Indiana Department of Natural Resources
Division of Forestry
Resource Management Guide
Draft

Clark State Forest | **Tract:** 6300306 (Comp. 3 Tract 6)
Forester: Gina Wilcoxen | **Management Cycle Length:** 15 years
Date of Guide: March 7, 2017 | **Management Cycle End Year**: 2031

Location

Compartment 3 tract 6 is located in sections 20 and 29, T2N, R6E, Finley Township, Scott County, Indiana. This tract is approximately 5 miles west of Henryville, IN off of S Liberty Knob Rd.

General Description

This tract includes 169.3 acres of forested woodland, the general cover type being an oak-hickory forest predominately made up of chestnut oak and white oak.

History

- 1939, 1940, 2011- Acquisition of majority of C3T6
- November 1986- Inventory: 1,135 bd. ft/ acre harvest
- July 1988- East boundary line between private property and state property checked by property forester
- September 2016- Inventory and management guide: 2,040 bd. ft/ acre harvest

Landscape Context

The surround landscape mainly consists of other state forest tracts and privately owned forested woodlands. Other land uses in the immediate area include pastures, cropland, and residential.

Topography, Geology and Hydrology

Topography in this tract ranges from 956 feet elevation in the west part of the tract to 710 feet elevation on the east side of the tract. There is a main ridge running northwest-southeast that makes up the south and west boundary of this tract. Extending from this main ridge are several smaller, steep ridges running to the east that eventually end at an unnamed intermittent creek. This creek, which makes up part of the east boundary of the tract, empties into South Branch Big Ox Creek, being part of the Muscatatuck Watershed. There are also two man-made wildlife ponds near the two highest points along the main ridge of the tract. The ridges of this tract are fairly dry while the majority of the slopes, having a general north aspect, are capable of a slightly higher moisture availability. This area is underlain with siltstone.

Soils

Beanblossom silt loam (BcrAW)

1-3 percent slopes, located in floodplains: occasionally flooded for short durations, parent material is loamy-skeletal alluvium over Mississippian siltstone or shale, 40- 60 inches to paralithic bedrock, well drained. Site index for yellow poplar is 95

Brownstown-Gilwood silt loams (BvoG)

25- 75 percent slopes, found on knobs and side slopes, parent material is loamy-skeletal residuum over Mississippian siltstone, 20-40 inches to lithic bedrock, well drained. Site index for upland oaks is 50-60

Gilwood-wrays silt loams (GgfD)

6- 18 percent slopes, found on knobs and side slopes, parent material is loamy residuum over Mississippian siltstone, 20-40 inches to lithic bedrock, well drained. Site index for upland oaks is 70; site index for yellow poplar is 90

Gnawbone-Kurtz silt loams (GmaG)

20- 60 percent slopes, found on side slopes, parent material is loamy residuum over Mississippian siltstone, 20- 60 inches to paralithic bedrock, well drained. Site index for upland oaks is 60

Sprickert silt loam (SoaB)

2- 6 percent slopes, found on the shoulder of ridges, parent material is loess over loamy residuum over Mississippian siltstone, 64- 80 inches to lithic bedrock, moderately well drained. Site index for upland oaks is 75; site index for yellow poplar is 100

Sprickert silt loam (SoaC2)

6- 12 percent slopes, eroded, found on shoulder of ridges and side slopes, parent material is loess over loamy residuum over siltstone, 50- 80 inches to lithic bedrock, moderately well drained. Site index for upland oaks is 70; site index for yellow poplar is 95

Access

The access for this tract is a fire lane off of S. Liberty Knob Rd that runs west through part of C03T08 and then heads northwest along a ridge that separates tracts 6 & 8. A small portion of this road, approximately 450 feet, goes across a corner of privately owned property. Although this road is already established, it is not the best placement for a road due to the topography as well as the road going onto private property. For these reasons, a portion or all of this fire lane may be closed and/or rerouted to a better suited area.

Boundary

Other state forest tracts border C3T6 on the north, south, west, and a portion of the east side. The south half of the east boundary of C3T6 is bordered by privately owned forested land. There are surveyor's pins at some of the boundary corners while no corner evidence was found at others.

Wildlife

This tract is typical of Southern Indiana's flora and fauna. Evidence of deer, turkey, squirrel, Eastern box turtle, and other wildlife were observed. Many songbirds were also noted as well as some birds of prey. The area within and surrounding this tract provide a variety of habitat and resources for wildlife. These include: a contiguous oak-hickory canopy-providing a food source for white-tailed deer, turkey, and squirrels; scattered mixed hardwoods and riparian areas which are more densely vegetated and provide cover; and the intermittent creek and wildlife ponds that ensure a continual water supply and habitat for aquatic animals.

The Division of Forestry has developed compartment level guidelines for two important wildlife structural habitat features: snags and legacy trees.

Snags refer to standing dead or dying trees. They are used by a wide range of species as essential habitat features for foraging activity, nest/den sites, decomposers (e.g., fungi and invertebrates), bird perching and bat roosting. Additionally, snags are an important contributor to the future pool of downed woody material. Downed woody debris provides habitat and protection for many species and contributes to healthy soils.

