Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

Yellowwood State Forest Compartment **7** Tract **25**
Total Tract acreage: 69 acres Commercial Acres: 69 Date: 3/4/11
Forester: L. Burgess

Location

This tract is located in Section 29 T9N, R2E of Brown County, between Yellowwood Lake Road and Dubois Ridge Road. This land was deeded to the State from the federal government in 1956.

General Description

The cover types within this tract contains mixed primarily oak/hickory and is dominated by White oak in the sawtimber size class. The 2011 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
Chestnut oak	White oak	American beech
Black oak	Shagbark hickory	Red maple
Northern red oak	Pignut hickory	Ironwood
Shagbark hickory	Chestnut oak	Blue beech
Red maple		American elm
White ash		White oak
Sugar maple		Sassafras
Pignut hickory		
White ash		
Bitternut hickory		
American beech		

History

The state acquired this acreage from the federal government in November 1953.

Resource management history:

4/75 Timber sale, Forester Akard. Tallied 71,260 b.f. sold to Crone
11/75 TSI: CETA
5/84 One-quarter acre landing marked "Y" horsetrail for harvest in Tract 18: 2,00 bf in 13 trees. Forester Duncan
12/84 Tract 25 & Tract 28 created from Tract 19
9/88 Inventory, Forester Duncan
10/88 TSI of 15-yr old regeneration opening, Forester Duncan
1/89 Management plan, Forester Duncan
12/89 Haul road constructed to tract from Dubois Rd.
1/90 Completed harvest marking: 103,561 bf in 318 trees. 20 prime White oak

7/90 20 Prime White oak sold
9/90 White oak cut by Rodney Sloan Logging
10/90 Timber sale. Not sold.
12/90 Timber re-sale. Sold to Chester Morgan
Fall 1991 Logging completed
1/92 TSI of southern most opening
2/92 TSI cost estimate, Forester Eckart
3/92 Stump jump, Forester Eckart
5/92 Closeout, Forester Duncan
6/92 TSI large opening, pole size stand, small opening by radio tower by Forester Duncan
4/92 Tree planting; Boy Scout troop planted White oak in south opening

Topography, Geology and Hydrology

The tract is comprised of <5% ridgetop, <5% bottomland and the remaining acreage is primarily northeast facing slopes 20- 55%. The soil types noted in next section are unglaciated soils and that formed from the bedrock material of sandstone, shale and siltstone. This tract is located within the North Fork Salt Creek-Jackson Creek watershed (Yellowwood Lake Watershed).

Soils

Berks-Trevlac-Wellston complex (**BgF**) 20 – 70 percent slope. Moderately steep to very steep, well drained soils on hillsides in the uplands. Severe limitations noted for logging due to slope. Comprises about 65% of tract acreage.

Beanblossom channery silt loam (**Be**) nearly level and gently sloping, deep, moderately well drained soil is on flood plains, alluvial fans and colluvial benches. Slight to moderate limitations. Comprises less than 2% of tract acreage.

Welston Berks Trevlac complex (**WaD**) 6 – 70 percent slope. nearly level and gently moderately sloping, to moderately steep, well drained soils are on side slopes and narrow ridgetops. Slight to moderate limitations. Comprises just over 20% of tract acreage.

Tilsit silt loam (**TiB**) 2 – 6 percent slope. Gently sloping, deep, moderately well drained soils are on tops of ridges in the uplands. Slight limitations noted for logging. Comprises less than 5% of tract acreage.

Wellston-Gilpin silt loam (**WeC2**) 6 – 20 percent slopes, eroded. Moderately sloping to moderately steep, well drained soils on side slopes and ridgetops. Slight to moderate limitations noted for logging due to slope or rock depth. Comprises less than 5% of tract acreage.

Access

Recreation and resource access to tract is available from the west off a firetrail from Yellowwood lake Road or from the east off firetrail from Dubois Ridge Road.

Boundary

This tract is surrounded by State Forest acreage. The western edge is the firetrail, southern boundary is the “Y” horsetrail and eastern/northern boundary follows an intermittent stream up into a drainage.

