**Indiana Department of Natural Resources**
**Division of Forestry**

# RESOURCE MANAGEMENT GUIDE

State Forest: Jackson-Washington Compartment: 04 Tract: 08
Forester: D. Potts Date September 19, 2013
Management Cycle End Year 2037 Management Cycle Length 20 years

## Location

This management area is located approximately 2.5 miles south of Brownstown, Indiana. More specifically, section 26 of Driftwood Township, Township 5N and Range 4E. The area is more commonly referred to as Compartment 04 Tract 08 of Jackson-Washington State Forest.

## General Description

This general cover type is hardwood forest. The tract is 17 acres, all of which are considered commercial forest.

## History

This tract is comprised of two separate land acquisitions. The first occurred in 1932 from Emil V. Heller and Edna Heller, 301.5 acres. The second occurred in 1933 from Henry and Louise Terkhorn, his wife, 80 acres.

The first recorded management activity in the tract history file is a "management plan" from 1971. That plan recommends a possible white oak sale within 10-15 years.

An inventory and subsequent management guide was completed in 1988. That inventory estimated a total of 6,483 bd.ft./acre volume with a harvest of 1,720 bd. ft./acre leaving a residual growing stock of 4,763 bd.ft./acre. The management guide recommended marking a timber sale to be sold in 1990. Further, it recommended regenerating an area in the western portion of the tract, to "remove overmature trees and to encourage new seedlings to germinate on this site." The guide also recommends marking a sale in the rest of the tract where access allows.

In 1995 a field inventory and resource management guide were completed. That inventory estimated a total of 6,057 bd.ft./acre volume with a harvest of 940 bd. ft/acre and a leave of 5,117 bd.ft./acre. The resource management guide in 1988 indicated looper mortality and that mortality could be a reason the harvest bd.ft. was in 1995 than in 1988. The guide recommends marking a sale in 1998 and possibly a combined sale with another tract.

In 2011, 59,501 bd.ft. was sold to Max Lambring for $15,000.00 as a part of salvage sale that included several trees from this tract. The trees from this tract were all located adjacent to the firelane and were selected for salvage because they were dying due to previous drought events.

**Landscape Context**
The tract is completely surrounded by hardwood forest which are primarily used for timber production, recreation, and hunting. There is very limited agriculture being practiced within a one mile radius. Development is limited and primarily consists of single-family residences.

**Topography, Geology and Hydrology**
The topography of this tract is relatively steep with benches located throughout the slopes. The tract is generally a north facing slope. Underlying geology is made up of sandstone, siltstone, and shale bedrock. This tract does not contain any mapped drainages, it does however have several ephemeral drainages. The runoff from this tract will eventually make its way into Hough Creek and then into the East Fork White River. Any proposed management activities will adhere to the Indiana Logging and Forestry Best Management Practices 2005 field guide. Following these guidelines will minimize the impact to soil and water resources.

**Soils**
Berks channery silt loam (BeG) 6.2 acres This steep and very steep, moderately deep, well drained soil is on side slopes and knolls in the uplands. Slopes can range from 25 to 75 percent. The native vegetation is hardwoods. It is fairly well suited to trees. North aspects generally are more productive than south aspects. The site indexes for hardwood species range from 70 (white oak) to 90 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

Gilpin silt loam, (GnF) 8.6 acres 25 to 55 percent slopes. This well drained soil has a water table at a depth greater than 40 inches and is on side slopes on the uplands. Slopes range from 25 to 55 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderate organic matter content (2.0 to 4.0 percent). Permeability is moderate (0.6 to 2.0 in/hr) in the most restrictive layer above bedrock. Available water capacity is low (4.8 inches in the upper 60 inches). The pH of the surface layer 3.5 to 5.5. Bedrock is at a depth of 20 to 40 inches.

Kurtz silt loam (KtF) 0.8 acres This series consists of deep, well drained soils on hills. They formed in residuum weathered from interbedded soft siltstone and shale bedrock. Slopes can range from 20 to 55 percent. Native vegetation consists of mixed hardwood with oaks, hickory, American beech and yellow-poplar. This soil is well suited to trees. The site index for this soil type is 60 for northern red oak. Preferred trees to manage for are black oak, chestnut oak, northern red oak, scarlet oak, shagbark hickory, American beech, sugar maple, and white oak.

