

**Indiana Department of Natural Resources  
Division of Forestry  
DRAFT- Resource Management Guide**

**State Forest:** Clark  
**Forester:** Gina Wilcoxon  
**Management Cycle End Year:** 2036

**Tract:** 6301011 (Comp. 10 Tract 11)  
**Date:** 7-1-2016  
**Management Cycle Length:** 20 years

**Location**

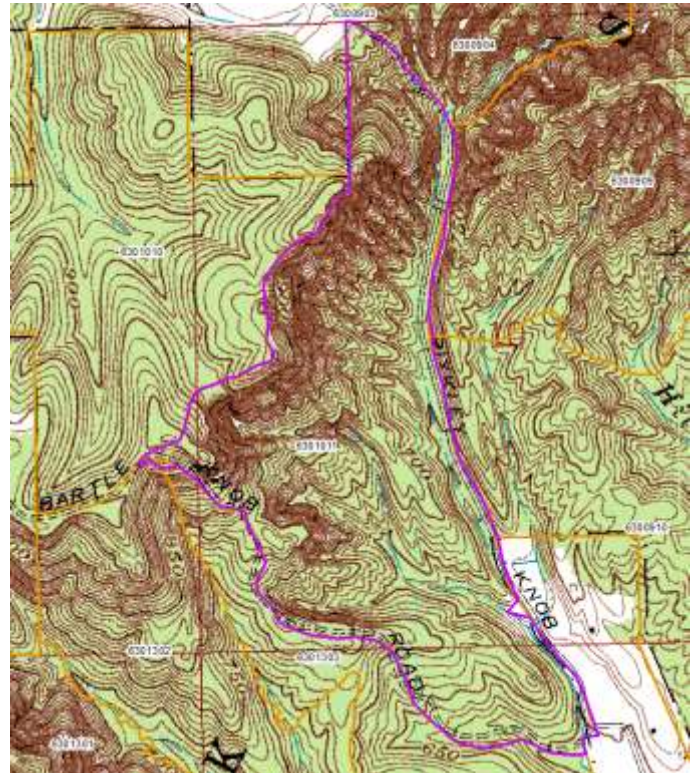
C10 T11 is located in Sections 10 and 15, T1N, R6E, Monroe Township, Clark County, Indiana. The tract is approximately 3 miles west of Henryville, IN, off of Pixley Knob Rd.

**General Description**

C10 T11 contains approximately 190 acres of forested woodlands in southern Indiana. The dominant species in this tract are chestnut oak and white oak.

**History**

This tract was last harvested in spring 1981. The harvest area was 20 acres of bottomlands and lower slopes and contained 24,004 bd. ft. of timber. TSI followed in the summer of 1981. An inventory was done in 1986 showing a basal area of 92 square feet per acre and 4,116 bd. ft. per acre. The 2016 inventory indicates current volume at 6,552 bd. ft. per acre (a 59% increase since 1986)



**Landscape Context**

The surrounding landscape consists mainly of forest land owned by Indiana DNR, with private rural residences to the northwest and southeast of C10 T11.

**Topography, Geology and Hydrology**

This tract is mainly comprised of one main ridge to the west and all of the associated fingers that run off of it to the east. The terrain of the northern and western portions of the tract is very steep, with 50% or greater slopes. Elevation ranges from 650 ft. in the bottoms to 940 ft. on the west ridgeline for a total relief of 290 ft. The bedrock of this area is Mississippian siltstone. These soils are suited to timber production. The tract drains into Wrong Branch, which drains into Right Branch Blue Lick Creek, which is part of the Silver-Little Kentucky watershed.

## **Soils**

### **BcrAW**—Beanblossom silt loam

Slope: 1-3%  
Landform: alluvial fans and flood plains  
Drainage Class: well drained  
Frequency of Flooding: occasionally flooded, very brief duration  
Depth to Restrictive Feature: 40 to 60 inches to paralithic bedrock  
Site Index: 100 (yellow-poplar)  
Suitability for Log Yard: poor  
Suitability for Haul Roads: moderate

### **ConD**—Coolville-Rarden complex

Composition: 51% Coolville, 30% Rarden

#### **Coolville**

Slope: 12-18%  
Landform: Slopes  
Drainage Class: moderately well drained  
Frequency of Flooding: none  
Depth to Restrictive Feature: 40 to 60 inches to paralithic bedrock  
Site Index: 66 (northern red oak)  
Suitability for Log Yard: poor  
Suitability for Haul Roads: moderate

#### **Rarden**

Slope: 12-18%  
Landform: slopes  
Drainage Class: moderately well drained  
Frequency of Flooding: none  
Depth to Restrictive Feature: 20 to 40 inches to paralithic bedrock  
Site Index: 71 (black oak)  
Suitability for Log Yard: poor  
Suitability for Haul Roads: moderate

