oak. Of the three strata, the oak-hickory has the best areas of desirable regeneration. There are pockets of white oak and chestnut oak regeneration that is well established. This stratum has the highest quality overstory trees in the tract. The overstory has reached canopy closure and trees are suppressed below.

Upland oak-hickory – 42 acres

Basal area per acre (square feet)	109.2
Trees per acre (>11" DBH)	112
Approximate stocking	87% (fully stocked)

Species	Bd. ft. per acre
White oak	2,750
Virginia pine	2,589
Chestnut oak	1,124
Scarlet oak	219
Black oak	125
Pignut hickory	108
Total:	6,915

The upland oak-hickory stratum is the most well stocked stratum within this tract. The bulk of the volume present is within white oak, chestnut oak, and Virginia pine. This stratum is located on the central knob, the northern ridge, and the southern ridge. This stratum had areas of really good white oak, chestnut oak, and pignut hickory advanced regeneration. This stratum is well stocked and there is some dieback present among crowns due to stocking levels. The snag count was high in this stand.

### **Prescriptions**

#### Mixed hardwoods – 64 acres

Although this stratum has lower stocking compared to the other two strata, there are several high quality yellow-poplar present. The Virginia pine falling out has largely contributed to providing space for these trees. A single tree selection harvest is recommended to provide light and space to the high quality yellow-poplar that have not yet been released.

Areas that have oak and hickory regeneration but an undesirable overstory are prescribed to have a group or patch selection harvest implemented. The goal of this prescription is to help establish the regeneration as the future cohort.

Although invasive species were not severe in this stand, this stand had the largest abundance of exotics. Treating them before opening the canopy is required.

Timber Stand Improvement (TSI) is prescribed to take place in the areas that have a large amount of pine blowdown. This work should focus on releasing future crop trees in areas that do not have merchantable timber.

#### Oak-hickory – 114 acres

A single tree selection harvest is prescribed in this stand. The goal of this prescription is to release high quality crop trees by removing lower quality competitors. Crop trees should be selected based on health, quality, vigor, and species.

Areas that have desirable advanced regeneration are prescribed to have a group or patch selection harvest performed.

Areas without desirable regeneration, but a high quality overstory are prime locations to implement a shelterwood. A shelterwood aims to create partial shade with the goal of recruiting oak and hickory regeneration. The shade tolerant midstory must be addressed with this management strategy. The midstory may be treated by means of a chemical, mechanical, or cultural method. Once oak regeneration is established, the remaining overstory will be removed to release the young trees

A prescribed fire is a cost effective way to treat this midstory. The multipurpose trails provide excellent access and firebreaks.

Upland oak-hickory – 42 acres

A group and patch selection harvest is prescribed for this area which contains advanced regeneration. Releasing this regeneration to form the next cohort is the primary goal of management within this stratum. There is a high amount of mortality within this stand that will also be captured with this management method.

A single tree selection is prescribed in areas requiring more thinning from below or release of co-dominant crop trees. Trees that exhibit good form are the main targets to be released with this harvesting method.

The use of a shelterwood cut to promote regeneration of oak and hickory or a prescribed fire to knock back the beech and maple understory are additional options within this stratum.

Other considerations

**Regeneration evaluation** – Three years following the completion of the timber harvest, a regeneration evaluation will be performed to evaluate regeneration openings for development and invasive species.. If deemed unsatisfactory, mitigations options will be review and appropriate management prescription employed.

**Timber Stand Improvement (FSI)** – TSI shall be performed within two years of timber harvest completion. TSI is prescribed to complete regeneration openings, remove tree 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 in order to minimize soil erosion.

**Guide revision** – This tract should receive another inventory and management guide 20 years following the completion of the timber harvest.

