TM 901 RESOURCE MANAGEMENT GUIDE					
INVENTORY SUMMARY					
			Compartment:	10	
Jackson-Washington State Forest			Tract:	29	
Forester:	Jacob Florine		Date:	7/21/08	

ACREAGE IN:				
Commercial Forest	98.9	Average Site Index	69	
Tree Plantation	2.67	Avg. Annual Growth	127	
Recreation Use		Total B.A./Acre	114	
Permanent Openings	1.43	B.A. Trees 6" & Up	100.9	
Other Uses		B.A. Trees < 6"	13.1	
TOTAL AREA	103			

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

SPECIES	HARVEST STOCK	GROWING STOCK	TOTAL VOLUME
American beech	10,710	32,850	43,560
American sycamore	4,290	0	4,290
basswood	0	6,050	6,050
black cherry	0	4,520	4,520
blackgum	0	3,730	3,730
black locust	0	3,080	3,080
black oak	13,110	21,130	34,240
chestnut oak	38,810	183,760	222,570
eastern white pine	0	39,190	39,190
hackberry	0	4,460	4,460
northern red oak	0	27,440	27,440
red elm	1,080	0	1,080
red maple	10,280	6,750	17,030
sassafras	0	2,290	2,290
shagbark hickory	0	11,640	11,640
sugar maple	17,050	127,450	144,500
virginia pine	0	3,020	3,020
white ash	3,960	11,500	15,460
white oak	2,480	41,940	44,420
yellow poplar	24,930	64,260	89,190
TRACT TOTALS	126,700	595,060	721,760
PER ACRE TOTALS	1,230	5,777	7,007

PREVIOUS CRUISE DATA				
DATE:	05/01/71	GROWING STOCK	HARVEST STOCK	TOTAL VOLUME
PER ACRE TOTALS		1,223	1,062	2,285

RESOURCE MANAGEMENT GUIDE

FORESTER'S NARRATIVE

Jackson-Washington State Forest
Compartment 10 Tract 29
Forester: Jacob Florine
Date: July 17, 2008

Location

This tract is located in Washington County in the civil township of Monroe in Sections 11, 12, 13 and 14 of T3N R4E.

General Description

This tract has flat ridge tops along with fairly steep north, east and west facing slopes and is comprised of oak-hickory, beech-maple and mixed hardwoods cover types. The quality of these trees ranges from low to average quality.

History

Compartment 10 Tract 29 is comprised of two separate land acquisitions. The first was part of a 928.5 acre purchase from Elvin Nolan et. al in 1953. The second acquisition was part of a 200 acre purchase from Evelen Nicholson in 1996.

An inventory in 1971 indicated 1,062 board feet per acre of harvestable timber with a total volume of 2,285 board feet per acre. This inventory indicated 75 acres of merchantable timber which is now 99 acres of merchantable timber. In 1998 the west edge of this tract was planted to white ash, white oak and northern red oak. This plantation was planted in a random order of species with approximately 5' by 5' feet spacing. The close spacing was to encourage a straight stem with few lower branches. This plantation takes up 2.67 acres of this tract. In 2002 TSI was performed to remove the competition from the white oak in the tree plantation.

Landscape Context

The surrounding landscape is mostly forested with several watershed lakes. Topography varies from flat bottomlands to upland ridges. Agriculture fields dominate the flat ground. Development is minimal and mostly resulting from single family houses.

Topography, Geology and Hydrology

There are several steep slopes in this tract facing three cardinal directions; north, east and west. There are several ephemeral drainages due to the steep slopes. These drainages do not usually hold water.

Soils

There are six different soil types found in this tract.

Berks-Weikert complex, 25-75 percent slopes**,** (BhF) is well drained with bedrock at a depth between 10-40 inches. This soil type is commonly found on side slopes and uplands. Berks-Weikert has a black oak site index of 50 (71.65 acres).

Burnside silt loam, 0-2 percent slopes, occasionally flooded, (Bu) is moderately well drained with bedrock at a depth between 40-65 inches. This soil type is commonly found on flood plains. Burnside silt loam has a yellow-poplar site index of 95 (4.44 acres).

