Indiana Department of Natural Resources - Division of Forestry
"DRAFT"
RESOURCE MANAGEMENT GUIDE

Morgan-Monroe State Forest Compartment **03** Tract **10**
Total Tract Acreage: **50 acres** Commercial Acres: **48 acres** Date: **1/05/11**
Forester: **T. Tompkins**

Location

Compartment 3 Tract 10 is mostly located in Monroe County, Section 4, T10N, R1E with a small portion of the tract extending into Morgan County, Section 33, T11N, R1E. The tract lays just north of an old firetrail behind the Assistant Property Manager's residence and along Rosenbaum Road on the east boundary and Gose Creek Road on the North boundary.

General Description

The cover type within this tract is primarily mixed hardwood with a large mixed oak and yellow poplar component. There is also a Jack Pine stand located on the edge of the tract along the Assistant Property Manager's driveway and the main forest road. Some White Pine was also observed in the stand that surrounds this area. The two non-commercial acres are due to a power line right of way that runs near the eastern edge of the tract. The 2010 inventory data noted the frequency of tree species within each size category (listed in descending order of occurrence):

Sawtimber	Poletimber	Regeneration
White oak	Sugar maple	Sugar maple
Chestnut oak	Red maple	American beech
Yellow poplar	Yellow poplar	Sassafras
Black oak	Chestnut oak	Yellow poplar
Jack Pine	American beech	Shagbark hickory
Sugar maple	Blackgum	Dogwood
American beech	Shagbark hickory	Red elm
N. Red oak	Jack pine	Black locust
Blackgum	Black locust	
Shagbark hickory	White oak	
Scarlet oak	Sassafras	
Bitternut hickory	Scarlet oak	
Red maple	Green ash	
Pignut hickory		
Sassafras		
Basswood		
White ash		
Red elm		

History

Resource management history for tract 0310:

03/31/1938	CCC Planted 1500 White Pine and 1500 Jack Pine near East edge of tract 03 on 2.1 acres.
04/05/1938	CCC Planted 2,600 Jack Pine on 2.1 acres on SE tract corner
01/1991	Wind Storm Damage Assessment by R. Unversaw and L. Eckart
07/30/1991	Salvage Sale – 2.4 acres, 13 trees, 1,576 BF. Sold by D. Vadas to Hawkins Logging DBA.
04/17/2005	4 acre fire off of Rosenbaum Road controlled.
05/2007&8	Ailanthus treatment on utility line ROW by Vadas – 1 acre.

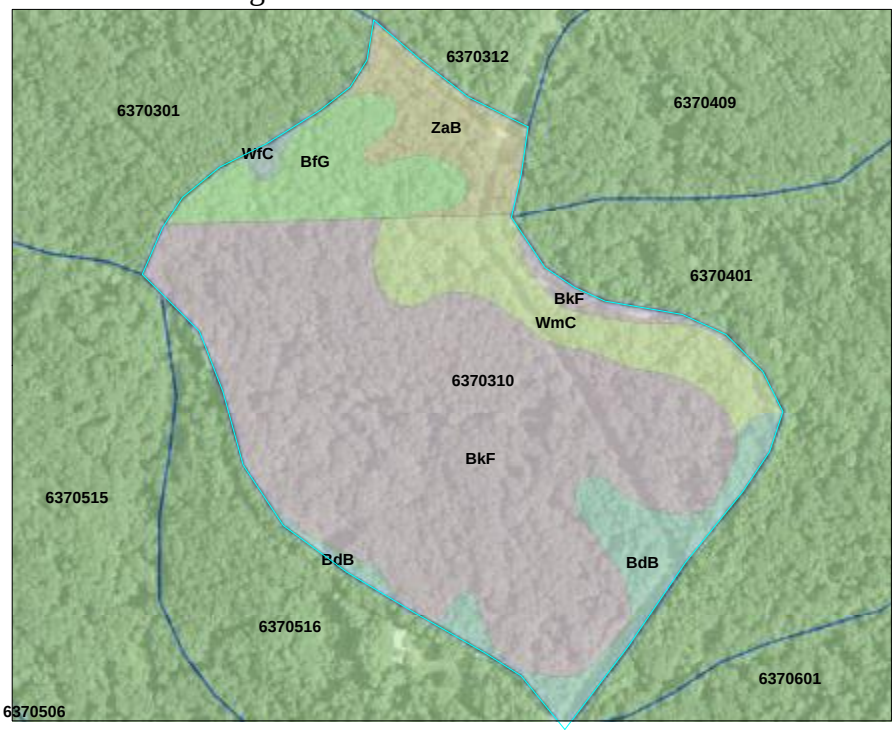
01/05/2011 Inventory completed by intermittent forester Tompkins.

