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

State Forest: **Morgan-Monroe** Compartment: **17** Tract: **25**
Tract Acreage: **79** Commercial Forest Acreage: **79**
Forester: **Amanda Smith (for Amy Spalding)** Date: **7/26/2012**

Location

M1725 is located in Section 26 of Township 9N, Range 1E of Monroe County. It is located approximately 3 miles northwest of Belmont and 3.75 miles southeast of Unionville. The tract is accessible by a firetrail off of the west side of Scarce O' Fat Ridge Road.

General Description

M1725 consists of a total of 79 forested acres of which 38.2 acres are of Oak-Hickory forest and 40.8 acres of Mixed Hardwood forest in Morgan – Monroe State Forest. All 79 forested acres are considered commercial acreage. M1725's timber resource ranges from small to large sawtimber in size. The overall timber quality of this tract is average. A summary of the forest resources in M1725 in relation to species dominance is noted below in Table 1.

Table 1. Overview of Forest Resources in M1725 in July 2012

Overstory Sawtimber Layer	Understory Poletimber Layer	Regeneration Layer
Yellow Poplar	Sugar Maple	Sugar Maple
Sugar Maple	Sassafras	American Beech
White Oak	Black Walnut	Ironwood
Black Oak	American Beech	Red Maple
American Beech	Chestnut Oak	Blackgum
Northern Red Oak	Shagbark Hickory	Bluebeech
White Ash	Red Maple	Basswood
Chestnut Oak	Yellow Poplar	American Elm
Red Maple	Bitternut Hickory	Black Oak
Scarlet Oak	Black Oak	Sassafras
Largetooth Aspen	Bluebeech	White Ash
Pignut Hickory	White Oak	*Bitternut Hickory
Chinkapin Oak	American Sycamore	*Chestnut Oak
Bitternut Hickory	Ohio Buckeye	*Northern Red Oak
Shagbark Hickory	Pignut Hickory	*Pignut Hickory
Sassafras	Basswood	*Scarlet Oak
Black Walnut		*Shagbark Hickory
Black Cherry		*White Oak
Basswood		*Yellow Poplar
Red Elm		
American Elm		

* Species not captured in Prism Plots but present within the tract.

