

Indiana Department of Natural Resources – Division of Forestry
Draft
RESOURCE MANAGEMENT GUIDE

State Forest: Jackson-Washington
Forester: Sandy Derringer
Management Cycle End Year: 2039

Compartment 4 Tract 5
Date: 10/29/14
Management Cycle Length: 20 years

Location

This tract is located in part of the northwest $\frac{1}{4}$ of the northwest $\frac{1}{4}$ of section 26 and part of the northeast $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of section 27 and part of the southeast $\frac{1}{4}$ of the southeast $\frac{1}{4}$ of section 22, Township 5 north and range 4 east in Jackson county.

General Description

This 64 acre tract is made up of mostly steep north facing slopes. The tract lies in an L shape pattern with a cover type divided between oak-hickory and mixed oak.

History

This tract was obtained in 3 pieces. It contains basically the east half of the 40 acres obtained from Robert G. Gillespie and Jack R. Gillespie on April 4, 2007. It also contains part of the NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of section 27, township 5 N range 4 E that was obtained from Emil V. Heller and Edna Heller on July 18, 1932. The area north of the horse trail in the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of section 26 was obtained from William J. Robertson and Viola Robertson on May 8, 1940. An old road bed runs in the tract with some areas that appear to have been harvested in the past.

Landscape Context

State forest land lies to the south and west of this tract with private ownership to the north and east. State land consists of forested cover while private ownership provides a mixture of forestland, agricultural fields, isolated rural housing and an old fallow field. From a broader landscape perspective the majority of private ownership lies to the north with state land to the south.

Topography, Geology and Hydrology

The topography of this area is mostly steep to very steep north facing slopes with the beginning portion of an intermittent stream in the far northwest corner of the tract. The green loop horse trail, which also doubles as a fire access/haul road, serves as the southern boundary of the tract. The west boundary follows a drainage ravine down to the intermittent stream. Very little level ground is found along the private boundary lines on the north side. The steep areas near the ridge tops contain loose rocks on the surface of the ground. The bedrock in this area is soft shale or soft siltstone.

Soils

Berks channery silt loam (BeG) 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. The equipment limitations, seedling mortality, and the erosion hazard are management concerns. Building logging roads and skid trails on the contour and constructing water bars help to control erosion. 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.

Coolville silt loam, 12 to 20 percent slopes (CoD) This moderately well drained soil has a seasonally high water table at 1.0 to 2.0 ft. and is on side slopes on uplands. Slopes can range from 12 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above bedrock. Available water capacity is moderate (6.6 inches in the upper 60 inches). The pH of the surface layer is 3.5 to 5.5. Bedrock is at a depth of 40 to 60 inches. This soil type has a site index of 66 for northern red oak.

Gilpin silt loam, 25 to 55 percent slopes (GnF) This well drained soil has a water table at a depth greater than 40 inches and is on side slopes on 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.

Rarden silty clay loam, 12 to 20 percent slopes, severely eroded (RdD3) This moderately well drained soil has a seasonal high watertable at 1.0 to 2.0 ft. and is on side slopes on uplands. Slopes are 12 to 20 percent. The native vegetation is hardwoods. The surface layer is silty clay loam and has moderately low organic matter content (0.5 to 2.0 percent). Permeability is slow (0.06 to 0.20 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 in non-limed areas is 3.5 to 6.5. Bedrock is at a depth of 20 to 40 inches. This soil type has a black oak site index of 71. Tree species to manage for include bitternut hickory, northern red oak, and white oak.

Stonehead silt loam (SsC2) This series consists of deep and very deep, moderately well drained soils formed in loess and the underlying residuum weathered from soft shale or soft siltstone bedrock. Slopes range from 4 to 12 percent. Native vegetation is mixed hardwoods with oaks, hickory, beech, maple, and tulip-poplar as the major species. This soil is well suited for trees. Prolonged seasonal wetness hinders logging activities and planting of seedlings. The equipment limitations, seedling mortality, windthrow hazard, and plant competition are management concerns. The potential productivity or site index for this soil type is 90 for northern red oak. Preferred trees to manage for are black oak, chestnut oak, common persimmon, northern red oak, scarlet oak, shagbark hickory, yellow-poplar and white oak.

Tilsit silt loam, 6 to 12 percent slopes, eroded (TIC2)

This moderately well drained soil has a seasonal high water table at 2.0 to 3.0 ft. and is on ridge tops and side slopes on uplands. Slopes are 6 to 12 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (< 0.06 in/hr) in the most restrictive layer above bedrock. Available water capacity is moderate (7.9 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Bedrock is at a depth of 40 to 80 inches.

