Indiana Department of Natural Resources
Division of Forestry

DRAFT
RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **12** Tract: **11**
Tract Acreage: **99** Commercial Forest Acreage: 9**9**
Forester: **K. DeCosta** (for Amy Spalding) Date: **2/23/2011**

Location
This tract is located in Section 17 of Township 10N, Range 2E of Brown County. It is approximately 1 mile east of Waycross and 2 ½ miles north of Trevlac and State Road 45. Access is off of Carmel Ridge Road through a gated firetrail than originates at neighboring Tract 10 and runs through the east boundaries of Tracts 8&9.

General Description
This tract is 99 acres of closed canopy hardwood forest in Yellowwood State Forest all of which constitute commercial acreage. The forest resource is predominantly large sawtimber Mixed Oak and Mixed Hardwoods. Oak dominates south to southwest facing slopes and ridgetops while other Mixed Hardwoods dominate north to northeast facing slopes and other cove areas. Numerous Yellow Poplar, Black Oak, and Northern Red Oak throughout the tract are mature to over-mature and are in need of harvest. The northern half of the tract is composed of mostly mature, large sawtimber stems; the southern half has some areas of old regeneration with a slightly smaller overall tree diameter. The tract's inventory of forest species composition is listed below in Table 1 according to their dominance:

Table 1. Overview of Forest Resources in Y1211

Sawtimber	Poletimber	Regeneration
Black Oak	Sugar Maple	American Beech
White Oak	Sassafras	Sugar Maple
Northern Red Oak	White Oak	Sassafras
Yellow Poplar	Red Maple	Yellow Poplar
Virginia Pine	American Beech	Red Maple
Sugar Maple	Yellow Poplar	Blackgum
Pignut Hickory	Pignut Hickory	Pignut Hickory
Largetooth Aspen	Virginia Pine	Flowering Dogwood
Bitternut Hickory	White Ash	Ironwood
White Ash	Largetooth Aspen	Bluebeech
Scarlet Oak	Shagbark Hickory	Witch Hazel
Red Maple	Blackgum	White Ash
Basswood	Basswood	Black Cherry
Shagbark Hickory		Red Elm
American Beech		Pawpaw
Black Walnut		Shagbark Hickory

Black Cherry Sassafras		White Oak Northern Hackberry Eastern Redcedar

History

The northern part of this tract was sold to Yellowwood State Forest by John and Elizabeth Kistner for $3,541.12 on 4/24/1952. The southern part of the tract was granted to Yellowwood State Forest by the U.S. Government on 10/30/1956. A timber sale was marked by Jim Akard of 131,345 BF and sold on 1/19/1979 to Timber Specialists for $200.49/MBF. TSI was completed by YACC on 2/8/1979. Foresters Gray and Fischer ran the boundary line along the Welty property on 4/19/1982. The Compartment Tract number was changed from 21 to 11 on 12/4/1986. Forester Kaina completed a 20 point inventory for this tract on 10/7/2004 indicating 1,518 BF/Ac Harvest and 2,992 BF/Ac Leave volume estimates. Kaina completed a short management guide for this tract of 80 acres on 1/7/2005 and did not recommend a timber harvest at that time. As the Kaina MG and inventory did not appear to fit the tract's description and acreage, Forest Intermittent Kaylee Decosta completed a reinventory of the tract on 2/23/11 indicating there were actually 4,474 BF/Ac of Harvest volume and 6,221 BF/Ac of Leave Volume.

Landscape Context

The majority of land immediately surrounding this tract is managed State Forest of mostly mature, closed canopy hardwood forestland to the north and south and privately managed forestland to the west and east. To the farther west and southwest there are church campgrounds and recreation areas such as Waycross, Lutheran Hills and Gallahue Valley Girl Scout camp recreation sites available to private groups as well as modest developmental residential properties to the northeast and southeast along Carmel Ridge Road.

Topography, Geology and Hydrology

One central ridge runs north-south through the center of this tract from which several finger ridges extend. Topography ranges from 6% to 70% slopes with East and West aspects dominating. The underlying soils range from 27 - 60 inches in depth to weathered siltstone interbedded w/sandstone and/or shale bedrock. One mapped intermittent stream drains from the northeastern corner of this tract. Several other unmapped ephemeral drainages as well as 1 unmapped intermittent stream also exist in the tract. Water resources from this tract drain into Brier Creek and from there to Beanblossom and eventually into Lake Lemon.

