

Indiana Department of Natural Resources  
Division of Forestry  
**DRAFT**  
RESOURCE MANAGEMENT GUIDE

**State Forest:** Owen-Putnam

**Forester:** R. Duncan

**Management Cycle End Year:** 2029

**Compartment:** 8    **Tract:** 5

**Date:** August 2014

**Management Cycle Length:** 15 Years

### **Location**

Compartment 8, tract 5 is located in the center of section 34, township 11N, range 4W, Morgan Township, Owen County. It is approximately 1.5 miles southeast of the horse campground and approximately 1.5 miles northeast of the office.

### **General Description**

This tract is a 61-acre multiple use parcel located in the north central portion of the 767 acres comprising compartment 8 of the Owen-Putnam State Forest. Timber types include closed canopy oak-hickory, beech-maple, mixed hardwoods and pine. White pine and Virginia pine were planted in 1953 along the access road and ridge top to control erosion from past disturbance. The over-story consists of medium to large sawlog sized yellow-poplar, sugar maple, white oak and red oak. The quality of merchantable timber is good. The pole-sized under-story consists mostly of American beech, maple, hickory and poplar. This area exhibits good opportunities for multiple use management, including timber management, wildlife management, soil and water conservation and public recreational activities, such as, hunting, hiking, gathering, viewing and interpretation.

### **History**

- Owen-Putnam State Forest was established in 1948 with most of its landholdings purchased as smaller non-contiguous tracts in the 50's and 60's. The ridge tops in the area of this tract were farmed up until approximately 1930 and then planted to White and Virginia Pine in 1953 when the state purchased the land. Compartment 8 tract 5 has been managed for many years.
- Property wide timber inventory (TIMPIS) in 1988
- Timber inventory in 1991
- Timber inventory in 1995
- Timber harvest in 1998
- Timber inventory in 2009

### **Landscape Context**

Compartment 8 tract 5 is located in a very rural area. Generally the area is forested hills and ravines. The private property adjacent to this compartment and tract are primarily closed canopy, deciduous, mixed hardwood forests with no agriculture or industry, limited residential housing, small fields/pastures and small ponds located primarily along county roads beyond the state forest.

### **Topography, Geology and Hydrology**

This part of Owen-Putnam State Forest falls in the Shawnee Hills Natural Region, Crawford Upland Section. The region represents presettlement conditions better than any other region in Indiana. This section is most distinct by its rugged hills with sandstone cliffs and rockhouses. Characteristic soils are the well-drained acidic silt loams of the Wellston-Zanesville-Berks Association. The upper slopes consist of an oak-hickory assortment, with a more mesic component in the coves resembling the mixed mesophytic forest community..

The topography of the area varies from nearly level ground on the ridge top along the eastern boundary with moderate to steep west, southwest and south facing slopes. Water sheds into a mapped intermittent stream flowing north to south along the west edge of the tract, then into a mapped perennial stream (Fish Creek) flowing north to south on private property, southwest of the tract along Fishcreek Road. The area is generally comprised of shallow to moderately deep, well-drained soils often containing fragipans, on nearly level to steep slopes. These soils occur throughout the Illinoian glaciated areas of the county. In the event of a harvest, the existing haul road and log yards can be utilized. However, care must be taken during the planning and execution of skid trails due to the erosive nature of some soils. Best Management Practice (BMP) guidelines will be followed to preserve soil and water quality.

## **Soils**

The tract is composed primarily of the Muskingum Stony Silt Loam on 35-70% slopes and the Hickory silt loam on 35-70% slopes. In the Muskingum series are shallow, excessively drained, steep or very steep soils underlain by sandstone, siltstone and shale. The Hickory series consists of deep, well-drained, steep soils that lack a fragipan. These soils are mainly in forest and are excellent for the growth of poplar, oak and hickory..

