Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

Yellowwood State Forest | Compartment **10** | Tract **1**
Total Tract acreage: 42 acres | Commercial Acres: 42 | Date: 8/12/11
Forester: L. Burgess

Location

This tract is located in Section 1, T9N, R1E of Brown County off of County Line Road. Approximately 12 acres of the tract are located within Monroe County in Section 2, T9N, R1E.

General Description

The cover types within this tract contains mixed hardwoods. There are approximately 36 acres of mixed oak & yellow poplar stands and approximately 6 acres of Virginia pine. 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 Sawtimber	**Understory Poletimber**	**Regeneration Layer**
Black oak	White oak	Sugar maple
White oak	Yellow poplar	American beech
Scarlet oak	Red maple	Red maple
Yellow poplar	Pignut hickory	Blackgum
Northern red oak	Largetooth aspen	Yellow poplar
Sugar maple	Scarlet oak	Ironwood
American beech	Shagbark hickory	Sassafras
Largetooth aspen	Sugar maple	American elm
Virginia Pine	Virginia pine	Dogwood
	American elm	Bluebeech
		White oak
		Pignut hickory

History

The State Forest acquired this acreage from the federal government in December 1956.

Resource management history:

4/75 CETA Forester: Black locust planted for erosion control (200 seedlings)
12/75 Timber cruise by Forester Gunkel: 44,870 bd. ft. harvest, 58,420 bd. ft. leave.
4/90 Inventory by Forester Eckart. Present stand 8,054 bf/ac., harvest 3,186 bf/ac.
5/90 Management plan by Forester Eckart.
1/93 Wildlife management noted by Forester Eckart: Bald eagle nest on private property adjacent to this tract
6/11 Forester Burgess completed last tract inventory.
8/11 Forester Burgess completed first boundary marking of tract.

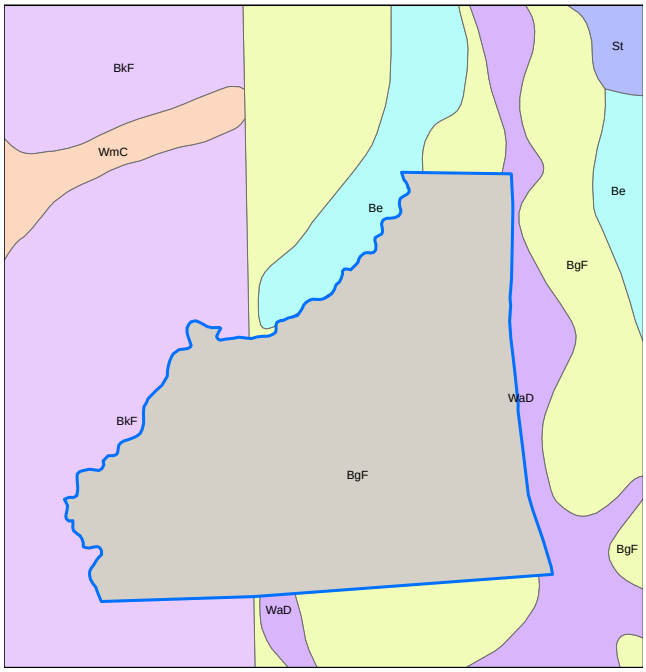
Topography, Geology and Hydrology
The tract is dominated by west facing slopes with basically no south-facing slopes. Moderately steep slopes for Yellowwood. The soil types noted in next section are unglaciated soils and were formed from the bedrock material of sandstone, shale and siltstone. One mapped intermittent stream runs along a portion of the tract's northern boundary. The entire tract drains into the Bean Blossom Creek-Lake Lemon watershed.

Soils
Berks-Trevlac-Wellston complex (BgF) 20-70% slope. Approximately 50% of tract. Moderately steep to very steep, well drained soil. Harvest limitations due to slope.

Wellston-Berks-Trevlac complex (WaD) 6 to 20 percent slopes. Less than 15% of tract.

Beanblossom channery silt loam (Be), occasionally flooded. Less than 5% of tract.

Berks-Weikert complex (BkF) 25 – 75% slope. 35% of tract. Well drained. Moderate limitations due to slope.



