RESOURCE MANAGEMENT GUIDE

DRAFT

State Forest: Morgan-Monroe **Compartment:** 13 **Tract:** 14
Forester: Amy Zillmer **Date**: November 12, 2008
Management Cycle End Year: 2023 **Management Cycle Length:** 15 yrs

Location

This tract is located in Section 20, T10N, R1E of Monroe County. This tract lies about 2.5 miles southeast of Hindustan.

General Description

This tract is comprised of 81 fairly diverse acres of which 75 in considered commercial. The majority of the tract consists of mixed hardwoods. Portions of the tract in south consist of planted red pine and eastern white pine.

History

This tract has a considerable amount of history. This portion of the Morgan-Monroe State Forest was acquired in the early 30's through purchases and donations from Emma Weddle on behalf of the Martinsville Trust Company and Anna May Burns. The 1930's saw the development of many of our state forests by the use of the Civilian Conservation Corp. Workers were set up in camps around the state. Although the legislation surrounding the Corps dictated that the no bias of "race, color, or creed" was to be tolerated, the phenomenon of segregated work camps occurred across the U.S. Portions of this tract are made up of an African-American CCC camp.

In 1938 CCC labor was used to plant 6,900 Jack pine seedlings to reforest 6.7 acres of tract. Jack pine was not noted during 2008 cruise, however stands of red and eastern white pine were. The recorded species is most likely inaccurate. In 1973 61,580 BF in 314 trees (.07/BF) were sold to Ringo Lumber Mills. In 1975 a timber sale was conducted on tract that yielded 85,494 BF (.06/BF) to Crone Lumber Company. In 1988 a commercial firewood area along Jack Weddle Road was marked and sold. This area was up for a new management guide in 1989. Following which, four openings from the 70's sales covering approximately 4.5 acres received mechanical TSI and pre harvest vine control where needed. Road construction and stone delivery was completed in 1996. Based on inventory results a harvest in 1997 of 127,600 BF in 533 trees was sold to Foley Hardwoods for $68,000 (.53/BF). Following sale in October of 1997, yards were seeded to winter wheat. This area was opened up in January of 1998 for public firewood cutting. During 1989 and 1999 post harvest TSI was used for regeneration opening completion across 2.45 acres and bottomland vine control across 5 – 6 acres. 200 garlic mustard plants were pulled in May of 2002. This area was reinventoried in August 2008. An inventory of 1 point per 2.4 acres depicted a present volume of 8,000 BF/acre with 2,890 BF/ac designated as harvestable.

Landscape Context
This tract borders both public and private land. Closed canopy forest is the most dominant cover type across landscape. Agricultural fields are common to the southeast as the topography becomes level.

Topography, Geology and Hydrology
This northern portion of tract consists of several fingerlike ridges grading down toward the southwest. Several ephemeral and unmapped intermittent drainages flow through these ridges before draining into a mapped intermittent stream that flows into Bean Blossom Creek. The southern portion of the tract has gentle slopes that settle into a wetland area in the south.

Soils
EkF-Elkinsville Silt Loam
This is the most dominant soil on tract covering about 55 acres. It is found on the ridges and sideslopes. This soil typically occupies stream terraces or flood-plain steps from loess or silty sediments and underlying loamy alluvium. They are well drained with moderate permeability. This soil has moderate limitations for haul roads and yard due to slope and landslide potential. It is poorly suited for log landings due to slope and has severe rutting hazards due to low strength. This soil has a site index of 86 for northern red oak and 96 for yellow poplar.

BkF-Berks-Weikert Complex
This soil covers about 15 acres of the tract. It is found on the upper ridgetops and sideslopes. This complex forms from loamy-skeletal residuum over shale and sandstone. This soil has severe limitations for haul roads, yards, and equipment operability due to slopes and low strength. This soil has a site index of 60 for northern red oak and 70 for yellow poplar.

Ba- Bartle Silt Loam
This soil occupies about 6 acres of the tract. It is geographically associated with the Elkinsville series but is found on treads of stream terraces. It is formed from alluvium with a loess mantle. This soil is somewhat poorly drained due to the presence of a fragipan leading to intermittent perched water. This soil has moderate ratings for haul roads and lands and severe rating for soil rutting due to low strength. This soil has a site index of 75 for northern red oak and 90 for yellow poplar.

Cu- Cuba Silt Loam
This soil series covers about 6 acres of the tract. It is found in the wet low lying areas in the southern portion of tract. This soil is formed in acid, silty alluvium on flood plains or flood-plain steps. This soil is well drained with low potential for surface run off. This soil has severe ratings for landings and haul roads due to flooding and severe ratings for rutting hazards due to strength. Timber harvesting and logging operations in these areas would be limited to drier times of year due

to frequent flooding. This soil has a site index of 90 for northern red oak and 100 for yellow poplar.

