

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

State Forest: Jackson - Washington
Forester: Sandy Derringer
Management Cycle End Year: 2038

Compartment 2 Tract 4
Date: 3-25-14
Management Cycle Length: 20 years

Location

This tract is located in Jackson County in the northwest ¼ of the southeast ¼ of section 17, Township 5 North, Range 5 East. It contains 50 acres. The tract is located approximately 1.5 miles north of Hwy 250. Fire access road 130, located at the horse parking lot off Hwy 250, serves as the main access for this tract.

General Description

This 50 acre tract is gently rolling. The tract is bordered on the North and East by private property. The South and West boundary follow an intermittent stream that flows south east. It is made up of mostly 2 main ridges and has an intermittent stream running through the northeast corner. The forest cover type consists mainly of pine. A horse trail circles through the area.

History

This tract is part of a parcel purchased from John and Mary Vondielinger on January 28, 1963. It was a badly eroded field. Old fencing was found in the tract. The area was planted in mixed pine such as white, Virginia, shortleaf, and loblolly. The pine was planted in this area to stabilize the eroded ground. The area was inventoried in 1990 with a management plan completed in 1992 that indicated a high basal area. Recommendation then was to check the area in 10 -15 years for a possible commercial thinning. Property lines were located in 1991 with a request for a survey due to trees being cut along the east fence line. The north line of this tract was surveyed by a private surveyor, Dan Blann, in 2014. At this time, only flagging and stakes are present. Following frozen ground conditions, the surveyor intends to install PVC and caps.

Landscape Context

State Forest land lies to the south and west of this tract consisting mainly of upland forests. A few residential homes are present to the north and east. Agriculture, with scattered patches of small wood lots, dominates to the northeast and east.

Topography, Geology and Hydrology

This tract is gently sloping. The tract has one main ridgeline running northwest to southeast through it with another finger ridge to the south. A major drain runs from the southwest in this tract with another drain in the southern half running southeast. An intermittent stream is the border to the south and west. The stream runs southeast to Horse Lick then to Grassy Fork and finally to the Muscatatuck river.

Soils

Beanblossom silt loam (BcrAW) This is a deep, well drained soil that formed in 0 to 24 inches of medium-textured alluvium and the underlying loamy-skeletal alluvium. The Beanblossom soils are on flood plains and alluvial fans below steep and very steep hill slopes. Native vegetation is deciduous forest, dominantly sycamore, elm, hickory, beech, maple, and tulip-poplar. This soil is well suited to trees. Plant competition is moderate. Preferred trees to manage for are bitternut hickory, white oak, and yellow-poplar.

BpD3--Bonnell silty clay loam, 10 to 18 percent slopes, severely eroded

This well drained soil has a watertable at a depth greater than 40 inches and is on side slopes on uplands. Slopes are 10 to 18 percent. The native vegetation is hardwoods. The surface layer is silty clay loam and has low organic matter content (0.5 to 1.0 percent). Permeability is moderately slow (0.2 to 0.6 in/hr) in the most restrictive layer above 60 inches. Available water capacity is moderate (8.5 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5.

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.

PeB2--Pekin silt loam, 2 to 6 percent slopes, eroded

This is a moderately well drained soil and has a seasonal high watertable at 1.5 to 2.0 ft. and is on side slopes on terraces. Slopes are 2 to 6 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 60 inches. 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.

Rarden silty clay loam, 12 to 20 percent slopes, severely eroded (RdD3) This moderately well drained soil has a seasonal high water table 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.

TIC2--Tilsit silt loam, 6 to 12 percent slopes, eroded

This moderately well drained soil has a seasonal high watertable at 2.0 to 3.0 ft. and is on ridgetops 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.

Access

Access to this tract begins with fire access road 130 located at the horse trail parking lot off Hwy 250. The road begins as a drivable gravel/dirt road eventually transitioning into a horse trail with no gravel that loops through the tract. It is approximately 1.5 miles to the tract from the horse trail parking lot.

Boundary

The north and east sides of the tract are bounded by private property. The south and west sides of the tract follow an intermittent stream and then up the drain to the ridge top. The south and west sides are state owned property. Boundary lines were last located by property personnel in December 1991 with a possible trespass on the east line. The north line of the tract was privately surveyed by Dan Blann in 2014.

