TM 901

RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

			Compartment:	3
Jackson-Washington State Forest			Tract:	7
Forester:	Scott Funk		Date:	8/13/09

ACREAGE IN:

Commercial Forest	46	Total B.A./ Acre	131.7
Non-Commercial		B.A. Saplings	14.6
Recreation Use		B.A. Sawtimber	89.5
Permanent Openings		B.A. Poles	25.6
Other Uses		B.A. Culls	2
TOTAL AREA	46	Ave. Annual Growth (bd. ft./ acre)	202

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
American beech	0	1,980	1,980
Black Cherry	0	1,520	1,520
blackgum	750	0	750
black oak	8,980	16,230	25,210
chestnut oak	10,560	23,070	33,630
northern red oak	1,290	10,110	11,400
pignut hickory	0	19,300	19,300
Pin Oak	0	1,100	1,100
Post Oak	0	1,240	1,240
red maple	2,250	0	2,250
sugar maple	0	1,280	1,280
scarlet oak	11,850	21,840	33,690
shagbark hickory	0	3,000	3,000
Pitch Pine	1,830	0	1,830
Virginia pine	96,140	0	96,140
white ash	1,900	2,680	4,580
white oak	2,450	55,740	58,190
yellow-poplar	0	2,500	2,500
TRACT TOTALS	138,000	161,590	299,590
PER ACRE TOTALS	3,000	3,510	6,513

PREVIOUS CRUISE DATA

DATE:	11/14/86	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		1,326	531	1,857

RESOURCE MANAGEMENT GUIDE

Jackson Washington State Forest — Compartment 03 Tract 07
Forester: Scott Funk — Date: 8-13-09
Management Cycle End Year 2032 — Management Cycle Length 23

Location
The tract is located in Section 30 T5N R5E in Brownstown Township, Jackson County. The tract can be entered by turning off of highway 250 onto 100 east traveling approximately 3/4 quarters of a mile south to a parking lot on the east side of the road, which is where the tract begins. Fire trail 204 accesses the interior of this tract. The tract lies approximately 1.5 miles southeast of Brownstown.

General Description
This 46 acre tract changes in topography from flat gentle sloping hills to the east and short, steep ridges in the north and southeast. This tract contains a mixture of pitch pine and Virginia Pine in the southwest and east portions of the tract. There is an ephemeral stream that runs through the center and comes out at the southeastern portion of the tract. The tract also contains good access through old road beds throughout the tract. This tract also contains good oak-hickory stands.

History
The land that contains compartment 3 tract 7 was purchased from Wesley, Lois, Salmon, and Ruth Hotchkiss in May of 1951. The total purchase is listed as 200 acres on the deed.
Formerly known as compartment 8 tract 7, a cruise and management plan was completed in August 1971. The plan stated that 2/3 of the tract was planted in pines in 1950; however, many were dead and the stand looked rather poor. The pine planting site used to be an orchard prior to state ownership. At that time, the oak-hickory stand contained mainly pole sized trees.
An inventory and resource management guide was completed on November 14, 1986. Due to a prior property line discrepancy, the tract acreage was given as only 37 acres, which is now 46. The entire tract was commercial forest. The harvest volume was 19,657 bdft (531 per acre), and the total volume was 68,714 bdft (1,857 per acre).
On March 17, 1990, forester Eric Johnson finished marking Timber Stand Improvement on the entire tract. During the latest cruise, girdled trees were seen throughout the tract.

Landscape Context
The area of forestland in which compartment 3 tract 7 lies contains approximately 2,900 acres of State Forest ownership. To the north east across state highway 250 lies approximately 2,000 acres of state forestland. All of these areas are forested land except agricultural farm land, campgrounds, farm buildings, residences, and office buildings. Brownstown lies approximately 1.5 miles to the northwest of this tract and mainly consists of residential, small businesses, and local government. To the north of the tract lies private property forest land. To the east of the tract lies private forest land and

agricultural farm land to state highway 250. To the south of the tract lies all agricultural farm land and small forested lots. To the west side of the tract is all state forested land.