Legacy trees are certain species of trees that are preferred by the Indiana bat as roost trees.

Number of legacy trees per acre*

Diameter Class	Maintenance Level	Inventory
11"-19" DBH	9	9.3
20"+ DBH	3	1.7

Number of snags per acre

Diameter Class	Maintenance Level	Inventory
5+ DBH	4	8.6
9+ DBH	3	4.6
19+ DBH	0.5	0.46

***Species Include: AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

Inventory data for C3T6 shows that the number of legacy trees for the 20"+ diameter class does not meet the maintenance level for this tract, while it is met in the lower diameter class. Snags meet the maintenance level for the 5"+ and 9"+ diameter classes but are slightly deficient in the 19"+ diameter class.

It is important to note that these are compartment level guidelines and that even though the estimated tract data does not quite meet all target levels, it is likely that suitable levels are present for this habitat feature in the surrounding landscape. The prescribed management will maintain or enhance the relative abundance of these features.

RTE
A Natural Heritage Database review was completed for C3T6. If rare, threatened or endangered species were identified for this tract, the activities prescribed within this guide will be conducted in a manner that will not threaten the viability of those species.

Exotics
Below is a list of invasive species identified during the inventory. If identified, priority control should be given to ailanthus and bush honeysuckle. These would be treated as soon as practical, with individuals and smaller areas being targeted if needed. A broader and/or situational approach should be taken with the species noted below. However, these species are prevalent throughout the county and eradication is not feasible.

- Paulownia- 1 small tree observed
- Japanese stiltgrass- along old fire lanes
- Multiflora rose- scattered small individuals

Cultural
Cultural resources may be present within this tract but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

Recreation
The Knobstone Trail runs along a small portion of the west boundary of this tract. If needed, a small portion of the Knobstone Trail may be temporarily rerouted during forest management activities. Other recreation opportunities for this tract include hunting and gathering of nuts, berries, and mushrooms.

Tract Summary Data
A forest resource inventory for C3T6 was completed in October, 2016. 40 prism points were sampled over 169.3 acres (1 plot for every 4.2 acres). A summary of the inventory results and a table of the total volume by species are presented below.

Total Acres= 169.3	Overall % Stocking= 72%
Trees/Ac.= 158	Present Volume= 6,340 Bd. Ft./Ac.
Basal Area/Ac.= 81.6	Harvest Volume= 1,200-1,400 Bd. Ft./Ac.

Volume estimates from October 2016 inventory of C3T6

Species	Total volume (bd ft)
Chestnut oak	539,808
White oak	160,110
Red maple	59,616

Black oak	59,539
Yellow poplar	55,183
Scarlet oak	36,335
Mockernut hickory	34,993
Northern red oak	34,889
Blackgum	23,970
White ash	21,673
Sugar maple	20,840
Pignut hickory	8,206
American beech	6,443
Shagbark hickory	4,958
American sycamore	4,426
Largetooth aspen	2,425
Tract Total	1,073,416
Tract Average/acre	6,340

Stand Types and Description
For the purpose of this guide, this tract has only one designated management stand based on the dominance of its oak-hickory cover type.

Oak-Hickory
This stand type comprises all 169.3 acres of this tract. The majority of sawtimber size trees are chestnut oak, white oak, and red maple. Pole size timber is mainly chestnut oak, red maple, sassafras, and American beech. Primary regeneration species include American beech and red maple. The average overall health of this tract is good. Some signs of dieback in chestnut oak and white oak was noticed during inventory. Oak species account for the majority of the total volume in the tract, 65% of which is white oak and chestnut oak.

Silvicultural Prescription
This tract is adequately stocked at 72% and a managed timber harvest is prescribed.

Stocking levels are varied across this tract and will therefore determine the management objective as timber marking is conducted; often areas of low stocking are most beneficial for group selection openings to promote a new, diverse and well stocked stand. Other areas noted as over-stocked can be thinned to reach desired stocking levels.

The prescribed timber harvest would focus on improving the growth and vigor of the highest quality and most hearty oak, hickory and mixed hardwood stems. This harvest should mainly use a single tree selection cutting method. Group selection and regeneration opening cutting may be implemented to regenerate areas that contain aggregations of poor and/or decadent growing stock. Low thinning may also be utilized in denser, even-aged areas with large amounts of suppressed and intermediate trees that are likely to drop out from competition. This method can also be employed to reduce the

density of shade tolerant species such as sugar maple, red maple, and American beech in an attempt to establish and promote advanced oak-hickory regeneration. Additionally a harvest is recommended to salvage dead and/or dying white ash trees. Overall, a managed harvest of approximately 200,000-250,000 bd. ft. is anticipated.

Post-harvest timber stand improvement should be done to complete openings, release acceptable growing stock, and deaden cull trees. It is also recommended to monitor the area for invasive species and administer treatment, if needed.

Recommended management cycle length for this tract is 15 years.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Road Work	2017-2018
Timber Marking and Sale	2018
Knobstone trail ongoing maintenance and routing	2018-
Post-Harvest Timber Stand Improvement/Invasive Treatment	2018-2019
Reinventory and Management Guide	2031

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Clark State Forest
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