Indiana Department of Natural Resources
Division of Forestry
DRAFT
RESOURCE MANAGEMENT GUIDE

State Forest: Jackson-Washington
Forester: Matt Vellella
Management Cycle End Year: 2034

Compartment: 1 Tract: 14
Draft Date: December 16, 2010
Management Cycle Length: 24 years

TM 901 RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY			
		Compartment:	1
Jackson-Washington State Forest		Tract:	14
Forester:	Matt Vellella	Date:	12/16/10

ACREAGE IN:	
Commercial Forest	61
Non-Forest	12
TOTAL AREA	73

B.A. Culls	0.7
B.A. Sawtimber Trees	78.6
B.A. Trees < 12"	39.8
Total B.A./Acre	119.1

	GROWING STOCK (BF)	HARVEST STOCK (BF)	TOTAL VOLUME (BF)
Chestnut oak	243,640	51,720	295,360
White oak	105,830	3,040	108,870
Black oak	47,490	12,330	59,820
Yellow-poplar	18,340	0	18,340
Pignut hickory	16,020	2,010	18,030
White ash	3,080	13,380	16,460
American beech	7,820	7,390	15,210
Northern red oak	12,530	2,220	14,750
Sugar maple	2,660	8,890	11,550
Scarlet oak	6,390	0	6,390
Virginia Pine	3,440	0	3,440
blackgum	1,720	670	2,390
Red maple	2,280	0	2,280
Shagbark hickory	1,160	0	1,160
Red elm	640	0	640
TRACT TOTALS	473,020	101,640	574,670
PER ACRE TOTALS	7,750	1,670	9,420

Location
This tract is in sections 17, 18, and 19 of Township 5 N Range 5 E of Jackson County. It is in Brownstown Township, about 2 miles SE of Brownstown.

General Description
The total acreage is 73 acres; 12 acres is delineated as part of the campground, leaving 61 acres as commercial forest. The tract is elongated in a southwest to northeast orientation with one general slope over the whole tract facing the southeast. Elevation is lowest on the southeast side and higher to the northwest side.

History
The tract originates from four acquisitions all bought in the year 1931 from four separate owners. They were Grover Doerr with a total of 200 acres, Annetta and Matthias Gossman totaling 40 acres, Charles T. Brandtein with 40 acres, and Willard and Mary Gossman with another 40 acres.
The first recorded management activity on the tract was a resource management guide prepared in December 1985 by John Friedrich. Of the 73 total acres, the plan delineated 15 for recreational use. Total stocking for the 58 acres inventoried was 386,809 board feet, with 83,857 board feet of harvest stock and 302,954 board feet as growing stock. A timber harvest was then marked by John Friedrich and Eric Johnson and sold with 93,434 BF of volume on August 28, 1986 to Randy Darlage for $11,147.86 ($119.31/MBF).
Eric Johnson removed five trees from the campground in 1996 for FIA training demonstrations and later cut up for lumber for property projects.
A fire ran through the northern end of this tract in the fall of 1999 that resulted in scars on the many trees.
In 2007, four logs were salvaged for 855 board feet for a log sale by Brad Schneck, Mike Spalding, and Hougham. They were sold to Darlage and Lambring Logging with 53 other logs totaling 20,115 BF for $3,500 ($174.00/MBF).
A log salvage sale was conducted in December of 2010 by Derrick Potts throughout compartments 1, 2, and 3 over various tracts, this being one of them. The purpose was to salvage many of the ash trees prior to arrival of the Emerald Ash Borer. A total of 146 logs with 30,589 BF were sold for $4,000.00 ($130.77/MBF) to Bane Logging Inc. Only a few of those logs were from this tract.

Landscape Context
The tract is completely surrounded by steep hills and forested lands which are primarily used for timber production, recreation, and hunting. Other types of agriculture being practiced within a one mile radius is very limited. There is also minimal residential development in adjacent areas.