Wildlife

Snags (all Species)	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
5" + DBH	196	343	1585	1389	1242
9" + DBH	147	294	647	500	353
19" + DBH	24.5	49	16	-9	-33

The wildlife habitat feature summary indicates the 5" and 9" DBH classes for snags exceed the maintenance and optimal levels. As would be expected given the age and

characteristics of the planted pine the 19"+ DBH class falls short of both the maintenance and optimal level. Additional snags will likely be created in each DBH class through post harvest Timber Stand Improvement (TSI). To address the 19"+ DBH deficiency, TSI operations will place an emphasis on the creation of larger snags where applicable.

Communities

A Natural Heritage Database review was completed for the 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 observed during the inventory include: American hollies and multiflora rose. The rose is naturalized to the area, however, both species should be considered for appropriate treatment with approved herbicide or another eradication method used prior to a harvest operation.

The tract consists mainly of mixed pines with the drains being more mixed hardwood - pine. The regeneration and understory in the entire tract is mainly beech, red and sugar maple, yellow poplar, and ash.

Forest Condition

This tract is composed of mostly planted White pine with scattered patches of Shortleaf and Loblolly pine. The drainage areas are the only areas with hardwoods. The larger drainage area near the center of the tract consists of poor quality back and sweet gum, yellow poplar, red and sugar maple and a few white and black oak. Most of the drainage area in the southwest portion of the tract lies in the adjoining tract but appears to have a higher quality of hardwoods. Mortality of shortleaf and loblolly pine are evident by the number of downed stems. One particular area to the southeast of the short middle finger ridge appears to have been impacted by wind indicative of the number of stems blown over.

The 2014 inventory of this tract contains an estimated volume of 10,210 Bd. Ft. per acre, with a harvest of 5,888 Bd. Ft. per acre and leaving a growing stock of 4,322 Bd. Ft per acre. The basal area for the tract excluding sub merchantable trees is 119.80 sq. ft. per acre. This would put the post harvest basal area per acre at 69.59 sq. Ft. per acre according to the inventory. The stocking chart shows current stocking levels at 88% with a reduction to 67% stocking post harvest. Trees per acre will decrease from 140 to 104 trees per acre. The top three species by volume in this tract are white pine, tulip poplar and shortleaf pine. The top three species to be harvested by volume are white pine, yellow poplar and shortleaf pine. The dominate understory in this tract is beech, red and sugar maple and ash.

Recreation

Recreational use of this area is a horse trail and hunting of small game, deer, turkey, mushrooms, etc.

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

Pine – This area was an old field that was planted with mixed pine. The major species is white pine with pockets of shortleaf and loblolly. The white pine appear to be doing well, however the shortleaf and loblolly are smaller and dying. There are areas within the pine where natural mortality has created openings. The regeneration in most of these areas is very thick consisting of ash, beech and red maple.

The management prescription for this subdivision would be to remove all non - native pine. Within the regeneration openings species likely to occur in years following removal of the overstory and completion of the openings via post harvest timber stand improvement are the following: yellow poplar, red maple, sassafras, and white ash. Single tree selection may be employed in better areas within this subdivision where there are no oak and hickory present in an effort to retain some of the better quality pine.

Mixed hardwoods – These areas are located mainly along the central drain, intermittent stream and on the west side of the tract boundary. They are composed of tulip poplar, maple, oak, hickory and sweet gum. The areas closer to the intermittent stream have several fallen pine. The head of the main drain in the center of the tract has a small area of all blown down pine. Regeneration in this area is composed of yellow poplar, red maple, beech ash and sweetgum. There is also the presence of grapevines, raspberry, multiflora rose, and American holly in the main drain.

The invasive plants should be reviewed for appropriate treatment before harvesting operations. Treatment could be done by cutting and use of appropriate herbicide.

The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. The openings will focus on the removal of low quality hardwoods and dying poplar. Within the regeneration openings species likely to occur in years following removal of the overstory and completion of the openings via post harvest timber stand improvement are the following: American beech, yellow poplar, hickory, and sugar and red maple. 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 nutrient to enhance the development of the oak- hickory forest that remains.

