TM 901

RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY

		Compartment:	4
Jackson-Washington State Forest		Tract:	17
Forester:	Jacob Florine	Date:	8/13/08

ACREAGE IN:

Commercial Forest	57	Average Site Index	75.5
Nature Preserve	12	Total B.A./Acre	133
Electrical Line	1	B.A. Trees 6" & Up	123.8
TOTAL AREA	70	B.A. Trees < 6"	9.2

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
American beech	11,860	3,020	14,880
American sycamore	0	670	670
black cherry	2,010	2,990	5,000
blackgum	5,240	0	5,240
black locust	950	0	950
black oak	39,900	50,410	90,310
chestnut oak	4,120	670	4,790
northern red oak	2,350	9,860	12,210
pignut hickory	5,840	21,040	26,880
red maple	20,350	7,060	27,410
sassafras	2,090	0	2,090
scarlet oak	2,080	0	2,080
shagbark hickory	2,550	17,700	20,250
sugar maple	3,450	930	4,380
sweet gum	3,470	2,880	6,350
white ash	5,210	0	5,210
white oak	14,210	30,870	45,080
yellow-poplar	93,240	134,670	227,910
TRACT TOTALS	218,920	282,770	501,690
PER ACRE TOTALS	3,841	4,961	8,802

PREVIOUS CRUISE DATA

DATE:	02/10/1975	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		2,238	937	3,174
DATE:	02/01/1982	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		2,787	1,585	4,372
DATE:	01/19/1984	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		2,856	846	3,702

RESOURCE MANAGEMENT GIUDE
FORESTER'S NARRATIVE

Jackson-Washington State Forest **Compartment 04 Tract 17**
Forester: Jacob Florine **Date: August 11, 2008**
Management Cycle End Year: 2033 **Management Cycle Length: 25 years**

Location
This tract is located in Section 34 T5N R4E, Driftwood Township, Jackson County. The tract is located along Starve Hollow Road.

General Description
This tract transitions from flat ground to steep south and west facing slopes and is comprised of mixed hardwoods and oak-hickory cover types. The top of the knob as well as the steepest slopes are included in a 15-acre nature preserve. The quality of the timber ranges from average to high quality.

History
The land that contains tract 17 was originally acquired by the State of Indiana in two separate land acquisitions. The first was a 100-acre purchase from Edward and Anna Tuelker on August 19, 1935. The second land acquisition was a 66.5 acre purchase from John and Bertha Burcham on April 4, 1941.

The current tract 17 was formed from the former tract 17 and tract 22. On February 24, 1994, tract 17 was split and part of the acreage was added to tract 18. The remaining acreage of tract 17 was added to tract 22 to form the new tract 17. Tract 22 was then eliminated. The management history prior to this date will be described in terms of the former tract designations.

A cruise was performed in tract 17 on February 10, 1975 by forester David Pearson. At that time, 13 of the 56 total acres was listed as non-commercial forestland. Of the 13 acres of non-commercial forestland, 8 acres were due to steepness and dryness of the site. This area is now included in the nature preserve which will be described in detail later. The other 5 acres of non-commercial forestland was primarily open ground, which has since developed into commercial forest. The cruise estimated the tract to have a total of 3,175 bd. ft. per acre with 2,238 bd. ft. of that as growing stock and 937 bd. ft. as harvest stock. Pearson recommended a timber harvest for 1985.

A cruise was performed in the south part of tract 17 in February 1982. At that time only 41 of the 44 acres of commercial forest was merchantable. This was because one acre was not merchantable and two acres where the highway right of way. This timber cruise indicated 4, 372 board feet per acre with 1,585 board feet per acre of harvest and 2,787 board feet per acre of growing stock.

Another cruise was performed for the north part of tract 17 which was then tract 3 on December 19, 1984 by John Friedrich. This inventory was taken on 56 acres. Fourteen of these acres are now in a nature preserve. This cruise made up the north part of the current tract 17. This cruise indicated 3,702 board feet per acre with 846 board feet per acre of harvest and 1,055 board feet per acre of growing stock.

A timber sale was marked by forester John Friedrich and sold on March 20, 1986. This sale consisted of 406 trees containing an estimated 85,480 bd. ft. and 233 culls. Tracts 17 and 22 were both marked in the sale. Tract 17 accounted for 35,293 bd. ft. in 206 trees and 151 culls. Tract 22 accounted for 50,187 bd. ft. in 200 trees and 82 culls. Thomas W. Hall of Medora bought the sale for $13,590.00 ($158.98/MBF). Black oak, yellow-poplar, and American beech were the top three species by volume in the timber sale. The harvest was completed August 18, 1986.