Topography, Geology and Hydrology
The topography at the west, south west, and north west is gently flat rolling semi steep hills with a slope range from 0 to 40%. The topography at the east, south east, and north east is steeper ridges and steep gullies with a slope range from 5 to 60%. The elevation changes from 610 feet to its highest point on the tract at 700 feet. The geology mainly consists of shale bedrock with siltstone mixed in at the ridge tops. An ephemeral stream flows into an un-named perennial stream which flows into pond creek, which flows into the Muscatatuck River.

Soils
Bonnell Silt Loam (BoD2) (1.57 acres) 10 to 18 percent slopes, eroded; upper part is friable silt loam to silty clay loam yellowish brown, lower part is firm clay to clay loam, water capacity is moderate, permeability is slow. This soil is well suited for trees if competing vegetation is properly controlled. Northern red oak site index 76, Yellow poplar site index of 90, shortleaf/Virginia pine site index is 80.

Cincinnati Silt Loam (CcC2) (0.74 acres) 6 to 12 percent slopes, eroded, well drained; upper part is friable silt loam, next is fragipan brittle silt loam, lower part is firm silt loam clay loam, water capacity is moderate, permeability is moderate above fragipan and slow in and below the fragipan. Fragipan restricts the root growth and this soil is well suited for trees with a northern red oak site index of 80.

Coolville Silt Loam (CoD) (3.68 acres) 12 to 20 percent slopes, well drained own side slopes; upper part is firm silt loam/silty clay loam, next is very firm silty clay, and the lower part is mottled, firm silty clay loam. Water capacity is moderate; permeability is moderate in the upper part and slower in the lower part. Northern red oak site index 66.

Hickory Loam (HrE) (2.73 acres) 15 to 45 percent slopes, the upper part is friable loam, and lower part is firm clay loam, some areas are moderately eroded and some areas are severely eroded. Water capacity is high in hickory soil and the permeability is moderate. High erosion hazard, stay on contour. White oak site index 85, northern red oak site index 85, and yellow poplar site index 95.

Kurtz Silt Loam (KtF) (19.1 acres) 20 to 55 percent slopes well drained; the upper part is friable silt loam and the lower part is firm silty clay loam and very shaly silty clay loam. Water capacity and permeability are both moderate and the soil is fairly well suited for trees with a northern red oak site index of 70.

Rarden Silty Clay Loam (RdD3) (18.18 acres) 12 to 20 percent slopes, severely eroded; well drained own side slopes. Subsoil is firm silty clay and silty clay loam, depth of bedrock around 32 inches. Water capacity is moderate and permeability is slow and the soil is fairly suited for trees with a northern red oak site index of 63.

Access
From the intersection of Highway 250 and County Road 100 East, travel .75 mile to a small gravel parking lot on the east side of the road. At the parking lot is a gate to Fire Trail 204. Overall access within the tract is excellent. There are many old road beds and Fire Trail 205 running through the middle and down each of the ridge tops, which makes every section of the tract very accessible for harvest operations.

Boundary
The western tract boundary follows County Road 100 East. The northern, eastern, and southern boundary lines boundary lines with the adjacent private properties. The southern and eastern boundary lines are identified by a fence line that was put up by the private property owner, while the northern tract boundary is identified by a road bed.

Wildlife

Wildlife Habitat Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	414		680	266	
20"+ DBH	138		151	13	
Snags (all species)					
5"+ DBH	184	322	760	576	438
9"+ DBH	138	276	373	235	97
19"+ DBH	23	46	8	-15	-38
Cavity Trees (all species)					
7"+ DBH	184	276	468	284	192
11"+ DBH	138	184	393	255	209
19"+ DBH	23	46	186	163	140

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

There is only one habitat feature estimated below maintenance level which is 19"+ size class for snags. There has already been TSI done on this tract in 1990 which created a lot of snags and after a harvest has taken place, more snags will be created to help wildlife and create roosting sites for the Indiana bat. Due to the overall relatively younger age of the stand, not many large trees have died from natural mortality in the stand. I saw several deer on the tract while I was doing inventory and there is dense cover within the tract, which is good for bedding cover. I also found a shed deer antler on the tract which is a good sign of deer activity. The oak-hickory stands also provide a good acorn crop for wildlife as well as the surrounding agricultural crops. The Natural Heritage Database review showed a timber rattlesnake sighting from August 3, 2007, which is a state endangered species. The sighting was across County Road 100 East. It also found

siltstone glade barrens bedrock within two other tracts near by. No glade barrens are located within this tract.

