RESOURCE MANAGEMENT GUIDE (DRAFT)

Morgan Monroe State Forest Compartment 07 Tract 02 Property Forester: D. Ramey
Total Acres: 71 Commercial Acres: 65 Date: 10-23-09

Location
Compartment 07, Tract 02 is located in Morgan-Monroe State Forest of Section 1, Township 11N, Range 1W in the northern part of Monroe County, Indiana.

General Description
MM0702 is 71 acres of closed-canopy mixed hardwood forest. The dominate timber type is mixed oaks: black, white, scarlet and red (approx 50%). Other overstory species include: yellow poplar, sugar maple, American beech and black walnut in the bottomlands.

History
This area was acquired by the State in the early 1930's. Previous forest management activities include partial tract timber sales and a salvage sale. On 3/21/69 approximately 50,000 BF was sold over 20 acres to an unknown buyer. On 4/20/79 a harvest sale (#7913) took place on the southern side of the main ridge, a part of old compartment 17, tract 3 (131 trees, 23 culls, 33,120 board feet, sold to Empire Wood Co. for $6,612.85). In 1990 a salvage sale was marked and sold by Forester Hahn following a high wind event that had damaged and uprooted trees. This area of approximately 12 acres was located along the lower north property line (108 trees, 20 culls, 18,200 board feet, sold to Midwest Logging and Veneer for $2,570.00). In 1993 Hahn also marked and sold a harvest in the southeast corner ridge. This 13 acre area had been missed in previous harvests because of the old compartment, tract delineation (141 trees, 14 culls, 48,500 board feet, sold to Foley Hardwoods, Inc. for $8,500.00). A complete tractwide inventory was completed by Forester Ramey on 9-15-09.

Landscape Context
The land surrounding this tract is dominated by closed-canopy hardwood forest with part of Morgan Monroe State Forest to the west, south and east. North of the tract is private property with timberland on the ridge top and slopes to fields in the bottomlands. The powerline right of way occupies approximately 5 acres and provides long term permanent wildlife grassland habitat.

Soils
Soils of this region are discontinuous loess (interrupted wind deposited sand and silt material from dried glacial melt water, lakes and streams) over weathered sandstone and shale.

Management Concerns (across from color code)
*Erosion Hazard, Equipment Limitations, Seedling Mortality, Windthrow Hazard

BkF	Berks-Weikert complex 25 – 75% slope	Sandstone-Bedrock – 38"
SI – 70	Well drained. Most areas woodland. Soil suited to trees.	
41 Acres	Severely limited to dwellings with basements due to slope and bedrock.	
Green	*Moderate, severe, moderate, slight.	

CrC	Crider silt loam	6 – 12% slope	Subsoil – 58" thick
SI – 88	Well drained. Many areas in cultivated crops. Soil well suited to trees.		
14 Acres	Moderately limited to buildings due to steepness of slope.		
Yellow	*Slight, Slight, Slight, Slight.		

WmC	Wellston Gilpin silt loam	6 – 20% slopes	Bedrock – 46"
SI – 71	Well drained. Many areas in woodlands. Well suited to trees. Limited for		
10 Acres	building sites. Severe hazard to erosion due to silty loam soil content.		
Blue	*Slight, Slight, Slight, Slight.		

Wa	Wakeland silt loam	Nearly level.	Substratum – 60”
SI - 90	Poorly drained. 50% in woodland. Soil well suited to trees.		
3 Acres	Severe building limitations because of flooding. Roads and absorption fields.		
Red	*Slight, Slight, Slight, Slight.		

Bo	Bonnie silt loam	Level	Substratum – 60”
SI – 90	Poorly drained soil well suited to trees, many areas woodland.		
3 Acres	Severe limit to buildings and septic systems. Surface runoff very slow.		
Purple	*Slight, severe, severe, severe		

Topography, Geology and Hydrology

In general, this region consists of unglaciated, sharply dissected hills, narrow ridges and valleys. The underlying bedrock is Mississippian and Pennsylvanian sandstone, shale and siltstone. This tract is made up of 1 primary ridge with 2 side fingers and a small ridge in the southeast corner. There are three ephemeral drainages, one on the lower western side, one in the southeast part of the tract. The northwest tract boundary is a modest sized intermittent stream.

Access

The access to this tract is excellent, located north of Old SR 37 and south of the Morgan County line. On the east edge adjacent to Morgan County road, there is a cable gate access.

Boundary

This tract is surrounded by Morgan Monroe State Forest property tracts to the west, south and east. The western edge borders a major power line. This power line splits off the northern section of the tract. The lower north boundary line is well marked, the upper northern line and east boundary line is not marked, but flagged. A stone that has been referenced by State Personnel exists in the SW corner of the NE ¼, NW ¼ of section 1. The NE boundary lines were surveyed by Vollmer in early 2000’s, to settle a field encroachment on the south line of this 40 acres.

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. This tract presently does not have a wildlife pond.