Topography, Geology and Hydrology
A main ridge on the western boundary slopes to the east across the whole tract. Narrow ridges run from the top of the main ridge to the valley bottom. There are considerably steep slopes throughout the tract and general topography is hilly. Parent material of the

soil and the bedrock is mississippian siltstone and shale. There are no perennial or intermittent water features within the tract though Knob Lake is 100 feet from the border to the south east of it. This entire tract is located within the watershed of Knob Lake. After leaving Knob Lake, water travels through a series of small perennial streams prior to emptying into Pond Creek, a tributary of the Muscatatuck River. Although natural erosion continuously contributes to the sedimentation of this lake, best management practices will be essential to preventing excessive sediment from reaching the lake during any proposed harvesting activity.

Soils

Beanblossom silt loam (BcrAW) This deep, well drained soil 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 hillslopes. 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. Seedlings survive and grow well if competing vegetation is controlled. Preferred trees to manage for are bitternut hickory, bur oak, pin oak, shellbark hickory, and swamp white oak.

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 are 25 to 75 percent. It has a site index of 50 for black oak. It is fairly well suited to trees. The equipment limitations, seedling mortality, and the erosion hazard are management concerns. Overstocking helps to compensate for seedling mortality. North aspects generally are more productive than south aspects. Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

CoD--Coolville silt loam, 12 to 20 percent slopes

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 are 12 to 20 percent. It has a site index of 66 for northern red oak. 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 in non-limed areas is 3.5 to 5.5. Bedrock is at a depth of 40 to 60 inches.

GnF--Gilpin silt loam, 25 to 55 percent slopes

This well drained soil has a watertable at a depth greater than 40 inches and is on side slopes on uplands. Slopes are 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 in non-limed areas is 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

range from 20 to 55 percent. It has a site index of 60 for northern red oak. Native vegetation consists of mixed hardwood with oaks, hickory, beech and yellow-poplar. These soils are well suited to trees. Preferred trees to manage for are black oak, chestnut oak, common persimmon, northern red oak, scarlet oak, shagbark hickory, sugar maple, and white oak.

Access

The primary entrance road to the office off of State Road 250 provides access to this tract. A fire lane follows the entire western boundary from the southern tip to the very north along the ridge top. Equipment can reach down the finger ridges to access the entire tract. Some terrain is very steep over short distance but logs may be cabled out or accessed with a dozer.

Boundary

The western and northern boundaries are formed by fire lane 111 and Trail 10, while the southern and lower end of the eastern boundary is formed by the camp road. The rest of the northern end of the eastern boundary is a valley bottom and then connects straight north to the fire lane in the north east corner.

Wildlife

Snags (all species)	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
5"+ DBH	244	427	571	327	144
9"+ DBH	183	366	349	166	-17
19"+ DBH	30.5	61	72	42	11

Maintenance level for the number of snags is exceeded in all DBH classes and optimal level is exceeded for the 5" and 19" DBH classes. The snags present on the site provide great roosting habitat for the Indiana bat and TSI after the harvest may create more. Openings created by the harvest are also important to providing them with ideal foraging habitat.

A Natural Heritage Database Review is part of the management planning process. 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.

Communities
The tract is mostly composed of three separate and definable cover types being the mixed hardwoods, chestnut oak, and oak. The five tree species with the most volume are chestnut oak, black oak, white oak, yellow-poplar, and pignut hickory. Sugar maple and American beech are also very common trees which also dominate regeneration. Multiflora rose and silt grass are two invasive exotics that are present across the tract. Stilt grass may be treated where accessible with an ATV.

Forest Condition
The inventory estimates that harvesting will reduce the basal area from 112 square feet per acres to 92 and the number of trees per acre will be reduced from 111 to 99. This will in turn decrease stocking from 89% to 74% and within the fully stocked range. Approximately 1,670 board feet per acre should be harvested, leaving a growing stock of approximately 7,750 board feet per acre. As is typical for this region of Indiana, the form and growth of trees becomes poorer and slower as the soils become thinner. The lowest slopes in valleys contain many quality and prime trees.