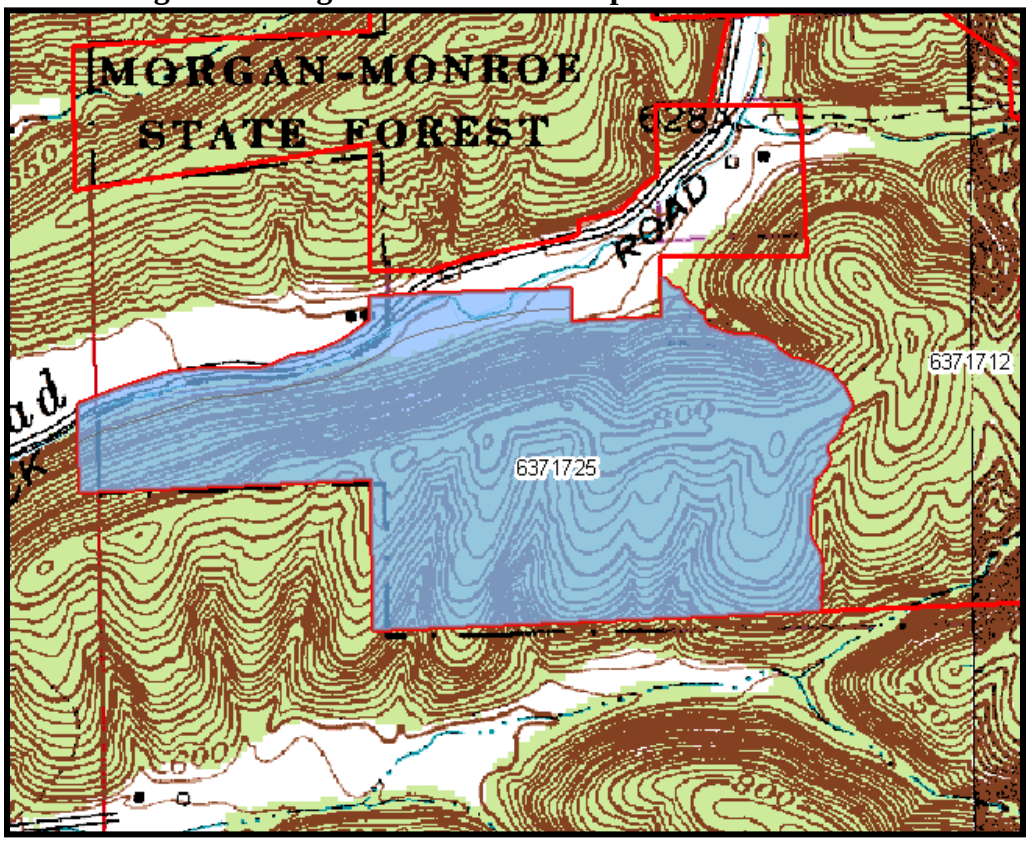
History

The land area that includes M1725 was deeded to the State of Indiana in 1962 by the United States Department of Agriculture. Historical aerial photography suggests that prior to government acquisition the valleys and ridgetops were farmed and the sideslopes likely were grazed. No record of past harvesting has been found for this tract nor does the area show signs of recent timber harvest. The northern boundary has had a longterm public encroachment that has not been resolved by a timely land survey. A large portion of the southern boundary of this tract was run, painted and posted in February of 1999 by Forester Hal Kaina. The first and current forest resource tract inventory was completed on July 25, 2012 by Intermittent Forester Amanda Smith.

Landscape Context

Tract 25 occupies a large finger ridge that slopes downward to the Brummett Creek Valley. Much of the lowland areas are dominated by agriculture or hobby equestrian users. Yellowwood Lake, which is approximately 133 acres in size, is located a little over a mile east of the Tract's east boundary and provides a significant watering source for migrating waterfowl as well as a public fishery. The Brummett Creek lowland areas to the west have modest acreages of row crops, pastureland areas as well as residential developments. The northern headwaters and intermittently flooded marshes of Monroe Reservoir lie approximately 1 mile southwest of the tract providing valuable and stable habitats for migrating waterfowl as well as prime habitat for lowland mammals, herptiles and birds.

Figure 1. Morgan–Monroe SF Compartment 17 Tract 25



Topography, Geology and Hydrology
Tract 25 is part of a large finger ridge that grades westerly toward the Brummett Creek Valley. The northern and southern slopes consist of smaller finger ridges that are interlaced with ephemeral drainages that drain into mapped intermittent drainages. The N ephemerals drain into Conrad Branch, which then flows into Brummett Creek, which then moves south into the North Fork Salt Creek, and eventually flows into Lake Monroe. The S ephemerals drain into an unnamed large intermittent that enters the aforementioned Brummett Creek. In general, these upland soils were formed in residuum from sandstone, siltstone, and shale. The tract's topography ranges from 0 - 75% slopes with dominant north and south aspects.

Soils

BkF (Berks-Weikert Complex, 25 – 75% slopes) This is the dominant soil found on the tract. It is derived from sandstone bedrock about 38" under the surface. This soil has severe limitations for equipment due to slope and low strength. It is recommended that any road construction follow contours or land shaping may be employed. This Complex is well drained with a low available water capacity. Although unsuited for urban development due to slope and depth to bedrock, it is well suited for trees. This soil holds a 70 Site Index for northern Red Oak.

Bu (Burnside Silt Loam, 0 – 2% slopes) This soil in found in the tract's bottomlands. It is derived from channery alluvium deposited in floodplains. This soil has only slight limitations for woodland management. It is moderately well drained and has a moderate available water capacity. This soil holds a 90 Site Index for Yellow Poplar.

Access
M1725 is accessible for management purposes by a firetrail off of Scarce O' Fat Ridge Road. Tract 25 is most easily accessed by the public from the end of Sewell Road and traversing through Y0911 and M1712 or from long hikes from the N and S ends of Scarce O' Fat Ridge Road. This tract contains the "X" Horse Trail that allows access from Brock Road onto Scarce O' Fat Ridge. The management access will need to be upgraded for equipment from the long firetrail that proceeds from off the west end of Scarce O' Fat Ridge Road. A DHPA roadwork project will need to be reviewed by the Division of Forestry Archaeologist prior to completing any timber sale roadwork improvements. Log trucks and equipment will travel in and out the north end of Scarce O' Fat Ridge Road during the timber harvest.

Boundary
M1725 is bordered by State Forest to its east. Otherwise the tract is bordered by privately owned property to the north, south, and west as well as by Brock Road on its northeast portion. The southern and western boundaries have been marked and repainted by orange paint along the line for many years and are up to date. In March of 1992 Surveyors from Bledsoe and Tapp Surveying Company surveyed a portion of the North ½, NW1/4, SW1/4 of this tract. Forester Hal Kaina completed a review of this surveyed area in 1995 and posted portions of it however there are portions that need additional review and marking. The Northeast portion of this tract has had a longterm field encroachment that has not been resolved by a timely survey. A modest effort will need to be undertaken to mark and post this N line prior to any proposed timber harvest. The east boundary of Tract 25 connects with the west boundary of M1712. Overall, the boundaries in this tract will need modest efforts at resolving its N line issues prior to harvest.