Landscape Context

This tract is surrounded by managed State Forest on all sides. Modest areas of forest recreational facilities are nearby which include the 3 Morgan-Monroe campgrounds, the Forest Headquarter complex & residences and the Scout Ridge Nature preserve and hiking trail. The adjacent tract to the southwest was devastated by a major windstorm in 1990 which created a large blowdown which has succeeded into a later stage of early successional habitat. Within the tract the Jack & White pine stands provide some additional diversified habitat for forest wildlife and songbirds.

Topography, Geology and Hydrology

The tract is comprised of about 40% ridgetop and the remaining acreage covers sideslopes over all aspects with slopes ranging from 5-65%. The soil types noted in the next section are unglaciated soils and have formed from the bedrock material of sandstone, shale and siltstone. The tract has one mapped intermittent stream that runs from the east side of the tract northwest through the center of the tract. Water flow from this stream heads into Gose Creek which in turn drains into Little Indian Creek. In addition, there is one wildlife pond located to the northwest of the residence on the edge of the tract.



Soils

BkF	Berks-Weikert Complex.	25 – 75% slope	Sandstone-Bedrock – 38”
SI – 70	Well drained. Most areas woodland. Soil suited to trees.		
32.2 Acres	Severely limited to dwellings with basements due to slope and bedrock.		
WmC	Wellston Gilpin silt loam.	6 – 20% slopes	Bedrock – 46”
SI – 71	Well drained. Many areas in woodlands. Well suited to trees. Limited		
5.54 Acres	for building sites. Severe hazard to erosion due to silty loam soil content.		
BfG	Berks Channery silt loam.	35 - 80% slope	Sandstone-bedrock – 30”
SI – 70	Well drained. Most areas wooded. Soil suited to trees.		
4.59 Acres	Limited to building sites due to steepness of slope and depth of bedrock.		
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.		

4.34 Acres Moderately limited to buildings because of wetness, shrinking and swelling.
ZaB Zanesville silt loam. 2 - 6% slope Subsoil – 47”
SI – 68 Well drained. Most areas woodlands. Soil suited to trees.
3.49 Acres Fragipan restricts root development.
WfC Wellston silt loam. 6 – 12% slope Sandstone-bedrock – 43”
SI – 71 Well drained. Most areas woodland. Well suited to trees.
.27 Acres Moderate limitation to building due to slope and for absorption.
(Building skid trails on the contour and constructing waterbars are measures taken to reduce erosion potential. SI = Site Index.)

Access
There is good access to this tract from the north and south. New yard locations will have to be made in this tract on both of the north and south ridgetops. Portions of the firetrail behind the Assistant Property Managers house will need modest erosion control rehabilitation.

Boundary
This tract is surrounded by State Forest all sides. A portion of the No Hunting zone is marked on the north part of the tract. This restricts hunting access to the Property’s recreational campgrounds and residences and is remarked periodically.

Wildlife
Wildlife resources in this tract are abundant. Common species which are present include: squirrels, white-tailed deer, turkey, coyote, various small furbearing animals, and a variety of songbirds. The inventory for this tract included recording structural habitat features at each data point; these records include snag (dead, standing tree) counts. The results of these collected data for snag counts are included on the bat guidelines form for this tract.

