Indiana Department of Natural Resources - Division of Forestry

RESOURCE MANAGEMENT GUIDE

TM 901 RESOURCE MANAGEMENT GUIDE			
INVENTORY SUMMARY			
		Compartment:	13
Jackson-Washington State Forest		Tract:	16, 19, 20
Forester:	Jason Vogelpohl	Date:	8/17/2010

ACREAGE IN:				
	Commercial Forest	166		
	Non-Forest	0		
			B.A. Culls	0.7
			B.A. Trees 12" & Up	64.7
			B.A. Trees < 12"	34.6
	TOTAL AREA	166	Total B.A./Acre	100

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
chestnut oak	181,830	286,860	468,240
white oak	17,940	80,070	98,020
pignut hickory	3,110	63,560	66,670
sugar maple	39,410	22,480	61,890
yellow-poplar	17,520	30,640	48,150
eastern white pine	12,130	19,270	31,930
American beech	21,560	0	21,560
black oak	4,130	16,850	20,980
northern red oak	13,550	6,190	19,740
bitternut hickory	10,250	7,520	17,770
eastern cottonwood	6,590	9,560	16,150
white ash	9,330	0	9,330
shagbark hickory	2,590	6,710	9,300
scarlet oak	5,100	2,570	7,670
red maple	7,630	0	7,630
black cherry	5,260	0	5,260
TRACT TOTALS	**352,670**	**552,280**	**910,290**
PER ACRE TOTALS	**2,125**	**3,327**	**5,484**

Jackson-Washington State Forest Compartment 13 Tract 16, 19, 20
Forester: Derrick Potts & Jason Vogelpohl Date: 12/30/2010
Management Cycle End Year 2030 Management Cycle Length: 20 years

Location
Tracts 16, 19 & 20 are located in Washington County, Indiana approximately nine miles East of Salem. More specifically the tracts are located in Sections 28 & 29, Township 3N and Range 5E.

General Description
The three tracts are a combined 166 acres. The general cover type is hardwood forest with a small pine component in the north of the area.

History
This management area is compromised from land that originates as follows: On July 19, 1958 30 acres from Carl Wayne Weston and Bette J. Weston, his wife, on July 19, 1958 30 acres from Lottie Weston, an unmarried woman, Howard Weston and Lois Weston, his wife, and Carl Weston and Bette J. Weston, on April 29, 1963 40 acres from Thomas and Grace Bane, husband and wife, Harry Eugene Bane, unmarried and Jewel Bane, unmarried, formerly Jewel Sandlin, on June 27, 2007 acres from Charles R. Howser and Barbara Jean Howser, husband and wife, on January 12, 1960 40 acres from Garnet Fawbush, an unmarried adult, and on January 16, 1953 17.2 acres from Thomas Bane and Grace Bane, husband and wife.

The compartment 13 tract 16 tract file contains tract history information. This tract was formerly compartment 52 tract 4 with 56 acres. In 1975 the inventory summary listed 1,459 bd. ft. per acre growing stock, 2,677 bd. ft. per acre harvest stock with a total of 4,136 bd. ft. per acre volume for the tract. In 1988 a salvage operation (included logs in compartment 13 tract 19) removed 33,693 bd. ft. in logs salvaged from tornado damage.

The compartment 13 tract 19 tract file contains tract history information. The first record is an inventory in 1972 that listed 1,861 bd. ft. per acre growing stock, 1,634 bd. ft. per acre harvest stock and with a 3,505 bd. ft. per acre volume for the tract. The next inventory occurred in 1987 with a growing stock of 3,873 bd. ft. per acre, 1,642 bd. ft. per acre harvest stock and 5,515 bd. ft. per acre volume for the tract. The next record is a salvage timber sale which occurred in 1988 (it was combined with tract 16). Also, 110,753 bd. ft. was sold in 1989 as a combined sale with tract 20. From tract 19 55,695 bd. ft. was included in the sale.

The compartment 13 tract 20 tract file contains tract history information. The first record listed is a 1987 inventory with 4,464 bd. ft. per acre growing stock, 2,015 bd. ft. harvest stock and a total 6,479 bd. ft. per acre volume for the tract. Also, 110,753 bd. ft. was sold in 1989 as a combined sale with tract 19. From tract 20 55,058 bd. ft. was included in the sale.

The most recent record for tracts 16, 19, and 20 is an inventory performed in August of 2010.

