RESOURCE MANAGEMENT GUIDE

DRAFT

State Forest Yellowwood
Forester Amy Zillmer
Management Cycle End Year 2030
Compartment 15 **Tract** 3
Date April 28, 2009
Management Cycle Length 20 yrs

Location
This tract is located in Section 14, T10N, R2E, Brown Co., Indiana. It is approximately 3 miles northwest of the community of Bean Blossom and 3 miles northeast of Helmsburg.

General Description
Tract covers 22 acres of which 21 are commercial. This tract is fairly diverse with cover types of eastern white pine, oak-hickory, and mixed hardwoods.

History
This tract was acquired by the state in 1954 from the United States government. Prior to public ownership, this area was farmed during the turn of the century and many of the ridges were planted to pine by government work crews in the 30's.

A cruise was conducted on this tract in December of 1972 by Forester Akard. Cruise indicates a total volume of 51,320 BF of which 35,320 BF were harvestable and 16,000 BF were left as growing stock. This cruise was over 20 acres and did not include any of the areas of eastern white pine (~1.5 acres). An improvement harvest of 60,220 BF (includes harvest volume from tract 1) was sold in the fall of 1973. Following harvest, TSI was conducted in 1974.

This tract was up for inventory for the 08/09 fiscal year. An inventory was completed on March 25, 2009. 14 points were taken across 22 acres (1 pt./1.6ac). The findings of which are highlighted in this report.

Landscape Context
Closed canopy forest is the most dominant covertype. Agriculture is also common. There has been an increase in residential development over the past 30 years

Topography, Geology and Hydrology
This tract consists of a few finger ridges ridgetops with interlaced ephemeral drainages that slope west to northwest into Dunnaway Creek. The creek flows southwest and serves as an outlet for an unnamed body of water located north of the tract. The creek joins up with Beanblossom and flows into Lake Lemon. The underlying geology of this tract is a combination of sandstone, siltstone, and shale.

Soils

CnC2- Cincinnati silt loam, 6 – 12% slopes

This soil is found along the side of the tract's ridgetops. It is formed from loess over loamy till. It has a low available water capacity and is moderately well drained. Root penetration is somewhat restricted by firm and brittle fragipan present 26" below surface. Moderate limitations for roads and landings exist due to low strength and slope. Cincinnati holds a site index of 80 for northern red oak, a land capability class of IIIe, and woodland ordination symbol of 4A.

HkF-Hickory silt loam, 20 to 70 % slopes

This soil is found on the tract's side slopes. Actual slope grade on tract is between 30 and 40%. This silt loam is formed from sandstone, siltstone, and shale residuum. Hickory soils have a high available water capacity and are moderately permeable. Due to slope, it is generally unsuitable to development or agricultural, but is well suited to trees. Erosion hazards are a concern for large equipment, but can be mitigated by the use of land shaping and standard BMP regulations such as waterbars. This soil has a SI of 85 for both white oak and northern red oak, and a SI of 95 for yellow poplar. It has a land capability class of VIIe and woodland ordination symbol of 5R.

Be-Beanblossom channery silt loam, occasionally flooded

This soil is found in the floodplains along the creek on tract. 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.

Access

This tract can be accessed from Stinson Hollow Rd north of Railroad Rd. A well defined lane bisects tract 4 and leads to management area. This lane was used for 1973 for timber sale and would require some rehabilitation for future use.

Boundary

The southern and portions of the eastern tract boundary also serve as property lines. The boundary management for this area is up to date and painted in with orange glo paint. The north and western boundary follows Dunnaway Creek. The remaining eastern boundary follows the side tract 4's flat ridgetop.

Wildlife

A Natural Heritage Database search was done for tract and surrounding area. No rare, threatened, or endangered flora or fauna were identified in tract or immediate surrounding area.

The tract does contain rich wildlife habitat. Sightings and signs of wild turkey, bard owls, whitetail deer, songbirds, eastern grey squirrel, fox squirrel, and chipmunks were observed during inventory.

Wildlife Habitat Features

The Indiana Division of Forestry recognizes the potential to enhance wildlife habitat, including that of the Indiana Bat, on its lands by implementing comprehensive management principles. These management principles include obtaining data on size, species, and numbers of live legacy trees, snags, and cavity trees. Snag trees and some specific species are an integral part of the Indiana bat policy as they are prime roosting sites for maternal colonies.

Table 1. Legacy Trees inventoried 3/27/2009 on 6421503.

Size Classes	Maintenance Level	Inventory	Available For Removal
11"+ DBH	195	368	172
20"+ DBH	65	62	-4

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

Currently the tract is showing a slight deficiency for 20"+ DBH classes of preferred legacy trees and a significant surplus of small sawtimber. Removing less desirable stems and improving growing conditions will increase the size and frequency of many of the preferred hardwood species. Management activities such as commercial timber harvesting or TSI could hasten this transition.