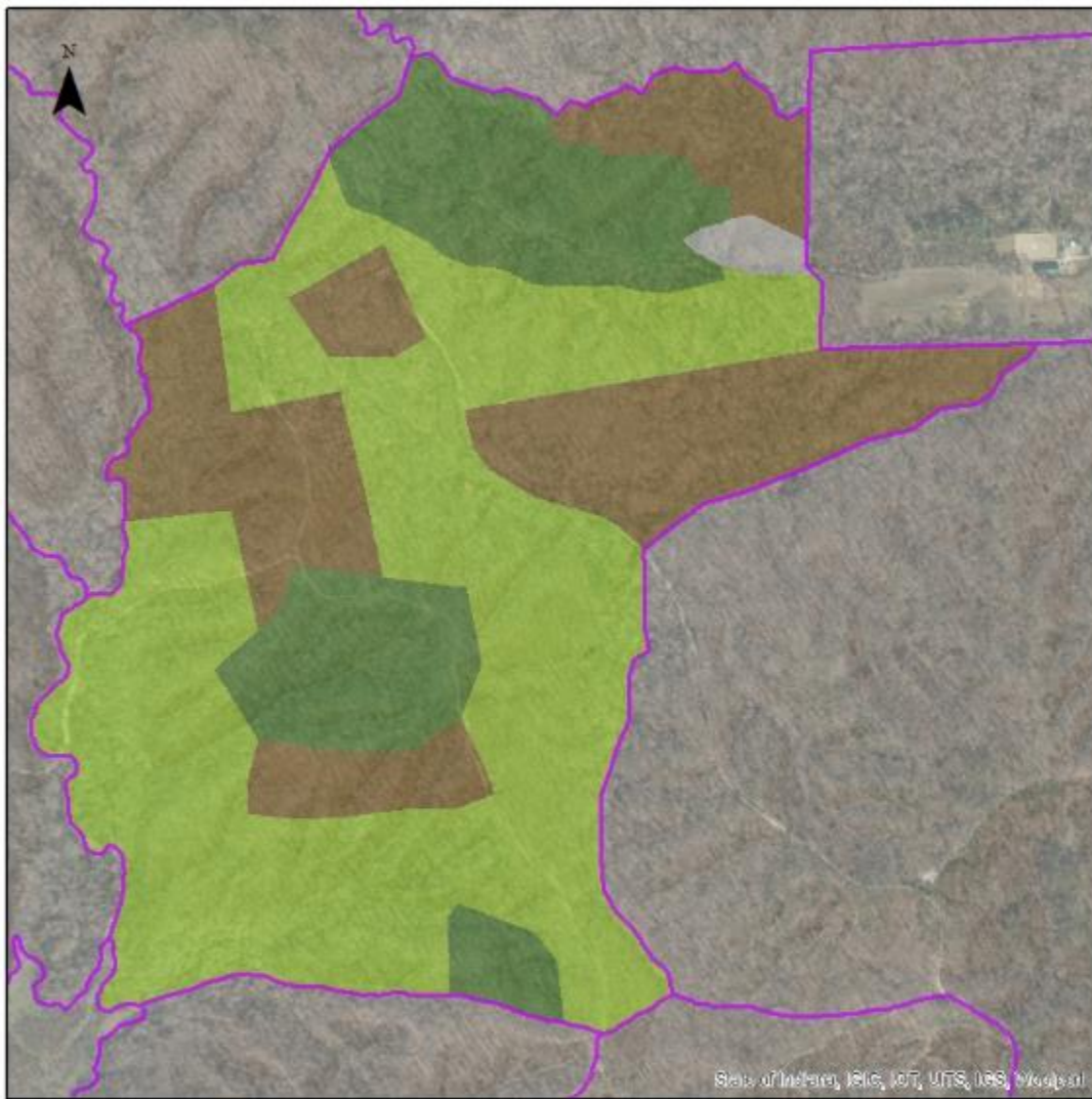
**Prescribed fire** – A regime of prescribed burns may be started within this tract to reduce the abundance of the shade tolerant species in the midstory and to help control invasive species. Once implemented, a fire should be implemented every five to seven years.

**Schedule:**

<u>Proposed Activities Listing</u>	<u>Proposed Date</u>
Invasive species management	2020 – 2021
Timber marking and sale	2020 – 2021
Prescribed fire regime	2020+
Post-harvest forest stand improvement	2023 – 2027
Regeneration evaluation	2025 – 2027
Inventory and resource management guide	2039



# Clark State Forest Compartment 15 Tract 3 Cover Types Map



0 0.125 0.25  
Miles

- |   |   |  |
|---|---|--|
|  Dry Oak-Hickory   |  Mixed Hardwoods |  Tract Boundary |
|  Mesic Oak-Hickory |  Old Field       |  |

**Clark State Forest****Forester:** Alwine/Bartlett**Tract Acreage:** 102**Management Cycle End Year:** 2039**Tract:** 6301105 (Comp. 11 Tract 5)**Date:** August 2019**Forested Acreage:** 102**Management Cycle Length:** 20 years**Location**

Tract 6301105 is located in Washington County on Honey Run Road approximately 5 miles northeast of Borden, Indiana. More specially, it is located in the South Boston Quadrangle in Section 18 of Township 1N, Range 6E.

**General Description**

This is a fully stocked forest with two different stands; oak-hickory and mixed hardwoods. Crown closure persists throughout the tract with quality of the trees ranging from poor to average. The most common tree species are sugar maple, chestnut oak, white oak and tulip tree. The regeneration is made up of mostly shade tolerant species including sugar maple and American beech. The last timber harvest was conducted in 1987. This tract would benefit from overstory management to lower stocking levels providing needed crown space and sunlight penetration to stimulate regeneration and growth of the residual stand.