Recreation
Special safety consideration must be made during harvesting due to proximity of campground.. There are multiple campsites in the campground zone of the tract as well as shelter houses and picnic areas. The rest of the tract is in the safety zone that does not allow hunting. Hiking trail 10 borders the northern boundary. These areas will need to be closed off during harvesting activities. Camping, hiking, and wildlife viewing are the primary recreation uses of the tract.

Cultural
Cultural resources may be present, but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during management or construction activities

Tract Subdivision Descriptions

Mixed Hardwoods (5.4 acres)
Overstory species for this subdivision are white oak, sugar maple, chestnut oak, northern red oak, American beech, black oak, yellow-poplar, sassafras, white ash, and black cherry. Understory species vary widely, including sassafras, persimmon, white pine, American beech, sugar maple, yellow poplar, and black gum. There is very little regeneration and is dominated by American beech with a few chestnut oak and sassafras seedlings in places. Ideally, a diverse and balanced mix of the previously mentioned tree species should be present. This is a good quality subdivision in general with straight trees and little defect. Sawtimber tree basal area is 78.6 square feet per acre for this subdivision. This subdivision should be managed with single tree selection. Damaged, mature, over-mature, and low quality trees should be harvested to release higher-quality, healthier trees. Where present, healthy oak and hickory trees should be favored for retention. Most of the white ash should be removed in anticipation of the imminent threat of emerald ash borer.

Oak (41.0 acres)
Species composition in the overstory is black oak, white oak, chestnut oak, and the occasional white ash and pignut hickory. The understory species are white ash, sugar maple, American beech, pignut hickory, black gum, and ironwood. Many white oaks are exceptional quality on the lower slopes where this subdivision blends with the mixed hardwoods. Sawtimber tree basal area is 99.3 square feet per acre for this subdivision. Again, single tree selection should be used to harvest. Codominant and dominant trees should be and thinned to maximize vigor and quality. There is very good potential for future oak trees that are currently intermediate and suppressed but that have small diameters and straight clear lower boles. Special concern should be taken while harvesting these trees and around the remaining quality and prime trees.

Chestnut Oak (15.0 acres)
Overstory species are chestnut oak with the occasional shagbark hickory, sugar maple, and pignut hickory. The understory is dominated by chestnut oak, sugar maple, and pignut hickory, with sassafras and Virginia pine in places. Chestnut oak and Virginia pine are regenerating fairly well in the understory. Part of this subdivision experienced a fire in 1999 that left scars on the bottoms of most chestnut oak trees. Saw timber tree basal area is 121.7 square feet per acre for this subdivision. Single tree and group selection should be used to harvest this subdivision. Openings would be appropriate in the fire damaged area to return healthy trees to the area. Elsewhere, the subdivision should be thinned to favor retention of the higher quality stems with healthier crowns.

Campground (11.5 acres)
This area has few trees that are all large and an open understory. It was not inventoried and will not be included in the proposed harvest. Exception is removal of campground hazard trees.

Overall Tract Prescription and Proposed Activities

The harvest should be single tree selection with a few small openings and canopy gaps. Harvesting will remove approximately 101,640 board feet of timber from the estimated total of 574,670. The harvest should leave an uneven aged stand that mimics natural processes to encourage vigorous growth and health. The remaining trees should be healthy. The harvest should occur in the next five to ten years. Following the timber harvest, timber stand improvement should be conducted to complete openings, deaden culls, and release any trees not sufficiently released during the harvest. Another inventory and management guide should be completed in 20 years following completion of the harvest.

The harvest will have minimal impact on the soils, hydrology, wildlife, and recreation. Because high-use areas (roads, hiking trails, and campground areas) surround the tract, appropriate posting of restricted access will be necessary during the harvest. Following BMP's will ensure that minimal sediment will reach Knob Lake.

