

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

State Forest: Martin

Compartment: 3 Tract: 3

Forester: Kush

Date: 1-11-2016

Management Cycle End Year: 20

Management Cycle Length: 20 years

Location

The tract is located off Williams Road in Martin County. It is the northwest tract of compartment 3. From Martin State Forest office, travel 6 miles north on Williams road to a parking unit on the South side of the road. Tract boundary starts approximately .33 miles down the fire lane.

General Description

This tract contains 136 acres of timber land. Overall topography for this tract is a hilltop in the central part of the tract, and slopes outward in all four directions. Most of the tract is covered with hardwood forest; there is a distribution of oak-hickory on the ridge tops with mixed hardwoods coming down in elevation. One plantation of white pine is located in the south central part of the tract.

History

- This tract was pieced together from several land transfers in 1940. Dating back to 1889, Joshua Crim and George Buman each sold many acres within the tract, to Reany Bowden. All of this land eventually ended up in the hands of William Gerkin, who transferred it to the state in 1940. Henry Paull sold approximately 40 acres in 1940, for \$225.00. George Medford transferred 128 acres to the state in 1940, of which several acres were also within the tract boundary.
- 1986 - Timber Inventory
- 1993- Timber Sale: 235,898Bdft., 1,202 trees, 447 culls/Wright Timber - \$106,000.00
- 2007 - Timber Inventory
- 2007 - Resource Management Guide –Jim Lauck
- 2012 - Grapevine control throughout old opening and other areas of high concentration.
- 2013 - Understory TSI on southern slope to promote oak regeneration ~5acres
- 2015 - Timber Inventory –Joshua Kush
- 2016 - Resource Management Guide- Joshua Kush

Landscape Context

The property surrounding the tract is predominantly closed-canopy deciduous forest. Other minor cover/habitat present includes pine/conifer plantation. This tract is part of a roughly 1000 acre parcel of Martin State forest. The west and east boundaries are against private ownership. The privately owned land in the area is forested with scattered residences along the road. The land uses seem to be relatively stable.

Topography, Geology and Hydrology

This tract is made up of a diverse topography with the north central ridge and terrain falling to flatter lowland topography. The soil is quite rocky on the slopes and less so on the flat and in the northern area. Rocky outcropping and ledges present in the tract will not be threatened. Water flows primarily south off of this tract into an unnamed intermittent stream to the southern boundary of the tract. The stream eventually flows to the White River.

Soils

AgrB - Apalona-Zanesville silt loams, 2 to 6 percent slopes

This is a gradual sloping, moderately drained soil found on uplands and upper side slopes. The fragipan can limit rooting depth. This soil has a site index of 70 for white oak and 88 for yellow poplar.

AgrC2 - Apalona-Zanesville silt loams, 6 to 12 percent slopes

This moderately sloping moderately drained soil found on hills, toe slopes, and structural benches. Has erosion ability on slopes during saturation. This soil has a site index of 70 for white oak and 88 for yellow poplar.

GacAW - Gatchel loam, 1 to 3 percent slopes

This is a nearly level, excessively deep, well drained flood plain soil. Soil is occasionally flooded, very brief duration, and be taken into management plan consideration.

WaaAH - Wakeland silt loam, 0 to 2 percent slopes

This is a nearly level, deep, somewhat poorly drained soil on narrow to moderately broad flood plains of creeks. Management planning should consider wet times of year.

WhfC2 - Wellston silt loam, 6 to 12 percent slopes

This moderately sloping, well drained soils is on narrow ridgetops and on side slopes of the uplands. Well suited for trees. The soil has a site index of 81 for red oak and 90 for yellow poplar.

WhfD2 - Wellston silt loam, 12 to 18 percent slopes

This steeply sloping, moderately well drained soils on structural scarps, ridges, and hill slopes. The soil has a site index of 81 for red oak and 90 for yellow poplar.

WpfG – Wellston Tipsaw Adyeville complex, 18 to 70 percent slopes

This severe sloping, moderately deep, moderate to excessively drained soils is on side slopes. Equipment limitations and erosion hazards should be considered when planning management activities.

Access

This tract has good access. Williams's road is a maintained county gravel road running by the designated parking area for this compartment. The parking unit is the head of a fire lane extending into the tract. The initial portion of the firelane will provide good access for logging. As it continues into the tract it will become marginal for hauling as the grades steepen into the southern portions of tract.

Boundary

The north, west, east, and south west boundaries of the tract are property lines. The property line is marked with a mix of carsonite posts and orange paint. The south boundary is defined by the drainage.

Wildlife

This tract is home to the typical woodland wildlife of the region including among others: deer, turkey, raccoon, squirrel, mice, various songbirds, hawks, owls, snakes, turtles, and salamanders. The tract provides oak hickory, mixed hardwood, mature forest habitat, mature pine habitat, and stream habitat.

This tract has an excellent stocking of Oak and Hickory trees which provide reliable mast crops. Most of these stems will be retained after timber harvest. Some regeneration openings may be created and will provide benefit to wildlife species requiring that specialized type of habitat.

