Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **14** Tract: **23**
Tract Acreage: **92 acres** Commercial Forest Acreage: **92 acres**
Forester: **Kaylee DeCosta** (for Dave Vadas) Date: **5/22/2012**

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 2½ miles south of Mahalasville. Access is off of Bear Creek Road.

General Description

This tract is 92 total acres of mixed hardwoods in Yellowwood State Forest, all of which constitute commercial forest acreage. Less than one acre of this tract includes a portion of a wildlife opening area on the ridgetop adjacent to the North Brunner Firetrail. The forest resource is predominantly medium to large sawtimber mixed oak. Overall timber quality in the tract is fair in Chestnut Oak with concentrated patches of quality growth in White Oak. The tract inventory species composition is listed below in Table 1 according to their dominance:

Table 1. Overview of Y1423 Forest Resources

Overstory	Understory	Regeneration	Cull	Quality
Chestnut Oak	Red Maple	American Beech	Red maple	White Oak
White Oak	Chestnut Oak	Red Maple	Chestnut Oak	Chestnut Oak
Yellow Poplar	Sugar Maple	Sassafras	Black Cherry	Northern Red Oak
Northern Red Oak	Yellow Poplar	Sugar Maple	American Beech	Black Oak
Red Maple	American Beech	Blackgum	Sassafras	Yellow Poplar
Pignut Hickory	Pignut Hickory	Downy Serviceberry	Pignut Hickory	White Ash
Sugar Maple	Black Cherry	Chestnut Oak	White Ash	
Black Oak	White Oak	Flowering Dogwood		
Scarlet Oak	Blackgum	Ironwood		
American Beech	Black Oak	American Elm		
White Ash	White Ash	Yellow Poplar		
Shagbark Hickory	Basswood	Pignut Hickory		
Blackgum	Shagbark Hickory	Basswood		
Basswood	Sassafras	Shagbark Hickory		
	Northern Red Oak	Black Oak		
		Black Cherry		
		White Ash		
		Red Elm		
		American Sycamore		
		Pawpaw		
		Witch Hazel		
		White Oak		

		Bluebeech Redbud *Ailanthus (exotic)*		

History

The land included in this tract was purchased from George Brunner in a large acquisition in 1988. Prior to State's purchase this and other adjacent tracts received modest timber harvests some of which included clearcut areas ranging from 5 to 30 acres. A timber sale including a south portion of this tract occurred in 1981; this sale consisted of 230,984 BF in 1,017 trees. Another timber sale occurred in 1986 including a north portion of this tract; this sale consisted of 213,650 BF in 1,156 trees. Both of these timber sales occurred prior to State Forest acquisition and consisted of single tree selection, and some small sized regeneration openings. A damaging wind storm occurred in the area on May 16, 1990 which resulted in extensive windthrow damage within the tract. As a result, a salvage timber sale was recommended, marked, and then sold on August 22, 1990. At that time 41,376 BF in 233 trees were sold to Chet Morgan for $2,750.00. The current and first State Forest resource inventory was completed by Forestry Intermittent K. DeCosta on 5/14/2011.

Landscape Context

This tract borders private forestland on a short portion of the west boundary; it is otherwise completely surrounded by Yellowwood State Forest and a portion of the Backcountry Area of Morgan-Monroe State Forest. This tract is 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 modest forest regeneration harvests prior to its acquisition in 1988. This Management Unit was established to continue the great diversity of forestland and early successional wildlife habitats by conducting periodic timber harvests as well as maintaining the grassland and early successional fields. Some of the wildlife fields within this Unit were planted shortly after acquisition to warm season grasses that are given prescribed burns on a regular basis. The remainders of the Brunner Tract's wildlife fields are mowed every 4-5 years to prevent or reduce woody plant encroachment. At times these fields are also prescribed burns to reduce fescue and thatch. This mixture of grassland field edges with early successional forest habitats is unique on the Yellowwood State Forest and provides many opportunities for wildlife viewing as well as hunting for the public. Bear Lake is owned and administered by Yellowwood State Forest and lies southeast of the tract and a few other small private reservoirs also exist to the southeast of this tract. The original Bear Wallow pond (less than 0.1 Acre) lies at the southeast corner of this tract. This is a historic pond that was the basis for the naming of the adjacent county road as well as for this general location in Brown County. Also, the Brunner Tract Shallow Water Educational wetland is located in Tract 24 at the SW corner of this tract. This wetland area provides a unique resource mix of a lowland oldfield and water resources for many herptiles as well as excellent habitat for lowland mammals, birds and migratory waterfowl.

