RESOURCE MANAGEMENT GUIDE

DRAFT

State Forest: Yellowwood SF **Compartment:** 12 **Tract**: 12
Forester: A. Zillmer **Date:** June 13, 2008
Management Cycle End Year: 2028/29 **Management Cycle Length:** 20 Years

Location

Tract 12 of Compartment 12 is located in the SW1/4 of Section 17, T10N, R2E , Brown Co. It is north of SR-45 and approximately 3 miles northwest of Helmsburg.

General Description

This tract is approximately 43 acres of which 37 are commercial. Oak-hickory is the most dominant covertype across tract. Sections of mixed hardwood and small pockets of pine in the north were also noted.

History

This portion of the Yellowwood SF was granted by the U.S. government in October, 1956. This tract has little info due to a fire at the Morgan-Monroe SF office in the 1980's. Due to the current composition of the forest stand it is likely that this tract was farmed or heavily grazed before state ownership. The pine was planted in the north to stabilize the soil from erosion. Old file notes suggest that much of the area was used as a nursery or orchard. In 1986 the entire tract acreage was changed when the tract number was changed from 22 to 12.

Landscape Context

The majority of the surrounding landscape is closed canopy forest under both public and private ownership. Agricultural fields dot the landscape. There is an increase in residential and recreational usage of land. This increase seems to be concentrated near SR46 and feathers out moving north on Carmel Ridge Road.

Topography, Geology and Hydrology

This tract has one main ridge that runs south along the tracts eastern boundary. Three fingerlike ridges extend to the south west and grade gently (0-10%) into a southern flowing creek. The elevation increases on the western side of the creek. Ephemeral drainages between the smaller ridges drain into the creek. The underlying geology is most likely a combination of shale and sandstone.

Soils

<u>Be-Beanblossom channery silt loam, occasionally flooded</u>

This soil is found in the bottomland areas along the western creek. It is formed from channery alluvium. Slopes range from 1 to 3 %. It has a very low available water capacity and is moderately rapidly permeable. Overall this soil is well suited to woodlands. Wetness is a concern for harvesting and planting operation,

but can be dealt with by avoiding wet times of year. Beanblossom holds a 95 SI, a land capability class of IIIw, and woodland ordination symbol of 7F.

BgF-Berks-Trevlac-Wellston complex, 20 – 70% slopes
This complex is found side slopes along the tract's main ridge. It is formed from a combination of siltstone interbedded with sandstone and shale. It has a very low available water capacity and is moderately rapidly permeable. This soil is well suited to woodlands, and has some limitations to harvest. Employing standard BMP regulations such as waterbars or contour shaping for haul roads mitigate these limitations. Other special logging methods, such as uphill yarding with cables can be beneficial when using rubber tired or crawler tractors. This complex holds a SI of 70 in northern red oak, a land capability class of VIIe, and woodland ordination symbol of 4R.

WaD-Wellston – Berks – Trevlac Complex, 6 to 20 % slopes
This complex is found along the tract's main ridge. It forms from weathered sandstone-shale-siltstone bedrock at a depth of 51" with a loess cap. The slopes range from 6 – 20%. This soil is unsuited to urban development due to slope. It is very well suited to forestry, with only moderate equipment limitations due to slope and depth to bedrock on some components of complex. Following natural contours for road construction and land shaping can mitigate erosion hazards. This soil has a site index of 70 for northern red oak and a woodland ordination symbol of 4A.

Access
This tract is accessible from Carmel Ridge Rd. from fire lanes and a portion of the Tecumseh Trail. Some widening may be necessary to accommodate vehicular access. Widening work should be minimal and employ tree trimming where applicable to preserve aesthetics. Also, a buried water line in tracts 8 and 11 are underneath the haul road.

Boundary
This tract lies alongside both private and public land. The southern and western boundaries neighbor private property. They are clearly defined by orange paint. Capped rebar was also noted along this property line. The northern boundary bisects drainage and crosses onto the main ridge before heading south to make up the eastern boundary.

