Indiana Department of Natural Resources
Division of Forestry

DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **14** Tracts: **09+10**
Tract Acreage: **125.53** Commercial Forest Acreage: **125.53**
Forester: **Kaylee DeCosta** (for Amy Spalding) Date: **11/22/2011**

Location

Tracts 10 and 09 are located in Section 5 of Township 10N, Range 2E of Brown County. Both tracts are approximately 2.3 miles southeast of Mahalasville. Access from the east is off of Cook's Hill Road (off of Carmel Ridge Road) and access from the west is off of Bear Creek Road. Both of these access points connect with Firetrail #22 which runs along the central ridge through this block of State Forest.

General Description

These tracts are 125.5 total combined acres of closed canopy mixed hardwoods in Yellowwood State Forest, all of which constitute commercial acres. The forest resource is predominantly medium to large sawtimber Mixed Oak and Mixed hardwoods. These tracts overall have a history of storm damage which has impacted the health and composition of the present stand. Many of the larger diameter oaks along the upper ridges have succumbed to windthrow damage leaving mostly smaller diameter – poletimber sized trees with the exception of the occasional mature YEP and REO. The overall timber quality in these tracts is only fair due to windthrow damage and fire damage.

Table 1. Overview of Forest Resources

Sawtimber	Poletimber	Regeneration
White Oak	Sugar Maple	American Beech
Black Oak	Red Maple	Sugar Maple
Northern Red Oak	Yellow Poplar	Red Maple
Sugar Maple	Sassafras	Sassafras
Yellow Poplar	Blackgum	Yellow Poplar
Red Maple	White Oak	Ironwood
Scarlet Oak	Pignut Hickory	Black Cherry
White Ash	American Beech	Blackgum
Basswood	Black Cherry	Red Elm
Pignut Hickory	Northern Red Oak	*Pignut Hickory
Sassafras	White Ash	White Oak
Shagbark Hickory	Shagbark Hickory	*Flowering Dogwood
Blackgum	Red Elm	*White Ash
American Beech	Scarlet Oak	*Basswood
Bitternut Hickory	Basswood	*Red Oak
Black Cherry	Largetooth Aspen	*Largetooth Aspen
Largetooth Aspen	*Chestnut Oak	*Paw Paw
Red Elm		*Black Oak
*Chestnut Oak		*Bitternut Hickory
*Virginia Pine		*American Elm
		*Blue Beech

		*Redbud *Hackberry

*Species not captured in Prism Plots but present within the tracts.

History

The land in the north portion of tract 10 totaling 40 acres was deeded to Division of Forestry on 11/03/1953 by the Brown County Board of Commissioners for $260.00. The remaining land in tract 10 and in tract 09 was deeded to Division of Forestry by the United States Government on 10/30/1956. Both tracts have a history of timber sales, storm damage and subsequent salvage sales.

Tract 09

On 4/23/84, Forester Unversaw completed an inventory of this tract. The same Forester began timber marking in the fall of 1986. On 5/20/87, a timber sale of 128,914 BF was sold to Foley Hardwoods for $28,000. While this same timber harvest was taking place, Forester Unversaw returned to the tract and began marking a salvage sale from a storm on 4/6/88. On 5/02/88, approximately 1500 REO trees were planted in the largest of the regeneration openings along Firetrail #22. On 9/21/88 a timber sale of 171,255BF from tract 13 and 09 (25,484BF of salvage timber from tract 09) was sold to Pingleton Sawmill for $36,418.00. On 11/16/89 Phil Reid completed TSI on this tract. On 5/15/90, a second storm hit. On 5/31/90, Forester Duncan marked a salvage sale in tracts 09, 10, 13, and 14. Twenty-three trees from tract 09 were marked. This sale totaling in 58, 406 BF was sold to Pingleton Timber for $3,500 on 6/07/1990. On 6/10/05 Forester Kaina began a timber inventory which resulted in 4,479BF/Ac. Present and 1,736.1 BF/Ac. Harvest. A timber harvest was not recommended at that time. On 11/2/11 Forester Intermittent DeCosta changed tract boundary; west boundary line now follows section line. Tract acreage is now 70.91 acres.

