

Indiana Department of Natural Resources - Division of Forestry

TM 901				
RESOURCE MANAGEMENT GUIDE				
INVENTORY SUMMARY				
			Compartment:	4
Jackson-Washington State Forest			Tract:	15
Forester:	Scott Funk		Date:	9/16/09

ACREAGE IN:				
	Commercial Forest	67	Total B.A./Acre	133.7
			B.A. Saplings	12.7
			B.A. Sawtimber	91.1
			B.A. Poles	26
	TOTAL AREA	67	B.A. Culls	3.9

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
American beech	7,740	6,370	14,110
American sycamore	0	2,050	2,050
black cherry	0	1,380	1,380
blackgum	980	0	980
black oak	37,970	82,840	120,810
chestnut oak	28,200	84,380	112,580
northern red oak	8,660	22,920	31,580
pignut hickory	9,310	15,210	24,520
red maple	7,340	7,250	14,590
shagbark hickory	0	20,150	20,150
shortleaf pine	9,000	7,310	16,310
sugar maple	4,190	7,970	12,160
sweetgum	5,310	13,740	19,050
Virginia pine	2,850	0	2,850
white ash	1,900	0	1,900
white oak	9,840	83,740	93,580
yellow-poplar	24,280	25,020	49,300
TRACT TOTALS	157,570	380,330	537,900
PER ACRE TOTALS	2,352	5,677	8,028

PREVIOUS CRUISE DATA				
DATE:	May, 1982	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		3,660	2,515	6,175
DATE:	August, 1971	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		2,574	1,876	4,450

RESOURCE MANAGEMENT GUIDE

Jackson-Washington State Forest
Forester: Scott Funk
Management Cycle End Year 2033

Compartment 4 Tract 15
Date: September 16, 2009
Management Cycle Length 24 years

Location

This tract is located in section 34 T5N R4E, Driftwood Township, Jackson County. The center of the tract is located approximately 3.5 miles south of Brownstown.

General Description

This 67 acre tract contains oak-hickory, oak-hickory/chestnut oak, mixed hardwoods, yellow-poplar, and shortleaf pine stands. Topography ranges from very gentle toe slopes to steep east and southeast facing slopes. The elevation in this tract ranges from 570 ft. to 834 ft.

History

The current Compartment 4 Tract 15 is made up of parts of the following two tracts: Compartment 16 Tract 6 and Compartment 16 Tract 7. The entire 42 acres of the former Tract 7 and 25 acres of the former Tract 6 are included in Compartment 4 Tract 15.

An inventory and management plan were completed for Compartment 16 Tract 7 in August 1971 for 37 acres of oak-hickory needing an improvement harvest and 5 acres of pine that was planted in 1950.

Forester Dwayne Sieg prepared a resource management guide on May 14th, 1982 stating a total of 204,014 bdft on 37 acres of commercial forest, compartment 16 Tract 7.

Harvest stock was 3,202 bdft per acre and growing stock was 2,312 bdft per acre. The pine averaged 458 bd. ft. per acre.

Inventory and management plans were completed for Compartment 16 Tract 6 in August 1971. At that time, the tract contained 82 acres, with 56 acres listed as merchantable and 26 acres listed as non-merchantable. The inventory estimated a total volume of 187,880 bd. ft. with 133,504 bd. ft. as harvest stock.

Approximately 27 acres at the north end of Compartment 4 Tract 15 was included in a December 6, 1974 timber sale marked and sold by forester David Pearson. The entire sale area covered 125 acres and was in Compartment 16 Tract 6. The sale included 130,448 board feet in 1,031 trees and was sold to Paul Wheeler of Vallonia for \$4,174.00 (\$32.00/MBF). This harvest averaged 1,043 bd. ft. per acre.

Eric Johnson had a timber sale on August 17, 1989 on compartment 4 tract 15 with a total of 67,298 bdft. Leading tree volumes came from black oak, hickory, and white oak. The area harvested in 1974 was not included in the sale. The pine area was also excluded from the sale. One regeneration opening of 4-5 acres was marked in the south central part of the tract and contained primarily mature black oak. The rest of the stand was marked as an improvement harvest.