A Natural Heritage Database Review was completed for M0303 on January 26, 2016. If Rare, Threatened or Endangered species (RTE's) were identified near or within this tract, 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 and tract level basis to maintain long-term and quality forest habitats. Crown release performed during timber harvests will stimulate the growth of the selected residual trees and will enhance the vigor of these trees. Current live tree abundance meets or exceeds the recommended maintenance levels for all diameter classes. Timber Stand Improvement (TSI) following the harvest is planned which will further increase standing snag counts and provide habitat benefits. Management practices conducted on M0303 will be conducted in a manner that will enhance habitat diversity and maintain the long-term forest habitats for wildlife populations.

Communities

Two main plant communities are found on the tract. The first and most common is hardwood forest. The tract is dominated by oak hickory. Mixed hardwoods are found on the slopes and some ridge tops. The predominant overstory in this tract is middle aged medium sized oak with smaller hickory intermixed. Mature timber is present throughout the tract. The midstory and understory in the hardwoods areas is dominated by sugar maple and American beech. A small white pine plantation is the other community present

on the tract. The pines have never been thinned and are mature with an understory of American beech and sugar maple saplings.

Invasive Species

A limited amount of multi-flora rose is present in the tract. This species is widespread in the county. Most plants are of low vigor and are not spreading. The population will be monitored by property staff.

Recreation

The only recreational developments on the tract are the parking units. The primary users of the tract are hunters and mushroom gatherers. While not permitted, evidence of ATV traffic is present on the firelanes.

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.

Tract Subdivision Description and Silvicultural Prescription

The current forest resource inventory was completed on 12/21/2015 by Resource specialist Kush. 46 prism points were examined and sampled over 136 acres (1 point for every 3 acres). An estimate of the summary of the tract inventory results is located in the table below.

Total Trees/Acre. = 80 Trees/Ac.
 BA/A = 100.7 Ft²/Ac.
 Present Volume = 8,696 Bd. Ft /Ac.
 Bd.Ft./Ac.

Overall % Stocking = 79%
 Sawtimber/Ac. = 40 Trees/Ac.
 Approx. Harvest Volume = 1,819

Species	#trees	Total Bd. Ft
White Oak	1688	409750
Yellow Poplar	677	171380
Black Oak	595	144760
Northern Red Oak	313	118940
Bitternut Hickory	536	72560
Sugar Maple	516	67330
White Ash	248	48520
Eastern White Pine	142	36890
American Sycamore	81	24940
Shagbark Hickory	105	22070
Black Cherry	166	16050
American Beech	65	12830
Black Walnut	73	11550
Red Maple	22	6920
Black gum	85	6260
Scarlet Oak	40	4760

Sassafras	75	2900
Pignut Hickory	24	2530
Persimmon	38	1690
TOTAL	5489	1182630

The Tract consists of two major timber types: oak-hickory and mixed hardwoods. There is a small area of white pine.

Oak-Hickory Subdivision- 92ac.

The timber type is predominantly oak-hickory and is located in the south half of the tract. Primary species include white oak, black oak, red oak, and hickories. A mix of diameters is present, but the timber resource consists of a mostly medium to large sawtimber size class. Quality is good throughout the stand, with oaks consistently having the highest quality. The central ridge top in this area is actually portions of old field areas having large, mature, wolfy white oaks. The understory is dominated by beech, maple, and ash. Most of this area should receive selection thinning to favor retention of the healthiest and highest quality oak and hickory trees. Trees targeted for removal should include mixed hardwoods as well as drought-stressed, fire damaged, suppressed, defective, poorly-formed, over-mature and some mature oaks and hickories.

Mixed Hardwood Subdivision- 44 ac.

This cover type is quite variable within this tract depending on the past history, aspect, and soils that are present. Primary species include yellow poplar, sugar maple, red maple, white ash, and some oaks and hickories. Sugar maple, sassafras, American beech in a wide array of pole tree sizes dominates this subdivision's understory. A combination of free thinning techniques is prescribed for this tract. The goal is to improve growth and vigor on the highest quality mixed hardwood stems. Trees targeted for removal should include the following: competing mixed hardwoods; suppressed trees; trees damaged by past fire or grazing; wind-damaged trees; drought-stressed trees; and any other dominant or co-dominant trees that are overtopping or suppressing quality growing stock. Small group selections may be implemented to remove clusters of poor growing stock and create important early successional habitat.

Eastern White Pine Subdivision-1 ac.

This subdivision is a planting of eastern white pine in the southcentral portion of the tract. It appears this planting has never been thinned and is mature. The trees range in size from large pole to large saw timber and are good quality for white pine. The understory is dominated by American beech and red maple. This area should have continued management of this quality white pine through selection thinning.

Entire Tract – Sanitation Cutting (EAB)

Emerald Ash Borer has been detected in Indiana State Forests and is killing ash trees. Numerous trees are dying and more are showing signs of EAB infestation. When an infected ash tree dies, the wood quickly starts to breakdown and decay; by the second year following death, the wood is too far degraded to be utilized for commercial wood products. A salvage harvest is prescribed to utilize the majority of ash trees before they

die and decay. Many ash trees will not be utilized due to the rapid spread of EAB and mortality of ash across the infested landscape. This harvest will open areas somewhat and encourage the regeneration of ash before the seed source is lost due to the heavy mortality of the species.

