Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: Jackson Washington
Forester: Matt Vellella
Management Cycle End Year: 2037

Compartment: 11 Tracts: 21, 22
Date: 10/15/10
Management Cycle Length: 26 years

Location

This tract is a total of 214 acres located in Sections 1 and 2, Township 3 North, Range 5 East, Gibson Township, Washington County. It is 2.7 miles northwest of Little York on State Road 39.

General Description

This tract is not typical of most of the forest types found at Jackson-Washington State Forest. Instead of the steeply sloped hills and highland areas, this is a flat bottomland tract with some tree species found at the northern extent of their range. Those species include overcup oak, pumpkin ash, sugarberry, shellbark hickory, and swamp cottonwood. Some of those even go unlisted in reference sources as having a range this far north. The tracts combine for a total acreage of 214, all of which are in this bottomland area. The cover type is almost entirely bottomland hardwoods. The three tree species with the most volume are red maple, overcup oak, and pumpkin ash.

History

The property was purchased from Perry and Dorothy Fleenor on October 11, 2010. As indicated by scattered oak stumps, this property had a light harvest in the past 20 to 30 years that left a good stocking.

Landscape Context

This tract lies within a very large block of bottomland forest that is within the Healthy Rivers Initiative project area that encompasses 26,000 acres. A critical threat to most of the forestland in this block is improper timber management. Nearly all of the timber sales in this area have been diameter limit cuts that have resulted in removal of oak with regeneration of red maple, sweetgum, sycamore, cottonwood, and ash. This tract is one of the few existing parcels in the area with stands of bottomland oaks. Surrounding this block of bottomland forest is land heavily dominated by row crop agriculture. There are few residential homes within this area, likely due to the very high water table and frequent flooding. Little York lies on higher elevation and therefore contains the highest concentration of homes near this area.

Topography, Geology and Hydrology

Topography is almost entirely flat with slopes no greater than three percent present. The soils are often wet and flood seasonally. This area is typically flooded throughout the winter and spring. This would require that a timber harvest would be restricted to dry times of the year in order to prevent excessive rutting and soil damage. A perennial stream, Cammie Thomas Ditch,

divides the two tracts. This ditch is connected to the Muscatatuck River at both ends, 1.6 miles to the southeast and 5.7 miles to the northwest. The ditch is too wide for the use of a timber bridge; therefore, the area will have to be harvested from two different directions. The banks of the ditch are much higher than the surrounding ground. This prevents floodwaters from readily re-entering the ditch after flood events and therefore further affects the hydrology of the surrounding soils. A much shallower mapped intermittent stream runs through this tract as well.

Soils

Bartle silt loam (Ba) (4.1 acres) This soil series consists of very deep, somewhat poorly drained soils that formed in alluvium. Slopes range from 0 to 4 percent. The native vegetation is mixed hardwood forests. It is well suited to trees. Seedling mortality is a management concern. Overstocking helps to compensate for seedling mortality. The site indexes for hardwood species range from 75 (white oak) to 85 (yellow-poplar). Preferred trees to manage for are bur oak, swamp white oak, and swamp chestnut oak.

Bonnie silt loam (Bo) (11.8 acres) This poorly drained soil has a seasonal high watertable above the surface or within 1.0 ft. and is on flood plains. Slopes are 0 to 2 percent. The native vegetation is water tolerant grasses and hardwoods. The surface layer is silt loam and has moderately low organic matter content (1.0 to 3.0 percent). Permeability is moderately slow (0.2 to 0.6 in/hr) in the most restrictive layer above 60 inches. Available water capacity is very high (12.8 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. This soil is hydric.

Steff silt loam (Sf) (196.7 acres) The Steff series consists of deep, moderately well drained, moderately permeable soils, formed in mixed acid alluvium. These soils are on flood plains. Slopes range from 0 to 4 percent. The native vegetation is mixed hardwoods, such as river birch, sycamore, willow, water-tolerant oaks, swamp cottonwood, shellbark hickory, and red maple. This soil is well suited to trees. Management limitations occur during wet periods of the year. Severe rutting will occur during wet periods. Management activity should occur during dry or frozen periods of the year. The site index for sweetgum is 100. Preferred trees to manage for are bur oak, overcup oak, pin oak, swamp chestnut oak, swamp white oak, and shellbark hickory.