Access

Recreation and resource management access to tract is available directly from off County Line Road. There is currently a small gravel pull-off for public parking area. A log yard will be constructed just west off of this parking area.

Boundary

This tract's eastern boundary is indicated by County Line Road with private property on east side of road. The north and south lines also border private property. A concrete monument delineates the tract's southeast corner. The State's deed indicates a stone along the tract's southern line at the intersection with the county line. I found this stone August 11, 2011 and have since painted a portion of the south line between the two southern monuments. The northern boundary of the tract is located 1707 feet north of that stone. A concrete monument delineates the tract's northeast corner. An old fence line connects this northern boundary to a concrete monument to the west; this line was also painted August of 2011. The western portion of the tract borders State Forest property. Prior to my boundary work in August of 2011 no portion of this tract boundary was marked.

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 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 tables.

Legacy trees*	**Maintenance level**	**Inventory**	**Available above Maintenance**
11″ + DBH	378	530	152
20″ + DBH	126	96	-30

*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	168	294	448	280	154
9″ + DBH	126	252	189	63	-63
	21	42	7	-14	-35

The wildlife habitat feature summary lists deficiencies in the number of snags for both "Available above Maintenance" and "Available above optimal" category for 9″+ and 19″+ DBH. Timber harvesting could create additional snags as well as during the planned post-harvest timber stand improvement project.

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
No invasives were noted during the June 2011 inventory. Any invasive or exotics species noted during timber marking will be evaluated and treated as needed. I do not know where the Black locust was planted in 1975. I did not see this species during the 2011 inventory. Perhaps it was cut out of the tract for posts.

Recreation
Primary recreational use is hunting.

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 Hardwood volume estimates:
(Includes only the 36 acres of hardwoods. Does not include the 6-acre pine stand)

		Basal Area
Harvest volume	3,522 bd.ft./acre	33
Leave volume	3,892 bd.ft./acre	70
Total Hardwoods	7,414 bd.ft./acre	103

June 2011 Harvest/Leave Report Summary for Y1001 (Hardwood Stand Only)

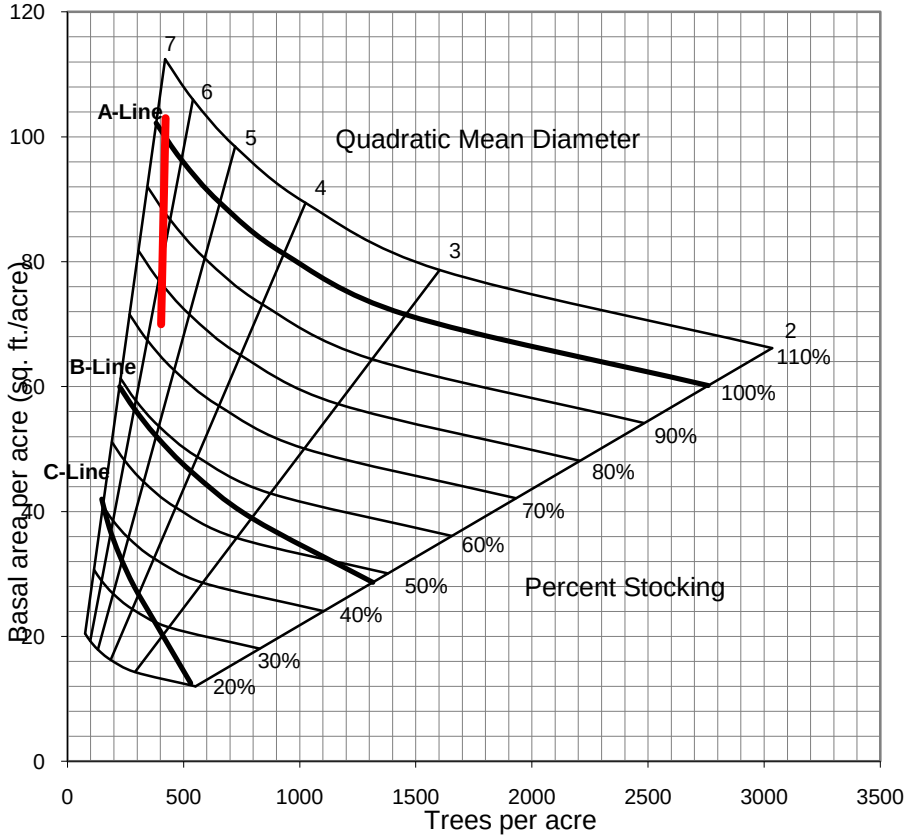
Species	**Harvest Bd. Ft.**	**Leave Bd. Ft.**	**Total Bd. Ft.**
Black Oak	36,160	26,950	63,100
Yellow poplar	28,440	28,670	57,100
Scarlet oak	31,930	19,560	51,500
White oak	34,600	4,2530	45,990
Northern red oak	10,070	1,0530	20,600
Largetooth aspen	7,350	5,700	13,050
White ash	2,890	0	2,890
Red maple	2,460	0	2,460
American beech	1,650	770	2,420
Sugar maple	2,380	0	2,110
Bitternut hickory	0	2,110	4,710
Pignut hickory	0	1,710	1,710
Black walnut	0	1,580	1,580
Totals	**126,780**	**140,110**	**266,890**
PER ACRE	**3,522**	**3,892**	**7,414**

