Indiana Department of Natural Resources - Division of Forestry

TM 901

RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

		Compartment:	10
Jackson-Washington State Forest		Tract:	16
Forester:	Jason Vogelpohl	Date:	8/6/2010

ACREAGE IN:	
Commercial Forest	151
Inaccessible	8
TOTAL AREA	159

B.A. Culls	1.7
B.A. Trees 12" & Up	79.2
B.A. Trees < 12"	23.4
Total B.A./Acre	103.6

SPECIES	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
chestnut oak	222,620	115,190	337,810
white oak	86,810	11,060	97,870
yellow-poplar	42,560	44,220	86,780
scarlet oak	33,490	25,450	58,940
white ash	0	52,330	52,330
sugar maple	20,490	29,220	49,710
black oak	33,190	13,920	47,110
Virginia pine	10,530	22,410	32,940
red maple	6,530	21,080	27,610
pignut hickory	23,050	3,650	26,700
northern red oak	9,710	11,980	21,690
shagbark hickory	12,230	0	12,230
American beech	6,290	2,340	8,630
black cherry	0	7,710	7,710
basswood	4,980	2,540	7,520
blackgum	7,100	0	7,100
black walnut	0	4,170	4,170
American sycamore	3490	0	3,490
sassafras	1,540	1,540	3,080
largetooth aspen	0	1,920	1,920
TRACT TOTALS	524,610	370,730	895,340
PER ACRE TOTALS	3,474	2,455	5,929

DATE:	11/1971	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		430	1,147	1,577

RESOURCE MANAGEMENT GUIDE

Jackson-Washington State Forest | Compartment 10 Tract 16
Forester Jason Vogelpohl | Inventory Date: August 6, 2010
Draft Plan Date: September 22, 2010
Management Cycle End Year 2032 | Management Cycle Length 22 years

Location

This tract is located in sections 7, 8, and 18, Township 3 North, Range 5 East, Washington County. This tract is located 9 miles northeast of Salem.

General Description

This 151 acre tract contains a wide variety of cover types including pine, oak-hickory, chestnut oak, and mixed hardwoods.

History

The following three land acquisitions contributed to the land that makes up this tract:
500 acres from J Kirk and Mary Etta Cheatham on December 2, 1955
240 acres from Thurman and Nora Saylor on September 19, 1957
102.5 acres from Woodrow and Russell Cheatham on August 16, 1965

The only prior management history recorded for this tract is an inventory from November 1971. At this time, the tract was stated to be 144 acres in size. Thirty acres of low quality chestnut oak was exempted from the inventory. Twenty acres of semi-open ground and pine plantings was not inventoried either. The remaining 94 acres were inventoried and estimated to contain 430 board feet of harvest volume per acre and 1,577 board feet of growing stock per acre.

Landscape Context

The landscape surrounding this tract is entirely forested. The proportion of early successional forest habitat is very low as most of the abandoned fields from prior to State of Indiana ownership have become closed canopy forest, and harvesting in the Back Country area is restricted to single-tree selection.

Topography, Geology and Hydrology

This tract consists of broad ridgetops with steep slopes on the eastern aspects and gentle to moderately steep slopes on the western aspects. Most of the bedrock underlying the soils in this tract is a combination of sandstone, shale, and siltstone. A small area in the south east corner of the tract may contain some limestone bedrock as indicated by the soils.
Two mapped intermittent streams collect the runoff from this tract and converge just outside this tract. This stream eventually empties into the lake at Delaney Park.