Tilsit silt loam (TlB2, TlC2) 1.2 acres The Tilsit series consists of deep and very deep, moderately well drained soils with a slowly permeable fragipan in the subsoil. Slope ranges from 0 to 15 percent. The potential for surface runoff is negligible to medium. Permeability is moderate in horizons above the fragipan and slow or very slow in the fragipan. Native vegetation is primarily oaks, hickories, maple, blackgum, yellow poplar,

dogwood, American beech, persimmon, and sassafras. These soils are well suited to trees. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. Seedlings survive and grow well if competing vegetation is controlled. The site indexes for hardwood species range from 90 (black oak) to 100 (tulip poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

**Access**
This tract is located at the western end of Skyline Drive, on the Brownstown side. From the intersection of Poplar Street and US 50 in Brownstown, travel south on Poplar street for approximately 2 miles, the street will change from Poplar Street to County Road 50 West and then to Skyline Drive. Continue on Skyline Drive, the southern and eastern boundary of the tract is Skyline Drive.

**Boundary**
The southern and eastern boundary of this tract is Skyline Drive. The northern boundary is also a property boundary, the western portion of the line is marked by orange blazes painted on trees and the eastern portion of the line is marked with orange carsonite. The western boundary is a firelane/horsetrail, which is located along a ridgetop.

**Wildlife**

***Wildlife Habitat Feature Summary***

| Snags(all species) | Maintenance Level | Optimal Level | Inventory | Available Above Maintenance | Available Above Optimal |
|---|---|---|---|---|---|
| ***5"+ DBH*** | 68 | 119 | 90 | 22 | -29 |
| ***9"+ DBH*** | 51 | 102 | 50 | -1 | -52 |
| ***19"+ DBH*** | 8.5 | 17 | 6 | -2 | -11 |

The Wildlife Habitat Feature Summary indicates the 5"+DBH class meets the maintenance level for the number of snags within the tract. However, the 9"+ DBH and 19"+DBH class are slightly deficient in the number of snags. Additional snags will likely be created through post harvest timber stand improvement (TSI).

**Communities**
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.

Japanese stilt grass is present along the horse trail and fire lane in the southwest portion of this tract. The stilt grass should be monitored for its spread into the understory and sprayed with an appropriate herbicide along the horse trail, where there is ATV access.

**Forest Condition**

The forest is generally healthy and vigorous. The 2013 inventory shows a total volume of 188,130 bd. ft. for the tract with a harvest volume of 74,560 bd. ft. and a leave volume of 113,570 bd. ft. These numbers translate to per acre volumes of 11,066 bd. ft. total, 4,386 bd. ft. harvest and 6,681 bd. ft. leave. The stocking chart shows current stocking at 84%, with a reduction to 58% stocking post harvest. Currently basal area is 108.1sq. ft./ acre. Post harvest basal area is estimated to be 70 sq. ft./acre. Trees per acres will decrease from 82 to 64 after the harvest is estimated. The post harvest basal area appears low and was likely affected by the inventory accounting for regeneration openings. During the course of the inventory plots that fell in areas were the most appropriate management prescription would be to regenerate the stand, all trees were assigned a harvest designation. When the software calculates basal area, those plots where all trees are selected for harvest have zero basal area. In areas where single tree selection was applied and no regeneration openings were prescribed the post harvest sawtimber basal area was estimated at 86 sq.ft./acre. The three top harvest species by volume are yellow poplar, chestnut oak and black oak. Regeneration in the understory is comprised primarily of American beech and sugar maple. Paw paw was a significant component in the understory as well, especially in the southwest portion.

**Recreation**

This tract has a horse trail on the southwest boundary. This tract has excellent public access due to Skyline Drive bordering this tract on the east and south. Given the proximity to a main road and ease of access, this tract is visited by many hunters during all hunting seasons. During any harvest operations the sale area and portions of the horse trail as well as Skyline Drive will be closed due to safety concerns. Following the harvest, horse trails and access roads will be re-opened and returned to similar or better conditions.

**Cultural**

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

**Tract Subdivision Description and Prescription**

**Mixed Hardwoods (~12 acres)**

This subdivision is dominated primarily by yellow poplar, which comprises 40% of the sawtimber basal area and 52% of the sawtimber volume. Northern red oak and chestnut oak make up the greatest proportion of the remaining species within this subdivision, combined they add up to 32% of the sawtimber basal area and 31% of the sawtimber volume. The management prescription for this area is to mark a harvest within a year or two, utilizing single tree selection and group selection openings. In the southwest portion

of the tract there is a slope that contains a significant amount of yellow poplar trees that are declining and in some cases dying due to drought stress. This area, extending from the horse trail down the slope to the property line, should be regenerated to remove the declining yellow poplar overstory. Several trees were removed along the firelane in a 2011 salvage, due to dead and dying yellow-poplar trees. Throughout the rest of the subdivision the management prescription is to harvest trees that are hollow, have significant lean, which drastically increases their chance of windthrow, have poor form or are competing with future crop trees. Future crop trees should be selected as those having good form and growth characteristics and located on stable ground.