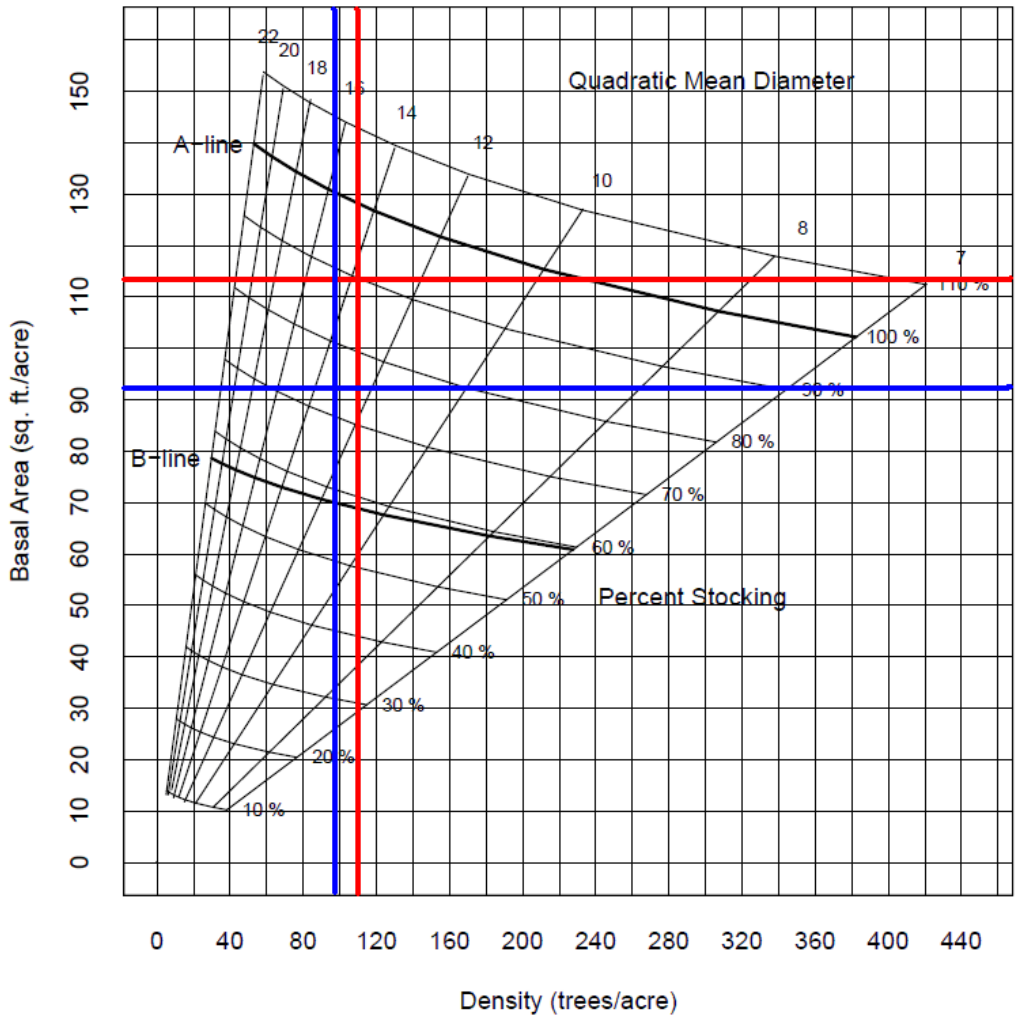
Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mark harvest and sell timber	2014-2020
Post-harvest TSI	2015-2022
Review any openings greater than one acre for regeneration	2016-2023
Inventory and Management Report	2040

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 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.

