TM 901

RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

		Compartment:	9
Jackson-Washington State Forest		Tract:	16
Forester:	Brian Bailey	Date:	6/20/07

ACREAGE IN:

Commercial Forest	75	Average Site Index	76
TOTAL AREA	75	Avg. Annual Growth	149.7
		Total B.A./Acre	114.1

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

SPECIES	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
American Beech	5,110	3,230	8,340
American Sycamore	1,690	5,310	7,000
Black Cherry	3,010		3,010
Black Oak	28,480	16,740	45,220
Chestnut Oak	100,960	53,550	154,510
Eastern White Pine	14,000	28,090	42,090
Northern Red Oak	10,630	4,190	14,820
Pignut Hickory	5,300	4,690	9,990
Red Maple	2,100	9,840	11,940
Scarlet Oak	5,810	8,250	14,060
Shagbark Hickory	1,630	0	1,630
Shortleaf Pine	0	2,300	2,300
Sugar Maple	18,320	8,710	27,030
Sweetgum	0	2,680	2,680
Virginia Pine	0	4,400	4,400
White Ash	0	5,140	5,140
White Oak	26,680	13,390	40,070
Yellow Poplar	8,520	7,350	15,870
TRACT TOTALS	232,240	177,860	410,100
PER ACRE TOTALS	3,097	2,371	5,468

PREVIOUS CRUISE DATA

DATE:	December, 1988	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		2,088	535	2,623

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RESOURCE MANAGEMENT GUIDE

FORESTER'S NARRATIVE

Jackson-Washington State Forest
Compartment 09 Tract 16
Foresters: Brian Bailey and Michael Spalding
Date: July 2007

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Tract 16 is located ½ north of Clay Hill Hollow. More specifically, it is located in Sections 1 and 2 of T3N R4E and Section 36 of T4N R4E, Monroe Township, Washington County. It contains 75.2 acres, predominately steep slopes with a southern aspect, descending into gentler topography along the stream bottom. The tract is bordered on all four sides by state property. The bordering tracts are tract 20 to the west, tracts 19 and 18 to the south, and tract 13 to the east.

Access to the tract is fair, although a long distance from Pulltight Road. From the intersection of Pulltight Road and Mail Route (Firetrail 710), travel approximately 3.75 miles to Firetrail 720. The tract is approximately 1.1 miles back Firetrail 720.

History

The creation of tract 16 resulted from five (5) larger purchases: 153 acres from Columbus P. Baskerville and Edith N. Baskerville on November 20th, 1959; 40 acres from William L. Thompson, as Administrator of the Estate of Johnie Cole, on February 18th, 1964, for the sum of $640.00; 37.5 acres from Wayne Calloway and Patsy Harned Calloway on October 12th, 1957; 150 acres from Virgil Fleenor, et al. (this includes all of Virgil Fleenor's brothers and sisters), as heirs of Joseph H. Fleenor, on September 8th, 1954; and 40 acres from Hubert W. and Helen L. Seal, on March 8th, 1963.

A cruise of this tract in December 1971 and subsequent management plan stated the following about this tract:

> Only 15 trees were tallies on the entire 104 acres as cut or leave trees. Most of the acreage is too poor to produce sawtimber and the land that is good enough is only supporting pole size trees. The beech-maple portion should be TSI'd to permit ingrowth of tulip. Three turkeys were observed during the cruise, thus the area might best be utilized for turkey management.

Thirty-six years later this stand is in need of a timber sale for management and the turkey population is flourishing.

The current tract 16 is only a portion of the original. Tract 20 contains the remaining acreage from the original Tract 16. A 1988 management plan states that the tract was 127 acres. Currently Tract 16 is listed as 75 acres, and Tract 20 is listed as 70 acres. Maps from 1988 show the same land area; therefore, I attribute the difference in acreage to improvements in technology providing a more accurate estimate now.

A cruise and management plan for tract 16 was completed by forester John Friedrich on December 23, 1988. The cruise indicated approximately 2,624 bd. ft. per acre, with 535 bd. ft. available as harvest stock and 2,088 bd. ft. to be left as growing stock. This accounted for an estimated total tract volume of 333,220 bd. ft., with 68,001

bd. ft. available as harvest stock and 265,219 bd. ft. to be left as growing stock. Due to the low amount of harvest stock available and areas of smaller trees present, Friedrich recommended TSI. The TSI was not performed.

Soils

Burnside silt loam (Bu) occasionally flooded; well drained and bottom land is moderately well drained. Available water capacity and permeability is both moderate. Soil is well suited for trees while plant competition is moderate and seedlings do well if competing vegetation is controlled. Burnside silt loam has a yellow poplar site index of 95 and an eastern cottonwood site index of 105.