Tract 10

On 8/75 Forester Akard completed a timber inventory resulting in 1362 BF/Ac. harvest, 1811 BF/Ac. leave. On 9/12/75 a timber sale in 44,380BF was sold to Crone Lumber for $3,192.00. In 1982, Forester Gray flagged west boundary line; Due to lack of proper surveyor's description, Forester was uncertain of line. On 11/5/86, a gate was installed at the east end of Firetrail #22.On 3/17/87, Forest Unversaw performed a recon for high quality SAS poles for Pan-Am games; 150 quality SAS poles were cut and hauled. On 5/31/90, 2 trees were marked along ridgetop for salvage sale with tracts 09, 13, and 14. This sale totaling in 58, 406 BF was sold to Pingleton Timber for $3,500 on 6/07/1990. On 12/30/1994, this tract passed an archeological review process. On 3/1995, Forester Fischer completed an inventory of this tract resulting in 5,704BF/Ac. present and 1,330BF/Ac. Harvest. Timer marking was completed in 3/1996 by Foresters Fischer and Eckart. On 6/12/1996, a timber sale in 63,263 was sold to Foley Hardwoods for $19,160.00.

Landscape Context

These two tracts are bordered by State Forest to the south along Firetrail #22. Private forestland borders tract 10 to the east, north, and west; tract 09 is bordered by private forestland to the north and west. This private forestland underwent a recent (<3yrs) timber harvest; in this harvest, timber was cut heavily and residual stand has low BA and small stem size.

A few small reservoirs exist within the landscape as well residential areas and agricultural fields. The majority of the landscape is composed of private and State Forests.

Topography, Geology and Hydrology

These two tracts are situated on the north side of a major ridge running east-west; several finger ridges extend north and northwest from this major ridge. Topography ranges from 6 - 70% slopes east, west, and north aspects are equally represented within the tract. The underlying soils range from 27 - 72 inches in depth to sandstone and/or shale bedrock. This tract overall is characterized by very steep, deep ravines between the finger ridges. Timber harvesting operations will be limited in these particular areas. One mapped intermittent creek runs north out the central part of tract 10; another mapped intermittent creek runs northwest out of the central part of tract 09. Several other unmapped ephemeral drainages occur throughout the tracts. Water resources from tract 10 drain into Indian Trace Creek which drains into Indian Creek. Water resources from tract 09 also drain into Indian Creek via an unnamed creek on the other side of the ridge. Indian Creek drains into the White River.

Soils

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 - 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.

WeC2 (Wellston-Gilpin silt loams, 6 – 20% slopes, eroded) Moderately sloping to moderately drained soils on sideslopes and ridgetops. This soil type comprises approximately 10% of the tract along some of the lower ridgetops and presents slight risks for erosion hazard, equipment limitation, seedling mortality, and windthrow hazard.

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 15% of tract along the upper ridgetop areas.

HkF (Hickory silt loam, 20-70% slopes) Moderately steep to very steep, deep, well drained soil with a high available water capacity and moderate permeability. This soil type comprises approximately 5% of the tract and presents severe erosion hazards and equipment limitations. Seedling mortality and windthrow hazard is low. Haul roads/skid trails should be build on a contour, water bars constructed, and understory vegetation should be preserved where possible to reduce erosion hazards.

Access

Access into these two tracts from the east is off of Cook's Hill Road (off of Carmel Ridge Road) and access from the west is off of Bear Creek Road. Both of these access points connect with Firetrail #22 which runs along the central ridge through this block of State Forest. Firetrail #22 from the west is inaccessible by vehicle due to lack of road maintenance. Approximately 1.5 miles of Firetrail #22 from Bear Creek Road is in need of clearing and stone improvements. A

road improvement project for this portion of the firetrail has been submitted. A timber sale in these tracts will likely utilize the access from Cook's Hill Road.

