"DRAFT" Resource Management Guide

Yellowwood State Forest
Tract Acreage: 105
Forester: L. Burgess

Compartment: 2 Tract: 32
Commercial acres: 105
Date: 5/17/2010

Location
This tract is located between Dewar Ridge Road and Crooked Creek Road about twelve miles from Nashville, IN. It is in Section 20 of Township 8 North and Range 2 East, in Brown County.

General Description
The cover types within this tract is dominated by mixed hardwood (89 acres), primarily oak/hickory. About 8 acres is pine including Virginia pine and Shortleaf pine. Another 8 acres was noted as old field due to species composition and lack of abundant forest cover. The 2010 inventory data noted the frequency of tree species within each category of the tract's forest canopy (listed in descending order of occurrence):

Overstory	**Understory**	**Regeneration**
White oak	Sugar maple	Sugar maple
Virginia pine	Virginia pine	American beech
Yellow poplar	Pignut hickory	Red maple
Shortleaf pine	Red maple	Dogwood
Pignut hickory	White oak	Ironwood
Black oak	Shagbark hickory	Blackgum
American beech	Yellow poplar	Bluebeech
Scarlet oak	American beech	Black oak
Black cherry	Blackgum	Hawthorn
Shagbark hickory	Black oak	Sassafras
Sugar maple	Scarlet oak	
Blackgum	Largetooth aspen	
Northern red oak	American elm	
Largetooth aspen	Basswood	
White ash		

History:
1984 Tract created by dividing tract 20; forester Duncan
1986 Haul road planning; forester Unversaw
1988 Road construction; forester Unversaw
1989 I beam and cable gate installed. Recon of tract for possible 98-99 harvest; forester Unversaw
1990 Timber inventory and construction of haul roads, skid trails and log yards; forester Unversaw
1991 Management plan based on inventory; forester Unversaw
1992 Passed Archeological review process; forester Duncan
1995 Repaired haul road; timber marking. Est. 83,310 bd.ft. in 400 trees; forester Eckart
1996 Timber sale sold to Foley Hardwoods for $26,220.00; forester Eckart

1996-97 Timber harvest forester Eckart
1997 Vine TSI, sale closeout and TSI of regeneration openings; forester Eckart
1998 Timber sale audit; forester Ratts
2006 Tract is designated as a buffer tract for the Eneven-aged core Unit 8 as a part of the Hardwood Ecosystem Experiment (HEE)
2010 Tract inventory; forester L. Burgess

Topography, Geology, and Hydrology:
The tract is comprised of about 15% ridgetop and the remaining acreage is primarily north facing slopes ranging 5- 40%. The soil types noted in next section are unglaciated soils and have formed from the bedrock material of sandstone, shale and siltstone.
This tract is located within the North Fork Salt Creek-Lower Schooner Creek watershed.

Soils:
Beanblossom (Be) is characterized by nearly flat or very gentle sloping terrain with well-drained soils; 10% of tract acreage. Slight to moderate limitations.
Berks-Trevlac-Wellston (BgF) has moderately steep to very steep slopes ranging from 20 to 70% grade; 50% of tract acreage. Severe limitations noted for logging due to slope.
Wellston-Berks-Trevlac (WaD) has moderately sloping to steep grades between 6 - 20% ; 40% of tract acreage. Slight to moderate limitations.

Access
Walk-in access from east from the gravel lot just before the cable gate on the firetrail which comes off of Crooked Creek Road.

Boundary
Tract is surrounded by state forest on the north and portion of east line, south half of east line borders Corps of Engineers. West and south lines border private property. Boundary lines are updated, last painted 2005-06.

Wildlife
Wildlife resources in this tract are abundant. Common species which are present include: Squirrels, white-tailed deer, turkey, various small furbearing animals, and a variety of songbirds.

An official ecological review was completed on the tract. This review focuses on wildlife habitat, looking at what is present in the tract and what can be created through management activities. The inventory for this tract included recording structural habitat features at each data point; these records include snag (dead, standing tree) and cavity tree counts. The result of this collected data for snag counts is included in the following table.

