

Indiana Department of Natural Resources – Division of Forestry

Draft

Resource Management Guide

State Forest: Morgan-Monroe

Tract Acreage: 65

Foresters: Allison Rubeck for Phil Jones

Management Cycle End Year: 2028

Compartment 11 Tract 25

Commercial Acreage: 61.5

Date: June 14, 2013

Management Cycle Length: 15 years

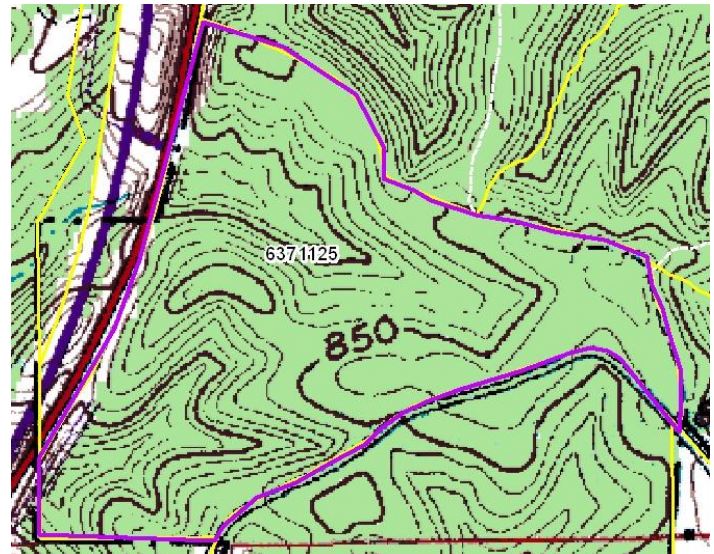
Location:

Compartment 11, Tract 25 is located in the southcentral portion of Section 10 in Township-10-N, Range-1-W of Washington Township in Monroe County, Indiana. M1125 lies approximately 10 miles north of the city of Bloomington, Indiana and 8 miles south southwest of Martinsville, IN.

Figure 1 – Morgan Monroe Compartment 11 Tract 25

General Description:

M1125 consists of a total of 65 acres of which 61.5 forested acres are in commercial forest land. Noncommercial acres include 3.5 acres that include structures and land for an underground gas pipeline, its associated roadways and its Right of Way. The majority of this tract is comprised of Oak-Hickory forest. Mixed Hardwoods such as Yellow Poplar, Sugar Maple, White Ash, Red Maple, Beech and Largetooth Aspen are also present and interspersed throughout the tract. There are no intermittent streams



within this tract. M1125's timber resource ranges from small to large sawtimber in size. The overall timber quality of this tract is good. M1125 also contains some old plantations of Virginia Pine, Shortleaf Pine, and Black Locust. All of these were planted in 1941. A summary of the forest resources in M1125 in relation to species dominance is noted below in Table 1.

Table 1 – Overview of Forest Resources in M1125 in May of 2013

Overstory Canopy Layer	Understory Poletimber Layer	Regeneration Layer
Black Oak White Oak Yellow Poplar <i>Virginia Pine</i> <i>Northern Red Oak</i> <i>Sassafras</i> <i>White Ash</i> <i>American Beech</i> <i>American Sycamore</i> <i>Bitternut Hickory</i> <i>Sugar Maple</i> <i>Pignut Hickory</i> <i>Red Pine</i> <i>Black Locust</i> <i>Black Walnut</i> <i>Red Maple</i> <i>Shagbark Hickory</i> <i>American Elm</i>	Sassafras <i>Bitternut Hickory</i> <i>Red Pine</i> <i>White Oak</i> <i>American Elm</i> <i>Red Maple</i> <i>Sugar Maple</i> <i>White Ash</i> <i>Yellow Poplar</i> <i>Red Elm</i> <i>Shagbark Hickory</i> <i>Virginia Pine</i> <i>Black Locust</i>	Sugar Maple Pignut Hickory <i>Black Locust</i> <i>Red Elm</i> <i>Sassafras</i> <i>White Ash</i> <i>Yellow Poplar</i> <i>American Beech</i> <i>Bitternut Hickory</i>

