Indiana Department of Natural Resources – Division of Forestry

Draft

RESOURCE MANAGEMENT GUIDE

State Forest: Jackson-Washington Compartment: 5 Tract: 14
Forester : Sandy Derringer Date: 12/10/2014
Management Cycle End Year: 2038 Management Cycle Length: 20 years

Location

This tract is located in Section 3, T4N, R4E of Jackson County. It is located off County road 400 south. The tract is approximately 7 miles south of Brownstown, IN.

General Description

Located East of Starve Hollow State Recreation Area and northeast of Starve Hollow Lake, this 61 acre tract is comprised mostly of North and East facing slopes. Two existing, maintained fire-access roads (310 & 320) are present providing management access to this tract and others within the compartment. The Lakeshore (Yellow) hiking trail is located in the tract. The Cabin site trail (White) and Vista trail (Blue) both touch the southern section of the tract.

History

This tract is part of four different purchases. The first purchase was from Abbie Humphrey, Rebecca Humphrey, Virgil D. Humphrey, Lizzie Humphrey, Iva Humphrey Robertson and Lynn Robertson July 1935 containing 40. The second purchase was from Edward Tuelker and Anna Tuelker on August 19, 1935 containing 40 acres. . Another purchase was from John George H. Snyder on September 30, 1935 containing 42.41 acres. The final purchase was from the Brownstown Loan and Trust Company on March 23, 1942 containing 40 acres. All are located in Section 3, T4N, R4E of Jackson County.

Landscape Context

The area to the west of this tract is Starve Hollow State Recreation Area. A 280 acrestate owned and operated modern recreational facility that includes a 146 acre lake and campground offering a variety of camping and day use opportunities.. South and southwest of the tract is additional state forestground. Land to the northwest and northeast is private ownership comprised of agricultural crop land, pastures, scattered rural residential homes and forestland.

Topography, Geology and Hydrology

The tract has some steep to very steep north, east and west facing slopes. The ephemeral that turns into an unmapped intermittent stream on the east side and Mill Creek to the north both flow into Starve Hollow Lake. The soil is very rocky and loose near the tops of the ridge. Underlying bedrock is composed of siltstone, fine grained sandstone and some interbedded siltstone and soft shale.

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 Bean blossom 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.

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.

Kurtz silt loam (KtF) 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, 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, persimmon, northern red oak, scarlet oak, shagbark hickory, and white oak.

Sg--Steff silt loam, rarely flooded

This moderately well drained soil has a seasonal high water table at 1.5 to 2.5 ft. and is on flood plains. Slopes are 0 to 2 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 in/hr) in the most restrictive layer above 60 inches. Available water capacity is high (10.8 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5.

TlC2--Tilsit silt loam, 6 to 12 percent slopes, eroded
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. The erosion hazard, the equipment limitations, and plant competition are the main concerns in the management of wooded areas. 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, bur oak, chestnut oak, scarlet oak, red oak, and white oak

Access
Access to this tract is a maintained gravel road south of county road 400south. From SR135 turn south onto County Road 310 (Lake Road) go approximately 1 ½ miles and turn east on County Road 400 south. Go approximately one mile and turn south onto a well maintained gravel road that crosses Mill Creek. The tract starts on the other side of Mill Creek. The two gravel roads that run through the tract and above the tract are well maintained with regards to vehicle access and are currently used for management access..

Boundary
The North and West boundaries are Mill Creek and Starve Hollow Lake, respectively. . The southern boundary is an old unused roadbed running from the lake edge up a finger to the ridge top and across the ridge top until you cross a well maintained gravel road. From there, you head north down the drain and to a property boundary that runs north/south.

Wildlife

	Maintenance Levels	Optimal Levels	Inventory	Available Above Maintenance	Available Above Optimal
Snags (all Species)					
5" + DBH	244	427	685	441	258
9" + DBH	183	366	378	195	12
19" + DBH	30.5	61	32	1	-29

A 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.

