# RESOURCE MANAGEMENT GUIDE

State Forest: Morgan-Monroe | Compartment: 11 | Tract: 17
Forester: D. Potts | Date: November 11, 2009
Management Cycle End Year: 2029 | Management Cycle Length: 20 years

## Location

This tract is located in Section 15 and 22 T10N R1W of Monroe County, commonly known as Compartment 11 Tract 17 of Morgan-Monroe State Forest. This particular tract is accessible via cable gate off of Chambers Pike Road approximately one half mile east of State Highway 37. Chambers Pike Road is about six miles south of Martinsville, Indiana.

## General Description

This tract includes 108 acres of which all are in commercial forestland. The predominant cover type within this tract is hardwood forest.

## History

According to the timber management activity record, recorded management began in the early 1970's. The first record of a timber sale occurred in 1978. That sale took place in the east central portion of 1117. Tract 17 was created in 1980 from a portion or all of the following in old compartment 21 tracts 6,7,9, and 10. A total 270 trees were sold to the Hindustan sawmill for $3,000.00. A diagnostic cruise was completed in October of 1985. Following the cruise the tract was marked for sale and sold (sale date 03/26/1986) to Crone Lumber Company, Inc. of Martinsville for $13,110.00. An estimated 174,804 bd. ft. in 744 trees and 275 culls was sold. Following the timber harvest in spring/summer of 1986, timber stand improvement (TSI) was contracted to Hopwood Forestry Consultants of Bloomington, Indiana. The most recent activity was a forest inventory that was completed in October of 2009.

## Landscape Context

Closed canopy deciduous forest is the most common and dominant cover type. Agriculture in the form of hay fields, livestock and a fruit tree orchard are nearby. Due to the continued sale and division of private land, residential development continues to decrease the acreage of forestland in the area.

## Topography, Geology and Hydrology

This tract consists of a main north to south ridge with smaller ridges to the west. To the east are side slopes of the main ridge that lead into a mapped intermittent drainage. This drainage flows eventually into the Bean Blossom Creek and then to the White River. The tract lies within the Bean Blossom water shed. The slopes within the tract are moderate to somewhat steep. The underlying geology of this tract is sand stone, siltstone and shale.

**Soils**

Wellston-Gilpin siltloam (WmC) 6-20% slope 20% of tract

This is the most dominant soil type on the majority of ridge tops within this tract. The available water capacity is moderate for Wellston soils and low for the Gilpin soils. Permeability for both is moderate. This soil complex has a slight hazard for soil erosion. The woodland suitability subclass is 2o. The "2" refers to high productivity for trees and the "o" indicates that limitations or restrictions for woodlands are insignificant.

Berks-Weikert complex (BkF) 25-75% slope 70% of tract

This soil is the most dominant type throughout the side slopes within this tract. The available water capacity is low in the Berks soil and very low in the Weikert soils. The permeability is moderate or moderately rapid in the Berks and moderately rapid in the Weikert. The complex is well drained. The woodland suitability subclass for the Berks soils is 3f and for the Weikert soils is 4d. The "3" refers to moderately high productivity for trees and the "f" refers to high content of coarse fragments in the soil profile. The "4" refers to moderate productivity for trees and the "d" refers to restricted root depth.

Burnside silt loam (Bu) 10% of tract

Nearly level, well drained soil located in bottoms and in narrow flood plains. This soil is subject to periodic flooding in the spring from March to June. Water capacity and permeability for the Burnside soil are moderate. The woodland suitability subclass for this soil is 1o. The "1" refers to very high productivity for trees and the "o" indicates that limitation or restrictions for woodlands are insignificant.

**Access**

This tract is accessible from Chambers Pike through 6371114 and 6371115. This access road was used for the previous harvests. The culvert stream crossing into 6371115 was repaired and is in working order. The road is in good shape up to the recently used log yard in tract 15, after the log yard the road is fair conditions as long as conditions are dry. The access road in 6371117 will need modest improvement before any harvest operations occur. As long as weather conditions are dry to moderately dry the access road should not need any stone.