Cuba silt loam, 0-2 percent slopes, frequently flooded, (Cu) is well drained with the restrictive layer at a depth of 60 inches. This soil type is commonly found on flood plains. Cuba silt loam has a yellow-poplar site index of 100 (2.59 acres).

Wellston silt loam, 6-12 percent slopes, eroded, (WeC2) is well drained with bedrock at a depth of 40-72 inches. This soil type is commonly found on uplands. Wellston silt loam has a northern red oak site index of 81 (14.75 acres).

Wellston silt loam, 12-18 percent slopes, (WeD) is well drained with bedrock at a depth of 40-72 inches. This soil type is commonly found on side slopes and uplands. Wellston silt loam has a northern red oak site index of 81 (1.02 acres).

Zanesville silt loam, 1-6 percent slopes, (ZaB) is moderately well drained with bedrock at a depth of 50-90 inches. This soil is commonly found on uplands. Zanesville silt loam has a black oak site index of 75 (7.05 acres).

Zanesville silt loam, 6-12 percent slopes, eroded, (ZaC2) is a moderately well drained soil with bedrock at a depth of 40-80 inches. This soil is commonly found on side slopes and uplands. Zanesville silt loam has a black oak site index of 75 (1.95 acres).

Access

This tract is easily accessible. There is a 30 feet wide and 1,939 feet long easement off of Delaney Creek Road which leads to fire trail 730. Fire trail 730 leads up the hill to the open field at the top of the ridge which continues on to compartment 10 tract 29.

Wildlife

Several species of birds, mammals and amphibians were spotted while conducting the timber cruise. Eastern chipmunks were noticed on downed trees as well as a barred owl, which prey on Eastern chipmunks. Eastern box turtle and a wood frog were seen moving through the forest floor. There was also a king snake as well as a copperhead seen in this tract. There is also a lot of grapevines and greenbrier which provide food for various species along with cavity trees and snags which provide excellent shelter. The field in the southeast part of the tract consisted of some warm season grasses which provide habitat to many songbirds. A goldfinch and Eastern bluebird were spotted using this area.

The Natural Heritage Database Review indicates that the hooded warbler (*Wilsonia citrina*) was spotted in 1995 in this tract. It also indicates that the worm-eating warbler (*Helmitheros vermivorus*) is within the 2.5 mile matrix of this tract.

Indiana Bat Management Guidelines

The following present values were determined from the inventory:

Live trees:	**Present**	Goal	Available for Removal
11” +dbh	857*	927*	-70

20" +dbh	148*	309*	-161

Snags:	**Present**	Goal	Available for Removal
9" +dbh	511*	618	-107
19" +dbh	77*	103	-26

* 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

The counts for all four requirements are below the set goal. The number of live trees in the 20" + dbh class could be increased through a harvest by removing the less desirable tree species and the trees hindering the growth of other trees. This will allow for nutrients and sunlight to get to the desired trees and to maximize their growing potential. Minimizing the removal of the desired species will also help regenerate the desired species. Post harvest TSI can also allow for more sunlight and nutrients to get to the desired trees as well as creating snags in both size classes.

Recreation
Recreational use on this tract is minimal. Hunting and hiking are likely the most common recreational use on this tract. The Knobstone Trail is routed through this compartment but the trail does not run through this tract.

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 – Pine
The basal area in this section is approximately 110, which is low compared to typical white pine stands and covers approximately 1 acre. There are also several yellow-poplar trees growing amongst the white pine. The understory consists mostly of sugar maple and American beech. Redbud, sugar maple, American beech and white ash are the most abundant species regenerating. The white pine ranges from pole sized to large sawtimber. Some of the overtopped white pine have died and are now snags. There is also some multiflora rose growing among the regeneration as well as several grape vines. Since this section is already converting to native hardwoods the pine could be harvested to promote these hardwoods.