Berks-Weikert Complex (BhF) 25 to 75 percent slope; well drained soil on the upland side slopes. Both soils are very intermixed so they are mapped as one. Berks has a northern red oak site index of 70, Weikert has a northern red oak site index of 64, and both have black oak site index of 50.Gilpin silt loam (GlD2)

Wellston silt loam (WeC2) 6 to 12 percent slopes, eroded; is a deep, well drained upland soil. This soil type has a yellow-poplar site index of 90 and a northern red oak site index of 71.

Wellston silt loam (WeD) 12 to 18 percent slopes; is a deep, well drained soil found on side slopes adjacent to drainages. This soil type has a yellow-poplar site index of 90 and a northern red oak site index of 71.

Zanesville silt loam (ZaB) 1 to 6 percent slopes; is a deep, moderately well-drained to well drained soil. This soil type has a black oak site index of 75 and a yellow-poplar site index of 90.

Each soil type present will support harvesting equipment with certain locations being avoided due to topographical limitations. BhF is listed with severe equipment limitations due to slopes ranging up to 75 percent.

Wildlife

Wildlife present includes, but not restricted to, the following: white-tailed deer, wild turkey, gray and fox squirrels, chipmunks, raccoons, eastern box turtles, hawks, Pileated woodpecker, Wood thrush, and other song birds. An improvement harvest in this tract should benefit both game and non-game species through the creation of additional foraging and nest habitat. Using both single tree and group selection provides habitat for early-, mid- and late-successional wildlife species.

Indiana Bat Management Guidelines

The following present values were determined from the inventory:

	Live trees:	**Present**	Goal	Available for Removal
Minimum	11” +dbh	826*	675 *	151
	20” +dbh	188*	225 *	-37

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	Snags:	**Present**	Goal	
Minimum	5" +dbh	1625	300	1325
	9" +dbh	357	225	132
	19" +dbh	0	38	-38

* The present and goal only include the following Desired Live Tree Species: AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

The minimum count for the largest snag and live tree size classes are below the goals. Timber marking will favor retention of these tree species preferred by the Indiana bat and minimize their removal. Release of these species in the smaller size classes will promote an increased number of these trees into larger size classes.
Very few, if any, snags are marked in a typical timber harvest. Through post-harvest TSI, the number of snags will be increased by deadening large hollow cull trees.

The nature of improvement cuttings lends itself to the known Indiana bat habitat. Removal of single trees will permit light and crown space for the residual trees. This temporary opening in the forest canopy lends itself to ease in movement for bats during flight as they capture their prey. Trees opened up to increased sunlight are able to capture the increased warmth for bats under the exfoliating bark. Regeneration openings also provide pockets within the forest canopy for bats to obtain prey while in flight. It has also been discussed that bats frequently use skid roads and haul roads as flight paths in capturing food and travel routes.

Recreation

Recreational use of this tract is moderate, due to a portion of the Knobstone trail that is routed through it. Hunting use is likely minimal due to the distance from public parking access. Signs will be posted to educate the public about current management activities and list areas that are closed to public access. The tract will reopen once the timber harvest has been completed. Signs to warn of safety concerns related to any TSI work completed on the tract will also need to be posted. These policies are administered to address safety issues.

Tract Subdivisions

Area 1 – Pine/Hardwood

This southern portion of the tract is an old abandoned field site that was planted to eastern white, shortleaf, and Virginia pine. The white pine are the most numerous and largest volume of all three species. A fair amount of hardwoods have naturally regenerated on this site. The basal area is approximately 110 square feet. My recommendation for this area is to remove all of the pine trees in the harvest. None of these species are native to this site, and their removal will allow this area to return to a stand of native hardwoods. In the case of areas where hardwoods are already established, removing the pine will provide release to allow the hardwoods to increase in growth and vigor. In areas where the pines completely occupy all of the growing space, their removal will allow regeneration of native hardwood species.

Area 2 – Chestnut Oak

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This area consists of the upper slopes and ridge-top. Chestnut oak is by far the most dominant species in this area; however pignut hickory, black oak, and white oak are also present. This area is overstocked with timber ranging from poor to excellent quality. My recommendation for this area is to conduct an intermediate thinning harvest to release the vigorous, healthy trees and remove the damaged, defective, and unhealthy trees. Also, any hickory , white oak, scarlet oak, red oak, or black oak trees that are healthy in this area should be favored over the chestnut oak in order to promote and maintain a larger diversity of species.

