Indiana Department of Natural Resources - Division of Forestry

RESOURCE MANAGEMENT GUIDE (DRAFT)

Morgan-Monroe Sate Forest Compartment 12 Tract 03 Property Forester: D. Ramey
Total Acres: 106 Commercial Acres: 104 Date: 10-27-09

Location

Compartment 12, Tract 03 is located in Morgan-Monroe State Forest of Section 7, 8, Township 10N, Range 1E in the northern part of Monroe County, Indiana.

General Description

MM1203 is 106 acres of closed-canopy mixed hardwoods, oak-hickory forest and scattered pine plantations. One acre is noncommercial due the existing hiking trail and wildlife pond. The Three Lakes Trail proceeds through the center of the tract. A wildlife pond and permanent wildlife opening are present on the east boundary.

Overstory	Understory	Regeneration
Sugar Maple	White Ash	White Ash
White Ash	Sugar Maple	Red Maple
White Oak	American Beech	Sugar Maple
Black Oak	Pignut Hickory	American Beech
Scarlet Oak	American Elm	Pawpaw
Black Cherry	Yellow Poplar	Redbud
Black Walnut	Dogwood	White Oak
Blackgum	Pawpaw	Red Oak
Yellow Poplar	Redbud	Pignut Hickory
Shagbark Hickory	Red Maple	Shagbark Hickory
Pignut Hickory	American Sycamore	Yellow Poplar
Red Maple	Chestnut Oak	American Elm
American Elm	White Oak	Sassafras
Eastern White Pine	Dogwood	Black Walnut
Largetooth Aspen	Black Cherry	Ironwood
Northern Red Oak	Sassafras	Dogwood
Shortleaf Pine	Eastern White Pine	Blackgum
Virginia Pine	Blacklocust	
Sassafras	Blackgum	
Basswood	Red Oak	
Black Locust		
American Beech		
American Sycamore		

History

This area was acquired by the State in the early 1930's. Old aerial photographs show the southern part of the tract as old farm fields. Previous forest management activities include the creation of a hiking trail, wildlife opening and pond, timber harvest, timber stand improvements, and management plan. The Property's Three Lakes hiking trail runs through the middle ridge, the actual establishment date of this trail is unknown. In 1967, an intermediate timber harvest took place in the north central ridge (217 trees, 46,280 board feet on 34.5 acres, sold to Ken Welty for $2,115.00). The first resource management guide was completed in 1988. In1989 TSI was completed in the south half of the tract 37.7 acres total (releasing oaks, ash, walnuts and grapevine cutting). In 1992, with the cooperation of the Division of Fish and Wildlife (Forest Wildlife) a wildlife watering hole was constructed and an adjacent permanent wildlife opening

was completed. This wildlife opening is mowed periodically. The current tract inventory was completed by Forester Ramey in September of 2009.

Landscape Context
The land surrounding this tract is dominated by closed-canopy, hardwood forest part of Morgan Monroe State Forest. Residential developments lays southwest of the tract approximately one mile away.

Soils
This tract is primarily Berks-Weikert Complex. Ridge tops are of the Wellston Gilpan and Crider silt loam soils.

	Management Concerns
	*Erosion Hazard, Equipment Limitations, Seedling Mortality, Windthrow Harzrd
BkF	Berks-Weikert complex 25 – 75% slope Sandstone-Bedrock – 38”
SI – 70	Well drained. Most areas woodland. Soil suited to trees.
62 Acres	Severely limited to dwellings with basements due to slope and bedrock.
Green	*Moderate, severe, moderate, 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
20 Acres	building sites. Severe hazard to erosion due to silty loam soil content.
Blue	*Slight, Slight, Slight, 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.
13 Acres	Moderately limited to buildings due to steepness of slope.
Yellow	*Slight, Slight, Slight, Slight.
BdB	Bedford silt loam 2 – 6% slope Fragipan at depth of 20-30”
SI – 75	Moderately well drained. A few areas in woodland. Soil suited to trees.
11 Acres	Moderately limited to buildings because of wetness, shrinking and swelling.
Pink	*Slight, Slight, Slight, Slight.

Topography, Geology and Hydrology
In general, this region consists of unglaciated, dissected hills, narrow ridges and valleys. The underlying bedrock is Mississippian and Pennsylvanian sandstone, shale and siltstone, as well as limestone. This tract is made up of 3 main ridges with some side fingers. There is one main ephemeral drainage on the western side with smaller drainages between ridges. The gradient ranges from 2% to 75% slopes. The Mount Carmel Fault runs through this tract and is often used by Indiana University geology classes observing plate tectonics. All water resources drain into Beanblossom Lake which is in the Bryant Creek watershed.

Access
The access to this tract is excellent, the eastern and southern edge of the tract borders Old Farr road, Main Forest road on the northern edge, and tract MM1202 to the northwest.

Boundary
This tract is completely surrounded by Morgan Monroe State Forest property tracts. The tract is a buffer tract to the Hardwood Ecosystem Experiment Management Unit #3. This unit is researching the long-term effects of clearcutting management on forest and wildlife species.