Soils

Berks-Weikert complex (BhF) This soil series is steep to very steep, well drained soils are on side slopes in the upland areas. The Berks soil is moderately deep, and the Weikert soil is shallow. They are about 55% Berks soil and 35% Weikert soil. The two soils occur as areas so intricately mixed that mapping them separately is not practical. This soil complex is suited for trees. The erosion hazard, the equipment limitations, seedling mortality, windthrow hazard, and plant competition are concerns in managing the woods. Locating logging roads, skid trails, and landings on gentle grades and removing water with water bars, culverts, and drop structures help to control erosion. The site indexes for hardwood species range from 50 (black oak) to 70 (white oak). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

Burnside silt loam (Bu) This series consists of deep, well drained soils that formed in 30 to 61 centimeters (12 to 24 inches) of medium-textured alluvium and the underlying loamy-skeletal alluvium. These soils are on flood plains and alluvial fans. It is occasionally flooded for brief periods in the spring. This soil is well suited for trees. The site index for hardwood species is 95 for yellow-poplar. Preferred trees to manage for are bitternut hickory, yellow-poplar, and sugar maple.

Gilpin silt loam (GID2) This strongly sloping, moderately deep, well drained soil is on side slopes in the uplands. This soil is fairly well suited to trees. 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. During wet periods, roads tend to be slippery and ruts form easily. The site indexes for hardwood species range from 80 (red oak) to 95 (tulip poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

Hagerstown silt loam (HaC2) This series consists of deep and very deep, well drained soils formed in residuum of hard gray limestone. Slope ranges from 0 to 45 percent. Permeability is moderate. Native vegetation is mixed hardwoods, including black walnut. This soil is well suited to trees. The equipment limitation is moderate. During wet periods, roads tend to be slippery and ruts form easily. The roads should be built on gentle grades, and water should be removed with water bars, culverts, and drop structures. The site indexes for hardwood species range from 70 (white oak) to 90 (yellow-poplar). Preferred trees to manage for are black cherry, black oak, black walnut, chinkapin oak, chestnut oak, red oak, and white oak.

Wellston silt loam (WeC2, WeD) This series consists of deep or very deep, well drained soils formed in silty material from loess and from fine-grained sandstone or siltstone and with bedrock at depths of 40 to 72 inches. Wellston soils are on nearly level to steep uplands in areas of acid sandstone, siltstone, or shale bedrock; but are most common on ridgetops. Slope ranges from 0 to 50 percent but are dominantly 4 to 18 percent. Native vegetation consisted of oak, hickory, dogwood, tulip poplar, and cherry. This soil is fairly well suited to trees. 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. During wet periods, roads tend to be slippery and ruts form easily. The site indexes for hardwood species is 81 (red oak) and 90 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, red oak, scarlet oak, shagbark hickory, sugar maple, yellow-poplar, and white oak.

Zanesville silt loam (ZaC2) This soil is found on the ridgetops. This gently sloping, deep, moderately well drained or well drained soil is on uplands. The soil is well suited to trees. The site index for this site ranges from 69 (white oak) to 90 (yellow-poplar). Preferred to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak..

Access
The access to this tract is good. From the intersection of Pulltight Road and Mail Route Road travel .9 mile on Mail Route Road to the beginning of the tract. Mail Route Road then follows the boundary of the tract for another .8 mile. Firetrail 750 intersects Mail Route Road at the southeast corner of the tract. Firetrail 750 travels west from this point and follows the southern boundary of the tract for .25 mile.

Boundary
The western boundary of the tract is a mapped intermittent stream valley. The southern boundary of the tract is Firetrail 750. The eastern boundary of the tract is Mail Route Road. The northern boundary of the tract is shared with a private landowner. The boundary is currently unmarked. There is an existing corner stone on the western corner of this line.

Wildlife

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Snags (all species)					
5"+ DBH	604	1057	1434	830	377
9"+ DBH	453	906	725	272	-181
19"+ DBH	75.5	151	68	-7	-83

The 5” DBH class is well above both maintenance and optimum levels. The 9” DBH class is also above the maintenance level. Due to the amount of snags in these size classes, no action is required to increase the number of snags. The 19” DBH class has a 7 snag deficiency below the maintenance level. During the post-harvest TSI, deadening large culls will increase the number of snags in the 19”+ DBH class.