Access

The southwest corner of this tract is located within a few feet of State Road 39. The neighboring landowner is willing to allow access across their property for a timber harvest. Flat topography throughout the tract would allow easy access; however, as mentioned previously the ground must be dry to prevent excessive rutting. The eastern side of Cammie Thomas Ditch would need to be accessed from State Road 256. Land purchased through the Healthy Rivers Initiative would provide access to this side of the ditch.

Boundary

This is a very rectangular tract with straight north-south and east-west lines for all boundaries. The boundaries are also property lines. During the inventory, corner evidence was located on three of the property corners. It appears on the map as well as in the field that one of the corners may be located in Cammie Thomas Ditch. Some old fence was located along the southern

boundary as well. Where there is sufficient evidence, the boundary should be painted with orange blazes. Where there is not sufficient evidence the boundary will be marked with flagging only.

Wildlife

Snags (all species)	Maintenance Level	Optimal Level	Inventory	Above Maintenance	Above Optimal
5"+ DBH	856	1498	5075	4219	3577
9"+ DBH	642	1284	1355	713	71
19"+ DBH	107	214	161	54	-53

Maintenance level for the number of snags is exceeded in all DBH classes and optimal level is exceeded for the smallest two size classes. The extant snags and those that will be created in post-harvest TSI provide great roosting habitat for the Indiana bat. Thinning out the canopy and openings that may be created by the harvest would also provide them with easier flight lanes and good roosting habitat.

A Natural Heritage Database review was obtained 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.

Communities

These are bottomland hardwood forests. Buttonbush and spicebush are common shrubs. The overstory is a diverse mix of many bottomland tree species. One area of the tract becomes wet enough that only buttonbush and a few stagnated small diameter trees are growing there. No exotic invasive species were noted during the inventory. This site is likely too wet to support some common invasives such as stilt grass.

Forest Condition

Although most of the trees appear to be healthy, they are currently competing for light and growing space. The soils are productive, although regeneration is extremely tough with wet conditions during the growing season.

Basal area is currently at 113 square feet per acre, but will be reduced to about 91 square feet after the harvest. This will drop the stocking from the top of the fully-stocked range to the middle of the fully-stocked range. About 15 trees will be cut per acre. Average tree diameter will also only drop about half an inch. This will be enough to invigorate the trees to increase in girth and allow the regenerating seedlings to shoot up quickly while conditions provide. This is a lighter harvest than would be conducted elsewhere on 'typical' Jackson-Washington State Forest properties but the difficult regeneration and water fluctuations are issues that must be dealt with.

Recreation

No public access is currently available to this tract, therefore preventing any recreational activities. If public access is gained in the future, hunting will likely be the primary use due to seasonal flooding.

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.

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RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

		Compartment:	11
Jackson-Washington State Forest		Tracts:	21, 22
Forester:	Mike Spalding, Matt Vellella	Date:	10/8/10

ACREAGE IN:	
Commercial Forest	214
Non-Forest	0
TOTAL AREA	214

B.A. Culls	5.0
B.A. Sawtimber Trees	67.2
B.A. Trees < 12"	63.6
Total B.A./Acre	135.8

	GROWING STOCK (BF)	HARVEST STOCK (BF)	TOTAL VOLUME (BF)
Red Maple	287,480	86,190	373,670
Overcup Oak	164,790	0	164,790
Green/Pumpkin Ash	4,030	133,470	137,490
Pin Oak	105,380	29,190	134,580
Swamp/eastern Cottonwood	95,220	27,340	122,560
Swamp White Oak	93,450	2,440	95,890
Sweetgum	62,200	17,840	80,030
American Sycamore	56,760	17,300	74,060
Silver Maple	10,080	15,420	25,500
Shellbark Hickory	18,620	0	18,620
River Birch	7,050	6,290	13,350
Swamp Chestnut Oak	0	8,150	8,150
Sugarberry	5,360	0	5,360
Bur Oak	4,560	0	4,560
Shumard Oak	3,290	0	3,290
American Elm	3,260	0	3,260
Black Gum	0	2,980	2,980
Black Willow	1,990	0	1,990
Box Elder	0	0	0
TRACT TOTALS	923,500	346,600	1,270,100
PER ACRE TOTALS	4,320	1,620	5,940

