Indiana Department of Natural Resources
Division of Forestry

RESOURCE MANAGEMENT GUIDE

Jackson-Washington State Forest	Compartment 13 Tract 06
Forester: Derrick Potts	Date: August 1, 2013
Management Cycle End 2037	Management Cycle Length: 20 years

Location
The tract is located Washington County, Indiana approximately nine miles East of Salem. More specifically in Sections 20 and 21, Township 3N and Range 5E.

General Description
The tract is approximately 86 acres. The general cover type is hardwood forest with scattered pine. A power line right of way, which is maintained in grasses by the utility company, occurs in the southern portion of the tract and runs the width of the tract.

History
This tract is comprised primarily from three separate land acquisitions occurring between 1963 and 1997.

A portion of this tract is from a 1963 acquisition of ~300 acres from Thomas and Grace Bane, husband and wife, Harry Eugene, unmarried, Jewel Band, unmarried, formerly Jewel Sandlin.

The second acquisition, which is eastern portion of this tract, occurred in 1981 from Leon E. and Judith B. Zink, husband and wife, 19.26 acres more or less.

The third and last acquisition to complete this tract occurred in 1997 from Leon E. and Judith B. Zink, husband and wife, 80 acres more or less.

The tract folder contains a 1986 resource management guide and inventory summary for 32 acres (30 was considered commercial), which was the size of this tract before the 1997 land acquisition. That inventory estimated a harvest of 168 bd. ft. per acre, with a leave of 1,226 bd.ft. per acre for a total of 1,284 bd. ft. per acre for the tract. The top two species, by volume, were black oak and yellow poplar.

Landscape Context
The area surrounding this tract to the north and south is primarily Jackson-Washington State Forest. To the east agricultural land dominates the flat bottomlands. Sparse residential housing can be found in the area as well. Land use has changed very little in the past ten years, with exception to the area surrounding Salem, IN, which has experienced some growth and expansion.

Topography, Geology and Hydrology

The topography in this tract is relatively gentle, especially when compared to other tracts to the south and to the north. This tract is primarily made up of a ridge that runs west to east, where the highest point is located in the northwestern portion of the tract. The parent material consists of siltstone, shale, and sandstone. The mapped intermittent stream located in the southern portion of the tract and the mapped intermittent stream located in the northern portion of the tract both flow east to Elk Creek, which then flows north to the Cammie Thomas Ditch. Cammie Thomas Ditch flows west into the Muscatatuck River, which then flows west into the East Fork White River.

Soils

Berks-Weikert complex (BhF) (~9 acres) 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. Seedlings survive and grow well if competing vegetation is controlled and if livestock are excluded from area. Because of the windthrow hazard, harvest methods should not isolate the remaining trees or leave them widely spaced. The site indexes for hardwood species range from 50 (black oak) to 70 (white oak). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

Burnside silt loam (Bu) (~27 acres) 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. Most areas are used as pasture or woodland. Some areas are cleared and used as cropland. Native vegetation is deciduous hardwoods. This soil is well suited for trees. Plant competition is moderate. Seedlings survive and grow well if competing vegetation is controlled by cutting, girdling, or spraying. The site index for hardwood species is 95 for yellow-poplar. Preferred trees to manage for are bitternut hickory, bur oak, pin oak, red maple, shingle oak, and swamp white oak.

Cincinnati silt loam (ChC2) (~19 acres) This series consists of very deep, well drained soils that are moderately deep to a fragipan. They are on till plains. Slope ranges from 1 to 18 percent. Much of the area of Cincinnati soils is used for growing cultivated crops, mainly corn, wheat, soybeans, tobacco, and forages, both grasses and legumes. A considerable percentage of the Cincinnati soils is used for pasture or woodland, or is idle. Native vegetation is deciduous mixed hardwoods, including oaks, hickory, tulip poplar, maple, and beech. This soil is well suited to tree. Plant competition is moderate. Seedlings survive and grow well if competing vegetation is controlled. The site indexes for hardwood species range from 80 (northern red oak) to 95 (tulip poplar). Preferred trees to manage for are black oak, chestnut oak, red oak, and white oak.