Wildlife

A Natural Heritage Database review was obtained for this tract. If rare, threatened or endangered species were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

The current inventory was conducted during mid summer of 2012 so summer breeding bird residents were present. Songbirds were heard and the following bird species were identified during the inventory:

American Crow	Grey Catbird	Red-eyed Vireo
Carolina Wren	Pileated Woodpecker	Red-tailed Hawk
Eastern Phoebe	Red Headed Woodpecker	Wood Thrush

Other species or sign observed within the tract indicates use by Wood Frogs, White-tailed Deer, Grey Squirrel, Eastern Chipmunk, Raccoon, Opossum, Coyote and other small mammals. Multiple deer trails were also noted throughout the tract. Tract 25 has an abundant supply of food resources such as soft and hard mast. Conrad Branch Creek which runs along the northern boundary of the tract provides a consistent water source for the area during nondroughty periods of the year.

The Indiana Division of Forestry recognizes the potential to improve the Indiana bat habitat on its lands by implementing comprehensive management practices. These management practices include obtaining data on size, species, and numbers of snag trees (See Table 2). Snag trees and the presence of some specific species of trees are a vital part of the Indiana bat policy as they provide prime roosting sites for maternal colonies. According to the Wildlife Habitat Feature Summary, all levels of snags and legacy trees met or exceeded maintenance levels except for snags in the 19"+ DBH range. This deficit can be improved during the post-harvest TSI project by girdling a number of trees in this size range.

Table 2. Live Legacy Trees* and Snags inventoried July 2012 on M1725

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	711		2,898	2,187	
20"+ DBH	237		633	396	
Snags (all species)					
5"+ DBH	316	553	1,760	1,444	1,207
9"+ DBH	237	474	339	102	**-135**
19"+ DBH	39.5	79	37	**-3**	**-42**

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

Communities

The ground cover of this tract consisted of mainly mesic to dry mesic species. Observed species included:

Appendaged Waterleaf	Greenbrier	Pawpaw
Beebalm	Hepatica	Poison Ivy

Black Snakeroot	Horseweed	Sedge spp.
Blue Cohosh	Jack-In-The-Pulpit	Spicebush
Blueberry	Japanese Stiltgrass	Spinulose Wood Fern
Broad Beech Fern	Jewelweed	Squawroot
Canada Violet	Large-flowered Bellwort	Stinging Nettle
Christmas Fern	Large-flowered Trillium	Sweet Cicely
Clayton's Bedstraw	Leeks	Virginia Creeper
Cleavers spp.	Maidenhair Fern	White Snakeroot
False Mermaid	Maple-leafed Viburnum	Wild Geranium
Gooseberry	Multiflora Rose	Wild Ginger
Grapevine	Oxalis spp.	Wild Strawberry
Grass spp.		

Squawroot (Conopholis americana) is a plant that is parasitic on the roots of oak trees. Japanese Stiltgrass and Multiflora Rose were observed during the resource inventory mainly along the horse trail. Multiflora Rose has become relatively common among the landscape, therefore, only large concentrations should be considered for treatment. With the improved accesses that Scarce O' Fat Ridge and Sewell Roads provide, the eradication of the Japanese Stiltgrass is unlikely. However, the prompt reseeding of exposed surface roads and yarding areas during timber sale closeout can reduce the spread and extent of infestation of stiltgrass.

Recreation

Scarce O' Fat Ridge Road is heavily used by hikers, handicap hunters, and horseback riders. This tract contains the "X" Horse Trail that allows access from Brock Road onto Scarce O' Fat Ridge. Other uses of this area include wildlife viewing and gathering. A posting to restrict access or temporary closure in the event of a future timber harvest is planned so as to reduce interactions between the timber harvest and recreational users.