Communities
The community in the southeast corner is mesic bottomland forest with mainly pawpaw covering the understory. Due to the minor extent of the mesic bottomland forest, it is not described in the Tract Subdivision section. The southwest portion of the tract contains dry upland site from an old eroded field, with mainly greenbrier and multiflora rose covering the understory. The northwest, east, and north sections of the tract are all dry upland oak-hickory with green bier covering the understory. Exotics found on this tract include multiflora rose and siltgrass. The multiflora rose should be monitored; however, no immediate action is needed. The stiltgrass should be sprayed during the early summer prior to it seeding.

Forest Condition
The overall condition of the tract is good, the oak-hickory stand type has excellent black oak, chestnut oak, scarlet oak, and white oak. The Virginia pine/pitch pine stand is rather poor and has stagnated in growth. There is some nice VIP within the tract but a lot of it is still pole sized, on the border of reaching sawtimber size. The tract has nice quality white oak with a few prime white oaks in the tract. The tract has a total of 6,510 bdft per acre with 3,000 bdft of harvest, and 3,510 bdft of growing stock. The leading volume is coming from white oak, Virginia pine, and scarlet oak. Pre-harvest stocking is 95% while projected post-harvest stocking is 48%. The low projected post-harvest stocking is due to removal of the stagnated pine stands. The areas of oak-hickory would still contain a full stocking following a harvest.

Recreation
Most of the recreational use of the tract is minimal. Due to excellent access, the area is heavily hunted for both deer and turkey.

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 Prescription

Virginia Pine (18.33 acres)

The overstory species in these areas consists of Virginia pine and pitch pine with a few scattered oaks, hickories, and maples. The understory consists of sugar maple, red maple, American beech, sassafras, persimmon, hickory, and oaks. Most of the pine is small to medium in pole/sawtimber size trees, 9" to 14" DBH. In 1950 2/3's of the tract was planted in VIP, PIP, and WHP, but all of the WHP has died out. Nearly all of the pine left in the tract is Virginia. The proposed management for these areas is to harvest all of the Virginia pine, pitch pine, and any hardwoods within the middle of the pine, to create regeneration openings. There is a lot of oak regeneration occurring on the forest floor

within these pine areas, some several feet high. Hardwoods around the edges of the openings will function as seed trees for regeneration in the openings. The average sawtimber basal area for the Virginia pine forest type is 103 sq. ft. per acre.

Oak-Hickory (27.66 acres)
The major overstory species includes black cherry, black oak, chestnut oak, northern red oak, pignut hickory, pin oak, post oak, scarlet oak, shagbark hickory, and white oak. The understory species include American beech, bluebeech, dogwood, eastern redcedar, ironwood, pawpaw, persimmon, sassafras, sugar maple, and red maple. The oak-hickory stand has some scattered Virginia pine as well. This area consisted of primarily medium sawtimber sized trees with some quality and prime white oaks and quality black oak and chestnut oak. The proposed management for this area is to harvest poor form, damaged (heart rot and storm), and overmature trees to release the high quality desirable crop trees for future growth. The timber stand improvement (TSI) done in the early 90's helped the hardwood growth a tremendous amount. The areas where Virginia pine is mixed in with hardwoods, I'd propose harvesting all the Virginia pine to release the hardwoods. The average sawtimber basal area for the Oak Hickory forest type is 84 sq. ft. per acre.

