Indiana Department of Natural Resources
Division of Forestry
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RESOURCE MANAGEMENT GUIDE

Jackson-Washington State Forest	Compartment 3 Tract 19
Forester Sandy Derringer	
Draft Plan Date: December 27, 2012	Inventory Completion Date: March 21, 2012
Management Cycle End Year: 2036	Management Cycle Length: 24

Location

This tract is located in the north half of Section 35, Township 5 North, Range 4 East, Brownstown Township, Jackson County. The tract lies approximately 3 miles south of Brownstown.

General Description

This tract is comprised of stands of oak-hickory, chestnut oak, and mixed hardwoods. The drain in the southwest corner of the tract is mostly mixed hardwoods that are reaching maturity. The topography consists of gentle slopes going up from the drain in the southwest to steep slopes by the road and horse trail in the northern part of the tract. The total tract is 72 acres.

History

The land that makes up this tract came from five separate land acquisitions. The first was a 64 acre purchase from August and Daisy Pollert on June 20, 1933. The next was an 80 acre purchase from Giles and Cora Smith on July 6, 1933. Another 40 acres was also purchased on July 6, 1933 from Giles and Cora Smith, William Schaub, Roger and Myrtle Schaub, and W.F. and Barbara Schaub. Seventy-six acres of land was purchased from William and Katherine Shaw on January 7, 1950. The final acquisition that contributed to these tracts was 30 acres purchased from Asbury and Hettie Jarvis on June 18, 1952.

The land that makes up this tract was formerly part of a larger tract that was 95 acres. The first recorded management history of this tract was a June 1971 inventory and plan. At that time the inventory estimated the tract to have 1,782 board feet per acre, with 864 board feet as harvest stock and 918 board feet as growing stock. The next activity to occur was another inventory and management plan on July 28, 1986. This inventory estimated 4,688 board feet per acre, with 1,513 board feet as harvest stock and 3,175 board feet as growing stock. A timber sale was marked on 62 acres of this tract and sold on October 11, 1988. The sale included 81,823 board feet in 553 sawtimber trees with an additional 182 culls. The top three species by volume were black oak, chestnut oak, and scarlet oak. Joe Spence Logging purchased the sale for $9,100.00 ($111.22/MBF).

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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 southern two thirds of this tract consists of gentle topography of primarily south-facing slopes. The northern third of the tract is steep south-facing slopes. The underlying geology consists of sandstone, siltstone, and shale bedrock. Ephemeral drainages are the only streams found in this tract. This tract lies in the watershed of Starve Hollow Lake, which eventually drains into Mill Creek, a tributary of the Muscatatuck River.

Soils
Kurtz silt loam (KtF) (27.1 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.

Coolville silt loam, 12 to 20 percent slopes (CoD) (13.9 acres) This moderately well drained soil has a seasonal high watertable at 1.0 to 2.0 ft. and is on side slopes on uplands. Slopes are 12 to 20 percent. 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. This soil type has a site index of 66 for northern red oak.

Gilpin silt loam, 25 to 55 percent slopes (GnF) (17.2 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.

Berks channery silt loam (BeG) (8.5 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

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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.

Stonehead silt loam (SsC2) (.74 acre) 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.

Beanblossom silt loam (BcrAW) (3.3 acres) This deep, well drained soils that 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, white oak, sugar maple, and yellow-poplar.

Cincinnati silt loam (CcC2) (1.4 acres) This series consists of very deep, well drained soils that are moderately deep to a fragipan. Slope ranges from 1 to 18 percent. Native vegetation is deciduous mixed hardwoods, including oaks, hickory, yellow-poplar, maple, and beech. This soil is well suited to trees. Plant competition is moderate. Seedlings survive and grow well if competing vegetation is controlled. The site index is 80 for northern red oak. Preferred trees to manage for are black oak, chestnut oak, persimmon, scarlet oak, northern red oak, and white oak.