Table 2. Snag Trees inventoried 3/27/2009 on 6421503

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
5"+ DBH	87	152	207	120	55
9"+ DBH	65	130	29	-36	-101
19"+ DBH	11	22	6	-5	-16

Inventory data shows a large surplus in 5"+ DBH, acceptable levels in 9"+, and deficiencies in 19"+ snags. Any management activity should be aimed at preserving existing 9"+ snags unless safety issues are present. Snag creation in larger diameter class sizes should be considered following any future harvesting or during TSI work.

Table 3. Cavity Trees inventoried 3/27/2009 on 6421503.

Size Classes	Maintenance Level	Optimal Level	Inventory	Available above Maintenance	Available above Optimal
7"+ DBH	86.8	130.2	169	82	39
11"+ DBH	30	40	124	59	38
19"+ DBH	11	22	48	37	27

Tract is meeting all recommended guidelines for cavity trees

Recreation
This tract has many possibilities for recreation uses. Some of the more common recreation that can be expected within the tract and surrounding area include: hunting, hiking, birding, traversing (with a compass and map), wildlife watching, meditation, mushroom hunting, tree identification, and photography.

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 Silvicultural Prescription
This is a fairly diverse tract containing multiple past openings, planted pine, and mixed hardwoods. Presently there 99.5 square feet of basal area per acre in 354 trees. The 2009 inventory estimated 6,127 BF/acre with 1,837BF of which designated as harvestable and 4,290 left as growing stock. The stand is currently fully stocked at 93%.

Species	Harvest Volume	Growing Stock	Total Volume
American beech	1,800	8960	10760
American elm	0	830	830
bitternut hickory	1040	960	2000
black cherry	0	1880	1880
black oak	3580	4690	8270
eastern white pine	12400	11240	23640
largetooth aspen	830	0	830
northern red oak	0	7200	7200
pignut hickory	1140	4300	5440
pin oak	1010	0	1010
scarlet oak	5890	10680	16570
sugar maple	450	1500	1950
white oak	2590	37680	40270
yellow poplar	9690	4450	14140
Totals	40420	94370	134790
Average/Ac	1837	4290	6127

<u>Pine</u>
There is a small (~1.5 acre) section of overstory white pine. Due to the two points picking up data from this small stand the overall volume has most likely overestimated. This stand has an average DBH of 17.7 inches. A notable quantity of oak and hickory regeneration was noted inside of the small stand. A two stage shelterwood is being recommended for this tract. The first stage will remove less vigorous understory trees and reduce density around the best formed pine. It is expected that the oak and hickory seedling will respond to the

increase in light and the harsher conditions from the acidic pine needle duff layer will inhibit heavy competition. This sight will be reevaluated in the future for adequate regeneration for final removal cut.

Mixed Hardwoods

Much of the tracts side slopes consist of mixed hardwoods. Common species include white oak, scarlet oak, American beech, black oak, and pignut hickory, and yellow poplar. Size classes range from pole to medium sawtimber. A few scattered wolfy white oaks dot the landscape. A few trees could be thinned; much of the area is in need of TSI to remove smaller diameter competing stems.

Old Openings

The last cutting cycle in 1973 was directed at removing many of the poorly formed stems to improve overall growing condition. Due to the poor quality on tract, several openings and canopy gaps were created across this small tract. These areas are regenerating nicely and could benefit from follow up TSI to release future crop trees.

Summary Tract Silvicultural Prescription and Proposed Activities

This area could benefit from an intermediate cut to reduce the density of low vigor stems in the next 2 to 3 years. Cut will be aimed at removing stems that are suppressed, deformed, or less vigorous to release more vigorous undergrowth and overstory. Efforts should be made to retain snags 9"+ on stand unless they present a safety concern. Due to the age/size of the white pine and the notable quantity of oak/hickory regen this area is being considered for a two stage shelterwood. Removal cut will be determined when area has sufficient advanced regeneration built up in the understory. Follow up TSI would be needed to complete any openings or to release crop trees throughout stand. Snag creation, especially in the 9" + diameter range should be employed to enhance wildlife habitat. A forest inventory will occur in the year 2030.

Harvesting timber will change the overstory species composition and density. Canopy gaps will stimulate residual canopies and understory plants as the results of increases to light. Modest ground cover exposure to mineral soil will simulate early successional species growth and development. Soil loss will be minimized as log yards and water bars will have seed and straw applied to prevent soil movement. The skid trails and haul roads will quickly re-vegetate after harvest operations cease. Little to no impact to water quality should occur as the use of Best Management Practices (BMP) help to prevent runoff directly entering streams. Recreation use of the tract will be limited while harvest operations are occurring; this measure is taken to provide for the safety of recreation users and timber harvest operators. Wildlife populations of early to mid successional groups will increase as a result of the harvest. In fact, the regeneration openings will promote species that thrive in early successional habitat, such as ruffed grouse and woodcock.

Proposed Management Activity	*Proposed Date*
Mark Timber Sale	09/10
Sell Timber Sale 09/10 Fiscal Year	09/10
Post Harvest TSI	11/12
New Inventory/Management Guide	29/30

Attachments (On File)
Ecological Resource Review
Topographic map with tract subdivisions
Aerial photo with tract subdivisions
Soil type map of area
Tcruise reports

To submit a comment on this document, click on the following link:
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You **must** indicate "Yellowwood C15 T3" 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.