Wildlife
The natural heritage database did not report any rare, threatened or endangered species on tract. A wildlife review was also conducted and is stored in tract files. Presently the tract hosts an abundance of wildlife. The tract inventory completed on June 11, 2008 reported sighting of deer, turkey, chipmunks, multiple songbirds, box turtles, and various herps. The combination of hard mast and water features provide steady sources of both food and water. The tract also has

a good supply of course woody debris providing habitat for herps. Harvesting activities would enhance this habitat.

Indiana Bat Habitat Guidelines

Live Trees – Entire Tract – Desired Species Only*

	Required	Inventory	Available for Removal
11" DBH+	414	395	-16
20" DBH+	138	64	-74

Snags – Entire Tract – All Species

9" DBH+	276	163	-113
19" DBH+	46	0	-46

*Desired Species Include: AME, BIH, BLA, BLL, COT, GRA, REO, POO, REE, SAS, SHH, ZSH, SHO, SIM, WHA, WHO

Currently this stand is falling below in all areas for bat habitat guidelines. In terms of live trees, many areas of the tract are dominated by non preferred species of the Indiana bat. Namely large tooth aspen and Virginia pine. Inventory noted that these species were in poor condition and many are experiencing mortality. Proposed management activities should be aimed at removing these species to accelerate the transition to desired hardwoods. Sassafras (desired species) is also common on tract. Many of the trees are falling in to the <9"DBH size class. A potential cord harvest or post harvest TSI would release better quality specimens and allow them to transition into sawtimber size classes and thus increase overall live tree count. Snag creation should also be considered of cull trees following harvest to increase overall density.

Recreation

The Tecumseh trail runs along the eastern boundary of tract. This area is used by long distance hikers. During harvest activities portions of this trail may need to be rerouted or temporarily closed. Original trail will be reopened following sale close out.

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 Subdivision Description and Prescription

Forest Condition

Currently the stand hold 262,300 BF (6,100 BF/ac) of timber with 65,790 BF (1,530 BF/ac) being designated as harvestable and 196,510 BF (4,570 BF/ac) as growing stock. The overstory is dominated by species such as black oak, yellow poplar, and white oak, red oak, Virginia pine, largetooth aspen, scarlet oak, American sycamore, and red maple. Common understory species include pignut

hickory, white ash, sassafras, sugar maple, white oak, and black cherry. Many of the species on tract such as the pine and aspen are experiencing rapid decline. It is recommended that poor formed and less vigorous stems be removed from stand to favor higher quality, more vigorous stems.

Table 1. Harvest/Leave species and volume inventoried 6/12/2008 on 6421212

Species	Harvest	Leave	Total
American Beech	0	980	980
American Sycamore	630	13690	14320
Bitternut Hickory	0	1700	1700
Black Cherry	1450	7000	8450
Black Oak	17100	42730	59830
Black Walnut	0	1450	1450
Largetooth Aspen	10320	0	10320
Northern Red Oak	5060	22040	27100
Pignut Hickory	2250	8510	10760
Red Elm	0	540	540
Red Maple	2340	14400	16740
Sassafras	0	640	640
Scarlet Oak	6530	10600	17130
Sugar Maple	0	9900	9900
Virginia Pine	19590	0	19590
White Ash	890	2440	3330
White Oak	2940	23430	26370
Yellow Poplar	5700	47430	53130
Total	**74800**	**207480**	**282280**
Total per Acre	**1740**	**4825**	**6565**

Oak Hickory

The oak hickory component on stand is the most dominant and covers roughly 24 acres. It is mostly found on the tract's ridgetops and sideslopes. Currently this subdivision contains 5,360 BF/ac with 1,550 BF/ac being designated as harvest and 3,810 BF/ac left as growing stock. Harvestable stock is in 13 trees per acre containing an average of 120 BF/tree. The current stand is dominated by black oak, red oak, scarlet oak, white oak, and pignut hickory in the overstory. Understory species are very similar, but there is a stronger component of hickory, white oak, and blackgum. Management goals for this section include thinning from above and below to release higher quality stems. Stems that will not survive to next rotation should also be removed.

