Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **14** Tract: **24**
Tract Acreage: **78 acres** Commercial Forest Acreage: **73 acres**
Forester: **Kaylee DeCosta** (for Dave Vadas) Date: **5/12/2011**

Location

This tract is located in Section 12 of Township 10N, Range 1E of Brown County. It is approximately 2 miles northwest of Waycross, 4 miles north of Lake Lemon and 2 ½ miles south of Mahalasville. Access is off of Bear Creek Road through the orange cattle gate across from the large parking area across the road from the gate.

General Description

This tract is 78 total acres of mixed hardwoods in Yellowwood State Forest, 73 of which constitute commercial forest acreage and 5 acres in noncommercial forest acreage (Warm Season Grass permanent wildlife opening, Field #6). The forest resource is predominantly medium to large sawtimber mixed hardwoods. Overall timber quality in the tract is good on north aspects and poor to average quality on south aspects with some areas of quality CHO, YEP, and REO stands but mostly concentrated on ridgetop areas and north facing slopes. The tract's forest resource inventory species composition is listed below in Table 1 according to their dominance:

Table 1. Overview of Forest Resources in Y1424.

Overstory Sawtimber	Understory Poletimber	Regeneration Layer
Chestnut Oak	Chestnut Oak	Yellow Poplar
Yellow Poplar	Yellow poplar	Sugar Maple
Black Oak	Sugar Maple	Sassafras
White Oak	Red Maple	White Ash
Scarlet Oak	Red Elm	American Beech
Northern Red Oak	Black Cherry	Red Maple
Sassafras	Bitternut Hickory	Ironwood
White Ash	Shagbark Hickory	Blackgum
Sugar Maple	White Ash	Northern Red Oak
Red Maple	Basswood	Chestnut Oak
Basswood	Sassafras	American Elm
Bitternut Hickory	Black Walnut	Bluebeech
Largetooth Aspen	White Oak	Shagbark Hickory
Black Cherry	Scarlet Oak	Flowering Dogwood
Black Walnut	Pignut Hickory	Red Elm
Pignut Hickory	Chinkapin Oak	Downy Service Berry
American Beech	American Beech	Basswood
Shagbark Hickory		Black Cherry
American Sycamore		Pignut Hickory
		Black Walnut

		Pawpaw

History

The land included in this tract was purchased from George Brunner in 1988. A timber sale on this tract and surrounding tracts occurred prior to State acquisition in 1981 however data is unavailable for this particular sale. In 1993, a straw production field #6 along the ridgetop area was plowed, fertilized, and disked. Straw was harvested in this field yearly up until 2001. Forester Vadas conducted a wetland project recon in 2000 in the lower wildlife field (Field #10). In 2001 - 2002, Field #6 was renovated and planted to warm season grasses with funding provided by the Wild Turkey Federation. Field #6 is maintained through biennial prescribed burns with the last prescribed fire completed in Spring 2010. In October 2002, Forester Vadas conducted a wetland project review of Field #10 with Dennis Egger and D. McGuckin. This project's DHPA and project map was submitted to PM Allen that same month. In January of 2010, work began on clearing the firetrail to the site of the wetland area; this work was completed in March. A DHPA field review was conducted in March 2003 with the clearance letter received and filed in May. A review on warm season grass development and prescribed burn planning was conducted in November 2003 in Field #6. In April 2004 a recon of the bushhogging of Field #10 (proposed wetland area) and level measurements were taken for the proposed shallow water wetland project. This wetland area was named the Bear Wallow Educational Wetland. Also in the spring of 2004, Field #6 underwent a prescribed burn. This field has been periodically burned every other year since by Fire Headquarters staff. In June of 2004, dozer work began for the construction of the wetland and work was completed on 6/23/2004. Roadwork, seeding, and water barring of the firetrail servicing the west bottomland of the tract and the wetland was completed on 5/18/2005. Field #6 underwent a prescribed burn in the spring of 2011. The current forest resource inventory was completed by Forest Intermittent K. DeCosta in May of 2011.