Legacy trees*	**Maintenance level**	**Inventory**	**Available above Maintenance**
11″ + DBH	450	1245	795
20″ + DBH	150	256	106

*Species include American elm, Bitternut hickory, Cottonwood, Green ash, Red oak, Post oak, Red elm, Shagbark hickory, Shellbark hickory, Silver maple, Sugar maple, White ash and White oak

Snags (all species)	**Maintenance level**	**Optimal level**	**Inventory**	**Available above Maintenance**	**Available above Optimal**
5″ + DBH	200	350	241	41	-109
9″ + DBH	150	300	92	-58	-208
19″ + DBH	25	50	21	-4	-29

Cavity trees (all species)	**Maintenance level**	**Optimal level**	**Inventory**	**Available above Maintenance**	**Available above Optimal**
7″ + DBH	200	300	108	-92	-192
11″ + DBH	150	200	108	-42	-92
19″ + DBH	25	50	31	6	-19

Communities
A Heritage Database Review was completed on this tract. Timber Rattlesnake and Indiana Bat were found to occur within this tract. Many other species were noted on nearby acreage including: Bobcats, Cerulean, Worm Eating and Hooded Warblers, and Trailing Arbutus (a rare plant) as well as Butternut which is a state threatened tree. There are also two rare forest types nearby, dry mesic upland forest and mesic upland forest. All of the animal species located in or around this tract are compatible with single tree selection and small to medium sized group selection harvests. Because of their adaptations to forest management no special management guidelines will occur in this area. Post harvest TSI in this tract will be completed and will increase the number of snags creating additional habitat for the Indiana Bat. If either plant species are discovered during pre-harvest, harvest and TSI operations they will be documented, buffered from management and protected.

Invasives/Exotics
No invasives or exotics were noted during the resource inventory however the inventory was completed during the winter season. Ailanthus (Tree of Heaven) was noted in about 1 acre of the tract along the utility line in 2006 and was treated in 2007&8. Longterm monitoring on the sites that were treated will continue until this species is eradicated.

Recreation
This tract is used for hunting, hiking and wildlife viewing. The majority of the tract is inside of the safety zone but the areas outside of it are used by hunters. There are many public parking areas off of the roads that border the east and north edges of the tract that provides recreational access.

Cultural Resources
No cultural resource sites were observed during the tract's inventory. In the event a cultural resource is encountered in future management practices the location will be recorded, buffered from management and reviewed by the Division Forest Archeologist.

Inventory Results – January 2011

Present tract volume estimates:		**Basal Area (includes sub-merch. stems)**
Harvest volume	**5,763 Bd. Ft./acre**	**65.6**
Leave volume	**6,016 Bd. Ft./acre**	**60.9**
Total tract	**11,780 Bd. Ft./acre**	**126.5**

