Indiana Department of Natural Resources
Division of Forestry

DRAFT

# RESOURCE MANAGEMENT GUIDE

State Forest: Jackson-Washington Compartment: 06 Tract: 04 & 07
Forester: Jason Vogelpol & D. Potts Date 8/19/2010
Management Cycle End Year: 2030 Management Cycle Length 20yrs

## Location

This management area is located approximately three miles southeast of Vallonia, Indiana. More specifically sections 3 and 10 of Driftwood Township and sections 2 and 11 of Grassyfork Township, Township 4N and Range 4E. The area is more commonly referred to as Compartment 06 Tracts 04 and 07 of Jackson-Washington State Forest.

## General Description

This management area is approximately 109 acres. The general cover type is hardwood forest.

## History

The Jackson-Washington State Forest compartment and tract folders contain tract history information pertaining to previous activities that occurred. The tract history folder for Compartment 06 Tract 04 (formerly Compartment 28 Tract 12) has information for a 1971 management plan. The 1971 inventory estimated total volume at 104,275 bd.ft. doyle, with an estimated harvest of 41,022 bd. ft. doyle.

The tract history folder for Compartment 06 Tract 07 (formerly known as Compartment 28 Tract 13) has information for a 1971 inventory, a 1973 timber sale, a 1982 inventory, a 1983 timber sale and a 1985 inventory. The 1971 inventory estimated total volume per acre at 3,157 bd. ft., with 2,082 bd. ft. volume per acre harvest. Thus, leaving 1,075 bd.ft. per acre growing stock. The 1972 timber sale resulted in a total harvest of 115,460 bd. ft. on 44 acres. The 1982 inventory estimated total 5,910 bd. ft. per acre, with 2,141 bd. ft available for harvest, leaving 1,628 bd. ft. per acre as growing stock. The 1983 harvest resulted in a 1,716 bd. ft. per acre being removed from the tract.

## Landscape Context

The area directly surrounding this management area to the North, South, East, and West is Jackson-Washington State Forest property. Beyond the State Forest property to the south and east is primarily agricultural land with sparse residential housing. To the north, adjoining State Forest Property is Starve Hollow State Recreation Area. Starve Hollow State Recreation contains a campground and Starve Hollow Lake. To the west, beyond

Starve Hollow State Recreation Area, is primarily agricultural land with sparse residential housing. The land use around the State Forest and the State Recreation area has seen little change in the last ten years.

**Topography, Geology and Hydrology**

The topography of this tract ranges from very steep on the side slopes to nearly level on the ridgetops and bottoms. This management area is comprised of a long east-west, north facing slope. In the northeast of the management area is a mapped intermittent stream that, as it flows west, transitions to a mapped perennial stream. The underlying geology is siltstone or shale.

**Soils**

Beanblossom silt loam (BcrAW) This deep, well drained soils that formed in 0 to 24 inches of medium-textured alluvium and the underlying loamy-skeletal alluvium. The Beanblossom soils are on flood plains and alluvial fans below steep and very steep hillslopes. Most areas of Beanblossom soils are used for hay, pasture or woodland. A few areas are used for cropland. Native vegetation is deciduous forest, dominantly sycamore, elm, hickory, beech, maple, and tulip poplar. This soil is well suited to trees. Plant competition is moderate. Seedlings survive and grow well if competing vegetation is controlled. Preferred trees to manage for are baldcypress, bitternut hickory, bur oak, red maple, shellbark hickory, shingle oak, and swamp white oak.

Berks channery silt loam (BeG) This steep and very steep, moderately deep, well drained soil is on side slopes and knolls in the uplands. Slopes are 25 to 75 percent. The native vegetation is hardwoods and most areas are wooded. It is fairly well suited to trees. The equipment limitations, seedling mortality, and the erosion hazard are management concerns. Overstocking helps to compensate for seedling mortality. Building logging roads and skid trails on the contour and constructing water bars help to control erosion. North aspects generally are more productive than south aspects. The site indexes for hardwood species range from 70 (white oak) to 90 (tulip poplar). Preferred trees to manage for are black oak, bur oak, chestnut oak, scarlet oak, red oak, and white oak.