WeD2--Wellston silt loam, 12 to 18 percent slopes, eroded

This well drained soil has a water table at a depth greater than 40 inches and is on flood plains. Slopes are 12 to 18 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is moderate (0.6 to 2.0) in the most restrictive layer above bedrock. Available water capacity is moderate (7.3 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 3.5 to 5.5. Bedrock is at a depth of 40 to 72 inches.

Access

This tract can be accessed by taking South Poplar Street off HWY 50 in Brownstown. South Poplar Street turns into South County Road 50W where it eventually enters the state forest. Turn west onto firelane #240 turning right at the first intersection onto firelane #250 which will run the southern boundary of the tract. The tract is located approximately 2 miles south of Brownstown.

Boundary

The southern and a majority of the western boundary of this tract are defined by a main ridgeline running east and west with a finger turning to the north. The north and east boundary lines are defined by private ownership. A majority of the eastern/northeastern boundary line was inspected in 2011 as noted in the property records. The north/south line on the east side of the tract was last located in 2001. Records indicate two corner

stone are present along the northeast section of property line (NW section corner of Section 26 and N middle of the NW1/4)

Wildlife

Wildlife Habitat Feature Tract Summary

	Maintenance level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Snags (all Species)					
5"+ DBH	256	448	1147	891	699
9"+ DBH	192	384	346	154	-38
19" + DBH	32	64	44	12	-20

The wildlife habitat feature summary indicates the 5" DBH class for snags exceeds the maintenance and optimal levels. The 9" and 19" DBH classes exceeds the maintenance level but falls slightly short in the optimal levels. More snags are likely to be created during post harvest Timber Stand Improvement (TSI).

A Natural Heritage Database review was completed for this tract. If Rare, Threatened, or Endangered species (RTE's) 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.

Several songbirds were heard and seen and signs of deer are also present in the stand. Proposed management prescription include a timber harvest utilizing single tree and group selection openings that will create a different habitat type for wildlife in this area.

Communities

A Natural Heritage Database review was completed for this tract. If Rare, Threatened, or Endangered species (RTE's) 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.

Invasive species were observed in the tract. Japanese stilt grass was seen along the horse trail that is the southern boundary of the tract. Some areas of this were sprayed in the summer of 2014. Multiflora rose was also found in the area by the intermittent stream.

This area contained large pockets of paw paws and ferns especially in the areas of the drains.

Forest Condition

TM 901 RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

		Compartment:	4
State Forest:	Jackson-Washington	Tract:	5
Forester:	S Derringer	Inventory Date:	10/29/2014

ACREAGE IN:	
Forest	64
Non-Forest	
Water	
Permanent Openings	
Other Uses	
TOTAL AREA	64

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
American Beech	9780	7150	16930
American Elm		20,500	20,500
American Sycamore	2550		2550
Blackgum	770	650	1410
Black oak	10570	30600	41170
Chestnut oak	23890	27620	51520
Northern red oak	15920	50670	66600
Pignut hickory	7580	39320	46900
Red elm		2720	2720
Red maple	4640	2550	7190
Sassafras	36100		3610
Scarlet oak	8400	2270	10680
Shagbark hickory	3760	29210	32970
Sugar Maple	30700	18490	49190
White ash	6390		6390
White oak	8070	44120	52190
Yellow poplar	55980	108830	164810
			0
TRACT TOTALS	192,610	366,250	558,880
PER ACRE TOTALS	3,009	5,723	8,732

The 2014 inventory showed that the area contained an estimated total volume of 8,732 board feet per acre, 3,009 bd. ft. per acre of harvest volume, and 5,723 bd. ft. per acre of growing stock. Total volume for the tract is 558,880 bd. ft., harvest volume is 192,610 bd. ft., and leave volume is 366,250 bd. ft. The top three species by volume present in this tract are yellow poplar, northern red oak, and white oak. The top three species in the harvest category are yellow poplar, sugar maple and chestnut oak. The stocking chart shows pre-harvest stocking at 74% and post-harvest stocking at 51%. Current basal area is 93.5 sq. ft. /A with a post harvest basal area estimated at 63.9 sq.ft. /A. The basal area after the harvest will be low due to areas in the mixed hardwood stand that need to be regenerated due to dead and dying yellow poplar and a low amount of trees in the understory. The trees per acre will decrease from 86 to 65 trees/acre after the harvest. The dominate trees in the under story are sugar maple and American beech. There were sparse pockets of white oak and black oak regeneration.