### **GgbG**—Gilwood-Brownstown silt loams

Composition: 45% Gilwood, 35% Brownstown

#### **Gilwood**

Slope: 25-75%  
Landform: slopes  
Drainage Class: well drained  
Frequency of Flooding: none  
Depth to Restrictive Feature: 20 to 40 inches to lithic bedrock  
Site Index: --  
Suitability for Log Yard and Haul Roads: poor

**Brownstown**

Slope: 25-75%

Landform: knobs, slopes

Drainage Class: well drained

Frequency of Flooding: none

Depth to Restrictive Feature: 20 to 40 inches to lithic bedrock

Site Index: 50 (black oak)

Suitability for Log Yard and Haul Roads: poor

**GgfD**—Gilwood-Wrays silt loams

Composition: 39% Gilwood, 38% Wrays

**Gilwood**

Slope: 6 – 18%

Landform: knobs, slopes

Drainage Class: well drained

Frequency of Flooding: none

Depth to Restrictive Feature: 20 to 40 inches to lithic bedrock

Site Index: --

Suitability for Log Yard: poor

Suitability for Haul Roads: moderate

**Wrays**

Slope: 6-18%

Landform: knobs, slopes

Drainage Class: well drained

Frequency of Flooding: none

Depth to Restrictive Feature: 40 to 60 inches to lithic bedrock

Site Index: 90 (yellow-poplar), 70 (white oak)

Suitability for Log Yard: poor

Suitability for Haul Roads: moderate

**GmaG**—Gnawbone-Kurtz silt loams

Composition: 55% Gnawbone, 35% Kurtz

**Gnawbone**

Slope: 20-60%

Landform: slopes

Drainage Class: well drained

Frequency of Flooding: none

Depth to Restrictive Feature: 20 to 40 inches to paralithic bedrock

Site Index: --

Suitability for Log Yard and Haul Roads: poor

**Kurtz**

Slope: 20-60%

Landform: slopes

Drainage Class: well drained

Frequency of Flooding: none

Depth to Restrictive Feature: 40 to 60 inches to paralithic bedrock

Site Index: 60 (northern red oak)

Suitability for Log Yard and Haul Roads: poor

**SolC2—Spickert-Wrays silt loams**

Composition: 44% Spickert, 32% Wrays

**Spickert**

Slope: 6-12%

Landform: knobs, slopes

Drainage Class: moderately well drained

Frequency of Flooding: none

Depth to Restrictive Feature: 20 to 36 inches to fragipan; 50 to 80 inches to lithic bedrock

Site Index: 60 (white oak), 100 (yellow-poplar), 90 (black oak)

Suitability for Log Yard and Haul Roads: moderate

**Wrays**

Slope: 6-12%

Landform: slopes

Drainage Class: well drained

Frequency of Flooding: none

Depth to Restrictive Feature: 40 to 60 inches to lithic bedrock

Site Index: 90 (yellow-poplar), 70 (white oak)

Suitability for Log Yard and Haul Roads: moderate

**Access**

The best access to this tract is off of Pixley Knob Rd. There is also an old roadbed running along the southern edge of the tract and a horse trail that runs along the western edge.

**Boundary**

This tract is surrounded on all sides by Clark State forest, with the exception of some private residences on part of the northwestern and southeastern boundary.

**Wildlife**

This tract is typical of Southern Indiana's flora and fauna. Evidence of deer, turkey, squirrel and other wildlife were observed. Many songbirds were also noted as well as some birds of prey.

The ridges and upper slopes of this tract have a good amount of greenbriar which provides excellent cover for wildlife. With the high component of oak species in this tract, there is an abundant hard mast food source for wildlife.

Snags (standing dead or dying trees) are an important wildlife habitat feature in Indiana's forests. They provide foraging opportunities, perching sites, and nest/den cavities for a multitude of species. Snags will eventually contribute to the stands downed woody debris which is utilized by many species as habitat. The prescribed management of this tract will maintain or enhance the abundance of snag trees. The table below shows the number of snags per acre from the inventory for C10 T11 which meet or exceed recommended maintenance levels.

<b>Diameter Class</b>	<b># of snags per acre</b>
5+ DBH	6.50
9+ DBH	5.30
19+ DBH	0.48

A Natural Heritage Database review was completed for C10T11 in February, 2016. 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.

### **Communities**

This tract was divided into three different stand types based on cover type. The three stand types are oak-hickory, mixed hardwoods, and Virginia pine.

#### **Stand 1: oak-hickory**

Stand 1 covers about 128 acres and is found on the slopes and ridges of the tract. It is dominated by medium to large sized chestnut oak and white oak trees in the overstory and sugar maple, red maple, and American beech saplings in the under and mid story. There is also a lot of chestnut oak mortality throughout this stand.

Regeneration species in Stand 1 include white oak, chestnut oak, American beech, red maple, sugar maple, and some hickory. In many areas with chestnut oak mortality, there is an abundance of oak regeneration.