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. Several sets of turkey tracks in the snow as well as redbellied woodpeckers and eastern bluebirds were observed during the winter 2011 inventory. 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 also included recording structural habitat features at each data point; these records include snag (dead, standing tree) tree counts. The results of this collected data for snag counts is included in the following tables.

Legacy trees*	Maintenance level	Inventory	Available above Maintenance
11″ + DBH	621	1423	802
20″ + DBH	207	391	184

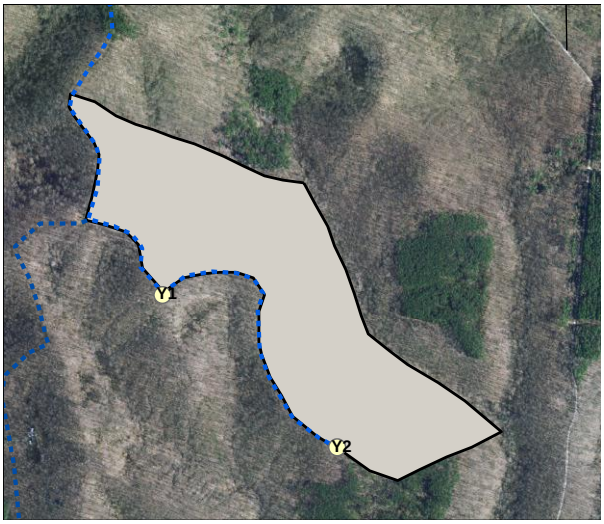
*Species include American elm, Bitternut hickory, Cottonwood, Green ash, Red oak, Post oak, Red elm, Shagbark hickory, Shellbark hickory, Silver maple, Sugar maple, White ash and White oak

Snags (all species)	Maintenance level	Optimal level	Inventory	Available above Maintenance	Available above Optimal
5″ + DBH	276	483	234	-42	-249
9″ + DBH	207	414	121	-86	-293
19″ + DBH	34.5	69	67	33	-2

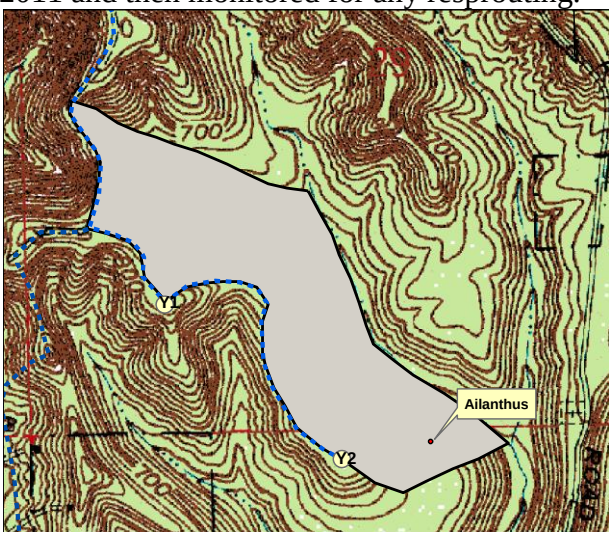
The deficiencies found in the wildlife habitat feature summary were the number of snags within the 5″ and 9″ categories for "Available above Maintenance" and for all three size classes within the "Available above optimal" category. Some snags will result from timber harvesting operations and additional snags could be created during post-harvest timber stand improvement.

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.



Invasives/Exotics
One occurrence of Ailanthus was noted during Winter 2011 inventory. This tree will be treated with chemical basal bark treatment (20%Garlon 4 + 80%basal oil) early summer 2011 and then monitored for any resprouting.



Recreation
Primary recreational use is hunting, hiking and horseback riding. A portion of the "Y" horsetrail runs along this tract's west and southwest boundary.

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.