The Natural Heritage Database Review shows that there are no threatened, endangered or rare species within the tract. However, worm-eating warbler, a species of special concern, was spotted nearby. This species will not be affected by management activities within this tract because this species is tolerant to various forest management techniques (Bushman and Therres 1988).

Communities
The exotic invasive Japanese honeysuckle and Japanese stilt grass were both found within this tract. Japanese stilt grass should be treated where accessible.

The Natural Heritage Database Review shows that the state endangered species cucumber magnolia grows near this tract. Management of this tract will not affect the cucumber magnolia because it is not currently present in the tract.

Kentucky coffeetree was found near Mail Route in this tract. It is a tree species whose populations are in no danger over its range, however, it is uncommon in Jackson-Washington State Forest in Washington County. These trees should be avoided when it is practical.

Forest Condition
The current stocking level is approximately 75%, with 100 trees per acre (6" DBH and larger) and 93 square feet of Basal Area per acre. As estimated by the inventory, the stocking level would be reduced to approximately 47% with 69 trees per acre (6" DBH and larger) and 56 square feet of basal area. The top three harvest species by volume estimated by the inventory are chestnut oak, yellow-poplar, and white ash. The top three growing stock species by volume estimated by the inventory are chestnut oak, white oak, and yellow-poplar.

Recreation
Hunting and hiking are the two primary recreational uses of this tract. A section of the Knobstone Trail follows Firetrail 750 within this tract, and that section of the trail would need to be closed during the harvest operation. Hunting is also popular in this tract due to its easy access. This tract is in the Back Country Area and therefore the management will be affected due to the restriction of single-tree selection placed on the Back Country Area.

Cultural
No cultural resources were discovered during the inventory of this tract. If any are found, the area will be avoided and the archaeologist contacted.

Tract Subdivision Description and Prescription

Chestnut Oak (61 acres)
This stand type has an overstory dominated nearly completely by chestnut oak. The understory is generally sparse. The predominant species found in the understory are

American beech, red maple, and sugar maple. There is a large amount of chestnut oak, sugar maple, red maple, sassafras, and American beech regenerating. The chestnut oak in the overstory consists of low quality trees with some scattered higher quality trees. The higher quality and healthier trees should be favored for retention. Any healthy oak or hickory species other than chestnut oak should also be favored for retention. Trees targeted for removal should include damaged trees (wind, fire, grazing), suppressed trees, trees of low vigor, low quality, and trees of less desirable species. The average basal area per acre of sawtimber is 79 square feet.

Oak-Hickory (45 acres)
The oak-hickory stand type has an overstory dominated by black oak, chestnut oak, white oak, pignut hickory, and shagbark hickory. These trees are generally medium sawtimber of average to good quality. The understory primarily consists of sugar maple, red maple, and American beech. Regeneration varies greatly across this stand. Sugar maple and American beech are the most common regeneration. The overstory should be thinned around crop trees to increase the overall vigor of the dominant trees. The average basal area for sawtimber is approximately 76 square feet per acre.

Mixed Hardwoods (31 acres)
The mixed hardwoods stand type has an overstory of sugar maple, American beech, yellow-poplar, red maple, and pockets of basswood. There was also an area with some Kentucky coffeetree observed along Mail Route, however, it was not within an inventory plot. The understory is dense in areas and is dominated by paw-paw, sugar maple, and American beech. There is often very little or no regeneration due to the dense overstory and understory. Where regeneration is occurring it is generally sugar maple and American beech. The overstory should be thinned, using single-tree selection, by removing damaged, mature, over-mature, and low quality trees where they compete with more vigorous, higher quality trees. The average basal area per acre for sawtimber is 84 square feet.

Pine-Hardwoods (14 acres)
This stand type has an overstory of shortleaf pine, Virginia pine, white ash, and sugar maple. The understory consists mostly of sugar maple. White ash, sugar maple, and American beech make up the majority of the regeneration. Virginia pine and white ash should be removed where they are competing with other species. Pure stands of shortleaf pine should be thinned and individual stems should be removed when competing with hardwoods. Typically, patches of Virginia pine are completely removed due to their tendency of this forest type to deteriorate rapidly; however, this stand type will still be thinned using the single-tree method to favor shortleaf pine and hardwoods other than ash where possible. The average basal area of sawtimber is 110 square feet per acre.