Gilpin silt loam (GnF), This well drained soil has a watertable at a depth greater than 40 inches and is on side slopes on uplands. Slopes are 25 to 55 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderate organic matter content (2.0 to 4.0 percent). Permeability is moderate (0.6 to 2.0 in/hr) in the most restrictive layer above bedrock. Available water capacity is low (4.8 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 3.5 to 5.5. Bedrock is at a depth of 20 to 40 inches

Kurtz silt loam (KtF) This series consists of deep, well drained soils on hills. They formed in residuum weathered from interbedded soft siltstone and shale bedrock. Slopes range from 20 to 55 percent. Most Kurtz soils are in forest. Native vegetation consists of mixed hardwood with oaks, hickory, beech and tulip. These soils are well suited to trees. The site index for this soil type is 60 (northern red oak). Preferred trees to manage for are

black oak, bur oak, cherrybark oak, chestnut oak, common persimmon, northern red oak, scarlet oak, shagbark hickory, shingle oak, sugar maple, swamp white oak and white oak.

Stonehead silt loam (SsC2) This series consists of deep and very deep, moderately well drained soils formed in loess and the underlying residuum weathered from soft shale or soft siltstone bedrock. Slopes range from 4 to 12 percent. Most areas are used for hay, pasture or are in woodland. Native vegetation is mixed hardwoods with oaks, hickory, beech, maple, and tulip-poplar as the major species. This soil is well suited for trees. Prolonged seasonal wetness hinders logging activities and planting of seedlings. The equipment limitations, seedling mortality, windthrow hazard, and plant competition are management concerns. The potential productivity or site index for this soil type is 90 (northern red oak). Preferred trees to manage for are, black oak, bur oak, cherrybark oak, chestnut oak, common persimmon, northern red oak, scarlet oak, shagbark hickory, shingle oak, sugar maple, swamp chestnut oak, tulip poplar and white oak.

TlB2--Tilsit silt loam, 2 to 6 percent slopes, eroded
This moderately well drained soil has a seasonal high watertable at 2.0 to 3.0 ft. and is on ridgetops and side slopes on uplands. Slopes are 2 to 6 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (< 0.06 in/hr) in the most restrictive layer above bedrock. Available water capacity is moderate (7.9 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Bedrock is at a depth of 40 to 80 inches.

**Access**
Access to this tract is fair to average. Fire lane #320 accesses this tract from just south of the Driftwood State Fish Hatchery. The fire lane is approximately 1.2 miles from S. County Road 250 W. to the beginning of the management area. Access within the area is average. Fire lane #320 is the southern border of the area and serves as the main access for the tract.

**Boundary**
The entire management area is surrounded by Jackson-Washington State Forest, so no property boundaries are found within the area. The southern and eastern boundary is also fire lane #320. A significant valley separates the management area from the tract to the north; this valley is the northern boundary. Following the valley to the west, it transitions into an unmapped intermittent drainage, which then transitions into a mapped intermittent drainage. The valley, mapped and unmapped drainages form the northern management area boundary. The western boundary is a ridge that begins on fire lane #320 and slopes to the mapped intermittent drainage.

**Wildlife**

| | Maintenance Level | Optimal Level | Inventory | Available Above Maintenance | Available Above Optimal |
|---|---|---|---|---|---|
| **Snags (all species)** | | | | | |
| *5"+ DBH* | 320 | 560 | 355 | 35 | -205 |
| *9"+ DBH* | 240 | 480 | 267 | 27 | -213 |
| *19"+ DBH* | 40 | 80 | 81 | 41 | 1 |

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

The 5" and 9" DBH classes meet the maintenance levels for snags, but are under the optimal levels. The 19" DBH classes meets both the maintenance and optimal levels. There are no snag deficiencies for this tract. No action needs to be taken to increase the number of snags.

**Communities**

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.

**Forest Condition**

The most recent inventory was conducted during summer 2010. The 2010 inventory shows a total volume of 560,200 bd. ft. for the area with a harvest volume of 194,830 bd. ft. and a leave volume of 365,370 bd. ft. These numbers translate to per acre volumes of 5,139 bd. ft. total, 1,787 bd. ft. harvest and 3,352 bd. ft. leave. The stocking chart shows current stocking at 58%, with a reduction to 40% stocking post harvest. Currently basal area is 103.6 sq. ft./ acre. Post harvest basal area is estimated to be 70.4sq. ft./acre. Trees per acres will decrease from 69 to 57 after the harvest. The three top harvest species by volume are sugar maple, white ash and American beech. Harvest data from the inventory is based upon single tree selection. The data indicates this area is has low stocking throughout and management should reflect such low stocking.