Bold – Species that comprise ≥ 10% of the total TPA and/or BA in each structural class

Italicized - Species that comprise ≤ 10% of the total TPA and/or BA in each structural class

History:

- 1941 – State Acquisition from Nutter Family
- 4/1941 – Pines and Black Locust planted by CCC
- Early 1970’s – Timber Inventory - Quick Cruise old M1902 of 70 acres
- Late 1970’s - Tract Boundaries Redrawn – old M1111 of 148 acres
- 02/1980 – Tract Boundaries Redrawn – M1125 – 67 acres
- 1982 – MMSF Allowable Cut Cruise for MC11 completed
- 1983-1986 – Photo Type-Map prepared for MC11
- 1/31/1987 – Compartment Accomplishment Record created
- 1/19/95 – Boundary Encroachment survey completed by State Surveyor
- 4/1995 - Removal of encroachment material by private landowner
- 1997-1998 – Compartment 11 Boundaries Completely Remarkd
- 2001-2002 – Compartment 11 Boundaries Completely Remarkd
- 2013 – Last Remarking of south portion of Compartment 11
- 05/31/13 – Inventory Cruise by Intermittent Forester A. Rubeck

M1125 has had modest changes to its tract acreage since its land acquisition in 1941. Oldfields within the tract along with other adjacent tracts were planted by the CCC in April of 1941 to mostly Shortleaf Pine, Virginia Pine and Black Locust. This planting was locally known as the Gumm Tract and it included about 137 acres with 31,075 SHP, 38,000 VIP and 70,000 BLL. 2,172 man hours of CCC labor totaling \$905.72 were noted in MMSF’s Plantation Record #182. The original tract description was MMSF Compartment 19 Tract 2 and it contained 70 acres of which 17 acres

were Pine. A quick cruise inventory in the early 1970's was completed on the 53 acres of hardwoods by an unknown forester (The pine plantation portion was not inventoried). Present volumes were estimated at 1,843 BF/A and harvest volumes were estimated at 1,267 BF/A over the hardwood acreage. No harvest at that time occurred. Sometime in the late 1970's old M1902 was merged into Compartment 11 Tract 11 of which the new tract contained 148 acres. The final tract realignment occurred in February of 1980 for all of MMSF Compartment 11 and Tract 25 contained 67 acres. A boundary line survey along M1125's south boundary was completed in 1995 by Surveyor Robert Vollmer due to a usage encroachment by the adjacent landowner. Boundary corners and monuments were set and the removal of some private property by the adjacent landowner was completed that spring. The current forest resource inventory was completed by Forester Intermittent Allison Rubeck in May of 2013.

Landscape Context:

M1125 lies just east of Highway 37. The land surrounding the north, east, and south are State Forest timberland which consists of a mix of closed canopy, mostly deciduous forest. There is a fair amount of pine forestland that was established in plantations in the 1940's in the immediate area. The western border of this tract contains State Route Highway 37 which has modest grassland and forest edges. Modest residential development occurs to the south of the tract as well as to the west. Portions of M1125 have deep underground natural gas storage caverns which are leased by the State. A natural gas pipeline feeding these caverns runs north through the southern portion of the tract from Chambers Pike Road.

Topography, Geology, and Hydrology:

M1125 consists of long ridgetops with moderate slopes. These slopes range from 2-6% on the ridgetop and 25-75% on the sideslopes. All aspects are represented within the tract. The two primary soils within M1125 were formed over limestone, underlain by sandstone, siltstone, or shale. Water resources from the ephemeral drainages in this tract feed into Buck Creek, then into Bean Blossom Creek, which then flows into the White River.