Landscape Context

This tract is surrounded completely by sustainably managed State Forest and is adjacent on the west end to the Morgan-Monroe Backcountry Area. The tract is also centrally located within the Brunner Tract Forest & Wildlife Management Unit of Yellowwood State Forest. The Brunner Tract had a long history of upland row crops and pastures prior to the State Acquisition in 1988. This Management Unit was established to continue the great diversity of forestland and early successional wildlife habitats by scheduling periodic timber harvests as well as maintaining early successional and warm season grassland fields. About half of the wildlife fields within this Unit were converted to warm season grasses that are given prescribed burns on a biennial basis. The remainder of the Brunner Tract wildlife fields are maintained as early successional fields and are mowed every 4-5 years to prevent and reduce woody plant encroachment. At times these fields may be prescribed burns to reduce fescue and thatch and promote early successional plants. This mixture of grassland field edges with early successional forest habitats is unique within the Yellowwood State Forest and provides the public many opportunities for wildlife viewing and recreational hunting.

Topography, Geology and Hydrology

This tract is comprised of one central ridge running east-west. Topography ranges from nearly level to 70% slopes with north and south being the dominant aspects. The underlying soils range from 27 - 54 inches in depth to weathered siltstone interbedded with sandstone and/or shale bedrock. Two mapped intermittent creeks serve as the tract's northern, southern, and western

boundaries in the western half of the tract. Several other unmapped ephemeral drainages occur throughout the tract. Water resources from this tract drain into Bud Davis Hollow and from there into Robertson Creek which flows into Indian Creek which is a tributary of the White River.

Soils

Be (Beanblossom channery silt loam, occasionally flooded) This soil type is deep and moderately well drained, gently sloping, or nearly level. It is subject to occasional flooding and so presents equipment limitations. This soil type comprises approximately 10% of the tract along the creek bottom area at the north end of the tract.

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 to moderate seedling mortality, and slight windthrow hazard. Management considerations should include building haul roads on a contour and constructing water bars to prevent erosion.

WeC2 (Wellston-Gilpin silt loams, 6 – 20% slopes, eroded) Moderately sloping to moderately drained soils on sideslopes and ridgetops. This soil type comprises approximately 20% of the tract along the central ridgetop area and presents slight risks for erosion hazard, equipment limitation, seedling mortality, and windthrow hazard.

Access

Access into this tract is off of Bear Creek Road through the Brunner Tract Forest & Wildlife Management Area main gate. The haul road will cross west into and through Wildlife Field #6 and the western portion of the wildlife field will be used for the main yarding area. Coordination with Fire Headquarters and the Forest Access wildlife staff is needed to ensure the prescribed burn schedule for this field is followed so that minimum damage occurs to the wildlife field's warm season grass plantation. A potential yarding area also exists near the center of the tract's main ridge. This area was reviewed by DHPA and proposed for a parking area for possible tours that could hike down the sloping skidtrail to the Bear Wallow Shallow Water Wetland. At present this parking area is undeveloped but could be developed following the proposed harvest. The skid trail proceeding downhill from this lot is the primary access for the lower points of the ridge, the Wetland and the remainder of the bottomland for resource management.

Boundary

This tract is bordered completely by State Forest therefore there are no private boundaries.

Wildlife

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.
Worm-eating, Cerulean, and Hooded Warblers were also detected within the tract during the inventory. A timber harvest would encourage the growth of a denser understory and shrub layer component. This habitat type provides cover and nesting habitat for Worm-eating and Hooded Warblers. According to the Indiana State Forest Environmental Assessment handbook, research in Indiana has shown that Cerulean Warblers do not show avoidance for harvested areas and also that canopy gaps may be an important component of Cerulean habitat. This was further

evidenced by the presence of Cerulean Warbler observed during the inventory along forest edges within the tract. These birds would most likely be benefitted by a light timber harvest in this tract. The following bird species were detected during the inventory:

Acadian Flycatcher	Eastern Wood-pewee	Ruby-throated Hummingbird
American Crow	**Hooded Warbler (SC)**	Scarlet Tanager
American Goldfinch	Indigo Bunting	Summer Tanager
Baltimore Oriole	Kentucky Warbler	Swainson's Thrush
Black-pole Warbler	Louisiana Waterthrush	Tennessee Warbler
Black-throated Green Warbler	Northern Cardinal	Tufted Titmouse
Blue Jay	Northern Parula	White-breasted Nuthatch
Blue-grey Gnatcatcher	Ovenbird	Wood Thrush
Brown-headed Cowbird	Pileated Woodpecker	**Worm-eating Warbler (SC)**
Carolina Chickadee	Prairie Warbler	Yellow-billed Cuckoo
Carolina Wren	Red-bellied Woodpecker	Yellow-breasted Chat
Cerulean Warbler (SE)	Red-eyed Vireo	Yellow-throated Vireo
Downy Woodpecker	Rose-breasted Grosbeak	Yellow-throated Warbler

The wildlife fields containing warm season grasses within this tract provides excellent early-successional habitat for many bird and animal species. Other species most likely utilizing this tract include White-tailed Deer, Grey and Fox Squirrels, Eastern Chipmunk, Raccoon, Opossum, Coyote, and other small mammals. A shallow water wetland area exists at the northwestern corner of this tract. This area is called the Bear Wallow Educational Wetland and it was created by the Division of Fish and Wildlife's Forest Access team in 2004. This area is also characterized by a relatively open canopy. Shallow water wetlands provide important breeding habitat for native amphibians as well as critical water reservoirs for forest mammals during droughty summer and fall periods. Wetlands within forests are a rapidly declining wildlife habitat in Indiana. Their purpose is not to provide fish habitat but important breeding and foraging areas for amphibians such as frogs, toads, & salamanders. Shallow water wetlands within forests also provide some secluded resting areas for migrating waterfowl in the fall and spring. Amphibian life in this area appears to be diverse and abundant.

From the forest resource inventory deficiencies were found in the Wildlife Habitat Feature Summary for larger diameter legacy trees and larger diameter snags as highlighted in red below. 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. Some legacy tree species will be retained during harvest operations in an effort to encourage regeneration towards maintenance levels. Post harvest TSI will plan for the girdling of some large cull trees as well as completing the group selection regeneration openings where larger, unharvested trees will be girdled in an effort to create standing snags.

	Maintenance Level	Optimal Level	Inventory	Above Maintenance	Above Optimal
Legacy Trees *					
11"+ DBH	657		973	316	
20"+ DBH	219		169	-50	

Snags (all species)

5"+ DBH	292	511	394	102	-117
9"+ DBH	219	438	280	61	-158
19"+ DBH	36.5	73	0	-37	-73

*** 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.
Multiflora Rose was noted in a few areas throughout the tract but especially along the existing haul road and wildlife pond area. *Bush Honeysuckle* was also observed within the tract and should be treated before harvesting activities commence. Other shrubs and/or vines noted during the inventory include Blackhaw, Gooseberry, Leatherwood, Witch Hazel, Poison Ivy, Virginia Creeper, and Spicebush. Maple-leaved Viburnum, Green-briar, and a variety of low-bush blueberry comprised common ground cover on south aspects and along ridgetop areas.

Recreation

This tract is easily accessible to the public from a large parking area across from the Brunner Forest & Wildlife Management Area cattle gate on Bear Creek road. Recreational opportunities for this tract include hiking, hunting, mushrooming, and wildlife/nature viewing. Once the Bear Wallow Shallow Water Wetland project is completed it will provide a unique opportunity for hiking and school groups to observe forest ecological processes as well as wildlife management habitat enhancements.

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.