Specifically, the tract is composed of the following soils:

MmG - Muskingum Stony Silt Loam, 35-70% Slopes

HcG - Hickory Silt Loam, 35-70% Slopes

ZaC2 - Zanesville Silt Loam, 6-12% Slopes, Moderately Eroded

ZnC3 - Zanesville Soils, 6-12% Slopes, Severely Eroded

ZaB2 - Zanesville Silt Loam, 2-6% Slopes, Moderately Eroded

WmE2 - Wellston Silt Loam, 18-25% Slopes, Moderately Eroded

GnB - Ava Silt Loam 2-6% Slopes

Ph - Philo Silt Loam

Gu - Gullied Land, Residuum

## **Access**

To access the tract from Spencer Indiana, travel west on State Road 46 approximately 5-miles to Fishcreek road, then travel north on Fishcreek road approximately 2-miles to Weilhammer road, then travel east on Weilhammer road approximately  $\frac{3}{4}$  of a mile to Powell Red Bud lane, then travel south on Powell Red Bud lane a  $\frac{1}{4}$  mile to the forest parking lot and access road. The tract is accessible to the public via the parking lot on Powell Red Bud lane. Management access as well as public recreational access to this tract is relatively good.

## **Boundary**

This tract is located in the north central portion of the 767 acres contained in compartment 8.

Tract boundaries follow the ridge top to the north, a ravine to the northwest, a mapped intermittent stream to the southwest, a ravine to the south and an abandoned county road to the northeast. Private property borders this

tract to the east, of which it has been located and marked with the boundary lines being reasonably well documented and witnessed in the past.

## **Wildlife**

This tract contains habitat for a variety of wildlife species. Common species or sign observed include Eastern grey squirrel, Eastern fox squirrel, Eastern chipmunks, white-tailed deer, Wild Turkey, Virginia opossum, North American raccoon, Eastern box turtle, raptors, songbirds, woodpeckers, toads, frogs and various small stream aquatic life.

).

Live trees in this tract provide for shelter, escape cover, roosting and as a direct (e.g. mast, foliage) or indirect (e.g. foraging substrate, bugging) food resource, with the oaks, hickories, walnuts and beech providing hard mast for deer, turkey and squirrel and the cherries providing soft mast for birds. The pine stands provide benefits such as cover, roosts and browse.

Live trees containing cavities in this tract provide nesting and denning opportunities for woodpeckers, songbirds and small mammals and potentially contribute to future snags (standing dead trees).

Snags in this tract provide essential habitat characteristics for foraging activity, nest/den sites, decomposers (e.g., fungi and invertebrates), bird perching and bat roosting, and are important contributors to the future pool of downed woody material.

Rotten logs, crater knolls, ephemeral streams and the mapped intermittent stream provide habitat for herptiles and aquatic vertebrates.

The proposed management activities for this tract should not significantly alter the relative proportion and availability of habitat/cover types or significantly disrupt travel/dispersal corridors or create isolated habitat units separated from larger units of similar habitat. Nor should the proposed management activities increase the likelihood that specialist interior forest species would be affected by generalist species using forest edge habitats. Indiana Logging and Forestry Best Management Practices (B.M.P.s) will be followed to conserve soil and water resources and related forest wildlife habitats, such as springs/seeps, ponds/wetlands and karst features.

## **Wildlife Habitat Features**

According to the data collected during the tract inventory (R. Duncan 2014) and represented in the following table, this tract is well represented with habitat in regards to the density, size and species of live and dead trees essential for consideration of various wildlife habitat needs including habitat specialists such as cavity nesters and species of conservation need like the Indiana bat (*Myotis sodalis*) and their suggested habitat requirements.

Legacy trees, as defined by the Management Guidelines for Compartment-Level Wildlife Habitat Features are well represented above the suggested maintenance levels. White oak and shagbark hickory are two species having preferred characteristics for tree roosting bats. Both are relatively abundant in this tract and will be given consideration as habitat. Also, as the tract continues to mature, the number of legacy trees  $\geq 20''$  D.B.H. is expected to rise.

Standing dead or dying trees (snags) are somewhat well represented in this tract. Snags  $\geq 5''$  D.B.H. and  $\geq 9''$  D.B.H. in this tract are above the maintenance levels for both classes. However, the snags in the  $\geq 19''$  D.B.H. class are below the maintenance level. The lack of large diameter snags is often attributable to the overall good

health of the forest and the short retention of large standing dead trees. Snags have short standing times and often become wind thrown.