On May 14, 1990 Johnson planted the following tree species in the regeneration opening: BLW, WHO, REO, and BLO.

On February 21, 1992 the post-harvest Timber Stand Improvement was completed.

Landscape Context

The surrounding landscape is mostly state-owned forest land, and the block of state land that this tract lies within is approximately 2,850 acres. The block of state owned forest land to the south is approximately 1,700 acres. To the north northeast, east, and south east is mostly all state land, but to the west is a lot of farmland, pasture, crop land, and private forest land. Most of the development consists of single family homes. To the northwest is Vallonia and to the north is Brownstown, which has seen some growth in the last ten years in small subdivisions.

Topography, Geology and Hydrology

The topography in the south, southeast, and southwest sections of the track is gently sloping finger ridges with a slope ranging from 5 to 15% with a max of 20%. The topography in the northwest and west sections of the tract is semi steep to steep with slopes ranging from 20 to 35% with a max of 50%. The elevation changes from 600 feet to 750 feet at its highest point. The geology is shale stone bedrock in the bottoms and siltstone with sandstone on the ridge lines. The tract drains into a mapped intermittent stream that flows south out of the east boundary line into Starve Hollow Lake, which flows into Mills Creek, which flows into the Muscatatuck River.

Soils

Beanblossum Silt Loam (BcrAW) (6.13 acres) 1 to 3 percent slope well drained soil with a seasonable high water table at 3 to 5 feet on floodplains. Permeability is moderately rapid above bedrock. Water capacity is moderate at 7 inches in the upper 60 inches. The depth of bedrock is at 40 to 60 inches. Flooding and drought are concerns for soil and this soil mainly grows hardwoods. Beanblossum silt loam has no site index.

Berks Channery Silt loam (BeG) (9.95 acres) 25 to 75 percent slope, moderately deep well drained very steep soils. Water capacity is low and permeability is moderately rapid and has a severe hazard of erosion. North aspects have better productive tree growth than the south side. Depth to bedrock is 20 to 40 inches deep. Berks Channery silt loam has a northern red oak, black oak, and Virginia pine site index of 70.

Cincinnati Silt Loam (CcC2) (11.05 acres) 6 to 12 percent slopes, eroded and well drained on side slopes. The upper part is friable silt loam, next is fragipan/ brittle silt loam, and the lower part is firm silt loam/clay loam. Water capacity is moderate and permeability is moderate above fragipan and slow in and below fragipan. Northern red oak site is 80.

Cincinnati Silt Loam (CcC3) (0.04 acres) 6 to 12 percent slopes, severely eroded. Upper part is friable silt loam, next is fragipan, very firm/brittle silt loam, and lower part is firm silty clay loam/clay loam. Small areas are moderately eroded. Water capacity is moderate and permeability is also moderate above fragipan and slow in and below fragipan. Northern red oak site index is 80.

Coolville Silt Loam (CoD) (9.52 acres) 12 to 20 percent slopes. This moderately steep, moderately well-drained soil; water capacity is moderate and permeability is moderate in the upper and slower in the lower subsoil's. Upper part is silt loam/silty clay loam, next is very firm silty clay loam, and the lower part firm silty clay loam. The depth to bedrock of 40 to 60 inches and the northern red oak site index for this soil is 66.

Gilpin silt loam, (GnF) (15.28 acres) 25-55 percent slope, a very steep, moderately deep, well drained soil on the side slopes. Permeability is moderate with a low water capacity. Upper part is friable silt loam/channery silt loam and the lower part is friable very channery silt loam. This soil is fairly well suited for trees with moderate soil erosion. The depth to bedrock is 20 to 40 inches. Gilpin silt loam has a northern red oak site index of 80 and a yellow poplar site index of 95.

Hickory Loam (HrE) (11.51 acres) 15 to 45 percent slopes, the upper part is friable loam, and lower part is firm clay loam, some areas are moderately eroded and some areas are severely eroded. Water capacity is high in hickory soil and the permeability is moderate. Erosion can be a concern on this soil type. White oak site index 85, northern red oak site index 85, and yellow poplar site index 95.