**History**

- Land acquisition from Robert Martian in 1942
- Inventory completed by Ratts in 1973
- Inventory completed by Westefer in 1977
- Resource Management Guide written by Gallogly in 1979
- Inventory completed for State Forest Inventory Program in 1986
- Timber harvest completed in 1987
- Inventory completed by Snyder in 1990
- Resource Management Guide written by Snyder in 1990
- Inventory completed by Alwine in 2019
- Resource Management Guide written by Alwine in 2019

**Topography, Geology and Hydrology**

The topography in this tract varies from extremely steep slopes to flat ridgetops. The north portion of the tract is a very steep north facing slope that descends towards a mapped stream. There is a major ridge that runs from the southern edge of the tract and runs northeast. It splits around two-thirds the way through the tract forming a large “Y” and then runs northwest and east.

The underlying bedrock is siltstone with a sub lithology of shale, sandstone, and limestone.

6301105 is located within the South Fork Blue River watershed. A majority of the water in the tract flows into Honey Run north of the tract. Honey run flows southwest into Whiskey Run that eventually flows into South Fork Blue River. A small portion of the tracts water flows into an intermittent stream located south of the tract. This intermittent stream runs into Whiskey Run.

General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the Indiana Logging and Forestry Best Management Practices.

### **Soils**

#### BhF- Berks-Weikert complex, 25 to 75 percent slopes, 8.3 acres

This steep and very steep, well drained soils are on side slopes in the uplands. The Berks soil is moderately deep and the Weikert soil is shallow. It is suited to trees. Erosion, equipment limitations, seedling mortality, and windthrow hazards are concerns. Slope should be considered during timing of management activities, planning sale layout, and implementing Best Management practices for Water Quality. Northern red oak has a sited index of 70 on Berks and 64 on Weikert.

#### Cu- Cuba silt loam, frequently flooded, 5.9 acres

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, 58.7 acres

These moderately steep to very steep, moderately deep, well drained soils are on side slopes in the uplands. Erosion hazards, equipment limitations, and plant competition are the main management concerns. These should be considered 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, 24.8 acres

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.

#### ZaB- Zanesville silt loam, 1 to 6 percent slopes, 4.3 acres

This gently sloping, deep, moderately well drained or well drained soil is on uplands. It is well suited to trees. This soil has a site index of 69 for white oak and 90 for yellow-poplar.

### **Access**

Access to this tract is poor and limited. There is one parking location on State Forest land where Honey Run Road curves north away from the tract. Management access to this tract is limited as well. . Construction of a management road or rehab of an existing road may be required to provide access for forest management activities.

### **Boundary**

6301105 is surrounded by private lands to the north, west, and south. Tract 6301106 is located east of the tract with a major ridgeline serving as the boundary between the two tracts.

## **Wildlife**

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

A Natural Heritage Database Review was completed for this tract. If Rare, Threatened or Endangered species (RTE's) were identified for this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

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

	<b>Inventory Level</b>	<b>Above Maintenance</b>	<b>Above Optimal</b>
<b>Snags 5"+</b>	<b>813</b>	<b>405</b>	<b>99</b>
<b>Snags 9"+</b>	<b>539</b>	<b>233</b>	<b>-73</b>
<b>Snags 19"+</b>	<b>187</b>	<b>136</b>	<b>85</b>

The snag levels in 6301105 meet the maintenance levels in all the size classes. It surpasses the optimal level in two out of three size classes. Proposed management activities in this tract should maintain or improve snag levels.

## **Recreation**

Recreational activities in this tract are limited. There are no multipurpose trails located in or near it and public access is limited. Hunting is the main recreational activity. There were multiple hunting stands noted during the inventory. Other recreational activities include foraging and wildlife viewing.

## **Exotics and Invasive Species**

Invasive plants were not a major concern in this tract. Japanese stilt grass was present in the drainages and on old skid trails. Scattered stems of ailanthus were noted during the inventory as well. The ailanthus should be treated before any overstory management to prevent it from expanding. Japanese stilt grass should be treated on a situational approach.

## **Cultural**

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

### Tract Prescription and Proposed Activities

This tract was inventoried in July 2019 by Forest Specialist Dustin Alwine and summer intern Cody Moore. A summary of the estimated tract inventory results are located in the table below.

Tract Data Summary			
Trees per acre	92	Percent stocking	82%
Basal area per acre	104 ft <sup>2</sup>	Quadratic mean diameter	14.2"
Volume per acre	7737 bdft		

For the purposes of this guide and management in the tract, this area was separated into two stands based on overstory composition: oak-hickory and mixed hardwoods.