Topography, Geology and Hydrology

This tract is comprised of one large ridge and two smaller ridges running east-west. Topography ranges from nearly level to 70% slopes with north and south being the dominant aspects. The lower slopes in this tract are very steep in some places and some timber extraction limitations are expected. The underlying soils range from 27 - 54 inches in depth to weathered siltstone interbedded with sandstone and/or shale bedrock. One mapped intermittent creek serves as the tract's southwestern boundary. 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. Site index for Yellow Poplar is 95.

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 waterbars to prevent erosion. Site index for Yellow Poplar is 90 and 70 for White Oak.

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 ridgetop areas and presents slight risks for erosion hazard, equipment limitation, seedling mortality, and windthrow hazard. Site index for Yellow Poplar is 90 and 70 for White Oak.

Access

Access into this tract is off of Bear Creek Road. The North Brunner Firetrail is the tract's east boundary and also serves as the tract's primary access for timber extraction. A recently installed log yard and skid trail exists on the tract's northernmost ridge is shared with adjacent Tract 21. A new yard and rehabbed haul & skid trail will need to be constructed along the southernmost finger ridge in this tract. These improvements are planned to avoid impacting the historic Bear Wallow Pond that exists at the southeast portion of the tract.

Boundary

This tract is bordered by private forestland on a small portion of the west boundary. This boundary is well posted and marked in orange paint with the last remarking completed in 2011. The SW cornerstone of Section 1, T10N, R1E of Brown County was recently discovered and reviewed by Forester Vadas with the adjacent landowner (Mr. Ostler) in 2011 and will be referenced by carsonite in 2012.

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.

The following bird species including State listed endangered species (SE) and listed species of concern (SC) were detected during the inventory:

Cerulean Warbler (SE)	Eastern Towhee	***Red-shouldered Hawk (SC)***
Acadian Flycatcher	Eastern Wood Pewee	Red-winged Blackbird
American Crow	Field Sparrow	Scarlet Tanager
American Goldfinch	Hairy Woodpecker	Swainson's Thrush
Black-and-white Warbler(SC)	***Hooded Warbler (SC)***	Tennessee Warbler
Black-pole Warbler	Indigo Bunting	Tufted Titmouse
Blue Jay	Kentucky Warbler	White-breasted Nuthatch
Blue-grey Gnatcatcher	Louisiana Waterthrush	White-eyed Vireo
Broad-winged Hawk (SC)	Northern Cardinal	Wood Thrush
Brown-headed Cowbird	Northern Parula	***Worm-eating Warbler (SC)***
Carolina Chickadee	Ovenbird	Yellow-breasted Chat
Carolina Wren	Pileated Woodpecker	Yellow-throated Vireo
Common Yellowthroat	Red-bellied Woodpecker	Yellow-throated Warbler
Downy Woodpecker	Red-eyed Vireo	

The wildlife field opening of warm season grasses adjacent to this tract as well as its associate fringe habitat provides excellent early-successional habitat for many animal species. This was evidenced in the wide diversity of bird species detected in and around the tract. The tract as a whole provides excellent habitat for closed-canopy bird species as well as early-successional species. Worm-eating, Cerulean, Hooded, and Black-and-White 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 which could enhance cover and nesting habitat for Worm-eating, Hooded, and Black-and-White 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. These birds would also be benefitted by a light timber harvest in this tract. A few Eastern Box Turtles were also observed during the inventory. Eastern Box Turtles prefer habitats characterized by forestland ranging from upland to bottomland as well as wet meadows. Harvesting would increase the prevalence of preferred habitats that include cover such as slash/brush piles, brier thickets, logs, and deep leaf litter as well as loose soil for nesting. Other species most likely utilizing this tract include White-tailed Deer, Grey and Fox Squirrels, Eastern Chipmunk, Raccoon, Opossum, Coyote, and other small mammals. One wildlife pond and small wetland area exists at the western corner of this tract in the flat creek bottom area. This area is called the Bear Wallow Educational Wetland. This area is characterized by a relatively open canopy. Wildlife ponds provide important breeding habitat for native amphibians as well as critical water reservoirs for forest mammals during droughty summer and fall periods. Amphibian life in this area appears to be very diverse and abundant. This wetland area was created in 2004. Deficiencies were found in the Wildlife Habitat Feature Summary for larger diameter legacy trees and snags as highlighted in red below. Some legacy tree species will be retained during harvest operations in an effort to encourage regeneration towards maintenance levels. A postharvest TSI project is planned to include the girdling of some large cull trees and trees left standing in regeneration openings in an effort to create additional standing snags.