Landscape Context
The area surrounding this management area to the north and south is primarily Jackson-Washington State Forest. To the east and west agricultural land dominates the flat bottomlands. Sparse residential housing can be found in the area as well, especially along Highway 56. 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 of this management area ranges from flat in the drainage to the west and on the ridge-tops to very steep on the side slopes. The area consists of a main ridge that runs from the southwestern border to the northeastern border and is slightly less than one mile in length. From this main ridge there are several ridges that spur off to the east. The geology is shale bedrock in the bottoms and siltstone with sandstone mixed in on the ridge lines. To the north is a mapped intermittent stream that flows into Apple Lake. The runoff from this tract flows via intermittent streams to Elk creek and then eventually into the Muscatatuck River, which then flows into the East Fork White River.

Soils

Berks-Weikert complex (BhF) 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) 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.

Gilpin silt loam (GID2) This strongly sloping, moderately deep, well drained soil and is on side slopes in the uplands. 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 by cutting, girdling, or spraying. The site indexes for hardwood species range from 80 (red oak) to 95 (tulip poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

Gilpin-Berks loams (GnF) 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) 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 area is through an existing lane that crosses private property. The access is off of Indiana State Highway 56, nine miles east of Salem, IN. Within the tract access is excellent. There is a main southeast to northwest ridge that runs the length of the management area. An old county road follows this ridge.

Boundary
Starting at the northwestern corner of the management area and going northeast, the boundary is a mapped intermittent. At the northeastern corner of the management area, the boundary going south along the eastern edge is also the property boundary. The eastern boundary then travels south for one half of a mile. At the southeastern corner of the area the boundary line makes a turn to the west for approximately one mile, this property line looks like a stair step on the map. From the southwestern corner the property line turns north for three tenths of a mile, at which point makes a turn west for another three tenths of a mile. Lastly the line turns north the place of origin (the northern tract boundary, the mapped intermittent stream).

Wildlife

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Snags (all species)					
5"+ DBH	664	1162	1014	350	-148
9"+ DBH	498	996	272	-226	-724
19"+ DBH	83	166	64	-19	-102

The 5" DBH class exceeds the maintenance level. The 9" and 19" DBH classes are below their respective maintenance levels. During timber stand improvement activities, undesirable trees should be deadened to leave standing snags in the 9" and 19" DBH classes to meet the maintenance levels that are required.

Communities
The invasive species found include multiflora rose, Japanese stilt grass, and Ailanthus. Multiflora rose should be monitored. There were a few 8" to 12" ailanthus observed within the 1988 salvage area. Ailanthus should be cut and treated with a basal oil and triclopyr. Japanese stilt grass should be treated where accessible along trails with glyphosate or other grass herbicides. No Heritage Database elements known from within or near the management area.

Forest Condition
The 2010 inventory states that the area contains volume of 5,484 bd. ft. per acre, with a harvest of 2,125 bd. ft. per acre and leaving a growing stock of 3,327 bd. ft. per acre. The measured basal for this area is currently 86.4 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 53.5 sq. ft. This will reduce the stocking from 70% to 46%. The basal area and stocking numbers are low due to extensive storm damage within the area in 1988. Several inventory points within storm damage/salvage areas reduced the overall basal area and stocking number for the inventory. The 1988 storm area is currently stocked with young pole size and smaller trees.

Recreation
The primary recreational use for this tract is hunting, walking, hiking, and mushroom hunting.

Cultural
At this time no cultural resources have been identified.

Tract Subdivision Description and Prescription

1988 Salvage Area (22 acres)
This area was salvaged after a tornado in 1988. It consists of mostly pole-sized or smaller trees with scattered sawtimber trees. This stand has an average basal area of sawtimber of 13 square feet per acre. The primary species in this area are scarlet oak, chestnut oak, red maple, pignut hickory, black cherry, yellow-poplar, and sugar maple. Regeneration is often suppressed by the dense stems, but includes red maple, sugar maple, American beech, chestnut oak, and white ash where it is occurring. There were a few 8" to 12" ailanthus observed in this stand as well. Timber stand improvement should be done in this area to thin out the saplings and poles, favoring desirable species. The ailanthus should be removed during TSI operations.

Pine-Hardwoods (6 acres)
This stand has an overstory of white pine and cottonwood. The basal are per acre of sawtimber is approximately 110 square feet. The white pine had diameters of around 24" to 30". The understory is sugar maple and American beech. There was very little regeneration due to the dense overstory. The high basal area of sawtimber suggests that the overstory should be thinned, favoring hardwoods over white pine. Even though the stocking is high, a regeneration opening can not be ruled out. A regeneration opening removing the white pine would promote the succession from non-native planted pine into native hardwoods.