Gilpin-Berks loams (GnF) (~4 acres) This soil complex is found on side slopes in the uplands. These are moderately steep to very steep, moderately deep, well drained soils. They are about 50 percent Gilpin soil and 35 percent Berks soil. The two soils occur as areas so intricately mixed that mapping them separately is not practical. These soils are fairly well suited for tree. The erosion hazard, the equipment limitation, seedling mortality, and plant competition are concerns in managing the 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 by cutting, girdling, or spraying. The site indexes for hardwood species range from 70 (black oak) to 95 (tulip poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

Wellston silt loam (WeC2, WeD) (~21 acres) 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. Slopes range from 0 to 50 percent but are dominantly 4 to 18 percent. Nearly half of the area is cultivated and used for row crops, grain crops, and hay. Sizable proportions are used for pasture and for woodland. 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. Seedlings survive and grow well if competing vegetation is controlled and if livestock are excluded from area. The site indexes for hardwood species is 81 (red oak) and 90 (yellow-poplar). Preferred trees to manage for are black oak, bur oak, cherrybark oak, chestnut oak, persimmon, red oak, scarlet oak, shagbark hickory, sugar maple, yellow-poplar, and white oak.

Access

Access to this tract is via Banes Hollow Road, which also forms the southern tract boundary. The west-to-east ridge running through the tract will provide access within the tract.

Boundary

The southern tract boundary is Banes Hollow Road. Starting in the southwest corner, the tract boundary follows the property boundary north for approximately 1650 feet to a property corner. From the property corner the tract/property goes west for 656 feet to a valley. The boundary follows the valley, which becomes an ephemeral channel, to a mapped intermittent drainage that forms the northern tract boundary. The tract boundary follows the mapped intermittent drainage east to the eastern tract boundary, which is also the property boundary. Follow the property boundary south to Banes Hollow Road, which is southern tract boundary. Banes Hollow Road is the southern tract boundary for approximately 2,980 feet.

Wildlife

Wildlife Habitat Feature Tract Summary

	Maintenance level	Optimal level	Inventory	Available above maintenance	Available above optimal
Snags (all species)					
5"+ DBH	344	602	1888	1544	1286
9"+ DBH	258	516	593	335	77
19"+ DBH	43	86	57	14	-29

All diameter classes for snags exceed the maintenance level and in the 5"+ and 9"+ DBH classes the optimal level was exceeded. Post-harvest TSI will create additional snags throughout the tract.

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.

Multiflora rose, an invasive species common to old field sites, was observed during the field inventory. Japanese stilt grass was also observed during the field review, it was primarily located in the power line right of way. Species should be monitored for its spread within the tract. Treatments to be applied if monitoring results justify.

Forest Condition

The 2013 inventory states that the area contains an estimated volume of 6,568 bd. ft. per acre, with a potential harvest stock of 3,841 bd. ft. per acre and leaving a growing stock of 2,728 bd. ft. per acre. The measured basal for this area is currently 84.8 sq. ft. per acre (excluding sub merchantable trees). According to the inventory, the post harvest basal area per acre (excluding sub merchantable trees) will be 43.1 sq. ft.

Potential regeneration openings were accounted for during the field portion of the inventory. Therefore, the harvest volume is considerable higher than if single tree selection was used tract-wide. Also, the lower post harvest tract basal area and stocking numbers reflect the number plots that fell within the potential regeneration opening areas. See tract subdivisions for details.

TM 901

RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

		Compartment:	13
Jackson-Washington State Forest		Tract:	6
Forester:	D. Potts	Date:	1-Aug-13

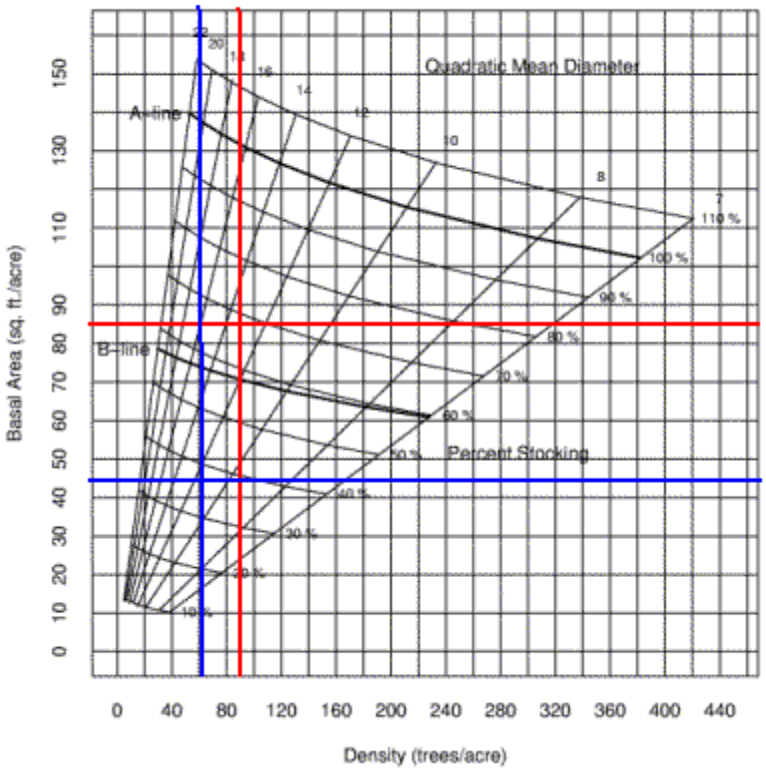
ACREAGE IN:

