Indiana Department of Natural Resources – Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

Jackson-Washington State Forest	Compartment 5 Tract 6
Forester Michael Spalding	
Inventory Completion Date January 22, 2013	Draft Plan Date January 30, 2013
Management Cycle End Year 2036	Management Cycle Length 23 years

Location

This tract is located in Sections 2 and 3, Township 4 North, Range 4 East, Jackson County. The portion in Section 3 is located in Driftwood Township, and the portion in Section 2 is located in Grassy Fork Township. Vallonia is 3 miles to the northwest, and Brownstown is 4 miles to the north.

General Description

This 60 acre tract is dominated by two forest types. Mixed hardwoods cover approximately 75% of the acreage, while oak-hickory covers the remaining 25%.

History

The land that makes up this tract came from two acquisitions. The first was an 81.21 acre purchase from Raymond and Louise Wolff on April 25, 1963. The second was a 40 acre purchase from James and Janece Hartman for $14,000 on August 27, 1987.

The earliest management record from this tract is an inventory performed in October 1971. This was prior to the later acquisition, so the tract acreage was only 45 acres at that time. This inventory estimated a total of 1,282 board feet per acre, with 732 of that being harvest stock. The accompanying management guide describes a recent harvest in the tract prior to acquisition by the State of Indiana. The forester said "Very little sawtimber now remains but reproduction is fairly dense. Much of the area is covered with 1 to 3 inch saplings. TSI has been accomplished on portions of the tract, however the trees that remain are poor in quality and form. Tulip and maple make up part of the residual and possibly in 10 to 15 years these could be sold on a selective basis."

Another inventory was performed January 18, 1991 on the entire tract. The inventory estimated a total of 6,189 board feet per acre, with 1,382 as harvest stock and 4,807 as growing stock.

Landscape Context

The landscape around this tract is dominated by forestland in the Brownstown hills with large tracts of cropland to the east and west. Development is limited to single family residences, and some new home construction.

Topography, Geology and Hydrology

The overall topography of this tract is steep; approximately 80% of the area is greater than 20% slope. An old side hill cut exists within the tract and will make timber harvesting easier in that area. A dozer or other tracked equipment will be necessary for

skidding in portions of the tract. The underlying geology is made up of sandstone, siltstone, and shale bedrock. The only streams found within this tract are ephemeral, and the entire tract is located within the watershed of Starve Hollow Lake.

Soils

Berks channery silt loam (BeG) (25.1 acres) 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. The native vegetation is hardwoods. 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. Building logging roads and skid trails on the contour and constructing water bars help to control erosion. North aspects generally are more productive than south aspects. The site indexes for hardwood species will range from 70 (white oak) to 90 (yellow-poplar). Preferred trees to manage for are black oak, chestnut oak, scarlet oak, red oak, and white oak.

Gilpin silt loam, 25 to 55 percent slopes (GnF) (5.8 acres) This well drained soil has a water table 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) (17.1 acres) 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. Most Kurtz soils are in forest. Native vegetation consists of mixed hardwood with oaks, hickory, beech and yellow-poplar. These soils a well suited to trees. The potential productivity or site index for this soil type is 60 (northern red oak). Preferred trees to manage for are black oak, chestnut oak, persimmon, northern red oak, scarlet oak, shagbark hickory, American beech, sugar maple, and white oak.

Stonehead silt loam (SsC2) (6.6 acres) This series consists of deep and very deep, moderately well drained soils formed in loess and the underlying residuum weathered from soft shale or soft siltstone bedrock. Slopes range from 4 to 12 percent. Native vegetation is mixed hardwoods with oaks, hickory, beech, maple, and tulip-poplar as the major species. This soil is well suited for trees. Prolonged seasonal wetness hinders logging activities and planting of seedlings. The equipment limitations, seedling mortality, windthrow hazard, and plant competition are management concerns. The potential productivity or site index for this soil type is 90 for northern red oak. Preferred trees to manage for are black oak, chestnut oak, common persimmon, northern red oak, scarlet oak, shagbark hickory, sugar maple, yellow-poplar and white oak.