Stonehead silt loam, (SsC2) (1.62 acres) 4 to 12 percent slopes, gently to moderately sloping, well drained soil on side slopes and ridge tops. Water capacity is high with a moderate permeability but slow in the lower part. This soil is well suited for trees and they grow well if competing vegetation is controlled properly. Bedrock below Stonehead soils ranges from 40 to 72 inches deep. Stonehead soils have a northern red oak site index of 90, indicating a very productive soil type.

Tilsit Silt Loam (TIC2) (0.43 acres) 6 to 12 percent slopes, eroded, the upper part is friable silty clay loam, next is fragipan/very firm/brittle silt loam, and the lower part is firm silt loam. Siltstone bedrock is at a depth of about 64 inches. Water capacity is moderate and permeability is moderate above fragipan and slow in the fragipan. This soil is well suited for trees with a white oak site index of 68, yellow poplar site index of 90, and a black oak site index of 74.

Access

The tract can be accessed potentially from three different directions. From Starve Hollow Road there is a private access approximately .125 miles across a crop field, which is owned by a private land owner. This accesses fire trail 202. Another access is from Skyline Drive. On Fire Trail 240, travel approximately 1 mile to Fire Trail 244. Travel South on Fire Trail 244 south for .65 mile to the northwest corner of the tract, which is a potential log yard site. The other access is from Sand Lane. Sand Lane ends at the state forest boundary where it becomes Fire Trail 240. Travel east on Fire Trail 240 approximately .62 mile to Fire Trail 244. Travel South on Fire Trail 244 south for .65 mile to the northwest corner of the tract, which is a potential log yard site. Access within the tract is good because of the flat gently rolling slope on the majority of the tract. The

tract has been harvested in the past and the old skid trails, fire trails, and horse trail can be re-used for another harvest.

Boundary

The southern boundary is a property line with a private landowner and is identified by an old road bed. All of the merchantable timber was cut off of this private tract of land. The eastern boundary of this tract is identified by a major mapped intermittent stream. The northern boundary is identified by an ephemeral stream valley that travels to the top of the ridge. The northern half of the western boundary follows a ridgetop, while the southern half of the western boundary follows a property line with an adjacent private property owner.

Wildlife

Wildlife Habitat Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	605.7		1085	480	
20"+ DBH	201.9		352	150	
Snags					
(All species)					
5"+ DBH	269.2	471.1	203	-66	-268
9"+ DBH	201.9	403.8	203	1	-201
19"+ DBH	33.65	67.3	40	7	-27
Cavity Trees					
(All species)					
7"+ DBH	269.2	403.8	881	612	477
11"+ DBH	201.9	269.2	641	439	372
19"+ DBH	33.65	67.3	244	210	176

* Species Include: AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

One category fell below available above maintenance level and that was the 5"+ DBH snags. The other two categories of snags slightly exceeded the maintenance level. Another harvest and another post harvest TSI should help create more snags. This tract has a very high deer population, likely due to the availability of food in the near by crop fields. The Natural Heritage Database review returned sightings of timber rattlesnake, Indiana bat, black vulture, and bald eagle within the area; however, none of these were sighted within the tract. Any proposed management will not interfere with the habitat of these wildlife.

Communities

This tract is mostly dry upland oak-hickory and oak-hickory chestnut oak with paw paw and green brier as the understory. There is also a pine stand and yellow poplar stand that

has paw paw and green bier as the understory. Invasive species include siltgrass on the horse trails and Fire Trail 202, multiflora rose, and a few ailanthus trees in the old regeneration opening. The siltgrass on the trails should be sprayed during the early summer, and the ailanthus should be treated basally with Garlon and oil either now or during a post-harvest TSI, as they are not producing seeds at this time and are not located in an area that would be disturbed by the harvest.

Forest Condition

The overall condition of this tract is excellent, due in large part to previous management. Many high quality black oak, chestnut oak, and prime/quality white oak are present on this tract. There is a 4.5 acre yellow-poplar stand that is growing vigorously and will be very productive once it reaches sawtimber size. A Virginia pine and shortleaf pine stand in the southeast corner should be harvested to convert the area to native hardwoods.