**Boundary**

This tract is bounded by State Forest land to the northeast and northwest. To the west and south private property lines bound the tract. The property boundaries are marked with orange vertical bars on trees along the line. The east boundary follows two intermittent drainages. The northwest boundary is across the ridgetop and is the southern border for 6371115. Tract boundaries will be marked before any harvest operations begin.

**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. 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 resources in this tract are plentiful. This tract supports many woodland species including but not limited to white-tailed deer, wild turkey, eastern gray squirrel, fox squirrel, chipmunks and various songbirds.

This tract is does not meet the requirement for snags throughout. It is recommended that snags be created during the management process to maintain habitat for those species (specifically the Indiana bat) that require snags for their survival.

**State Forest:** Morgan-Monroe **Compartment Number:** 11 **Tract:** 17
**Reference Number:** 6371117 **Tract Acres:** 108

**Live Trees - Entire Tract - Desired Species Only***

| | Required | Inventory | Available For Removal | Harvested | Remaining |
|---|---|---|---|---|---|
| *11" DBH+* | 972 | 1245 | 273 | | |
| *20" DBH+* | 324 | 341 | 17 | | |

**Snags - Entire Tract - All Species**

| | | | | | |
|---|---|---|---|---|---|
| *9" DBH+* | 648 | 194 | -454 | | |
| *19" DBH+* | 108 | 55 | -53 | | |

***Desired Species Include:** AME, BIH, BLA, BLL, BLO, COT, GRA, REO, POO, REE, SAS, SHH, ZSH, SHO, SIM, WHA, WHO

**Communities**
A Natural Heritage Database review did not indicate any species or communities within or near the tract. However, during the inventory several butternut (also called white walnut) trees were identified. The trees were located in previous regeneration openings on the eastern portion of the tract. The butternut trees ranged in size from sapling to sawtimber, the largest being 19in DBH. The largest butternut had signs of the butternut canker, but the callous tissue seemed to be sealing the wounds from further infection. The location of these trees will be taken into consideration when potential harvest roads/skid trails are constructed. Also, the butternut trees will be managed for during pre-harvest TSI as well as during the timber marking process. During pre-harvest TSI grapevine control will promote growth and vigor for the butternut trees by removing vines that compete with the trees for light.

**Recreation**
There are no recreation facilities within this tract. This remote, connected parcel of state land provides excellent areas for bird watching, hiking/walking, and hunting (mushroom, squirrel, Ruffed Grouse, White-tailed Deer, Wild Turkey, and raccoon, etc.).

**Cultural**
At present, no cultural sites have been discovered. If such a resource is later discovered during timber marking its location would be documented, submitted to the Division of Forestry archaeologist and a management buffer of 100 feet observed. Locations of cultural sites are not disclosed to protect their integrity.

**Tract Silvicultural Prescription and Proposed Activities**
The predominant timber type within this tract is mixed hardwoods. The overall dominate sawtimber species composition within the tract is: oak (BLO, REO, SCO and WHO) 30%, sugar maple 15%, yellow poplar 14%, hickory (BIH, PIH, and SHH) 14% and black cherry 6%. According to the Gingrich stocking guide for this area the tract is fully stocked at 80%. The tract contains 47 sawtimber trees/acre and has an average overall basal area per acre of 100.8 square feet. The average tree diameter is 14 inches. Understory regeneration is composed primarily of American beech and sugar maple. A significant amount of American elm was present in the understory as well. According to the most recent tract inventory (October 2009) the total Board Feet per acre (Bd.Ft./ac) is 8,899 and the total number of trees per acre is 431. For the overall tract the harvest volume per acre is 3,714 Bd.Ft., the residual volume per acre is 5,185 Bd.Ft. and the number of harvest trees per acre is 42. Based on this information a harvest is recommended to remove mature declining and poor quality trees. A management objective for this tract is to maintain the oak-hickory component by creating light conditions for intermediate shade tolerant species. Within this tract are areas of oak overstory with little regeneration in the understory; some of these areas could be marked as a shelter-wood to promote oak and hickory regeneration. This tract does contain a small amount of eastern white pine in the form of old plantings. Eastern white pine is a non-native species in this part of the state and therefore in this tract it is recommended to remove many of the eastern white pine trees to promote native hardwoods. There are several areas within this tract that would benefit from a regeneration opening. One

specific area is located to the west and northwest of the potential log yard. This area consists of mature white ash, sugar maple, and American beech. In removing the overstory and understory, conditions will be favorable for the regeneration of shade intolerant species.