Tilsit silt loam (TlB2) (5.8 acres) The Tilsit series consists of deep and very deep, moderately well drained soils with a slowly permeable fragipan in the subsoil. Slope

ranges from 0 to 15 percent. The potential for surface runoff is negligible to medium. Permeability is moderate in horizons above the fragipan and slow or very slow in the fragipan. About half of the areas are used for corn, small grains, tobacco, truck crops, and hay and pasture. The remainder is in woodland or idle. Native vegetation is primarily oak, hickory, red and sugar maples, blackgum, yellow-poplar, dogwood, beech, persimmon, and sassafras. These soils are 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. Seedlings survive and grow well if competing vegetation is controlled. The site indexes for hardwood species range from 90 (black oak) to 100 (tulip poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

Access
From State Road 135 in Vallonia, turn east onto County Road 300 West and travel 1.7 miles. Then turn east onto County Road 400 South (aka Starve Hollow Road) and travel 1.3 miles to a gravel lane on the south side of the road. Travel south on the gravel lane .3 mile to the beginning of the tract. The lane then continues another 1.1 mile through the tract. There is a locked gate after traveling .2 mile south from Starve Hollow Road.

Boundary
The northern boundary line is a private property line. The eastern and western boundaries are ephemeral drainages. The southern boundary is a firelane that follows a ridgetop.

Wildlife
A Heritage Database Review was completed for this tract in 2012. 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.

Indiana bat habitat should be improved through the creation of foraging areas in the regeneration openings and the addition of snags. The quantity of snags for the maintenance level in the smallest two size classes is deficient; however, post-harvest TSI will create numerous snags to help fill this gap. Residual shagbark hickories and other preferred live roost trees will also benefit through release from competition from other trees.

Indiana Bat Habitat Snag Guidelines					
				Available	**Available**
Snag	**Maintenance**	**Optimal**	**Inventory**	**Above**	**Above**
Size Class	**Level**	**Level**	**Estimate**	**Maintenance**	**Optimal**
5"+ DBH	242	423	151	-91	-272
9"+ DBH	181	362	151	-30	-211
19"+ DBH	30	60	52	22	-8

Communities
A Heritage Database Review was completed for this tract in 2012. 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.

This tract is covered with oak-hickory and mixed hardwood forest types. Several siltstone glades are located near this tract, but none were discovered in this tract during the inventory. With much of this tract consisting of north slopes with good soils, it is very unlikely a glade could even be found here.

Three large Ailanthus trees were discovered during the inventory. Two have become small colonies of one tenth of an acre in size or less. These must be treated prior to a timber harvest. Some stilt grass is present along the haul road. This should be treated if resources allow.

Forest Condition
The overall health of this tract varies greatly within. Some areas contain an overstocking of medium-sized sawtimber trees that are healthy, but need thinned within the next 2-3 years in order to maintain their vigor. Other areas have begun to collapse from a combination of trees weakened by old damage and wind storms. Other areas contain mature to over-mature trees near the end of their average life span. The 2013 inventory estimated a total volume of 516,970 board feet on this tract. The top three species to be harvest by volume are white ash, sugar maple, and yellow-poplar. The proposed harvest will temporarily drop the stocking level below the b-line for this tract. This is due to the prescribed regeneration openings, which will remove all stocking from those areas until sufficient natural regeneration has occurred. Stocking in the remainder of the tract remains above the b-line. A large proportion of the volume will come out in a relatively small area of regeneration openings. This is due to the at-risk, over-mature and declining trees that will be removed having a higher average volume per tree than the vigorous residual trees spread out through the rest of the tract.

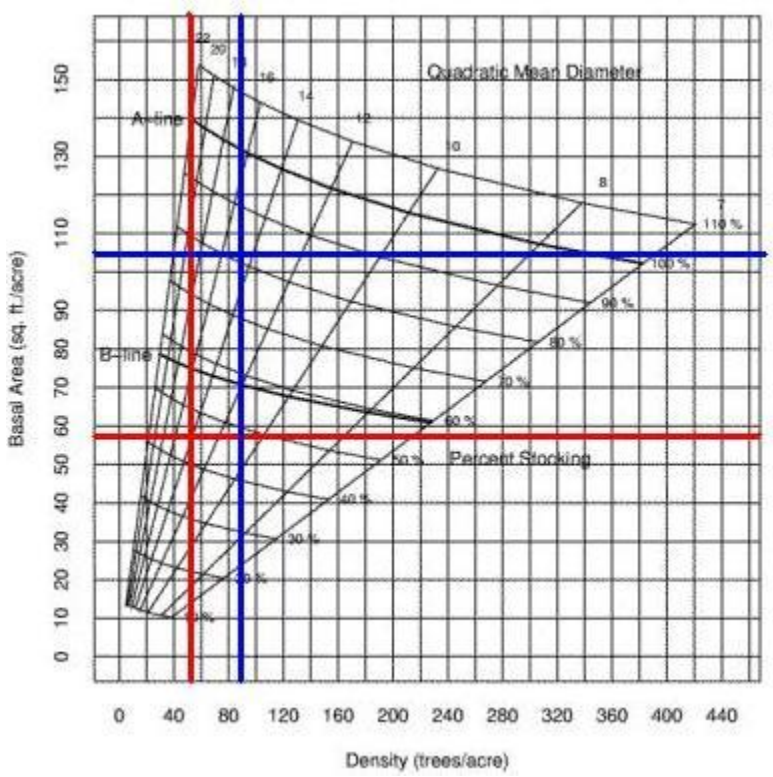
TM 901 RESOURCE MANAGEMENT GUIDE				
INVENTORY SUMMARY				
			Compartment:	5
Jackson-Washington State Forest			Tract:	6
Forester:	Michael Spalding		Date:	January 22, 2013

