Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

Yellowwood State Forest **Compartment** 7 **Tract** 28
Tract acreage: 143 acres **Commercial acres:** 143 **Date:** 6/21/12
Forester: L. Burgess

Location

This tract is located in Section 29 of T9N, R2E of Brown County between Yellowwood Lake Road and Dubois Ridge Road.

General Description

The primary cover type within the entire tract is Oak-Hickory and is dominated by White Oak in the sawtimber size class. The tract contains stands totaling 14 acres of Eastern White Pine and approximately 16 acres of Virginia pine. There is a 2-acre Black Walnut plantation in the southeast accessed from the intersection of Yellowwood Road and Dubois Ridge Road. The 2012 inventory data noted the frequency of tree species within each category of the tract's forest resource (listed in descending order of occurrence) is listed in Table 1.

Table 1. Forest Resources from February 2012 inventory in Y0728.

Overstory Layer	Understory Layer	Regeneration Layer
White Oak	Sugar Maple	Sugar Maple
Chestnut Oak	White Oak	American Beech
Pignut Hickory	E. White Pine	Red Maple
Scarlet Oak	Virginia Pine	Dogwood
Sugar Maple	Pignut Hickory	Ironwood
Shagbark Hickory	American Beech	Blackgum
Red Maple	Shagbark Hickory	American Elm
E. White Pine	Yellow Poplar	E. White Pine
Virginia Pine	Red Maple	Bluebeech
Bitternut Hickory	Bitternut Hickory	Sassafras
American Sycamore	Blackgum	Pignut Hickory
Northern Red Oak	Black Oak	White Ash
White Ash	Black Walnut	Bitternut Hickory
Black Walnut	Black Cherry	Redbud
American Beech		Black Cherry
Black Oak		
Blackgum		
Black Cherry		
Yellow Poplar		

History

94 acres of the current Tract was deeded to the State from the federal government in 1956. A 49-acre parcel at the south end was purchased by the State (Halloran Tract) and added to the tract in 1999.

Resource Management History:

Undocumented date of Pine plantings
2/9/90 Management Recon; Forester Eckart
8/25/90 Inventory; Forester Eckart
2/12/91 Count stumps; Forester Duncan
6/28/91 Logging road construction; Forester Eckart

10/3/91 Site prep of road for seeding; Forester Eckart
10/4/91 Seeded road; Forester Eckart
2/4/93 Harvest marking; Forester Eckart
6/15/93 Construction of primary skid trails; Forester Eckart
9/15/93 Timber sale; Forester Eckart. Est. 81,062 bf in 342 trees and 57 culls. Sold to G.R. Wood.
9/1/94 Pre-harvest conference; Forester Eckart. Joel Hawkins crew logging for G.R. Wood.
9/7/94 Timber harvest; Forester Eckart.
9/28/94 TSI marking; Forester Eckart.
10/7/94 Sale closeout; Forester Eckart.
10/21/94 Haul road and log yards mulched; Forester Eckart.
10/21/94 Logging exam; Forester Eckart.
11/15/94 TSI; Forester Eckart. Completed in large regeneration opening at north end of tract. 100% felling and treated with Roundup.
1999 Purchase of Halloran property (49 acres). Includes 2–acre Black walnut planting and 7-acre Christmas tree farm.
10/31/99 Forest fire on approx. 9 acres (see map within this guide).
1999 Acquired 49-acre parcel at the south end (Halloran Tract). This changed the original tract boundaries for Tracts 25 and 28 and also resulted in the creation on Tract 30.
1/27/12 Inventory of Tract 28.
2/17/12 Inventory of Tract 30. Decision was made to merge Tract 30 into Tract 28 to create one 143-acre Tract now known as Tract 28.

Topography, Geology and Hydrology

The tract is comprised of over 20% ridgetop, <7% bottomland and the remaining acreage (20- 55%) is primarily east, northeast and southwest facing slopes. The soil types noted in the next section are unglaciated soils and were formed from the bedrock material of sandstone, shale and siltstone. The water resources from this tract drain into the North Fork of Salt Creek which drains into Monroe Reservoir.

Soils

Berks-Trevlac-Wellston Complex (**BgF**) 20 – 70 percent slopes. Moderately steep to very steep, well drained soils on hillsides in the uplands. Severe limitations noted for logging due to slopes. Comprises about 45% of tract's acreage.

Wellston-Gilpin Silt Loam (**WeC2**) 6 – 20 percent slopes, eroded. Moderately sloping to moderately steep, well drained soils on sideslopes and ridgetops. Slight to moderate limitations noted for logging due to slope or rock depth. Comprises 25% of tract's acreage.