Landscape context

The surrounding landscape is a mix of primarily row-crop agricultural land and large blocks of forest-land, mostly Jackson-Washington State Forest. The landscape area also includes the 145-acre Starve Hollow Lake. Topography in this landscape varies from flat bottomlands and steep slopes and on up to upland ridges. Agriculture fields dominate the flat ground. Development is minimal and mostly resulting from single family houses.

Topography, Geology and Hydrology

This tract is comprised of mostly south and west facing slopes. There are several ephemeral drainages dissecting the tract. The ephemeral drainages on the west side of the tract flow onto the neighbor's hay field to the west. The entire tract is located within the Starve Hollow Lake watershed. Soils in this area generally were formed in material weathered from shale, siltstone, sandstone, clayey till, loess or acidic silty alluvium.

Soils

There are 14 different soil types found in this tract.

Beanblossom silt loam, 1-3 percent slopes, occasionally flooded, very brief duration, (BcrAW) is well drained with bedrock at a bepth of 40-60 inches. This soil type is commonly found on flood plains. Beanblossom silt loam site index could not be found (1.54 acres).

Burks channery silt loam, 25-75 percent slopes, (BeG) is well drained with bedrock at a depth of 20-40 inches. This soil type is commonly found on side slope, knolls and uplands. Burks chanery silt loam has a black oak site index of 50 (3.25 acres).

Bonnell silty clay loam, 10-18 percent slopes, severely eroded, (BpD3) is well drained with its most restrictive layer above 60 inches. This soil type is commonly found on side slopes and uplands. Bonnell silty clay loam has a northern red oak site index of 70 (2.18 acres).

Cincinnati silt loam, 6-12 percent slopes, eroded, (CcC2) is moderately well drained with its most restrictive layer above 60 inches. This soil type is commonly found on side slopes and uplands. Cincinnati silt loam has a northern red oak site index of 80 (11.3 acres).

Coolville silt loam, 12-20 percent slopes, (CoD) is moderately well drained with bedrock at a depth of 40-60 inches. This soil type is commonly found on side slopes and uplands. Coolville silt loam has a northern red oak site index of 66 (11.35 acres).

Dubois silt loam, 2-6 percent slopes, eroded, (DuB2) is somewhat poorly drained with its most restrictive layer above 60 inches. This soil type is commonly found on side slopes and lacustrine terraces. Dubois silt loam has a northern red oak site index of 80 (3.54 acres).

Gilpin silt loam, 25-55 percent slopes, (GnF) is well drained with bedrock at a depth of 20-40 inches. This soil type is commonly found on side slopes and uplands. Gilpin silt loam has a northern red oak site index of 80 (7.03 acres).
Haubstadt silt loam, 2-6 percent slopes, eroded, (HdB2) is moderately well drained with its most restrictive layer above 60 inches. This soil type is commonly found on side slopes and lacustrine terraces. Haubstadt silt loam has a northern red oak site index of 80 (1.59 acres).
Hickory silt loam, 15-45 percent slopes, (HrE) is well drained with its most restrictive layer above 60 inches. This soil type is commonly found on side slopes and uplands. Hickory silt loam has a northern red oak site index of 85 (14.62 acres).
Kurtz silt loam, 20-55 percent slopes, (KtF) is well drained with bedrock at a depth of 40-60 inches. This soil type is commonly found on side slopes and uplands. Kurtz silt loam has a northern red oak site index of 60 (5.8 acres).
Medora silt loam, 6-12 percent slopes, eroded, (MtC2) is moderately well drained with most restrictive layer above 60 inches. This soil type is commonly found on side slopes, outwash ridges and eskers. Medora silt loam has a white oak site index of 90 (4.21 acres).
Negley loam, 18-35 percent slopes, (NgE) is well drained with its most restrictive layer above 60 inches. This soil type is commonly found on side slopes, outwash ridges and eskers. Negley loam has a northern red oak site index of 94 (3.72 acres).
Steff silt loam, 0-2 percent slopes, rarely flooded, (Sg) is moderately well drained with its most restrictive layer above 60 inches. This soil type is commonly found on flood plains. Steff silt loam has a black oak site index of 88 (.35 acres)
Stonehead silt loam, 4-12 percent slopes, eroded, (SsC2) is moderately well drained with bedrock at a depth of 40-72 inches. This soil type is commonly found on ridge tops and side slopes. Stonehead silt loam has a northern red oak site index of 90 (.05 acres)

Boundary
The northern boundary is an ephemeral stream valley. The western and eastern boundaries are shared with private property. The south half of the eastern boundary is identified by a fence along a horse pasture. The southern boundary of the tract is Starve Hollow Road, except in the southeast corner where a one-acre piece of the tract crosses the road.