Legacy trees, snags and cavity trees will be given consideration for retention as habitat for the Indiana bat and other wildlife as defined by the Resource Management Strategy for the Indiana Bat on State Forest Property and the Management Guidelines for Compartment-Level Wildlife Habitat Features. In addition, the girdling of select cull trees could be performed through post harvest timber stand improvement (T.S.I.) to address the lack of large diameter snags.

### Wildlife Habitat Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance
<b>Legacy Trees *</b>				
11"+ DBH	549		1490	941
20"+ DBH	183		293	110
<b>Snags (all species)</b>				
5"+ DBH	244	427	345	101
9"+ DBH	183	366	203	20
19"+ DBH	30.5	61	5	-25

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

### Communities

Most of this tract is of the dry-mesic upland forest community type, with some isolated more mesic sites located along lower north slopes, and some floodplain along streams. The dry-mesic upland forest community has moderate soil moisture with trees growing well, however the canopy is usually more open than in mesic forests. It is one of the most prevalent forest communities in Indiana. It occurs on slopes throughout the state. The dominant plants in this community are the white oak (*Quercus alba*), Northern red oak (*Quercus rubra*) and black oak (*Quercus velutina*). Characteristic plants in this community are the shagbark hickory (*Carya ovata*), mockernut hickory (*Carya tomentosa*), flowering dogwood (*Cornus florida*), hop hornbeam (*Ostrya virginiana*) and black haw (*Viburnum prunifolium*). Characteristic animals in this community are the broad-headed skink (*Eumeces laticeps*), white-footed mouse (*Peromyscus leucopus*) and eastern chipmunk (*Tamias striatus*) (Jacquart et al. 2002).

A Natural Heritage Database Review is part of the management planning process. If Rare, Threatened or Endangered species were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

An exotic/invasive species, multi-flora rose (*Rosa multiflora*), is present in and around this tract in patches of light to moderate densities. It is also common throughout the county. Control measures could be undertaken, possibly during post-harvest T.S.I., to treat problem occurrences.

### Recreation

This multiple use tract has good public access via the northern cable gate and fire trail for compartment 8, located on Powell Red Bud lane. It is a good tract for public recreational activities including hunting, hiking, gathering, viewing and interpretation. Because of its parking and walkable fire trail, it is an ideal spot for anyone looking for an accessible outdoor experience.

## **Cultural**

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

## **Tract Description and Silvicultural Prescription**

This tract was not subdivided (non-stratified).

In 1988 a property wide inventory (TIMPIS) was conducted, including Compartment 8 tract 5 (R. Winks & D. Cole). The results estimated the tract to contain 5131 Bd. Ft. of total sawtimber per acre and 1001 Bd. Ft. of harvest sawtimber per acre, with a stocking level of 80% and a harvest proposed in the year 1996.

In 1991 a routine timber inventory was conducted (J. Gagnon). The data estimated the tract to contain 60 Sq. Ft. of basal area per acre in trees  $\geq$  12 inches in diameter at breast height (d.b.h.) and approximately 4596 Bd. Ft. of total sawtimber per acre with an estimated 1762 Bd. Ft. of harvest sawtimber per acre.

In 1995 a routine inventory was conducted (B. Gallogly). The data estimated the tract to contain 74 Sq. Ft. of basal area per acre in trees  $\geq$  12 inches in d.b.h. and approximately 5649 Bd. Ft. of total sawtimber per acre with an estimated 1719 Bd. Ft. of harvest sawtimber per acre.

In 1998 the tract was harvested of 92,796 Bd. Ft. in 355 trees on 54 acres (1718 Bd. Ft./Acre) as part of a selective thinning.

In 2009 a routine inventory was conducted (J. Bauer). The data estimated the tract to be 95% stocked with 108 Sq. Ft. of total basal area per acre and approximately 5870 Bd. Ft. of total sawtimber per acre with an estimated 940 Bd. Ft. of harvest sawtimber per acre and an average tree diameter of 9 inches.

In 2014 a routine inventory was conducted (R. Duncan). The data estimated the tract to be 97% stocked with 113 Sq. Ft. of total basal area per acre and approximately 6530 Bd. Ft. of total sawtimber per acre with an estimated 2357 Bd. Ft. of harvest sawtimber per acre and an average tree diameter of 10.9 inches.

