TM 901	
RESOURCE MANAGEMENT GUIDE	
INVENTORY SUMMARY	

			Compartment:	5
Jackson-Washington State Forest			Tract:	5
Forester:	Scott Funk		Date:	7/1/09

ACREAGE IN:

Commercial Forest	56.6	Total B.A./Acre	137.7
Non-Commercial		B.A. Saplings	12.8
Recreation Use		B.A. Sawtimber	100.9
Permanent Openings	0.4	B.A. Poles	15.4
Other Uses		B.A. Culls	8.6
TOTAL AREA	57		

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
American beech	7,970	5,270	13,240
American sycamore	0	1,290	1,290
basswood	5,190	1,740	6,930
black oak	16,740	20,480	37,220
black walnut	0	1,700	1,700
butternut	0	2,490	2,490
chestnut oak	25,290	84,230	109,520
mockernut hickory	1,910	0	1,910
northern red oak	7,920	18,060	25,980
pignut hickory	3,060	23,260	26,320
red elm	0	2,150	2,150
red maple	970	1,050	2,020
scarlet oak	1,670	0	1,670
shagbark hickory	0	11,070	11,070
sugar maple	13,490	18,350	31,840
Virginia pine	19,330	0	19,330
white ash	5,420	0	5,420
white oak	6,600	49,600	56,200
yellow-poplar	51,570	83,140	134,710
TRACT TOTALS	167,130	323,880	491,010
PER ACRE TOTALS	2,932	5,682	8,614

PREVIOUS CRUISE DATA				
DATE:	01/16/90	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		2,212	634	2,846

RESOURCE MANAGEMENT GUIDE

Jackson Washington State Forest — Compartment 05 Tract 05
Forester Scott Funk — Date: July 1, 2009
Management Cycle End Year 2032 — Management Cycle Length 23 years

Location

The tract is located in Section 2 T4N R4E in Grassy Fork Township in Jackson County. The tract can be entered off of Starve Hollow road at fire access road 310 and travel a distance of approximately 1.35 miles. This tract begins approximately at 3.14 miles southeast of Vallonia.

General Description

This 57 acre tract changes in topography from the very steep ridges with deep eroded hollers on the south to southeastern section to the flat rolling finger ridges to the north and north east. There is an old eroded field in the west section of the tract and planted Virginia pine in an old field to the north east. There is a mapped intermittent stream that flows from the east to the south west through the middle of the tract. The tract also features good quality yellow poplar and oak-hickory stands.

History

The land containing compartment 5 tract 5 is made up from two larger purchases. The first purchase was from Artie C. and Freda G. Leffler on June 13, 1939 and was a total of 178.3 acres with 49 acres of that making up a portion of the current tract. The second purchase was from Raymond and Louise Wolff on April 25, 1963 and was a total of 80 acres with approximately 8 acres contained in the current tract 5. This tract was formerly compartment 24 tract 1 and had a timber management plan done on December 10, 1968 stating that; “past uses of the land prior to acquisition have left it so badly eroded it will probably require many years to put this land in production.” Restoration of the tract was the primary goal for management then, but it was adequately stocked with mixed hardwoods and Virginia pine. In 1968 the tract was a total of 40 acres, 32 acres of merchantable timber, 8 acres of non merchantable pine. On 1/16/90 Eric Johnson prepared a resource management guide stating that compartment 05 tract 05 had an average site index of 76, average annual growth of 68 bf/ac/yr, and total basal area per acre of 88. It had a total volume of 161,866 bdft, 125, 713 bdft of growing stock, and 39,706 bdft of harvest stock. On a per acre basis it had a total of 2,846 bdft, 2,212 bdft of growing stock, and 634 bdft of harvest stock. On 5/26/01 Eric Johnson changed the tract boundary and updated the tract acreage for geographical information systems (GIS). Acreage stayed the same but the tract boundary shifted a considerable amount southward.

Landscape Context

The area of forestland in which compartment 5 tract 5 lies contains approximately 1,700 acres of state forested land. The north block of state forest land across from Starve Hollow road contains approximately 2,850 acres of stated forested land according to Arc

Gis. This area is predominantly forested excluding an area of mixed use private property in between the two state forest blocks including but not limited to residences, agricultural land, campgrounds, ponds, streams, and lakes. The nearest municipality is Vallonia approximately 3.14 miles northwest of the tract and has seen some population increase over the last 10 years consisting mostly of private forested land being broke up and sold off, then turned into subdivisions for family homes.