ACREAGE IN:	
Commercial Forest	60.4
TOTAL AREA	60.4

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
sugar maple	59,310	94,650	153,960
white ash	66,060	0	66,060
chestnut oak	11,730	47,350	59,080
basswood	4,170	22,190	26,360
northern red oak	4,860	21,070	25,930
shagbark hickory	0	22,440	22,440
red maple	18,320	3,780	22,100
pignut hickory	1,330	16,800	18,130
blackgum	6,770	3,800	10,570
white oak	0	5,940	5,940
bitternut hickory	0	4,780	4,780
sassafras	4,110	0	4,110
red elm	2,170	0	2,170
black oak	0	1,760	1,760
American beech	1,710	0	1,710
yellow-poplar	37,430	54,440	91,870
TRACT TOTALS	217,970	299,000	516,970
PER ACRE TOTALS	3,609	4,950	8,559

Stocking Guide
Compartment 5 Tract 6



Estimated Pre-Harvest Data in Blue
Total Basal Area per Acre = 104 square feet per acre
Total Number Trees per Acre = 89
Average Tree Diameter = 14.5 inches DBH
Percent Stocking = 81%

Projected Post-Harvest Data in Red
Total Basal Area per Acre = 57 square feet per acre
Total Number Trees per Acre = 54
Average Tree Diameter = 14 inches DBH
Percent Stocking = 46%

Recreation
Hiking trail 8 runs along the eastern part of the southern boundary of this tract for approximately 1/3 mile. This portion of the trail will need to be closed or re-routed during harvesting activities. This area is also popular for deer and turkey hunting.

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

Tract Subdivision Description and Prescription

Mixed Hardwoods (46.5 acres) – This subdivision contains is dominated primarily by sugar maple, yellow-poplar, and white ash. Other common species include basswood, blackgum, chestnut oak, northern red oak, pignut hickory, red maple, and shagbark hickory. The overall quality is good; however, there are many trees that are hollow, likely from old grazing and/or fire damage. While the sugar maple in this tract tend to be above average in quality, many still have maple borer damage or wind damage. The understory is dominated by American beech, pawpaw, and spicebush. Deer tend to not graze on pawpaw and spicebush, suggesting a high deer population in this area. Seedling regeneration tends to be minimal to non-existent. This area will contain multiple regeneration openings, with the potential for some to be over 10 acres. Openings will be marked in areas that contain ash, mature to over-mature yellow-poplar, and trees of various species containing fire, grazing, and/or wind damage. TSI will be needed to complete these openings following the harvest. Areas not in need of regeneration openings will receive single tree selection to favor retention of vigorous, high quality oak and hickory trees as well as vigorous high quality mixed hardwoods including black walnut, sugar maple, basswood, and yellow-poplar.

Oak-Hickory (13.8 acres) – This area is primarily dominated by chestnut oak. White, red, black, and scarlet oaks and pignut and shagbark hickories can be found here as well. There are individuals and pockets of mixed hardwoods near the lower slopes where the soils improve. This area will primarily be marked for harvest using single tree selection. If openings are made, they will likely be small in extent. Trees marked for harvest should include fire and wind damaged trees, suppressed and intermediate trees, mature yellow-poplar, all ash, and any mixed hardwood species that release any oak or hickory species. Many of the trees are pole to small sawtimber in size, so post-harvest TSI will be needed to deaden any culls and to release residual trees not sufficiently released through the harvest.