Mixed Hardwoods

The mixed hardwood component makes up 12 of the tracts 43 acres. It is commonly found around the tracts bottomlands and cultural features. This section is estimated to contain 6,850 BF/ac. 1,010 BF of which are harvestable and 5,830 BF that are left as growing stock. The low harvest volume is contributed to restrictions surrounding cultural sites. Common overstory species

include yellow poplar, American sycamore, black oak, red oak, black cherry, sugar maple, largetooth aspen, and white oak. Under story species are similar with a stronger presence of black cherry, pignut hickory, and sugar maple. Species such as largetooth aspen are experiencing decline. Removing these stems and others not surviving to next rotation will improve overall stand health and vigor.

Pine

The pine component is located in the north of tract and covers approximately 7 acres. 5,970 BF/ ac were estimated from inventory with 1,570 BF classified as removable. This stand is dominated by small saw-pole size Virginia pine. Currently this stand is stagnating and much of the pine is dying out. Removing the pine will expedite the natural transition to hardwoods. It is expected that species such as red maple and yellow poplar will have the strongest response to this removal. When possible, islands of hardwoods should be maintained to serve as a seed source for next generation.

Tract Prescription and Proposed Activities

This tract should employ an improvement cutting to promote more vigor, long lived hardwood species. Both single tree and group selection cutting techniques should be employed on the oak hickory and mixed hardwood stands. The pine area should have all marketable pine removed to hasten hardwood transition. Post-harvest TSI such girdling remaining pine or sassafras thinning would also be beneficial. Snag creation along with vine control should be considered following harvest. These areas should be reexamined during marking.

This tract should be marked and sold during the 08/09 fiscal year in conjunction with tract 13. Harvest volumes were predicted at 75,000 BF. This total may be lower due to aesthetics on the Tecumseh Trail.

Following harvest, follow up TSI should be considered in any openings to promote potential crop trees.

Proposed Activities Listing

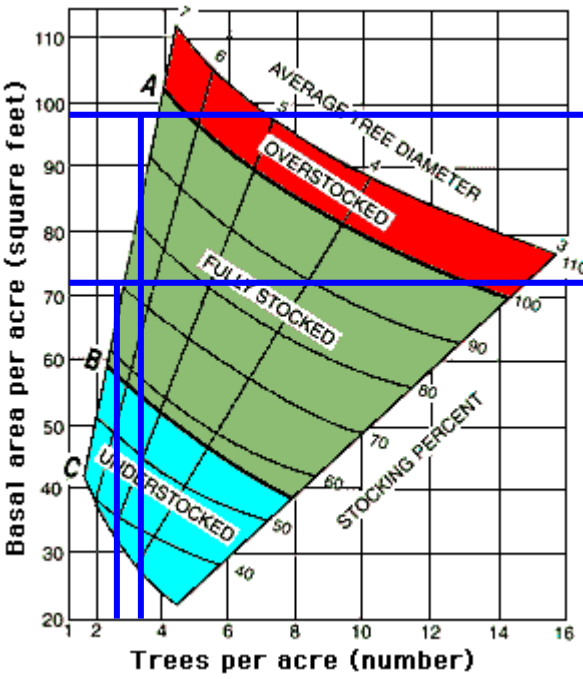
Activity	***Date***
Mark 65,000 BF	08/09
Sell 65,000 BF in conjunction w/ 6421213	08/09
Post-Harvest TSI	09/10
New Management Guide	2028/29

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 "Yellowwood C12 T12" 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.