Access
This tract has extremely good access as it is bordered to the east by Jack Weddle Rd. Three skid trails with yards were used in previous sales and would require minor work to rehabilitate.

Boundary
This tract abuts both adjacent tracts of state forest and private land. In 1989 the west line (E ½, Sec. 20) and the north line of tract (south line of N ½ , SE ¼ , NW ¼ , Sec. 20) were painted in. Corner stones along this line were witnessed and posted with State Forest Property posts. The south and east lines of tract are made up by both Anderson and Jack Weddle Rd. The northwest line is shared by an adjacent state forest tract and follows drainage.

Wildlife
A Natural Heritage Database search was done and is in tract file. The natural heritage database did not report any findings of rare, threatened, or endangered animals within or in immediate surrounding of tract. The tract does provide a variety of habitats for animals. Sightings of deer, chipmunks, woodpeckers, turkey, and numerous songbirds were noted on the tract. Bird densities were much higher in and around older openings

Overall, the forest provides a steady food source in the form of mast. The southern portion of tract often retains water during the wetter times of the year. Steady water sources (Lazy Lake) are about a mile from tract. Single tree and group selection harvesting methods will increase the horizontal heterogeneity across the tract by creating gaps of varying successional stages.

<u>Indiana Bat Habitat Guidelines</u>

Live Trees - Entire Tract - Desired Species Only*			
	Required	**Inventory**	**Available For Removal**
11" DBH+	765	802	37
20" DBH+	255	344	89
Snags - Entire Tract - All Species			
9" DBH+	510	91	-419
19" DBH+	85	21	-64

***Desired Species Include:** *AME, BIH, BLA, BLL, COT, GRA, REO, POO, REE, SAS, SHH, ZSH, SHO, SIM, WHA, WHO*

Inventory currently meet and exceed guidelines in both size classes for live trees. Deficiencies in snags across tract were reported in both size classes. Harvesting activities should maintain snags present on tract unless safety issues arrive.

Post-harvest TSI should incorporate snag creation if time and funding allows to increase overall density and habitat quality.

Recreation
This tract does not contain any established recreational facilities. Signs of hunting were present on tract. Other uses may include hiking, meditation, wildlife viewing, and/or mushroom hunting.

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
Forest Condition
Presently, this tract contains 680,020 BF (8,000 BF/ac) of volume with 258,020 BF (3,036 n BF/ac) of volume being harvestable and 420,640 BF (4,949 BF/ac) designated as reserve stock. There is an average basal area of 104 square feet per acres. The tract is fully stocked (100%).

Table 1. Volume Estimates from 2008 Inventory (Doyle)

Species	Harvest	Leave	Total
Eastern White Pine	51,990	66,130	118,120
Black Oak	51,180	39,620	90,800
Yellow Poplar	43,360	70,910	114,270
Sugar Maple	25,650	17,740	43,390
White Ash	20,250	4,270	24,520
White Oak	17,520	105,730	123,250
Northern Red Oak	16,160	34,130	50,290
American Beech	9,340	15,600	24,940
Scarlet Oak	6,150	0	6,150
American Sycamore	3,950	2,700	6,650
Chinkapin Oak	3,510	3,410	6,920
Silver Maple	2,190	0	3,190
Red Maple	1,900	12,150	14,050
Swamp White Oak	1,780	3,430	5,210
Blackgum	1,640	6,400	8,040
Virginia Pine	1,450	0	1,450
Bitternut Hickory	0	1,650	1,650
Black Cherry	0	4,950	4,950
Black Walnut	0	4,380	4,380

Pignut Hickory	0	21,910	21,910
Red Elm	0	710	710
Shagbark Hickory	0	5,180	5,180
Total BF	258,020	420,640	680,020
Total BF/Acre	3,036	4949	8000

Oak-Hickory

This is the most dominant cover type on tract and covers approximately 51 acres. Presently this stand contains 416,211 BF (8,161 BF/ac) with 159,630 BF (3,130 BF/ac) harvestable timber and 253,470 BF (4,970 BF/ac) designated as growing stock. This subdivision holds 105 square feet of basal area in 347 trees. Presently this stand is fully stocked (100%).

The overstory in this stratum is dominated by species such as white oak and black oak, sugar maple, yellow poplar, northern red oak, pignut hickory, and American beech amongst other species were also noted. The understory consisted of a mixture of American beech, black cherry, eastern white pine, red elm, red maple, white ash, and white oak. Overall, this area was dominated by sugar maple and yellow poplar. Regeneration was overwhelmingly composed of American beech and sugar maple.