Recreation

A horse trail runs along the southern edge of the tract. The horse trail will need to be closed during the harvest operations with any repairs to the trail bed to follow before it is reopened. Hunting of small game, turkey and deer may also occur in this area.

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 Subdivision Description and Prescription

Oak –Hickory(34 acres) – This area is dominated by chestnut oak on the upper slopes and more red and black oak on mid and lower slopes. Pignut hickory is the main hickory present. Other species present include shagbark hickory, white oak, and scarlet oak. The under story is dominated by mostly sugar maple and American beech. There are a few scattered white oaks. Regeneration is mainly sugar maple and American Beech, but there were scattered white and black oaks along with shagbark and pignut hickories. The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The single tree selection will focus on removal of poor quality, competing and over mature trees to release the healthy more vigorous trees present. This will provide more sunlight and nutrients to enhance the growth of the residual stand. Species likely to occur in any regeneration openings created following the harvest and post harvest Timber Stand Improvement (TSI) will likely include the following: sugar maple, American beech, yellow poplar, black cherry, and shagbark and pignut hickory.

Mixed Hardwood (28 acres) – This area was more dominated by sugar maple and yellow poplar. White oak, chestnut oak, black oak, red maple, shagbark hickory and

pignut hickory were present in the area also. Under story in parts of this area is thick with pawpaw with little or no regeneration under them. Regeneration in this area was a mixture of sugar maple, American beech, yellow poplar, white oak, hickories and included some White ash. This area shows evidence of a harvest that occurred in 1971. There appeared to be culls, butt scars and damage to trees nearest to the old roadbed. The management prescription for this subdivision would be an improvement harvest utilizing single tree and group selection openings. Removal of the damaged trees and some cull trees would improve the growth of the more vigorous trees left. Follow the harvest with TSI to deaden any culls, release any future crop trees and reduce the amount of American beech and sugar maple competing with the oak regeneration. Species expected to regenerate in the entire management area following the harvest and post harvest Timber Stand Improvement include: white oak, black oak, sugar maple, shagbark hickories, American beech and yellow poplar. The basal area following the harvest will be low in this area due to the dead and dying yellow poplar that need to be removed and the low amount of understory. .

Tract Prescription and Proposed Activities

The management prescription for this tract would include implementing an improvement harvest utilizing single tree and group selection harvest within the next 5 years. Most of the tract should be harvested to encourage growth of better quality trees with the removal of low quality, suppressed and dying species present in the tract. Best management practices will be implemented during and after the harvest to minimize impact on soil and water resources.

Follow the harvest with TSI to deaden culls, release future crop trees and reduce the amount of beech and maple competing with the oak regeneration. Another inventory will be performed in approximately 20 years following the harvest.

Proposed Activities Listing

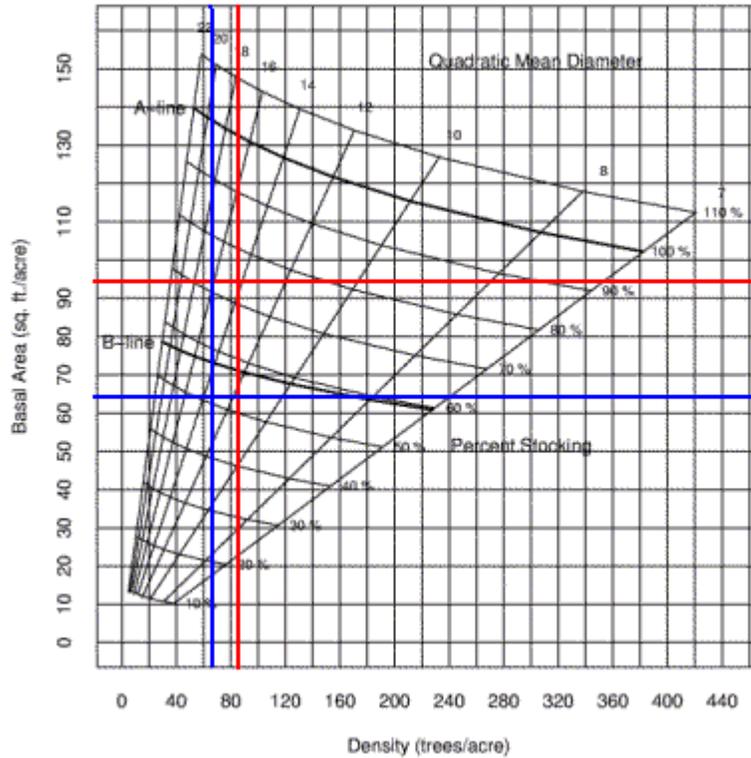
Proposed Management Activities	Proposed Date
Treat Stilt grass	2015
Mark harvest and sell timber	2016-2017
Post-harvest TSI	2018-2019
Regeneration opening monitoring> 1 acre in size	2019 – 2022
Inventory and management guide	2038

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

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.