**Recreation**

The turkey roost trail (trail 8) follows fire lane #320 on the southern boundary of the management area. During harvest operations this portion of the trail will be closed or re-routed to keep hikers and trail users safe from harvest operations. The trail will be reopened after the sale area is closed out and there is no longer a safety concern for trail users. Other recreation uses of the management area are traversing, geocacheing, mushroom hunting, bird watching and hunting. The Collins English Dictionary defines

recreation as: "refreshment of health or spirits by relaxation and enjoyment." Though hunting is listed under "recreation," many individuals hunt for the food itself and not for "refreshment of health or spirits by relaxation and enjoyment."

**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.

| TM 901 RESOURCE MANAGEMENT GUIDE | | | |
|---|---|---|---|
| **INVENTORY SUMMARY** | | | |
| | | Compartment: | 6 |
| Jackson-Washington State Forest | | Tract: | 4, 7 |
| Forester: | Jason Vogelpohl | Date: | 8/6/2010 |

| ACREAGE IN: | | | | |
|---|---|---|---|---|
| | Commercial Forest | 109 | | |
| | Non-Forest | 0 | | |
| | | | B.A. Culls | 0 |
| | | | B.A. Trees 12" & Up | 60.2 |
| | | | B.A. Trees < 12" | 15.7 |
| | TOTAL AREA | 109 | Total B.A./Acre | 75.9 |

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

| SPECIES | GROWING STOCK | HARVEST STOCK | TOTAL VOLUME |
|---|---|---|---|
| sugar maple | 116,550 | 64,110 | 180,660 |
| American beech | 48,240 | 27,130 | 75,370 |
| yellow-poplar | 34,440 | 22,540 | 56,980 |
| chestnut oak | 25,950 | 14,660 | 40,610 |
| shagbark hickory | 36,690 | 2,450 | 39,140 |
| white ash | 0 | 35,450 | 35,450 |
| red maple | 20,670 | 11,850 | 32,520 |
| white oak | 30,210 | 1,800 | 32,010 |
| pignut hickory | 29,450 | 0 | 29,450 |
| northern red oak | 15,290 | 9,850 | 25,140 |
| black oak | 3,600 | 0 | 3,600 |
| scarlet oak | 3,010 | 0 | 3,010 |
| sweetgum | 1,270 | 1,270 | 2,540 |
| black cherry | 0 | 2,450 | 2,450 |
| basswood | 0 | 1,270 | 1,270 |
| sassafras | 0 | 0 | 0 |
| TRACT TOTALS | 365,370 | 194,830 | 560,200 |
| PER ACRE TOTALS | 3,352 | 1,787 | 5,139 |

## Tract Subdivision Description and Prescription

### Mixed Hardwoods (85 acres)

The dominant overstory species for this area include American beech, sugar maple, white ash, and yellow poplar with scattered northern red oak, chestnut oak, white oak, and pignut hickory. The approximant basal area per acre for sawtimber is 62 square feet. The understory can be sparse to dense with primarily paw-paw, sugar maple, and American beech. Regeneration consists of mostly sugar maple, American beech, and white ash. In areas where stocking is higher and single tree selection is viable, white ash should be removed due to the threat of emerald ash borer. Due to low stocking and low basal area, multiple or a several large regeneration openings should be created to establish a new cohort of future crop trees. There is also an area that has a high concentration of grapevines. Effort should be made to control the spread during pre-harvest and post harvest timber stand improvement operations, especially in areas where grapevines could affect stand regeneration.

### Oak-Hickory (24 acres)

Chestnut oak, northern red oak, scarlet oak, white oak, shagbark hickory, pignut hickory are the dominant species in this stand. Many of these trees are of high quality. The basal area per acre of sawtimber trees is approximately 56 square feet. The understory species are mostly sassafras, American beech, and sugar maple. Regeneration is largely sugar maple with scattered pockets of oak and hickory. The overstory should be thinned around the quality trees to allow an increase in growth rate and an overall improvement to the health and quality of the stand. Where thinning is not feasible, especially in areas where there is nothing to release, regeneration openings should be implemented to establish a new stand of trees.