Soils

M1125 contains 3 different soil types: BkF, CrC and BdB. These soils are listed in order of their dominance and identified in Figure 2.

BkF- Berks-Weikert Complex, 25 to 75 percent slopes

This Complex consists of steep and very steep, moderately deep and shallow, well drained soils on sideslopes of the uplands. These soils are only suitable for forestland but do not typically produce high quality timber. Erosion hazards, equipment limitations, and seedling mortality are concerns in management due to this soil's slope and depth to bedrock. These factors should be considered when laying out timber sales and implementing Best Management Practices for Water Quality. This Complex has a site index of 70 for northern Red and Black Oak.

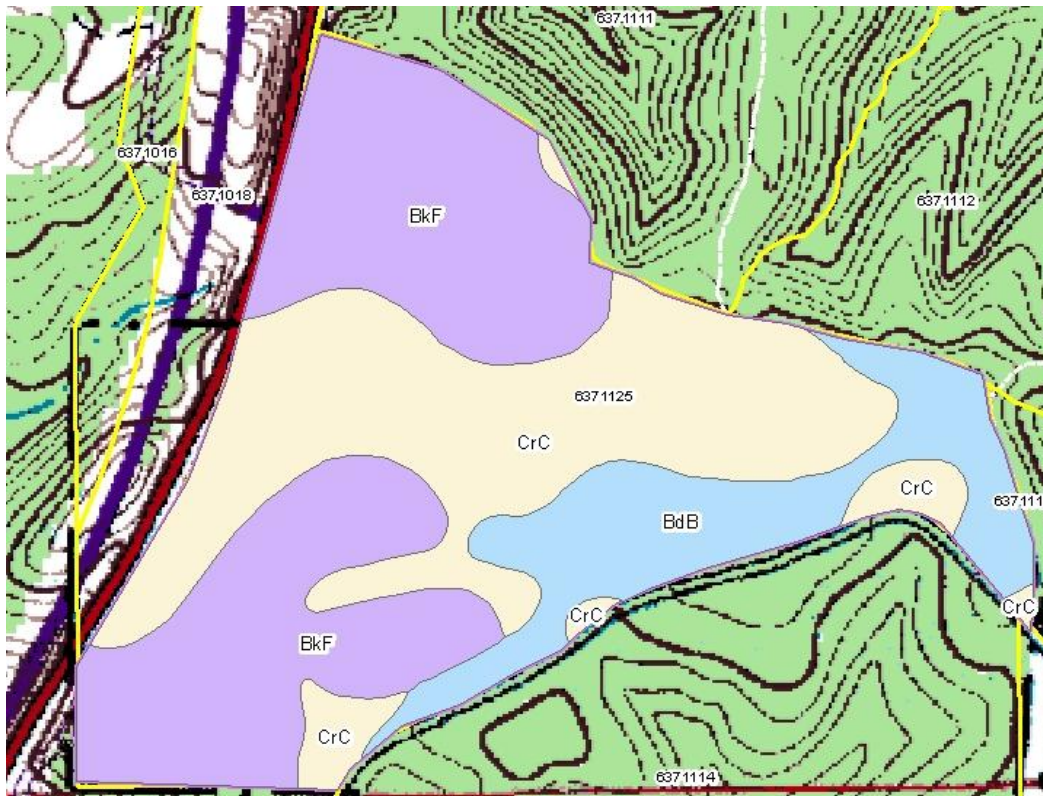
CrC- Crider Silt Loam, 6 to 12 percent slopes

This moderately sloping, deep, well drained soil is on narrow and broad convex ridgetops of the uplands. It is well suited to trees. This soil has a site index of 88 for northern Red Oak and 97 for Yellow Poplar.

BdB- Bedford Silt Loam, 2 to 6 percent slopes

This gently sloping, deep, moderately well drained soil is on uplands. There is a fragipan present at 1.5-3.5 feet that can restrict root penetration. It is well suited to trees and has a site index of 70 for White Oak and 90 for Yellow Poplar.