Many of these areas are overstocked and could benefit from thinning from both above and below. This would remove less vigorous and over mature stems and improve overall spacing. Top volume trees would include black oak and yellow poplar as they are reaching maturity and would release more vigorous stems. Openings would be beneficial on areas of stand that are over mature or of poor quality. Due to current composition of undesirable regeneration, pre-harvest mid-story release would be beneficial to promote oak seedling establishment.

Mixed Hardwoods

Mixed hardwoods make up about 22 acres of the present tract. This stand holds 141,240 BF (6,420 BF/ac) with 38,500 BF (1,750 BF/ac) being harvestable and 89,340 BF (4,470 BF/ac) designated as growing stock. The stand is fully stocked (93%).

Both the over and understory are dominated by a mixture of American beech, sugar maple, and yellow poplar. Other species such as blackgum, dogwood, hickory, red maple, oak, and white ash are also present in the understory.

This stand could benefit from a general thinning. Removing less vigorous stems to favor higher quality trees or species would improve this stand. Areas with high concentrations of poor quality or over mature stems should be regenerated.

Pine

This tract contains a few stands of pine over about 7 acres. Although records indicated Jack Pine was planted here in the 1930's, small eastern white pine plantations and pockets of Virginia pine were observed during 2008 inventory. This designation covers about 7 acres of the tract. Inventory results estimated 118,230 BF (16,890 BF/ac) with 45,220 (6,460 BF/ac) being harvestable and 73,010 BF (10,430 BF/ac) left as growing stock. This stand holds a basal area of 170 square feet per acre.

Many of these areas are in need of thinning. Several stems have experienced leader damage from weevils and could be removed to favor higher quality stems. Other areas are transitioning to native hardwood. Removing the overstory pine would hasten this transition. Actual harvests will most likely be much lower than inventory. A few of the plantations are located in areas that frequently flooded and in VEA (Visual Enhancement Areas) from both Jack Weddle and Anderson Roads. Limited harvesting or restricted harvesting times in these areas should be employed to preserve aesthetics and minimize soil disturbance.

Old Openings

Old openings from the 1970's and 1990's harvest are present over 5-7 acres of the tract. These areas are regenerating well and have reached or are moving toward closed canopy conditions.

The inventory reported high counts of yellow poplar poles and submerchantable sassafras. Other species reported included black oak, black cherry, blackgum, black cherry, white oak, dogwood, winged elm, and American beech.

Follow up timber stand improvement to these past opening would be beneficial. TSI would entail releasing higher quality desirable regeneration to increase growth and promoted overall species diversity.

Summary Tract Silvicultural Prescription and Proposed Activities

This tract would benefit from future management. An improvement thinning utilizing single tree and group selection should be performed across tract to improve overall stand health and improve crop tree spacing. Tract should be marked and sold in an upcoming fiscal year. Harvest yields from tract are estimated at about 200,000 BF. Post harvest TSI to complete any opening will be performed following harvest. Due to deficiencies in snags, snag creation should also be considered to enhance habit potential for the Indiana bat. Tract should be up for a new management guide 20 years after harvest.

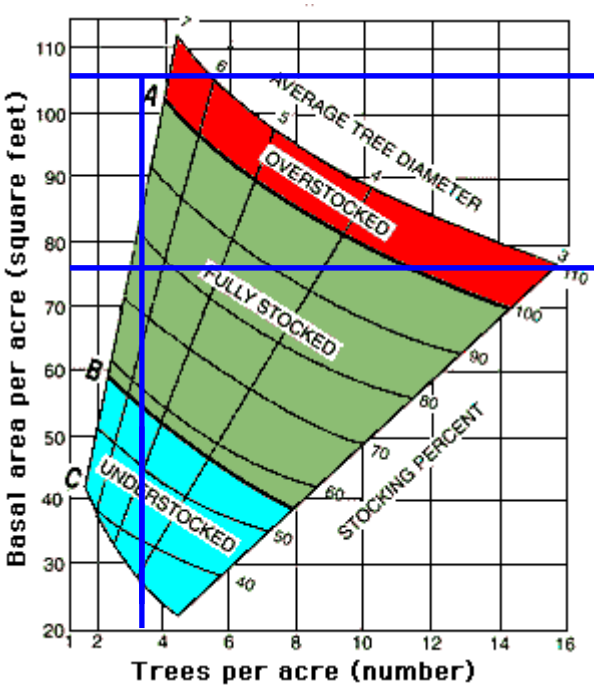
Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Yard/Skid/Haul Improvement	2010
Mark and Sell Timber Harvest (200,000 BF Est.)	2010/11
Post-Harvest TSI	2012
New Management Guide	2023