Tract Prescription and Proposed Activities
The inventory concluded in the summer of 2009 estimates the 46 acres of commercial forest on this tract contains a total of 299,610 board feet of volume. Out of that amount, 138,010 board feet was estimated as harvest stock and 161,600 board feet was estimated as growing stock. On a per acre basis, the harvest stock is 3,000 board feet and the growing stock is 3,510 board feet for a combined total of 6,510 board feet. The overall proposed management for this tract is an intermediate harvest within the hardwoods forest type and to create regeneration openings in the Virginia pine forest type. Target harvest trees in the hardwoods will be those with poor form, damage (heart rot or storm damage), and overmature trees. This will help release the future growing crop trees and trees in the midstory and suppressed range. All Virginia pine and pitch pine will be harvested to create group selection regeneration openings to promote hardwood regeneration. The Virginia pine forest type has a lot of oak regeneration occurring on the forest floor and some in the suppressed stage as well. Following the harvest, timber stand improvement should be done to release any crop trees that did not get released during harvest, to complete the regeneration openings, and to remove any midstory or understory trees where there is high potential for oak regeneration. This tract features very good habitat for deer and turkey and I witnessed both there. The harvesting of this tract should only improve the wildlife habitat. There is only one habitat feature estimated below maintenance level which is 19"+ size class for snags. There has already been TSI done on this tract in 1990 which created a lot of snags and after a harvest has taken place, more snags will be created to help wildlife and create roosting sites for the Indiana bat. Due to the overall relatively younger age of the stand, not many large trees have died from natural mortality in the stand. 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

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:
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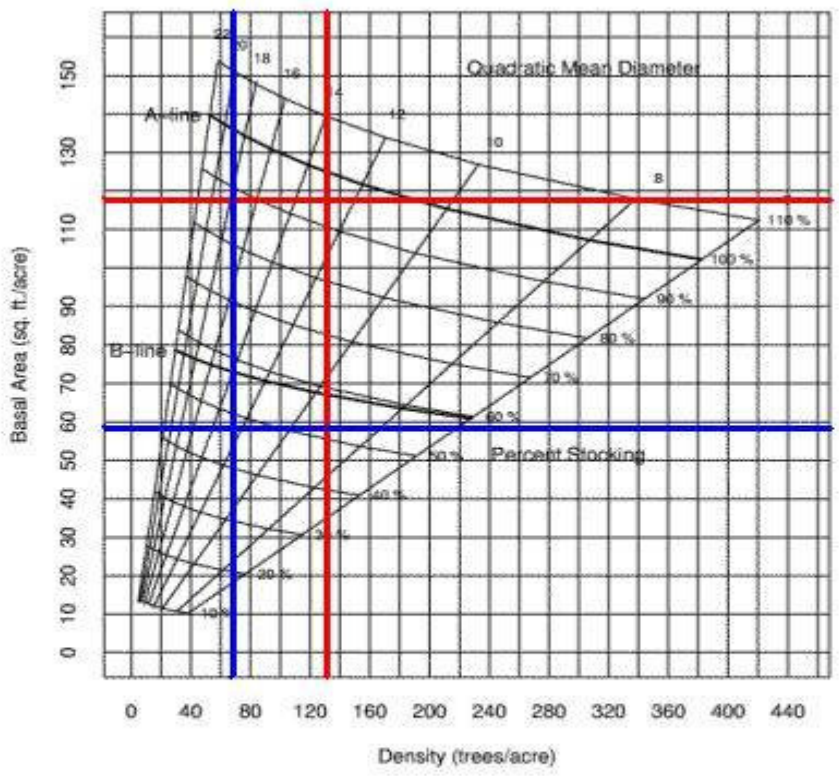
You **must** indicate "Jackson-Washington C3 T7" in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