Tract Prescription and Proposed Activities
A timber harvest should be marked and sold in this tract within the next two years. The harvest objectives include salvage of the ash volume before emerald ash borer reaches this block of forest and regeneration with site compatible native hardwoods. Regeneration openings will be necessary to regenerate areas of mature trees, ash, and trees that are falling apart due to previously mentioned reasons. Some openings may be

greater than ten acres in size. Marking in areas of oak and hickory trees should focus on releasing the most vigorous, highest quality oak and hickory trees. Implementation of BMP's will reduce any negative impacts to water quality. Prior to the timber being harvested, Ailanthus and grapevines are to be treated. Post-harvest TSI should be completed following the harvest to deaden any culls not taken by the logger, release any trees not sufficiently released during the harvest, and to complete the regeneration openings. Another inventory and management guide should be completed 20 years following completion of the timber harvest.

Proposed Activities Listing

Mark Harvest	2013
Treat Ailanthus and grapevines	2013
Sell Timber	2014
Post-Harvest TSI	2016
Inventory	2036

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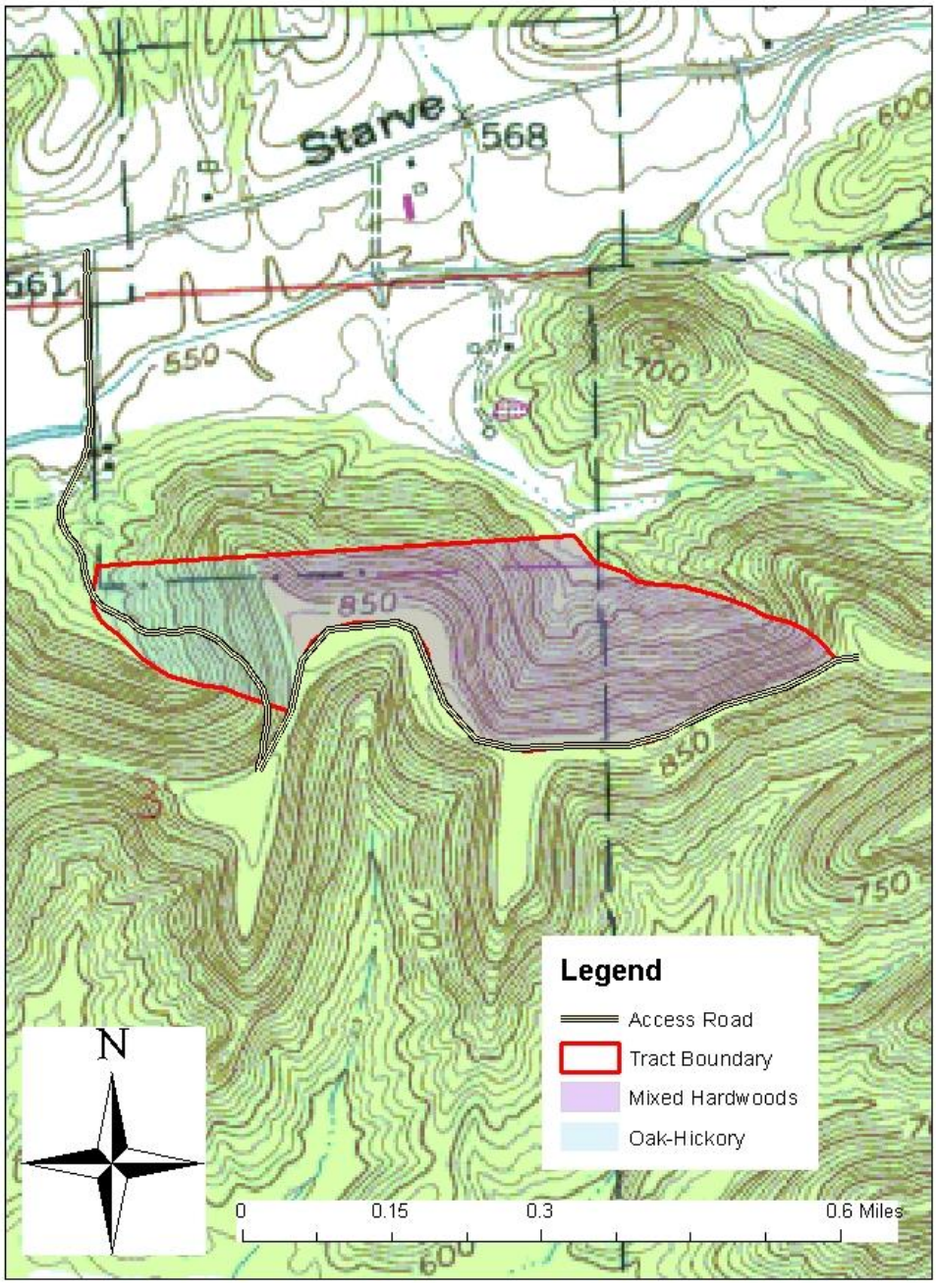
Tract Subdivisions
Compartment 5 Tract 6
Jackson-Washington State Forest