Mixed Hardwoods (41 acres)
The overstory is dominated by American beech, sugar maple, yellow-poplar, shagbark hickory, bitternut hickory, and white ash. The average sawtimber basal area per acre is 50 square feet, however, the basal area varied widely across the stand. Understory species include sugar maple, red maple, American beech, and yellow-poplar. Sugar maple and American beech are the main species regenerating. Throughout the stand, white ash should be removed due to the emerald ash borer threat. In areas where the stocking is high, the overstory should be thinned, favoring quality trees. Where the stocking is low, regeneration openings can be created to encourage areas of dense, young trees.

Oak-Hickory (62 acres)
The oak-hickory stand is comprised of chestnut oak, white oak, scarlet oak, northern red oak, pignut hickory and shagbark hickory in the overstory. The average basal area per acre of sawtimber is 72 square feet. The understory is primarily sugar maple and American beech. Sugar maple, sassafras, white oak, northern red oak, chestnut oak, and white ash made up the regeneration. The overstory has many damaged or partially hollow

trees that should be removed to allow the more vigorous trees to thrive. The stand should also be thinned, favoring high quality trees.

Chestnut Oak (35 acres)
The overstory is primarily chestnut oak. There is also white oak, scarlet oak, and pignut hickory scattered throughout. The average basal area per acre of sawtimber is 90 square feet. The understory consists of red maple, sugar maple, and American beech. The regeneration is mostly chestnut oak, red maple, sassafras, and sugar maple. There are many good to high quality trees in the overstory mixed in with low quality or damaged trees. These low quality and damaged trees should be removed to increase the quality and vigor of the stand.

Tract Prescription and Proposed Activities
The overall proposed management for this tract is to conduct an improvement harvest. Single-tree selection will focus on removing overmature, damaged, low quality, poorly-formed, and mature trees. This will create stands of healthy growing hardwoods within the tract. Based on the summer 2010 inventory data, an estimated total 768,110 bd. ft. is present and 301,160 bd. ft. will be harvested from the management area. This will leave an estimated 466, 950 bd. ft. growing stock. This translates to 5,484 bd. ft. per acre, with a harvest of 2,125 bd. ft. per acre and leaving a growing stock of 3,327 bd. ft. per acre. Following the harvest, timber stand improvement should be done to release any crop trees that did not get released during harvest, to complete any regeneration openings, and to remove midstory or understory species where there is high potential for oak regeneration. Smaller diameter trees that are left as residual crop trees will grow into the larger size class more quickly after being released by a harvest and post-harvest TSI. Post-harvest TSI will create some snags, which will help to meet the maintenance level for 9" + and 19"+ snags. In approximately 20 years following the harvest and timber stand improvement, another inventory will be done on the tract.

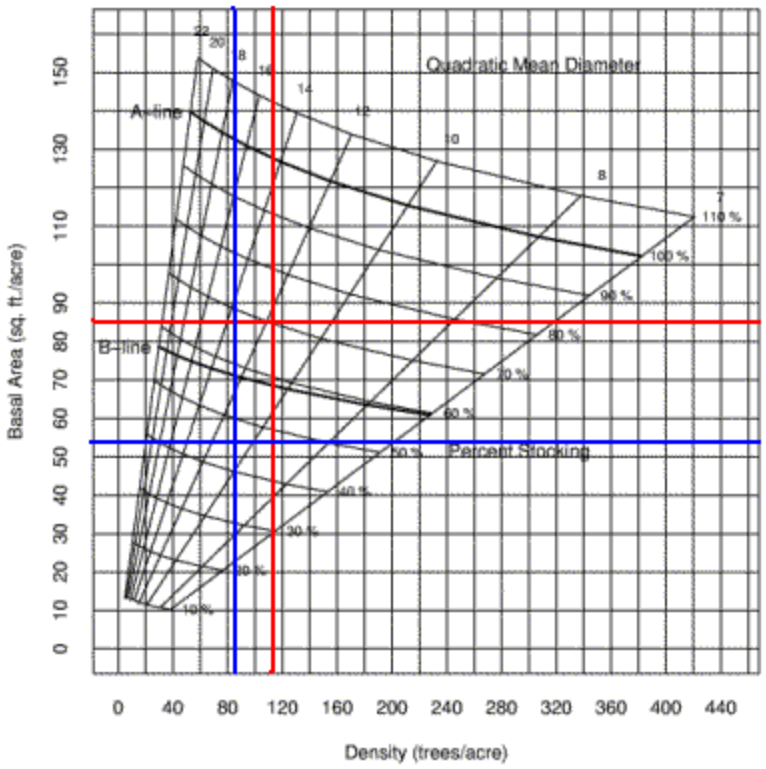
Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mark harvest and sell timber	2011
Post-Harvest TSI	2013
Inventory and Management Guide	2034