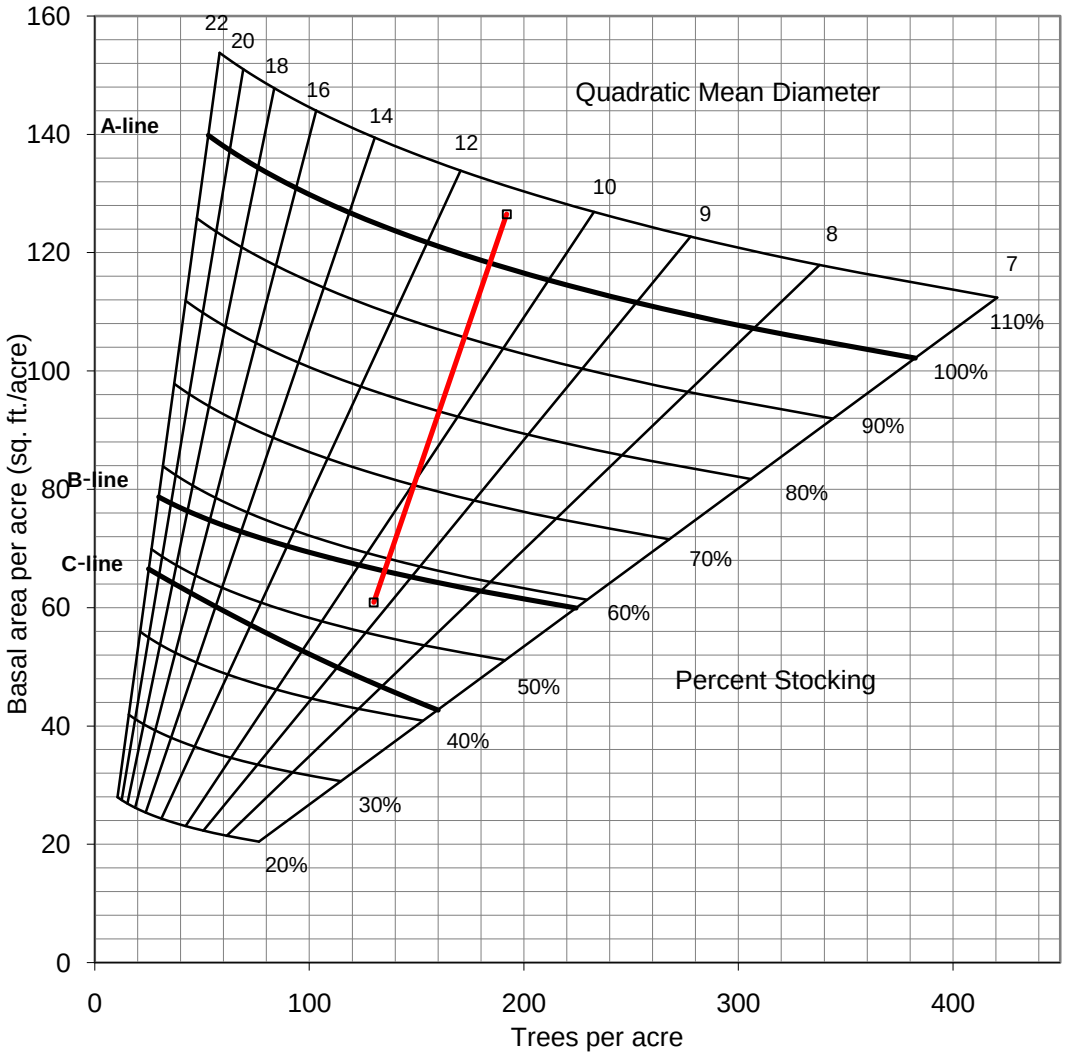
Harvest/Leave Report Summary
MBF=1000 board feet

SPECIES	HARVEST MBF	LEAVE MBF	TOTAL MBF
Yellow Poplar	57.98	54.84	112.82
White Oak	38.45	62.45	100.9
Black Oak	24.77	60.33	85.1
Chestnut Oak	29.7	45.05	74.75
Northern Red Oak	32.41	20.35	52.76
Scarlet Oak	10.72	16.96	27.67
Jack Pine	21.5	0.0	21.5
American Beech	12.79	8.49	21.28
Sugar Maple	16.8	1.7	18.5

Shagbark Hickory	5.43	12.56	17.99
White Ash	12.53	0.0	12.53
Blackgum	4.64	5.71	10.35
Bitternut Hickory	5.15	5.18	10.33
Pignut Hickory	0.0	7.22	7.22
Basswood	6.60	0.0	6.60
Red Maple	5.27	0.0	5.27
Red Elm	2.43	0.0	2.43
Sassafras	1.02	0.0	1.02
Totals			
TRACT TOTAL (MBF)	288.17	300.82	589.00
PER ACRE (MBF)	5.76	6.02	11.78