Figure 2. Soil Types present in M1125



Access:

M1125 is accessible from Chambers Pike Road which ties into State Highway 37. Firetrail 146 runs the eastern border of M1125 and is accessible directly from Chambers Pike. Firetrail 148 runs mostly along the northern border of this tract. Access for recreational users as well as for timber harvest in M1125 can use the main access road/fire trail in the southeast corner. This access is also used by the Vectren gas company to maintain their gas lines.

Boundary:

Morgan-Monroe State Forest tracts border the north, east and south borders of M1125. The entire west edge of this tract is bordered by Highway 37. This west border of this tract is also lined with a state highway fence. This fence lies approximately 50 feet from Highway 37. A gas pipe line right-of-way runs north through the eastern part of this tract via Chambers Pike Road. The south private boundary was surveyed in 1995 to resolve a boundary line encroachment by DNR surveyor

Robert Vollmer. State Forest property corners were marked and posted to establish the lines however some usage issues are still occurring along this boundary.

Wildlife:

A prevalence of wildlife resources are found within M1125. This tract contains diverse vegetation conducive to providing habitat for a variety of wildlife species. Habitat includes a large amount of contiguous Oak-Hickory canopy, scattered Mixed Hardwoods, and old mixed Pine plantations. An assortment of canopy gaps and oldfield openings were observed in the north central part of M1125. These openings contained very dense vegetation that favors early successional wildlife. Vegetative species include Sassafras, Wild Grapevine, and other early successional shrubs. Other habitat structures that favor wildlife include snags (standing dead trees) and cavity trees. Snags and cavity trees provide habitat for birds, bats, and other small mammals to feed, roost, and nest. Hard mast trees such as Oaks, Hickories, and Beech provide food source to Squirrels, Wild Turkey, and White-tailed Deer. Downed woody debris provides forest floor habitat and escape cover for many wildlife species.

A Natural Heritage Database review was completed for M1125 on June 13, 2013. If Rare, Threatened or Endangered species (RTE's) 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 Division of Forestry has instituted procedures for conducting forest resource inventories so that the documentation and analysis of live tree and snag tree densities are examined on a compartment level basis in order to maintain long-term and quality forest habitats. Crown release performed during timber harvests will stimulate the growth of the selected croptrees and will enhance the vigor of these sawtimber trees. Timber Stand Improvement (TSI) following the harvest is planned which will increase standing snag counts. Management practices conducted on M1125 will be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations.

Communities:

M1125 is comprised mostly of dry mesic upland hardwoods. The dominant overstory timber species include White, Black, and northern Red Oak in the upland areas. Slopes and streamside areas are dominated by Mixed Hardwood species such as Sugar Maple, Yellow Poplar, and Beech. The understory contains some Oaks but generally consists of Hickory spp., Maples and Beech. M1125 has a diverse species mixture due to its past use history. The ridgetops consist of oldfields that were planted in the 1940's to Black Locust, Virginia Pine, Shortleaf and Red Pine. The north central portion of the tract contains a few oldfield areas that were not planted which have resulted in some low quality timber, dense shrubs and invasive species.

Multiflora Rose was observed in scattered, light concentrations throughout the tract. However, some areas displayed dense pockets of Multiflora rose. As nearby counties contain viable populations of the plant "virus" Rose Rosette disease, this disease that has great potential for

controlling MF Rose and may be moving into Monroe & Morgan counties. Control measures may be warranted if large populations are located in or surrounding planned regeneration openings. If other exotic or invasive species are detected during future management reviews, they will be addressed at that time. As Black Locust is present in M1125 control measures to reduce the spread of this species the prescription for this species includes the timber marking of larger individuals and the subsequent TSI of remaining stems in a postharvest TSI operation.