The cruise data shows that the number of snags is above the maintenance level and optimal level in all but the 19"+ class. The number of snags in the 5"+ and the 9"+ class exceed the optimal level. Post harvest Timber Stand Improvement should increase the snags in this tract.

Communities

A Natural Heritage Database review was completed for the tract. 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.

Some multiflora rose was noted near the access road near the north end of the tract. It will be monitored for spread.

This tract consists of mostly mixed hardwoods, oak-hickory and on the ridge tops chestnut oak timber types. Regeneration is basically American beech and sugar maple with the occasional oak and hickory.

Forest Condition

Permanent Openings	
Other Uses	
TOTAL AREA	61

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
American Beech	26,560	28,030	54,590
American Elm	2,800		2,800
American sycamore	12,300		12,300
Black Cherry	2,580		2,580
Blackgum	8,330		8,330
Black locust	3,190		3,190
Black oak	3,990	15,860	19,850
Black Walnut	1,250	7,090	8,340
Chestnut oak	39,430	45,640	85,070
Eastern White pine	13,320		13,320
Northern Red oak	18,750	37,110	55,860
Pignut hickory	2,190	38,370	40,560
Red Maple	14,580	1,930	16,510
Sassafras	2,170	1,810	3,980
Shagbark hickory		19,870	19,870
Sugar maple	18,960	51,050	70,010
Sweetgum	2,390		2,390
White ash	34,460	6,360	40,820
White oak	3,550	10,420	13,970
Yellow poplar	45,290	91,650	136,940
			0
			0
			0
			0
TRACT TOTALS	256,090	355,190	611,280
PER ACRE TOTALS	4,198	5,823	10,021

The inventory for this tract showed an estimated total volume of 611,290bd.ft., harvest volume of 256,090bd.ft and a leave volume of 355,200bd.ft.. The estimated per acre volumes are 10,020bd.ft.per acre total volume, 4,200bd.ft. per acre harvest volume and 5,820bd.ft.per acre growing stock. The top three species by volume in the harvest category are yellow poplar, chestnut oak, and white ash. The top three species in the tract by total volume are yellow poplar, chestnut oak, and sugar maple. The stocking shows current stocking at 80% with a reduction to 52% stocking after the harvest. Current basal area is 104.1sq.ft.per acre with a post harvest basal area estimated at 66.56sq.ft. per acre. The trees per acre will decrease from 88 to an estimated 68 trees per acre after the harvest. The dominate understory in the tract is American beech and sugar maple with sparse areas of oak and hickory.

Recreation

Recreational use of this tract is fairly high due to its proximity to the campground and lake which allow for easy viewing and access. Hikers use the Lakeshore Loop located within the tract and the Vista and Cabin loops present along the southern edge of the tract throughout the spring, summer and fall. The tract is open to public hunting and is heavily used during the various public hunting season (e.g., squirrel, deer, turkey, mushrooms, etc) . Management implementation will consider these recreational uses and plan for their continuation.

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. Old fencing was seen in some trees.

Tract Subdivision Description and Prescription

Mixed hardwoods (47.7**)-** This area makes up the majority of the tract acreage. . It is composed of yellow poplar, American beech, sugar maple, red oak, white oak, black oak, and pignut hickory. Regeneration is mainly American beech and sugar maple. Some multiflora rose was seen along the access road to the north of this area and will be monitored..The management prescription for this subdivision would be to implement an improvement harvest utilizing single tree selection. Group selection openings can be utilized away from the hillsides near Starve Hollow Lake to preserve the view and prevent possible erosion. The openings will focus on the removal of low quality hardwoods and white ash. Within the regeneration openings species likely to occur in the years following the harvest and completion of the openings via post harvest timber stand improvement are the following: American beech, yellow poplar, pignut hickory, ash and sugar maple. The single tree selection will focus on the removal of poor quality, competing and over mature trees to release the healthy more vigorous trees present. This will provide additional sunlight and nutrients to enhance the development of the mixed hardwood forest that remains. Some of the white ash along the fire access road have been marked and sold for removal as part of an ash salvage sale in the area due to Emerald ash borer infestation.