Boundary

These two tracts are bordered by State Forest to the south along Firetrail #22. Private forestland borders tract 10 to the east, north, and west; tract 09 is bordered by private forestland to the north and west. These boundary lines were recently remarked in orange paint on trees in November 2011 by Forester Spalding. The west boundary line in tract 10 may need to be reviewed or surveyed due to lack of legal line description.

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 current inventory was conducted during the late fall of 2011 so breeding summer bird residents were not present. The following bird species were detected during the inventory:

Northern Cardinal	Eastern Bluebird	Wild Turkey
Blue Jay	Golden-crowned Kinglet	American Crow
Pileated Woodpecker	Carolina Chickadee	Carolina Wren
White-breasted Nuthatch	American Goldfinch	Downy Woodpecker
Red-bellied Woodpecker	Tufted Titmouse	Eastern Towhee

Other species or sign observed within these tracts indicate use by White-tailed Deer, Grey and Fox Squirrels, Eastern Chipmunk, Raccoon, Opossum, Coyote and other small mammals. Buck Scrapes and rubs were abundant throughout both tracts which is typical rutting behavior for White-tail Deer at the time of year that the inventory was completed. Multiple deer trails were also noted throughout both tracts. The old regeneration openings within these tracts provides early successional habitat for a variety of wildlife species. Also noted in this tract was an excessive amount of downed woody debris from storm damage. This debris provides cover and structure for small mammals and ground nesting birds. No deficiencies were found in the Wildlife Habitat Feature Summary; all levels of snags and legacy trees met or exceeded maintenance levels.

	Maintenance Level	Optimal Level	Inventory	Above Maintenance	Above Optimal
Legacy Trees *					
11"+ DBH	491.4		1583	1091	
20"+ DBH	163.8		271	107	
Snags (all species)					
5"+ DBH	218.4	382.2	403	185	21
9"+ DBH	163.8	327.6	188	24	-140
19"+ DBH	27.3	54.6	37	10	-18

*** 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.

The ground cover of the dryer slopes in these tracts is composed mostly of various wood sedges and greenbriar. Christmas Fern, and Bottlebrush Grass was found interspersed throughout the tracts. Beechdrops (Epifagus virginiana) was also found in a few spots in the tracts; this plant is parasitic on Beech Trees. Squawroot (Conopholis americana) is another parasitic plant that was found in these tracts; this plant is parasitic on the roots of oak trees. Spicebush, Greenbriar, and Maple-leaved Viburnum formed much of the shrub layer in these tracts. Other remnant plants observed during the inventory include Woodmint, Trillium, Wild Ginger, Maidenhair Fern, Violet, Sweet Cicely, and Dittany (Cunila origanoiodes).

Multiflora Rose, Periwinkle (Vinca minor), and Japanese and Bush Honeysuckles, Japanese Stilt Grass were invasives noted during the inventory. The Multiflora Rose, Periwinkle, and Japanese/Bush Honeysuckles were found concentrated mostly in the western most log yard in tract 09. Japanese Stilt Grass was also found in this yard location as well as along Firetrail #22 and on some old skid trails. Multiflora rose was also noted in small concentrations throughout the tracts but mostly along Firetrail #22. It is recommended that the larger concentrations of these invasives be treated prior to a timber harvest in order to prevent further spread after the disturbance of the timber sale. Rubus was also found interspersed throughout the tracts in areas of small canopy gaps or old log yards. Winged Sumac was found at some of the old log yard sites. Grapevines were particularly abundant in the old regeneration openings but also found growing on some of the more mature trees.

Recreation

Public access into this tract is off of Bear Creek and Cook's Hill Roads. Activities in this tract include hiking, mushrooming, wildlife viewing, and hunting. One old tree stand was found inside the tracts during the inventory.