#### Descriptions:

##### *Oak-hickory- 59 acres*

This is a fully stocked stand comprised mainly of upland oak-hickory species like chestnut oak and pignut hickory. The percent stocking in this stand is 87%. Due to the high stocking, individual tree quality and growth is declining. There are a lot of large, average to low quality stems. The most common pole sized tree in this stand is sugar maple. The regeneration in these stands is comprised mostly of sugar maple and American beech. Some of the other species found in the midstory included Virginia pine, ironwood and green brier. Japanese stilt grass is found on a few of the old skid trails from the '87 harvest and in the drainages.

	Trees per acre	Basal area per acre	Volume per acre
Chestnut oak	21	35.3	3,129
White oak	8	13	1,216
Pignut hickory	16	19.4	1,095
Scarlet oak	3	7.5	847
Sugar maple	26	19.6	692
Black oak	3	5.9	617
Shagbark hickory	2	2.4	161
Virginia pine	2	1.8	152

American beech	3	1.8	100
Yellow-poplar	1	0.6	64
Red maple	8	3.6	50
Blackgum	2	1.8	40
<i>Stand Totals</i>	95	112.7	8,163

*Mixed Hardwoods- 43 acres*

This is a fully stocked stand consisting mainly of large diameter yellow-poplar and smaller diameter sugar maple. The percent stocking in this stand is 75%. General tree quality is average, except for yellow-poplar. Quality yellow poplar stems were found throughout the stand. Stocking is variable with some areas exhibiting lower stocking of large diameter stems and others having with high stocking of small to medium diameter stems. The regeneration is mainly sugar maple and American beech. There were small pockets of high density yellow-poplar. Like the oak-hickory stand, Japanese stilt grass was present on old skid trails and in drainages. There were also a few small ailanthus stems noted in this stand.

	<b>Trees per acre</b>	<b>Basal area per acre</b>	<b>Volume per acre</b>
Yellow-poplar	9	17.4	2,346
Sugar maple	50	31.6	1,014
Scarlet oak	6	8.1	716
Pignut hickory	2	4.7	490
American beech	6	8	488
Chestnut oak	1	4	457
Virginia pine	2	3.4	354
Blackgum	4	4.6	291
Black walnut	1	2.7	279
Red maple	2	2.7	227
Shagbark hickory	1	2	215

White oak	1	2	185
American basswood	1	2	142
Red elm	2	0.8	52
Bitternut hickory	1	0.7	0
Black cherry	1	0.7	0
<i>Stand Totals</i>	90	95.4	7,256

## Prescriptions

### *Oak-hickory*

This stand would benefit from a timber harvest. This harvest would aim to serve three goals: lower the stocking to improve individual tree quality, remove low quality and dying stems, and promote oak/hickory regeneration in the stand. This should be done through a combination of silvicultural techniques. An improvement cutting should be done in areas where trees are overstocked. Harvest trees will be chosen to release crop trees on two to three sides. Regeneration openings should be installed in areas where quality overstory stems are lacking, general health is low, and regeneration lacking or in need of release. These openings will allow for a new growing stock to become established while also providing young forest habitat for wildlife.

In areas with large, quality oak stems and poor regeneration, a shelterwood harvest should be implemented. These harvests aim to regenerate oak species. A midstory removal followed by an overstory harvest to provide partial shade should help to lower the density of shade tolerant species like American beech and sugar maple from the stand. The midstory removal can be done either mechanically, chemically, or culturally. Approximately 10 years after the initial shelterwood harvest, if sufficient oak regeneration has been established, the remaining overstory in the shelterwood area should be removed to release the new crop of oaks.

Timber Stand Improvement (TSI) should be completed following any timber harvest. The goal of this work would be to complete the harvest by removing remaining stems marked but left behind, complete regeneration openings, and treat invasive species. A fire regime should also be started in this stand to introduce regular disturbance. This will prevent shade tolerant midstory trees like beech and maple from dominating the stand. Prescribed fire also lowers fuel loads and decreases wildlife risks. Once established, the forest should be burned every 5 to 7 years.

### *Mixed hardwoods*

This stand would benefit from a timber harvest as well, but with different goals than the oak-hickory stand. The goals of this harvest would be removing low quality stems while releasing high quality stems and regenerating yellow-poplar. Since this stand has large diameter yellow

poplar throughout, it would be a good opportunity to install larger regeneration openings to regenerate this high quality yellow-poplar stock. These openings will be installed where the trees are mature and overgrown, and regenerating stock is lower quality American beech and sugar maple. Since there is an abundance of seed present, these opening are expected to regenerate predominately with yellow-poplar.