Tract Description, Prescription, and Proposed Activities

This tract is not divided into separate subdivisions due to the homogeneity of covertypes and past history. The overstory is composed of bottomland hardwoods. The canopy varies in areas, containing proportionally more red maple in places or overcup oak in others or cottonwood in other places still. They all still have the same following species present in the overstory: green/pumpkin ash, red maple, pin oak, swamp/eastern cottonwood, overcup oak, swamp white oak, shellbark hickory, silver maple, sweetgum, American sycamore, river birch, sugarberry, black willow, shumard oak, bur oak, and American elm. While both eastern and swamp cottonwood were present, swamp cottonwood was much more common. The understory is similar to the overstory species with spicebush and wetland bushy shrubs. Regeneration is limited because of the harsh site conditions of flooding and inundating water, but ash and pin oak are the most common seedlings.

The whole tract should be harvested to manage for an uneven aged stand type and trees should be managed singly. Openings and canopy gaps may be used as well, but should not be too large in extent. Regeneration should be a top consideration while marking because the site is so difficult to recruit younger trees.

Green/pumpkin ash, red maple, pin oak, and swamp/eastern cottonwood were estimated to be the top four harvest species in board feet of volume. Red maple, overcup oak, pin oak, and swamp/eastern cottonwood are projected to be the top four species present after the harvest in volume. The ash should be harvested in anticipation of Emerald Ash Borer, which is currently present in Washington County. Harvesting many of the red maple and cottonwood will release residual bottomland oak trees. Most of the pin oaks tallied for harvest were due to rot defects. Retention and release of as many oak trees as possible will be important due to the decline in representation of these species in this landscape. It will also be very important to avoid logging in the wet season.

The proposed harvest would remove approximately 1,620 board feet per acre of the estimated present volume of 5,940 bd. ft. per acre, leaving a residual stand of 4,320 bd. ft. per acre. The basal area would be reduced from 113.1 square feet per acre to 90.8 square feet per acre. This would bring the stocking level from 94% down to 78%, which is still well above the b-line.

The stand should be marked in 2012-2013 and sold for harvest the same year. After the harvest in 2013-2017, post-harvest operations and TSI should be conducted. The stand should then be inventoried again 20 years after the harvest is completed.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mark and sell timber	2012-2013
Post-harvest and TSI	2013-2017
Inventory and Management Report	2037

References:

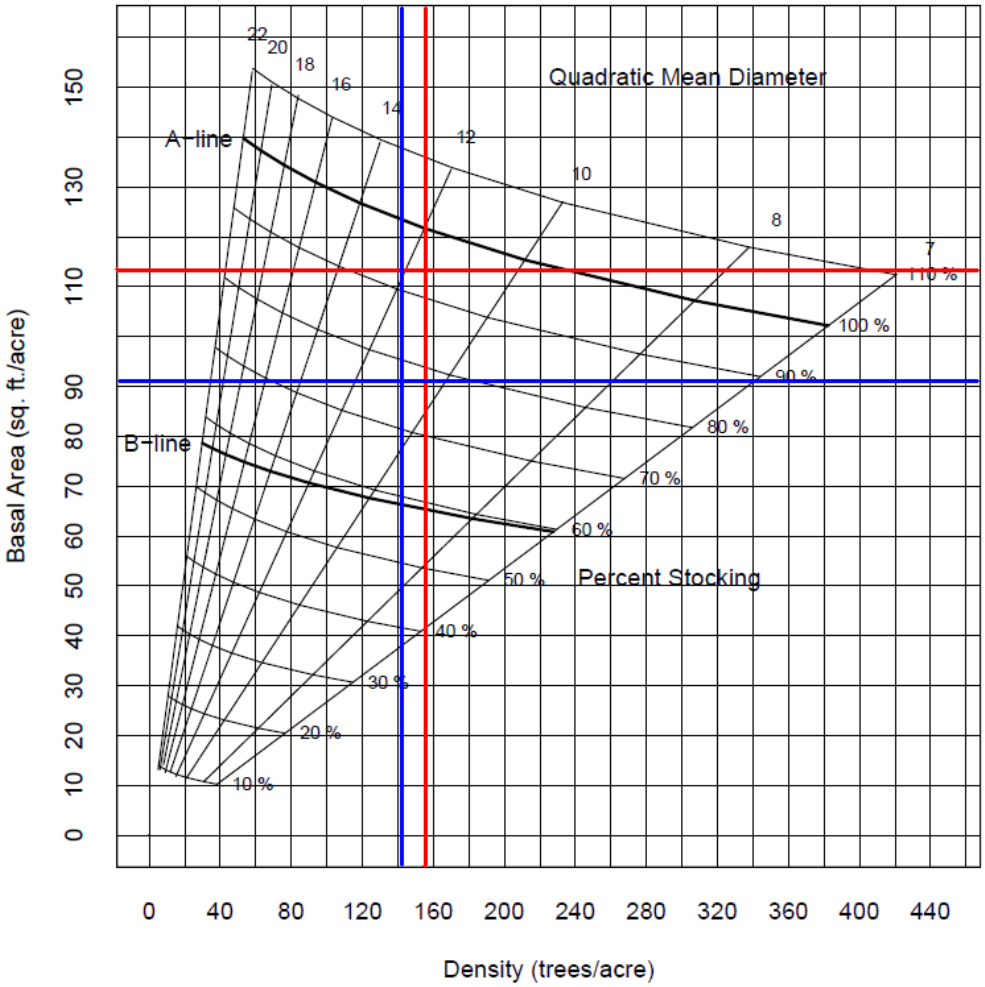
1. NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: December 5, 2011).
2. U.S. Fish and Wildlife Service. 2007. Copperbelly Water Snake (*Nerodia erythrogaster neglecta*) Draft Recovery Plan. Fort Snelling, Minnesota. Pages 17-18.
3. Indiana DNR Division of Forestry. 2008. Indiana State Forests: Environmental Assessment. Indianapolis, IN.