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

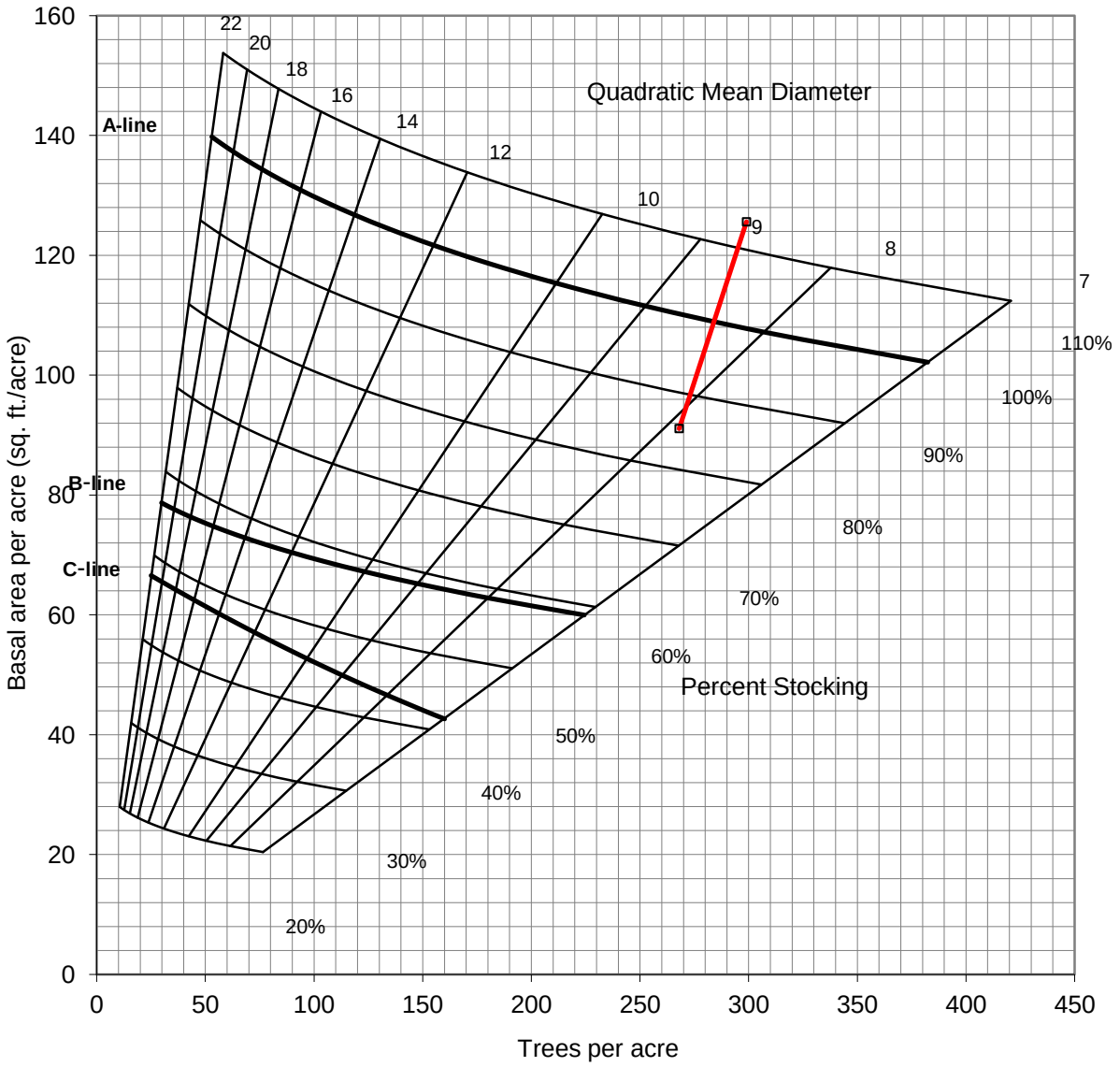
Total Trees/Ac.= **299** Overall % Stocking = **114%** (Over-stocked)