Tract Prescription and Proposed Activities
The overall prescription for this tract is to conduct an improvement harvest with the next year. This harvest will consist only of single-tree selection due to its location within the Back Country Area. Trees targeted for removal should include damaged, defective, mature, over-mature, suppressed, and trees of less desirable species in order to release

healthier, higher-quality, more vigorous residual trees. Proper BMP's implemented during and after the harvest will lead to little to no sediment entering the streams that run into the lake at Delany Park. Post-harvest TSI should be completed within a year following the harvest to deaden hollow cull trees, deaden grape vines, and to release any residual crop trees not released during the harvest. The TSI will create additional snags for the Indiana bat habitat.

Proposed Activities Listing

Activity	Year
Mark and sell timber	2010-2011
Post-harvest TSI	2012-2013
Inventory and management guide	2032

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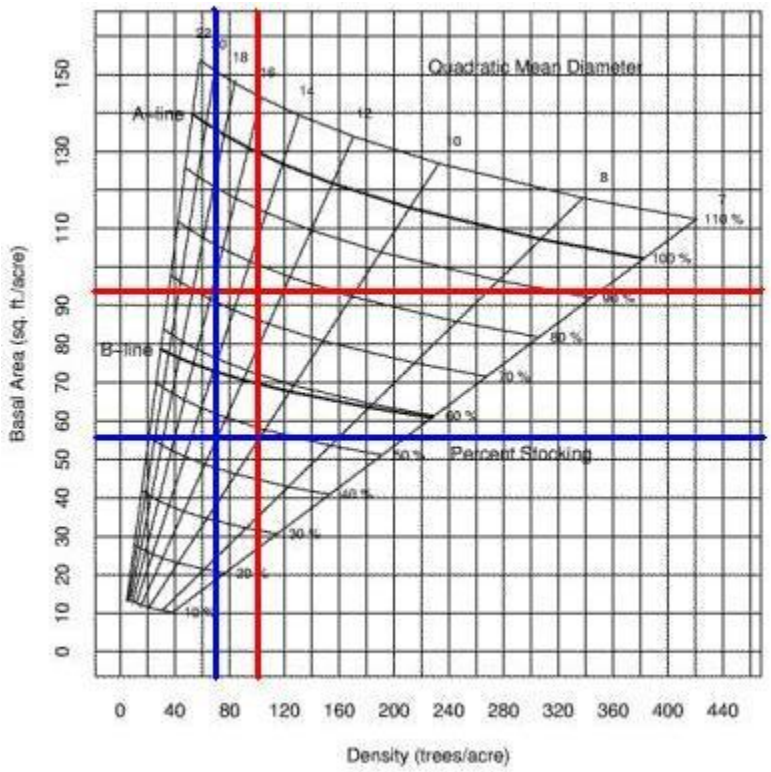
You **must** indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