Access

The main access to this site is a paved road, Skyline Drive, which comes off of Starve Hollow Road and goes up the fire tower hill. Access within the tract may be limited in some areas due to the steep banks and a guard rail coming off Skyline Drive. A main ridge that has a horse trail on it will provide the main access to most of the tract.

Boundary

The northern boundary of this tract follows a ridge top. The western boundary follows the same ridge and the northern boundary as it travels south and decreases in elevation. The eastern boundary is Skyline Drive. The southern boundary line is a property line and is marked with orange blazes on trees.

Wildlife

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Maintenance levels for the number of snags are exceeded in all DBH classes. Harvesting and post harvest TSI will also increase the number of snags. The snags will provide roosting habitat for the Indiana bat.

The large number of mast trees in this tract provides food sources for turkey, deer and squirrels. Openings created by the harvest will also provide more bugging areas, berries, and brush for cover and nesting. The single tree and group selection openings will create more interior edge in the tract, but will not create fragmentation.

A large Black Rat Snake, Woodcock, deer, and several song birds were seen in the tract. Deer scrapes, deer trails, and turkey diggings were seen in the tract as well. The larger drain in the Southwest part of the tract could be habitat for some amphibians.

Indiana Bat Habitat Snag Guidelines					
				Available	**Available**
Snag	**Maintenance**	**Optimal**	**Inventory**	**Above**	**Above**
Size Class	**Level**	**Level**	**Estimate**	**Maintenance**	**Optimal**
5"+ DBH	288	504	453	165	-51
9"+ DBH	216	432	269	53	-163
19"+ DBH	36	72	87	51	15

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 consists of native stands of oak-hickory, mixed hardwoods and Chestnut oak. There is an area that could potentially be a siltstone glade barrens, and major skid trails should avoid this area if possible. Light harvesting may occur in and around this area to promote more sunlight reaching the herbaceous layer.

Invasive species noted in the tract were multiflora rose, Japanese silt grass, and vine honeysuckle. The stilt grass could be treated if in accessible areas and resources allow. Eradication of stilt grass in this area is no longer an option due to the prevalence of the seed bank in streams throughout the area. The multiflora rose is just scattered bushes that do not seem to be interfering with the forest growth. The vine honeysuckle is primarily found near the power line right-of-way and does not need treatment at this time. Other species noted were holly and English ivy. The holly and ivy are not fast-growing species and both could be treated during the post-harvest TSI. The ivy is near the power line right-of-way in the southeast corner of the tract. The ivy should receive a foliar application of triclopyr, and the holly may be cut and stump treated with triclopyr, glyphosate, or Tordon RTU.

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Recreation
Hunting, horseback riding, biking, picnicking, and fall foliage viewing are the primary recreational uses of this tract. During a timber harvest, the portion of Skyline Drive bordering this tract would need to be shut down for public safety. The horse trail would also need to be shut down during active harvest times as well.

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 Description and Silvicultural Prescription

Oak-Hickory (22 acres)
The overstory species are mostly chestnut oak, white oak, black oak, red oak scarlet oak, pignut hickory, mockernut hickory, and shagbark hickory. The understory species are American beech, Sugar maple, Red maple, oak and some hickory. Regeneration is poor with it being dominated by American beech. Oak, maple and hickory regeneration was occasionally found. The quality of the trees varies. In most areas the White oaks have the better quality and form and the Chestnut oaks are more poorly formed. Management of this area would include removing trees that are over mature, poorly formed or of low quality to release the better quality oaks. Trees damaged by a past fire should also be considered for removal.

Chestnut oak (38 acres)
The overstory for this subdivision consists mainly of Chestnut oak with an occasional scarlet oak, black oak, or red oak. The understory species are American beech, red maple, and sugar maple. Regeneration is oak, American beech and sassafras. These areas have mostly low quality, damaged and suppressed trees. Some of these areas will benefit from making an opening. Thinning would also allow release of the better quality oak.