Cultural

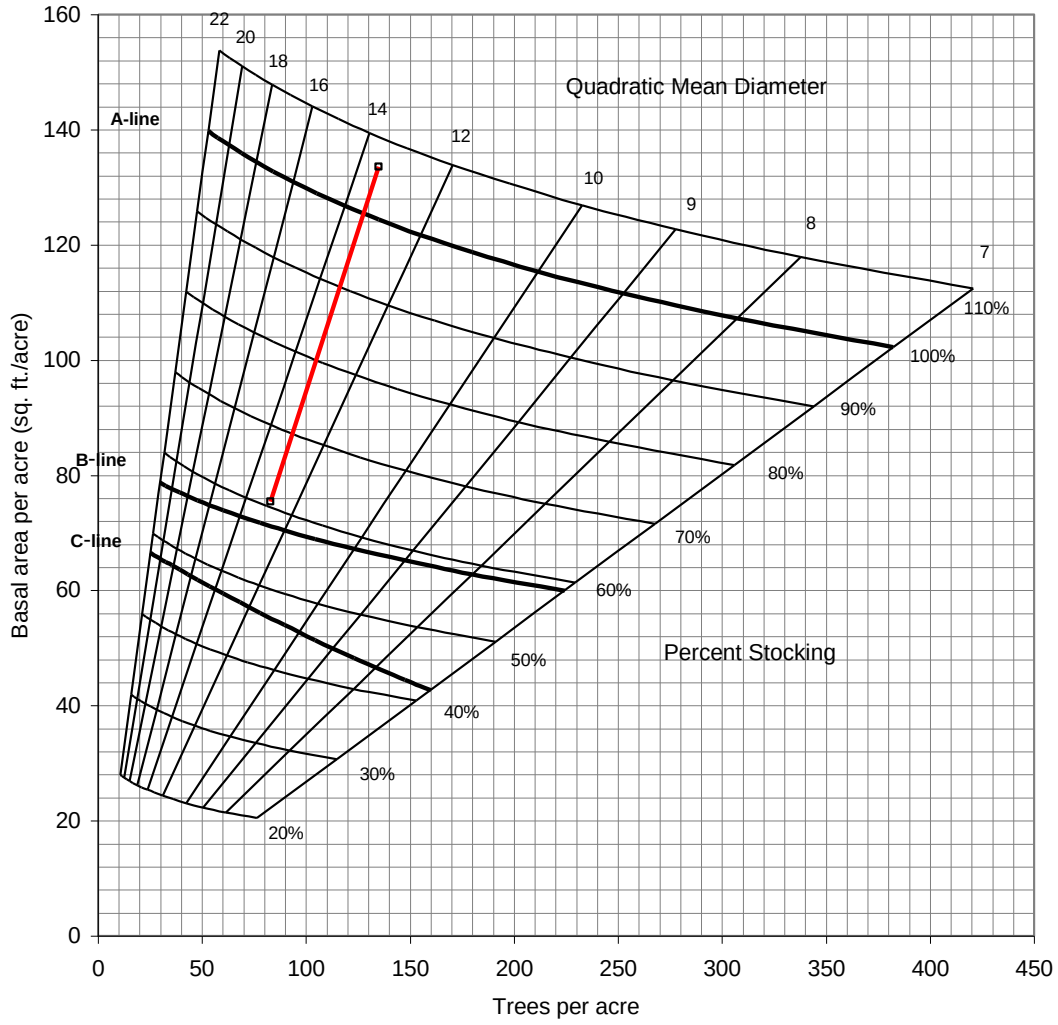
Cultural resources may be present on this tract but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities as prescribed by the Division of Forestry Archaeologist.

Tract Subdivision Description and Silvicultural Prescription

The overall stand structure for this tract is represented in the following Gingrich Stand and stock table that follows the individual stand summary.

Tract Summary Data

Total Trees/Ac. = **498**
Overall % Stocking = **107%** (Overstocked)
BA/A = **144.4 Sq. Ft./Ac.**
Sawtimber & Quality Trees/Ac. = **60**
Present Volume = **9,207 Bd. Ft./Ac.**
Harvest Volume = **4,432 Bd. Ft./Ac.**
Residual Volume/Ac. = **4,775 Bd. Ft./Ac.**



Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed on July 25, 2012 by Intermittent Forester Amanda Smith. 31 prism points were completed over 79 acres (1 point for every 2.5 acres). A tract summary of the inventory is given above and a species breakdown of the summary is given in Table 3 below. This tract is overstocked and would benefit from a timber harvest. The proposed timber sale on this tract would likely yield 350 MBF. The tract's forest resource is composed of 2 different stands that are based on the 2 major timber types mentioned below.

Oak-Hickory Stand

As the Oak-Hickory component of the Eastern Hardwood Ecosystem provides the most significant wildlife, timber resource, and value the retention of these stands is important in the Property's longterm timber management program. The Oak-Hickory timber type covers roughly 48.4% of the tract or about 38.2 acres. The overstory is dominated by WHO, BLO, REO, SCO, SHH, and YEP with an average basal area of 141.3 square feet per acre. Singletree selection is prescribed to remove lower quality stems and mature to overmature

trees to release a growing stock of high quality, more vigorous stems. Likewise, careful selection of co-dominant stems will help to improve overall croptree spacing. Lower quality trees that include low-forking, leaning, overtopped/suppressed intermediates, epicormically sprouting, and deformed trees are planned to be marked for removal in an improvement cutting. Group selection should be used to create regeneration openings where there is an abundance of advanced regeneration of oak and hickory seedlings or where the overstory has low stocking and should be regenerated. It was observed that some WHO crowns are experiencing decline this year. This decline could be from the past two years of drought or from a late spring frost at the beginning of this growing season. The affected WHO will need further observation to determine if they will recuperate from this crown decline.