Topography, Geology and Hydrology

The topography on the south to south east portion of the tract is very steep ridges with deep eroded hollers with slopes of 20 to 55 percent. The center and north eastern portion of the tract has moderately steep rolling hills at slopes of 5 to 20 percent. The northern most part of the tract has fairly steep pointed ridges at slopes of 15 to 30 percent. The western part of the tract has steep eroded short hills from old field use with slopes at 10 to 20 percent. The elevation changes from approximately 600 feet all the way up to 905 feet at its highest point. The geology consists of shale bedrock with siltstone mixed in, while the ridge tops consist of sandstone. The mapped intermittent stream flows into Starve Hollow lake, which flows into Mill Creek, which flows into the Muscatatuck River.

Soils

Berks Channery Silt loam (BeG) (10.64 acres) 25 to 75 percent slope, moderately deep well drained very steep soils. Water capacity is low and permeability is moderately rapid and has a severe hazard of erosion. North aspects have better productive tree growth than the south side. Depth to bedrock is 20 to 40 inches deep. Berks Channery silt loam has a northern red oak, black oak, and Virginia pine site index of 70.

Coolville silt loam (CoD) (13.55 acres) 12 to 20 percent slope. This moderately steep, moderately well-drained soil; water capacity is moderate and permeability is moderate in the upper and slower in the lower subsoil's. This soil is fairly well suited for tree growth, but has a soil erosion is a major hazard. The depth to bedrock of 40 to 60 inches and the northern red oak site index for this soil is 66, indicating a relatively low productivity.

Gilpin silt loam, (GnF) (14.42 acres) 25-55 percent slope, a very steep, moderately deep, well drained soil on the side slopes. Permeability is moderate with a low water capacity. This soil is fairly well suited for trees with moderate soil erosion. The depth to bedrock is 20 to 40 inches. Gilpin silt loam has a northern red oak site index of 80 and a yellow poplar site index of 95, indicating productive soils.

Kurtz silt loam (KtF) (16.99 acres) 20 to 55 percent slopes, moderately steep, well drained soil on side slopes. The available water capacity and permeability is moderate with a severe erosion hazard. This soil is fairly well suited for tree growth. Depth to bedrock is approximately 40 to 60 inches. Kurtz silt loam has a northern red oak site index of 70, indicating good productive soil.

Stonehead silt loam, (SsC2) (1.62 acres) 4 to 12 percent slopes, gently to moderately sloping, well drained soil on side slopes and ridge tops. Water capacity is high with a

moderate permeability but slow in the lower part. This soil is well suited for trees and they grow well if competing vegetation is controlled properly. Bedrock below Stonehead soils ranges from 40 to 72 inches deep. Stonehead soils have a northern red oak site index of 90, indicating a very productive soil type.

Access

The tract can be accessed from Starve Hollow road on to fire access road #310. The road crosses a stream and turns uphill onto fire access road #320, and then runs up the backside up a ridge and the follows out the top of the ridge until you reach the permanent wildlife opening which is also the southeastern most point of the tract. In the southwestern tip of the tract there is an old skid trail that runs north down the ridge line and runs to the bottom and makes a T where you can travel east or west to access the lower portions of the ridge. A timber bridge will have to be set up to cross the intermittent stream to access the northwest side of the tract. There is also a skid trail that comes down from the wildlife opening and then follows the ridgeline that makes up the eastern and northern boundaries. Overall access to the tract is good, topography limits access to some areas unless harvest is done in conjunction with the neighboring tract (C5T4).

Boundary

The western boundary of the tract adjoins private property for approximately .25 miles. The rest of the tract boundary adjoins state property. The northeastern tract boundary comes off of the highest point in the south and follows the ridge northwest down into a saddle and back uphill over a knob until it hits the private boundary on the northwest corner. The south western tract boundary starts at the property corner at the southern most point of the west line and runs up a deep valley to the top of the ridge. The southern boundary of the tract runs from this previous point along the ridge-top until it enters the wildlife opening.