Access
This tract can be accessed from Starve Hollow Road. There is a small parking lot on this road which allows for foot traffic on this tract. A log yard will need to be constructed in the flat portion of the tract near the southeast corner of the tract.

Wildlife
This tract contains abundant wildlife habitat. There are several oak and hickory trees which will provide hard mast food for a diversity of species. There is also several soft mast producing trees which also provide food for wildlife. Along with the cavity trees there also several snags. These also provide shelter and nesting places for many species. There are numerous game trails throughout this tract probably due to its close proximity to agricultural fields.

The Natural Heritage Database Review does not show any threatened, endangered or rare species in this tract. However, there are four within a 2.5 mile matrix. They are the red-shouldered hawk (*Buteo lineatus*), black vulture (*Coragyps atratus*), least bittern (*Ixobrychus exilis*) and the Indiana bat (*Myotis sodalis*).

Indiana Bat Habitat Guidelines

The following present values were determined from the inventory:

Live trees:	**Present**	Goal	Available for Removal
11" +dbh	900*	621*	279
20" +dbh	137*	207*	-70

Snags:	**Present**	Goal	Available for Removal
9" +dbh	352	207	145
19" +dbh	39	35	4

***** The present and goal only include the following desired live tree species: AME, BIH, BLA, BLL, COT, GRA, REO, POO, REE, SAS, SHH, ZSH, SHO, SIM, WHA, WHO

We have exceeded our habitat goals in every category but one in this tract. The number of large diameter preferred live roost trees is below the goal. This could be improved by harvesting some of the less desirable species to release the crowns of the smaller diameter class of the desired species. This will allow for the increase in growth rate to get some of the abundance in the smaller class into the larger diameter size class. Although both size classes of snags are above the goal, we do not harvest snags in a typical harvesting situation. Post harvest timber stand improvement will deaden some of the low quality less desirable species so that canopy gaps will be completed and could also release trees that were not released from the harvest. Deadening these trees will create snags in both size classes which will help us continue to exceed the goal for snags.

Recreation

Hunting is the primary recreational use of this tract, due to the tract being adjacent to Starve Hollow Road and having a public parking lot. Evidence of several shotgun shells shows that this tract is a popular hunting spot.

Cultural

Cultural resources may be present on the tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction projects.

Tract Area Descriptions – see attached map

Section 1 – Mixed Hardwoods

The basal area in this section is approximately 118 square feet of basal area per acre and covers approximately 27.43 acres. The basal area varies greatly throughout. In some areas the basal area is as low as 40 square feet per acre and in other areas it is as high as 160 square feet per acre. The areas with the high basal area may indicate that this area is

overstocked and should be harvested. The areas with the low basal area are good places to incorporate group selection openings to increase the stocking. The size of the trees in this tract ranges from seedlings and saplings to large mature sawtimber. Overall the quality of this area ranges from low to high. The overstory is dominated mostly by red maple, white ash, white oak, American beech, sweet gum, black oak and yellow-poplar. The understory in this area is mostly comprised of sugar maple, red maple, black gum, white ash and American beech along with several varying species. The regeneration is competing in certain areas with thick stands of pawpaw and spicebush. Regeneration varies depending on the amount of sunlight and the site conditions. Grapevines on the south and south east part of the tract are also competing for sunlight in the crowns of several trees. In the areas with very low basal area, regeneration openings could be implemented to encourage younger tree growth to achieve a higher stocking. In the areas with higher stocking single tree selection could be used to reduce the stocking and improve the growing conditions for the younger more vigorous trees.

Section 2 – Oak Hickory

The basal area in this section is approximately 128 square feet of basal area per acre and covers approximately 22.52 acres. This high basal area indicates that a harvest could be done to reduce the volume to increase the rate of growth in this section. The trees range in size from seedlings and saplings to pole sized and up to large mature and over mature sawtimber. The species most commonly found in this section are white oak, red oak, black oak, chestnut oak, shagbark hickory and pignut hickory. The quality ranges from average quality to very high quality. The understory is mostly comprised of sugar maple and American beech with several oaks and hickory intermixed. The regeneration is mostly sugar maple, American beech or white ash. In several plots the regeneration is poor. This is likely due to the dense sub-canopy created by the beech-maple understory. This stand could be managed to grow a mixture of high quality oak and hickory. Regenerating these oaks should be a major focus for management in this section especially since it is on a south slope and there is some oak regeneration already occurring. This could be done by incorporating group openings or an understory removal. An understory removal following a harvest could allow for the shade intolerant species to grow and get above their competition.