Recreation:

Although no permanently established recreation areas are present in M1125 there are several recreational opportunities. Hunting is permitted on State Forest properties and this tract is easily accessible and heavily used during most hunting seasons. Due to the network of roadways and maintained utility corridors there are also good opportunities for off-trail hiking, food gathering, and wildlife viewing.

Cultural:

Cultural resources may be present on M1125 but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

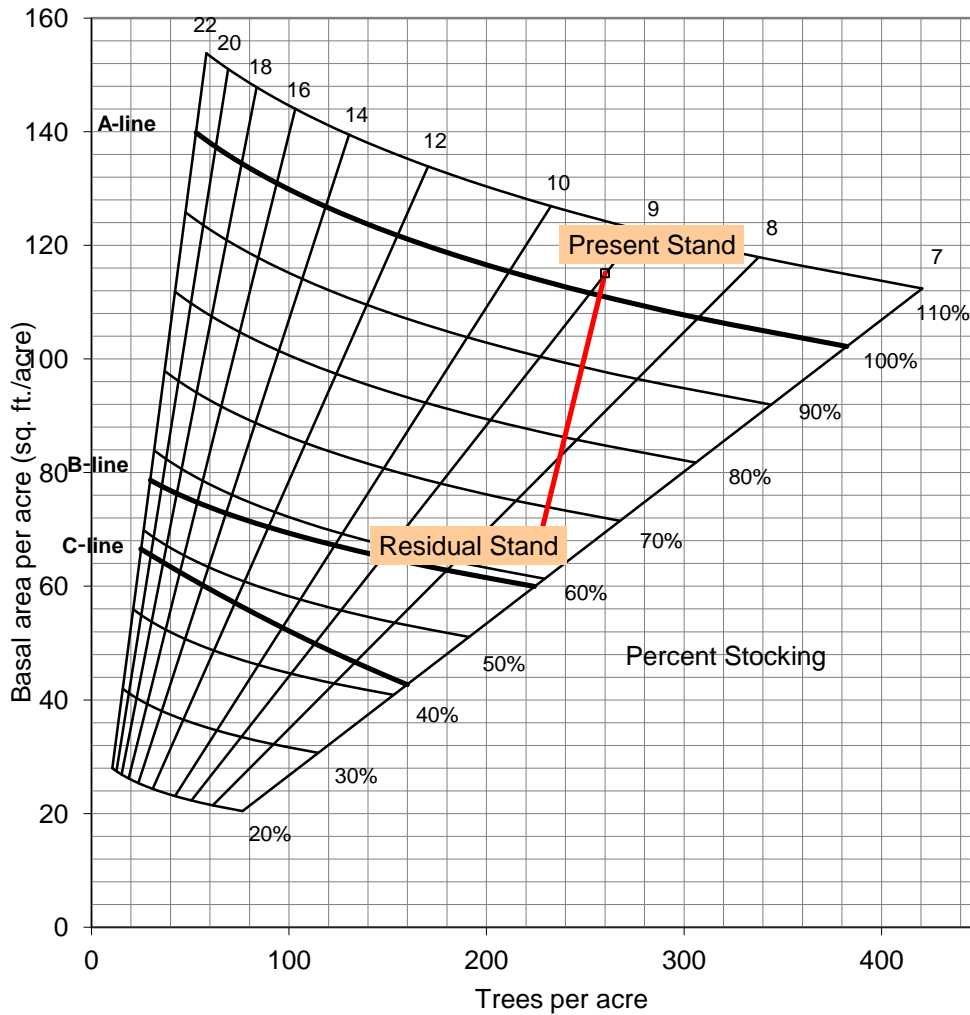
Tract Summary Data

Total Trees/Ac. = **260 Trees/Ac.**
 BA/A = **115 Ft²/Ac.**
 Present Volume = **8,318 BF/Ac.**

Overall % Stocking = **105% Stocking**
 Sawtimber & Quality Trees/Ac. = **80 Trees/Ac.**