Oak – Hickory – This area represents only a small portion of the tract acreage in the northwest and southeast corner of the tract. The main species is black oak with some white oak and pignut hickory. The trees within the tract area are poor quality, but the trees across the drain in the other tract on the western side look to be of a much higher quality. The eastern area seems to be part of an old field with mortality and short

“woolly” white oak present. Regeneration in these areas is plentiful with beech and hickory. The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree and group selection openings. Within the regeneration openings species likely to occur in years following removal of the overstory and completion of the openings via post harvest timber stand improvement are the following: American beech, hickory, sassafras, and red maple. 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 nutrient to enhance the development of the oak- hickory forest that remains.

Tract Prescription and Proposed Activities

The management prescription is to implement a harvest utilizing single tree and group selection harvest within 5 years. The pine area should be managed by removal of all non-native pine. The tract harvest is to encourage growth of better quality oaks and hickories with the removal of low quality, suppressed, and dying trees present in 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 and other preferred regeneration. Another inventory will be performed in approximately 20 years following the harvest.

Proposed Activities Listing

Proposed Management Activities	Proposed Date
Treat American Holly & multiflora rose	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:

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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.

**TM 901
RESOURCE MANAGEMENT GUIDE**

INVENTORY SUMMARY

		Compartment:	2
State Forest:	Jackson-Washington	Tract:	4
Forester:	Sandy Derringer	Inventory Date:	3/21/14

ACREAGE IN:

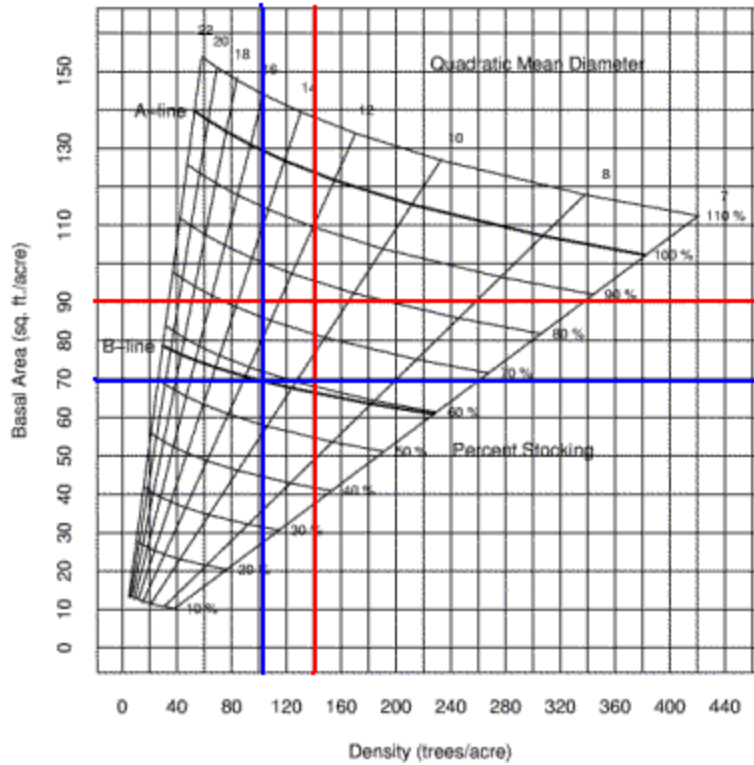
Forest	50
Non-Forest	
Water	
Permanent Openings	
Other Uses	
TOTAL AREA	50

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
Eastern White Pine	224,310	93,850	318,160
Yellow Poplar	11,230	54,900	66,130
Shortleaf Pine	3,640	22,520	26,160
Loblolly Pine	22,030	2,130	24,160
Black oak	7,680	6,360	14,040
Sweetgum	1,640	9,360	11,000
Red Maple	4,930	4,970	9,900
Pignut Hickory	2,050	5,690	7,740
Sugar Maple	4,320	360	4,680
Eastern Redcedar	0	4,260	4,260
Black Cherry	0	3,770	3,770
Blackgum	1,610	1,610	3,220
White Ash	3,020	0	3,020
White Oak	2,050	0	2,050
Red Elm	0	1,980	1,980
TRACT TOTALS	288,510	211,760	500,270
PER ACRE TOTALS	5,770	4,235	10,005