**Mixed Oak (~5 acres)**

This subdivision's overstory is dominated by primarily chestnut oak with lesser amounts of northern red oak, black oak, and white oak. All oak species combined within this subdivision make up 116 sq. ft./acre of the total 124 sq.ft./acre of the subdivision sawtimber basal area. Other species found within the subdivision are pignut hickory, shagbark hickory and lesser amounts of yellow poplar. The estimated volume for this subdivision is 12,449 bd. ft./acre, with the harvest removing 2,611 bd. ft./ acre, leaving the residual volume at 9,837 bd. ft./ acre. The management prescription for this subdivision is to provide release to better formed and healthy crop trees by harvesting lower quality competing trees within the next year or two. Effort should be made to maintain and enhance the oak/hickory forest type into the future. Care should be taken when harvesting trees within this tract to avoid damaging Skyline Drive.

**Tract Prescription and Proposed Activities**

The management prescription is to apply a single-tree and group selection improvement harvest in the next year or two. A harvest should focus on removing the drought stressed and declining yellow poplar trees along the ridge top and on the north facing slope in the southwest of the tract to allow for the creation of new cohort of young trees. Throughout the rest of the tract harvesting should focus on removing wind damaged and drought stressed trees as well as those that are prone to windthrow. The number of regeneration openings and size of openings will vary based on the conditions discovered in the field at the time of marking. Following these recommendations should provide for a tract of well stocked healthy and more vigorous growing trees. During and after harvest operations best management practices (BMP's) will be implemented to minimize any potential impact to soil and water resources. Following the harvest, timber stand improvement should be performed to remove grapevines, release future crop trees and to deaden (non-merchantable) trees not removed during the harvest. A re-inventory should occur in 20 years, following the harvest.

| ***Proposed Management Activity*** | ***Proposed Date*** |
|---|---|
| Spray stilt grass with herbicide | 2014 |
| Mark harvest and sell timber | 2014-2015 |
| Post-harvest TSI | 2017-2018 |
| Regeneration opening monitoring >1acre in size | 2018-2021 |
| Inventory and Management Guide | 2037 |

| TM 901 RESOURCE MANAGEMENT GUIDE | | | | |
|---|---|---|---|---|
| | | | | |
| **INVENTORY SUMMARY** | | | | |
| | | | Compartment: | 4 |
| Jackson-Washington State Forest | | | Tract: | 8 |
| Forester: | D. Potts | | Date: | 9/19/12 |

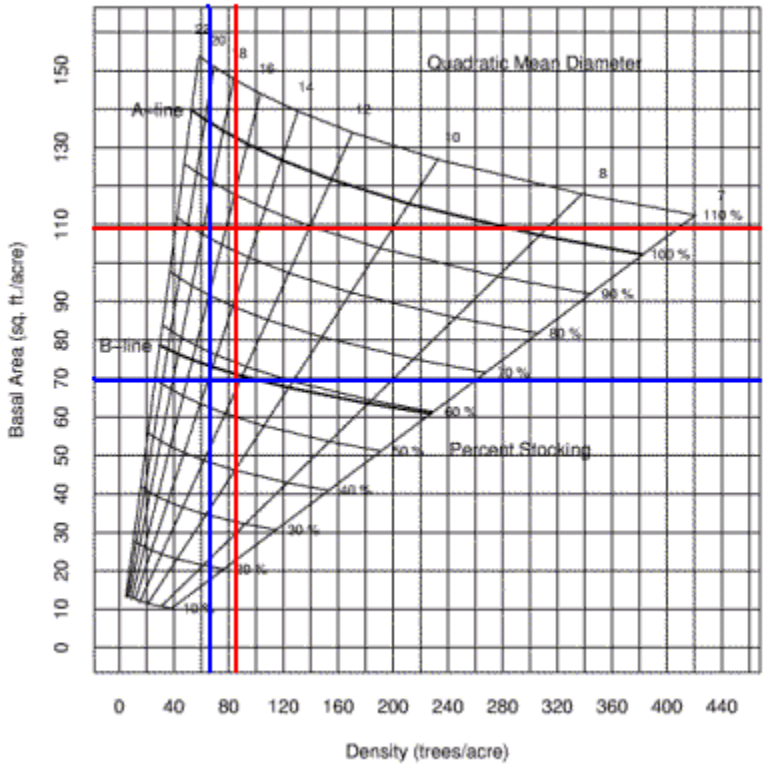
ACREAGE IN:

| | |
|---|---|
| Commercial Forest | 17 |
| Non-Commercial | 0 |
| | |
| | |
| | |
| TOTAL AREA | 17 |