Gingrich Stocking Charts

Morgan-Monroe SF
Compartment 13 Tract 14

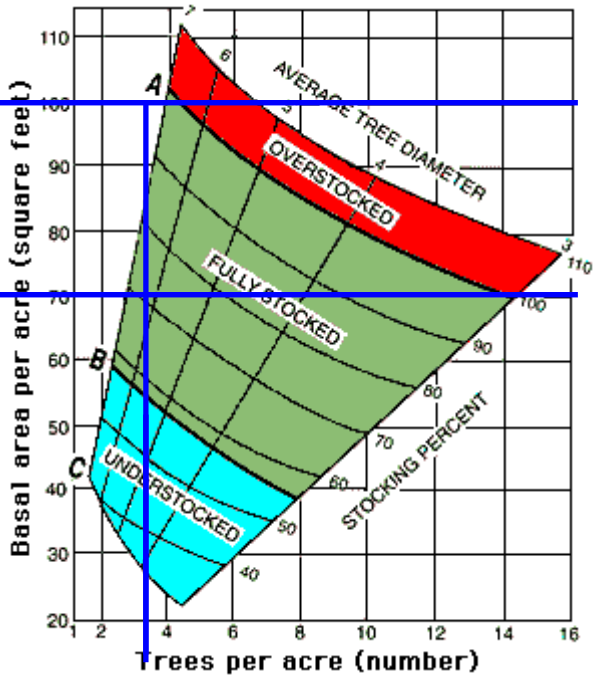
Overall Tract



Current Stand
104 sq. ft. BA
368 trees/ac
Fully Stocked 100%

Leave Stand
76 sq. ft. BA
350 trees/ac
Fully Stocked 76%

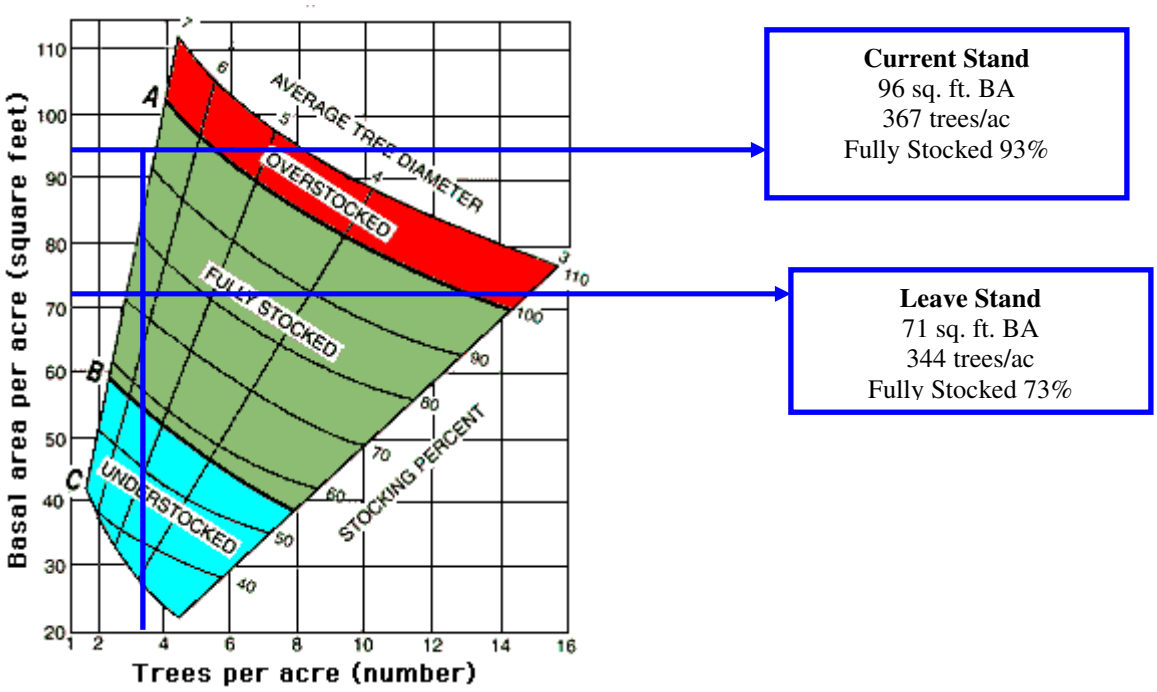
Oak-Hickory Strata



Current Stand
105 sq. ft. BA
347 trees/ac
Fully Stocked 100%

Leave Stand
79 sq. ft. BA
335 trees/ac
Fully Stocked 76%

Mixed Hardwoods



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Stand Type Map

Morgan-Monroe State Forest Comp 13 Tract 14