Legacy trees*	**Maintenance level**	**Inventory**	**Available above Maintenance**
11″ + DBH	945	2370	1425
20″ + DBH	315	368	53

*Species include American elm, Bitternut hickory, Cottonwood, Green ash, Red oak, Post oak, Red elm, Shagbark hickory, Shellbark hickory, Silver maple, Sugar maple, White ash and White oak

Snags (all species)	**Maintenance level**	**Optimal level**	**Inventory**	**Available above Maintenance**	**Available above Optimal**
5″ + DBH	420	735	876	456	141
9″ + DBH	315	630	162	-153	-468
19″ + DBH	52.5	105	25	-28	-80

Cavity trees (all species)	**Maintenance level**	**Optimal level**	**Inventory**	**Available above Maintenance**	**Available above Optimal**
7″ + DBH	420	630	51	-369	-579
11″ + DBH	315	420	51	-264	-369
19″ + DBH	52.5	105	0	-53	-105

Deficiencies indicated by the inventory results will not be addressed by any proposed management activities within the tract. Snag counts and cavity counts are often disproportional to actual occurrences and therefore it is not necessary to create additional snags or cavities within this tract.

Communities

Lake Monroe waters begin just 0.8 miles south of the tract- the floodplain of these waters provides seasonal wetland habitat. Pine stands including White pine, Virginia and Shortleaf pine are present in and near this tract.

One Butternut (*Juglans cinerea*) measuring 8.8″dbh was noted during the 2010 inventory (see map). This tree did exhibit the butternut canker and cavities.

According to the Natural Heritage Database, Bobcat (*L. rufus*, 1990) and Black-and-white Warbler (*M. varia*, 1988) have been sighted within the tract boundaries. The following have been sighted in neighboring tracts or within a few miles of the tract:

- To the north: Black-and-white Warbler (*M. varia*, 1989), Worm-eating Warbler (*H. vermivorus*, 1994)
- To the north west: Timber Rattlesnake (*C. horridus*, 1988)
- To the north east: Butternut (*J. cinerea*, 1996), Timber Rattlesnake (*C. horridus*, 2007)

- To the south west: Worm-eating Warbler (*H. vermivorus*, 1989), American Ginseng (*P. quinquefolius*, 1990), Golden Seal (*H. Canadensis*, 1990)
- To the south: Bobcat (*L. rufus*, 1990), Black-and-white Warbler (*M. varia*, 1988)

Dry upland, dry-mesic upland, and mesic upland forest terrestrial communities are all noted directly north of the tract.

The following information comes from the Indiana State Forests Environmental Assessment (2008-2027). In 2005 the bobcat was removed from the endangered list in Indiana and classified as special concern instead. Bobcats require a multitude of habitats and environmental features, deciduous forest offers one of these and harvest features such as slash piles and small openings give these predators the opportunity to stalk small mammal prey. The creation of snags and den trees are beneficial to this species providing den sites and habitat for small mammal prey. Management activities do not negatively affect the bobcat but rather benefit this species through the creation of forest habitat suitable to its prey. The timber rattlesnake, an endangered species in Indiana, is a species that greatly benefits from openings that provide excellent hunting grounds and basking areas. This species benefits from large amounts of woody debris on the forest floor that provide cover while stalking prey. These two species benefit from management activities.

Black-and-white Warbler is a ground nester and prefers dense ground cover and understory structure provided by mature and second growth forests. They are sensitive to forest fragmentation (clearing of forest for agriculture or commercial use) and the use of pesticides can negatively affect some populations. Precautions will be taken during timber stand improvement to utilize alternatives to pesticides even though this species has not been sighted in or near this tract for over twenty years. Forest thinning and small openings do not cause harm to the black-and-white warbler and actually are beneficial to similar species like the hooded and worm-eating warbler. The worm-eating warbler is more tolerant than the black-and-white warbler preferring to nest in deciduous or mixed deciduous/conifer forests on hillsides and steep ravines. Similar to the black-and-white warbler it also prefers dense ground cover such as shrubs and saplings but also is favorable to uneven-aged management, which provides varied canopy height. Habitat of the worm-eating warbler, as with most warblers, is in danger due to forest fragmentation. This species has been known to nest in forest openings seven years after the initial harvest.

Invasives/Exotics

No invasive exotic species were noted during 2010 inventory.

Recreation

Primary recreational use is hunting and wildlife viewing with a public parking in the lot located at tract's southeast corner.

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.