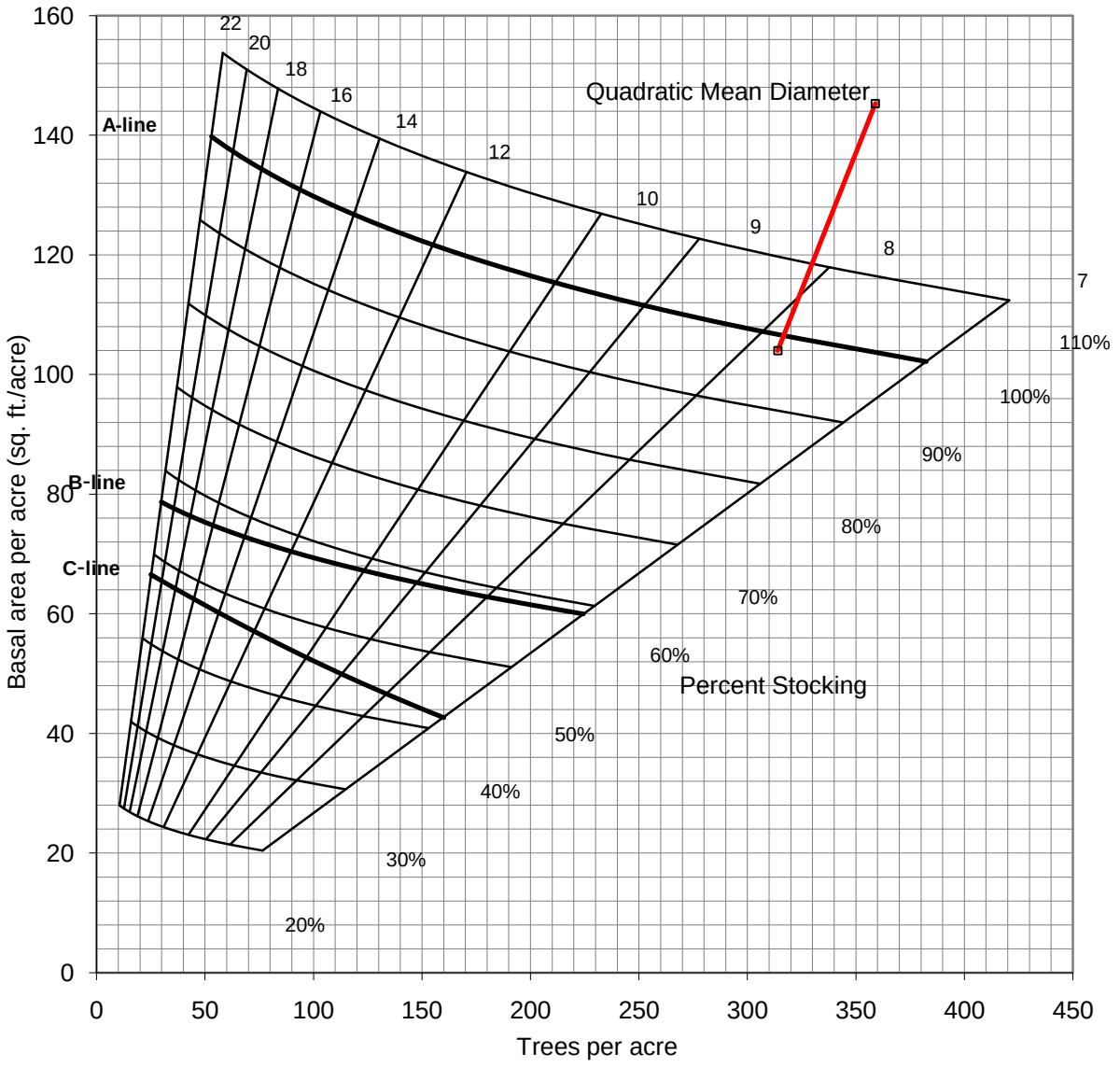
Tract Subdivision Description and Silvicultural Prescription
Tract Summary Data- May 2011 Inventory

Present Stand

Total Trees/Ac.= **359** Overall % Stocking = **130% (Over-stocked)**
Sawtimber & Quality Trees/Ac.= **64** BA/A= **145.3 sq.ft./Ac.**
Present Volume = **7,828 Bd. Ft./Ac.**
Harvest Volume = **2,736 Bd. Ft./Ac.**
Growing Stock Volume = **5,092 Bd. Ft./Ac.**

Commercial Forest Stand Summary (73 Acres)

Commercial Forest Acreage Present Volume = **8,365 Bd. Ft./Ac.**
Commercial Forest Acreage Harvest Volume = **2,923 Bd. Ft./Ac.**
Commercial Forest Acreage Growing Stock Volume = **5,442 Bd. Ft./Ac.**