2011 Inventory Results
Present tract volume estimates:
(Includes only the 51 acres of stands tallied as Mixed Oak)

		Basal Area
Harvest volume	1,744 bd.ft./acre	21
Leave volume	3,480 bd. ft. /acre.	60
Total tract	5,306 bd/ft./acre	81

Harvest/Leave Report Summary

Species	Harvest Bd. Ft.	Leave Bd. Ft.	Total Bd. Ft.
White Oak	20990	123780	148970
Black Oak	24790	10650	35450
Chestnut Oak	14320	24790	39110
Northern Red Oak	14430	11920	26350
White Ash	9170	0	9170
Bitternut hickory	0	3160	3160
Sugar Maple	2770	0	2770
American Beech	2470	0	2470

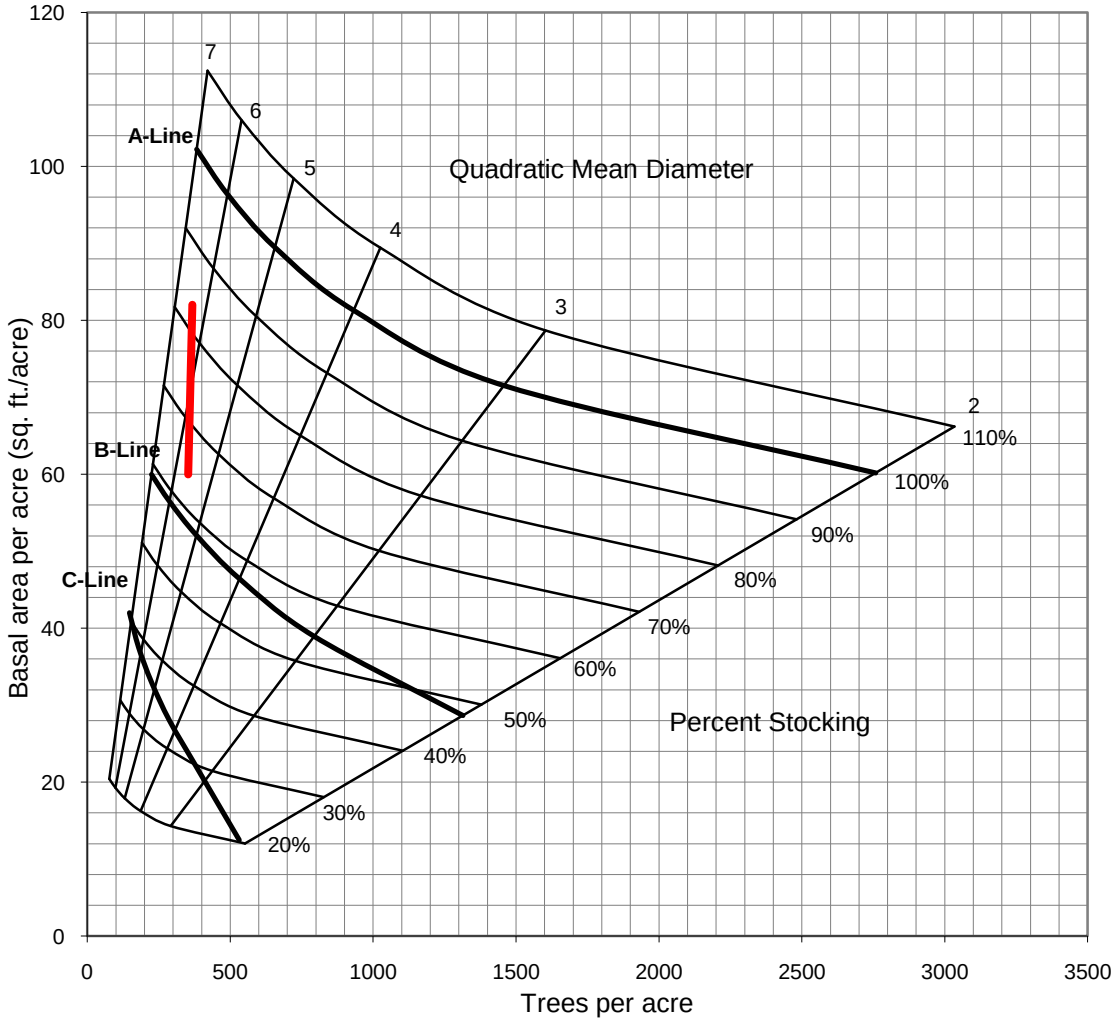
Shagbark hickory	0	2020	2020
Red Maple	0	1150	1150
Totals			
PER ACRE	1744	3480	5306
TRACT TOTAL	88950	177490	270630

Discrepancies due to rounding.