Section 2 – Tree Plantation
This plantation was planted in the spring of 1998 and covers approximately 2.67 acres. This planting was planted with a mixture of northern red oak, white ash and white oak on a 5' by 5' spacing. The tight spacing was to promote straighter stems with less branching. The trees currently range in size from 1" to 3" DBH and 3 feet to 15 feet total tree height. In 2002, TSI was contracted to remove the competition from the white oak.

It seems as if the trees, especially white ash, have come back and are vigorously competing with the oaks. The white ash that is currently competing seems to be coppice origin from the trees cut in 2002. I would suggest another TSI treatment to remove all the white ash and any other species competing with the oaks.

Section 3 – Grasslands
This grassland which covers approximately 1.74 acres of this tract was originally planted in 1999 to warm season grasses and has converted to a warm season and cool season grasslands mixed with annual weeds and some exotic species of grasses. This area should be planted to trees as part of a larger planting in other tracts on this ridgetop. This area was not historically grassland and a tree planting will be the best way to restore this area to a pre-settlement condition. This future large contiguous block of early successional forest habitat is under represented in the backcountry area due to restrictions that only allow single tree selection.

Section 4 – Oak-Hickory
The basal area in this section is approximately 122 and covers approximately 21.46 acres. This higher basal area in this section is an indication of the stand being overstocked. The size of these trees range from small pole sized to medium sized sawtimber. The oaks contained in this stand are mostly northern red oak, white oak, black oak and chestnut oak. The hickory that is in this section is mostly pignut hickory and shagbark hickory. The overstory has several areas of high quality oaks and hickory but is mostly dominated by average quality trees. The understory in these areas consists of mostly sugar maple and American beech with an occasional oak or hickory. The regeneration contains mostly sugar maple, sassafras and American beech with some hickory and oaks. This section could be managed to continue to promote the oak and hickory by incorporating group selection harvesting, however this tract is located in the backcountry and group selection cannot be used.

Section 5 – Mixed Hardwoods
The basal area in this section is approximately 95 and covers approximately 34.42 acres. The mixed hardwoods section is the most abundant on this tract. The basal area is a little high which indicates that these sections may be overstocked. However, the basal areas range from as low as 40 to as high as 130. These trees range in size from small seedlings to large sawtimber size trees. The understory in these areas is comprised mostly of sugar maple and American beech. Most of the regeneration is sugar maple, white ash, pawpaw and American beech. In several of these areas the understory canopy is so thick with sugar maple that there is very little to no regeneration occurring. An understory removal should help with regeneration in the areas with extremely thick canopy. There are also a lot of grapevines in the areas with low basal area. A pre-harvest grapevine control could help with regeneration. The quality is low in the areas of mixed hardwoods next to the field edges but is better in the areas surrounded by other trees.

Section 6 – Beech-Maple
The basal area of this section is approximately 90 and covers approximately 20.44 acres. The basal area does not suggest a high stocking which makes the areas with exceptionally

low basal area good candidates for making regeneration openings, which is not possible due to backcountry restrictions. The understory in these areas consists of mostly sugar maple and American beech. The regeneration in these areas is mostly sugar maple and American beech as well. The large beech are mostly hollow and of poor quality. The sugar maple varies in quality from good to poor. The hollow beech do however make good wildlife habitat.

Section 7- Yellow-Poplar
The basal area in this section is approximately 115 square feet per acre and covers approximately 5.59 acres. The high basal area suggests that this area is ready for a harvest. This bottomland area is full of average quality yellow poplar mixed with some pine. The understory consists mostly of yellow poplar and sugar maple. The regeneration is mostly sugar maple. The regeneration is very poor due to the high stocking and thick understory. Understory removal and thinning of some of the mature and damaged trees may be a good way to establish higher quality yellow poplar to grow in this area.