Commercial Forest	83.5			
Non-Forest	2.5			
TOTAL AREA	86		Total B.A./Acre	84.8

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
chestnut oak	23,430	88,730	112,160
black oak	74,640	20,700	95,340
yellow poplar	94,810	0	94,810
white oak	5,590	63,580	69,170
sugar maple	23,920	12,350	36,270
pignut hickory	17,550	6,390	23,940
northern red oak	15,280	3,630	18,910
eastern redcedar	8,680	9,320	18,000
blackgum	16,300	0	16,300
bitternut hickory	3,050	8,480	11,530
shagbark hickory	6,070	5,260	11,330
red maple	10,530	0	10,530
American sycamore	3,080	4,750	7,830
black walnut	2,070	5,450	7,520
basswood	2,940	4,150	7,090
American beech	6,730	0	6,730
white ash	6,580	0	6,580
largetooth aspen	5,840	0	5,840
Virginia pine	3,200	0	3,200
black cherry	0	1,780	1,780
TRACT TOTALS	**330,290**	**234,570**	**564,860**
PER ACRE TOTALS	**3,841**	**2,728**	**6,568**

Stocking Guide
Compartment 13 Tract 06
86 acres



Pre-Harvest Inventory Data in Red
Total BA/A = 84.8 sq.ft./AC
Total #trees/acre = 89
Avg. tree diameter = 13 inches
Percent stocking = 68%

Post-Harvest Inventory Data in Blue
Total BA/A = 43.1 sq.ft./AC
Total #trees/acre = 62
Avg. tree diameter = 12 inches
Percent stocking = 37%

Recreation
The Knobstone Trail follows a path through this tract. During harvest operations the trail will not be open within the harvest boundary, due to public safety concerns. The trail will be temporarily re-routed to avoid the harvest area. The original section of the trail will be re-opened and re-marked following harvest completion. Additional recreation uses within this tract are hunting (mushroom, deer, turkey, squirrel, etc.) and wildlife viewing.

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
Mixed Oak/Hickory (44 acres)
The overstory species within this subdivision consist primarily of chestnut oak, northern red oak, black oak, pignut hickory, bitternut hickory, shagbark hickory, yellow poplar, and sugar maple; when grouped together, oak and hickory comprise 70% of the total volume within the subdivision. Sugar maple and yellow poplar add to 19% of the volume within the subdivision; the remaining 11% is made up of small quantities of mixed hardwood species. The understory within this subdivision is dominated by American Beech and sugar maple. Regeneration within the subdivision is also dominated by American beech and sugar maple. There are a few scatted pockets of oak regeneration (mostly chestnut oak), where a few of the oak saplings are 4+ feet tall. Within this subdivision are several larger diameter trees that were blow down is past wind storms. Throughout the subdivision there are many examples of overstory trees exhibiting signs of drought stress and in some area the trees are dying from recent drought events. Part of the western portion of this subdivision received a harvest prior to acquisition by Jackson-Washington State Forest. Within this harvested area, many of the trees that remain have poor form and are not desirable as future crop trees.

The prescription for this area is to conduct a harvest with primarily single trees selection and group selection openings. Prescribed single-tree selection will focus on maintaining and enhancing the oak and hickory forest type by providing additional light and nutrients to favorable crop trees with well formed, healthy, dominant crowns located in stable areas. Merchantable ash trees should be marked for removal in advance of the Emerald Ash Borer, which has already been identified to occur within Washington County. Additionally, trees that are uprooted and trees that are declining in health will be selected for removal. Prescribed group selection openings will focus on areas where the stocking is low and trees are poorly formed; the previously harvested area is a likely candidate for a group selection opening. Post harvest timber stand improvement (TSI) will complete the regeneration openings by cutting and/or girdling the remaining sub-merchantable trees. This will allow full sunlight to reach the forest floor and promote the natural regeneration of a healthy stand of native mixed hardwood trees, including: yellow poplar, white ash, black cherry, and red maple.

