

RESOURCE MANAGEMENT GUIDE (DRAFT)

Morgan Monroe State Forest Compartment 04 Tract 04 Property Forester: D. Ramey
Total Acres: 88 Commercial Acres: 85 Date: 10-22-09

Location

Compartment 04, Tract 04 is located in Morgan Monroe State Forest of Section 27, 28, 33, 34, Township 11N, Range 1E in the southern part of Morgan County, Indiana.

General Description

This tract is a closed canopy of oak-hickory and mixed hardwoods. The tract is located on 3 ridges. The northern ridge is smaller and has some past openings on it. The southern ridges are Y shaped and make up 2/3 of the tract; this is where the yard will be located. There is an ephemeral drainage on the east side of the tract and four minor drainages between the ridges.

History

This area was acquired by the State in the early 1930's. In 1934 a white pine, Norway spruce planting took place in the bottomland on approximately 1 acre. In 1974, 35 white pines were sold to Harry Moore (3798 bd. ft., \$189.90). The last management was a timber harvest in 1988. This sale consisted of 553 trees, 76 culls and 121,800 bd. ft. (sold to Marvin O'Neal for \$20,150.00), and included 8 small openings throughout the tract totaling approx 6.6 acres, with one 2 acres in size. In 1989 Timber Stand Improvements were completed on the regeneration openings as well as coppicing oaks and hickories.

Landscape Context

The land surrounding this tract is dominated by closed canopy hardwood forest being part of Morgan Monroe State Forest.

Soils	Management Concerns
BfG SI - 70 41 Acres Green	Berks Channery silt loam 35 - 80% slope Sandstone-bedrock - 30" Well drained. Most areas wooded. Soil suited to trees. Limited to building sites due to steepness of slope and depth of bedrock. *Moderate, severe, moderate, slight.
ZaB SI - 68 22 Acres Pink	Zanesville silt loam 2 - 6% slope Subsoil - 47" Well drained. Most areas woodlands. Soil suited to trees. Fragipan restrict root development. *Slight, Slight, Slight, Slight.
GpE SI - 80 17 Acres Blue	Gilpin silt loam 18 - 25% slope Sandstone-bedrock - 36" Well drained. Most areas woodland. Soil suited to trees. Not suited for building sites. *Moderate, Moderate, Moderate, Slight.
Wa SI - 90 8 Acres Yellow	Wakeland silt loam Nearly level. Substratum - 60" Poorly drained. 50% in woodland. Soil well suited to trees. Severe building limitations because of flooding. Roads and absorption fields. *Slight, Slight, Slight, Slight.

Topography, Geology and Hydrology

The topography ranges from one main ridge top with two fingers ranging from moderately level to moderately steep slopes to bottomlands. Aspect is primarily east to northeast facing with the south ridge facing more southeast. The gradient ranges from nearly level to 80% slopes. There is one major intermittent stream on the east edge of the tract boundary with four ephemerals that drain into this stream.

Access

The access to this tract is excellent, located on the east side of Rosenbaum road. There are three cable gates; one across from Hatfield ridge gate, one along the road in the northwest part of the tract and one at the far north in a parking area along the stream.

Boundary

This tract is completely surrounded by Morgan Monroe State Forest property tracts. The northern most point of the tract at the bottom of Rosenbaum road is close to private property.