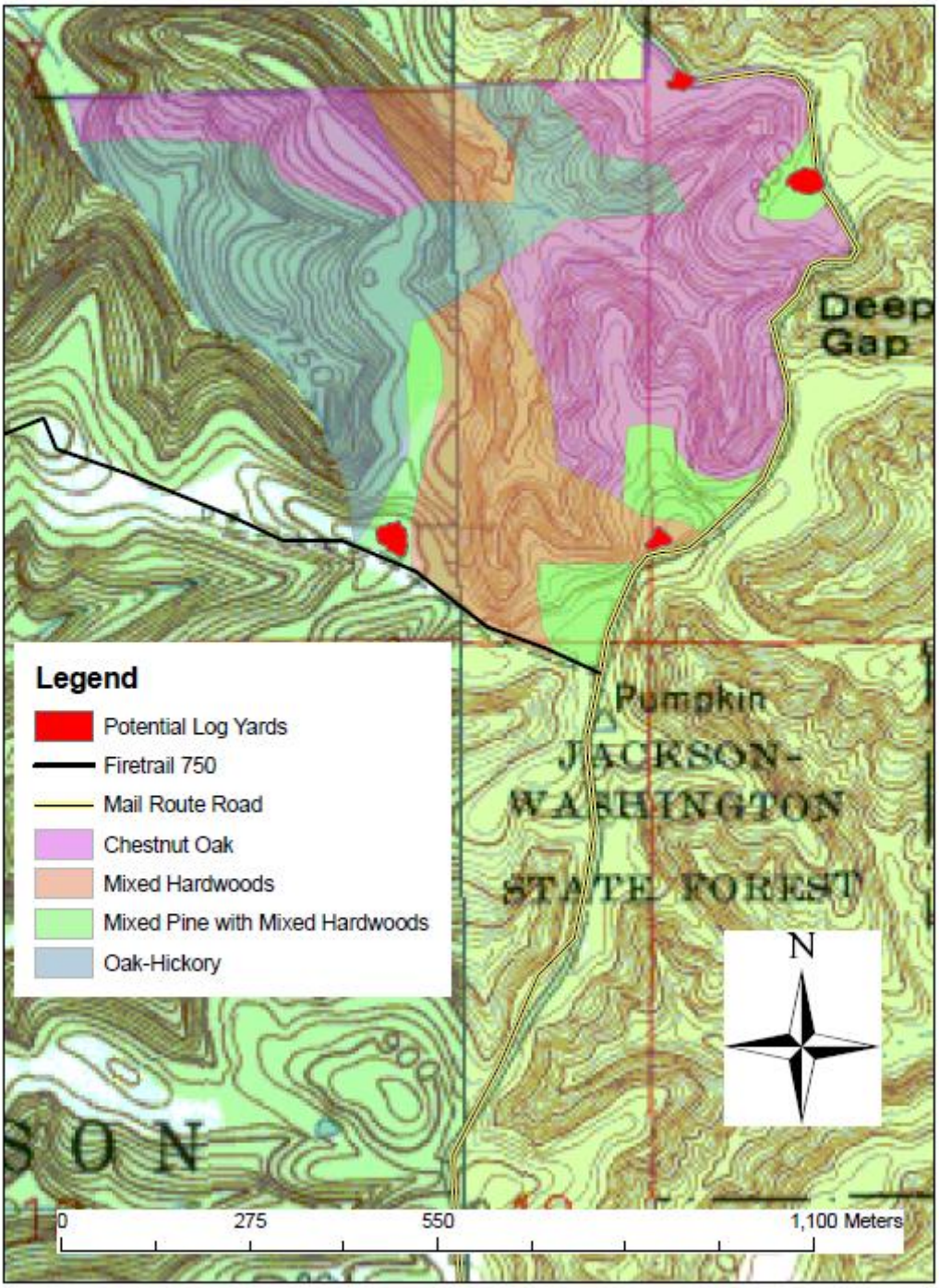
Compartment 10 Tract 16 Stocking Guide
2010 Inventory
151 acres



Pre-Harvest Inventory Data in Red
Basal Area per Acre Trees 6" DBH and Larger = 93 square feet per acre
Number of Trees per Acre 6" DBH and Larger = 100
Average Tree Diameter = 13 inches DBH
Percent stocking = 75 percent

Projected Post-Harvest Data in Blue
Basal Area per Acre Trees 6" DBH and Larger = 56 square feet per acre
Number of Trees per Acre 6" DBH and Larger = 69
Average Tree Diameter = 12 inches DBH
Percent stocking = 47 percent