	Acres		Sq. Ft. per Acre
Hardwood Commercial Forest:	49.5	Basal Area Sawtimber:	80
Pine Commercial Forest:	12	Basal Area Quality:	0
Noncommercial Forest:	3.5	Basal Area Poles:	27.3
Permanent Openings (<i>Gas Pipeline ROW, Roads</i>)		Basal Area Culls:	6.4
Other Use:	0	Sub-merchantable:	2.5
Total:	65	Total Basal Area:	115.1

Table 2. Gingrich Stand and Stock Table for M1125



Stand Descriptions and Silvicultural Prescriptions:

The current tract forest resource inventory was completed on May 31, 2013 by intermittent forester Allison Rubeck. Eighteen prism points were sampled over approximately 65 acres. A species breakdown of the summary is given in Table 3 below. M1125 is currently fully stocked and is prescribed a timber harvest. As the Oak Hickory, Mixed Hardwood and Pine Plantation timber types are modestly interspersed within the tract these timber types were combined into 1 Management Stratum for management purposes.

Oak-Hickory/Mixed Hardwood/Mixed Pine Stratum

Current Condition

The timber type in M1125 is predominantly Mixed Hardwoods composed of Yellow Poplar, Sugar Maple, White Ash, Red Maple and American Beech along with mature Oak-Hickory dominating some areas. Oak and Hickory species constitute only 37% of the total volume and BA within the tract with White and Black Oak being the most prevalent species within this grouping. The lower proportion of Oak and Hickory in M1125 is due to the tract's past history of use which probably included pasturelands and possibly row crop fields which were later planted. The understory is dominated by Sugar Maple, Sassafras, Red Maple, American Beech and Hickory spp. The oldfield areas are dominated by Virginia Pine, Red Pine, Black Locust, White Ash, and Yellow Poplar.

Prescription

The management goal for this Stratum is to maintain a fully stocked, vigorous canopy of Mixed Hardwoods and quality Oaks and Hickories. For a majority of the tract the prescription would be an improvement cutting. This should be accomplished primarily through singletree selection. However group selections may be prescribed in portions of the central portion of the tract where there are aggregations of understocked and/or poor quality growing stock that are present. Overall, trees selected for harvest in the improvement cutting would be primarily poorly formed, damaged or defective stems, individuals that have experienced drought and insect stresses, or low quality species that are competing with quality croptrees. Timber that is declining in vigor in the overstory would be removed in a selection marking.

Post-harvest Timber Stand Improvement (TSI) is also prescribed and may include Wild Grapevine control, croptree release, large snag creation and regeneration opening completion. A preharvest Wild Grapevine control may be required in some group selection openings.

Given the recent inventory and growth of M1125's forest resources, this tract is suitable for a 15 year management cycle wherein growth and development of the forest resource is measured and evaluated through a forest inventory every 15 years. The current inventory indicates a possible harvest of between 200 - 350 MBF.

Table 3. – Estimated Tract Total Volumes of M1125 in May 2013

Species	Total Volume (bd. ft.)
Black Oak	97,370
Yellow Poplar	86,580
White Oak	73,760
Northern Red Oak	45,990
Virginia Pine	34,270
White Ash	29,620
American Beech	28,080
Bitternut Hickory	26,830
American Sycamore	25,680
Sassafras	23,790
Sugar Maple	18,320
Pignut Hickory	14,290
Shagbark Hickory	9,490

Red Pine	8,240
Black Walnut	7,070
Red Maple	5,600
Black Locust	3,290
American Elm	2,430
Tract Total	540,700
Per Acre Total	8,318

Proposed Management Activity

Proposed Period

Timber Marking	CY2014
Pre-Harvest TSI in Potential Regeneration Openings	CY2014
Timber Sale	FY2013-14
Timber Harvest	CY2014-2016
Postharvest Timber Stand Improvement Project	CY2015-2017
Regeneration Opening Review	CY2020-2021
Reinventory and Management Guide	CY2028

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