Stocking Guide
 Compartment 04 Tract 05
 64 acres



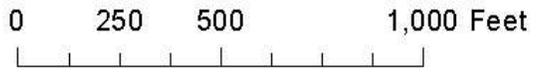
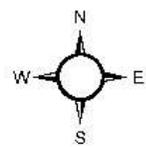
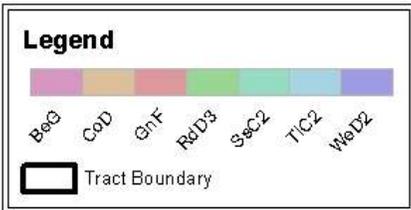
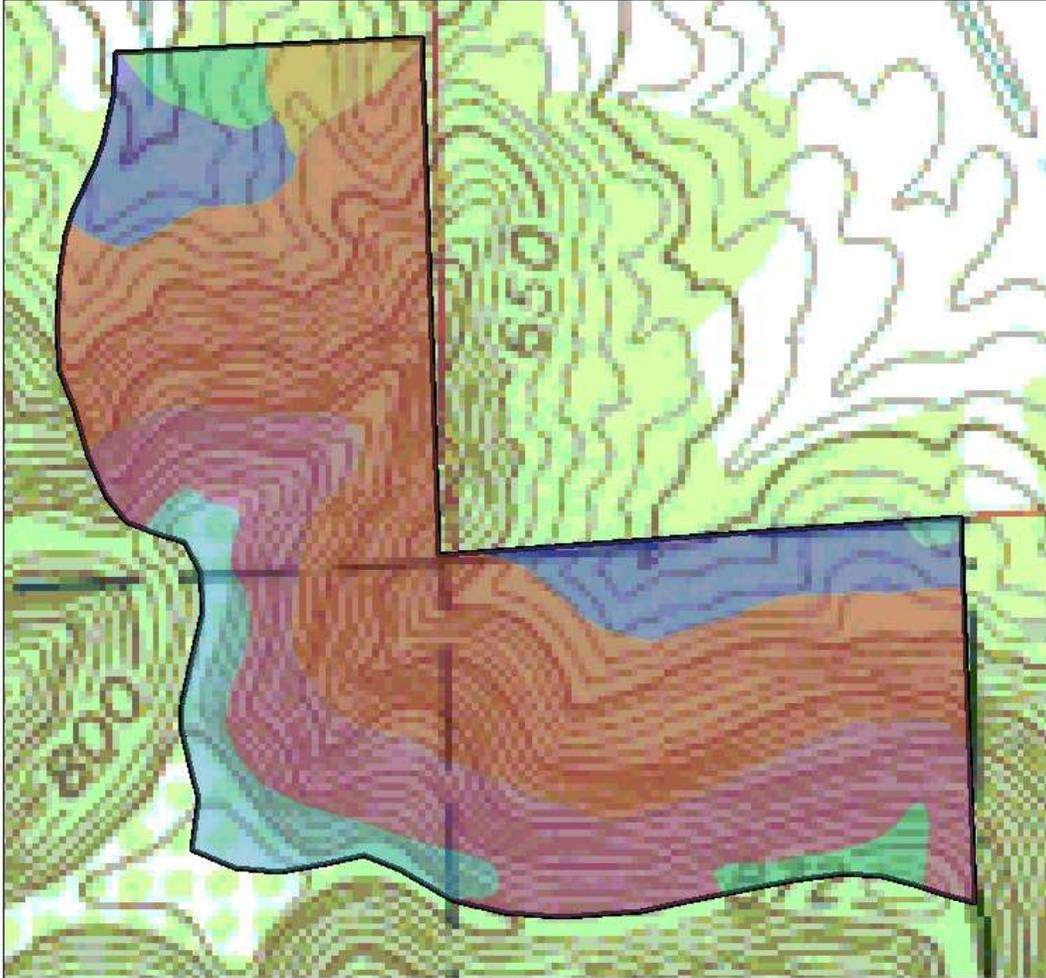
**Pre-Harvest Inventory Data in Red
 (Sub merchantable trees excluded)**