	Maintenance Level	Optimal Level	Inventory	Above Maintenance	Above Optimal
Legacy Trees *					
11"+ DBH	828		1447	619	
20"+ DBH	276		246	-30	
Snags (all species)					
5"+ DBH	368	644	173	-195	-471
9"+ DBH	276	552	173	-103	-379
19"+ DBH	46	92	0	-46	-92

*** 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.

Spicebush, Low-bush Blueberry, Maple-leaved Viburnum, and Greenbriar were common in the shrub layer in this tract. Greenbriar was especially noted as being dense in certain areas throughout the tract.

The following table lists herbaceous plants/ferns that were observed during the inventory. This list is not comprehensive of all herbaceous plants present within the tract.

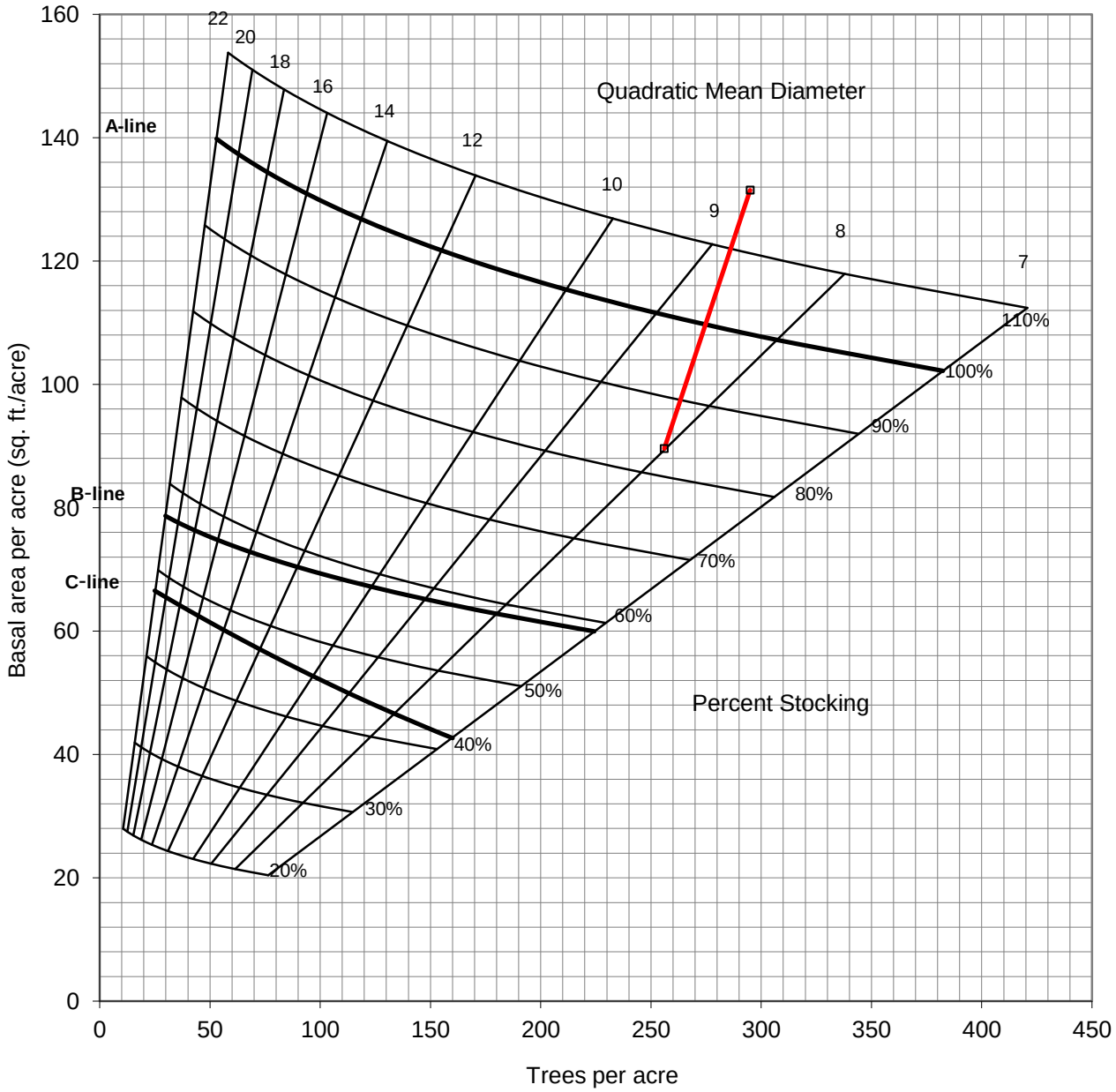
Dwarf Larkspur	Indian Cucumber Root	Solomon's Plume (False)
American Ginseng	Jack-in-the-Pulpit	Squawroot
American Spikenard	Jacob's Ladder	Star Chickweed
Appendaged Waterleaf	Jewelweed	Stinging Nettle
Bedstraw	Large-flowered Valerian	Sweet Cicely
Black Snake Root	Maiden-hair Fern	Tall White Lettuce
Bloodroot	May Apple	Tick Trefoil
Blue Cohosh	Moonseed	Two-flowered Cynthia
Cleavers	Mountain Bluets	Violet Wood Sorrel
Common Blue Violet	Nodding Wild Onion	Virginia Creeper
Common Cinquefoil	Ox-eye Daisy	Virginia Knotweed
Cream Violet	Partridgeberry	White Baneberry