In areas where regeneration openings are not installed, an improvement harvest will be used. This will remove low quality trees and culls while releasing higher quality oaks, yellow-poplars, and sugar maples.

TSI is recommended following the harvest to complete regeneration openings, remove cull trees or stems marked but not removed through the harvest, and treat invasive species. Following TSI regeneration openings should be monitored for progress. The main invasive species target should be Ailanthus and special care needs to be taken to remove all Ailanthus from any opening.

Other considerations

**Regeneration evaluation** – Three to five years after the completion of the timber harvest, a regeneration evaluation 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 shall be performed within two years of timber harvest completion. 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 in order to minimize soil erosion.

**Guide revision** – This tract should receive another inventory and management guide 20 years following the completion of the timber harvest.

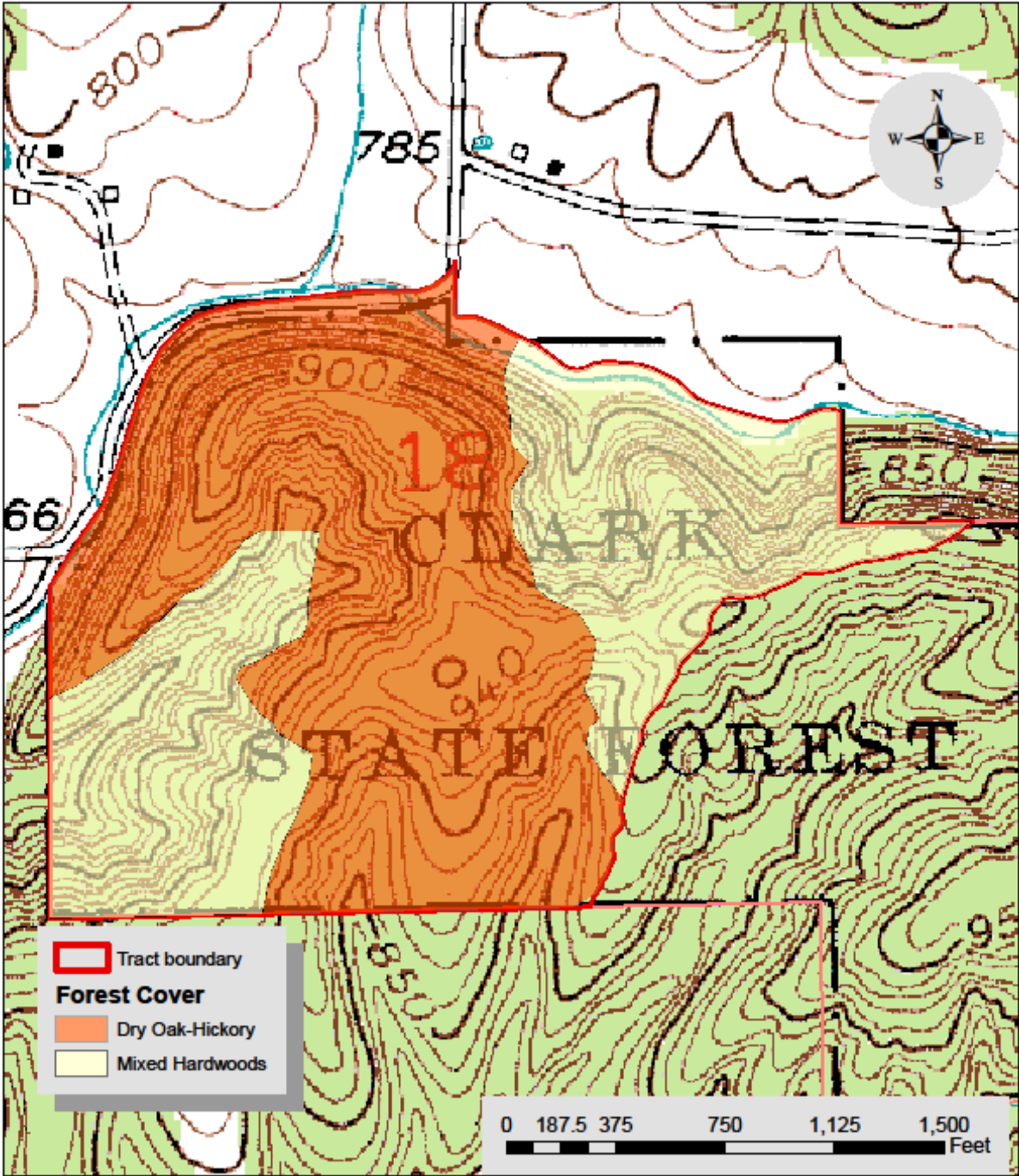
**Prescribed fire** – A regime of prescribed burns may be started within this tract to reduce the abundance of the shade tolerant species in the midstory and to help control invasive species.