Remaining marked pine trees from 6371115 could be included in a future timber sale. This pine was marked but very few trees were cut from a previous timber sale. Also, a potential regeneration opening in 6371115 that is adjacent to the northern boundary of 6371117 should be marked for harvest and included in a timber sale. An improvement cut of this are left several poor quality sugar maple and tulip poplar trees in the overstory. Marking a regeneration opening in this area should promote a healthy stand in the future.

Before any harvest operations occur it is recommended that tract-wide TSI occur to remove/reduce the number of grape vines. Regeneration openings from previous timber harvests contain so many grapevines that the trees are suffering from competition. Following a timber harvest, TSI should occur to complete any regenerations openings and to remove marked pole size trees that were not removed during harvest operations. During TSI additional trees should be girdled to create snags needed for wildlife habitat. Following the completion of a timber sale the tract will be closed out according to the Indiana Logging and Forestry Best Management Practices (BMP) Field Guide. The site will then be monitored for the application and effectiveness of the closeout and timber sale (BMP sale review). Lastly the tract will be re-inventoried and the management guide will be updated.

The 2009 inventory yielded the following information.

**Harvest/Leave species and volume (Bd. Ft.)**

| Species | Harvest | Leave | Total |
|---|---|---|---|
| white oak | 33,040 | 164,920 | 197,960 |
| yellow poplar | 71,280 | 81,210 | 152,490 |
| black oak | 57,360 | 81,860 | 139,210 |
| sugar maple | 62,070 | 14,910 | 76,990 |
| northern red oak | 7,140 | 68,020 | 75,170 |
| pignut hickory | 5,300 | 55,850 | 61,150 |
| American beech | 34,250 | 7,480 | 41,730 |
| eastern white pine | 39,380 | 0 | 39,390 |
| shagbark hickory | 3,780 | 35,570 | 39,350 |
| scarlet oak | 7,200 | 28,160 | 35,360 |
| black cherry | 17,690 | 12,540 | 30,230 |
| largetooth aspen | 24,970 | 1,600 | 26,570 |
| white ash | 18,390 | 0 | 18,390 |
| red maple | 9,680 | 880 | 10,560 |
| sassafras | 8,570 | 0 | 8,570 |
| bitternut hickory | 0 | 5,820 | 5,820 |
| blackgum | 0 | 1,150 | 1,150 |
| Ironwood | 1,040 | 0 | 1,040 |
| **Tract total** | **401,140** | **559,970** | **961,130** |
| **Tract average/acre** | **3,714** | **5,185** | **8,899** |

| | | | | |
|---|---|---|---|---|
| Total Tract Acreage | 108 acres | | Present Volume per Acre | 8,899 Bd. Ft. |
| Basal Area per Acre | 100.8 sq.ft. | | Harvest Volume per Acre | 3,714 Bd. Ft. |
| Number Trees per Acre | 431 | | Residual Volume Per Acre | 5,185 Bd. Ft. |
| Stocking Percentage | 80% | | Average Tree Size | 14 in. diameter |

**Proposed Activities Listing**

| *Proposed Management Activity* | *Proposed Date* |
|---|---|
| Tract boundary location/marking | 2009/2010 |
| Timber marking | 2009/2010 |
| Pre-harvest TSI (vine control) | 2010 |
| Timber Sale | 2010 |
| Timber Harvest (two year contract) | 2010-2012 |
| Post-Harvest TSI (regeneration opening completion and crop tree release) | 2010-2013 |
| Best Management Practices sale review | 2010-2013 |
| Re-inventory | 2029 |
| Management Guide update | 2029 |