Wildlife

Wildlife Habitat Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	514.8		1195	680	
20"+ DBH	171.6		245	74	
Snags (all species)					
5"+ DBH	228.8	400.4	604	376	204
9"+ DBH	171.6	343.2	259	87	-85
19"+ DBH	28.6	57.2	54	26	-3
Cavity Trees (all species)					
7"+ DBH	228.8	343.2	1379	1150	1036

11"+ DBH	171.6	228.8	1170	998	941
19"+ DBH	28.6	57.2	422	393	364

* Species Include: AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

The wildlife habitat feature shows all estimations were above available maintenance level. According to the Natural Heritage Database there was an Indiana bat sighting from a mist net capture of a male in another tract in the compartment, there was also a report of a red-shouldered hawk sighting in the compartment. Each time I entered the tract I saw a hawk and I believe it had a nest nearby as it was always in the same area. I saw several does and one velvet buck while inventorying this tract. This tract provides excellent habitat for deer, lots of dense thick paw paw cover with a lot of oak and hickory trees providing food. I also saw several squirrels on the tract. The adjoining tracts to the south have been managed for timber and wildlife; I believe this has had an impact on the frequency of wildlife sightings in this tract.

Communities
The topography found within this tract contains dry upland oak on the north western part of the tract. The understory consists mainly of American beech, sugar maple, and greenbrier. The north eastern part of the tract contains old field areas with Virginia pine and the mid-story consists of sassafras, sugar maple, and American beech with the under-story containing a lot of oak saplings. The western part of the tract consists of eroded old fields with young yellow poplar and oak with an understory of American beech. The south to south eastern parts of the tract contains dry mesic mixed hardwoods with an understory of paw paw. There are also places with stilt grass and multi flora rose bush.

Recreation
There is a hiking and mountain biking trail that follows the fire access road along the southern boundary of the tract. Use of this trail is high during the recreation season due to its proximity to Starve Hollow Recreation Area. During the hunting seasons it is used to access much of compartment 5.

Cultural
Cultural resources may be present on the tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction projects.

Tract Subdivision Description and Silvicultural Prescription

Mixed Hardwoods (11.73 acres)

Most of this area consists of old overmature hardwoods including sugar maple, American basswood, white ash, American beech, yellow poplar, black walnut, pignut hickory, shagbark hickory, chestnut oak, black oak, white oak, northern red oak, and scarlet oak. A lot of the trees in this area are very large sawtimber size, especially the yellow poplar, while the rest of the trees are medium to large sawtimber. The proposed management for these areas is to harvest overmature, damaged, and low quality sawtimber to help release

the young desired crop trees for future growth. Most of these areas had low rates of oak regeneration. The average sawtimber basal area for the mixed hardwoods forest type is 100 sq. ft. per acre.

Virginia Pine (4.54 acres)

In the North central section of the tract and in the North east section there is a Virginia pine plantation. Within the Virginia pine stand there are scattered hardwoods consisting of chestnut oak, black oak, white oak, pignut hickory, American beech, sugar maple, red maple, and sassafras. There is also an abundance of oak regeneration growing on the forest floor; such as, black oak and chestnut oak. The proposed management of these areas is to create an opening by harvesting all Virginia pine and undesired hardwoods while leaving the oak and hickory as a seed source. The opening will allow sunlight to the forest floor letting the oak regeneration grow to help create an oak stand in the future. The average sawtimber basal area for the Virginia pine stand is 90 square feet per acre.

Yellow Poplar (5.84 acres)

This forest type contains over-mature quality yellow poplar with several young yellow poplars predominantly in the east section. The average sawtimber basal area for this yellow poplar stand is 157 square feet per acre. The proposed management for these areas are to harvest overmature, mature, and damaged or heart rot trees. This will help release the young poplar and allow them to reach maturity by the next harvest.

Oak Hickory (16.74 acres)

The major overstory species in this area include chestnut oak, black oak, scarlet oak, white oak, northern red oak, pignut hickory, and shagbark hickory. There is some quality white oak and northern red oak on this tract, medium to large sawtimber size, with good oak regeneration on the forest floor. The midstory to understory mainly consisted of America beech, sugar maple, and paw paw. The proposed management for these areas are to harvest over-mature, competing, and damaged or heart rot trees. The average sawtimber basal area for this forest type is 81 square feet per acre.