Summary Tract Silvicultural Prescription and Proposed Activities

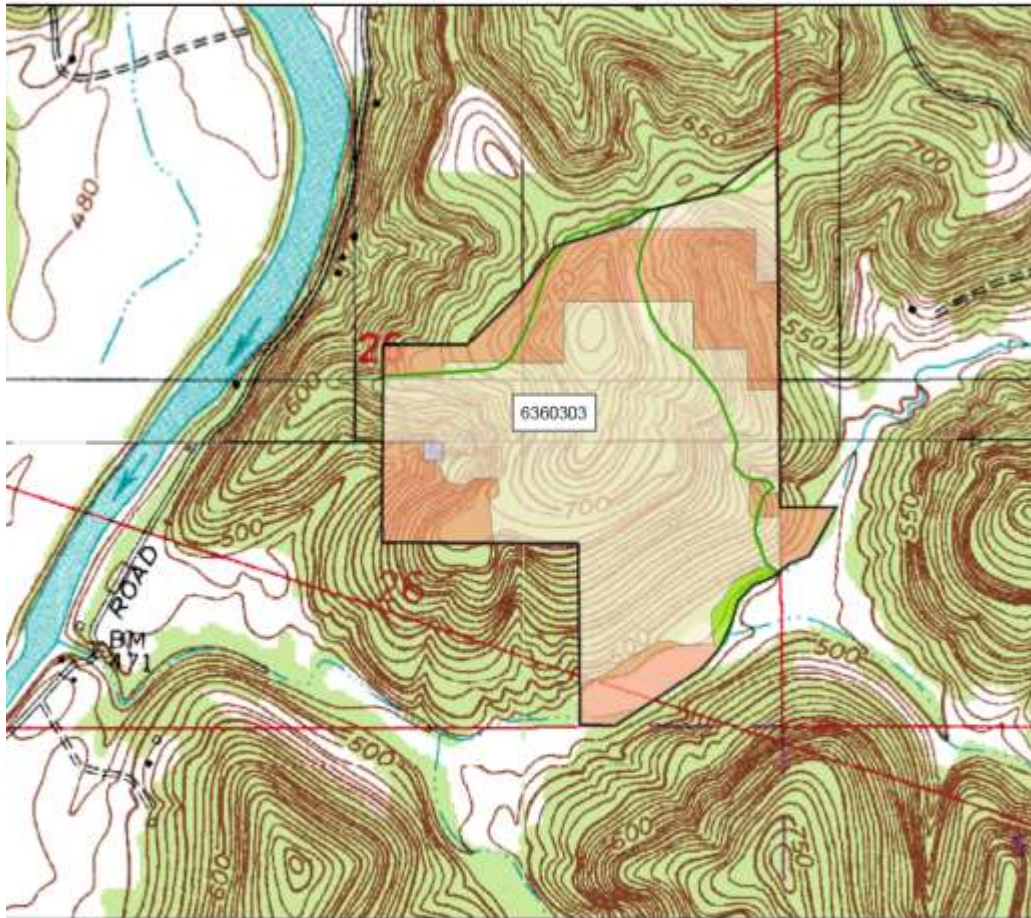
The overall silvicultural prescription for M0303 is a combined free thinning and improvement thinning harvest. Tree selection will remove poorly formed, mature stems, and improve spacing of residual trees to increase the growth of the residual stand. Small group selections may be implemented in areas dominated with poor growing stock, creating a component of young forest and important early successional habitat. The use of forestry BMPs will minimize soil erosion and protect water quality. Prompt installation of water diversions in conjunction with seed and straw (where needed) following harvesting will be employed to minimize any effects to neighboring water resources. Prior to the harvest, grapevine control is prescribed. Portions of or all of M0303 will receive postharvest Timber Stand Improvement (TSI) to ensure opening completion and crop tree release in other portions of the tract as well as in older openings. Invasive control will also be prescribed if deemed appropriate by the administering forester. A field review for regeneration opening success is planned 3-4 years after opening TSI completion. Due to the soils, tree inventory data and scale of proposed actions, a 20 year harvest reentry cycle is suggested and should be reassessed at that time. The current inventory indicates an approximate harvest of 247MBF (1,819 bd. ft. / acre).

Proposed Activities Listing

<u>Proposed Management Activity</u>	<u>Proposed Date</u>
Grapevine TSI	2017-18
Timber Harvest	2017-18
Post Harvest TSI	2018-19
Regeneration check	2018-2020
Re-inventory and update guide	2028

Martin State Forest
Compartment 3 \ Tract 3
Stand Type

Prepared By:
Joshua Kush
Date:1/25/2016



Legend

-  Tract
-  Fire_lane
-  BeechMaple
-  MXHDW
-  Pine_MXHDW
-  Oak_Hickory

0 330 660 1,320 1,980 2,640
Feet

1 inch = 836 feet



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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. Note: Some graphics may distort due to compression.