Discrepancies due to rounding.

Hardwood stand Acreage	36 acres		Present Volume per Acre	7,414 bd. ft.
Basal Area per Acre	103 sq. ft.		Harvest Volume per Acre	3,522 bd. ft.
Number Trees per Acre	423		Residual Volume per Acre	3,892 bd. ft.
Stocking Percentage	103%		Average Tree Size	6.5″ 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*
(* For the 36 acres of hardwoods)



Tract Prescription and Proposed Activities

This tract was inventoried by 1 point per 1.8 acres prism plots in June 2011. The tract is comprised primarily of mixed hardwoods with stands of Oak/Hickory and Yellow poplar. Approximately 6 acres holds some Virginia pine but this acreage also includes some encroaching hardwoods including Red maple, Largetooth aspen and Yellow poplar. Most of the pine is post or pole size stems with a few small sawtimber size stems. The pine stand is slowly degrading but could be kept for its wildlife and aesthetic value along the county road however, some of the pine as well as Yellow poplar and Largetooth aspen within the pine will be marked for harvest. Approximately one-quarter acre of the pine will be cleared for the log yard. Overall, the inventory results indicate this tract could sustain and benefit from a harvest this cycle. My recommendation is for an intermediate, improvement cutting type of harvest utilizing single-tree selection over most of the acreage with the potential for regeneration openings of 1 -5 acres in size. Likely areas of regeneration would include overmature and fire scarred Scarlet oak stands. Group selection would include areas of Largetooth aspen. Dominant harvest species by volume would be Black oak, Scarlet oak and Yellow poplar. Top leave species by volume would be White oak. Portions of the tract hold some quality stems including pole to large sawtimber White oak as well as Yellow poplar.

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 chart created from the 2011 inventory data (based only on 36 acres of hardwoods) gives a general guideline of removing 35 sq. ft. of basal area for best site utilization. Species composition will likely become more diverse and less susceptible to insect and disease infestation which is a common problem with homogeneous stands. The application of improvement cuttings are designed to 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 post harvest to reduce stocking in some areas of high basal area with pole sized stems and release croptrees not successfully released during the harvest.

Wildlife 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 habitats and forest diversity. Stimulation of the forest floor is important for many game and non-game species as well as continued forest regeneration efforts. 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 additional group selection regeneration openings will convert some current closed canopy stands into early successional habitat.

An estimated sale of 100,000 to 150,000 Bd. Ft. is proposed with this current plan and a timber sale is planned for late winter/early spring of FY2011-12.

Proposed Management Activity	Proposed Period
Boundary Line marking	August 2011
DHPA Sale Project Review	FY 2011-2012
Road construction Rehab & Yard construction	FY 2011-2012
Timber Marking	FY 2011-2012
Timber Sale	FY 2011-2012
Post Harvest TSI Project	CY2012-2014
Boundary Line Remarking – per 6 Yr plan	2017, 2023, 2029
ReInventory and Management Guide	2031

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