Tilsit Silt Loam (**TiB**) 2 – 6 percent slopes. Gently sloping, deep, moderately well drained soils are on tops of ridges in the uplands. Slight limitations noted for logging. Comprises less than 15% of tract's 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 about 10% of tract's acreage.

Wellston-Berks-Trevlac Complex (**WaD**) 6 – 70 percent slopes. Nearly level and gently moderately sloping, to moderately steep, well drained soils are on sideslopes and narrow ridgetops. Slight to moderate limitations. Comprises about 5% of tract's acreage.

Access
Recreation and resource management 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. This firetrail is in passable condition but will likely need some improvement at time of harvest as it is a part of the Y Horsetrail. No new roads will be installed within this tract. The log yards and haul road exist in adjacent Tract 25.

Boundary
This tract is adjacent to State Forest acreage along its north boundary. The eastern boundary is Dubois Ridge Road. The south and west lines border private property. All private property lines have been established and marked and up to date.

Wildlife
Wildlife resources in this tract are abundant. Common species which are present include: squirrels, white-tailed deer, wild 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 also included recording structural habitat features at each data point; these records include snag (dead, standing tree) tree counts. The results of these collected data for snag counts are included in the following Table 2.

Table 2. Legacy and Snag Tree Counts from February 2012 inventory in Y0728

Legacy trees*	Maintenance level	Inventory	Available above Maintenance
11″ + DBH	1287	3029	1742
20″ + DBH	429	556	127

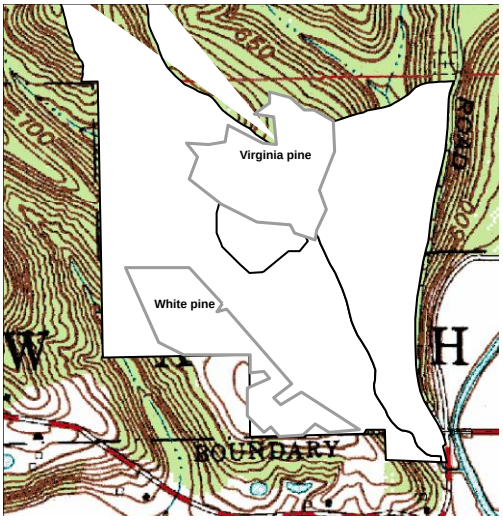
*Species include American elm, Bitternut hickory, Cottonwood, Green ash, Red oak, Post oak, Red elm, Shagbark hickory, Shellbark hickory, Silver maple, Sugar maple, White ash and White oak

Snags (all species)	Maintenance level	Optimal level	Inventory	Available above Maintenance	Available above Optimal
5″ + DBH	572	1001	1340	768	339
9″ + DBH	429	858	860	431	2
19″ + DBH	71.5	143	96	24	-47

The deficiencies found in the wildlife habitat feature summary were the number of snags within the 19″ category for "Available above Maintenance" category. Some snags will result naturally from timber harvesting operations and additional snags could be created during post-harvest Timber Stand Improvement (TSI).

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.

This tract also contains two pine stands: 18 acres White pine and 16 acre Virginia pine. Pine stands provide significant winter and escape cover for many species of wildlife and is preferred roosting habitat for several bird species as well as for wild turkey. A portion of the Virginia pine stand was impacted by the 1999 forest fire, however this impact is difficult to decipher from the remaining portion of the stand which is dying out as well.

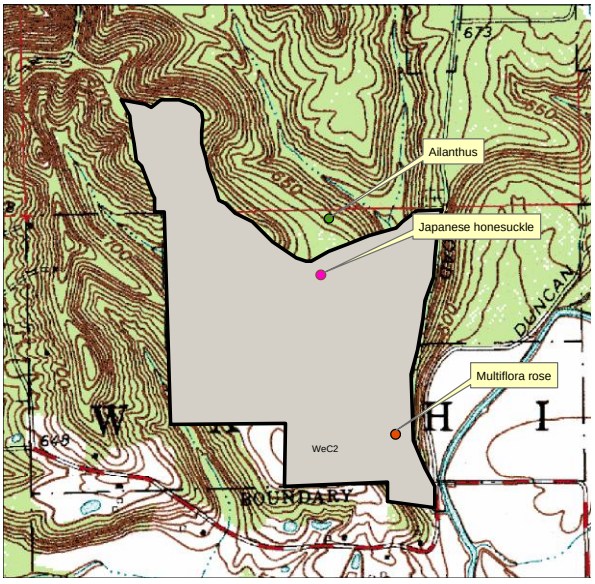


1999 Forest fire: approx. 9 acres

Pine stand

Invasives/Exotics

Japanese honeysuckle and multiflora rose were noted within this tract. These two species will not be treated due to the relatively slight impact they have to the area at this time. One occurrence of Ailanthus was noted nearby during the Winter 2011 inventory of adjacent Tract 25 to the north. This tract is proposed for harvest with Tract 25 therefore it is prudent to eradicate this species from the area prior to beginning harvest operations. This 9"tree and the 10+ adjacent saplings will be treated with a chemical basal bark treatment (20% Garlon4 + 80% basal oil) in summer 2012 and then monitored for any resprouting.