Soils

WaD (Wellston-Berks-Trevlac complex, 6 – 20% slopes) Moderately sloping to moderately steep. This soil type presents slight risks for erosion hazard and equipment limitation. Comprises approximately 25% of tract. Site Index value for Yellow Poplar is 90 and 71 for Northern Red Oak.

BgF (Berks-Trevlac-Wellston complex, 20 – 70% slopes) Moderately steep to very steep slopes and well drained soils. This tract is comprised of approximately 70% of this soil type and presents moderate to severe erosion hazards, severe equipment limitations, slight – moderate seedling mortality, and slight windthrow hazard. Management considerations should include

building haul roads on a contour and constructing water bars to prevent erosion. Site Index values for Black and Northern Red Oaks ranges from 70 – 71 and 90 for Yellow Poplar.

Be (Beanblossom) This soil type is deep and moderately well drained, gently sloping, or nearly level. It is subject to occasional flooding and so presents seasonal equipment limitations. This soil type comprises approximately 5% of this tract. The Site Index value for Yellow Poplar is 95.

Access

Access to this tract is off of Carmel Ridge Road north of State Road 45 through a gated firetrail and haul road. This haul road transects neighboring Tract 10 into the east boundaries of Tracts 8 & 9 and then through the center of this tract on the ridgetop. At the north end of this tract the haul road is coexistent with the ridgetop portion of the Tecumseh Hiking Trail. Therefore a portion of the T-Trail will be utilized as a haul road during the timber harvest. The Tecumseh Trail will be rerouted during any harvesting activities as a safety precaution. Two existing log yards are present along this roadway. A timber harvest in tracts 12 and 13 to the south will also utilize this roadway. The haul road through most of Tract 10 has an embedded waterline buried in it and care will need to be taken during harvesting to avoid soft road conditions that could impact its use. Also, there are a couple of large culverts in the bottomland of Tract 10 that will need some cleanout prior to preharvest roadwork rehabilitation as well as post harvest closeout.

Boundary

This tract is bordered by State Forest to the north and south. The west and east boundaries of the tract have private boundaries. These boundaries have been marked for many years in orange paint and will be updated and repainted as needed before a timber harvest occurs.

Wildlife

A Natural Heritage Database review was completed on the tract; no records of Rare, Threatened or Endangered species have been recorded within or near the tract. The current inventory was conducted during winter so no migratory breeding birds were present. Other bird species detected during the resource inventory include Red-bellied Woodpecker, White-breasted Nuthatch, Tufted Titmouse, Downy Woodpecker, Wild Turkey, American Crow, Pileated Woodpecker, American Goldfinch, American Robin, Eastern Bluebird, Hairy Woodpecker, Blue Jay, Eastern Towhee, Carolina Chickadee, Red-headed Woodpecker, Northern Flicker, Dark-eyed Junco, Carolina Wren, and Northern Cardinal. Mammalian species detected during the inventory include Eastern Chipmunk, White-tailed Deer, Grey Squirrel, Wild Turkey, Raccoon, and Coyote. Deficiencies in the Wildlife Habitat Feature Summary for IN bat snags in the 9"+ and 20"+ categories is highlighted in red below. All levels of legacy trees exceeded maintenance levels. An increase in snag density may occur in the next few years due to expected natural mortality from the sustained drought that occurred in the area in the Summer/Fall of 2010. Post harvest TSI following timber harvests is also a management technique that can aid in increasing tract snag densities. This would include the girdling of cull trees or unharvested timber in planned group selection openings.

	Maintenance Level	Optimal Level	Inventory	Above Maintenance	Above Optimal
Legacy Trees *					

11"+ DBH	891		2355	1464	
20"+ DBH	297		502	205	
Snags (all species)					
5"+ DBH	396	693	943	547	250
9"+ DBH	297	594	428	131	-166
19"+ DBH	49.5	99	23	-27	-76

*** Species Include:** AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

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.

Japanese Stiltgrass was noted on the haul road coming into this tract as well as on portions of the Tecumseh Hiking Trail. This invasive has spread throughout the entire Y-MMSF system however a treatment to reduce the spread prior to timber harvesting is planned.