Area 3 – Oak-Hickory

This area contains some of the poorest soils and timber located at Jackson-Washington State Forest. The primary species in this area are chestnut oak, black oak, white oak, and scarlet oak. The quality is terrible, likely due to a combination of poor soils, grazing history, and fire history. Most of the stems are hollow and pole or small sawtimber sized. A substantial amount of advanced oak regeneration is present in this area, predominantly chestnut oak. If while marking the timber harvest, there is determined to be enough merchantable timber in this area to justify it, an opening should be marked here to promote the advanced oak regeneration already present. Even if no volume is present, the area should be opened through TSI to encourage the oak regeneration present.

Area 4 – Mixed Hardwoods

This is a mixed hardwoods section that covers most of the mid range slopes. It is predominately chestnut oak, black oak, white oak, pignut hickory, shagbark hickory, sugar maple and red maple. The white oak and black oak potential is great in this area and should be favored during a thinning harvest. Several hollow cull beech trees are present on the lower western slope and should be girdled to create large diameter snags and to release the healthier trees currently competing with them. Enough oak and maple trees are at or beyond maturity to justify a timber harvest in the next 3 to 5 years, and TSI should coincide with the harvest to help any desirable stems not released by the harvest.

OVERALL

The inventory indicated approximately 5,468 bd. ft. per acre, with 2,371 bd. ft. available as harvest stock and 3,097 bd. ft. to be left as growing stock. This accounts for an estimated total tract volume of 410,100 bd. ft., with 177,860 bd. ft. available as harvest stock and 232,240 bd. ft. to be left as growing stock. The top three harvest species by volume are chestnut oak, eastern white pine, and black oak. The overall recommendation for this tract is to conduct an intermediate harvest over most of the tract to remove competing, defective, and mature trees. As mentioned earlier, the pine should be targeted for removal. Another regeneration opening is recommended for Area C. This harvest should take place within the next five years and should be combined with the adjacent tract 20. TSI after the harvest is recommended to release younger more vigorous crop trees not successfully released during the harvest and to complete the openings. The marking objective is to remove mature/over-mature stems, low quality stems, and stems of less desirable species in an effort to improve the overall health, vigor and composition of the stand. The white oak should be favored in the benefit of improving the Indiana bat habitat, and should be allowed to grow into the largest DBH classes where our goals are

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currently unmet. The reduced stocking level throughout the tract will provide ample space for pre-selected crop trees to move forward into the next cutting cycle. A healthier, more vigorous stand with good species composition will be less susceptible to insect and disease infestation a common problem with unhealthy stands. These management techniques will improve the overall health, vigor and quality of the residual stand, while capitalizing on stems dropping out due to natural morality from overstocking and maturity.

Wildlife will benefit from this harvest as well. Additional sunlight penetrating the forest floor will stimulate the development of new ground flora, subsequently increasing nesting and foraging habitat. This is essential for game and non-game species as well as continued forest development. TSI will increase snag per acre while diversifying diameter distributions of both snags and growing stock trees.

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RESOURCE MANAGEMENT GUIDE

SPECIFIC PRACTICES FOR ACCOMPLISHMENT

(tree planting, TSI, harvest, special product sales, wildlife work, erosion control, unique areas, recreation, etc.)

Jackson-Washington State Forest
Compartment 09 Tract 16
Date: August 9, 2007

Year Planned	Practice	Year Accomplished
Fiscal Year 2011	Mark and sell timber	
2013	Post harvest TSI	
2033	Inventory and Management Guide	

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 "Jackson-Washington C9 T16" 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.

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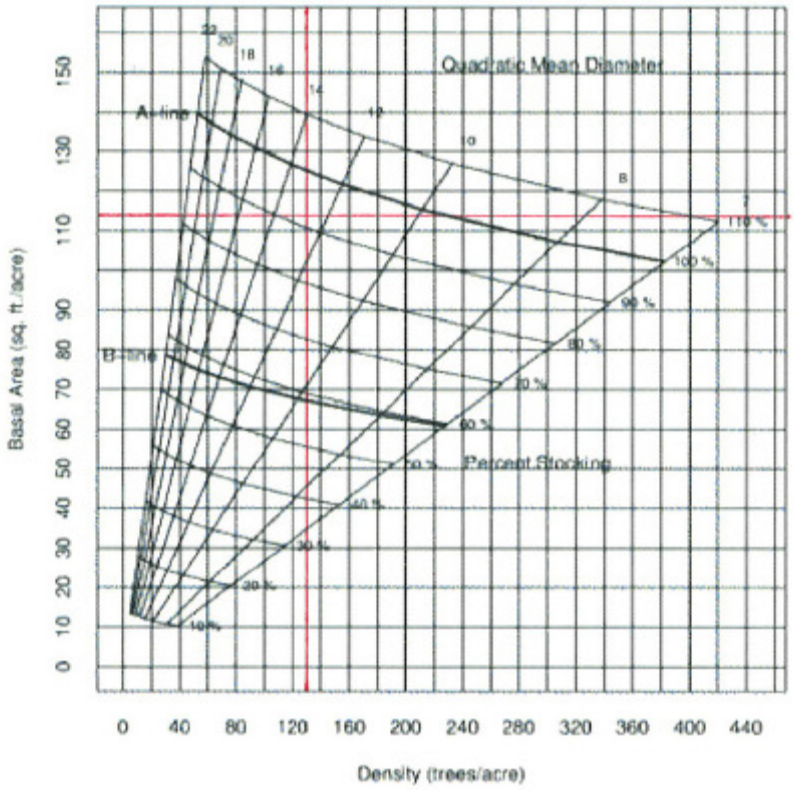
JWSF Resource Management Plan
C 09 T 16 Tract Stocking
July 2007 Inventory
75 acres