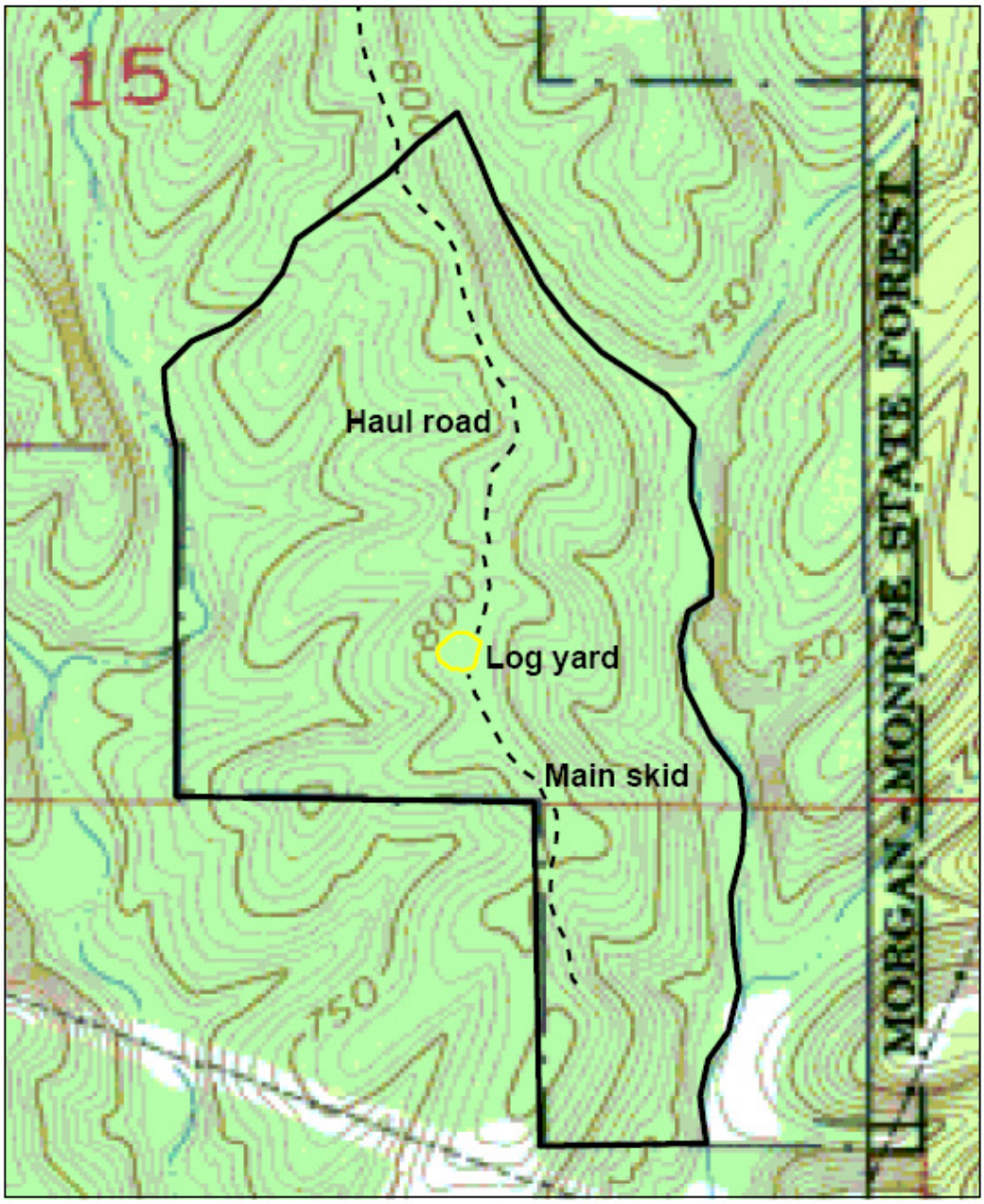
**Attachments (Or on file in property office)**

1. Topographic map with haul road, log yard and main skid trail
2. Aerial photograph and soils map
3. Gingrich stocking chart

**To submit a comment on this document, click on the following link:**
**http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry**

You **must** indicate "Morgan-Monroe C11 T17" 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.