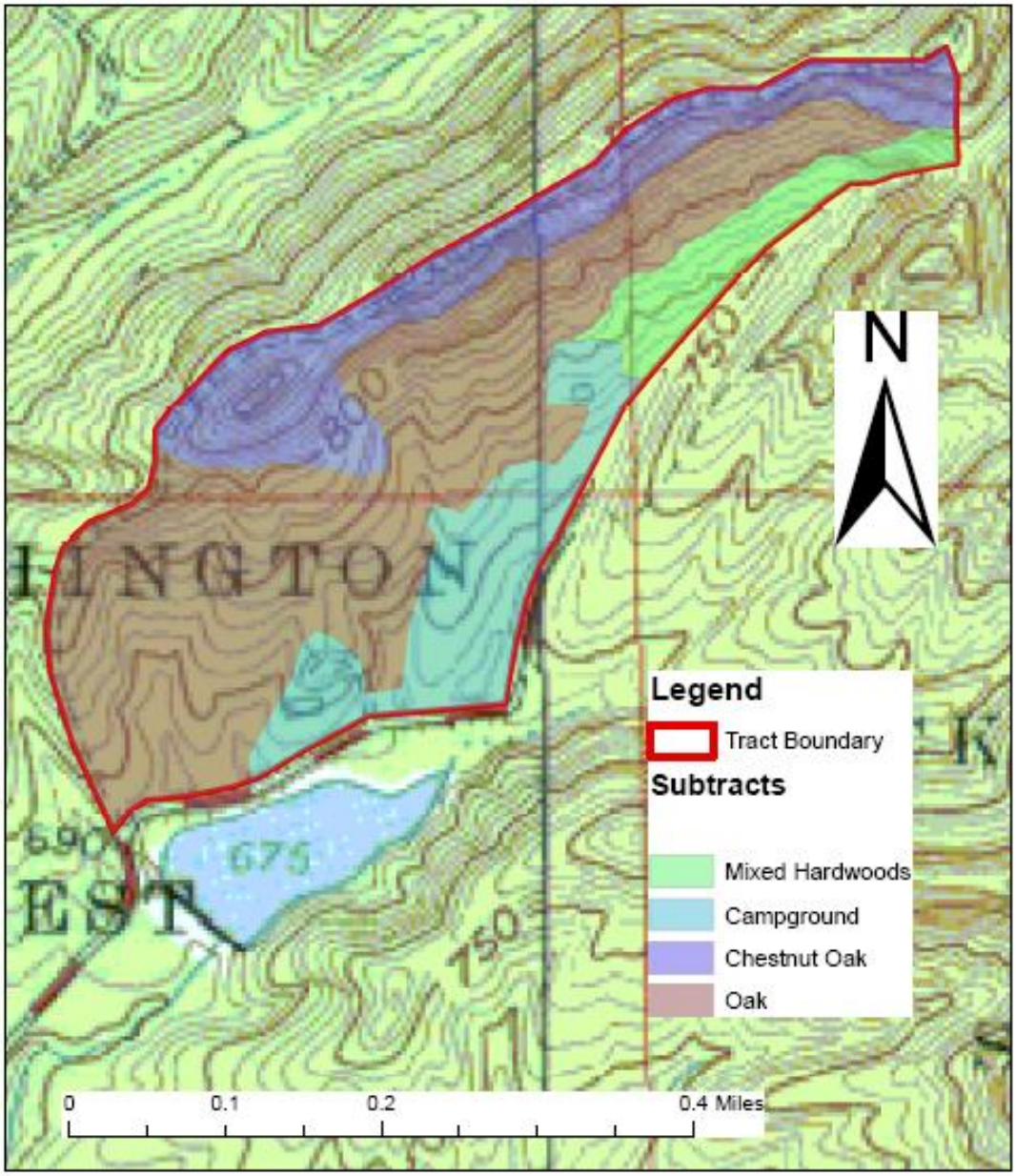
JWSF Resource Management Plan
C 01 T 14 Tract Stocking
December 2010 Inventory
61 acres