Oak Hickory-Chestnut Oak (17.93 acres)

The major overstory species in this area is chestnut oak with a few scattered white oak, black oak, and pignut hickory within these areas. The midstory and understory is mainly chestnut oak with a few American beech, sugar maple, red maple, and sassafras. A good amount of chestnut oak regeneration is occurring on the forest floor. The proposed management for these areas is to harvest or girdle the damaged and poor quality chestnut to help release other crop trees for future growth. The average sawtimber basal area for this forest type is 104 square feet per acre.

Summary of Silvicultural Prescription and Proposed Activities

The inventory concluded in the summer of 2009 estimates the 56.6 acres of commercial forest on this tract contains a total of 491,100 board feet of volume. Out of that amount, 167,140 board feet was estimated as harvest stock and 323,960 board feet was estimated as growing stock. On a per acre basis, the harvest stock is 2,920 board feet and the growing stock is 5,660 board feet for a combined total of 8,590 board feet. The overall recommendation for this commercial forest is an intermediate harvest with group openings in the Virginia pine stand and the yellow poplar stand. All the Virginia pine will be harvested to release the oak-hickory species scattered throughout and allow the oak regeneration occurring on the forest floor to grow and become a hardwood stand. In the yellow poplar stands there are clusters of over-mature trees that when taken out will create small group selection openings. The harvest will target over-mature, competing, damaged, low quality, and poorly formed hardwoods. Following the harvest timber stand improvement should be done to release any crop trees that did not get released during harvest and complete any and all openings. Remove any mid-story or under-story species where there is high potential for oak regeneration. There are sufficient dead snags throughout the tract, so only a few will need to be created post-harvest, which provide nesting and foraging sites for many wildlife species especially the Indiana bat. In approximately 20 years following the harvest and timber stand improvement, another inventory will be done on the tract to see if another harvest is possible.

Proposed Activities Listing

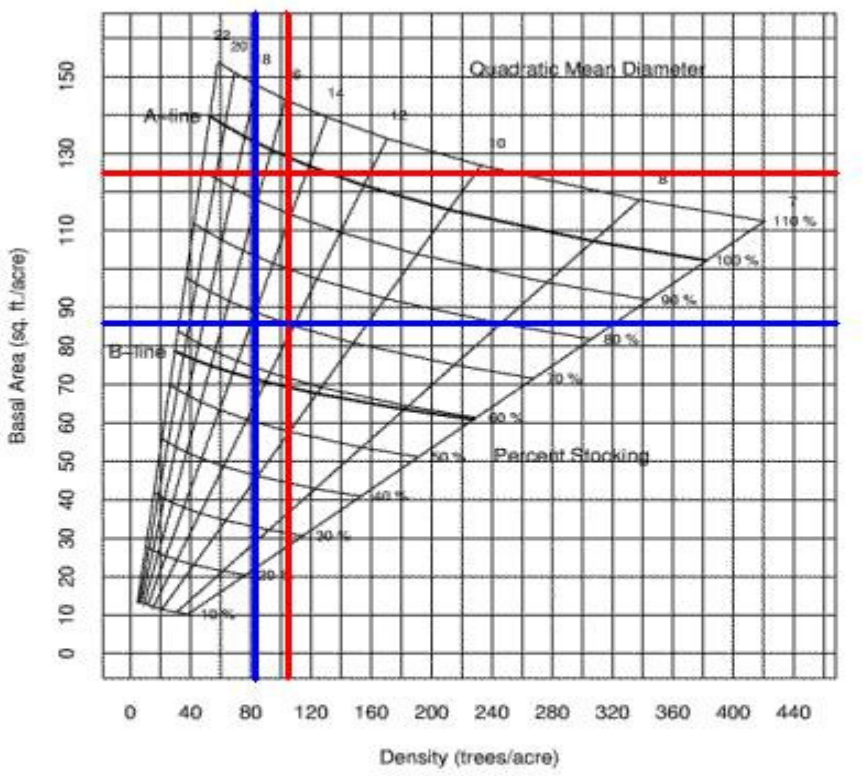
Create a summary list of proposed activities for the tract in approximate chronological order up to the start of the start of the next management cycle, which is the date of the next inventory.

Proposed Management Activity	*Proposed Date*
Mark harvest and sell timber	2010
Post-Harvest TSI	2012
Inventory and Management Guide	2032

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 C5 T5" 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.