Tract Subdivisions
Compartment 10 Tract 16
Jackson-Washington State Forest



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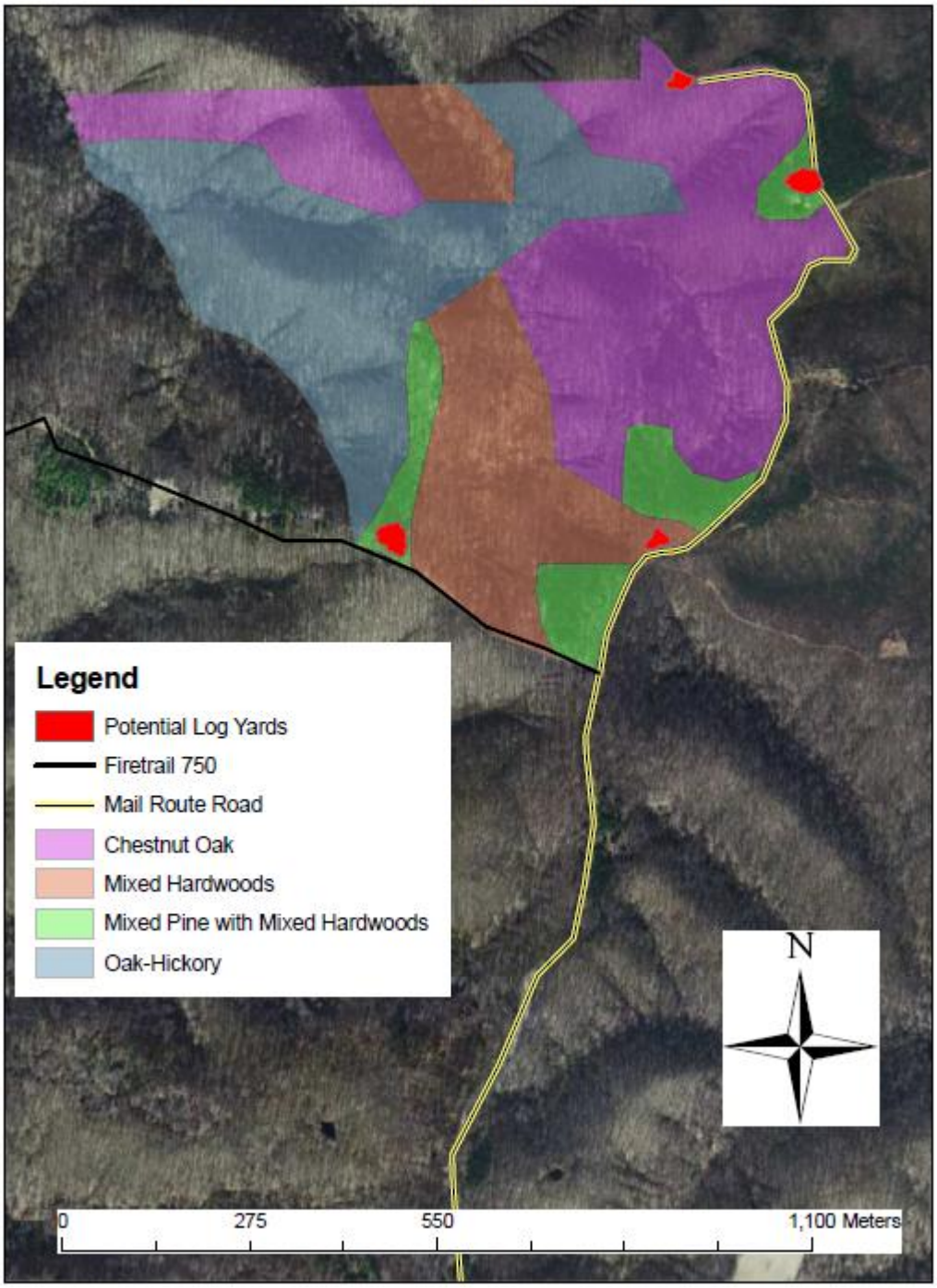

Soils Map
Compartment 10 Tract 16
Jackson-Washington State Forest