## Tract Prescription and Proposed Activities

The overall proposed management for this area is to conduct an improvement harvest. This management area is ready to be marked as early as 2012 for a timber sale. 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. This management area will likely need several large regeneration openings based upon the low stocking, as reported in the inventory. The openings may potentially cover a large percentage of the management area. 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.

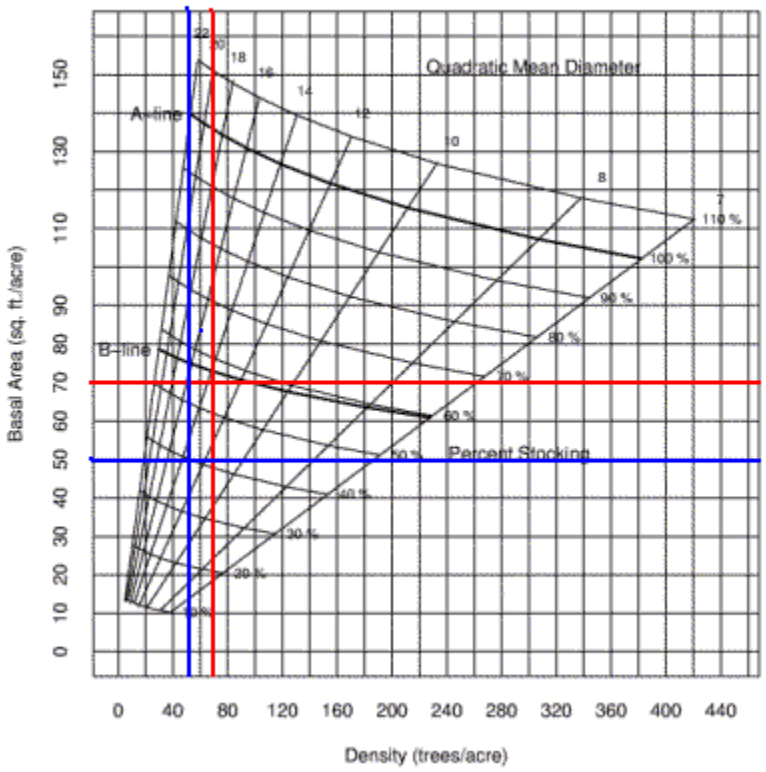
**Proposed Activities Listing**

| *Proposed Management Activity* | *Proposed Date* |
|---|---|
| Mark harvest and sell timber | 2012-2013 |
| Post-Harvest TSI | 2014-2016 |
| Inventory and Management Guide | 2035 |

**Attachments**

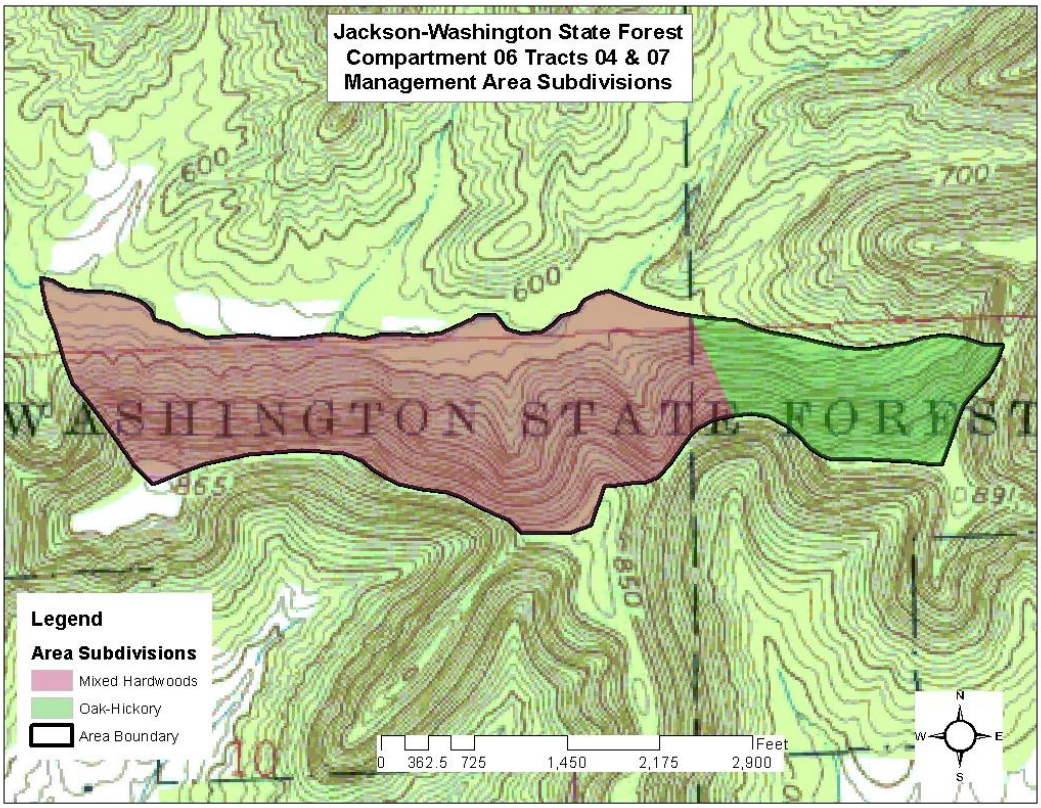
- Sawtimber stocking guide.
- Subdivision map with aerial photograph.
- Subdivision map with topographic map
- Soils map with aerial photograph