Old Field Hardwoods/Pine (42 acres)
This subdivision is located in areas where past land use was likely a field for row crops on the ridges or more likely grazing for livestock, as there is old barb wire fencing present. Various planted non-native pine tree including eastern white pine and Virginia pine are found throughout as well as eastern red-cedar, all of which are species commonly found in areas that were once fields. The Virginia pine is poor formed and much of it is dying. The dominant overstory species are black oak and yellow poplar, these two species comprising 63% of the volume within this subdivision. Both basal area and stocking for this area are low, sawtimber basal area (trees 12"+ DBH) is 51.7 sq. ft./ acre and the overall stocking for the subdivision is approximately 60%.

The prescription for this area is to regenerate much of the subdivision, due to low stocking and to remove the non-native pine as much of it is dying. Areas were stocking is sufficient, prescribed single tree selection should take place, favoring trees with dominant, healthy and well formed crowns located in stable areas. Many of the yellow poplar trees are dying from drought stress and a harvest should take place in the near future to salvage the trees before they are dead and the wood is not usable due to decay. Post harvest TSI will complete the prescribed regeneration openings by cutting and/or girdling the remaining sub-merchantable trees. This will allow full sunlight to reach the forest floor and promote the natural regeneration of a healthy stand of native mixed hardwood trees, including: yellow poplar, white ash, black cherry, and red maple.

Tract Prescription and Proposed Activities
Prescription: single-tree and group selection harvest within the next year. The primary objective is to salvage the dying yellow poplar trees. Other objectives include harvesting declining hardwood trees, non-native pine, as well as trees with past wind, fire, or grazing damage. An emphasis in the marking should be to favor quality oaks and hickories, those with little decay, good form and growth characteristics and located in stable areas. The number of prescribed 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 trees. 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*
Mark harvest and sell timber	2013-2014
Post-Harvest TSI	2016
Inventory and Management Guide	2037

Attachments

- Sawtimber stocking guide.
- Subdivision map with aerial photograph.
- Subdivision map with topographic map
- Soils map with topographic map

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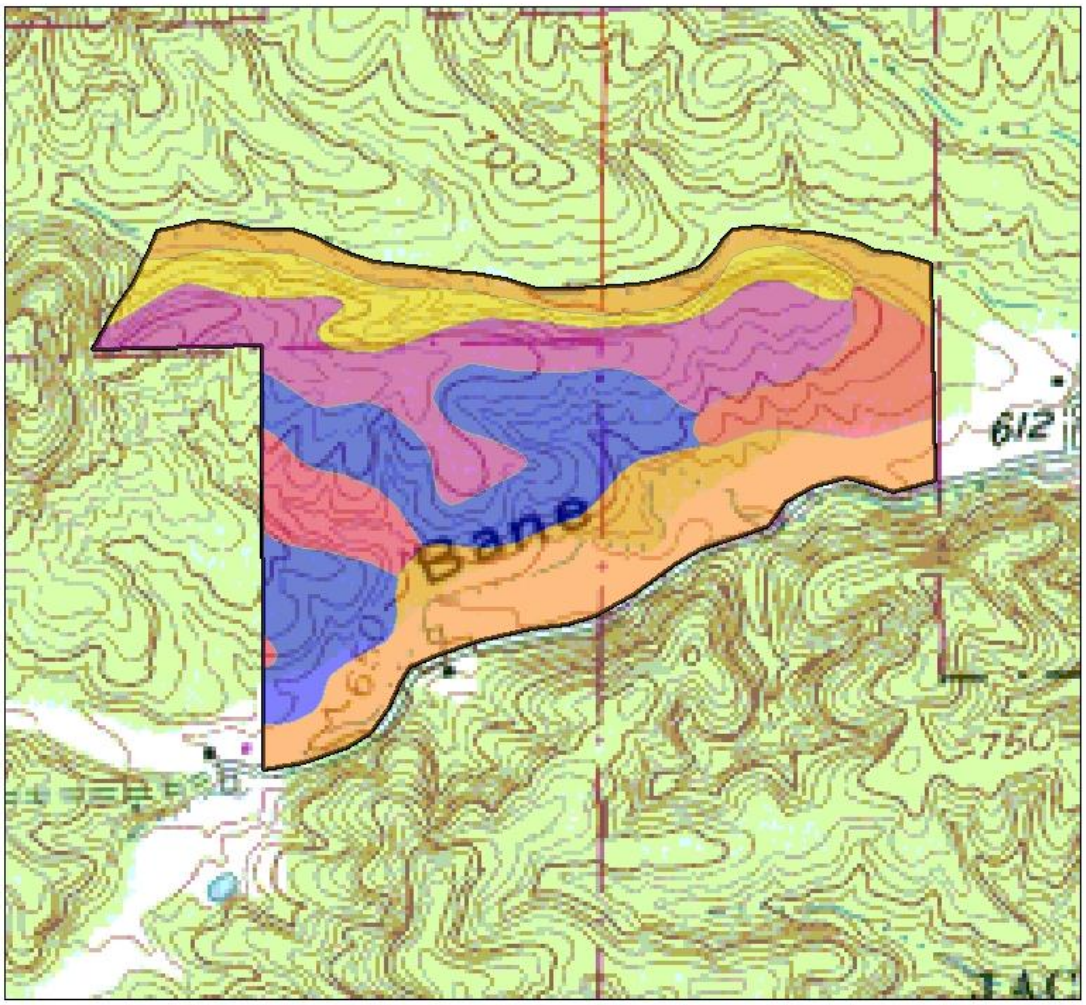
You must indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered. Note: Some graphics may distort due to compression.