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 will be 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. The powerline right of way acts as a long term wildlife opening and is maintained regularly every 3-5 years. This type of specialized habitat is rarely encountered within the State Forest.

Wildlife Habitat Feature Tract Summary

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	639		1001	362	
20"+ DBH	213		293	80	
Snags (all species)					
5"+ DBH	284	497	1225	941	728
9"+ DBH	213	426	599	386	173
19"+ DBH	35.5	71	76	40	5
Cavity Trees (all species)					
7"+ DBH	284	426	932	648	506
11"+ DBH	213	284	371	158	87
19"+ DBH	35.5	71	165	130	94

*** 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, small furbearing mammals and wide diversity of songbirds. The Natural Heritage Database has identified in the nearby vicinity of this tract: Timber Rattlesnake, Hooded Warbler, American Badger and Homoplectran Caddisfly. 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 endangered or threatened plant and animal communities within the tract. Nearby tract records include reports of timber rattlesnakes, Hooded Warbler, American Badger and Homoplectran Caddisfly. 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. Harvesting will create habitat for their main food source as well as create auxiliary den sites. Many tops leftover from a harvest will provide habitat for prey that snakes can forage for. The warblers both prefer fragmented canopies and dense under story sites. Harvesting will increase density of the understory plants temporarily. Indiana bat habitat may be enhanced by the creation of snag trees.

Recreation
This tract is easily accessible to recreational visitors as it lies adjacent to Old SR 37. 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.

Cultural
No known or observable cultural resource areas were encountered during the tract inventory. 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 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	0.22	0.2	0.43
American Elm	0.04	0.0	0.04
American Sycamore	0.06	0.05	0.11
Basswood	0.09	0.07	0.16
Black Locust	0.04	0.0	0.04
Black Oak	0.5	1.04	1.55
Black Walnut	0.0	0.22	0.22
Northern Red Oak	0.14	0.68	0.82
Pignut Hickory	0.06	0.17	0.23
Red Maple	0.04	0.02	0.06
Sassafras	0.0	0.07	0.07
Scarlet Oak	0.2	0.1	0.31
Shagbark Hickory	0.0	0.29	0.29
Sugar Maple	0.3	0.28	0.58
White Ash	0.0	0.1	0.10
White Oak	0.05	0.77	0.82
Yellow Poplar	0.37	0.98	1.34
Totals			
PER ACRE	2.11	5.07	7.18
TRACT TOTAL	149.72	360.02	509.74

Discrepancies due to rounding.

Total Tract Acreage	71.0 acres		Present Volume per Acre	7,180.0 bd. ft.
Basal Area per Acre	91.0 sq. ft.		Harvest Volume per Acre	2,110.0 bd. ft.
Number Trees per Acre	112.0		Residual Volume Per Acre	5,070.0 bd. ft.
Stocking Percentage	75 %		Average Tree Size	12.1” Diameter

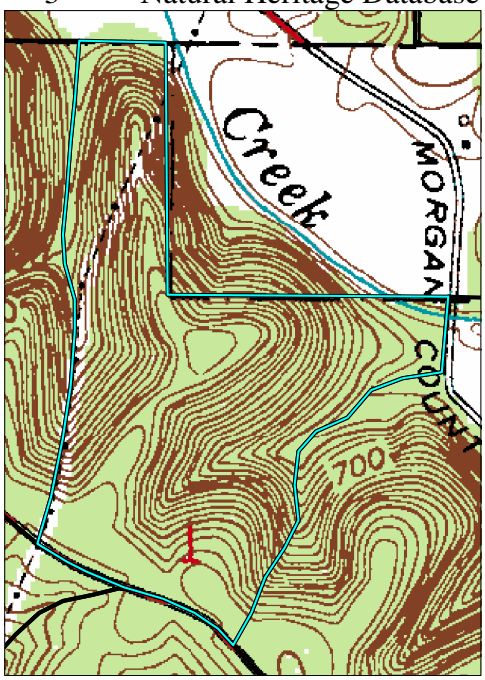
This tract has been selected as a potential harvest area for the Fiscal Year of 2010-11. Current inventory results indicate a total volume of 7,180 board feet per acre. The dominate timber type is mixed oaks: black, white, scarlet and red (approx. 50%). Other overstory species include: yellow poplar, sugar maple, American beech and black walnuts. The overall quality of the sawtimber resource is good. The volume harvestable is 2,110 board feet per acre and residual volume of 5,070 board feet per acre. The tract was estimated to have 75% stocking as indicated on the Gingrich chart.

This stocking level shows that the tract is fully stocked, a selective thinning on this tract could be done with care to avoid reducing the stocking level below 65%. As recommended, this thinning should be light so as to avoid a two aged stand. 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 residual stand root and crown systems. Regeneration openings 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. 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.

Proposed Activities Listing
Timber Harvest planned in 2010-11 fiscal year.
Timber Stand Improvement to be completed after timber sale closeout.
Re-Inventory work scheduled for 2030.

Attachments:
Attached are the following items

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



NORTH ^ 1"= 1000 FT.

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