Mixed hardwood (12 acres)
The overstory of these areas consists of Yellow poplar, black oak, sugar maple, red maple, Black walnut, and White ash. The understory is comprised of sweet gum and pawpaw. Regeneration is mainly pawpaw. The average Basal area is

This area has some very nice quality Yellow poplar and Black oak that are large. One area in the stream bottom has lots of hollow culls and would benefit from an opening. The majority of the area would benefit most by removing the over mature trees to release the nicer quality trees left.

Summary Tract Silvicultural Prescription and Proposed Activities
Management for this tract should be mainly single tree and small group selection openings. This will release the better quality trees and keep it an uneven age stand. Lower quality, damaged and over mature trees should be removed.

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The prescribed harvest would remove an estimated 2,574 board foot per acre of timber and leave an estimated 4,488 board feet per acre to continue growing.

The management of the timber in this tract should have little negative impact on soil or wildlife. Close out of the log roads/ skid trails that are part of the horse trail system should be closely monitored. The use of these trails will help widen and reduce maintenance of the trails for several years. Closely following BMP's on the steeper slopes and in the drain will ensure erosion does not take place. Snags should be maintained to benefit wildlife. Timber stand improvement following the sale will create more snags for wildlife as well.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mark and Sell Timber Harvest with Tract 21	2013-2014
Post-Harvest Timber Stand Improvement	2015-2016
Review any openings greater than one acre for regeneration	2016-2018
Inventory and Management Guide	2035-2036

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TM 901 RESOURCE MANAGEMENT GUIDE					
INVENTORY SUMMARY					
			Compartment:	3	
Jackson-Washington State Forest			Tract:	19	
Forester:	Spalding/Derringer		Date:	3/21/12	

ACREAGE IN:				
	Commercial Forest	71		
	Recreation Use	1	Total B.A./Acre	109.2
	Permanent Openings		B.A. Trees 14" & Up	75.9
	Other Uses		B.A. Trees < 14"	32.7
	TOTAL AREA	72		

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
Chestnut Oak	63,220	101,800	165,020
Black Oak	54,800	84,950	139,750
White Oak	11,900	94,400	106,300
Yellow Poplar	29,220	4,290	33,510
Red Oak	6,530	4,760	11,290
Scarlet Oak	5,780	4,730	10,510
Sugar Maple	5,400	3,340	8,740
Shagbark Hickory	0	4,670	4,670
White Ash	2,670	0	2,670
Red Maple	1,100	1,140	2,240
Pignut Hickory	2,120	11,800	13,920
Mockernut Hickory	0	1,390	1,390
Black Walnut	0	1,390	1,390
TRACT TOTALS	182,740	318,660	501,400
PER ACRE TOTALS	2,574	4,488	7,062