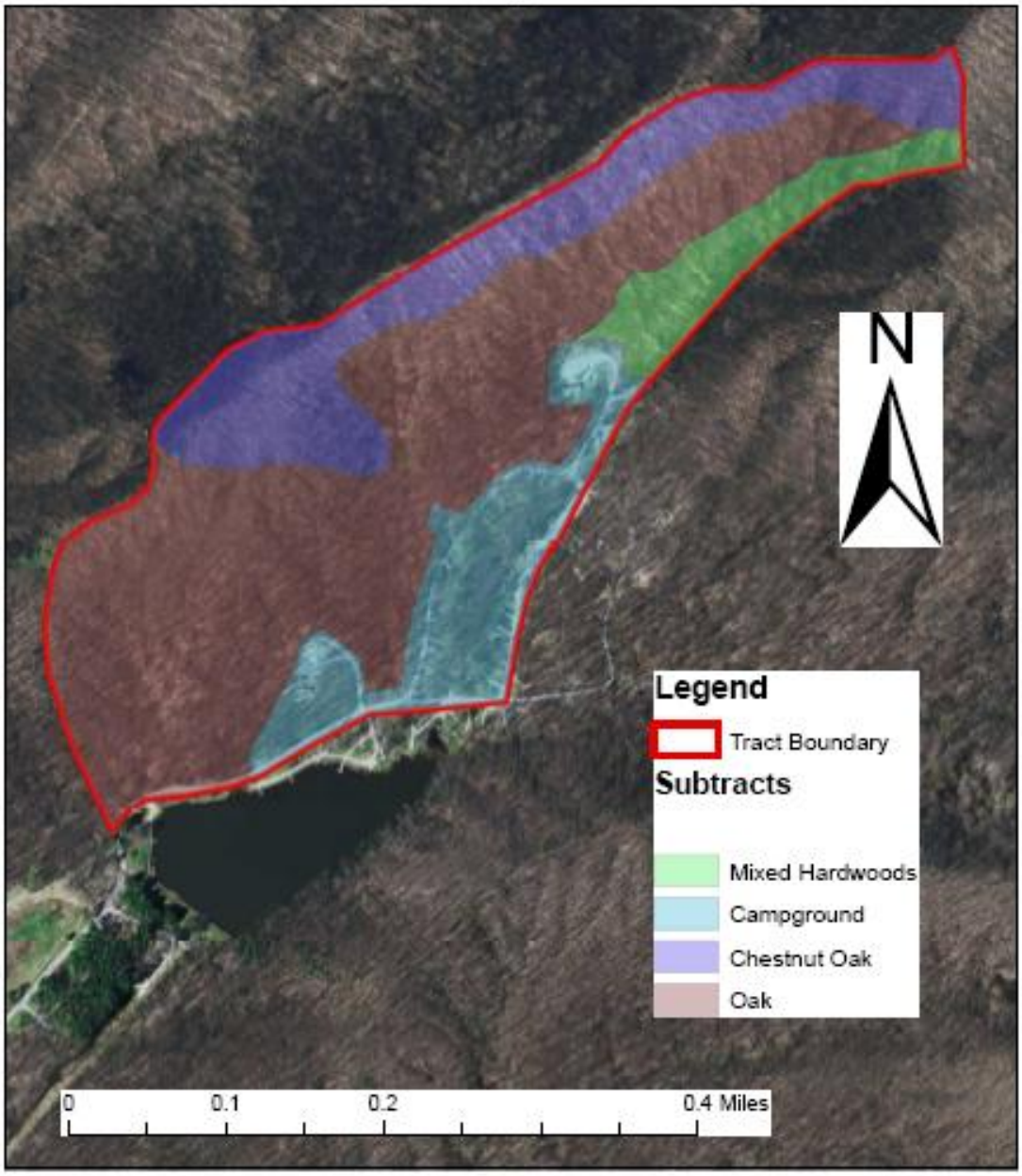
Pre-Harvest Inventory Data in Red
Total BA/A = 112.2
Total #trees/acre = 111
Avg. tree diameter = 13.8 inches
Percent stocking = 90%

Post-Harvest Inventory Data in Blue
Total BA/A = 91.8 sq.ft./AC
Total #trees/acre = 99
Avg. tree diameter = 13.2 inches
Percent stocking = 74%

Tract Subdivision Map
Compartment 1 Tract 14
Jackson-Washington State Forest



Tract Subdivision Map
Compartment 1 Tract 14
Jackson-Washington State Forest



Soils Map
Compartment 1 Tract 14
Jackson-Washington State Forest