Schedule:

<u><i>Proposed Management Activity</i></u>	<u><i>Proposed Date</i></u>
Pre harvest pre (invasive control/shelterwood TSI)	2020-2021
Timber harvest	2022
Post-harvest TSI	2023-2025
Fire regime (Oak-hickory stand)	2023+
Regeneration checks	2-5 years after TSI
Shelterwood completion harvest	Approx. 10 years after initial harvest
Re inspect tract	2039



Clark State Forest  
Compartment 11 Tract 5  
Stand Map



**Clark State Forest****Forester:** Alwine**Tract Acreage:** 74.5**Management Cycle End Year:** 2039**Tract:** 6301106 (Comp 11 Tract 6)**Date:** August 2019**Forested Acreage:** 74.5**Management Cycle Length:** 20**Location**

Tract 6301106 is located in Washington County southeast of Honey Run Road approximately 5 miles northeast of Borden, Indiana. More specifically, it is located in the South Boston quadrangle in Section 18 of Township 1N Range 6E.

**General Description**

This is a fully stocked mixed hardwoods stand located on knobs northwest of Deam Lake. The dominant overstory trees include yellow-poplar, oaks, sugar maple and American beech. The regeneration is mostly maple and beech with a few pockets of oak saplings. There is some blowdown damage from the 2008 tornado that came through south of the stand.

**History**

Land acquisition from Robert Martin in 1942

Land acquisition from Robert Fisher in 1951

Inventory completed in 1977

Resource Management Guide completed in 1979 by Gallogly

Inventory for State Forest Inventory Program completed in 1986

Timber harvest completed in 1987

Inventory completed by Snyder in 1990

Resource Management Guide completed by Snyder in 1990

Inventory completed in 2019 by Bartlett/Alwine

Resource Management Guide written by Alwine in 2019

**Topography, Geology and Hydrology**

The topography in this tract ranges from flat ridgetops to moderately to severely sloped on the knob fingers. There are two ridges in the tract, one that lays east to west in the southern half and the other runs east to west on the northern part of the tract. The rest of the area is downslopes away from these two ridges. The bedrock in this tract is siltstone with a sub lithology of shale, sandstone, and limestone.

6301106 is located within the South Fork Blue River watershed. A majority of the water in the tract flows into an intermittent stream that flows along the southern border of the tract. This intermittent flows into Whiskey Run that eventually runs into South Fork Blue River. A small portion of the tracts water flows into Honey Run stream located north of the tract. Honey run flows west into Whiskey Run Creek. General riparian management zone (RMZ) guidelines will

be implemented in these areas in accordance with the Indiana Logging and Forestry Best Management Practices.

## **Soils**

### **GnF- Gilpin-Berks loams, 18 to 50 percent slopes, 55.2 acres**

These moderately steep to very steep, moderately deep, well drained soils are on side lobes 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, 19.3 acres**

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.

## **Access**

Access to this tract is poor and limited. There is one parking location on State Forest land where Honey Run Road curves north away from the tract to the north (6301105). Management access to this tract is limited as well. Construction of a management road or rehab of an existing road may be required to provide access for forest management activities.

## **Boundary**

This tract is both bordered by other State Forest lands and private lands. Tract 6301105 is located northwest of 6301106 and 6301107 is located south. The only well-defined tract boundaries are the intermittent stream and ridgeline that serve as borders between 6301105 and 6301106. Land to the east and west are private property.

## **Wildlife**

This tract contains diverse vegetation and wildlife resources conducive to providing habitat for a variety of wildlife species. Habitat types include: Mixed hardwoods and young forest.

A Natural Heritage Database Review was completed for this tract. If Rare, Threatened or Endangered species (RTE's) were identified for this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

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

(DWD). DWD decomposes providing nutrients for remaining and new vegetative growth as well contributing to the complexity of the forest floor.

	<b>Inventory Level</b>	<b>Above Maintenance</b>	<b>Above Optimal</b>
<b>Snags 5"+</b>	<b>471</b>	<b>103</b>	<b>-173</b>
<b>Snags 9"+</b>	<b>303</b>	<b>27</b>	<b>-249</b>
<b>Snags 19"+</b>	<b>50</b>	<b>4</b>	<b>-42</b>

Snag densities exceeded maintenance levels in all three size classes, but did not reach optimal levels in any of the size classes. Proposed management activities in this tract should work to maintain or improve snag levels.