Wildlife

Wildlife habitat documentation and analysis is an important element of tract level forest management. Considering that wildlife species vary greatly in habitat use, the management goal is to maintain the highest level of wildlife habitat diversity. Wildlife habitat features include: snags, live trees, cavity/den roosting trees, culls, downed woody material, ponds, water pools, mast trees, shrubs and fruit producing vines. Standing dead or dying trees (snags), provide bat roosts, cavities and sites for wildlife dens and nests. They also contribute through decomposition as food reservoirs both above ground and on the forest floor. It is recommended that whenever possible snags are to be left standing during timber harvest operations, especially on upper slopes and ridge tops. Live tree retention is also important for most forest wildlife species, as they depend on live trees for shelter, escape cover, roosting, mast and foliage. Specific tree densities are essential for tree roosting Indiana bats and cavity nesting/denning wildlife species. Live cavity trees are used by a wide range of wildlife species as they provide long term nests, dens, and create potential future snags. Cull trees are damaged and/or decayed trees that also provide sources of future cavity trees and roosts. Live culls with cavities and decay should be retained for wildlife value. If an adequate number of snag trees are not present, girdling live culls during post harvest timber stand improvement will assist in satisfying guideline requirements. Downed woody material may include tree stems, logs, limbs and tree tops. The advanced stages of decay provide cover and foraging habitat for small mammals, ground-dwelling birds, reptiles, and amphibians. Wildlife ponds are small impoundments designed to permanently hold water throughout the year. These ponds are relatively shallow and often shaded by forest cover. They are also free of fish and provide foraging activity, drinking, cover and most important breeding habitat for forest amphibians. Natural water pools are seasonal and typically occur on poorly drained soils or in places where the water table is close to the ground surface. Mast trees and shrubs and fruit producing vines are hard and soft food resources that are essential for a wide variety of forest wildlife. Wild grapevines are retained except where their growth jeopardizes the integrity of regeneration openings or future stand development. In tract level forest management every effort will be made to meet or exceed target densities of snags, roost trees and cavity trees described to ensure that wildlife habitat benefits the highest number of individuals and populations possible.

Wildlife Habitat Tract Feature Summary

Available	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Residual Above Optimal
Legacy Trees *					
<i>11"+ DBH</i>	791.1		1514	723	
<i>20"+ DBH</i>	263.7		440	176	
Snags (all species)					
<i>5"+ DBH</i>	351.6	615.3	1360	1008	745
<i>9"+ DBH</i>	263.7	527.4	685	421	157
<i>19"+ DBH</i>	43.95	87.9	202	158	114
Cavity Trees (all species)					
<i>7"+ DBH</i>	351.6	527.4	1298	947	771
<i>11"+ DBH</i>	263.7	351.6	958	694	606
<i>19"+ DBH</i>	43.95	87.9	431	387	343

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

Wildlife resources appear to be abundant within this tract. Recent observations include wild turkey, white-tailed deer, copperhead snake, small furbearing mammals and wide diversity of songbirds. The Natural Heritage Database has identified in the nearby vicinity of this tract: Timber Rattlesnake, Trailing Arbutus, Black and White Warbler and Worm Eating Warbler and Indiana Bat. Tree species composition in this tract is diverse ranging from disturbed site species such as sassafras on the ridge tops along the road to bottomland hardwoods near the stream. Shagbark hickory present on this tract will provide excellent bat habitat. Larger mast trees are present and many will be retained for wildlife foraging. Log landings will be seeded with species favorable to wildlife such as Orchard grass, wheat, and or oats following harvest activities.

Communities

The Natural Heritage Database Review for this tract reported no threatened or endangered plant communities. Nearby tract records include reports of timber rattlesnakes, Indiana bats, warblers and trailing arbutus. Timber harvesting will create habitat for rattlesnake food resources as well as create auxiliary den sites. The timber rattlesnake usually prefers south slopes and rock outcrops. A dominant east slope is present in this tract however no rock outcrops were observed during inventory. Many tops leftover from a harvest will provide prey cover for forage. The white and worm eating warblers both prefer fragmented canopies and dense understory sites. Harvesting will increase density of the understory plants temporarily. Indiana bat habitat may be enhanced by the creation of snag trees. Trailing arbutus prefer acidic soils which are found in dry oak slopes as well as small patches of pine.

Recreation

This tract is easily accessible to recreational visitors as it lies adjacent to Rosenbaum road. Most visitors utilize the area for recreational opportunities such as: hunting, nature study, mushroom, berry and nut gathering. This area can also serve as an area for school groups to visit and learn about forest management activities. Gold panning is another activity in the main intermittent stream that lies on the boundary.