Cut-leaved Toothwort	Philadelphia Fleabane	Wild Blue Phlox
Dittany	Poison Ivy	Wild Comfrey
Dutchman's Breeches	Prairie Trillium	Wild Ginger
False Mermaid	Rattlesnake Plantain	Wild Yam
False Rue Anemone	Rue Anemone	Wood Poppy
Fernleaf Phacelia	Sensitive Fern	Woodland Agrimony
Golden Ragwort	Sharp-lobed Hepatica	Yellow Trout Lily
Gooseberry	Showy Orchis	Yellow Wood Sorrel
Great Indian Plantain	Smooth Solomon's Seal	Zig-zag Spiderwort
Hog Peanut	Christmas Fern	

Recreation
This tract is easily accessible to the public from the parking area at the cable gate that accesses the North Brunner Tract Firetrail. Access is also possible from the large parking area located at the cable and cattle gate that accesses the South Brunner Tract Firetrail. Recreational opportunities for this tract include hiking, hunting, mushrooming, and wildlife/nature viewing. This area is a popular area during the spring and fall hunting seasons.

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.

Y1423 Tract Subdivision Description and Silvicultural Prescription
Tract Summary Data

Total Trees/Ac.= **295** Overall % Stocking = **119% (Over-stocked)**
Sawtimber & Quality Trees/Ac.= **57** BA/A= **131.5 sq.ft./Ac.**
Present Volume = **8,358 Bd. Ft./Ac.**
Harvest Volume = **3,340 Bd. Ft./Ac.**
Growing Stock Volume = **5,019 Bd. Ft./Ac.**