### **Recreation**

Current recreational use of this tract is low. There are no multipurpose trails nearby and access is difficult due to topography and private ownership. The main recreational activity in the tract is hunting. Other possible recreational activities include wildlife viewing and foraging.

### **Exotics and Invasive Species**

Invasive plant species were present in this tract but are still in the early establishment stages. Japanese stilt grass is located on some of the old skid trails, drainages, and around some new rogue ATV trails identified and addressed with management. There were a few scattered stems of Ailanthus found in some of the blowdown areas. Grapevine competition was high in the

blowdown areas as well. Treatment of the Ailanthus should be a top priority. The grapevine and Japanese stilt grass should be treated on a situational basis.

**Cultural**

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

**Tract Prescription and Proposed Activities**

This tract was inventoried in July of 2019 by Forest Specialist Ryan Bartlett and Dustin Alwine. A summary of the estimated tract inventory results are located in the table below.

<b>Tract Summary</b>			
<b>Trees per acre</b>	<b>106</b>	<b>Percent Stocking</b>	<b>82%</b>
<b>Basal Area per acre</b>	<b>102 ft<sup>2</sup></b>	<b>Quadratic Mean Diameter</b>	<b>13.5"</b>
<b>Volume per acre</b>	<b>7,702 bdft</b>		

For management purposes, this tract will only have one stand: Mixed hardwoods.

**Descriptions:**

*Mixed Hardwoods*

This is a fully stocked mixed hardwoods stand. The percent stocking in this stand is 82 percent. The dominant trees include yellow-poplar, sugar maple, American beech, and chestnut oak. The overstory is made up mostly of large diameter oaks and yellow-poplar with smaller to medium diameter sugar maple and American beech. The regeneration is composed almost entirely of American beech and sugar maple with a few pockets of oak regeneration being present. There is some old windblown damage from the 2008 tornado that traveled through south of this tract. The windblown has caused small pockets of open canopies where only a tree or two remained. Due to

the lack of management in this particular wind damaged area, the new growth consists of mainly beech, maple and pine with grapevine competition.

	<b>Trees per acre</b>	<b>Basal area per acre</b>	<b>Volume per acre</b>
<b>Yellow-poplar</b>	<b>9</b>	<b>15.1</b>	<b>1,654</b>
<b>Sugar maple</b>	<b>39</b>	<b>29.2</b>	<b>1,529</b>
<b>Chestnut oak</b>	<b>5</b>	<b>12.5</b>	<b>1,258</b>
<b>White oak</b>	<b>2</b>	<b>7.5</b>	<b>976</b>
<b>Pignut hickory</b>	<b>3</b>	<b>5.8</b>	<b>528</b>
<b>American beech</b>	<b>20</b>	<b>12.9</b>	<b>516</b>
<b>Virginia pine</b>	<b>1</b>	<b>3.9</b>	<b>490</b>
<b>Blackgum</b>	<b>3</b>	<b>3.2</b>	<b>229</b>
<b>Scarlet oak</b>	<b>1</b>	<b>1.9</b>	<b>203</b>
<b>Red maple</b>	<b>7</b>	<b>3.6</b>	<b>75</b>
<b>Black cherry</b>	<b>9</b>	<b>4.6</b>	<b>72</b>
<b>Persimmon</b>	<b>1</b>	<b>0.7</b>	<b>61</b>
<b>Black oak</b>	<b>1</b>	<b>0.4</b>	<b>56</b>
<b>Shagbark hickory</b>	<b>1</b>	<b>0.7</b>	<b>33</b>
<b>Black walnut</b>	<b>1</b>	<b>0.4</b>	<b>22</b>
<b>Red elm</b>	<b>1</b>	<b>0.1</b>	<b>0</b>
<b>Sassafras</b>	<b>2</b>	<b>0.4</b>	<b>0</b>
<b>Stand Totals</b>	<b>106</b>	<b>102.9</b>	<b>7,702</b>

## **Prescriptions**

### *Mixed hardwoods*

This stand would benefit from a timber harvest. There are several large, over mature trees in this overstocked stand. This has led to decline in the quality of the trees and crown dieback. The timber management in this stand should aim at releasing quality oaks, yellow-poplar and maples by removing lower quality stems through an improvement harvest. The harvest should employ regeneration openings where applicable. In the areas with larger diameter trees and poor oak regeneration (i.e. partial blowdown areas), regeneration openings should be considered. There are large diameter yellow-poplar throughout the stand and the goal of regeneration openings should be to start a new cohort of these trees. With the abundance of large poplars, the seed bank should be sufficient to allow for natural regeneration of these openings. TSI will be needed to

treat invasive species and grapevines in these openings as well as completing the opening by culling low quality trees that were not taken during the harvest.