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 Prescription and Proposed Activities

The field inventory was completed in August 2009. The inventory yielded the following information:

HARVEST / LEAVE REPORT SUMMARY

MBF = 1000 Board Feet

SPECIES	HARVEST MBF	LEAVE MBF	TOTAL MBF
American Beech	0.04	0.05	0.10
American Sycamore	0.00	0.02	0.02
Basswood	0.05	0.08	0.14
Blackgum	0.04	0.07	0.12
Black Locust	0.00	0.02	0.02
Black Walnut	0.00	0.03	0.03
Black Oak	0.42	1.48	1.90
Chestnut Oak	0.04	0.00	0.04
Eastern White Pine	0.00	0.06	0.06
Largetooth Aspen	0.05	0.00	0.05
Northern Red Oak	0.03	0.56	0.60
Norway Spruce	0.00	0.05	0.05
Pignut Hickory	0.00	0.30	0.30
Red Maple	0.00	0.02	0.02
Sassafras	0.02	0.07	0.09
Scarlet Oak	0.18	0.13	0.31
Shagbark Hickory	0.00	0.11	0.11
Sugar Maple	0.02	0.07	0.09
White Ash	0.17	0.03	0.19
White Oak	0.27	1.72	1.98
Yellow Poplar	0.49	1.08	1.56
Totals			
PER ACRE	1.82	5.96	7.78
TRACT TOTAL	159.82	523.49	683.32

Discrepancies due to T Cruise program rounding

Total Tract Acreage	88.0 acres	Present Volume per Acre	7,780.0 bd. ft.
Basal Area per Acre	91.1 sq. ft.	Harvest Volume per Acre	1,820.0 bd. ft.
Number Trees per Acre	95.0	Residual Volume Per Acre	5,960.0 bd. ft.
Stocking Percentage	73 %	Average Tree Size	13.1" Diameter

Tract Prescription and Proposed Activities Continued

This tract last received a harvest in 1988 with follow up TSI 1989. This tract has been selected as a potential harvest area for the Fiscal Year of 2009-10. Current inventory results indicate a total volume of 7,782 board feet per acre. The primary timber type in the tract is oak-hickory with mixed hardwoods. (YEP 27%), (BLO 23%), (WHO 15%), (SCO 10%). Other overstory species include: red oak, pignut hickory, sugar maple, white ash, blackgum and shagbark hickory. The overall quality of the sawtimber is good. The volume harvestable is estimated at 1,820 board feet per acre with a corresponding leave volume of 5,960 board feet per acre. The tract stocking was estimated on the Gingrich chart at 73%. Given the information provided, this tract is fully stocked. With a stocking level of 73% this tract could be thinned with great care so as to not reduce the stocking level below 60%. An intermediate harvest and at least one group selection is recommended for this tract. The overall goal is to modify or guide the development of existing crop trees. Over-mature and less desirable species will be removed, releasing the oaks and allowing the expansion of root and crown systems. Other regeneration openings may be created in stands of low quality species and/or over-mature stands to promote regeneration of oaks and hickories. The harvest will be followed up with a proper close out according to Best Management Practices. Timber stand improvement is planned after the harvest to complete early successional openings. Girdling of cull trees to promote Indiana Bat populations is planned. All haul and skid roads will need to be improved prior to and following the sale. A public firewood operation is also planned following required sale reviews.

Proposed Activities Listing

Timber marking and harvest planned in 2009-10 fiscal year.

Timber Stand Improvement to be completed after timber sale closeout.

Public Firewood Program.

Re-Inventory work scheduled for 2029.

Attachments:

On file in property office are the following items

- 1 A property and topography map of the tract.
- 2 A map showing the soil types in the tract.
- 3 A stocking guide chart.
- 4 Natural Heritage Database Review map.

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