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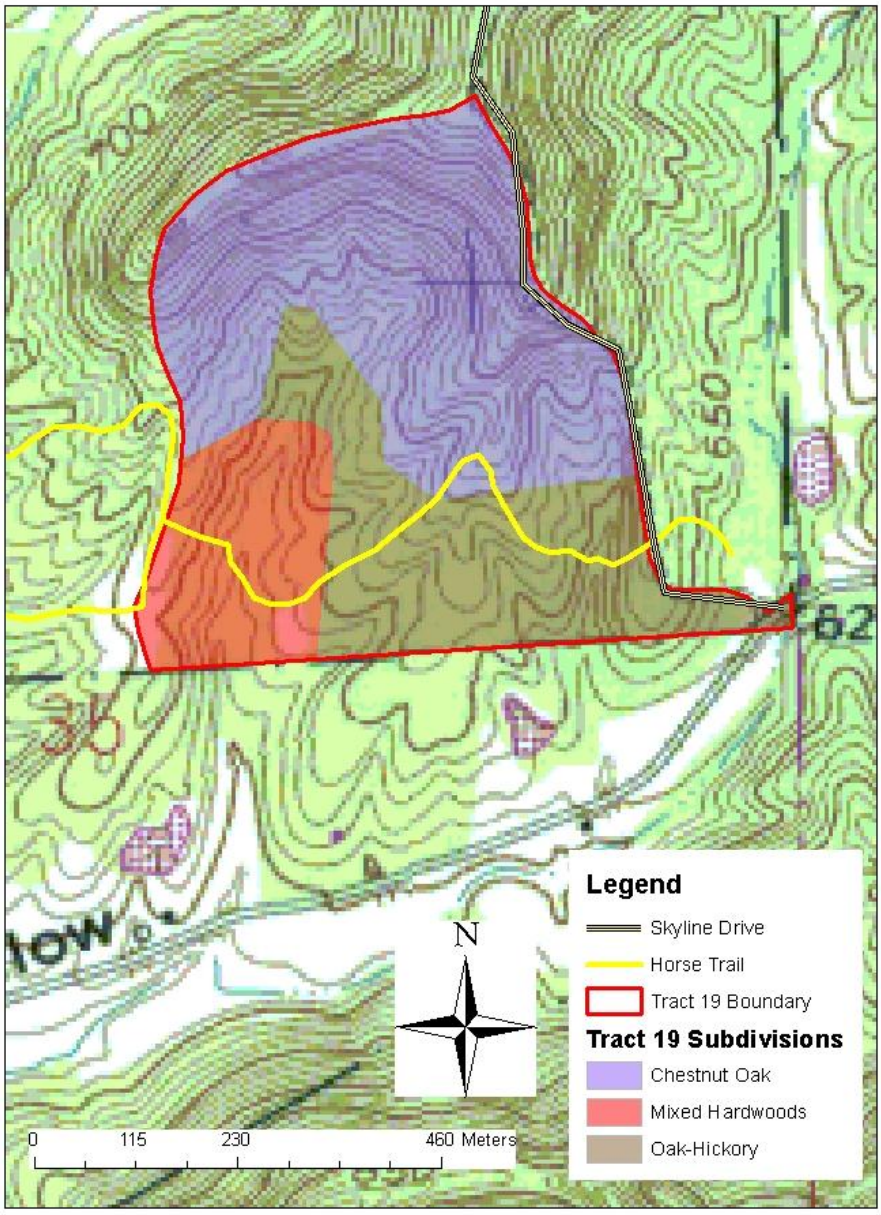
Tract Subdivisions
Compartment 3 Tract 19
Jackson-Washington State Forest