Hardwood stand Acreage	51 acres		Present Volume per Acre	5306 bd. ft.
Basal Area per Acre	82 sq. ft.		Harvest Volume per Acre	1744 bd. ft.
Number Trees per Acre	368		Residual Volume per Acre	3480
Stocking Percentage	85%		Average Tree Size	6.4″ dbh

Basal area per acre includes only live trees tallied as pole or sawtimber. Submerchantable and culls were excluded.
Number trees per acre includes only live trees

The following Chart includes all tallied trees: Pole, Sawtimber, Sub-merchantable and Culls



Tract Prescription and Proposed Activities
This tract was inventoried by 1 point per 3 acres prism plots February 2011.

The tract is comprised primarily of mixed oak/hickory stands with several (7 out of 23) stands tallied as White oak stands. Nine acres of the tract were tallied as regeneration openings as they do not hold merchantable size stems: these nine acres include regenerated stands from 1975 and 1990 harvest. Another nine acres were tallied as Virginia pine stands. The pine stands hold a small quantity of merchantable timber. No significant amount of oak regeneration was evident during the 2011 inventory, however these pine stands often harbor generous oak regeneration. If upon closer inspection such oak regeneration is found to be present it would be worthwhile to remove the pines to facilitate the advance of oak into the stands. An estimated 7,620 bd. ft. of harvest volume was tallied in these pine stands and 32,800 residual volume. Most of the volume in the pine stands is present within Yellow Poplar, Black oak, Virginia pine and American sycamore.
Overall, the inventory results indicate this tract could sustain and benefit from a harvest this cycle. My recommendation is for an intermediate, improvement harvest utilizing single-tree selection over most of the acreage and the potential for regeneration openings of 1 -5 acres in size, including removal of the Virginia pine. These openings will be included in post-harvest TSI. This tract holds many nice White oak that would benefit from release. Dominant harvest species by volume would be White oak and Black oak. Top leave species would be White oak and Chestnut oak.

The marking objective will be the removal of mature/over-mature stems, as well as those of low quality in an effort to improve the overall health, vigor and composition of the stand. The reduction of stocking levels should provide space for pre-selected crop trees to move forward into the next cutting cycle. The Gingrich graph created from the 2011 inventory data (based only on 51 acres) gives a general guideline of removing 12 sq. ft. of basal area for best site utilization. Regeneration of a minimum of 10% of tract acres will be addressed in the tract marking objective where conditions warrant. Approximately 12% of the tract acreage has been regenerated within the past 2 harvests over the past 36 years. Species composition will likely become more diverse and less susceptible to insect and disease infestation which is a common problem with homogeneous stands. These management techniques will improve the overall health, vigor and quality of the residual stand, while utilizing stems that would drop out due to natural mortality, overstocking or maturity. TSI is prescribed to follow to reduce stocking in some areas of high basal area with pole size stems and release crop trees not successfully released during the harvest.

Wildlife will benefit from this harvest as well. Additional sunlight penetrating the forest floor will simulate the development of new ground flora, subsequently increasing nesting and foraging habitat. This is essential for both game and non-game species as well as continued forest development. Post-harvest TSI will increase snags per acre while diversifying diameter distributions of both snags and growing stock trees.

Habitat/cover types currently present within the tract will remain after the proposed management activities throughout the majority of the tract as the silvicultural approach is predominately singletree selection. The creation of regeneration openings will convert current closed canopy to early successional habitat.

Proposed Activities Listing
Timber marking, harvest and TSI planned in 2011/2012
Treatment to eradicate the Ailanthus discovered Summer 2011

TSI will include treatment of any additional invasive exotics discovered.
Stand Re-inventory work 2031

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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.

Note: Some graphics may distort due to compression.