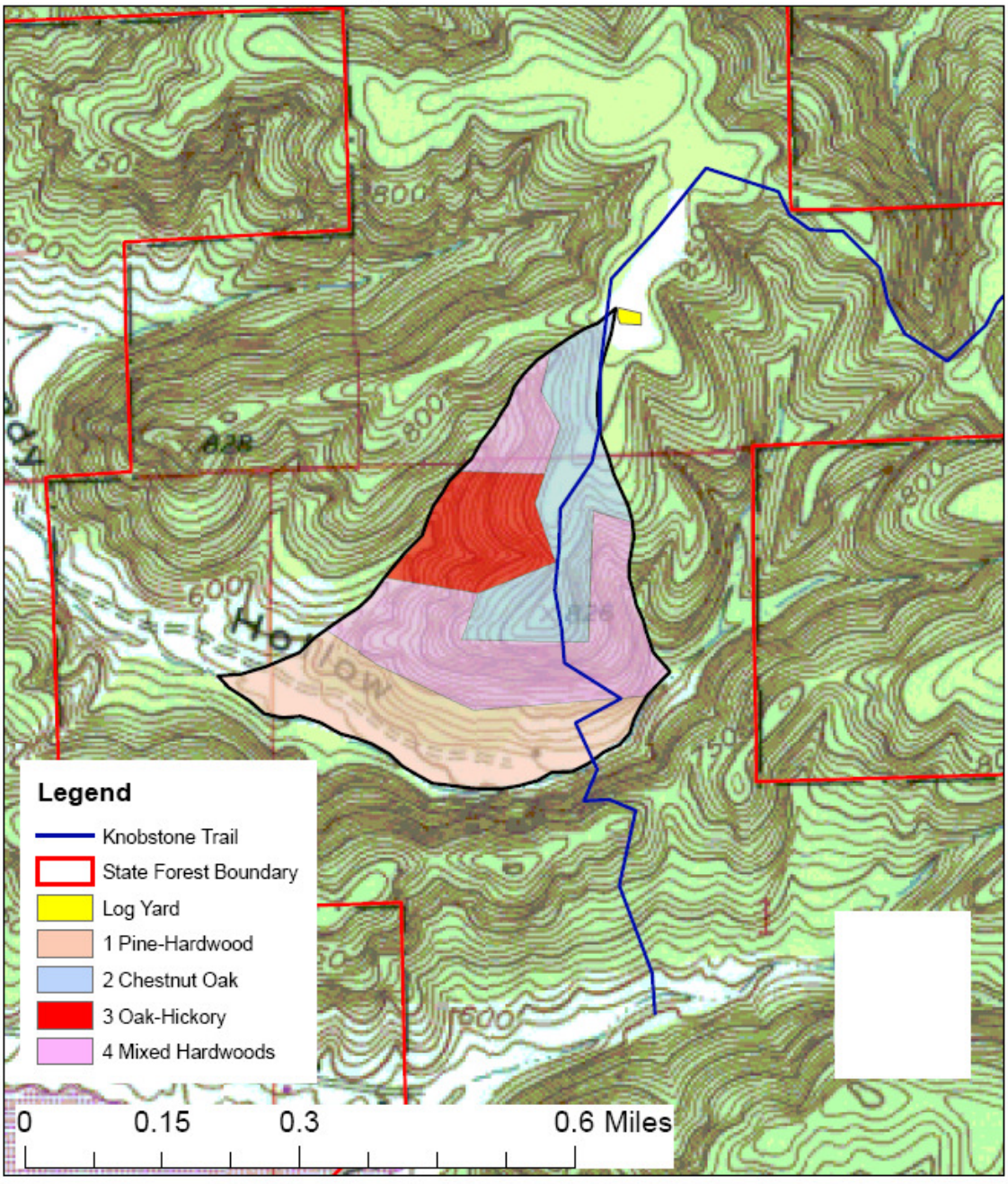
Total BA/A = 114.1 sq.ft./AC

Total #trees/acre = 134

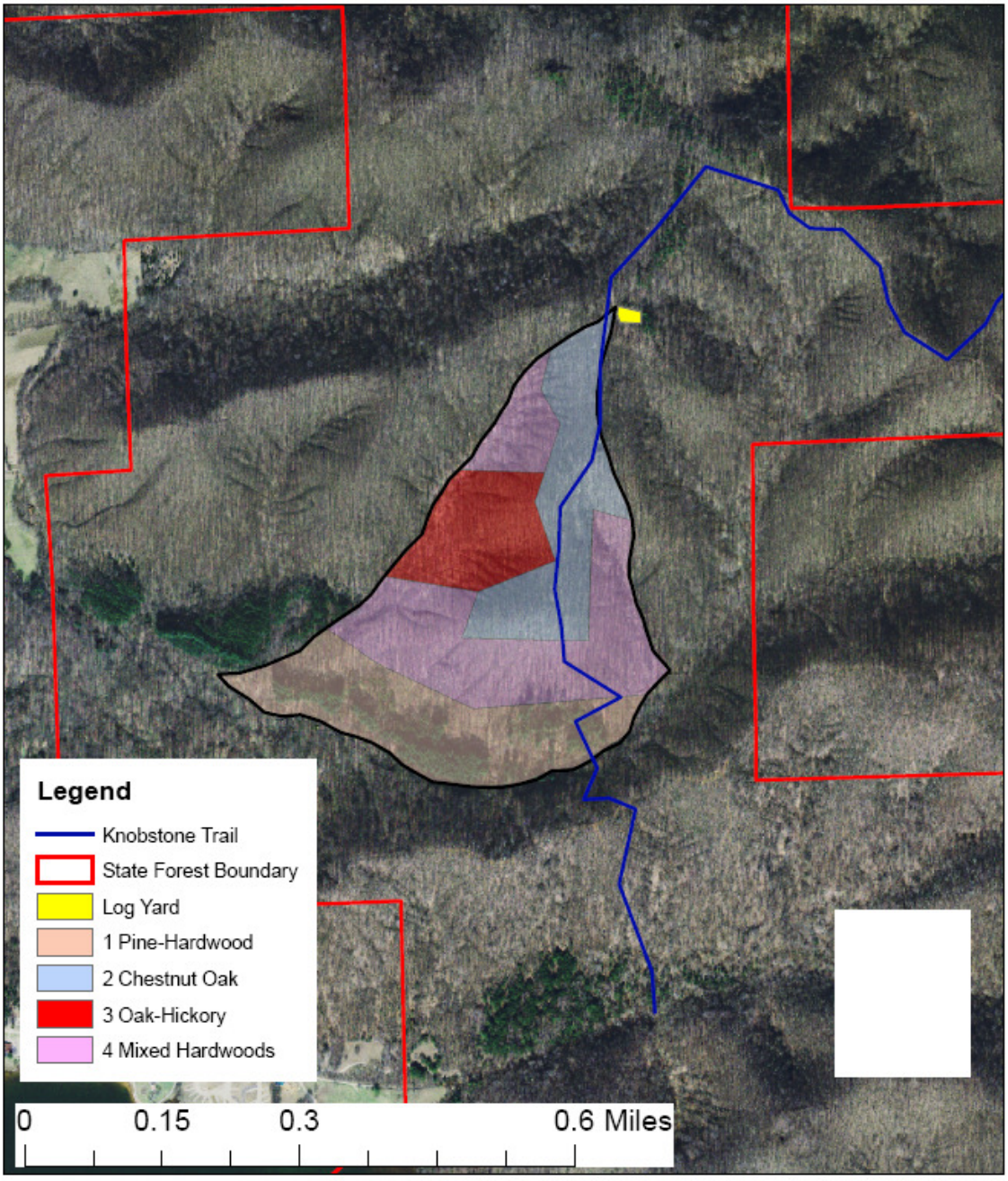
Avg. tree diameter = 12.5

Percent stocking = 92%

Jackson-Washington State Forest
Tract Subdivision Units
Compartment 9 Tract 16



Jackson-Washington State Forest
Tract Subdivision Units
Compartment 9 Tract 16



Jackson-Washington State Forest
Soils
Compartment 9 Tract 16