Indiana Department of Natural Resources
Division of Forestry

RESOURCE MANAGEMENT GUIDE

State Forest: Jackson-Washington | Compartment: 1 Tract: 15
Forester: D. Potts | Date: April 11, 2013
Management Cycle End Year: 2037 | Management Cycle Length: 24years

Location
This tract is located in Jackson County in sections 17 and 18 of township 5 N, range 5E. From Brownstown, take State Road 250 southeast for two miles to the entrance of Jackson-Washington State Forest. From the entrance travel northeast for .8 mile to the access road the leads into the tract; it is on the north side of the road, across from the dam.

General Description
The tract is 60 acres and all acres are considered commercial forest. This tract is comprised of stands of oak, mixed hardwoods. Snags abound throughout.

History
The tract is comprised of 5 separate land acquisitions. A portion of the tract came from a purchase of 40 acres from Wilbur D. Dersch, in 1995. Another portion of the tract came from a purchase of 40 acres from Willard Gossman and Marye C. Gossman, in 1931. A portion of the tract came from a purchase of 40 acres from Hettie A. Doerr, in 1931. A portion of the tract came from a purchase of 40 acres from Charles T. Brandenstein, in 1931. A portion of the tract came from a purchase of 40 acres from Matthias Gossman and Annetta Gossman, in 1931.

According to the compartment/tract folder for this tract the first recorded management activity occurred in 1971 and was a management plan. There is no data associated with the management plan only a paragraph write-up. The plan states that "It is an excellent site and has the highest volume per acre of any tract yet cruised on the forest." The plan recommends waiting 10 years for a harvest.

The next recorded activity was an inventory and management guide in 1979 that indicated a tract total volume of 440,931 bd.ft. (7,228 bd.ft./acre) with a recommended harvest volume of 221,664 bd.ft. (3,634 bd.ft./acre).

The next recorded activity was a white oak veneer sale in 1979 with 15,491 bd. ft. sold for $10,777.00. Following the veneer sale, a mixed hardwood sale occurred in 1981 with 129,955 bd. ft. being sold for $23,501. The management plan mentions that 25% of the volume removed in 1981 was from dead trees. The plan indicates a possible cause of mortality being several factors including: severe winters of 1977-78-79, dry summers, epidemic populations of loopers and canker worms, and finally two-lined chestnut borer.

Landscape Context
The tract is completely surrounded by steep hills and forested lands which are primarily used for timber production, recreation, and hunting. There is very limited agriculture being practiced within a one mile radius. Development is limited and primarily consists of single-family residences.

Topography, Geology and Hydrology
Proper implementation of Best Management Practices during and after the harvest will minimize impacts to water quality. Parent materials of the soils in this tract are siltstone and shale. Topography ranges from gentle to steep.

Soils
Beanblossom silt loam (BcrAW) (2.25 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.

Berks channery silt loam (BeG) (14.45 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 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.

Coolville silt loam, 12 to 20 percent slopes (CoD) (1.18 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) (30.66 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) (38.79 acres) (10.54 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.

Wellston silt loam (WeD2) (0.83 acres), **12 to 18 percent slopes, eroded**
This well drained soil has a watertable at a depth greater than 40 inches and is on flood plains. Slopes are 12 to 18 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 moderate (0.6 to 2.0) in the most restrictive layer above bedrock. Available water capacity is moderate (7.3 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 72 inches.

Access
The main road leading into Jackson-Washington State Forest does not have an official road name, but is labeled as "Camp Road" on Google Maps. The road is paved and provides primary access to the tract, via the fire trail entrance northwest of the Knob Lake dam. It intersects State Road 250 S just southeast of County Road 100 E, southeast of Brownstown. Within the tract the topography should not limit equipment access anywhere across the site.

Boundary
The tract is enclosed by Jackson-Washington State Forest property and does not touch private property on any side. This tract is bounded by trail 10 on the North, East, and South. The western boundary is a ridgetop running down to a mapped intermittent drainage.

Wildlife

Wildlife Habitat Feature Tract Summary

	Maintence level	Optimal level	Inventory	Available above maintence	Available above optimal
Snags (all species)					
5"+ DBH	240	420	282	42	-138
9"+ DBH	180	360	282	102	-78
19"+ DBH	30	60	86	56	26

Maintenance level for the number of snags is exceeded in all DBH classes and optimal level is exceeded for the 19" + DBH classes. No other action is needed within this tract. The snags present on the site provide great roosting habitat for the Indiana bat and TSI after the harvest should create more. Openings created by the harvest are also important to providing bats with ideal roosting habitat. Single tree selection and group selection openings will create more habitat types, mast and browse for wildlife. The harvest will not produce fragmentation or disrupt any travel corridors and any openings are meant to mimic natural disturbance that occurs in unmanaged stands, such as a wind event or a tornado. Proportions of cover types will slightly change in the short term but will return to current ratios in the future. Wildlife that are specialist interior forest species will benefit from a new diversity of food sources while generalist species would not have enough habitat created from these small openings to compete with those interior specialists.