Section 3 – Yellow-Poplar

The basal area in this section is approximately 173 square feet of basal area per acre and covers approximately 6.87 acres. This very high basal area indicates that a harvest should be done to reduce the stocking to increase the rate of growth and overall vigor in this section. The trees range in size from seedlings and saplings to pole sized and up to large mature and over mature sawtimber. Yellow-poplar dominates this area, accounting for almost all of the basal area. The quality ranges from average quality to very high quality. The understory is mostly comprised of sugar maple, red maple, yellow-poplar, and dogwood. The regeneration is mostly white ash and sweet gum. This stand should be managed to grow a high stocking of quality yellow-poplar. The soils in this area have a yellow-poplar site index of 99 and 98. This high site index will allow for fast growing, large yellow-poplar. Regenerating yellow-poplars should very easy once the mature trees

are removed. Sweet gum and white ash may try to take over this area but incorporating timber stand improvement into the management of this tract will prevent this.

Nature Preserve
The management of this area is under the supervision of the DNR Division of Nature Preserves. This area is in a dedicated nature preserve because it contains a siltstone glade barrens. This area takes up approximately 14 acres of this tract. It is comprised of oak-hickory, mixed hardwoods, and chestnut oak cover types. The average basal area is 137 square feet of basal area. The north part of this area is the mixed hardwoods cover type. The west and south slope of this area is the oak-hickory cover type. The top of this knoll is the chestnut oak cover type.

Overall
The inventory performed in August 2008 indicates that the commercial forest portion of the tract has an approximate total of 8,800 board feet per acre with 3,840 board feet per acre available for harvest and 4,960 board feet per acre to be left. The total potential harvest volume is approximately 218,900 board feet.

This tract has a high potential of volume that should be harvested. The excellent soils allow for this tract to quickly produce high volume and high quality trees. Single tree selection and group selection would allow for regeneration to occur and let the residual trees increase in their growth rate. Post-harvest timber stand improvement would also allow for expanding crowns and increased growth. The abundance in the small diameter desired bat tree species will then grow into the larger size class. This would help meet out bat habitat goals. The TSI would also create snags in both size classes which are beneficial to the Indiana bat.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mark harvest and sell timber	2009-2010
Post-Harvest TSI	2013
Inventory and Management Guide	2033

To submit a comment on this document, click on the following link:
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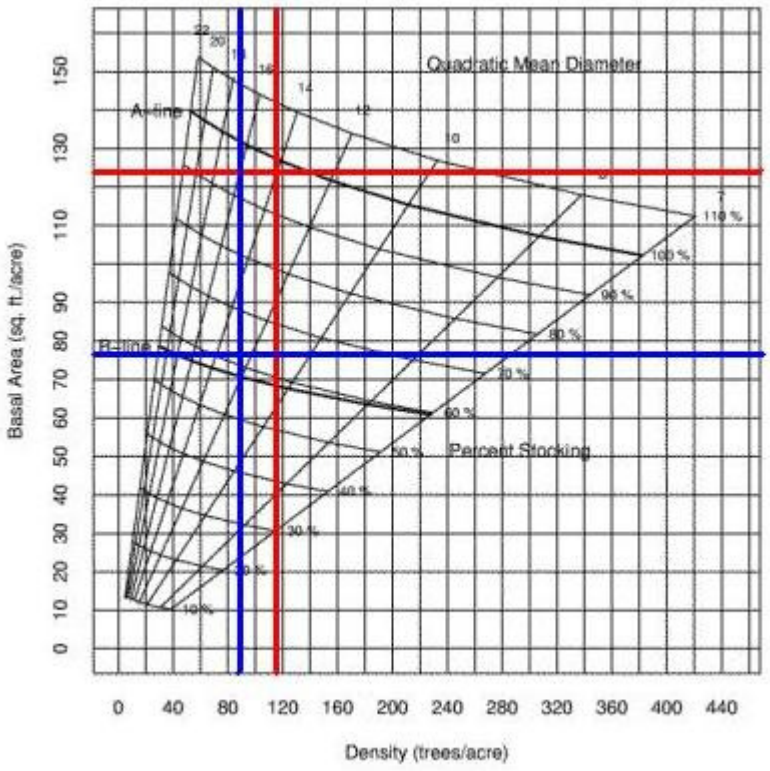
You **must** indicate "Jackson-Washington C4 T17" in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