(Estimated Tract Volumes for Commercial Forest Area-Bd.Ft., Doyle Rule)

| SPECIES | HARVEST STOCK | GROWING STOCK | TOTAL VOLUME |
|---|---|---|---|
| Yellow poplar | 50,440 | 13,860 | 64,300 |
| Chestnut oak | 9,760 | 44,410 | 54,170 |
| Northern red oak | 670 | 30,880 | 31,550 |
| Black oak | 5,280 | 4,440 | 9,720 |
| White oak | 0 | 6,850 | 6,850 |
| American beech | 2,000 | 2,400 | 4,400 |
| Sugar maple | 1,870 | 2,310 | 4,180 |
| Shagbark hickory | 0 | 3,210 | 3,210 |
| Sassafras | 1,490 | 510 | 2,000 |
| Pignut hickory | 0 | 1,830 | 1,830 |
| Basswood | 0 | 1,730 | 1,730 |
| White ash | 1,180 | 0 | 1,180 |
| Blackgum | 1,150 | 0 | 1,150 |
| Black locust | 720 | 0 | 720 |
| Red elm | 0 | 570 | 570 |
| Red maple | 0 | 570 | 570 |
| **TRACT TOTALS** | **74,560** | **113,570** | **188,130** |
| **PER ACRE TOTALS** | **4,386** | **6,681** | **11,066** |

**Stocking Guide**
Compartment 04 Tract 08




**Pre-Harvest Inventory Data in Red**
**(Sub merchantable trees excluded)**
Total BA/A = 108.1 sq.ft./AC
Total #trees/acre = 82
Avg. tree diameter = 15 inches
Percent stocking = 84%

**Post-Harvest Inventory Data in Blue**
**(Sub merchantable trees excluded)**
Total BA/A = 70 sq.ft./AC
Total #trees/acre = 64
Avg. tree diameter = 14 inches
Percent stocking = 58%