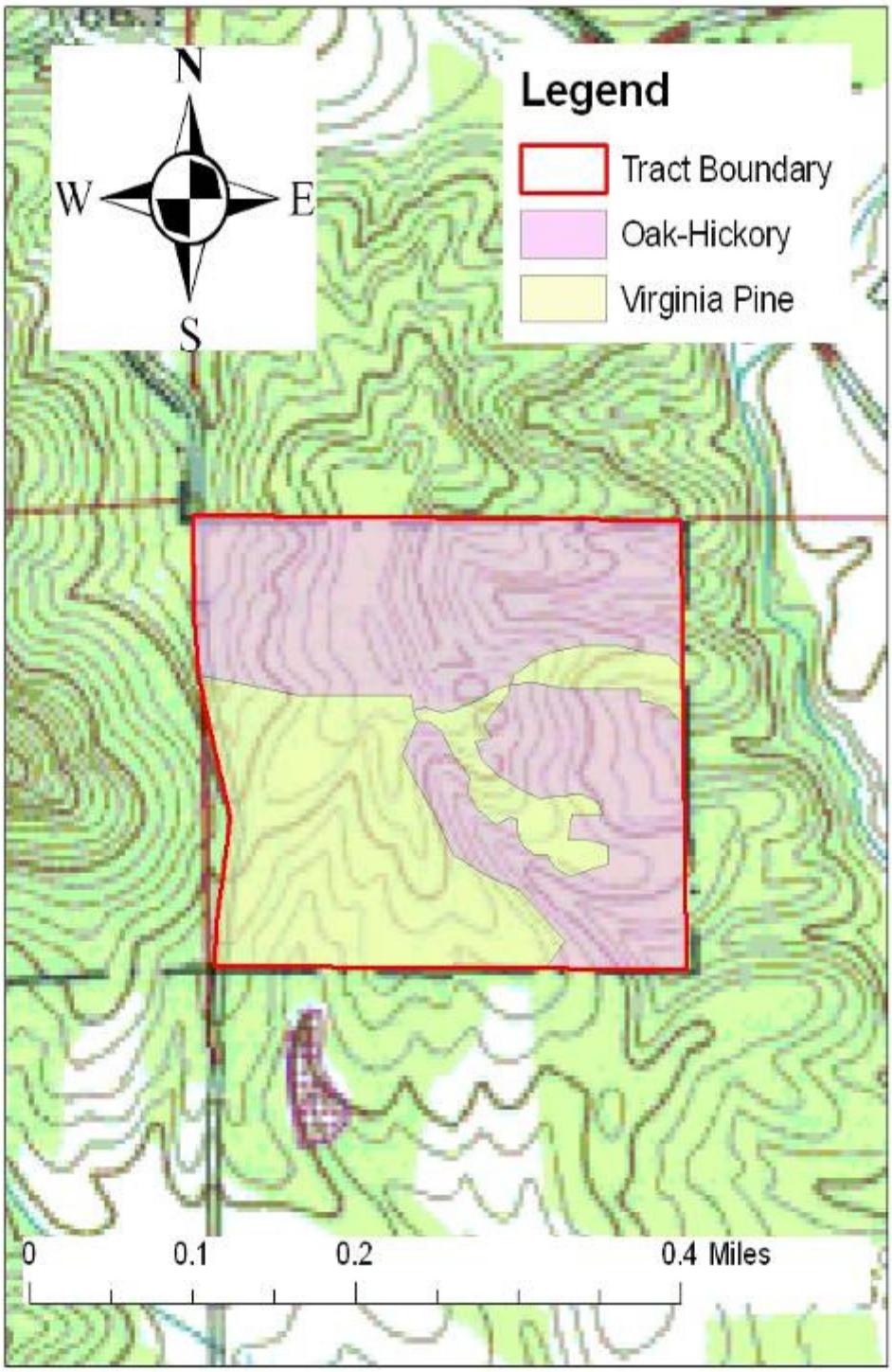
JWSF Resource Management Plan
Compartment 3 Tract 7 Stocking Guide
8/13/09 Inventory
46 acres