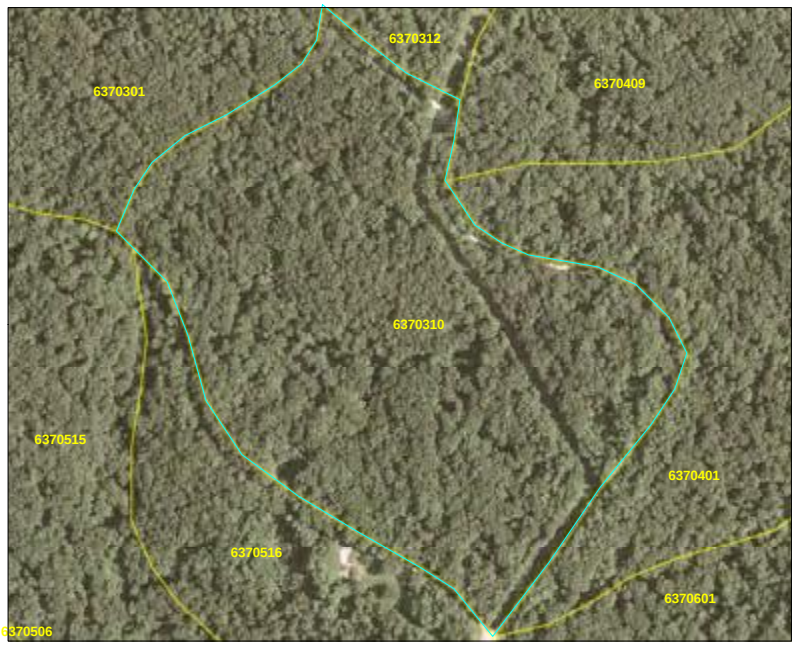
Discrepancies due to rounding.

Hardwood stand Acreage	50 acres		Present Volume per Acre	11,780 bd. ft.
Basal Area per Acre	126.5 sq. ft.		Harvest Volume per Acre	5,763 bd. ft.
Number Trees per Acre	192		Residual Volume per Acre	6,016 bd. ft.
Stocking Percentage	108%		Average Tree Size	8.7″ dbh.



Tract Prescription and Proposed Activities

This tract is comprised primarily of mixed oak/hickory and yellow poplar stands with one small Jack pine stand on the southeast corner. There are also some White pines mixed in with hardwoods on the southeast edge of the stand. The inventory results indicate this tract would sustain and benefit from a harvest this cutting cycle. The prescription is for an intermediate, improvement cutting utilizing single-tree selection as well as group selection cuttings (regeneration) for the south and north ends of the tract. Several trees of lower value shall be felled prior to the loggers entering the sale for a chainsaw safety training class. A ridge in the center of the tract was found to be suitable for a shelterwood cut to regenerate the oaks present there. Some larger openings may also be created in the southern end of the tract to remove areas of poor quality timber and pine; these openings will most likely be located near the Jack pine stand and on the slope to the north of the wildlife pond. Most of the tract consists of good quality sawtimber trees that will either be thinned or harvested with group selection openings to promote regeneration. These openings and the openings created from the 1991 salvage sale will be included in post-harvest TSI.



The marking objective will be the removal of mature & over-mature stems, as well as those individuals of low quality in an effort to improve the overall health, vigor and composition of the stand. The marking objective in the shelterwood areas will be to leave only the healthiest large-crowned oaks and hickories to provide seed for the replacement of the stand. The reduction of stocking should provide space for pre-selected croptrees to move forward into the next cutting cycle. Species composition will likely become more diverse and less susceptible to insect and disease infestation which is a common problem with homogeneous stands. These management techniques will improve the overall forest health of the residual stand, while utilizing a timber resource that is declining due to natural mortality, overstocking or maturity. In group selection areas some good quality trees in and around openings will be left for seed sources. Post harvest TSI is planned to reduce stocking in some areas of high basal area with pole-sized stems and release crop trees not successfully released during the harvest. An estimated harvest of 200,000 Bd. Ft. is possible in this tract and a combined harvest with adjacent tract M0516 is planned for 2011. The estimated cutting cycle from this inventory is approximately 20 years.

Wildlife will benefit from this harvest as well. Additional sunlight penetrating the forest floor will simulate the development of new ground flora, subsequently increasing nesting and foraging habitat. This is essential for game and non-game species as well as continued forest development. Post-harvest TSI will increase the numbers of snags per acre while diversifying the diameter distributions of both snags and growing stock trees.

Habitat & cover types currently present within the tract will remain throughout the majority of the tract after the proposed management activities with the possible addition of additional early successional wildlife areas in regeneration openings. These openings may be up to 5 acres in size.

Proposed Activities Listing	**Date Planned**
Archaeological Site review	Early 2011
Timber marking and Sale	Spring 2011
Timber Harvest	2011-2013
Post Harvest TSI	2011-2014
Review of regeneration in Shelterwood site	2021

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