# Jackson-Washington State Forest
# Compartment 04 Tract 08
# Subdivision Map


**Legend**

Skyline Drive

**Tract subdivisions**

Mixed hardwoods

Mixed oak

Tract Boundary

0 130 260 520 780 1,040

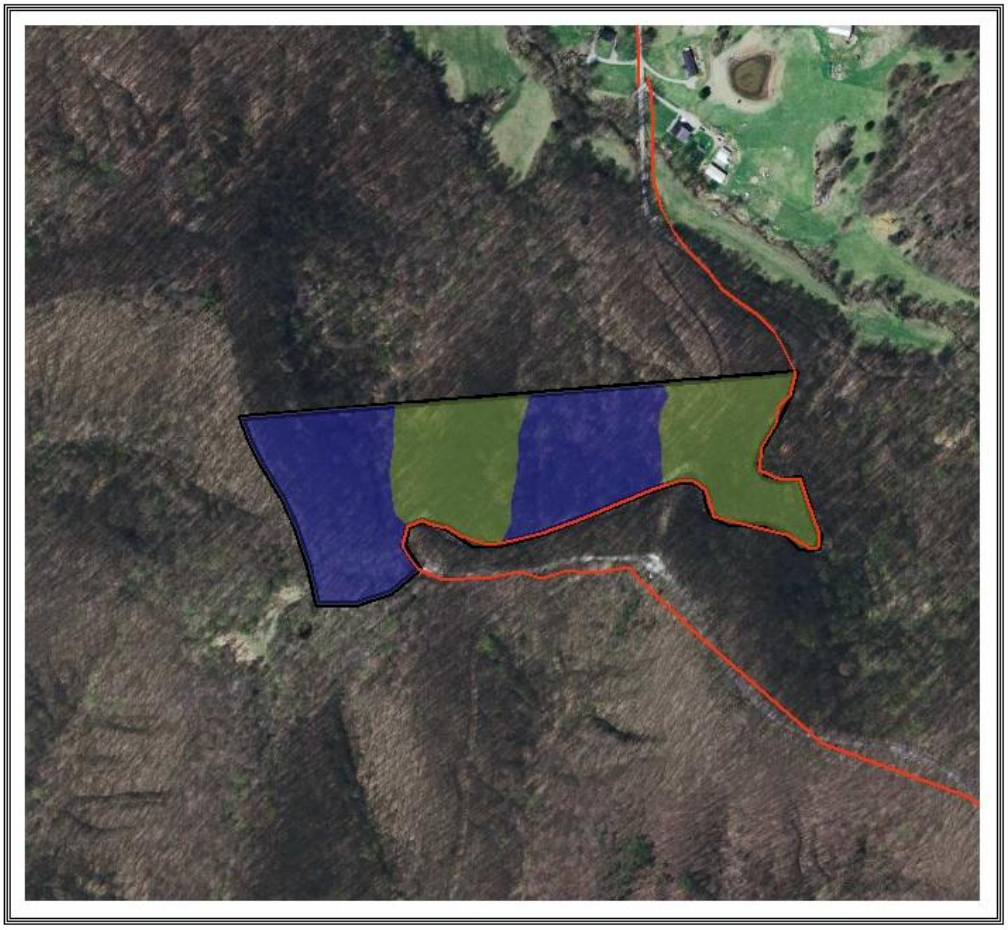
Feet

N

W E

S

# Jackson-Washington State Forest
# Compartment 04 Tract 08
# Subdivision Map



**Legend**

Skyline Drive

**Tract subdivisions**

Mixed hardwoods

Mixed oak

Tract Boundary

0 137.5 275 550 825 1,100

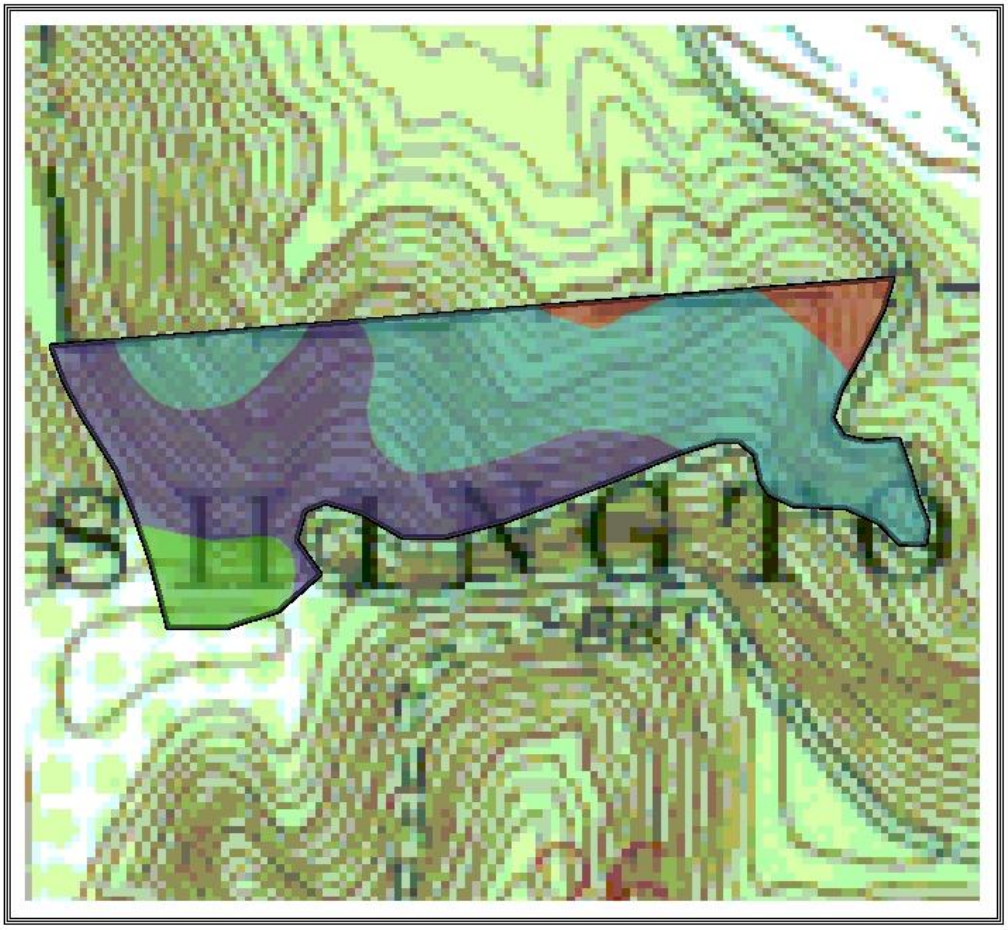
Feet

N

W E

S

# Jackson-Washington State Forest
# Compartment 04 Tract 08
# Soils Map



**Legend**

**Soils**

- BeG
- GnF
- KtF
- TlB2
- Tract Boundary

0 95 190 380 570 760 Feet

N W E S

**To submit a comment on this document, click on the following link:**
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

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.