Recreation

The Tecumseh Hiking Trail transects this tract and provides excellent public access for a variety of recreational activities including but not limited to hunting, mushroom hunting, hiking, and wildlife viewing. Rerouting of the hiking trail prior to and during resource management activities will be coordinated with Hoosier Hikers Council members.

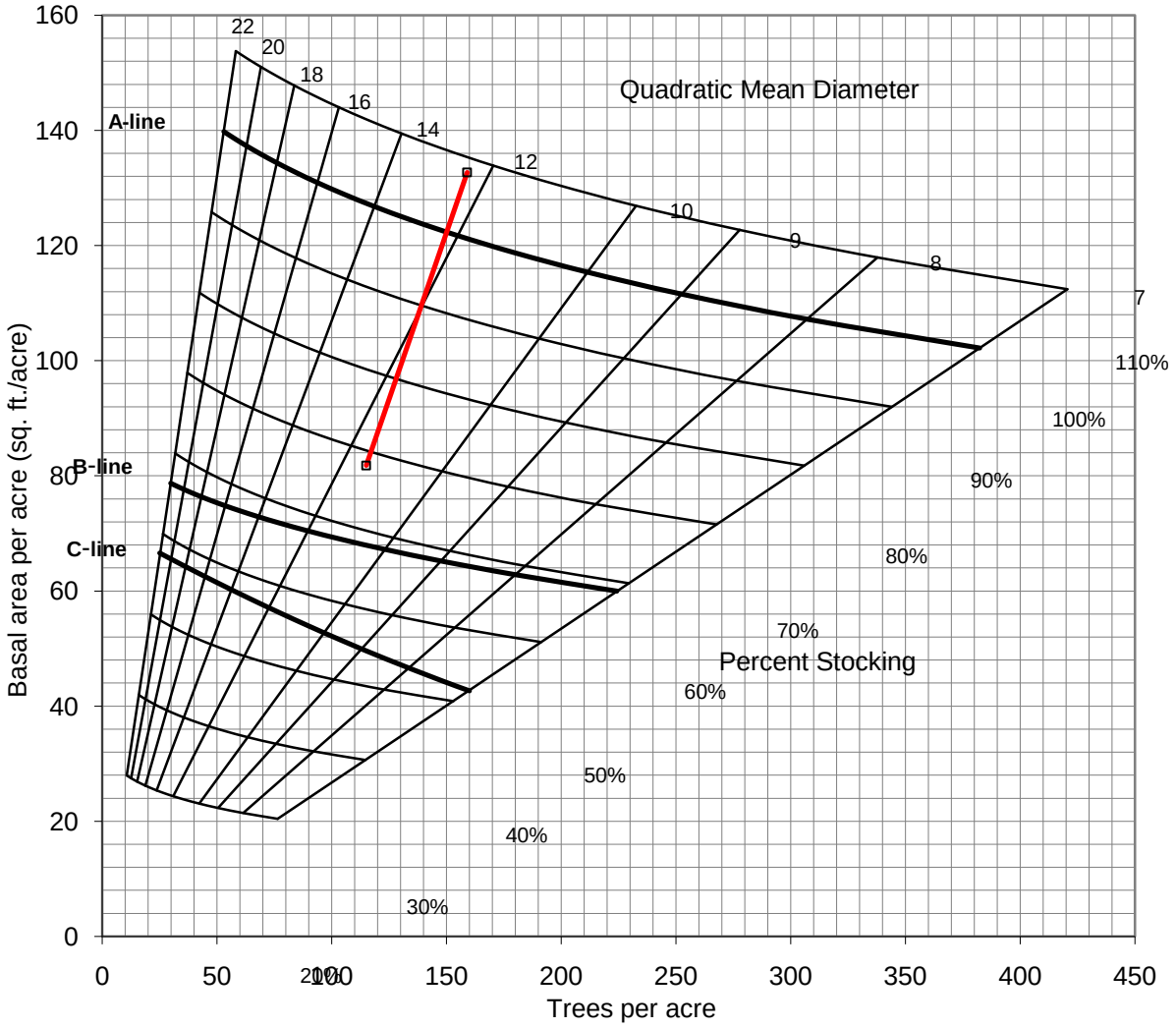
Cultural

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.