Attachments

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

Stocking Guide
Compartment 13 Tracts 16, 19, & 20
166 acres

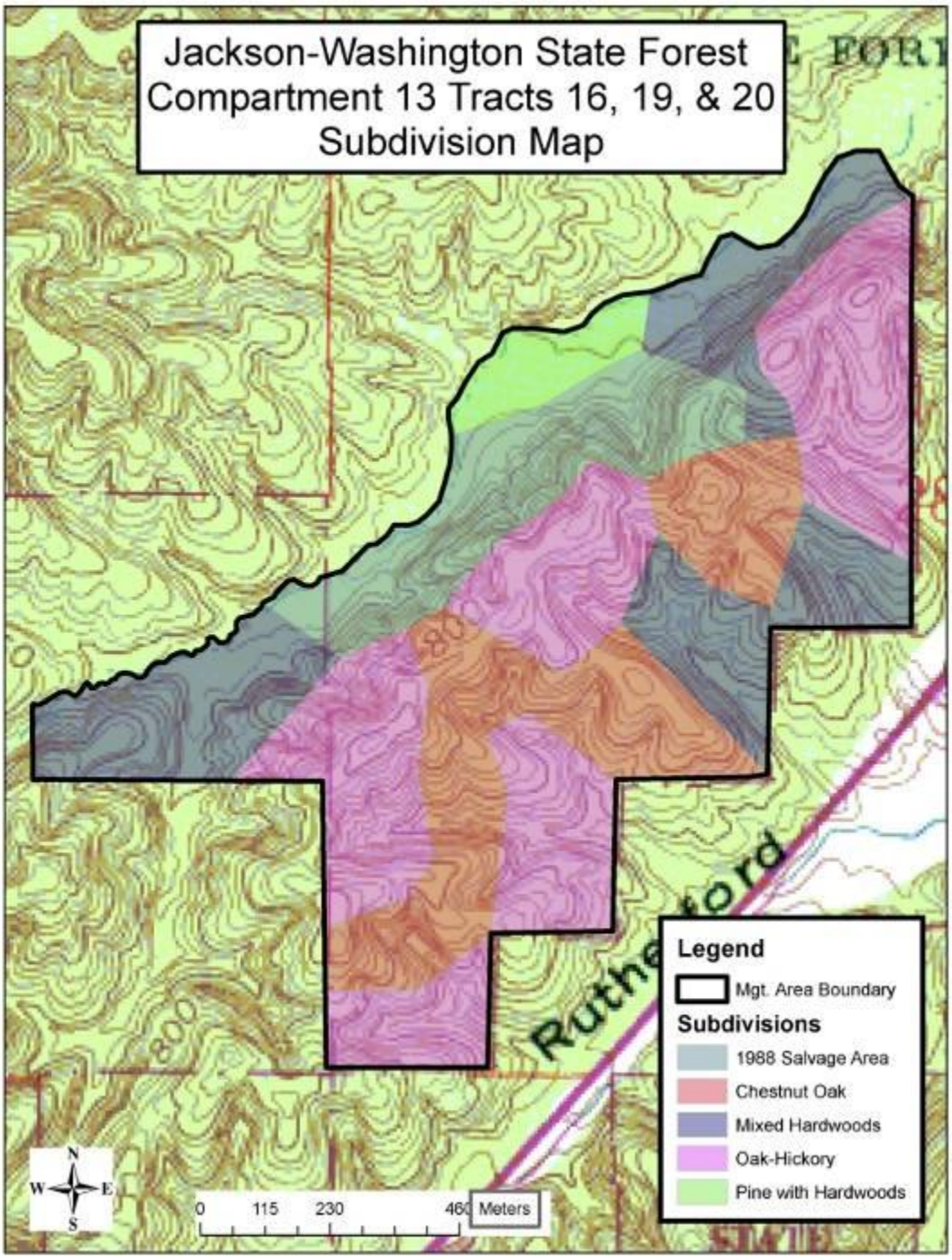


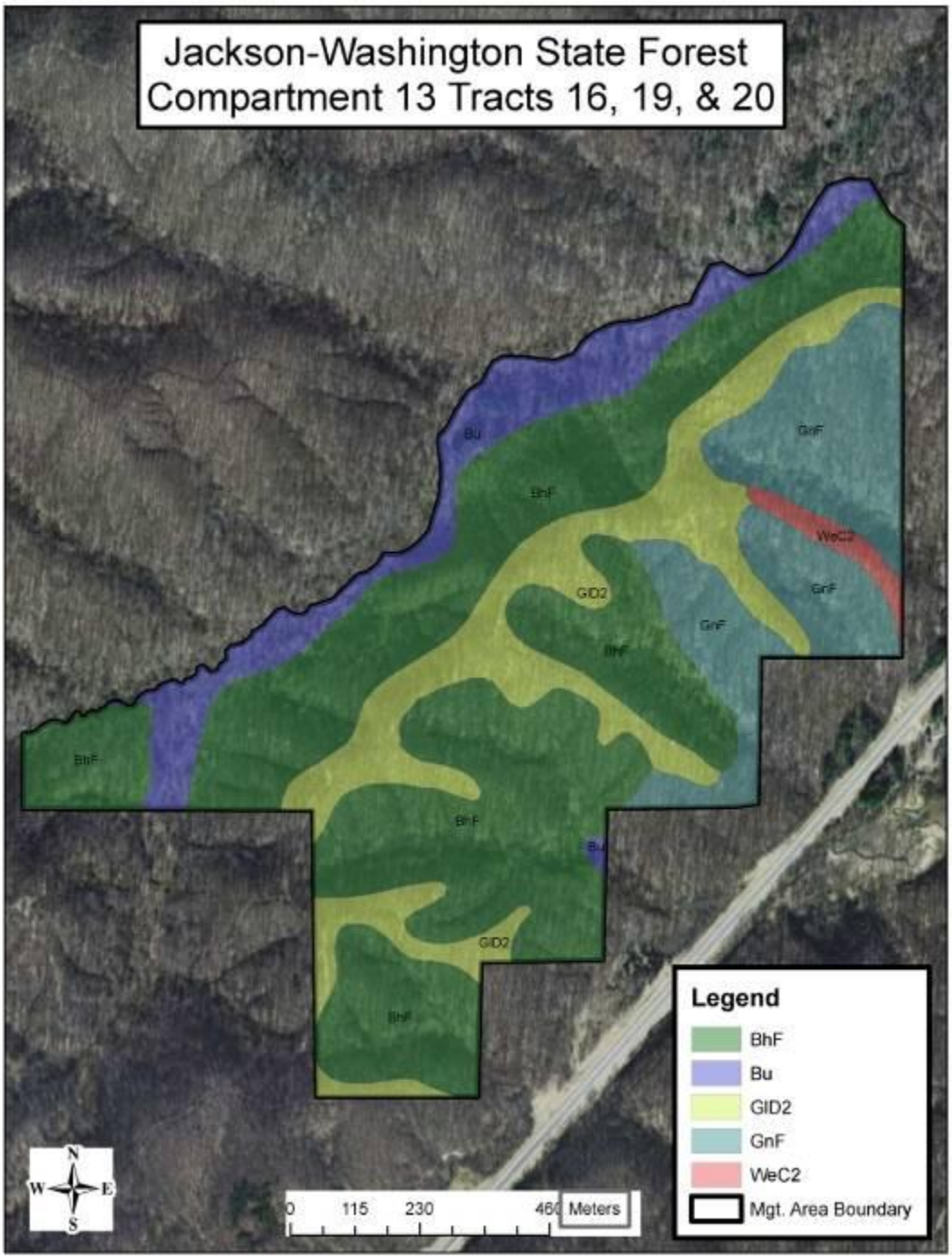
Pre-Harvest Inventory Data in Red
Total BA/A = 86.4 sq.ft./AC
Total #trees/acre = 116
Avg. tree diameter = 11.9 inches
Percent stocking = 70%

Post-Harvest Inventory Data in Blue
Total BA/A = 53.5sq.ft./AC
Total #trees/acre = 85
Avg. tree diameter = 11.4 inches
Percent stocking = 46 %

To submit a comment on this document, click on the following link:
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

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.