# Compartment 11 Tract 17

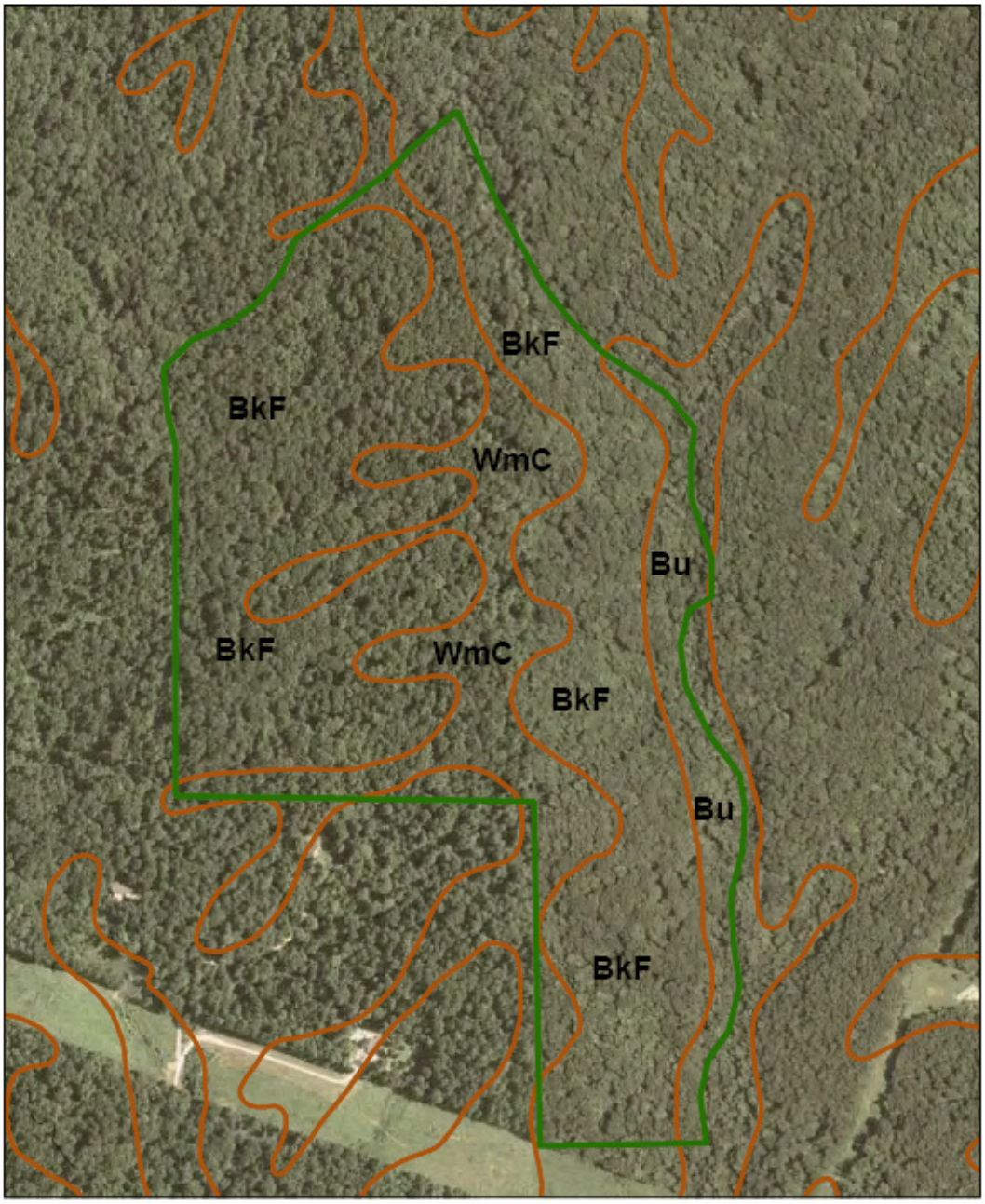



0 850 1,700 3,400 Feet

**Legend**

6371117

# Compartment 11 Tract 17




0 850 1,700 3,400 Feet

**Legend**

6371117

Soils_NRCS_Monroe

BkF: Berks-Weikert complex 25-75% slope
WmC: Wellston-Gilpin siltloam 6-20% slope
Bu: Burnside silt loam nearly level