JWSF Resource Management Plan
Compartment 5 Tract 5 Stocking Guide
7/1/09 Inventory
57 acres

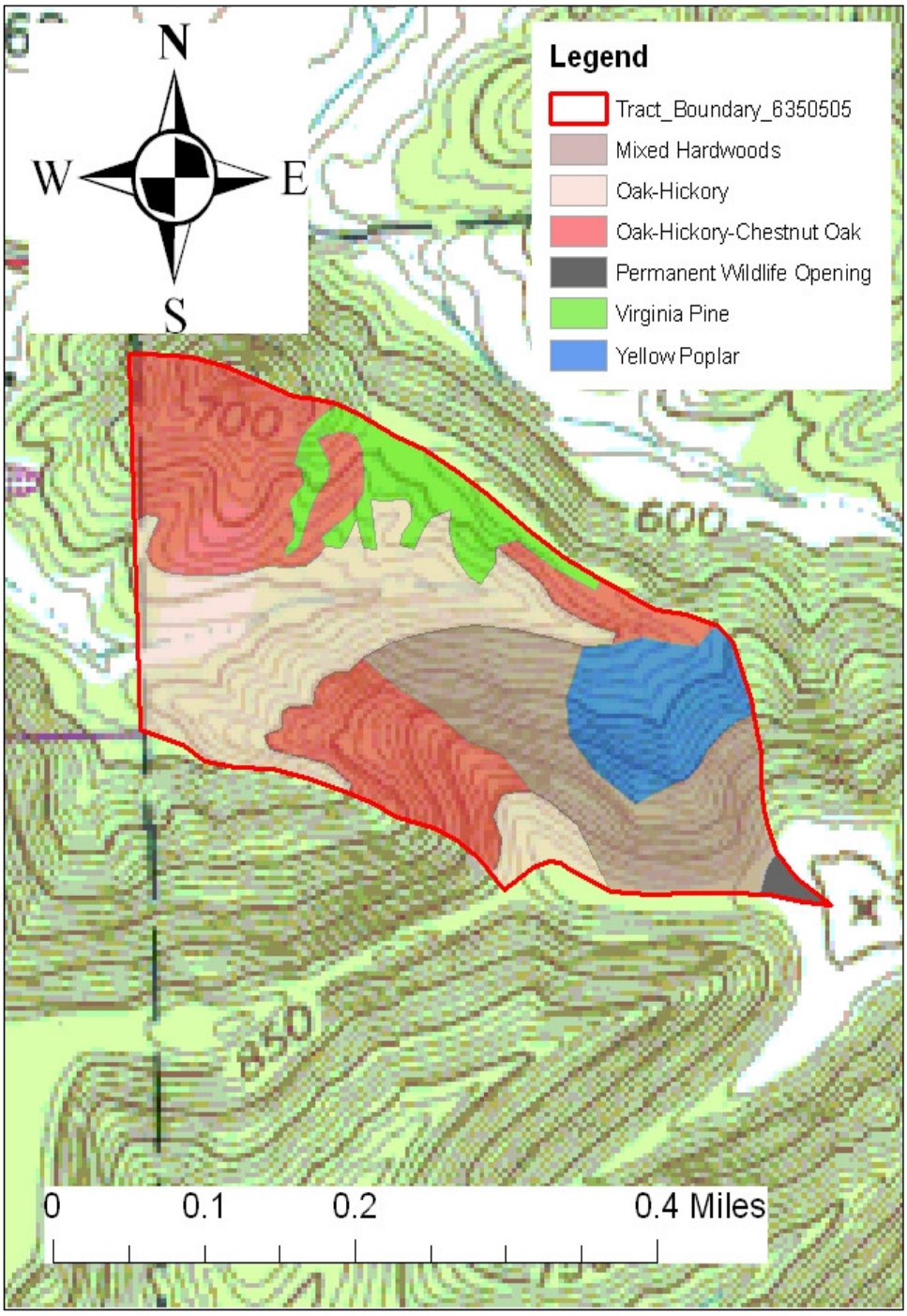


<u>Pre-Harvest Inventory Data in Red</u>
Total B.A. per acre = 124.9 sq.ft.
Total # trees/acre = 105
Avg. tree diameter = 15" DBH
Percent stocking = 97%