**JWSF Resource Management Guide**
C 06 T 04 & 07 Sawtimber Stocking Chart
July 2010 Inventory
109 acres




**Pre-Harvest Inventory Data in Red**
**(Sub merchantable trees excluded)**
Total BA/A = 103.6sq.ft./AC (saplings included)
Total #trees/acre =97
Avg. tree diameter = 14 inches
Percent stocking = 78%

**Post-Harvest Inventory Data in Blue**
**(Sub merchantable trees excluded)**
Total BA/A = 70.4 sq.ft./AC (saplings included)
Total #trees/acre = 79
Avg. tree diameter = 13 inches
Percent stocking = 58%


Jackson-Washington State Forest
Compartment 06 Tracts 04 & 07
Management Area Subdivisions
600
700
600
WASHINGTON STATE FOREST
865
891
850
Legend
Area Subdivisions
Mixed Hardwoods
Oak-Hickory
Area Boundary
0 362.5 725 1,450 2,175 2,900
Feet
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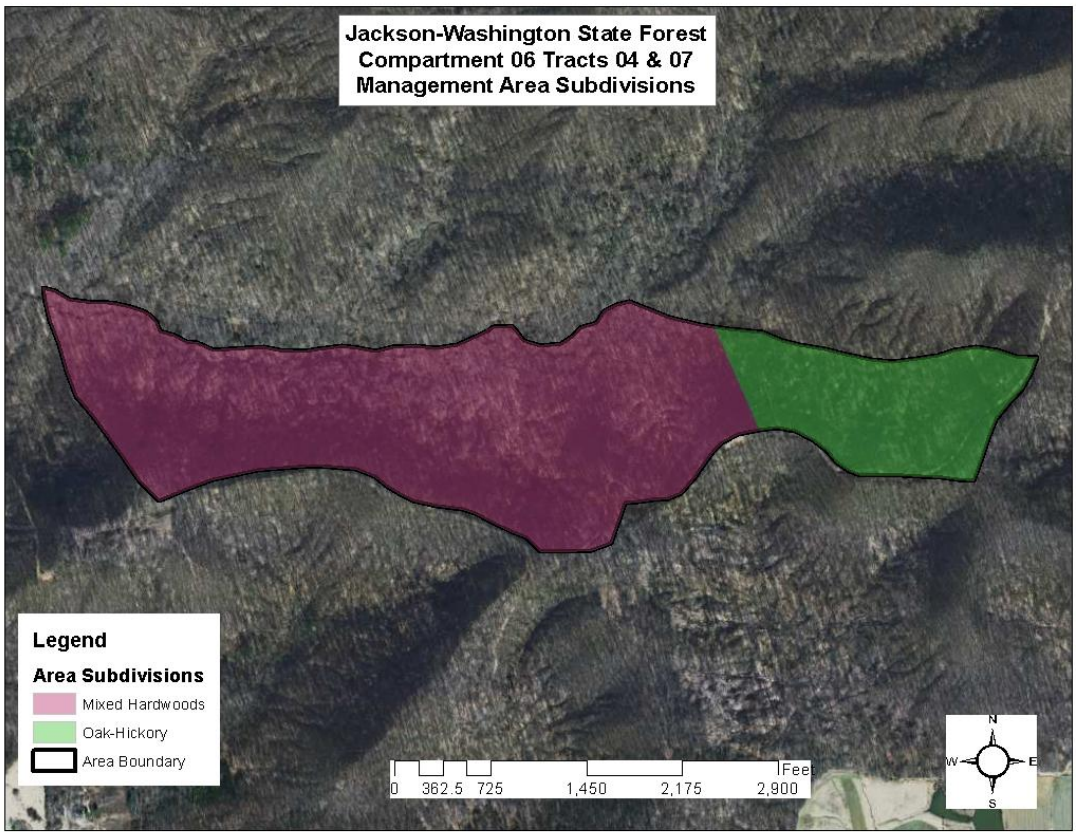
Jackson-Washington State Forest
Compartment 06 Tracts 04 & 07
Management Area Subdivisions
Legend
Area Subdivisions
Mixed Hardwoods
Oak-Hickory
Area Boundary
0 362.5 725 1,450 2,175 2,900
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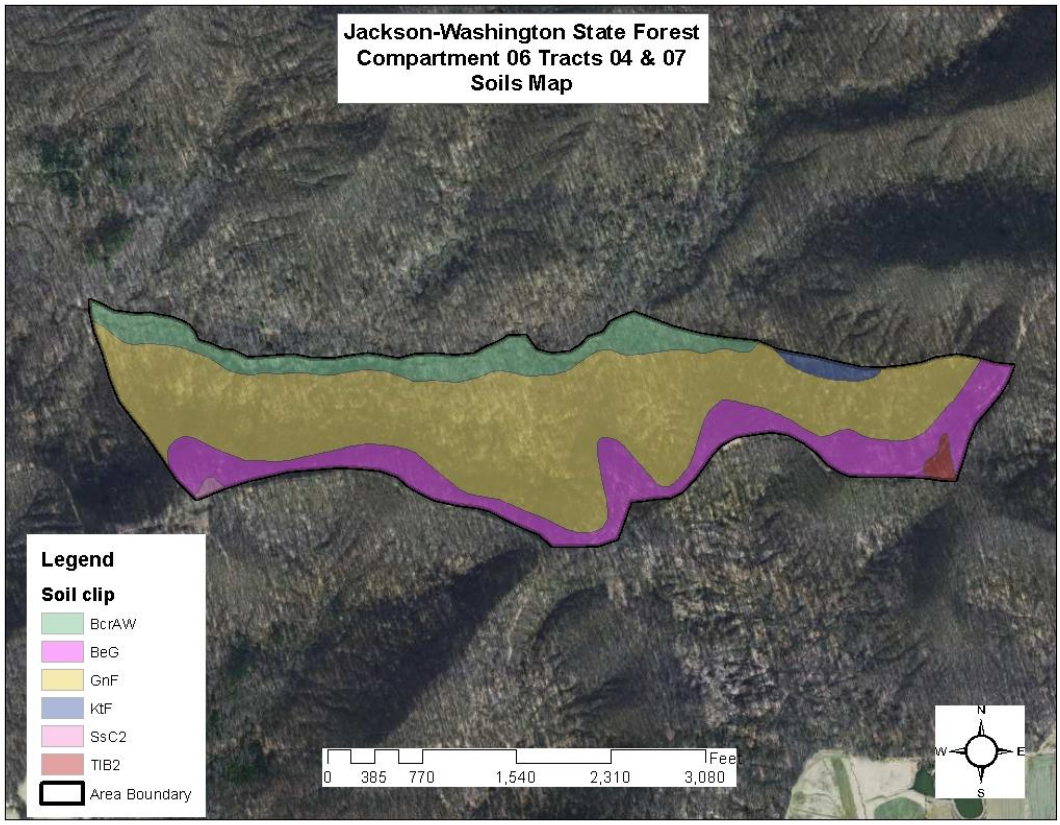


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You must indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

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