RESOURCE MANAGEMENT GUIDE (DRAFT)

Morgan Monroe Sate Forest	Compartment 01 Tract 09	Property Forester: D. Ramey
Total Acres: 110	Commercial Acres: 105	Date: 10-09-09

Location

Compartment 01, Tract 09 is located in Morgan Monroe State Forest of Section 28, Township 11N, Range 1E in the southern part of Morgan County, Indiana.

General Description

MC01T09 is 110 acres of closed-canopy mixed hardwood forest. The dominate timber type is mixed oaks: black, white, scarlet and red (approx 64%). Other over story species include: yellow poplar, pignut hickory, sugar maple, white ash and shagbark hickory.

History

This area was acquired by the State in the early 1930's. Previous forest management activities include the construction of a wildlife pond in 1979 and a wildlife opening in 1990, by Forest Wildlife. In 1981 a timber sale was conducted and sold to Foley's Hardwoods (130,241 board feet, 532 trees, 210 culls, $20,569.10). Part of this tract was included in a property salvage sale in 1991, approximately 8,774 board feet was salvaged, sold to Foley's Hardwood. This tract is adjacent to the Hardwood Ecosystem Experiment (HEE) management unit #1 uneven-aged management. The current inventory was conducted in 2008.

Landscape Context

The land surrounding this tract is part of Morgan Monroe State Forest with access roads to the east and south.

Soils

This tract is primarily Berks-Weikert Complex. Ridge tops are of the Gilpin silt loam soils.

	Management Concerns
	*Erosion Hazard, Equipment Limitations, Seedling Mortality, Windthrow Harzrd

BfG	Berks Channery silt loam 35 - 80% slope Sandstone-bedrock – 30"
SI – 70	Well drained. Most areas wooded. Soil suited to trees.
60 Acres	Limited to building sites due to steepness of slope and depth of bedrock.
	*Moderate, severe, moderate, slight.
GpE	Gilpin silt loam 18 – 25% slope Sandstone-bedrock – 36"
SI – 80	Well drained. Most areas woodland. Soil suited to trees.
27 Acres	Not suited for building sites.
	*Moderate, Moderate, Moderate, Slight
GpD	Gilpin silt loam 12 – 18 % slope Sandstone-bedrock – 36"
SI – 73	Well drained. Most areas wooded. Soil well suited to trees.
10 Acres	Erosion major hazard. Permeability moderate. Severely limited to buildings and absorption fields.
	*Slight, Slight, Slight, Slight.
Wu	Wilbur silt loam Nearly level Substratum – 60" sand
SI – 100	Well drained. Frequently flooded. Suited to crops and well suited to trees.
10 Acres	Limited to buildings and absorption fields. Frost action limits road usage.
	*Slight, Slight, Slight, Slight.
ZaB	Zanesville silt loam 2 - 6% slope Subsoil – 47"
SI – 68	Well drained. Most areas woodlands. Soil suited to trees.
3Acres	Fragipan restrict root development.
	*Slight, Slight, Slight, Slight.

Topography, Geology and Hydrology
The topography ranges from one main ridge top with steep to moderately steep slopes to bottomlands. Aspect is primarily east to northeast facing with one main ridge running northeast and a smaller ridge on the west side of the tract. The gradient ranges from nearly level to 80% slopes. There are two intermittent streams on the tract boundary and one ephemeral in the tract.

Access
The access to this tract is excellent, located on the west of Rosenbaum road and north of Pea Ridge road just inside the cable gate.

Boundary
This tract is completely surrounded by Morgan Monroe State Forest property tracts.