Stocking Chart

Compartment 11 Tracts 21 and 22

October 2010 Inventory

214 acres



Pre-Harvest Inventory Data in Red

Total BA/A = 113.1 sq.ft./AC

Total #trees/acre = 156

Avg. tree diameter = 11.5 inches

Percent stocking = 94%

Post-Harvest Inventory Data in Blue

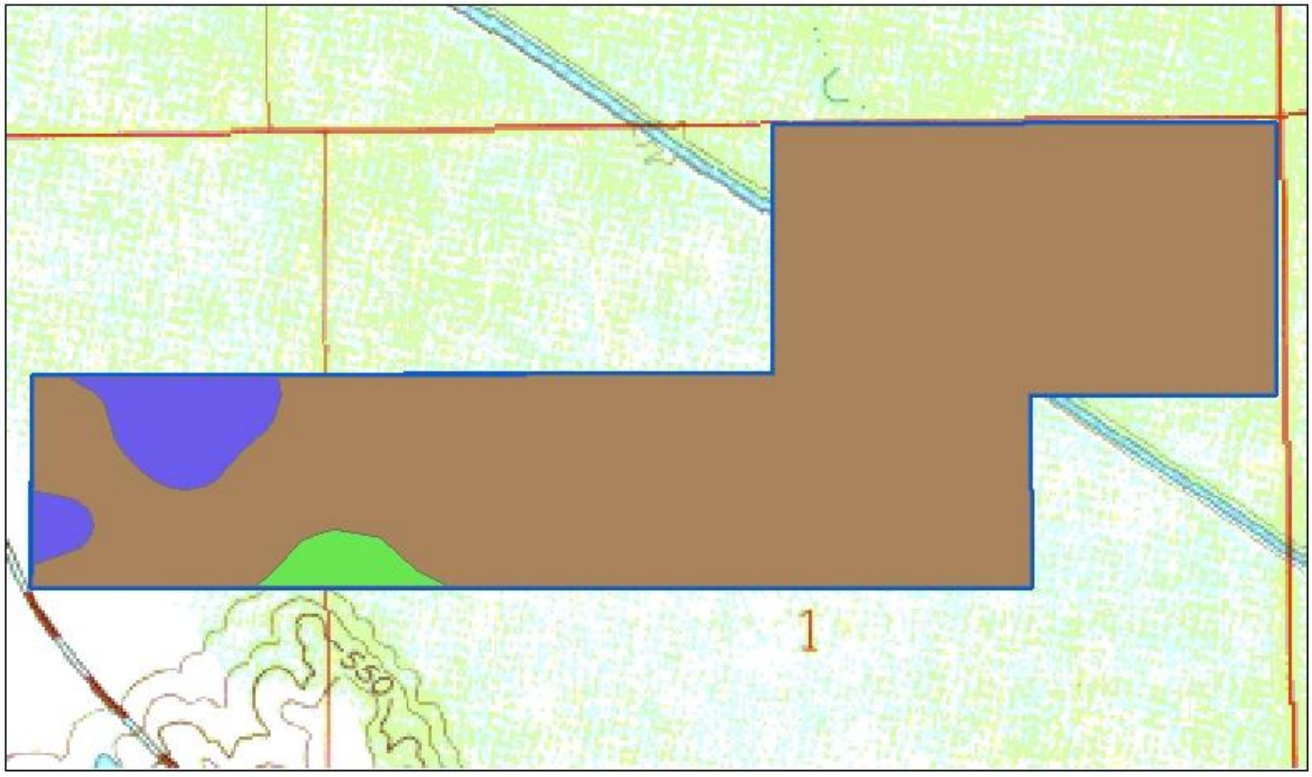
Total BA/A = 90.8 sq.ft./AC

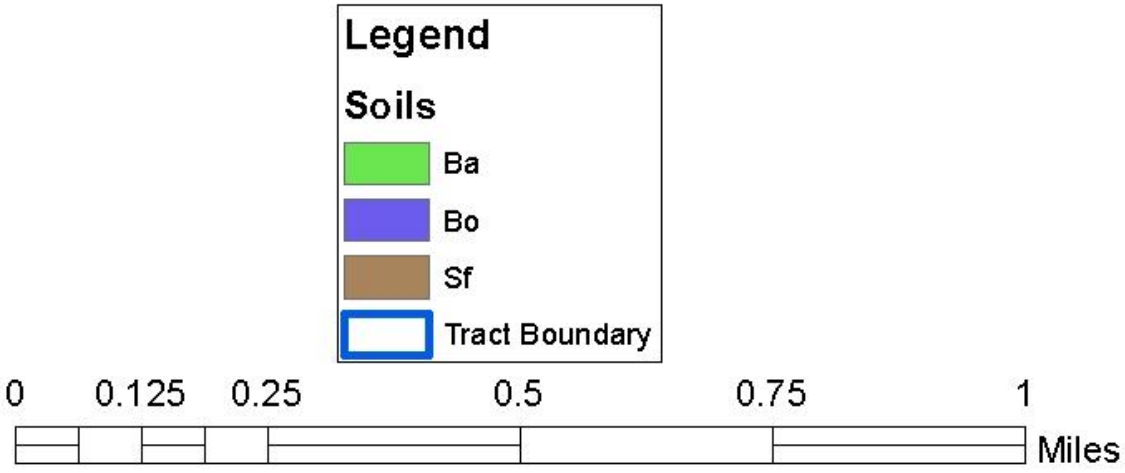
Total #trees/acre = 141

Avg. tree diameter = 10.8 inches

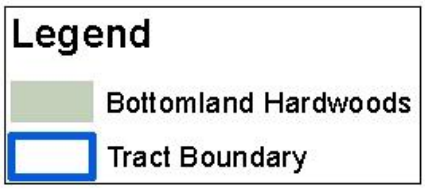
Percent stocking = 78%

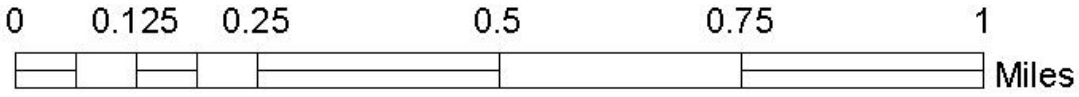
Jackson-Washington State Forest
Compartment 11 Tract 21
Soils Map