Inventory Results Current inventory completed by Burgess 4/21/10

<u>Stand 1. Mixed hardwoods (89 acres):</u>

Present tract volume estimates:	Basal Area
Harvest volume 1,063 bd.ft./acre	10

Leave volume 4,345bd. ft. /acre. 89
Total tract 5,407 bd/ft./acre 99

Stand 2. Old field (8 acres):
Present tract volume estimates: Basal Area
Total/Leave volume 1,415 bd. ft. /acre. 85

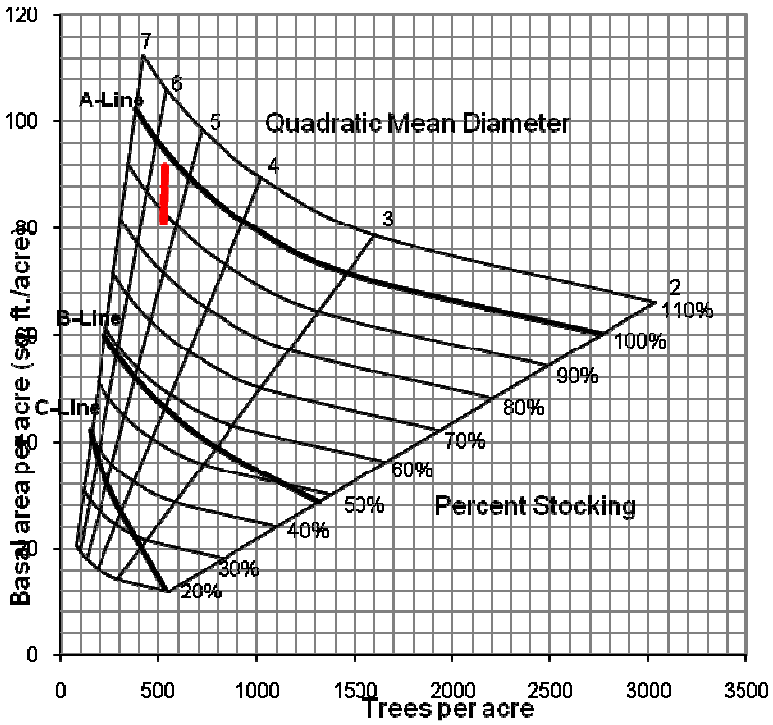
Stand 3. Pine (8 acres):
Present tract volume estimates: Basal Area
Harvest volume 901 bd.ft./acre 9
Leave volume 4,277 bd. ft. /acre. 93
Total volume 5,178 bd. ft. /acre. 102

Entire tract weighted average (105 acres)
Present volume: 5085 bf/acre
Harvest volume: 970 bf/acre

Harvest/Leave Report Summary for Mixed Hardwood stand (89 acres)
MBF=1000 board feet

SPECIES	HARVEST MBF	LEAVE MBF	TOTAL MBF
American Beech	0.71	0.20	0.91
American elm		0.31	0.31
American Sycamore	0.0	0.06	0.17
Basswood	0.0	0.44	0.44
Black Cherry	0.0	0.12	0.12
Black Oak	2.46	0.20	0.73
Black walnut	0.0	0.14	0.14
Northern Red Oak	0.0	1.15	1.15
Pignut Hickory	0.58	3.74	4.32
Scarlet Oak	0.0	0.38	0.38
Shagbark Hickory	0.0	1.41	1.41
Sugar Maple	1.32	.98	2.30
White Ash	0.28	0.0	0.28
White Oak	4.47	23.27	27.74
Yellow Poplar	0.81	8.04	8.85
Totals			
PER ACRE	1.063	4.345	5.407
TRACT TOTAL	94,607	386,705	48,1312

Hardwood stand Acreage	89 acres		Present Volume per Acre	5,407 bd. ft.
Basal Area per Acre	92 sq. ft.		Harvest Volume per Acre	1,063 bd. ft.
Number Trees per Acre	530		Residual Volume per Acre	4,345 bd. ft.
Stocking Percentage	97%		Average Tree Size	5.5″ dbh



Tract Prescription and Proposed Activities

The tract is 89 acres of mixed hardwoods dominated by Oak/Hickory, 8 acres of pine (Virginia and Shortleaf pine) and 8 acres noted as old field due to species composition and low stocking. No management activities are recommended this cycle for the tract. Adequate stocking is present throughout much of the tract with just a couple areas noted needing crop tree release, yet not enough to warrant entering the tract this management cycle. Some nice WHO stems throughout. The top volume species for the 1996 harvest was WHO and that will be expected for the next cutting cycle as well based on the inventory results. The 2 acres in regeneration openings from 1996 harvest are now dominated by YEP and have begun to thin-out naturally. The pine acreage is beneficial as wildlife habitat as it is in close proximity to a White pine stand in adjacent Tract 33.

The designation as a buffer tract for the HEE Uneven-Aged Core Unit 8 delegates the management options for this tract: tract can be harvested utilizing single-tree selection and group selection of 5 acres (further details in the HEE guidelines).

North Fork Salt Creek-Lower Schooner Creek watershed

This tract was inventoried by 1 point per approx. 3.75 acres prism plots.

Proposed Activities Listing

Tract inventory 2030

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 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.