Section 8 – Chestnut Oak
The basal area in this section is approximately 142 and covers approximately 15.37 acres. As the basal area suggests this area is highly overstocked. The quality in these oaks is of an average quality. These areas are mostly on south and west slopes and on poor soils. The understory in this area consists of mostly chestnut oak and sassafras. The regeneration is comprised of mostly chestnut oak, sassafras and black oak. Greenbrier is thick and it is competing with the regeneration. There is also a lot of blueberry growing amongst the regeneration. Overall this area seems to have great oak regenerating capabilities and should be managed to regenerate oaks in the future. This can be achieved by removing large areas of the overstory to allow for light to reach the forest floor.

Overall

The inventory done in July 2008 indicates that the tract has a total of approximately 7,300 board feet per acre with 1,250 board feet per acre available for harvest and 6,060 board feet per acre to be left. The total harvest volume for this tract could be 128,460 board feet.

A pre-harvest grapevine control along with an understory removal of the thick sugar maple should be done within five years and could greatly benefit this stand. Removal of the understory will allow for the more desirable species to become established before a harvest so that they will be competitive after the harvest. These more desirable species will be future habitat for the Indiana bat. During this same time the white ash and other species competing with the northern red oak and white oak should be removed from the plantation on the west edge of the tract. A harvest in one or more years could remove the low quality trees and to allow for more nutrients and sunlight to reach the better, higher quality, more desirable trees, this harvest should be done along with tracts 26 and 27. Incorporating group selections in the areas with low basal area could help the stocking and general health of the stand as a whole through regeneration but will not be used because of the backcountry guidelines. There is an area

with white pine that could be harvested to allow for the native hardwoods that are coming up underneath the pine to dominate that area. A post harvest TSI within two years of the harvest will allow for more nutrients and sunlight to reach the desirable species that were not released from the harvest. The TSI will also create snags which will help reach our bat habitat goals. The additional sunlight will allow for flora to grow which will create shelter and provide food for native wildlife.

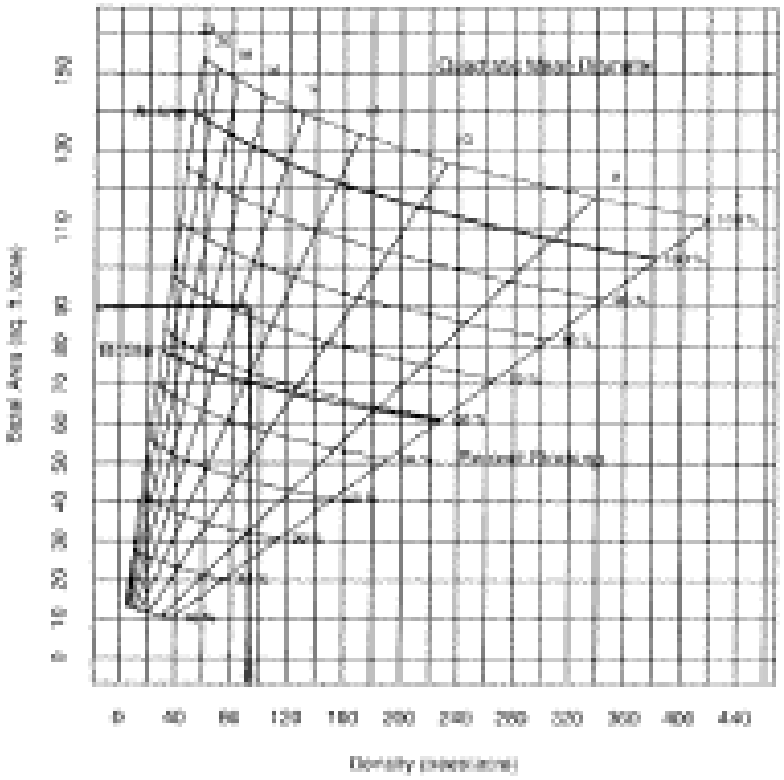
Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Mark timber and sell timber	2010
Post-Harvest TSI	2012
Inventory and Management Guide	2034

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 "Jackson-Washington C10 T 29" 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 10 T 29 Tract Stocking
July 2008 Inventory
103 acres