Sawtimber & Quality Trees/Ac.= **48** BA/A= **125.6 sq.ft./Ac.**

Present Volume = **8,392 Bd. Ft./Ac.**

Harvest Volume = **2,725 Bd. Ft./Ac.**

Growing Stock Volume = **5,667 Bd. Ft./Ac.**



Silvicultural Prescription

This inventory was completed on November 18, 2011 by Forestry Intermittent K. DeCosta. 53 prism points were completed over 125.5 acres (1 point for every 2.37 acres). Inventory results are given above. These tracts are overstocked and would benefit from a timber harvest. These two tracts are characterized by a history of storm damage and salvage sales. Windthrow damage was fairly extensive; most of the larger trees along the ridgetops in these tracts have been blown over. Windthrow damage appears ongoing within these tracts as both many old and recent blowdowns were observed. The present stand is composed mostly of smaller diameter – poletimber sized trees of mostly poor species composition (SUM/REM/SAS) with the occasional mature YEP and REO; growth overall is irregular and tree composition and size in not uniform throughout. Some areas were noted as decent oak/hickory growth. A large portion of this oak/hickory stand, however, appears to have been affected by moderate past fire damage. Many of these trees are displaying signs of butt rot and damage to the lower bole of the tree. This

damage weakens the tree and makes it susceptible to windthrow damage. The timber harvest in this area should focus on retaining the best possible oak/hickory crop trees while removing trees that pose a risk to surrounding trees during a wind event. An improvement cut using mostly single tree selection to thin and release desirable crop trees and to remove suppressed and poorly formed trees is recommended. Trees selected for harvest should include fire-damaged, low-forking, leaning, mature, epicormically sprouting, overtopped/suppressed intermediates, or deformed trees. Removing these will relieve crowding and thin from above and below offering release for the healthiest, most vigorous crop trees.

One large area extending over both tracts is recommended for regeneration. This area is characterized by pole sized Sugar Maple and Sassafras with interspersed mature YEP and REO. White Ash is also abundant in this area. This particular area appears to have undergone sever storm damage in the past; many pole-sized stems are on the ground. Basal area is fairly low within this area and species composition is poor. Giving a northerly aspect and the presence of mature/seeding YEP, it is likely that YEP will regenerate well in this area as it has in adjacent areas of older regeneration. Other smaller areas of regeneration or group selection may also exist within the tracts.

Some REO, BLO, and YEP trees throughout are mature to over-mature and should be harvested this cutting cycle. White Ash should be harvested in a sanitation cutting to slow the spread of the Emerald Ash Borer with has been reported in neighboring Brown County.

Large American Beech culls not harvested during the timber sale should be girdled during a post-harvest TSI operation to create standing snags and cavity trees for wildlife; several of these large culls were noted during the inventory. This tract had a high percentage of cull trees, likely from fire damage.

Vine TSI and crop tree release is strongly recommended in the old regeneration openings. Vines have taken over portions of these opening and caused severe stem/crown deformities and mortality in the regenerated trees. Overall, Yellow Poplar has regenerated well in these opening along with Black Cherry, Red Elm, and Sassafras.

A combined timber sale in these tracts will likely yield from 300-330 MBF.

Volume Estimates: Yellowwood SF Comp. 14 Tract 09+10

(November 2011 Inventory Data)

Species	Harvest	Leave	Total
Yellow Poplar	94,450	78,370	172,820
Black Oak	65,180	159,370	224,550
White Ash	57,350	0	57,350

Northern Red Oak	30,390	136,340	166,730
Scarlet Oak	26,580	26,910	53,490
Sugar Maple	15,720	22,350	38,070
Sassafras	10,300	3,110	13,410
Basswood	10,000	20,410	30,410
Red Maple	7,890	10,760	18,650
White Oak	7,080	167,080	174,160
Largetooth Aspen	5,590	0	5,590
American Beech	5,550	3,630	9,180
Pignut Hickory	3,340	38,070	41,410
Black Cherry	2,580	1,870	4,450
Bitternut Hickory	0	10,070	10,070
Blackgum	0	13,240	13,240
Shagbark Hickory	0	19,840	19,840
Tract Totals (Bd. Ft.)	**342,000**	**711,420**	**1,053,420**
Per Acre Totals (Bd. Ft./Ac.)	**2,725**	**5,669**	**8,394**

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
TSI (Vine/Crop Tree Release) in Regeneration Openings	FY 2011-12
Invasives Treatement	FY 2011-12
Timber Marking	FY 2011-12
Timber Sale	FY 2011-12
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.