Recreation

Recreational use of this tract is somewhat frequent due to the Orange Loop traveling through this tract. Mountain bike riders and horse riders use this trail. Hunters also hunt deer, turkey, and squirrel within this tract. During a timber harvest, the Orange Loop only would need to be closed during the harvesting operation.

Cultural

No cultural sites were discovered during the inventory of this tract.

Tract Subdivision Description and Prescription

Mixed Hardwoods (14.04 acres)

Most of these areas consist of black oak, chestnut oak, northern red oak, pignut hickory, red maple, shagbark hickory, American beech, American sycamore, black cherry, blackgum, sugar maple, sweetgum, white ash, white oak, and yellow-poplar. The understory species includes bluebeech, dogwood, ironwood, pawpaw, red elm, and sassafras. Most of these areas consist of medium to large sawtimber, with the exception of some very large sawtimber, including some quality and prime white oaks. The proposed management for these areas is to harvest the damaged, poorly formed, low quality, mature, and over mature trees to release the healthier and higher quality trees. One area near the horsetrail in the center of the tract contains mature, over-mature, and damaged trees that are primarily yellow-poplar. This area would be well-suited for a regeneration opening. The average sawtimber basal area for the mixed hardwood forest type is 107 square feet per acre.

Oak Hickory (24.92 acres)

Most of this area consists of black oak, chestnut oak, northern red oak, white oak, pignut hickory, and shagbark hickory. The understory consists of red maple, sugar maple, sassafras, and American beech. Most of this area consists of medium to large sawtimber with the exception of some very large sawtimber, including some quality and prime black

oak, chestnut oak, northern red oak, white oak, and yellow poplar. The proposed management for these areas is to harvest low quality, poorly formed, damaged, some of the mature, and over mature trees to release the healthy, higher-quality oaks and hickories growing within this area. This area has some excellent black oak, white oak, and yellow-poplar growing on it. The average sawtimber basal area for the oak hickory forest type is 94 square feet per acre.

Oak-Hickory/Chestnut Oak (17.56 acres)

The major overstory species in this area is chestnut oak, with a mixture of the following species; white oak, black oak, northern red oak, and pignut hickory. The understory species consist of red maple, sugar maple, and American beech. This area primarily consisted of medium to large sawtimber with some quality chestnut oak, white oak, black oak, and northern red oak. The proposed management for this area is to harvest the poorly-formed, damaged, low quality, some of the mature, and over mature trees to release the residual trees for future growth. Any oak, other than chestnut oak, or hickory trees that are healthy should be retained during marking in order to promote diversity within this stand type. The average sawtimber basal area for the oak hickory chestnut oak forest type is 88 square feet per acre.

Yellow-Poplar (4.67 acres)

This stand type consists of small pole-sized yellow-poplar. Very few black cherry are present as well. Some ailanthus trees invaded as well and are addressed in this plan. The area was a regeneration opening from the past harvest in 1991. All yellow-poplar range from 8 to 11" DBH and mortality is at work, with the smaller ones dying off. The overstory and midstory are both yellow poplar. The proposed management for this area is to perform Timber Stand Improvement at the same time as the post-harvest TSI to release the co-dominant and dominant trees, and to kill all ailanthus trees. The average sawtimber basal area for the yellow-poplar forest type is zero.

Pine (6.11 acres)

There is an approximately 6-acre pine stand in the southeast corner of this tract. Of that acreage, approximately 3 acres is Virginia pine and 3 acres of shortleaf pine. Most of the Virginia pine is pole-sized with some sawtimber trees mixed in, while the shortleaf pine is primarily all sawtimber sized. The proposed management for this stand is to harvest all of the pine to create a regeneration opening. Any hardwoods mixed within this stand will also be harvested to create the opening. White ash is the most common species regenerating on the forest floor. This area use to be an old eroded field and Virginia pine and shortleaf pine were planted on it in the 50's. The average sawtimber basal area for the Virginia pine forest type is 30 square feet per acre.