Jackson Washington State Forest
Compartment 13 Tract 06
Soils Map



Legend

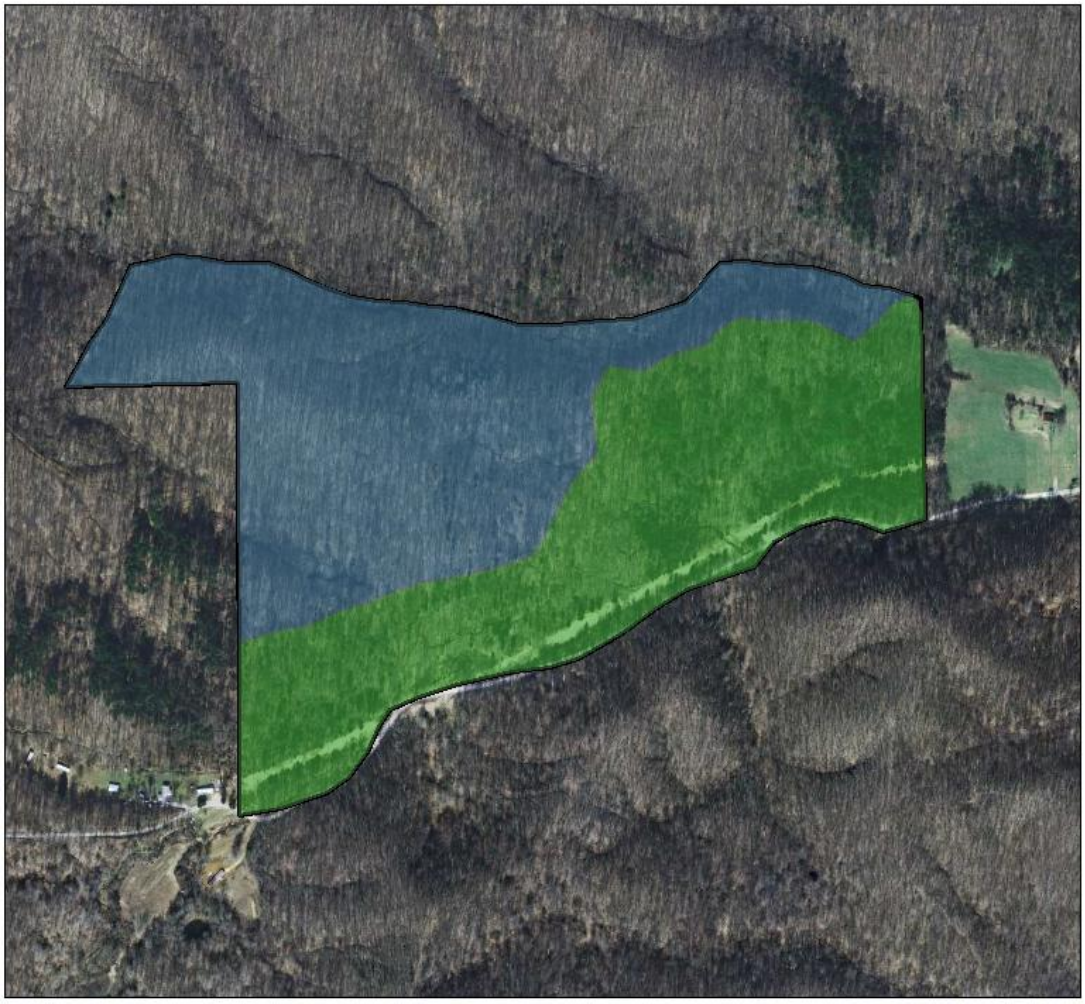
BhF Bu ChC2 GhF WeC2 WeD

Tract Boundary

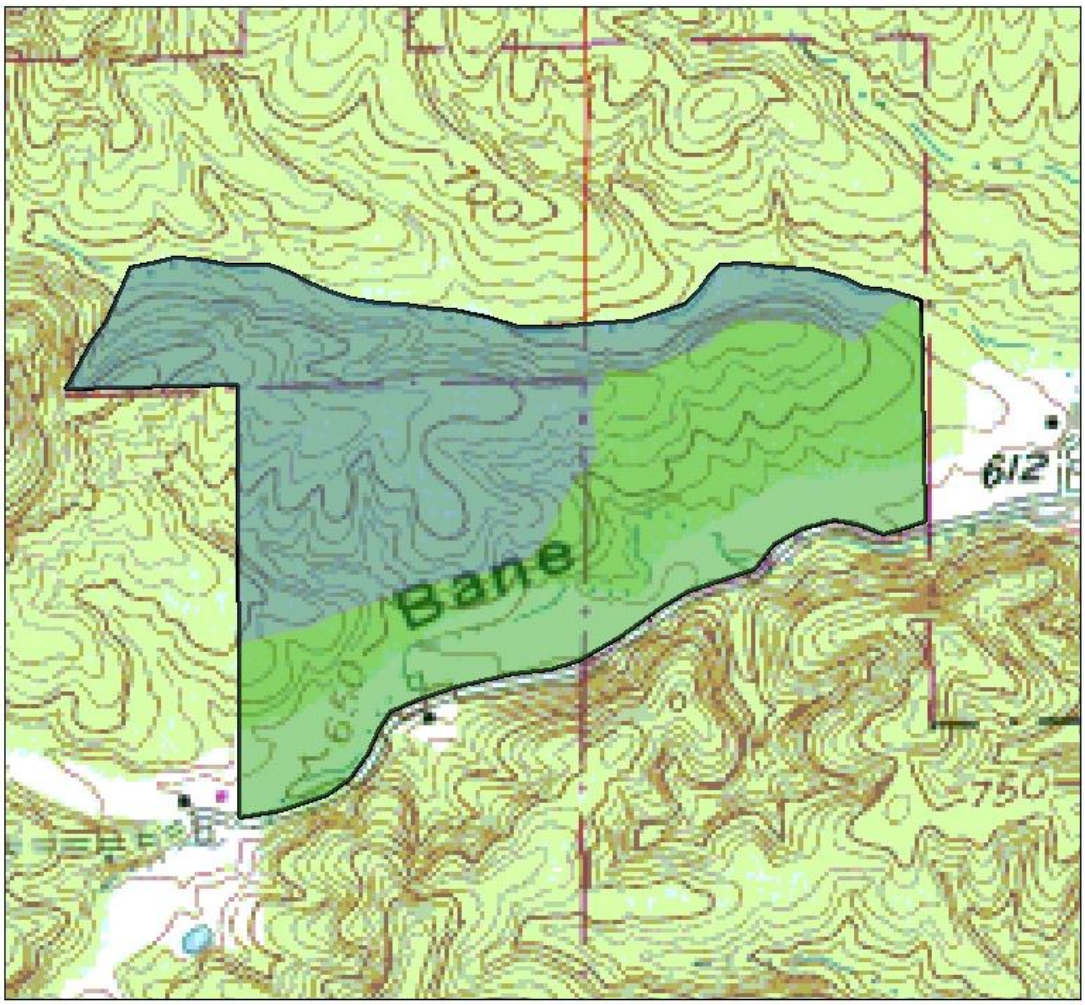
0 310 620 1,240 Feet

N W E S

Jackson Washington State Forest
Compartment 13 Tract 06
Tract Subdivision Map



Jackson Washington State Forest
Compartment 13 Tract 06
Tract Subdivision Map



Legend

Tract Subdivision

- Mixed Oak/Hickory
- Old Field Hardwoods/Pine
- Tract Boundary

0 305 610 1,220 Feet

N
W E
S