Communities

A Heritage Database Review was completed for this tract. 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.

Japanese stilt grass, is an exotic plant, and was found on the hiking trails and firelanes near and within the tract. . It will be monitored for management impacts and control needs.

Forest Condition

According to the inventory data, a harvest will drop the basal area from 112.2 square feet to 86.1 square feet and the number of trees per acre will be reduced from 98 to 86. This will in turn decrease stocking from 88% to 69%.

Recreation

The primary recreational use of this tract is by hikers, wildlife viewers, and hunters. This tract contains hiking trails 1 and 10. During the proposed harvest, portions of the trails will be shut down for public safety.

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

Tract Subdivision Description and Prescription

Oak-Hickory (41 acres) The overstory species, within this subdivision, are primarily chestnut oak, northern red oak, and white oak. Those three species account for nearly 85% of the estimated total volume within this subdivision. The understory species are mostly sugar maple and yellow poplar. Regeneration consisted mostly of sugar maple and American beech, although a small number of chestnut oak seedlings were present. The prescribed timber marking within this subdivision will focus on single tree and group selection. Single tree selection should focus on maintaining and enhancing the oak-hickory forest type. Whereas trees with good form and growth are released through the removal of slower growing, damaged and trees with poor form. Due to drought, past fire damage, and wind-throw, regeneration openings within this subdivision are prescribed. The size and number of openings will vary depending upon several factors, one of them being the number of hollow trees in a given area. One particular area (approximately middle of tract, directly west of the eastern tract boundary) had an excessive amount of grapevines. These grapevines should be cut and treated with herbicide, as the crowns of the trees within this particular area are being overtaken and their growth is suffering.

Mixed Hardwood (19 acres) The overystory species, within this subdivision, are yellow poplar, sugar maple, American beech and white oak. These four species account for nearly 75% of the estimated volume. The understory species are mostly sugar maple and American beech. Regeneration consisted primarily of sugar maple and American beech. This subdivision contains several pockets of black walnuts, including some young high quality stems. There are many excellent white oaks within this subdivision as well. The prescribed single tree selection will focus on promoting the growth of these high quality black walnuts and white oaks, by removing less desirable competitors. Due to drought, past fire damage, and wind-throw, regeneration openings within this subdivision are also prescribed. The size and number of openings will vary depending upon several factors, one of them being the number of hollow trees in a given area. The number and size of regeneration openings will vary depending upon the condition of trees within the area when the timber marking takes place.

Overall Tract Prescription and Proposed Activities
Silvicultural prescription: single-tree and group selection improvement harvest in 2015, in conjunction with compartment 01 tract 12 (see compartment 01 tract 12 management guide for details). An emphasis in the marking should be to favor quality oaks and hickories, those with little decay, good form and growth characteristics. The number of regeneration openings and size of openings will vary based on the conditions discovered in the field. Following these recommendations should provide for a tract of well stocked healthy and more vigorous growing stock. An area, located within the oak-hickory subdivision, with an excessive amount of grapevines should be treated prior to the start of harvest operations. Stilt grass should be sprayed prior to harvest operations. During and

after harvest operations best management practices (BMP's) will be implemented to minimize the impact to soil and water resources. Following the harvest, timber stand improvement should be performed to remove grapevines, reduce American beech and sugar maple saplings that are competing with or hampering oak regeneration, release future crop trees and to deaden (non-merchantable) trees not removed during the harvest. A re-inventory should occur in 20 years, following the harvest.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Pre-harvest grapevine control	2014-2015
Spray stilt grass	2014-2015
Mark harvest and sell timber	2015-2017
Post-harvest TSI	2017-2018
Inventory and Management Guide	2037

TM 901

RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

			Compartment:	1
Jackson-Washington State Forest			Tract:	15
Forester:	D. Potts		Date:	3/5/13