Recreation

Primary recreational use is hunting, hiking and horseback riding. A portion of the "Y" horsetrail runs through this tract.

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.

February 2011 Resource Inventory Summary Results for Y0728

	Acreage	Present Vol. BF/Acre	Harvest Vol. BF/Acre	Growing Stock Vol. BF/Acre
White Pine Poletimber Stand	16	N/A*	0	N/A
Virginia Pine & Hardwoods Stand	14	2,490	?	2,490
Black Walnut plantation Stand	2	N/A*	0	N/A
Mixed Hardwoods	111	5,067	1,531	3,536
Totals	143			
Estimated Tract Averages		**4,177**	**1,188+**	**2,889**

*N/A: Stands were mostly poletimber so were not inventoried this cutting cycle.

Volume Summary Report for Mixed Hardwood Stand only (111 acres)

Species	Harvest Bd. Ft.	Leave Bd. Ft.	Total Bd. Ft.
White Oak	46,850	241,660	288,840
Black Oak	55,670	17,630	73,300
Chestnut oak	11,490	25,380	36,870
Scarlet oak	24,270	5,400	29,670
Pignut hickory	0	25,200	25,200
Bitternut hickory	0	17,830	17,830
Shagbark hickory	0	15,260	15,260
Sugar maple	8,240	2,310	10,560
American sycamore	5,320	4,970	10,300
Northern red oak	0	10,280	10,280
American beech	3,370	3,750	7,120
Red maple	6,050	0	6,050
Yellow poplar	0	5,650	5,650
White ash	5,600	0	5,600
Black walnut	0	4760	4,760
Black cherry	0	4,240	4,240
Blackgum	0	1,160	1160
PER ACRE STAND TOTALS	**1,531**	**3,536**	**5,067**
STAND TOTALS	**166,860**	**385,470**	**552,330**

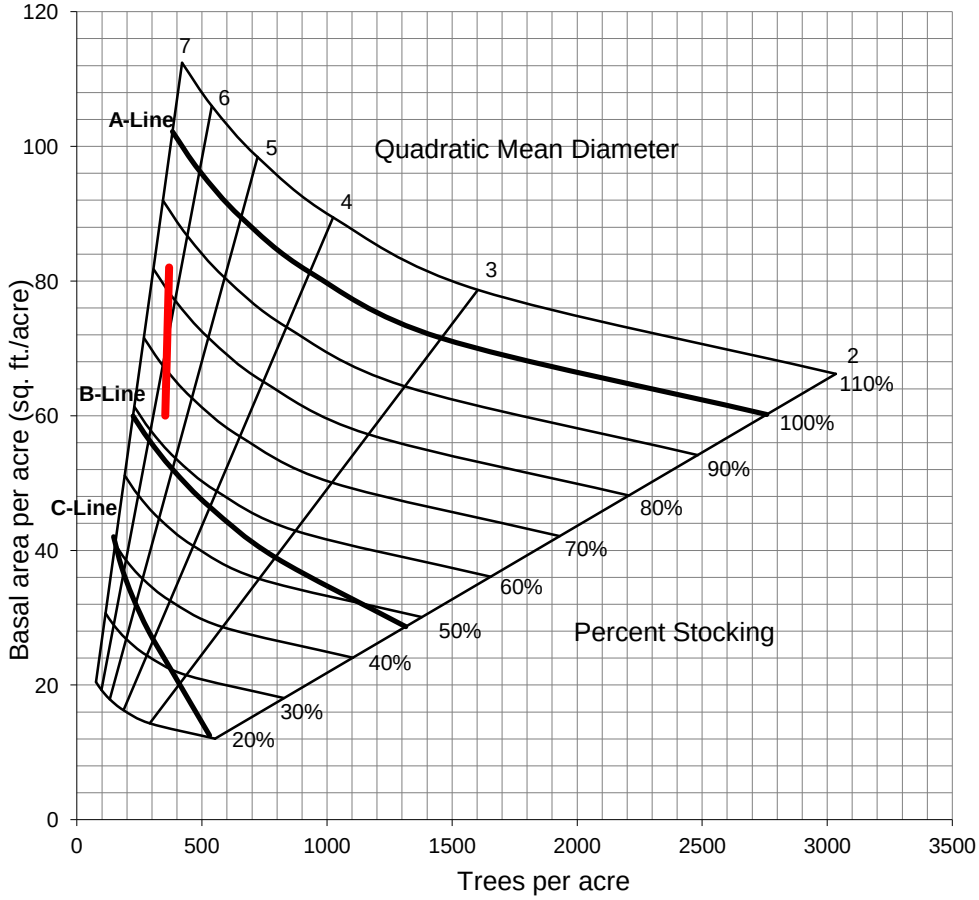
Discrepancies due to rounding.