Oak – Hickory (10.2**) –** This area is mainly on the upper part of the ridge running to the northwest and along fire access road 310 that runs southwest from where it intersects with the ridge. The predominate overstory species observed were chestnut oak and pignut hickory with a few red oaks. Regeneration is mainly American beech and sugar maple with a few hickories. The single tree selection method will focus on the 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 development of the oak-hickory residual stand. Some of the white ash along the fire access road have been marked and sold for removal as part of an ash salvage sale in the area due to Emerald Ash Borer infestation. .

Proposed Activities Listing

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

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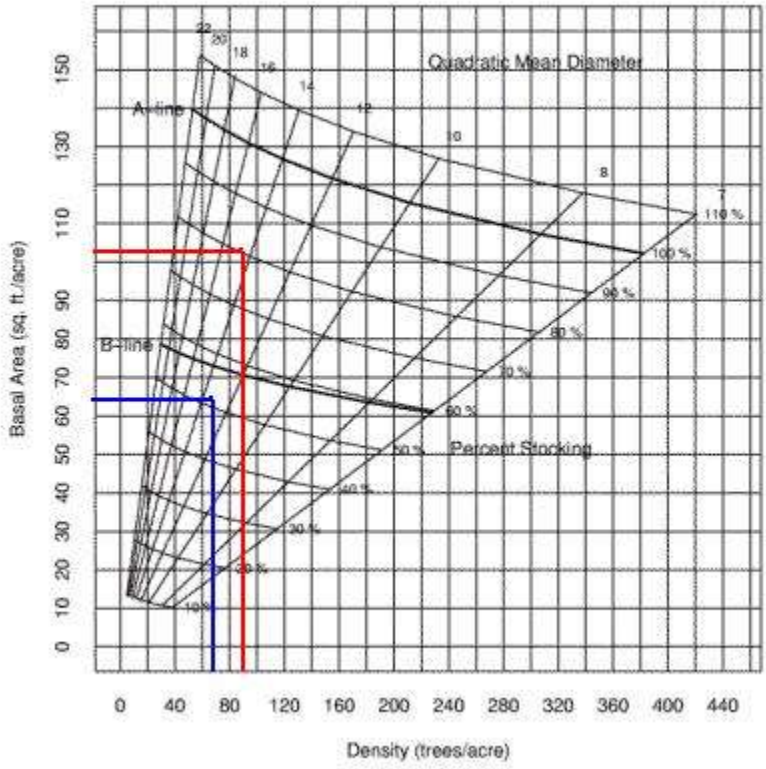
Note: Some graphics may distort due to compression.