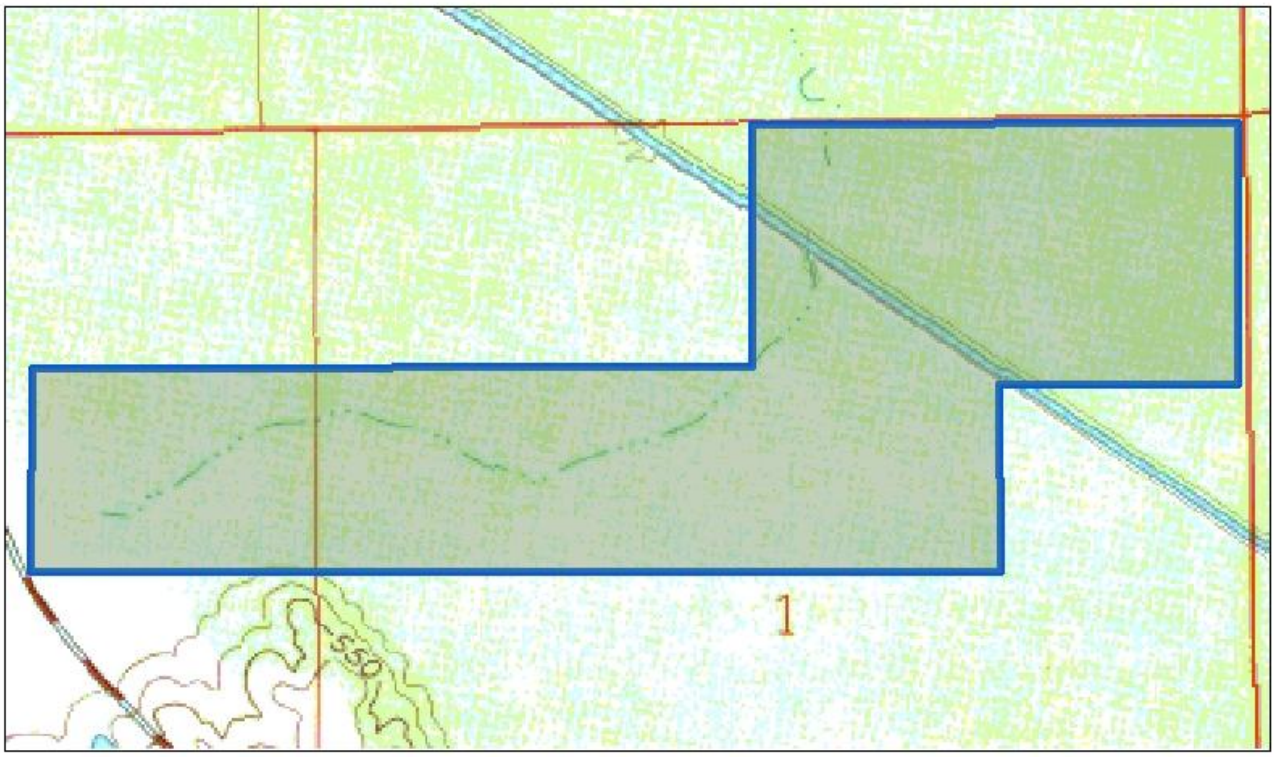


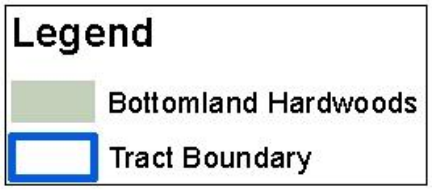
Jackson-Washington State Forest
Compartment 11 Tract 21
Subdivisions Map

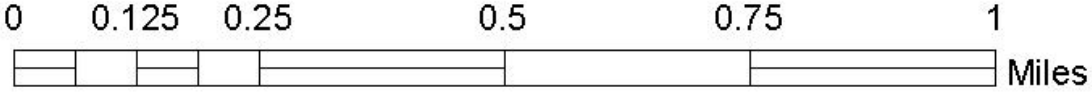




Jackson-Washington State Forest
Compartment 11 Tract 21
Subdivisions Map







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