Hardwood stand Acreage	111 acres		Present Volume per Acre	5,067 bd. ft.
Basal Area per Acre (Harvest 21, Leave 79)	100 Ft2		Harvest Volume per Acre	1,531 bd. ft.
Number Trees per Acre	368		Residual Volume per Acre	3,536
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 within the Mixed Hardwood Stand of Y0728



Tract Prescription and Proposed Activities

This tract was inventoried with 1 point per 3 acre intensity prism plots in February 2012 by Forester L. Burgess. Prior to 2012 Tract 28 constituted 83 acres. The merging of old Tract 30 to form the new 143 acre Tract 28 has resulted in there being 4 stands proposed for management. These stands are identified below.

Stand#1: White Pine Plantations (Total of 18 acres). Although no harvest trees were tallied within the White Pine stand there are a few merchantable stems present. As these White Pine stands contain mostly poletimber, the prescription for this stand is for retention to increase timber growth of the pines as well as to continue to provide significant wildlife habitat diversity and cover.

Stand #2: Virginia Pine plantations w/Mixed Hardwoods (Total of 14 acres). These pines were also planted for erosion control purposes during the early management history of YSF. This stand consists of mostly poletimber to small sawtimber Virginia Pine with some sawtimber sized mixed hardwoods. Most of the hardwood volume consists of Yellow Poplar, Pignut Hickory and Scarlet Oak. No significant amount of oak regeneration was evident in this pine stands' understory during the 2012 inventory. 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. Although no harvest trees were tallied within the Virginia Pine stand there are merchantable stems present. The decision will be made during marking whether to harvest within this stand. This stand contains an estimated 26,480 bd. ft. of hardwood volume

among the 8,380 bd. ft. of Virginia Pine. The removal of the Virginia pine could create an opening larger than 5 acres.

Stand #3: Black Walnut plantation (Total of 2 acres). State acquisition of the 49 acre Halloran tract included this 2 acre, bottomland BLW plantation. This plantation was maintained by mowing for a significant period prior to the State acquisition and is well stocked and poletimber in size. Management of this stand will be to continue routine precommercial thinning along with periodic pruning of the better stems (croptrees) so that quality is maintained.

Stand #4: Mixed Hardwoods and White Oak Stands (Approx. 111 acres). This stand constitutes the majority of the tract's acreage and consists of Mixed Hardwoods and several stands of White Oak. Overall, the inventory of this portion of the tract indicates that this large stand could sustain and benefit from a harvest this cutting cycle. The prescription for this cycle is for an intermediate, improvement harvest utilizing single-tree selection over most of the acreage and the potential for regeneration openings of 1 to 5 acres in size. All harvested openings will be included in post-harvest TSI. This stand contains many nice White Oak that would benefit from release. Dominant harvest species by volume would be White Oak and Black Oak. The top 2 timber species to be held for growing stock would be White Oak and Chestnut Oak. The marking objective will be the removal of mature and 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 chart created from the 2012 inventory data (based only on 111 hardwood acres) gives a general guideline of removing 23 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 3% of Tract 28's original 83 acres was regenerated during the past harvest 19 years ago. Following the proposed harvest, the stand's 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 will be prescribed to follow the harvest to reduce stocking in some areas of high basal area that contain pole sized stems and release croptrees from timber that was not harvested during the sale operation.

Overall, wildlife habitat and populations 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 group selection regeneration openings will convert portions of current closed canopy to modest levels of early successional habitat.

A combined tract timber harvest is proposed for this Tract and Tract 25 during FY2012-13. The volume of harvest for this combined sale is estimated to be around 255,510 BF. Given the growth and development of the timber resource reviewed during this inventory and management guide preparation the cutting cycle is amenable to 15 years.

Proposed Activities Listing

Proposed Management Activity	*Proposed Period*
DHPA timber sale project review	Summer 2012

Ailanthus treatment in T25	Summer 2012
Timber Marking	Summer-Fall 2012
Roadwork Rehabilitation	Fall 2012
Combined Tracts Timber Sale w/T25	FY2012-13
Timber Stand Improvement	CY2013-15
Reinventory and Management Guide	CY2027

Attachments (Included in Tract File)

- Topo Map of Tract Features
- Tract Soils Map
- Aerial Photo of Tract
- INHD Review Map
- Stocking Guide Chart
- Printed TCruise Reports

To submit a comment on this document, click on the following link:
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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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