Various timber types can be found on this tract. They are oak-hickory, beech-maple, mixed hardwood and pine. The over-story consists mostly of medium to large sawlog sized hickory, yellow-poplar, oak, sugar maple, American sycamore, and white ash; with Eastern white pine and Virginia pine comprising the pine stands. The quality of merchantable timber is good with the ridge tops and upper slopes containing more of the mixed hardwoods, and the mid to lower slopes containing more of the oak-hickory. The pole-sized under-story consists mostly of sugar maple, yellow-poplar, hickory, sassafras, black cherry, red maple, American sycamore, white ash, and black walnut; with E. white pine and Virginia pine representing some of the pole sized understory in the pine stand. Advanced regeneration is represented mostly by American beech, white ash, sugar maple, sassafras, pawpaw, Northern red oak, and hickory.

The current stocking level indicates the tract is fully stocked although not overstocked in response to the harvest in 1998. However, the recommendation is to thin the mature yellow-poplar and harvest the low quality, damaged, diseased, dying and poorly formed trees, especially the declining yellow-poplar that are competing with the oak and other quality trees. As with any forest management activities, Best Management Practice (BMP) guidelines will be followed to protect soil and water resources. Tract is projected to remain in the fully stocked category after the prescribed elective harvest.

Management in the form of Timber Stand Improvement (T.S.I.) was performed in 2007 to control grapevines and to perform maintenance on a 1-acre opening that was created in 1992. Additional post harvest T.S.I. could be performed to release preferred, high quality crop trees through the culling of low volume, poorly formed trees and less desirable species, and to encourage early to mid successional species regeneration through the creation of canopy gaps and a reduction in understory shade tolerant species (sugar maple and American beech). T.S.I. could include treatment of problem occurrences of multi-flora. Standing dead trees (snags) and cavity trees will be given consideration for retention as habitat for wildlife. Legacy trees, as defined by the Resource Management Strategy for the Indiana Bat on State Forest Property, will be given consideration for retention as habitat for the Indiana Bat. In addition, the girdling of select, larger diameter cull trees could be performed through T.S.I. to address the Management Guidelines for Compartment-Level Wildlife Habitat Features.

The overall goal of this silvicultural prescription is to improve timber growth and quality, species composition, and create favorable growing conditions for early to mid successional timber species, while providing biodiverse forest wildlife habitat.

### Inventory Summary – C8T5

**Total Number Trees/Acre:** 177  
**Average Site Index:** 85 Oak

**Average Tree Diameter:** 10.9”  
**Stocking Level:** 97%

	<b>Acres</b>		<b>Sq.Ft./Acre</b>
<b>Hardwood Commercial Forest:</b>	54	<b>Basal Area Sawtimber.</b>	74.4
<b>Pine Commercial Forest:</b>	7	<b>Basal Area Poles:</b>	30.0
<b>Noncommercial Forest:</b>	0	<b>Basal Area Culls:</b>	6.9
<b>Permanent Openings:</b>	0	<b>Sub Merch.</b>	1.9
<b>Other Use:</b>			
<b>Total:</b>	61	<b>Total Basal Area:</b>	113.2

**Estimated Tract Volumes for Commercial Forest Area – Bd.Ft. Doyle Rule**

<b>Species</b>	<b>Harvest Stock</b>	<b>Growing Stock</b>	<b>Total Volume</b>
<b>YEP</b>	1057	709	1766
<b>REO</b>	109	868	977
<b>WHO</b>	90	731	821
<b>AMB</b>	450	183	633
<b>SHH</b>	0	424	424
<b>WHA</b>	316	0	316
<b>SUM</b>	169	143	313
<b>WHP</b>	0	298	298
<b>REM</b>	92	187	279
<b>PIH</b>	0	189	189
<b>BIH</b>	0	162	162
<b>LAA</b>	73	0	73
<b>SAS</b>	0	64	64
<b>BLC</b>	0	63	63
<b>VIP</b>	0	60	60
<b>AME</b>	0	24	24
<b>BAS</b>	0	24	24
<b>SIM</b>	0	24	24
<b>BLL</b>	0	22	22
<b>Per Acre Total</b>	2356	4175	6532
<b>Tract Total</b>	143,716	254,675	398,452