Gingrich Stocking Charts
Compartment 12 Tract 12
Yellowwood SF

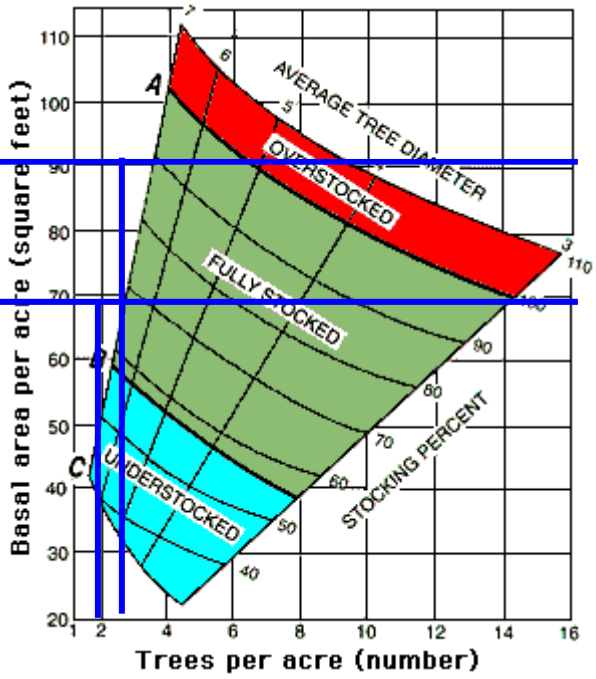
Overall



Current Stand
98 BA
230 trees/ac
7.2 avg DBH
Fully Stocked 96%

Leave Stand
74 BA
207 trees/ac
Fully Stocked 70%

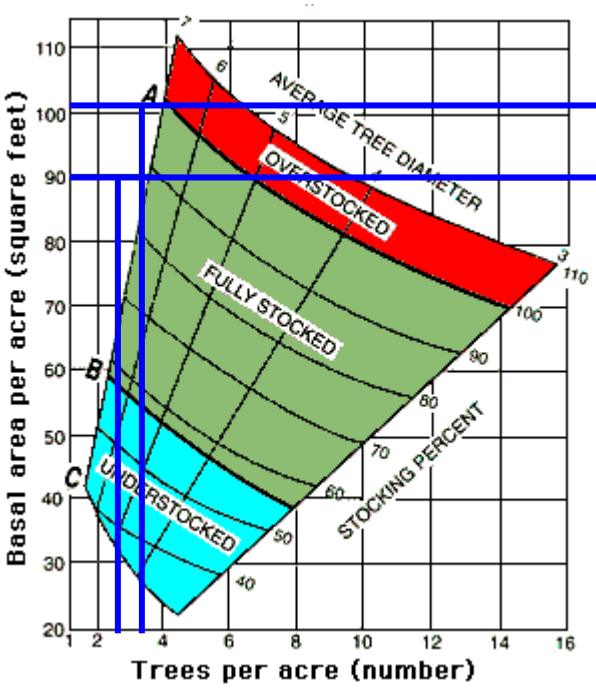
Oak Hickory



Current Stand
90 BA
215 trees/ac
7.3 avg DBH
Fully Stocked 90%

Leave Stand
71.2 BA
187 trees/ac
Fully Stocked 68%

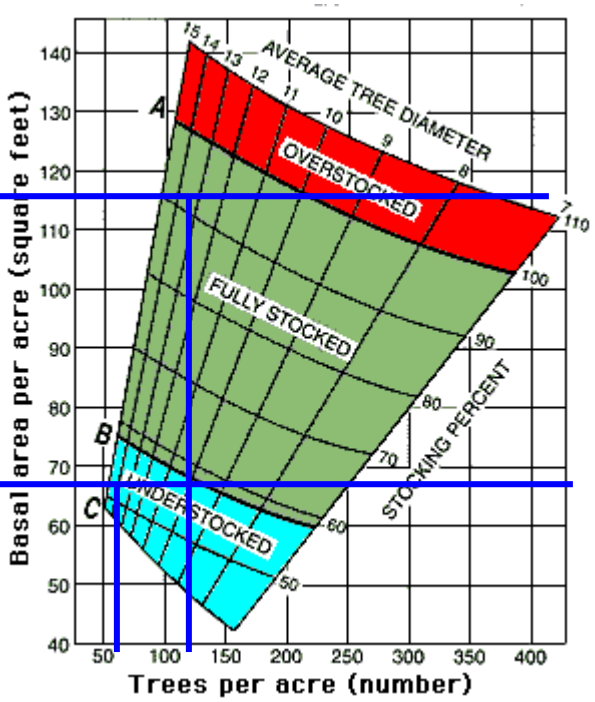
Mixed Hardwoods



Current Stand
101 BA
302 trees/ac
6.2" avg DBH
Fully Stocked 98%

Leave Stand
89.9 BA
295 trees/ac
Fully Stocked 89%

Pine



Current Stand
115 BA
114 trees/ac
13.3 avg BDH
Fully Stocked 92%

Leave Stand
67.5 BA
65 trees/ac
Understocked 53%

Stand Type Map

Yellowwood SF Compartment 12 Tract 12

Morgantown Quadrangle