Tract Prescription and Proposed Activities

The inventory conducted in the summer of 2009 estimates the 67 acres of commercial forest on this tract contains a total of 537,870 board feet of volume. Out of that amount,

157,570 board feet was estimated as harvest stock and 380,300 board feet was estimated as growing stock. On a per acre basis, the harvest stock is 2,340 board feet and the growing stock is 5,650 board feet for a combined total of 7,990 board feet. The pre-harvest estimate of the stocking is 96%, while the projected post-harvest stocking is 75%. Both stocking levels are well above the B-line and therefore fully stocked. The overall proposed management for this tract is an intermediate harvest with some regeneration openings. This tract should be included with a harvest in the adjacent Compartment 4 Tract 15. Prior to the harvest, grape vine control should be performed throughout the tract. The harvest will focus on removing damaged, poorly formed, low quality, some mature, and overmature hardwoods. One regeneration opening will occur on the south eastern side of the tract, approximately 6.11 acres of shortleaf pine, Virginia pine, and any hardwoods within the pine stand. The opening should regenerate yellow poplar as did the other regeneration opening that took place in 1991 in the south western side of the tract. Following the harvest, timber stand improvement should be done to release any crop trees that did not get released during harvest, complete any regeneration openings, remove any midstory or understory species where there is high potential for oak regeneration, deaden all ailanthus trees, control the grapevines, and thin the old regeneration opening. Although the snags are sufficient in two of the three categories, the post-harvest TSI should increase the number of snags so that the maintenance level is met in all three size classes. In approximately 20 years following the harvest and timber stand improvement, another inventory will be done on the tract to see if another harvest is possible.

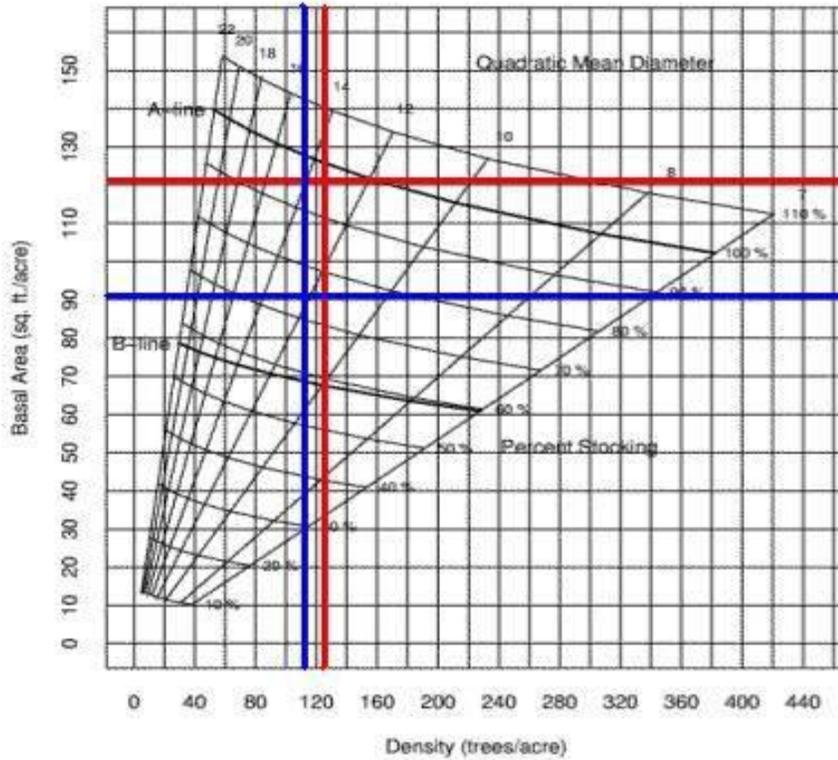
Proposed Activities Listing

<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Vine control	2011
Spray Ailanthus trees	2011-2012
Mark harvest and sell timber	2011-2012
Post-Harvest TSI	2013-2014
Inventory and Management Guide	2033

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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.