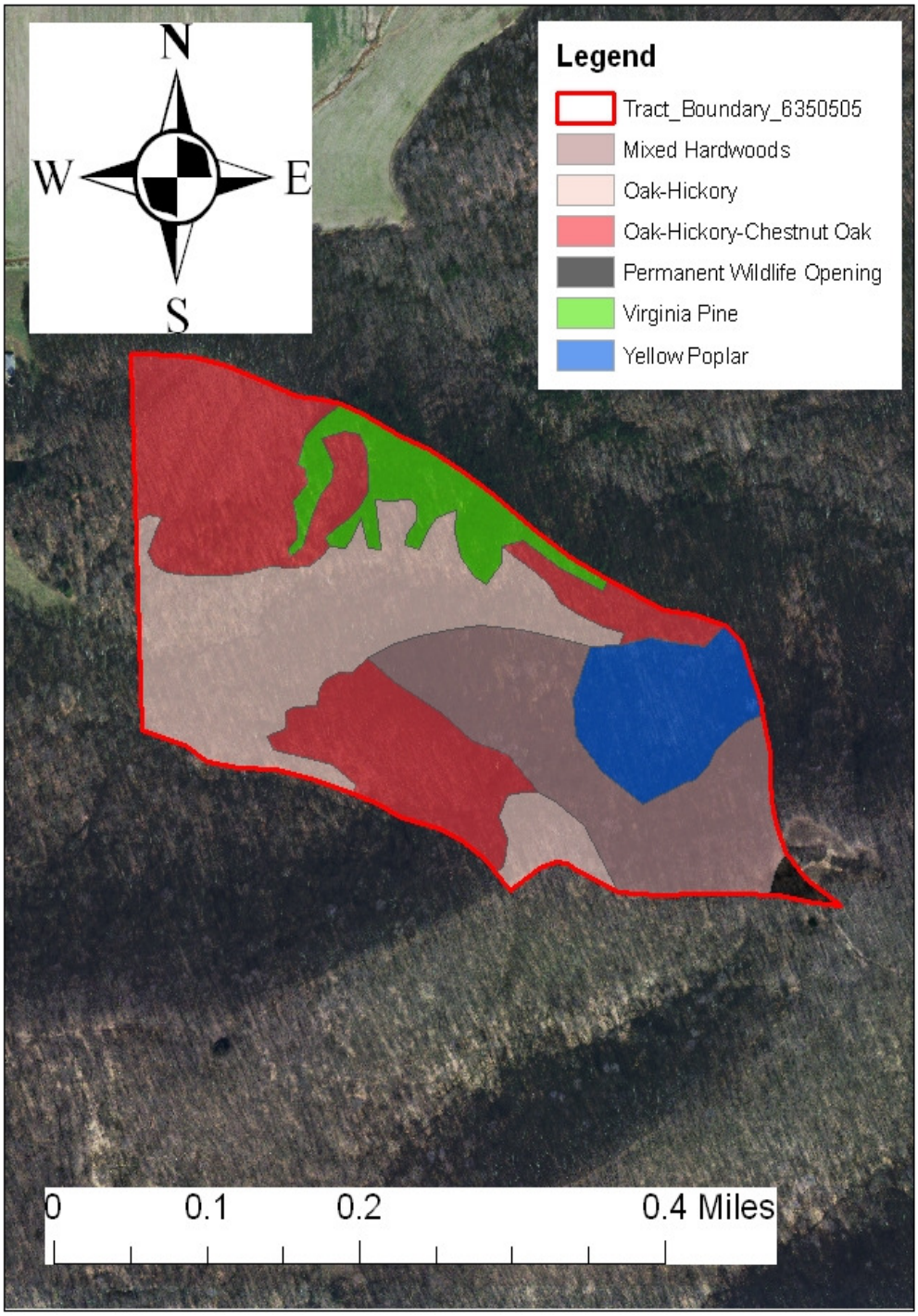
<u>Projected Post-Harvest Data in Blue</u>

Total B.A. per acre = 86.52 sq.ft.
Total # trees/acre = 83
Avg. tree diameter = 14” DBH
Percent stocking = 68%

Tract Subdivisions
Jackson-Washington State Forest
Compartment 5 Tract 5



Tract Subdivisions
Jackson-Washington State Forest
Compartment 5 Tract 5



Soils Map
Jackson-Washington State Forest
Compartment 5 Tract 5