Total BA/A = 93.5 sq.ft. per acre
 Total #trees/acre = 86 trees per acre
 Avg. tree diameter = 14.1 inches
 Percent stocking = 74%

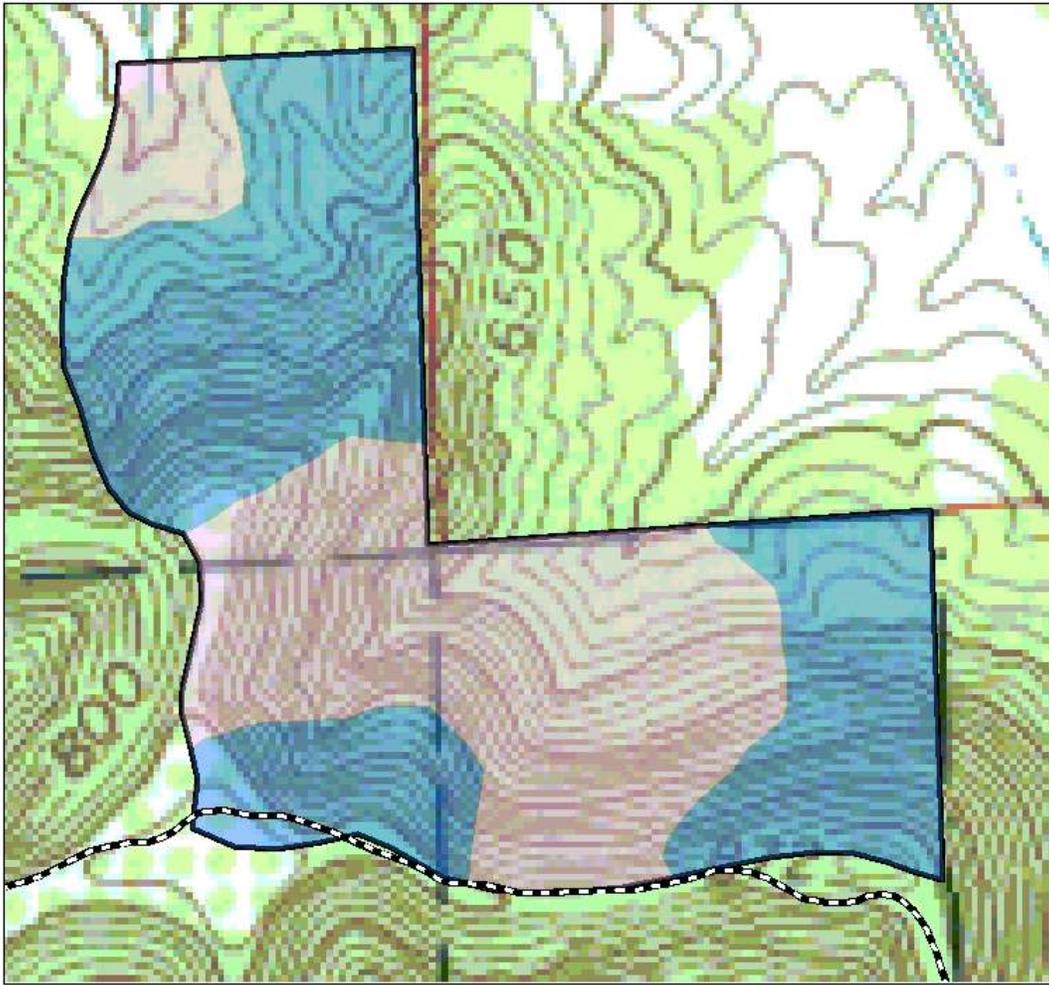
**Post-Harvest Inventory Data in Blue
 (Sub merchantable trees excluded)**

Total BA/A = 63.9 sq.ft. per acre
 Total #trees/acre = 65 trees per acre
 Avg. tree diameter = 13.8 inches
 Percent stocking = 51%

Jackson-Washington State Forest Compartment 04 Tract 05 Soils Map



Jackson-Washington State Forest
Compartment 04 Tract 05
Tract Subdivision Map



Legend

- Mixed Hardwoods
- Oak-Hickory
- Horse Trail
- Tract Boundary

0 260 520 1,040 Feet