Silvicultural Prescription

This inventory was completed on May 12, 2011 by Forestry Intermittent K. DeCosta. 24 prism points were completed over 73 acres (1 point for every 3.04 acres). Inventory summary results are presented above. This tract is overstocked and a modest timber harvest is recommended. This tract is dominated by mixed CHO/SCO/WHO/BLO on south aspects and mixed/cove hardwood species on northern aspects. Areas of mature to over-mature YEP and REO exist on northern and lower slopes and should be harvested using group selection. Chestnut oak dominates the ridgetop and upper slopes with white oak and black oak in co-dominant positions. Tree quality varies by site and aspect ranging from medium quality on the ridgetops and south facing slopes whereas fair to high quality timber is present on north facing and lower slopes. Poor quality/suppressed CHO of pole and small sawtimber sized trees are prevalent on South aspects. A timber harvest is proposed to improve and thin the current stand and to release and promote the growth of high quality croptrees. Trees that are mature, poorly formed, suppressed or have excessive crown damage or have overall low vigor should be removed in an effort to

relieve crowding that is occurring mostly on the south facing slopes. Selecting these trees for removal will release from above and below quality croptrees and increase their growing space. As this tract resides in the center of the Brunner Tract Forest & Wildlife Management Unit, group selection openings should be prescribed in appropriate areas of larger sizes to encourage early successional stands. These will probably be warranted in a few locations that have poor species composition, windthrow damage, or low residual basal area. Areas of older regeneration exist along the north creek bottom area from the timber harvest that took place in 1981 under private land ownership. These areas are now populated by smaller diameter YEP trees as well as LAA and Maple. A post harvest TSI plan should be implemented in this area for grapevine control as well as some croptree release. White Ash should be marked for removal where feasible in a sanitation cutting to reduce habitat for enlarging Emerald Ash Borer populations that are already present in northern Brown County. Grapevines were noted throughout the tract and should be treated where they pose a threat to the quality of potential croptrees. The proposed timber harvest could be sold in conjunction with Tract 23 to the north following the inventory of that tract. This combined harvest would reduce the reentry period needed for resource management of both areas. Invasive species were noted in this tract during the inventory and included multiflora rose and bush honeysuckle. Multiflora Rose was especially thick around the Shallow Water Wetland area and along the existing haul road. Bush honeysuckle was noted around the warm season grasses in Wildlife Field #6 and along the existing road into the main ridge. Bush Honeysuckle should be treated wherever found and Multiflora Rose where it is thickest. Based on the timber inventory a modest timber harvest of up to 200,000 BF is possible within the tract in a harvest that utilizes mostly improvement cuttings.

Volume Estimates: Yellowwood SF Comp. 14 Tract 24

(May 2011 Inventory Data)

Species	Harvest	Leave	Total
Chestnut Oak	64,620	111,270	175,890
Yellow Poplar	45,760	86,200	131,960
Black Oak	24,620	28,370	52,990
White Oak	5,000	47,290	52,290
Northern Red Oak	12,730	33,210	45,940
Scarlet Oak	24,600	13,620	38,220
Basswood	8,600	12,030	20,630
Sassafras	6,800	9,090	15,890
Bitternut Hickory	0	15,740	15,740
Sugar Maple	0	14,440	14,440
White Ash	7,230	5,960	13,190
Red Maple	3,790	6,230	10,020
Largetooth Aspen	3,800	2,230	6,030
American Sycamore	5,840	0	5,840
Shagbark Hickory	0	3,860	3,860
American Beech	0	2,580	2,580
Pignut Hickory	0	2,400	2,400
Black Walnut	0	1,810	1,810
Black Cherry	0	890	890
Tract Totals (Bd. Ft.)	**213,390**	**397,220**	**610,610**
Per Acre Totals (Bd. Ft./Ac.)	**2,736**	**5,092**	**7,828**

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
DHPA Project Submission	Fall 2011
Pre harvest Invasives Treatment	Fall 2011
Timber Marking	FY2011-12
Prescribed Burn in Field #6	FY2011-12
Haul road & Yard construction	FY2011-12
Timber Sale	CY2012
Post Harvest TSI & Invasive Treatments	CY2012-14
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

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.

Note: Some graphics may distort due to compression.