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

Clark State Forest **Tract:** 6300605 (Comp. 6 Tract 5)
Forester: Gina Wilcoxen **Management Cycle Length:** 15years
Date of Inventory: May 2017 by B. Farmer **Management Cycle End Year**: 2032

Location
Compartment 6 tract 5 is located in sections 25, 30 and 36, T2N, R6E, Monroe Township, Clark County, Indiana. This tract is approximately 3 miles northwest of Henryville, IN, south off of Brownstown Rd.

General Description
This tract includes 140 acres of forested woodland, the general cover type being an oak-hickory forest predominately made up of chestnut oak and white oak.

History
- 1903, 1921- Acquisition of C6T5
- December 1972- Inventory: 3,599 bd. ft/acre
- October 1986- Inventory: 3,697 bd. ft/ acre
- February 2000- Inventory and management guide: 4,608 bd. ft/acre
- April 2000- Timber Sale: 36,612 bd. ft
- May 2015- Inventory and management guide: 4,712 bd. ft/ acre

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 596 feet elevation in the far east corner of the tract to 860 feet elevation in the left-center of the tract. There is one main ridge running form the southeast corner of the tract, northwest to the middle and then west. Multiple finger ridges stem from the main ridgeline. This area is underlain with shale and siltstone. There are two intermittent creeks partially within this tract. The creek along the north edge of the tract is an unnamed intermittent. The other creek, which starts just inside the tract boundary in the south-center, is Sheep Branch. Sheep Branch and the unnamed intermittent eventually run into Silver Creek which empties into the Ohio River. This tract lies within the Silver-Little Kentucky watershed.

Soils
Beanblossom silt loam (BcrAW)

1 to 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

Coolville-Rarden complex (ConD)

12 to 18 percent slopes and are mainly located on hills underlain with shale or siltstone. Coolville soils are deep; being 40 to 60 inches to the bedrock and are moderately well drained. Rarden soils are moderately deep, around 20 to 40 inches, and also moderately well drained. Site index: Black oak- 71, Northern red oak- 66

Coolville silt loam (ComC)

6 to 12 percent slopes. This soil type is typically found on hills underlain with shale or sandstone. It is typically deep, being around 40 to 60 inches to the bedrock and moderately well drained. Site index: Northern red oak- 66

Deam silty clay loam (DbrG)

20 to 25 percent slopes, found on side slopes underlain with shale, parent material is clayey residuum over Mississippian shale bedrock, 20 to 40 inches to paralithic bedrock, well drained. Site index- none listed

Gilwood-Brownstown silt loam (GgbG)

25 to 75 percent slopes, found on side slopes underlain with siltstone, parent material is loamy residuum over Missisippian siltstone bedrock, 20 to 40 inches to lithic bedrock, well drained. Site index- Black oak: 50

Gnawbone-Kurtz silt loams (GmaG)

20 to 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

Stendal silt loam (StdAQ)

0 to 2 percent slopes, found in flood plain steps, parent material is acid silty alluvium, more than 80 inches to restrictive feature, somewhat poorly drained. Site index- Sweetgum: 85; Poplar: 90

Access

Access to this tract is good. This tract can be accessed via fire trails and the Horse Camp Loop trail. This trail begins in the southeast corner of the tract and follows the ridge line out to the west end of the tract.

Boundary

Other state forest tracts border C6T5 on the south and west sides. The north and east boundary is bordered by privately owned forested land and residential 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 provides a 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	19.0
20"+ DBH	3	2.9

Number of snags per acre

Diameter Class	Maintenance Level	Inventory
5+ DBH	4	9.9
9+ DBH	3	7.9
19+ DBH	0.5	0.25

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

Inventory data for C6T5 shows that guidelines are met for all categories except the largest diameter class for legacy trees and snags. These numbers could be increased by retaining some larger diameter trees and deadening cull trees during timber stand improvement.

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 C6T5. 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 horse trail and old logging roads
- Autumn olive- patches on lower slopes and bottoms near creek
- Multiflora rose- patches on lower slopes and bottoms near creek
- Oriental bittersweet- few small vines spotted in northwest part of tract; heavy infestation in nearby tract to the west (C6T3)
- Ailanthus- one 4" stem mapped in east half of tract

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
Part of the Horse Camp Loop trail runs through the middle of this tract. For safety reasons, a portion of this trail may be temporarily closed during forest management activities. Other recreation opportunities for this tract include hunting, wildlife viewing, and gathering of nuts, berries, and mushrooms.

Tract Summary Data
A forest resource inventory for C6T5 was completed in May 2017. 36 prism points were sampled over 140 acres (1 plot for every 3.8 acres). A summary of the inventory results and a table of the total volume by species are presented below.

Total Acres= 140	Overall % Stocking= 72%
Trees/Ac.= 160	Present Volume= 4,712 Bd. Ft./Ac.
Basal Area/Ac.= 80.7	Harvest Volume= 1,000-1,300 Bd. Ft./Ac.

Volume estimates from Summer 2017 inventory of C6T5

Species	Total volume (bd ft)
White oak	247,935
Chestnut oak oak	241,182
Virginia pine	71,471
Pignut hickory	32,463
Northern red oak	24,557
Red maple	15,013
Black oak	14,354
Yellow poplar	10,254
Persimmon	1,350
Black cherry	1,139
Tract Total	659,718
Tract Average/acre	4,712

Stand Types and Description

Oak-Hickory

This stand type comprises all 140 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 the autumn olive and multi-flora rose in the bottoms of this tract as well as the stem of Ailanthus that was found during inventory. This should be done prior to other management in order to reduce the spread of these invasives.

This tract is adequately stocked at 72% 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 ~~168,000~~ 140,000-180,000 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	2017-2018
Timber Marking and Sale	2018
Ongoing trail management, routing, maintenance	2018-
Post-Harvest Timber Stand Improvement/Invasive Treatment	2018-2019
Reinventory and Management Guide	2032

To submit a comment on this document, go to: 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 posted at http://www.in.gov/dnr/forestry/3634.htm Note: Some graphics may distort due to compression.

Clark State Forest
Compartment 6 Tract 5