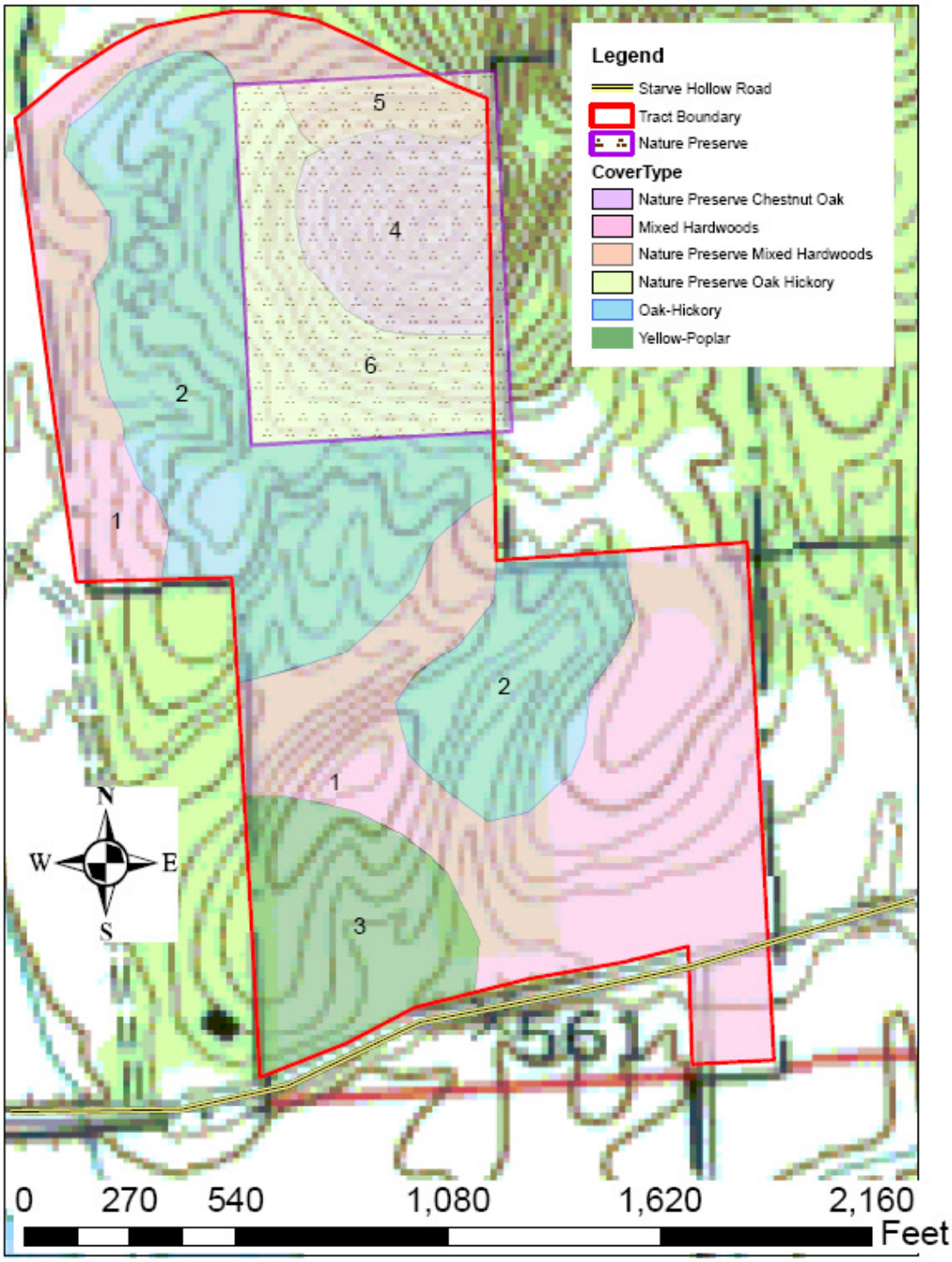
JWSF Resource Management Plan
C 04 T 17 Tract Stocking
August 2008 Inventory
57 acres of commercial forest