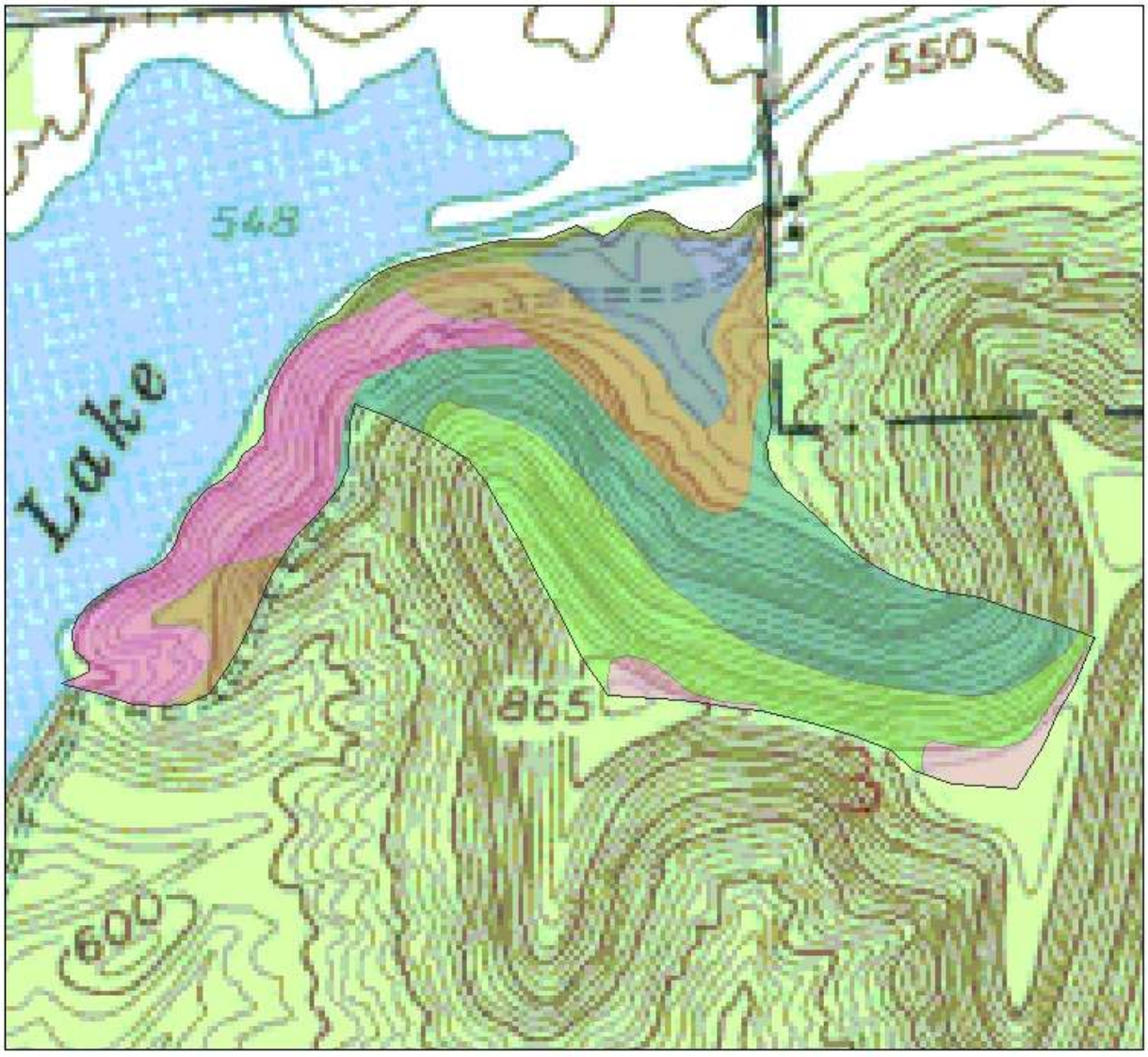
Stocking Guide
Compartment 05 Tract 14
61 Acres



Pre-Harvest Inventory Data in Red
(Sub merchantable trees excluded)
Estimated Pre-Harvest Data
Total Basal Area per Acre = 103.1square feet per acre
Total Number Trees per Acre = 87
Average Tree Diameter = 14.8inches DBH
Percent Stocking = 80%

Post-Harvest Inventory Data in Blue
(Sub merchantable trees excluded)
Projected Post-Harvest Data
Total Basal Area per Acre = 66.56 square feet per acre
Total Number Trees per Acre =68
Average Tree Diameter =13.2 inches DBH
Percent Stocking = 52%