ACREAGE IN:	
Commercial Forest	60
Non-Commercial	0
Other Uses	
TOTAL AREA	60

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
chestnut oak	99260	244240	343500
yellow poplar	36970	55350	92320
sugar maple	21230	56690	77920
northern red oak	11830	63080	74910
white oak	0	63260	63260
American beech	3400	20490	23890
sweetgum	0	12910	12910
pignut hickory	7170	4590	11760
shagbark hickory	0	10580	10580
black oak	0	9410	9410
blackgum	7210	1910	9120
white ash	4680	0	4680
hackberry	0	4230	4230
black walnut	0	3120	3120
sassafras	0	2930	2930
TRACT TOTALS	191,750	552,790	744,540
PER ACRE TOTALS	3,196	9,213	12,409

PREVIOUS CRUISE DATA

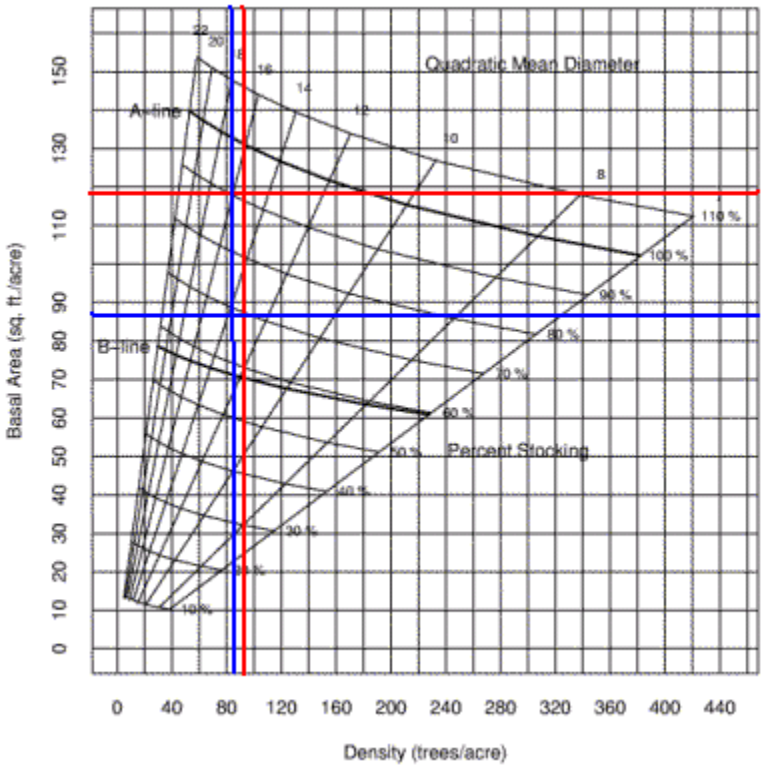
DATE:	March, 1979	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		219,266	221,664	440,931