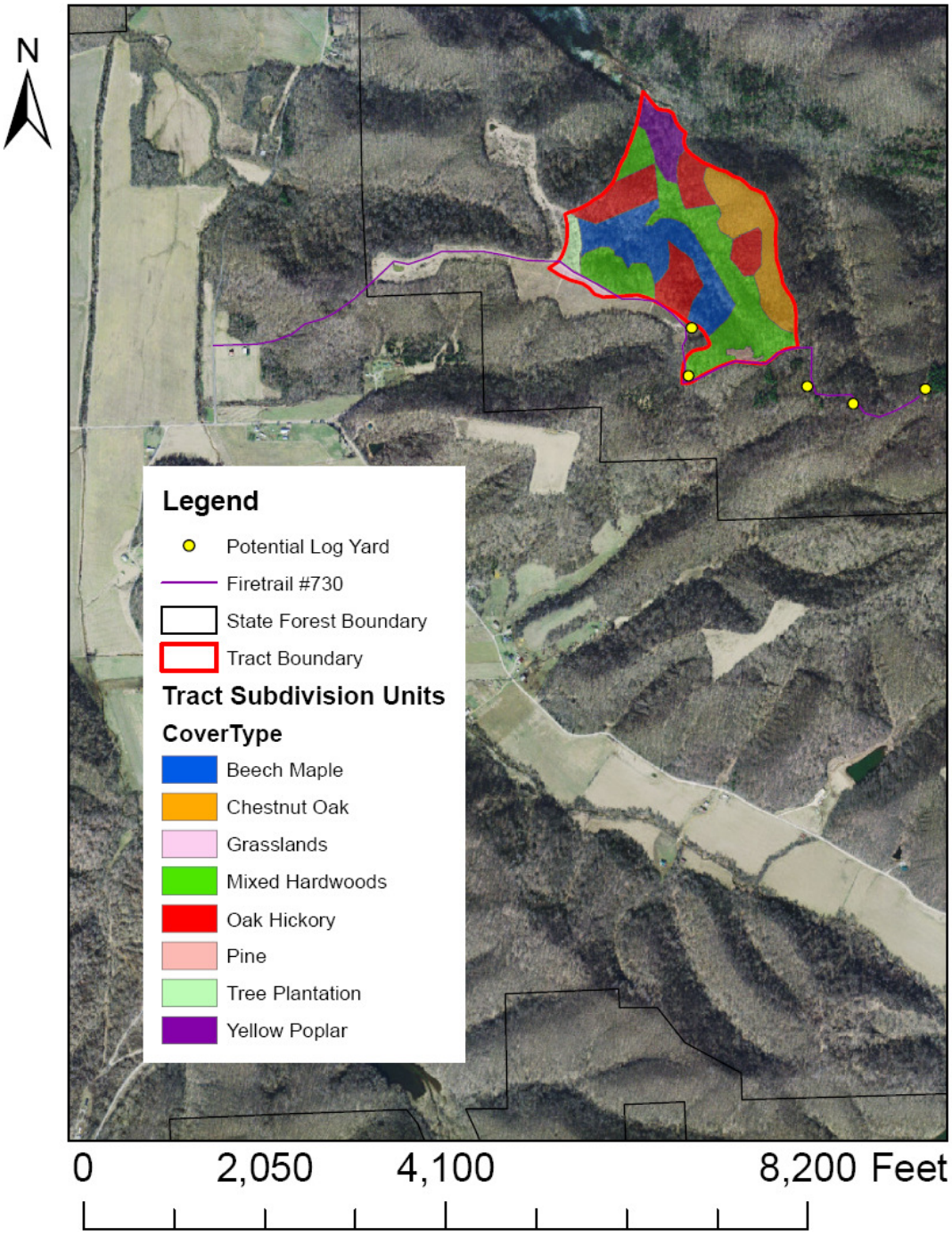
Total BA/A = 101 sq.ft./AC

Total #trees/acre = 89

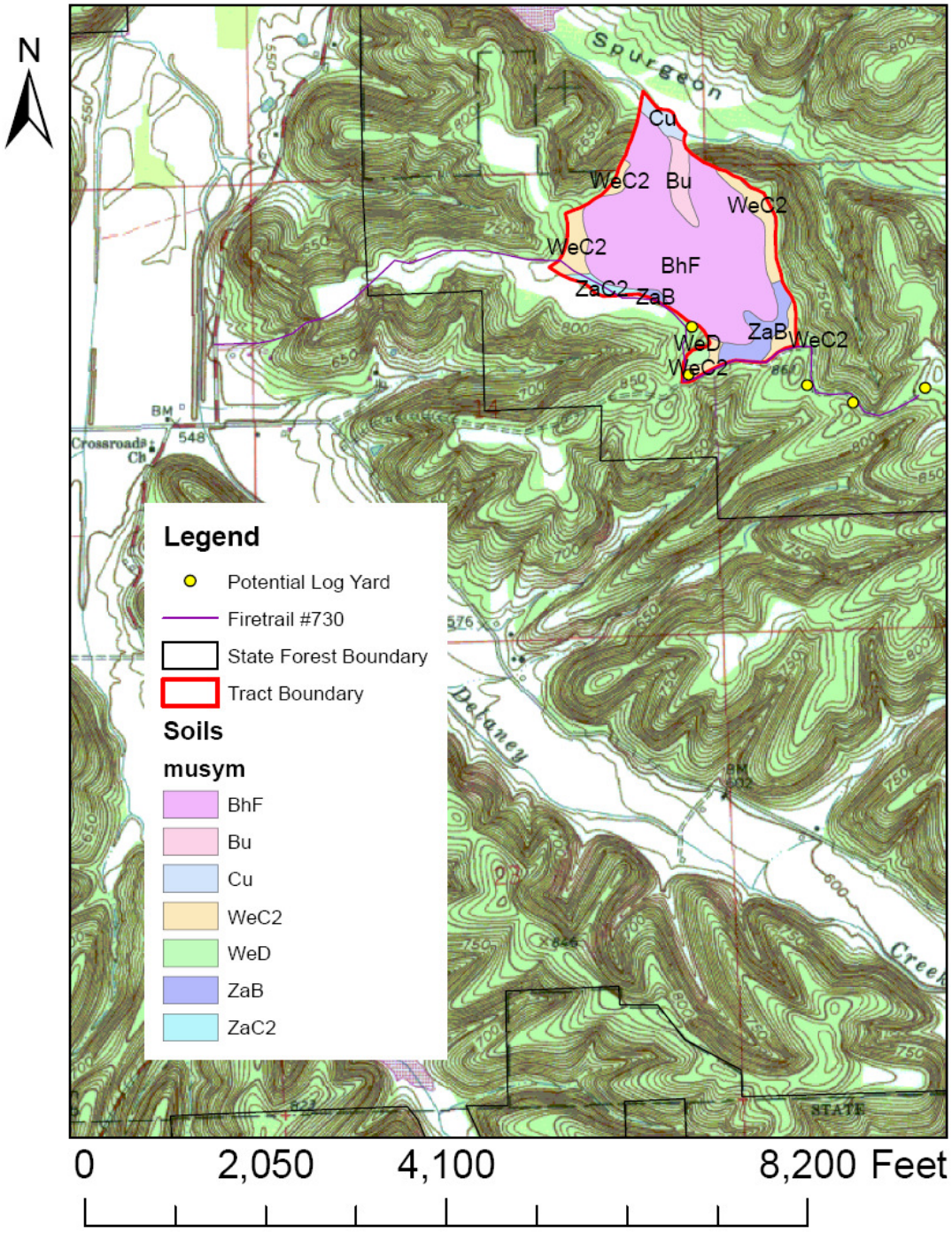
Avg. tree diameter = 15

Percent stocking = 72%

Aerial Photo
Jackson-Washington State Forest
Compartment 10 Tract 29



Soils Map
Jackson-Washington State Forest
Compartment 10 Tract 29



Topo Map
Jackson-Washington State Forest
Compartment 10 Tract 29