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 all snags are 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 grape vines 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 Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	990		1988	998	
20"+ DBH	330		605	275	
Snags (all species)					
5"+ DBH	440	770	1986	1546	1216
9"+ DBH	330	660	786	456	126
19"+ DBH	55	110	65	10	-45
Cavity Trees (all species)					
7"+ DBH	440	660	2311	1871	1651
11"+ DBH	330	440	1050	720	610
19"+ DBH	55	110	365	310	255

*** 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, timber rattlesnake, small furbearing mammals and wide diversity of songbirds. The Natural Heritage Database has identified in the nearby vicinity of this tract Timber Rattlesnake, Indiana Bat and Trailing Arbutus. Black and White Warbler and Worm Eating Warbler range within this tract. 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 streams. 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 plant communities. Nearby or within tract records include reports of timber rattlesnakes, Indiana bats, warblers and trailing arbutus. Harvesting will create habitat for their main food source 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 and no rock outcrops were observed during inventory. Many tops leftover from a harvest will provide habitat for prey that snakes can forage for. 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 prefers pine stands' acidic soils which are found in small patches.

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 ephemeral, east of the tract.

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. This tract is also protected from wildfire by aerial surveillance during fire seasons and has a well-maintained multi-purpose road on its western boundary. Any additional cultural areas discovered during timber marking will be documented and avoided by 100 feet whenever possible.

Tract Prescription and Proposed Activities
The field inventory was completed in June 2008. The inventory yielded the following information:

HARVEST / LEAVE REPORT SUMMARY
MBF = 1000 Board Feet

SPECIES	HARVEST MBF	LEAVE MBF	TOTAL MBF
American Beech	0.05	0.12	0.17
Basswood	0.09	0.13	0.22
Black Locust	0.04	0.0	0.04
Black Oak	1.07	1.06	2.13
Black Walnut	0.0	0.16	0.16
Chestnut Oak	0.03	0.0	0.03
Largetooth Aspen	0.07	0.03	0.10
Northern Red Oak	0.49	0.30	0.79
Pignut Hickory	0.14	0.34	0.48
Red Maple	0.0	0.02	0.02
Sassafras	0.03	0.10	0.13
Scarlet Oak	0.67	0.36	1.03
Shagbark Hickory	0.0	0.13	0.13
Sugar Maple	0.06	0.20	0.26
White Ash	0.11	0.05	0.16
White Oak	0.39	1.26	1.66
Yellow Poplar	0.58	0.62	1.23
Totals			
PER ACRE	3.82	4.86	8.72
TRACT TOTAL	420.37	535.08	958.74

Total Tract Acreage	110 acres		Present Volume per Acre	8,720 bd. ft.
Basal Area per Acre	108.7 sq. ft.		Harvest Volume per Acre	3,820 bd. ft.
Number Trees per Acre	124		Residual Volume Per Acre	4,860 bd. ft.
Stocking Percentage	87 %		Average Tree Size	12.3” Diameter

Tract Prescription Con.

This tract last received a harvest in 1981 and a salvage sale in 1991. 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 8,720 bd.ft. per acre. The dominate timber type is mixed oaks: black, white, scarlet and red (approx 64%). Other overstory species include: yellow poplar, pignut hickory, sugar maple, white ash and shagbark hickory. The overall quality of the sawtimber is good. The volume harvestable is 3,820 board feet per acre and leave volume of 4,860 board feet per acre. The tract was estimated to be 87% stocking. Given the information provided, this tract is adequately stocked. Species available for harvest consist of black, red and white oaks, yellow poplar, American beech, hickories and red maple. The trees are of large sawtimber with modest amount of quality sawtimber. With a stocking level of 87% this tract could be thinned with great care so as to not reduce the stocking level below 70%. An intermediate harvest and at least one group selection is recommended for this tract. The goal is to modify or guide the development of existing crop trees. Over-mature and less desirable species will be removed, releasing the white oaks and allowing the expansion of roots and crown systems. A regeneration opening may be utilized where stands of lower 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 and removal of vines. Girdling of cull trees to promote Indiana Bat populations can also be done. Ridgetop roads will need to be improved prior to and following the sale.

Proposed Activities Listing
Timber Harvest planned in 2009-10 fiscal year.
Timber Stand Improvement to be completed after timber sale closeout.
Re-Inventory work scheduled for 2028.

Attachments (on file in Property office):

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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