Stocking Guide

Compartment 1 Tract 15

2012 Inventory

60 acres



Pre-Harvest Inventory Data in Red

Total BA/A = 112.2 sq.ft./AC

Total #trees/acre = 98

Avg. tree diameter = 15 inches

Percent stocking = 88%

Post-Harvest Inventory Data in Blue

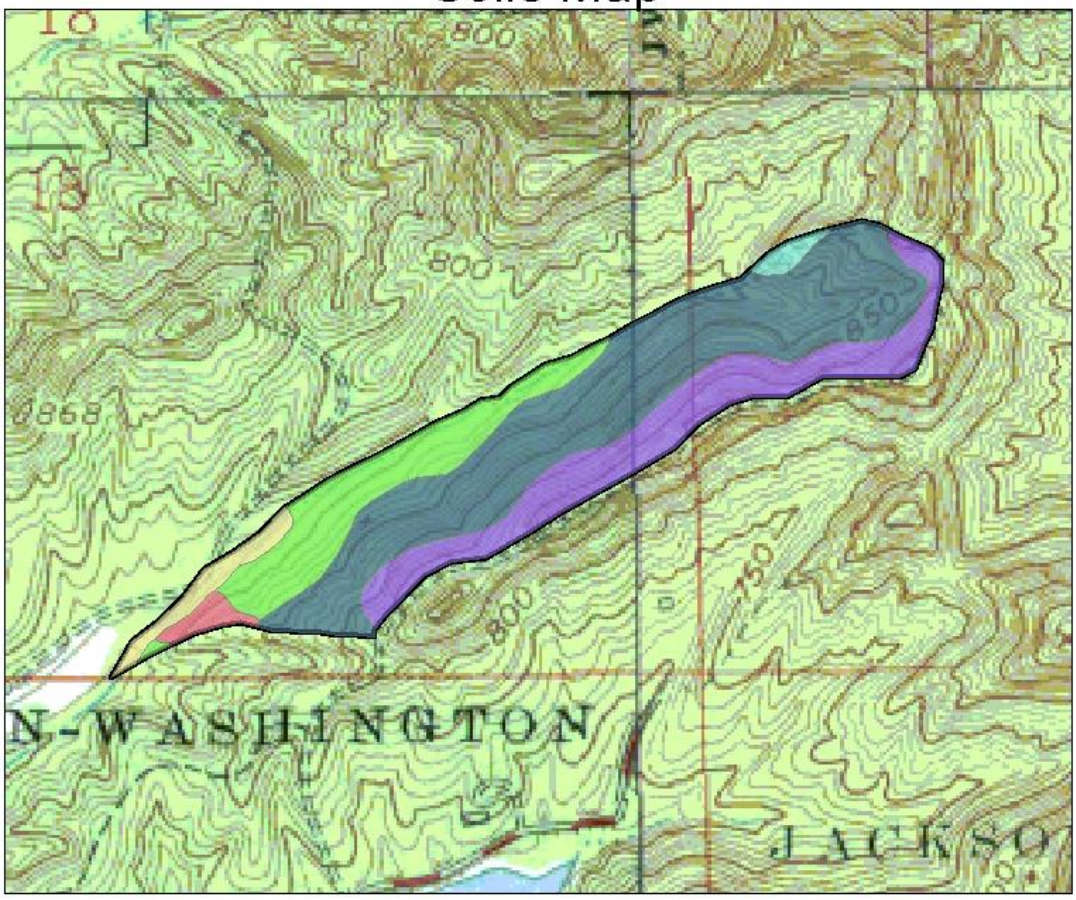
Total BA/A = 86.1 sq.ft./AC

Total #trees/acre = 86

Avg. tree diameter = 14 inches

Percent stocking = 69%

Jackson-Washington State Forest
Compartment 1 Tract 15
Soils Map



Legend

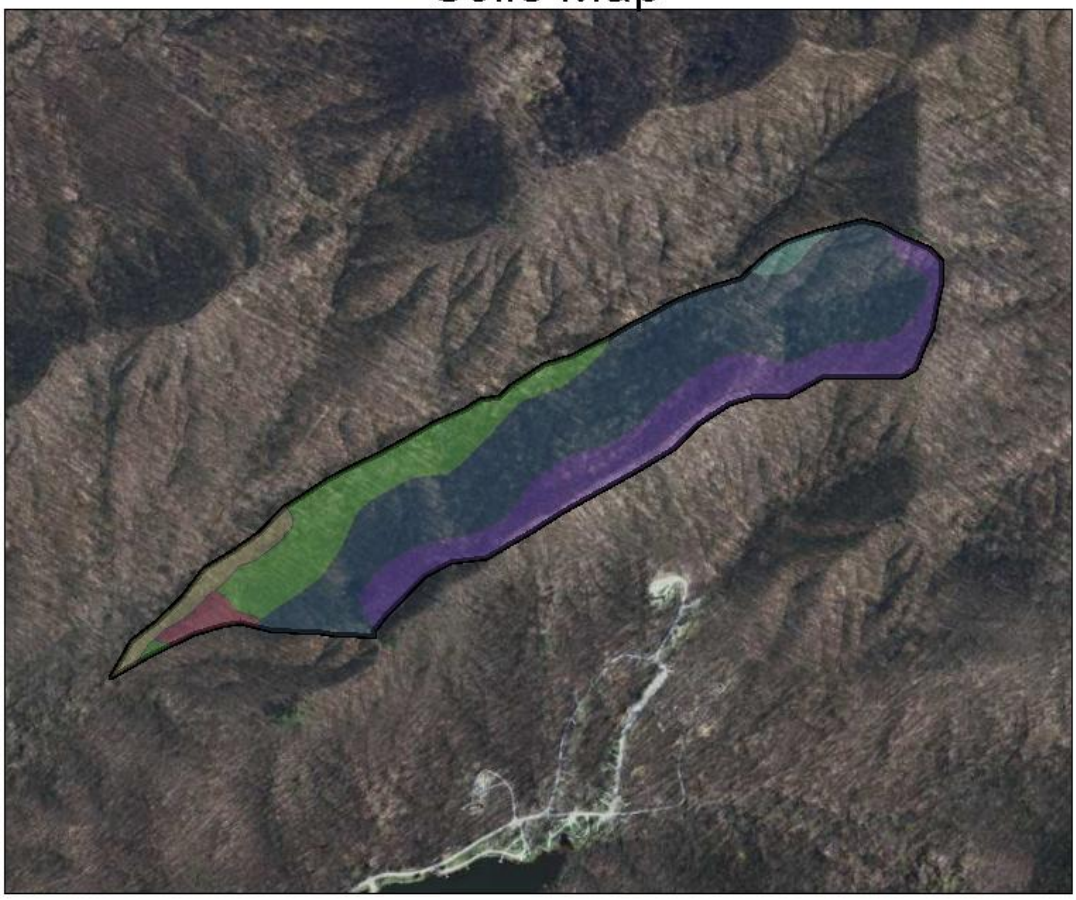
Soil s

- BorA/W
- BeG
- CoD
- GnF
- KtF
- WkD2