Jackson-Washington State Forest
Compartment 13 Tracts 16, 19, & 20
Subdivision Map
Legend
Mgt. Area Boundary
Subdivisions
1988 Salvage Area
Chestnut Oak
Mixed Hardwoods
Oak-Hickory
Pine with Hardwoods
N
W
E
S
0
115
230
460
Meters


Jackson-Washington State Forest
Compartment 13 Tracts 16, 19, & 20
Bu
BhF
GnF
WeC2
GID2
GnF
GnF
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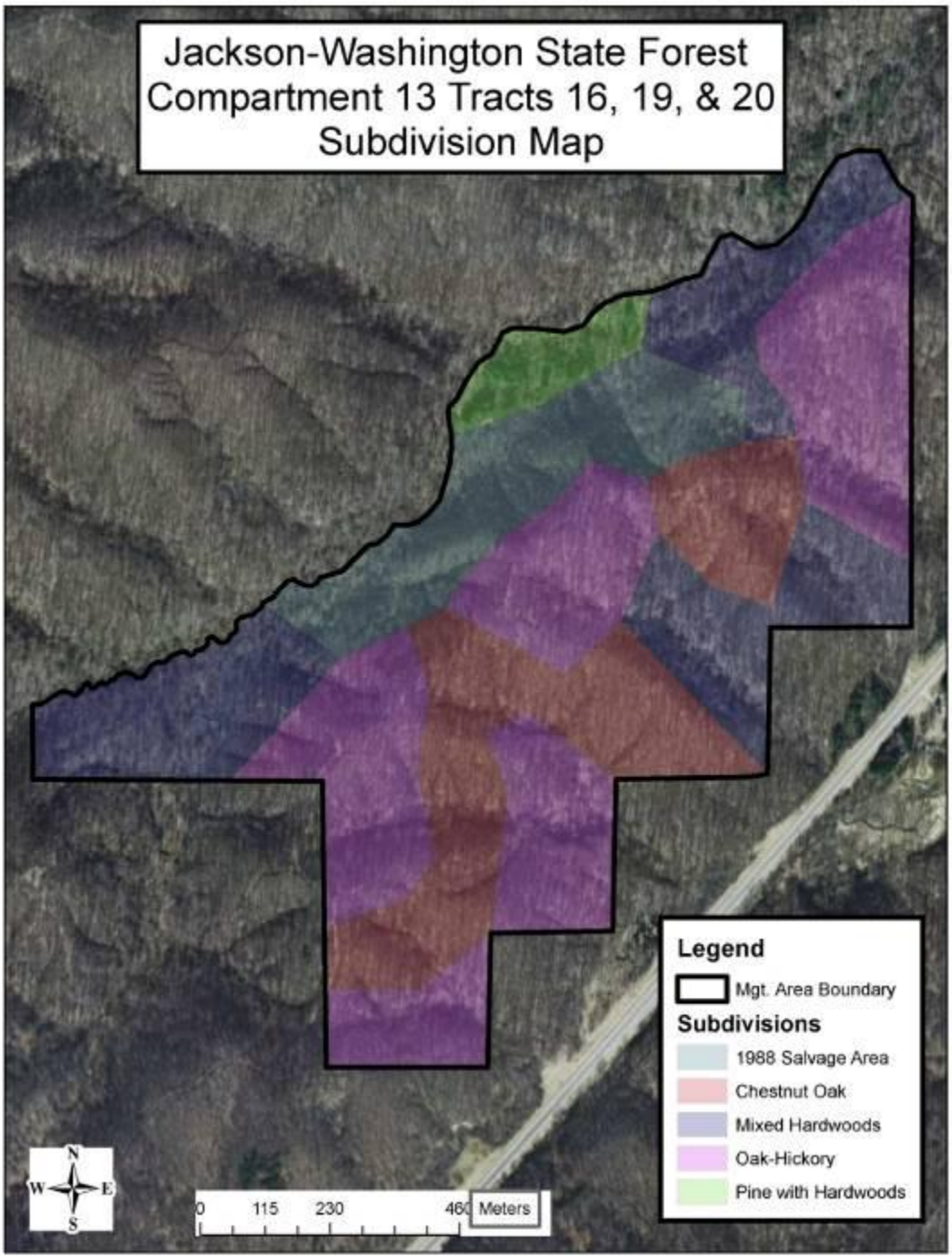
Mgt. Area Boundary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Chestnut Oak
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