**Other considerations**

**Regeneration evaluation** – Three to five years after the completion of the timber harvest, a regeneration evaluation 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 shall be performed within two years of timber harvest completion. FSI 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 in order to minimize soil erosion.

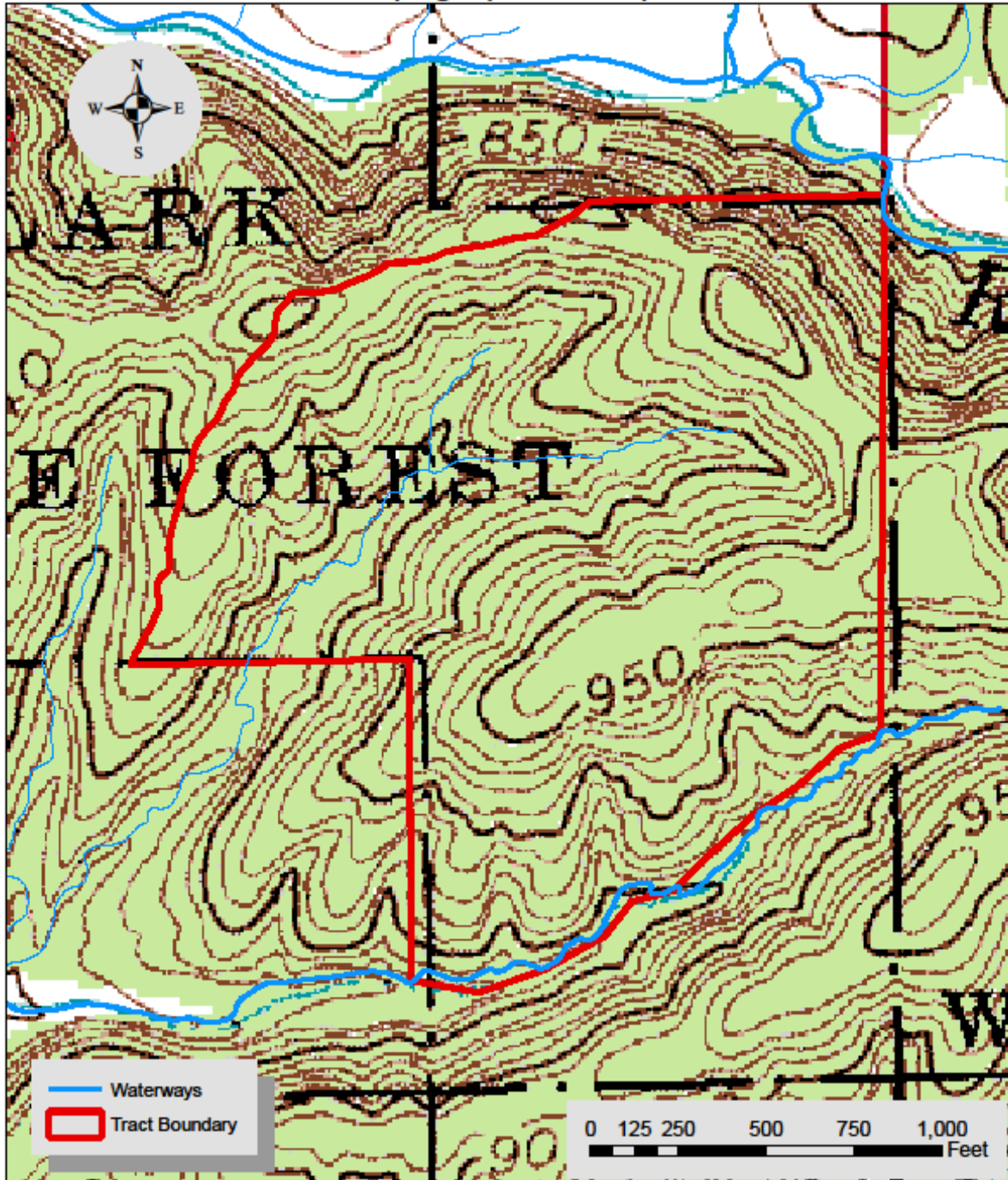
**Guide revision** – This tract should receive another inventory and management guide 20 years following the completion of the timber harvest.

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

**Schedule:**

<b><u>Proposed Management Activity</u></b>	<b><u>Proposed Date</u></b>
Invasive treatment	2020-2021
Timber harvest	2021-2022
Post-harvest TSI/invasive control	2023-2025
Prescribed fire (if applicable)	2023+
3 year monitor of regeneration openings	2023-2025
Tract Re-inspection	2039

Clark State Forest  
Compartment 11 Tract 6  
Topographical Map



2039