- Tract boundary

N W E S

0 0.05 0.1 0.2 0.3 0.4 Miles

Jackson-Washington State Forest
Compartment 1 Tract 15
Soils Map



Legend

Soil s

- BorA/W
- BeG
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- GnF
- KtF
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- Tract boundary

N W E S

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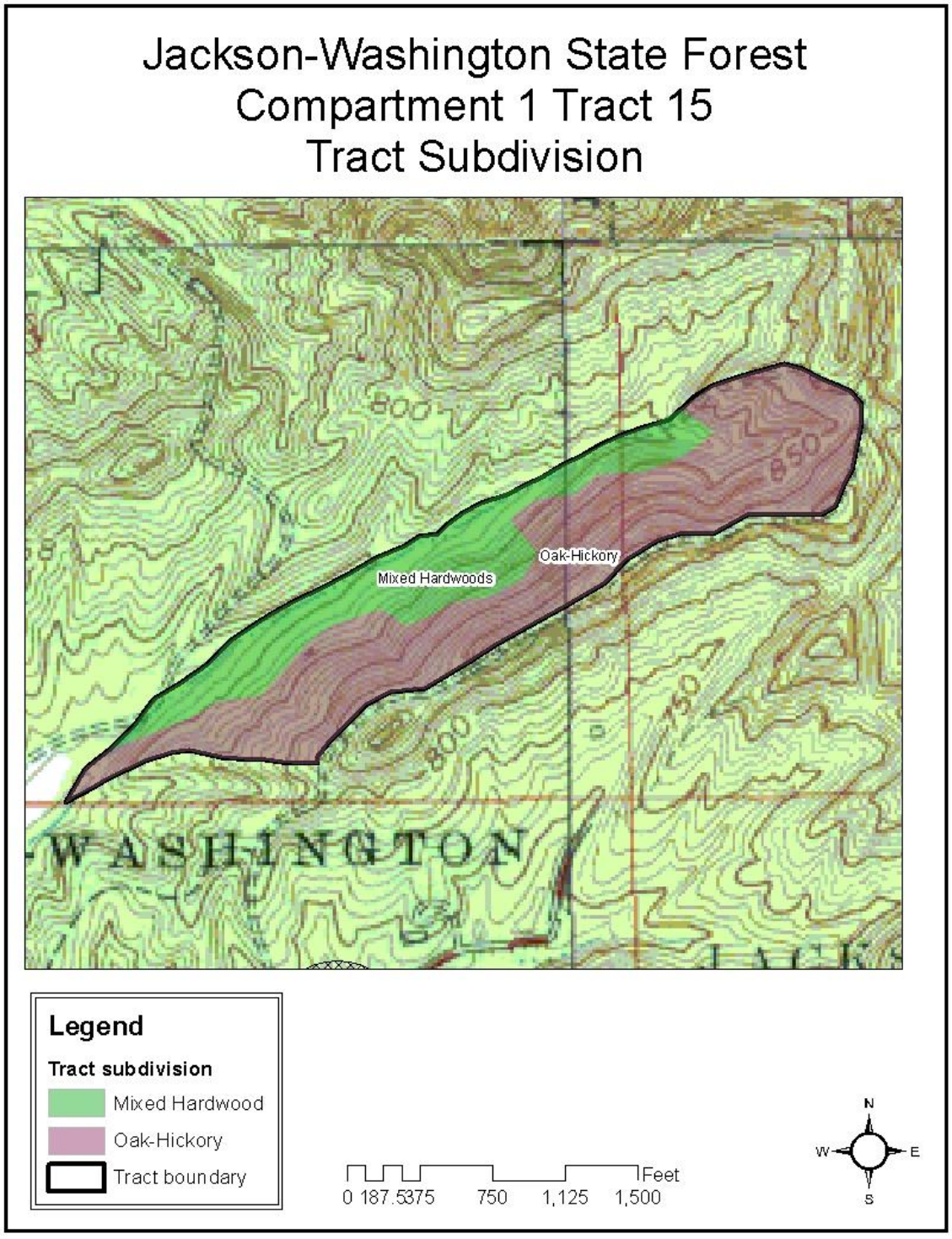

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You must indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered. Note: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