<u>Pre-Harvest Inventory Estimate in Red</u>
Basal Area per Acre = 123.8 sq.ft.
Trees per Acres = 117
Average Tree Diameter = 14" DBH
Percent Stocking = 98%

<u>Projected Post-Harvest Data in Blue</u>
Basal Area per Acre = 77 sq.ft.
Trees per Acres = 89
Average Tree Diameter = 12.5" DBH
Percent Stocking = 62%

Tract Subdivision Units
Jackson-Washington State Forest
Compartment 4 Tract 17



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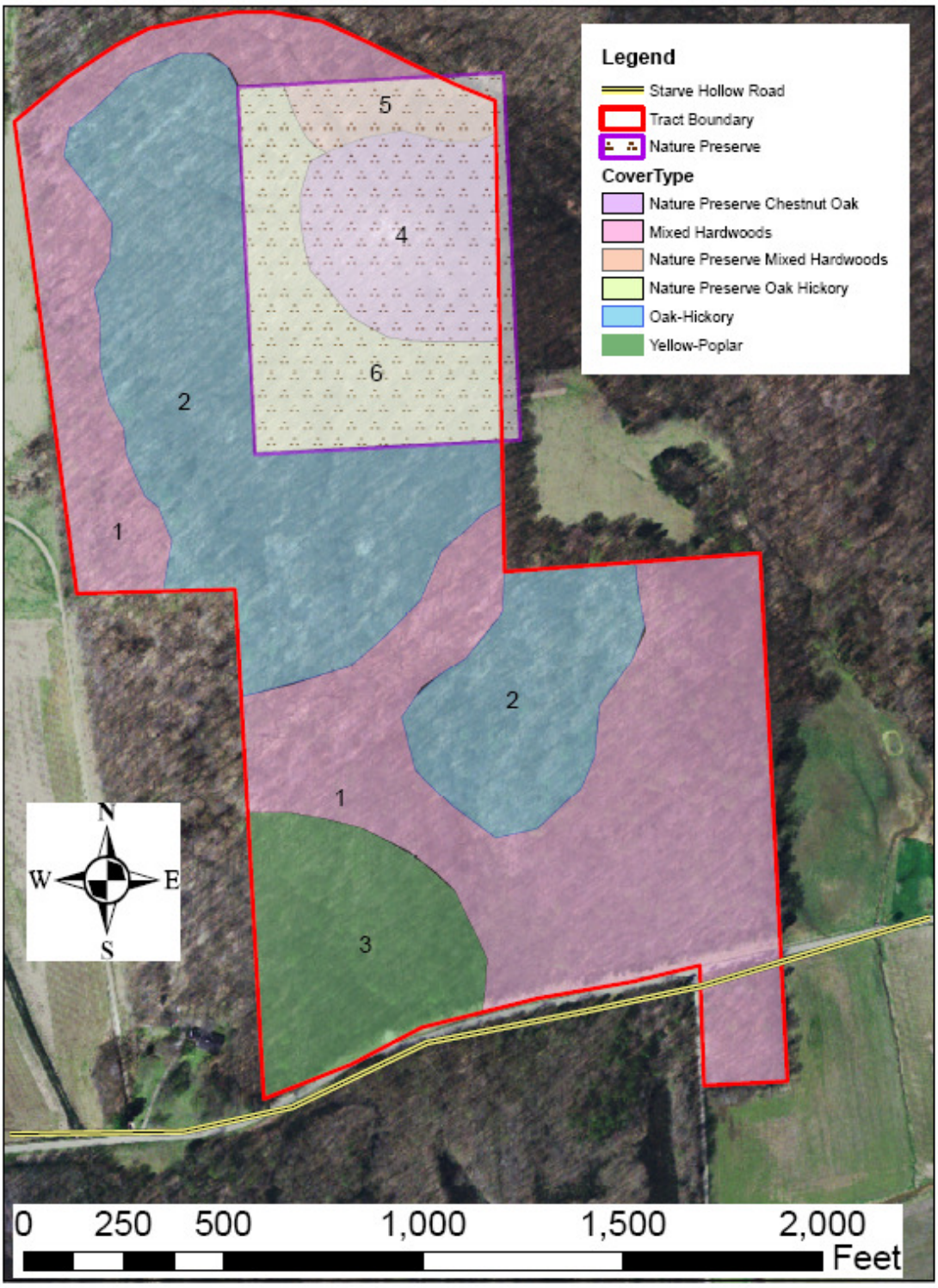

Soils Map
Jackson-Washington State Forest
Compartment 4 Tract 17