Stocking Guide

Compartment 02 Tract 04



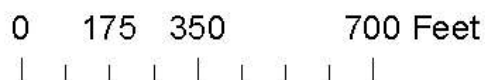
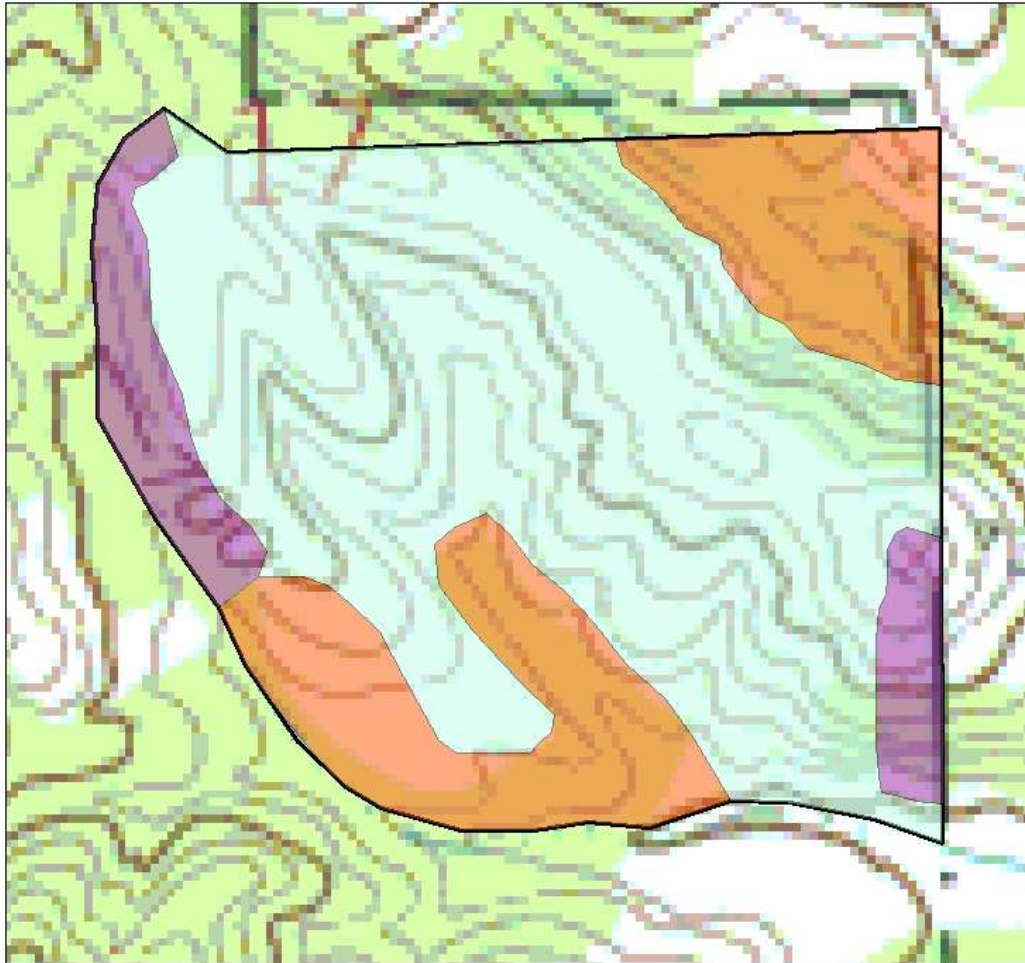
Pre-Harvest Inventory Data in Red

Total BA/A = 90 sq.ft./AC
Total #trees/acre = 140
Avg. tree diameter = 11 inches
Percent stocking = 88%

Post-Harvest Inventory Data in Blue

Total BA/A = 70 sq.ft./AC
Total #trees/acre = 104
Avg. tree diameter = 11 inches
Percent stocking = 67%

Jackson-Washington State Forest
Compartment 02 Tract 04
Tract Subdivision Map



Jackson-Washington State Forest Compartment 02 Tract 04 Soils Map