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 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 as described to ensure that the existing 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. Inventory observations included wild turkey, white-tailed deer, small furbearing mammals and a wide diversity of songbirds. The Natural Heritage Database has identified in the nearby vicinity of this tract: Timber Rattlesnake, Trailing Arbutus, Hooded Warbler, American Badger, Bobcat, Homoplectran Caddisfly and Indiana Bat. Tree species composition in this tract is diverse ranging from disturbed site species such as sassafras on the ridge tops, in the old field areas 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 tract records include reports of timber rattlesnakes, Indiana bats, warblers and trailing arbutus. Timber harvesting will create specialized habitats for many of these species as well as create auxiliary den sites. The timber rattlesnake usually prefers south slopes and rock outcrops. A dominant west slope is present in this tract however no rock outcrops were observed during the inventory. Tops leftover from a harvest will provide additional habitat for prey that snakes can forage for. The warblers both prefer fragmented canopies and dense understory sites. Harvesting will increase the density of the understory plants temporarily. Indiana bat habitat may be enhanced by crown thinning, as well as the creation of snag trees. Trailing arbutus prefers pine stands' acidic soils which are found in small patches. Bobcat habitat will also be enhanced as their primary food source of small mammals is located near forest edges and canopy gaps.

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: hiking, hunting, nature study, mushroom, berry and nut gathering. This area also provides a unique area for school groups to visit and learn about forest management activities and the unique fault system that runs through this tract. The Three Lakes hiking trail proceeds through the central ridge of the tract and is well traveled by hikers throughout the year.

Cultural

No known or observable cultural resource areas were encountered during the tract inventory. This tract is also protected from wildfire by aerial surveillance during fire seasons and has a well-maintained multi-purpose road on its eastern 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 September 2009. The inventory yielded the following information:

HARVEST / LEAVE REPORT SUMMARY
MBF = 1000 Board Feet

SPECIES	HARVEST MBF	LEAVE MBF	TOTAL MBF
American Beech	0.03	0.0	0.03
American Elm	0.02	0.06	0.08
American Sycamore	0.13	0.11	0.24
Black Cherry	0.11	0.11	0.23
Blackgum	0.03	0.0	0.03
Black Locust	0.09	0.01	0.10
Black Oak	0.65	2.22	2.87
Black Walnut	0.03	0.19	0.22
Eastern White Pine	0.11	0.13	0.23
Largetooth Aspen	0.16	0.18	0.34
Northern Red Oak	0.0	0.43	0.43
Pignut Hickory	0.0	0.87	0.87
Red Maple	0.0	0.14	0.14
Sassafras	0.06	0.19	0.25
Scarlet Oak	0.05	0.06	0.11
Shagbark Hickory	0.0	0.39	0.39
Shortleaf Pine	0.0	0.12	0.12
Sugar Maple	0.15	0.15	0.30
Virginia Pine	0.04	0.06	0.10
White Ash	0.21	0.10	0.31
White Oak	0.0	0.44	0.44
Yellow Poplar	0.65	2.08	2.73
Totals			
PER ACRE	2.52	8.04	10.56
TRACT TOTAL	267.10	852.56	1,119.66

Total Tract Acreage	106.0 acres		Present Volume per Acre	10,560.0 bd. ft.
Basal Area per Acre	102.2 sq. ft.		Harvest Volume per Acre	2,520.0 bd. ft.
Number Trees per Acre	95.0		Residual Volume Per Acre	8,040.0 bd. ft.
Stocking Percentage	81 %		Average Tree Size	14.2” Diameter

Tract Prescription and Proposed Activities

This tract last received a harvest in 1967 on the north central ridge. The 1988 management plan had recommended a potential improvement cut in 1992, with an estimated harvest volume of 1,761 board feet per acre, consisting mainly of black oak, yellow poplar, sassafras, red oak and black cherry. Current inventory results indicate a total volume of 10, 560 board feet per acre. The primary timber species in the tract are Black, White, Scarlet and Red Oaks (approx. 36%). Other dominate species include yellow poplar (26%), largetooth aspen, sassafras, sugar maple and hickories. The harvestable volume, as inventoried, is 2,520 board feet per acre and a residual volume of 8,040 board feet per acre. According to the Gingrich stocking guide this tract has 81% stocking. The trees are of large, quality sawtimber with modest amount of higher quality sawtimber. With a stocking level of 81%, this tract could be thinned but not to reduce the stocking level below 65%. 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 root and crown systems. Regeneration openings may need to be marked in stands with lower quality species and/or over-mature stands to promote forest regeneration. At least one regeneration opening is recommended for this area. The southern portion of the tract was once old fields. It now has some scattered pine plantings, sassafras, elms, black locust and beech. The black locust will be marked for harvest as it is considered an exotic invasive. The northern portion of this tract contains the majority of highest quality timber. A selective improvement cut is recommended here. The proposed harvest will be followed up with a proper close out according to Best Management Practices. Timber stand improvement is proposed following the harvest to complete early successional openings and removal of vines. Girdling of cull trees to promote Indiana Bat populations is also proposed. The harvest area in and around the hiking trail will be considered a sensitive area. Great care will be taken to minimize impact on the trail by applying a visual enhancement area along the trail. Skid trails that need t cross this trail will be limited in number and applied perpendicular to the trail as much as possible. All ridge top roads will need to be improved prior to and following the sale.

Proposed Activities Listing

Treatment of Autumn Olive in yard area prior to sale
Timber Harvest planned in 2010-11 fiscal year (est. 250,000bf).
Timber Stand Improvement to be completed after timber sale closeout.
Re-Inventory work scheduled for 2030.

Attachments:

Attached are the following items (in Property files)

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.

To submit a comment on this document, click on the following link:
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