Mixed Hardwoods Stand

The Mixed Hardwoods component of the Eastern Hardwoods Ecosystem can be very variable in their composition and thereby have more complicated prescriptions. The Mixed Hardwoods timber type covers roughly 51.6% of the tract or about 40.8 acres. The overstory is dominated by SUM, AMB, YEP, BLW, REO, and WHO with an average basal area of 116.9 square feet per acre. Singletree selection can be implemented to remove lower quality stems and mature to overmature trees which will help to improve croptree spacing. An improvement cutting is prescribed to release the quality oaks, hickories and walnuts from crown competition of lesser-valued timber species. The result of this cutting will increase timber diversity as well as provide for enhanced wildlife habitat as most of the species within the Mixed Hardwood component are not heavy mast producers nor tend to provide valuable timber resources. Improvement cuttings in this component will also be applied to remove low-forking, leaning, overtopped/suppressed intermediates, epicormically sprouting, and deformed trees. Group selections should be used to create regeneration openings within this Mixed Hardwood Stand. In order to meet our Property's International Forest Certification goals, group selections will be marked in appropriate areas. Certification standards seek to provide 10% of the tract acreage in regeneration harvests to maintain longterm forest regeneration and sustainability. The Mixed Hardwood stand is often where most of these goals are applied as they tend to have lower Oak-Hickory elements. Planned regeneration openings will most likely return to mixed hardwoods with a strong component of YEP. Overall, marking objectives within this component should consider oak and other species of significant wildlife value as the best croptrees for future conservation. Sugar Maple borer damage was noted in understory SUM throughout both the Mixed Hardwoods stand and the Oak-Hickory stand. In time this pest creates a girdling dead area on the bole of the tree that result in the stem breaking apart during moderate and severe windstorms. The removal of these stems would be classified as a combination improvement and sanitation cutting.

Given the recent inventory and growth of this tract's forest resources, this tract is suitable for a 15 year cutting cycle wherein growth and development of the tract is reevaluated by a forest inventory every 15 years. The current inventory indicates a possible harvest of between 300 to 400 MBF. A combined tract timber sale to include MMSF 1712 is planned for FY12-13.

Table 3. M1725 Sawtimber Volume Estimates

(July 2012 Inventory Data)

Species	Harvest	Leave	Total
White Oak	39,780	100,080	139,860
Yellow Poplar	87,910	45,320	133,230
Sugar Maple	67,600	31,200	98,800
Northern Red Oak	25,420	67,490	92,910
Black Oak	36,170	34,580	70,750
American Beech	33,030	4,960	37,990
Chestnut Oak	11,950	19,220	31,170
White Ash	24,620	0	24,620
Bitternut Hickory	1,670	19,590	21,260
Shagbark Hickory	1,570	17,670	19,240
Scarlet Oak	3,380	13,660	17,040
Black Walnut	1,360	8,050	9,410
Pignut Hickory	2,730	6,440	9,170
Red Maple	6,310	750	7,060
Black Cherry	0	3,880	3,880
Largetooth Aspen	3,040	0	3,040
Chinkapin Oak	2,140	0	2,140
Basswood	0	1,720	1,720
Red Elm	0	1,670	1,670
Sassafras	1,470	0	1,470
American Elm	0	980	980
Tract Totals (Bd. Ft.)	**350,150**	**377,260**	**727,410**
Per Acre Totals (Bd. Ft./Ac.)	**4,432**	**4,775**	**9,208**

Proposed Activities Listing

Proposed Management Activity	***Proposed Period***
DHPA timber sale project review	Summer-Fall CY2012
Roadwork Rehabilitation	Fall CY2012
Timber Marking (in conjunction with 6371712)	Fall CY2012
Timber Sale (in conjunction with 6371712)	Spring 2013
Postharvest Timber Stand Improvement Project	CY2014-2017
Postharvest Invasives Treatment (if needed)	CY2014-2017
Reinventory and Management Guide	CY2027

Attachments (Included in Tract File)

- Topo Map of Tract Features
- Tract Soils Map
- Aerial Photo of Tract
- INHD Review Map
- Stocking Guide Chart
- Printed TCruise Reports

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You must indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

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