Silvicultural Prescription

This inventory was completed on May 14, 2012 by Forestry Intermittent K. DeCosta. Thirty-two prism points were completed over 92 acres (1 point for every 2.88 acres). Inventory summary results are presented above and a detailed listing by species in Table 2 below. This tract is overstocked and a timber harvest is recommended. This tract is dominated by Chestnut Oak with mixed Black, White, and Scarlet Oak on ridgetops and upper sideslopes on south aspects. Mixed Oak, Yellow Poplar and other Mixed Hardwoods dominate the coves and north aspects. Overall tree quality in this tract varies greatly by site and tree species. Most of the tight stands of Chestnut Oak have grown without any thinning therefore many trees have short, leaning, low forking, and twisting stems. Poor quality/suppressed CHO of pole and small

sawtimber sized trees are prevalent on the southern aspects. Mature Yellow Poplar appeared to be of excellent quality. Pockets of high quality White Oak growth were also observed in the tract. 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. Tighter groupings of higher quality trees were common in this tract and would benefit from thinning as well. One area in particular supported a fair amount of large mature and over mature Yellow Poplar; it is highly recommended that this area be regenerated. Group selection openings of mostly smaller size may be warranted in a few other locations that have poor species composition, windthrow damage, or low residual basal area. Hickory species make up a fairly strong component in the understory and codominant layers in parts of this tract; timber marking in these areas should focus on releasing this hickory component as this species group provides excellent and consistent mast for wildlife. Oak regeneration was surprisingly abundant throughout the tract, probably due to the drier sites. These areas of advance regeneration may be benefitted by a modest thinning of the canopy or possibly by a shelterwood cut if overstory timber conditions warrant. Other portions of this tract are comprised of patches of regenerating YEP of pole to small sawtimber size; TSI may beneficial in these stands for croptree release. White Ash should be removed where feasible in a sanitation cutting to reduce habitat for enlarging Emerald Ash Borer populations that are already present in northern Brown County.

Invasive species were noted in this tract during the inventory and included Multiflora Rose, Japanese Honeysuckle, and Ailanthus. The Ailanthus in this tract lies along the shared skid trail on the north ridge; this infestation was treated in the fall of 2010 at which time a seed tree was killed. Currently, this area is characterized by 50-60 seedlings and small saplings. The retreatment of these seedlings and saplings is planned in CY 2012. It is probable that this infestation may require a few years of surveillance and retreatment. Multiflora Rose clumps were observed around the Bear Wallow wildlife pond area and along the existing haul road; these clumps of multiflora could be treated as well as any growing in areas of anticipated regeneration. Japanese Honeysuckle was also particularly dense around the Bear Wallow area; additional treatment of this species is recommended provided treatments are cleared with the Forest Archeologist.

Based on the timber inventory a modest timber harvest of up to 300,000 BF is possible in a harvest that utilizes mostly singletree selection cuts. Given the basal area and volume per acre observed in this inventory a 15 year cutting cycle is prescribed for the tract. A planned timber harvest in this tract is proposed for FY12-13 or FY13-14.

Table 2. Tract Volume Estimates: Yellowwood SF Comp. 14 Tract 23

(May 2012 Inventory Data)

Species	Harvest	Growing Stock	Totals
Chestnut Oak	132,190	223,210	355,400
Yellow Poplar	69,820	16,750	86,570
Black Oak	29,690	17,120	46,810
White Ash	23,040	0	23,040
White Oak	12,610	111,670	124,280
Scarlet Oak	11,970	1,000	12,970
Red Maple	7,580	8,040	15,620
American Beech	6,540	5,710	12,250
Blackgum	4,530	5,630	10,160
Northern Red Oak	4,040	42,250	46,290
Basswood	3,370	3,010	6,380
Sugar Maple	1,880	6,510	8,390
Pignut Hickory	0	13,430	13,430
Shagbark Hickory	0	7,390	7,390
Tract Totals (Bd. Ft.)	**307,260**	**461,720**	**768,980**
Per Acre Totals (Bd. Ft./Ac.)	**3,340**	**5,019**	**8,358**

Proposed Activities Listing

Proposed Management Activity	*Proposed Management Period*
Exotics Treatment	CY 2012-2013
DHPA Review	CY 2012-2013
Roadwork Rehab	CY2012-2014
Timber Marking	CY 2012-2014
Boundary Line Remarking	CY 2014-2015
Timber Sale	FY 2012-2013 or FY 2013-2014
TSI and/or Invasives Treatment (if needed)	CY 2013-2016
ReInventory and Management Guide	CY 2027

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.