Indiana Department of Natural Resources
Division of Forestry
Resource Management Guide

Clark State Forest **Tract:** 6300308 (Comp. 3 Tract 8)
Forester: Gina Wilcoxen **Management Cycle Length:** 15 years
Date of Guide: April 28, 2017 **Management Cycle End Year**: 2030

Location
Compartment 3 tract 8 is located in section 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 137 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- Acquisition of C3T8
- August 1989- Timber sale (according to old compartment boundaries) on old Compartment 20 Tracts 4, 5, 6, 7
- November 1986- Inventory: 726 bd. ft/ acre harvest
- October 1987- Road through C3T8 flagged for timber harvest in Compartment 3 Tracts 9 & 10
- June 2015- Inventory and management guide: 1,320 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 900 feet elevation in the northwest corner of the tract to 680 feet elevation on the southeast corner of the tract. There are two main ridges running northwest-southeast, one of which makes up the northeast boundary of the tract. The southwest boundary of the tract is an unnamed intermittent creek that empties into South Branch Big Ox Creek, being part of the Muscatatuck Watershed. The ridges in this tract range from steep to gently sloping. 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- yellow poplar: 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- upland oaks: 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- upland oaks: 70; yellow poplar: 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- upland oaks: 60

Pekin silt loam (PcrB2)

2- 6 percent slopes, eroded, found on stream terraces, parent material is loess over loamy alluvium, 24- 38 inches to fragipan, moderately well drained. Site index – white oak: 70; yellow poplar: 85

Pekin silt loam (PcrC2)

6- 12 percent slopes, eroded, found on stream terraces, parent material is loess over loamy alluvium, 20- 38 inches to fragipan, moderately well drained. Site index – white oak: 70; yellow poplar: 85

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- upland oaks: 75; yellow poplar: 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- upland oaks: 70; yellow poplar: 95

Wellrock-Gnawbone silt loam (WhcD)

6- 20 percent slopes, found on shoulders and side slopes, parent material is loess over loamy residuum over Mississippian shale and siltstone, 40- 60 inches to paralithic bedrock, well drained. Site index- white oak: 70; yellow poplar: 90

Access

The access for this tract is a fire lane off of S. Liberty Knob Rd that runs west through 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 C3T8 on the north, south, and west sides. The east boundary of C3T8 is bordered by privately owned forested land and some pastured land.

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	25.6
20"+ DBH	3	3.5

Number of snags per acre

Diameter Class	Maintenance Level	Inventory
5+ DBH	4	11.5
9+ DBH	3	9.4
19+ DBH	0.5	0.58

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

Inventory data for C3T8 shows that guidelines are met for all categories of legacy trees and snags.

The prescribed management will maintain or enhance the relative abundance of these features.

RTE
A Natural Heritage Database review was completed for C3T8. 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.

- Japanese stiltgrass- along old fire lanes
- Autumn olive- in bottoms near creek
- Multiflora rose- in bottoms near creek

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 through a small portion along the south boundary of C3T8. If needed, this section 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 C3T8 was completed in June 2015. 40 prism points were sampled over 137 acres (1 plot for every 3.4 acres). A summary of the inventory results and a table of the total volume by species are presented below.

Total Acres= 137	Overall % Stocking= 90%
Trees/Ac.= 176	Present Volume= 7,200 Bd. Ft./Ac.
Basal Area/Ac.= 105.3	Harvest Volume= 1,200-1,400 Bd. Ft./Ac.

Volume estimates from October 2016 inventory of C3T8

Species	Total volume (bd ft)
Chestnut oak	382,400
White oak	293,990
Black oak	95,780
Sugar maple	35,820
Yellow poplar	35,510
Red maple	32,960
Scarlet oak	28,270
Northern red oak	24,050
American beech	18,170
Pignut hickory	15,210
American sycamore	14,870
Virginia pine	4,860
Eastern redcedar	2,800
Black cherry	2,110
Tract Total	986,780
Tract Average/acre	7,200

Stand Types and Description

Mixed Hardwoods

18 acres of this tract are included in this stand type which is found on the toe slopes and along the creek in the southeast corner of the tract. Primary sawtimber size trees include white oak, red maple, and sugar maple. Primary pole size timber includes white oak, red maple, and yellow poplar. Regeneration in this stand type is American beech, sugar maple, and pignut hickory. The majority of the volume in this stand is in white oak, yellow poplar and red maple.

Oak-Hickory

This stand type comprises 119 acres of this tract. The majority of sawtimber size trees are white oak, chestnut oak, and black oak. Pole size timber is mainly chestnut oak, white oak, and red maple. Primary regeneration species include American beech, red maple, and sugar 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 this stand type.

Silvicultural Prescription

Invasives treatment is need for problem occurrences of autumn olive and multi-flora rose in the bottoms of this tract. This should be done prior to other management in order to reduce the spread of these invasives.

This tract is adequately stocked at 90% and a managed timber harvest is prescribed.

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. Overall, a managed harvest of approximately 160,000-190,000 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*
Invasive Treatment- autumn olive and multi-flora rose	2017-2018
Road Work	2017-2018
Timber Marking and Sale	2018
Knobstone Trail ongoing management and maintenance	2018-
Post-Harvest Timber Stand Improvement/Invasive Treatment	2018-2019
Reinventory and Management Guide	2030

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Clark State Forest
Compartment 3 Tract 8