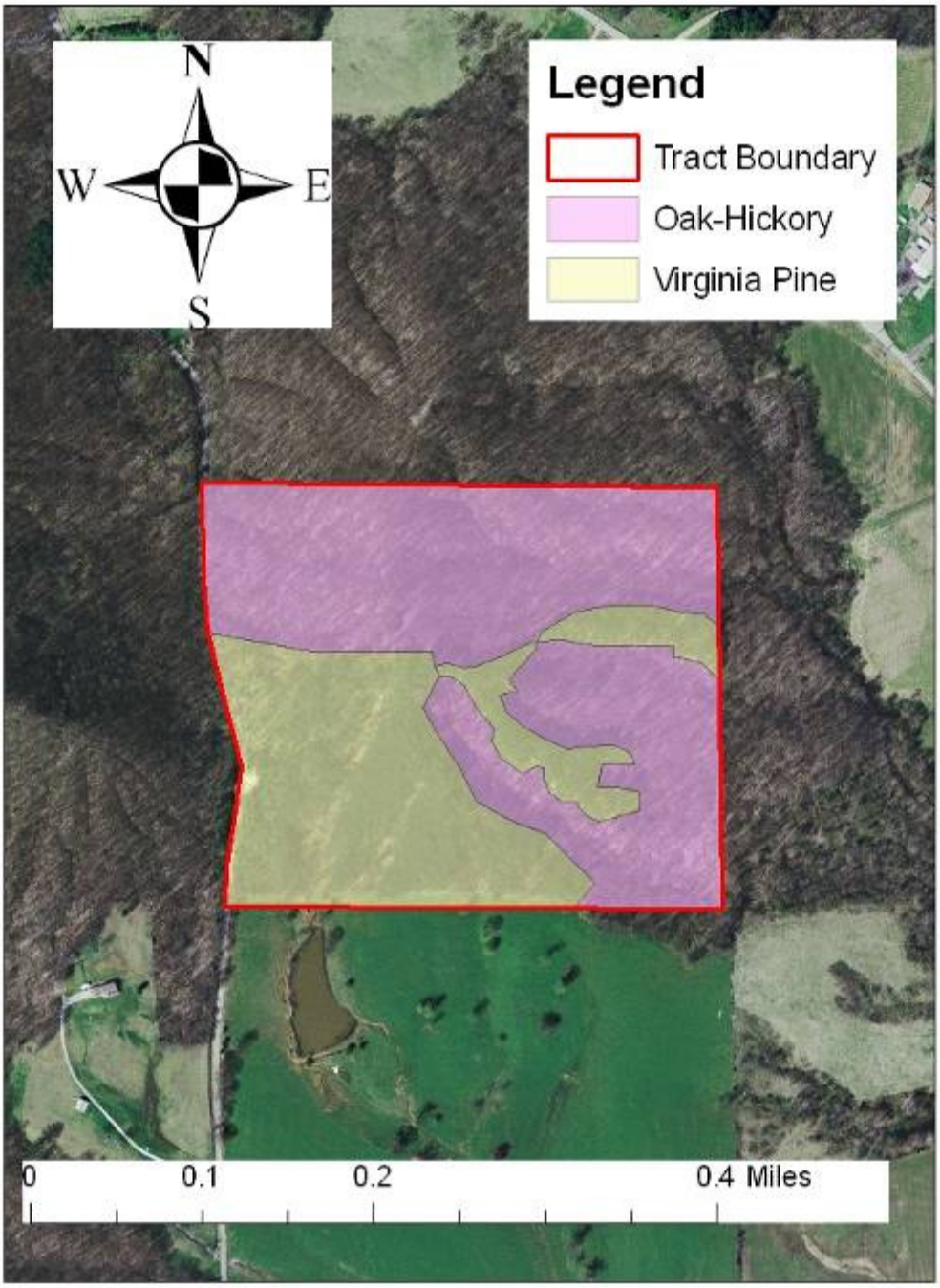
<u>Pre-Harvest Inventory Data in Red</u>
Total B.A. per acre = 117 sq.ft
Total # trees/acre = 132
Avg. tree diameter = 13”DBH
Percent stocking = 95%

<u>Projected Post-Harvest Data in Blue</u>
Total B.A. per acre = 59 sq.ft
Total # trees/acre = 67
Avg. tree diameter = 12”DBH
Percent stocking = 48%

Tract Subdivisions
Jackson-Washington State Forest
Compartment 3 Tract 7



Tract Subdivisions
Jackson-Washington State Forest
Compartment 3 Tract 7



Soils Map
Jackson-Washington State Forest
Compartment 3 Tract 7