#### **Stand 2: mixed hardwoods**

Mixed hardwoods make up about 58 acres and are found in the drainages, toeslopes and in the bottoms. The overstory is mainly dominated by medium to large sized white oak, yellow-poplar, red maple, white ash, American beech, and some black oak, northern red oak, and scarlet oak. There is a good amount of white ash in the bottoms that already shows evidence of damage and die back due to the emerald ash borer. Midstory and understory trees are mainly sugar maple, red maple, American beech, and yellow-poplar.

Regeneration in the mixed hardwoods is somewhat sparse, consisting of American beech, red maple, sugar maple, and yellow-poplar, with some oaks, and white ash. A portion of the understory in the bottoms is thick with spicebush.

### **Stand 3: Virginia pine**

The Virginia pine is roughly 4 acres located on a knob along the western boundary of the tract. Much of the pine is over mature and blown over.

Regeneration in stand 3 is fairly abundant in spots and includes chestnut oak, white oak, red maple, American beech, and some Virginia pine.

### **Exotics**

Two species of invasive exotic plants were observed during the inventory. Japanese stiltgrass was found and is well established on the toeslopes of drainages in the southern half of the tract. Single, small bushes of multi-flora rose were found scattered in the southern half of the bottoms between the creek and Pixley Knob Rd.

### **Recreation**

The Knobstone Trail comes into the tract off of Pixley Knob Rd. and runs a general north-south direction through the southern half of the tract. The horse and hiker Red trail and Green trail also run adjacent to the tract along the western boundary. Trails will be given due consideration during management activities to reduce impacts and where necessary will be temporarily closed or rerouted for user safety. The horse/hike trail is expected to be affected only at its north end.

### **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.

### **Tract Summary Data**

A forest resource inventory for C10T11 was completed in February, 2016. This inventory included 42 prism points over the tracts 190 acres (1 point for every 4.5 acres). A summary of the inventory results and a table of the total volume by species are presented below. This tract is currently well-stocked at 79%.

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Commercial forest: 186 acres	Basal Area Sawtimber: 63.3 sq ft per acre
Pine commercial forest: 4 acres	Basal Area Quality: 6.9 sq ft per acre
Non-commercial forest: 0 acres	Basal area Prime: .7 sq ft per acre
Permanent openings: 0 acres	Basal Area Poles: 18.8 sq ft per acre
Other: 0 acres	Basal Area Sub-merchantable: 1.2 sq ft per acre

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<b>Total Acres:</b> 190	<b>Total Basal Area:</b> 91 sq ft per acre
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**Trees/Ac.**= 116 Trees/Ac.  
**BA/Ac.**= 91 ft<sup>2</sup>/Ac.

**Present Volume**= 6,552 bd. ft./Ac.  
**Percent Stocking**= 79% Stocked

### Volume estimates from February 2016 inventory of C10T11

<b>Species</b>	<b>Total volume (Bd Ft)</b>
American Beech	4,666
American Sycamore	8,988
Bitternut Hickory	3,871
Black Cherry	13,643
Blackgum	12,909
Black Oak	16,985
Chestnut Oak	664,848
Northern Red Oak	28,289
Pignut Hickory	9,453
Red Maple	12,261
Scarlet Oak	20,160
Sugar Maple	22,216
Sweetgum	5,022
Virginia Pine	30,513
White Oak	365,861
Yellow-Poplar	25,283
<b>Tract Totals</b>	1,244,968
<b>Tract Average/acre</b>	6,552

### Silvicultural Prescription and Proposed Activities

For the purpose of this guide, this tract has only one designated management stratum based on the dominance of its oak-hickory cover type.

A timber harvest is recommended for this tract. 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. Additionally a harvest is recommended to salvage dead and/or dying white ash trees. Other harvest considerations should include the removal and regeneration of areas of mature Virginia pine. Group selection and regeneration opening cutting may be implemented to regenerate areas that contain aggregations of poor and/or decadent growing stock. Portions of this tract may have limited, or no harvesting due to excessively steep slopes. Overall, a managed harvest of approximately 400,000 bd. ft. is anticipated.

It would be beneficial to treat problem occurrences of Japanese stiltgrass and multi-flora rose before a timber harvest occurs to reduce the risk of transporting seed to other areas

of the tract by harvest equipment. Stilt grass is now being spread by recreation users, wildlife and other natural forces. Both species are prevalent throughout the county and eradication is not feasible.

Post-harvest timber stand improvement is prescribed, focusing on crop tree release, invasive species control, and completing openings.

This tract could also benefit from having a series of prescribed burns to deaden the maple and beech in the understory to promote the oak/hickory component of the tract.

Recommended management cycle length for this tract is 20 years.

<i>Proposed Management Activity</i>	<i>Proposed Date</i>
Timber marking and invasive control	2016
Timber Sale	2016
Follow-up invasive control/assessment	2017
Post Harvest recreation trail rehab as needed	2018-2019
Post-Harvest timber stand improvement -includes prescribed fire options	2018-2019
Re-inventory and Management Guide	2026

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