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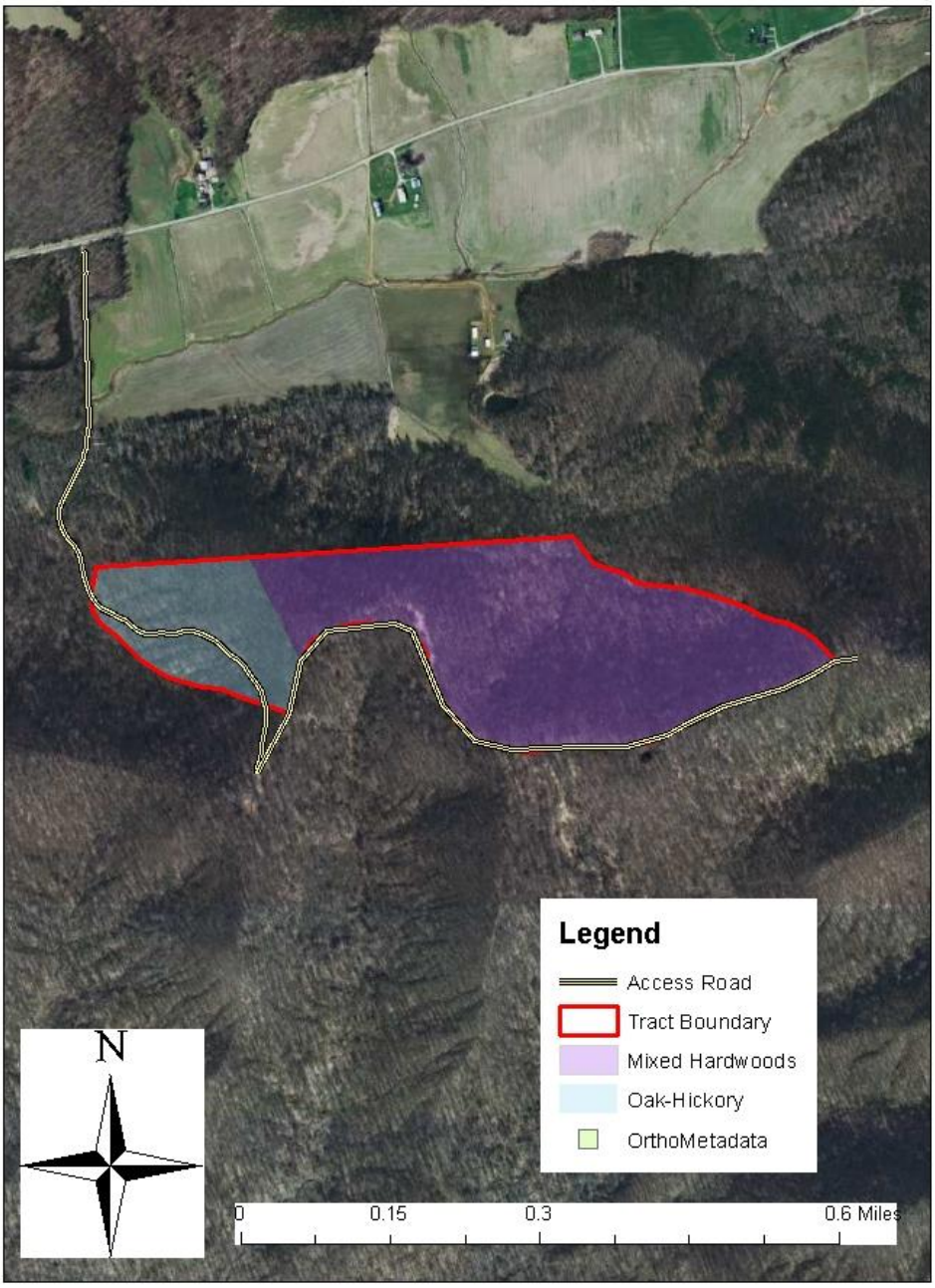
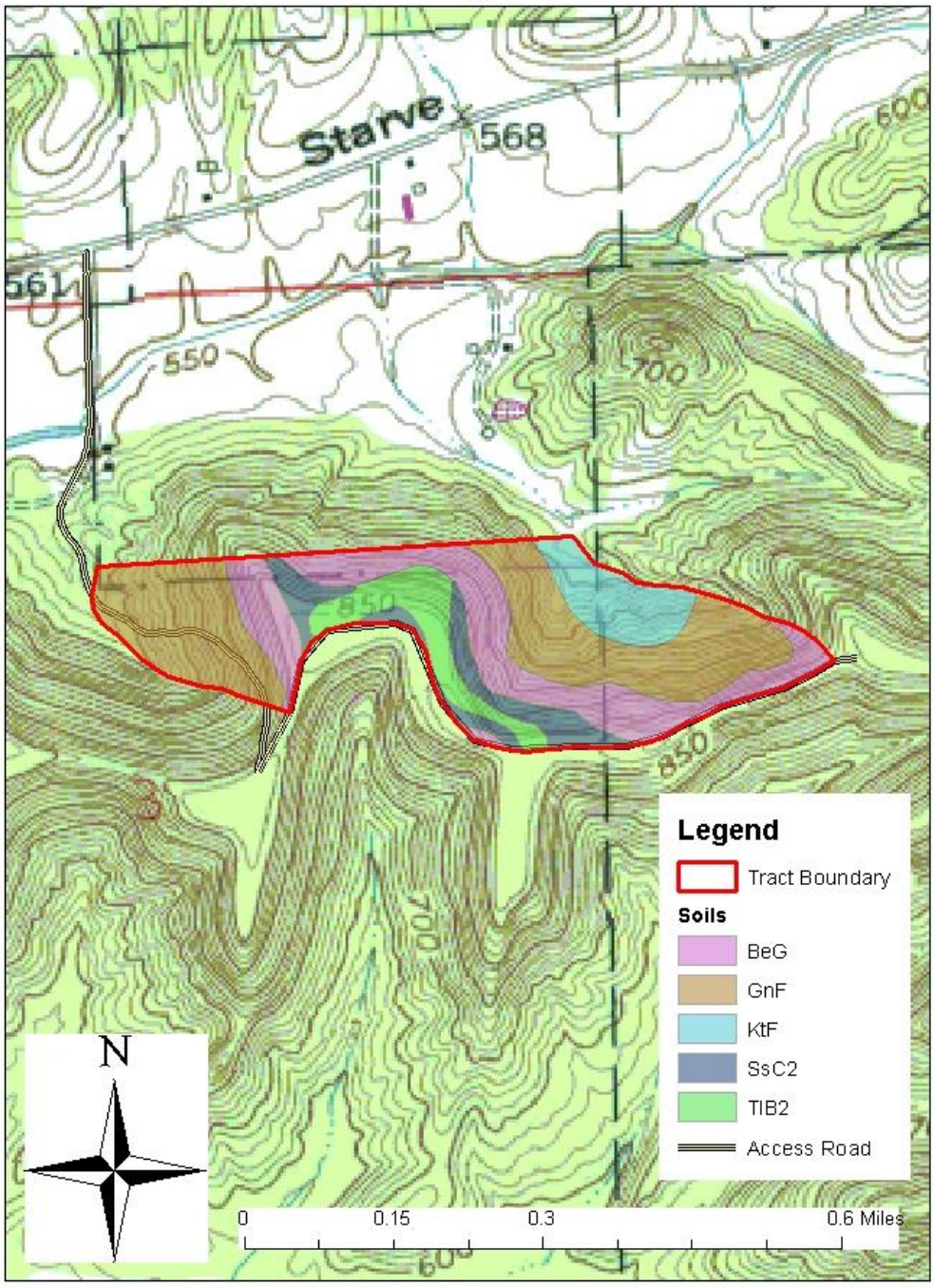


Soils Map
Compartment 5 Tract 6
Jackson-Washington State Forest



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