Tract Subdivision Description and Silvicultural Prescription

Y1211 Tract Summary Data – February 2011 Inventory Data

Total Trees/Ac.= 159 Overall % Stocking = 108% (Over-stocked)
Sawtimber & Quality Trees/Ac.= 62 BA/A= 147.1 sq.ft./Ac.
Present Volume = 10,695 Bd. Ft./Ac.
Harvest Volume = 4,474 Bd. Ft./Ac.
Growing Stock Volume = 6,221 Bd. Ft./Ac.



Silvicultural Prescription

This inventory was completed on February 23, 2011 by Forest Intermittent K. DeCosta. 34 prism points were evaluated over 99 acres (1 point for every 2.9 acres). Summary inventory results are given above. This tract is presently overstocked and a timber harvest is prescribed. A timber harvest should focus on thinning from above and below through single tree selection using improvement cuttings to release high quality croptrees. Trees selected for harvest should include over-mature, declining, dying, stressed, poorly formed trees and trees with low vigor. The residual stand will be comprised of healthy quality trees of long-lived tree species with adequate growing space. Oak stress and mortality was noted in several areas throughout the tract; oaks in these areas displayed epicormic sprouting and overall low vigor. These trees should be harvested before they die. During the inventory, 3 of the 34 evaluated plots were noted as warranting regeneration. As a sample this could result in an estimate of 9 acres of regeneration (10% of tract); however, total regeneration acreage will depend on more intensive evaluations conducted during actual timber marking. Regeneration is typically recommended for areas of moderate windthrow damage, insect/disease induced mortality, and poor species composition. Regeneration is also recommended for one of the Virginia Pine stands due to declining vigor within this stand. Due to the noted presence of many over-mature trees ready

for harvest throughout the tract, volume estimates from this resource inventory for this tract's proposed harvest are high at over 4,000 BF/A. The final volume after timber marking will most likely fall within a 250,000-350,000 BF range. In an effort to preserve aesthetic value, some harvest limitation is also recommended along the Tecumseh Trail. White Ash should be harvested where feasible in a sanitation cutting to reduce habitat for Emerald Ash Borer which is already present in northern Brown County.

Two regeneration openings from the 1979 harvest were found and mapped. One was approximately 1 acre and the other was approximately 4 acres in size. These openings are in need of vine TSI but otherwise appear to have good species composition and growth. These areas (approximately 5 total acres) would benefit from vine TSI as well as croptree release. A post harvest TSI project is planned to treat these openings along with other stand treatments that will be needed to place this tract into the next growth phase. These treatments include the reduction of competing grapevines, completion of harvested group selection regeneration openings as well as the deadening of cull and unharvested poletimber trees within the tract.

Volume Estimates: Yellowwood SF Comp. 12 Tract 11

(February 2011 Inventory Data)

Species	Harvest	Leave	Total
Black Oak	129,880	260,770	390,650
Yellow Poplar	112,120	68,450	180,570
Northern Red Oak	45,590	93,540	139,130
White Oak	36,720	75,500	112,220
White Ash	30,920	0	30,920
Virginia Pine	30,290	2,020	32,310
Largetooth Aspen	23,320	850	24,170
Sugar Maple	11,930	9,560	21,490
Scarlet Oak	7,040	30,650	37,690
Bitternut Hickory	3,830	11,880	15,710
Pignut Hickory	3,290	16,850	20,150
Basswood	3,080	7,280	10,360
Red Maple	1,860	5,490	7,350
Sassafras	1,680	0	1,680
American Beech	1,330	7,490	8,820
Black Cherry	0	9,530	9,530
Black Walnut	0	4,880	4,880
Shagbark Hickory	0	11,110	11,110
Tract Totals (Bd. Ft.)	**442,880**	**615,850**	**1,058,740**
Per Acre Totals (Bd. Ft./Ac.)	**4,474**	**6,221**	**10,695**

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Archaeological Review	August 2011
Road Construction & Rehab	Fall 2011

Timber Marking	Fall 2011
Timber Sale	Fall 2011
Invasives Treatment	2011-2013 FY
Post Harvest TSI	2011-2013 FY
ReInventory and Management Guide	2031

Attachments

Included in Tract File:

- Topo Map of Tract Features
- Tract Soils Map
- INHD Review Map
- Stocking Guide Chart
- Ecological Resource Review
- TCruise Reports

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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.