Jackson-Washington State Forest
Compartment 05 Tract 14
Soils Map



Legend

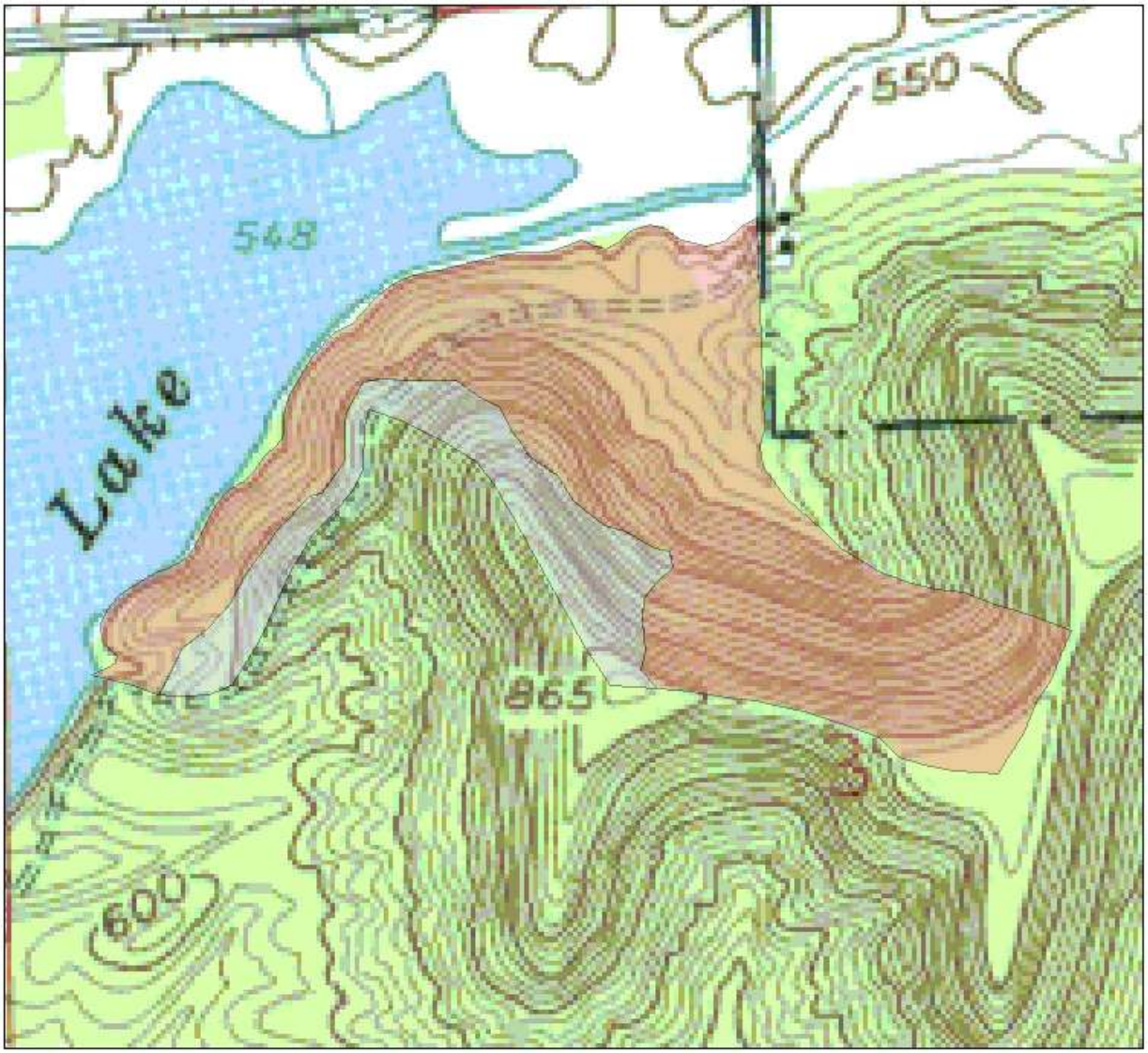
BcrAW BeG CoD GnF KtF Sb TtC2 W

Tract Boundary

N
W E
S

0 315 630 1,260 Feet

Jackson-Washington State Forest
Compartment 05 Tract 14
Tract Subdivision Map



Legend

- Mixed Hardwoods
- Oak-Hickory

0 330 660 1,320 Feet

N
W E
S