JWSF Resource Management Plan
Compartment 4 Tract 15 Stocking Guide
9/16/09 Inventory
67 acres



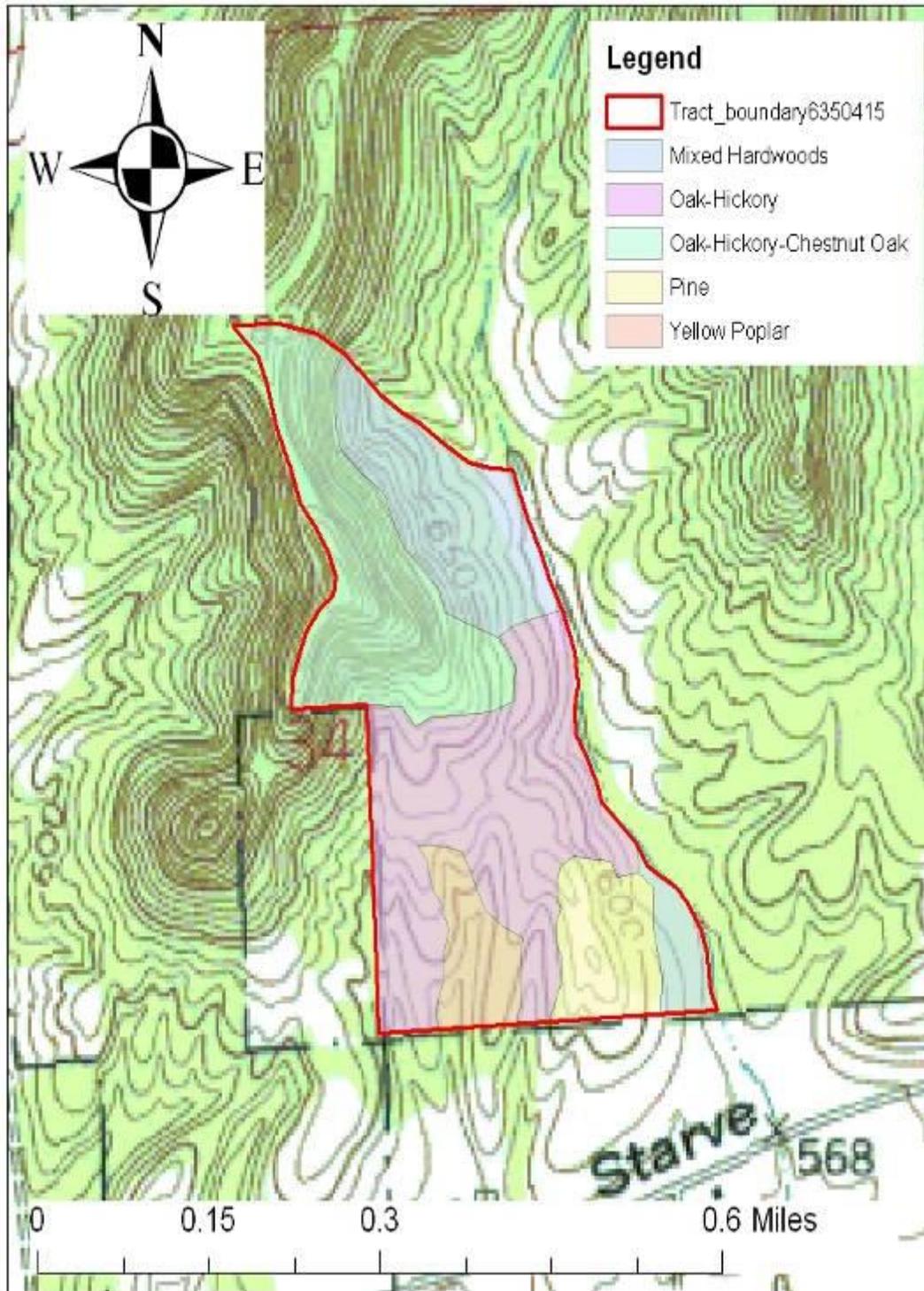
Pre-Harvest Inventory Data in Red

Basal Area per Acre = 121 sq.ft.
Trees per Acres = 122
Average Tree Diameter = 13" DBH
Percent Stocking = 96 %