**Proposed Management Activities**



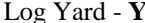


- 2014 ----- Timber Inventory
- 2014 ----- DHPA Archaeological Clearance Application
- 2014 ----- Resource Management Guide
- 2014/15 ----- Timber Marking and Sale Layout
- 2015 ----- Timber Sale
- 2015-17 ----- Timber Harvest
- 2015-18 ----- Post-Harvest TSI and Exotic/Invasive Control
- 2015-18 ----- BMP Monitoring
- 2029 ----- Timber Inventory
- 2029 ----- Resource Management Guide

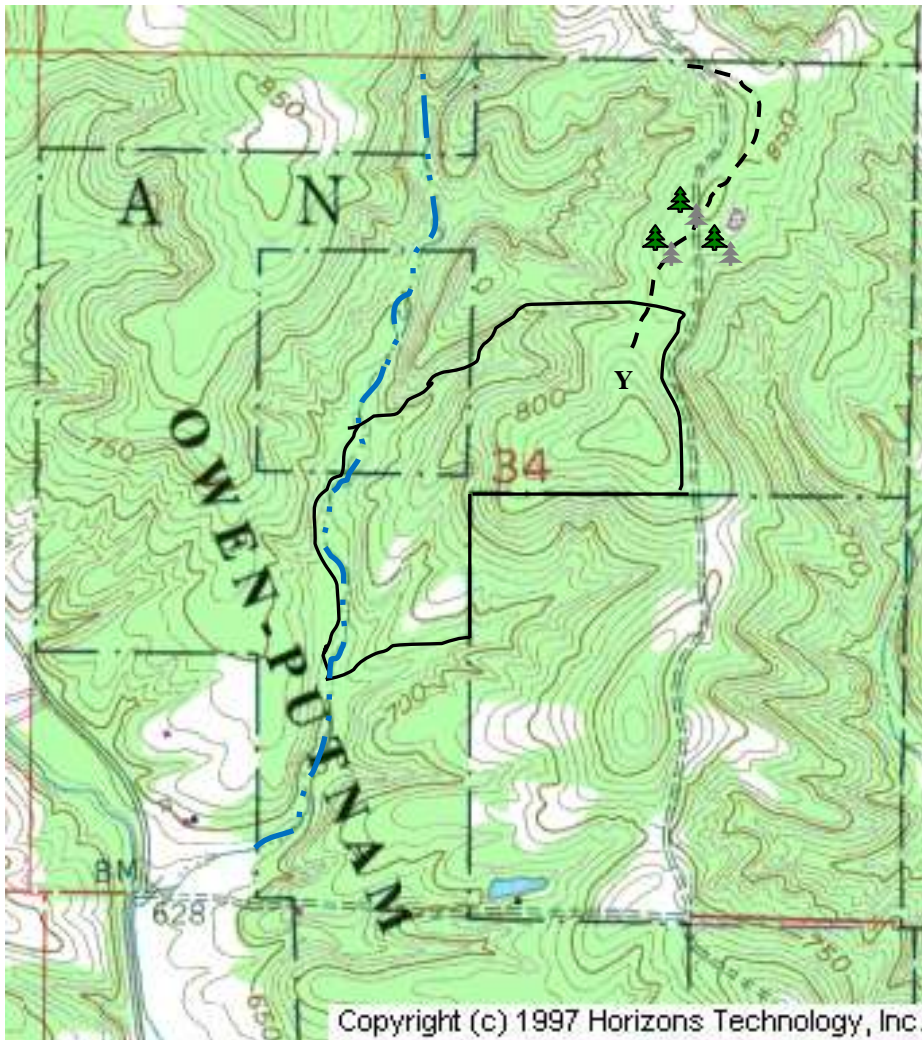
**Topographic Map  
Compartment 8 Tract 5**

61 - Acres

USGS - 7.5 Minute Series  
Spencer Quadrangle  
Owen Co. Section 34, T11N, R4W



Tract Boundary -  Haul Road -  Log Yard -   
Intermittent Stream -  Pines - 



**Use the link below to submit a comment on this document:**

[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. Note: Some graphics may distort due to compression.