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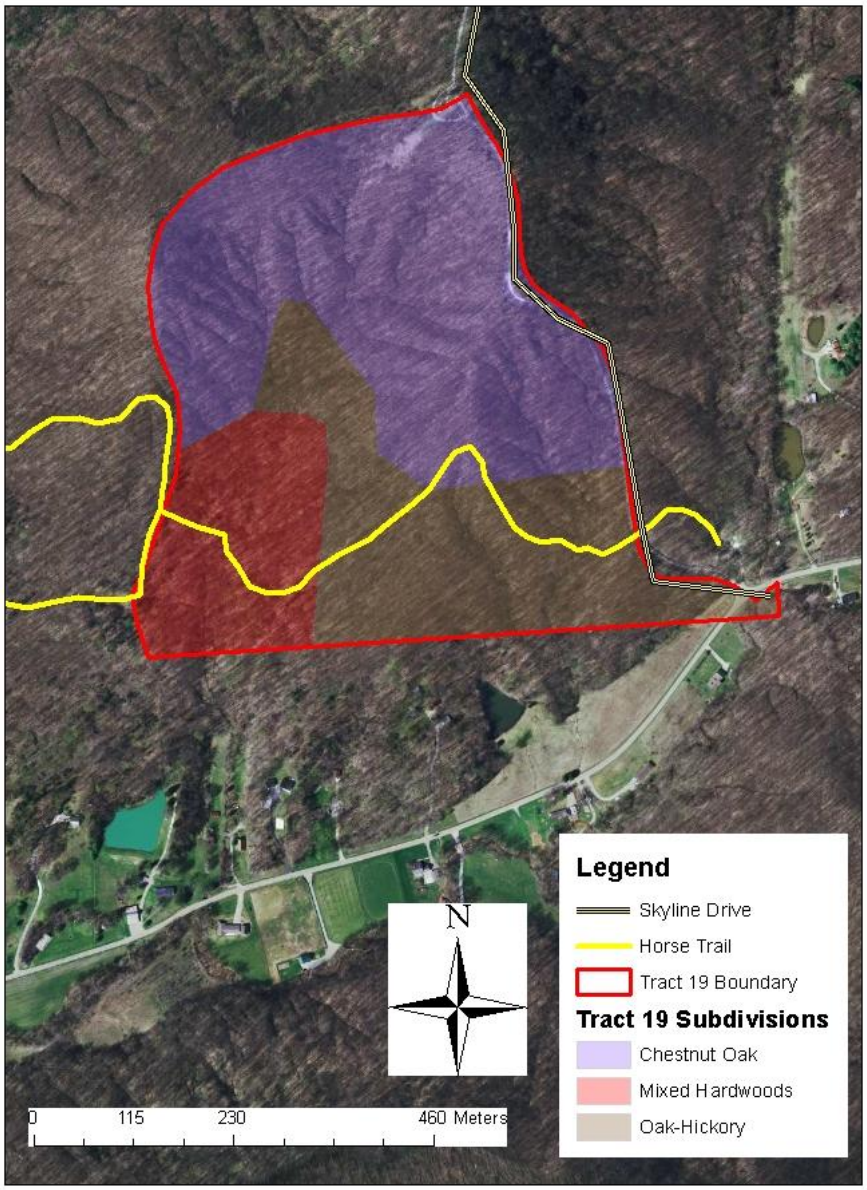
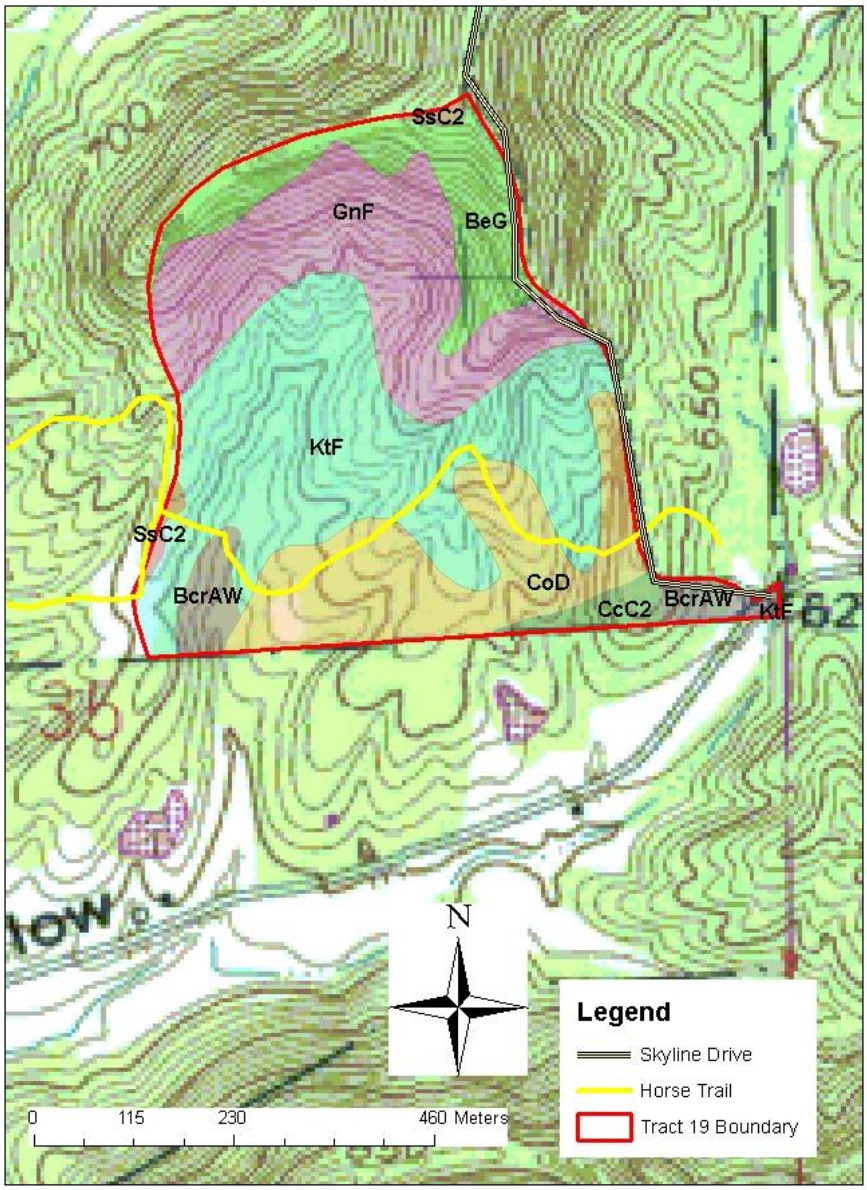
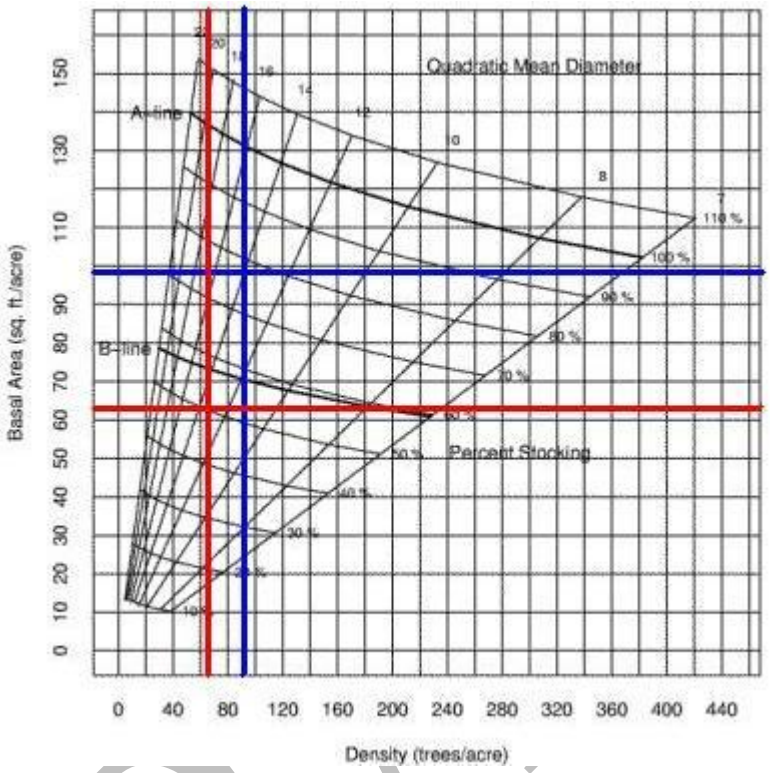


Soils Map
Compartment 3 Tract 19
Jackson-Washington State Forest



Stocking Guide
Compartment 3 Tract 19



Estimated Pre-Harvest Data in Blue
Total Basal Area per Acre = 97.8 square feet per acre
Total Number Trees per Acre = 91
Average Tree Diameter = 14 inches DBH
Percent Stocking = 78%

Projected Post-Harvest Data in Red
Total Basal Area per Acre = 62.3 square feet per acre
Total Number Trees per Acre = 64
Average Tree Diameter = 13.5 inches DBH
Percent Stocking = 50%

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