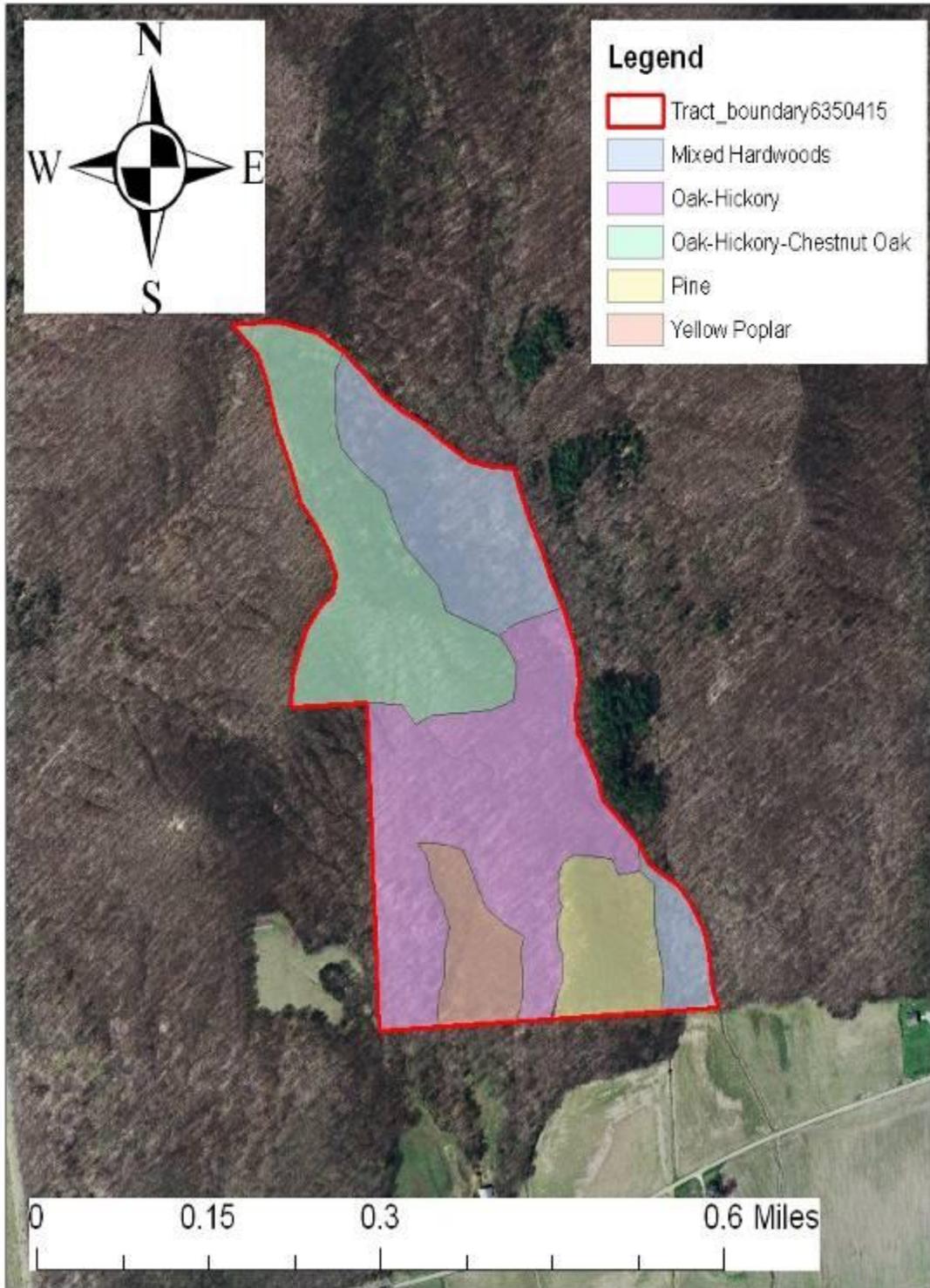
Projected Post-Harvest Data in Blue

Basal Area per Acre = 92 sq.ft.
Trees per Acres = 111
Average Tree Diameter = 12" DBH
Percent Stocking = 75%

Tract Subdivisions
Jackson-Washington State Forest
Compartment 04 Tract 15



Tract Subdivisions
Jackson-Washington State Forest
Compartment 04 Tract 15



Soils Map
Jackson-Washington State Forest
Compartment 04 Tract 15

