

**Indiana Department of Natural Resources
Division of Forestry
DRAFT
Resource Management Guide**

State Forest: **Yellowwood**
Tract Acreage: **196**
Forester: **Jordan McGuckin (for L. Burgess)**
Management Cycle End Year: **2029**

Compartment: **03** Tract: **27**
Commercial Acres: **196**
Date: **7/21/2014**
Management Cycle Length: **15 years**

Location

Y0327 is located off the east side of Crooked Creek Road being about 8 miles southwest of Nashville, Ind. It is in Sections 21 and 22 of Township 8 North and Range 2 East, in Brown County.

Figure 1. Yellowwood SF Compartment 3 Tract 27



General Description

Y0327 contains a total of 196 acres comprised mainly of north and south facing aspects. The tract is bordered by Yellowwood State Forest on all sides. The forest resource ranges from small to medium sawtimber in size of predominantly Oak-Hickory cover types. There is some quality Oak dispersed throughout the tract. A summary of the forest resources in Y0327 in relation to species dominance is noted below in Table 1. A portion of the 42 mile Tecumseh Hiking Trail runs through this tract.

Table 1. Species composition from the July 2014 inventory in Y0327

Overstory Sawtimber Layer	Understory Poletimber Layer	Regeneration Layer
Yellow Poplar	American Beech	Sugar Maple
Sugar Maple	Sugar Maple	American Beech
White Oak	Yellow Poplar	White Ash
Chestnut Oak	Sassafras	Red Maple
Northern Red Oak	Black Oak	White Oak
Black Oak	Pignut Hickory	Shagbark Hickory
White Ash	Red Maple	Sassafras
Scarlet Oak	White Oak	Chestnut Oak
American Beech	Shagbark Hickory	Flowering Dogwood
Pignut Hickory	Blackgum	Ironwood
Shagbark Hickory	Scarlet Oak	Blackgum
Black Cherry	American Elm	Black Oak
Blackgum	Basswood	Hawthorn
Bitternut Hickory		
Basswood		
Chinkapin Oak		

History

Y0327 is part of a large block of land deeded by the United States Department of Agriculture in 1959 to Yellowwood State Forest. Historical aerial photography suggests that prior to government acquisition the valleys and ridgetops of Yellowwood State Forest were farmed and the sideslopes likely to have been grazed. The last timber harvest in this tract occurred in 1984.

(Condensed version: Complete history in tract file)

1962 - Timber sale by forester Jerry Reyburn of 404,700 BF in 3,778 trees sold to Charles Steele. Sale included parts of Tracts 23, 24, 27, 28 and 30.

1980 – First Forest Resource Tract inventory completed followed by timber marking by forester Larry Gray.

1982-83 - Timber Sale and Harvest completed.

1984 - Landslide on 2.9 acres. Marked/sold timber on slide area.

1985 - TSI performed on harvested acreage.

2001 – Second Forest Resource Inventory by forester Laurie Burgess: No planned mgt.

2014 - Tracts 27 & 28 combined to form New Tract 27

July 21, 2014 – Third Forest Resource Inventory by forest intermittent Jordan McGuckin.

Topography, Geology, and Hydrology:

Y0327 is composed of one ridge with north and south facing slopes. A majority of the slopes are steeper however portions have more gradual elements. The soil types noted in the next section are unglaciated soils and have formed from the bedrock material of sandstone, shale and siltstone. This tract is located within the North Fork Salt Creek-Lower Schooner Creek watershed. The Lake Monroe watershed is nearby, being southeast of the tract with the Lake Monroe being approximately 0.8 miles to the south of the tract.

Soils:**Be- Beanblossom Channery Silt Loam, occasionally flooded**

This nearly level and gentle sloping, deep, moderately well drained soil is on floodplains, alluvial fans, and colluvial benches. It is fairly well suited to trees. Wetter periods contribute to equipment limitations. Rooting depth is somewhat restricted for some trees, i.e. Black Walnut, due to coarse fragments in its subsoil. This soil has a site index of 95 for Yellow Poplar and comprises approximately 5% of Y0327.

BgF- Berks-Trevlac-Wellston Complex, 20 to 70 percent slopes

These moderately steep to very steep well drained soils are on hillsides in the uplands. They are fairly well suited to trees. Erosion hazards and equipment limitations are the main management concerns due to slope. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality. This Complex has a site index of about 70 for Northern Red Oak and comprises approximately 70% of Y0327.

WaD- Wellston-Berks-Trevlac Complex, 6 to 20 percent slopes

These moderately sloping to moderately steep, well drained soils are on sideslopes and narrow ridgetops in the uplands. They are well suited to trees. Seedling mortality can be an issue on the south facing Berks soils during droughty periods. This Complex has a site index of about 70 for Northern Red Oak and comprises approximately 25% of Y0327.

Access

Public access is available from the parking lot along Crooked Creek Rd. Resource management access is available from the north being 1.8 miles south on Crooked Creek Road from Hwy. 46 to the Miller Ridge Firetrail cable gate. The tract lies approximately 2.5 miles from the gate along Miller Ridge and lies on the north side of the Firetrail.

Boundary

Y0327 is surrounded by other Yellowwood State Forest tracts. Crooked Creek Road is the tract's western boundary, the Miller Ridge Firetrail is the tract's eastern boundary, and intermittent streams determine the tract's northern and southern boundaries.

Wildlife

Wildlife resources in Y0327 are abundant. This tract contains habitat suitable for a wide variety of wildlife species. Y0327's forest resource currently consists of mostly closed canopy deciduous forest dominated by Mixed Hardwoods. Large areas of contiguous Oak-Hickory and Mixed Hardwood timberlands make up the adjacent Yellowwood SF tracts. These tracts provide abundant wildlife food resources that include soft and hard mast.

A Natural Heritage Database Review was completed for Y1413 in 2013. If Rare, Threatened or Endangered species (RTE's) were identified 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 in order to maintain long-term and quality forest habitats. In the event of a timber harvest, crown release performed would stimulate the growth of the selected croptrees and would

enhance the vigor of the residual overstory trees. Timber Stand Improvement (TSI) following the harvest would also increase standing snag counts. Proposed management practices would be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations.

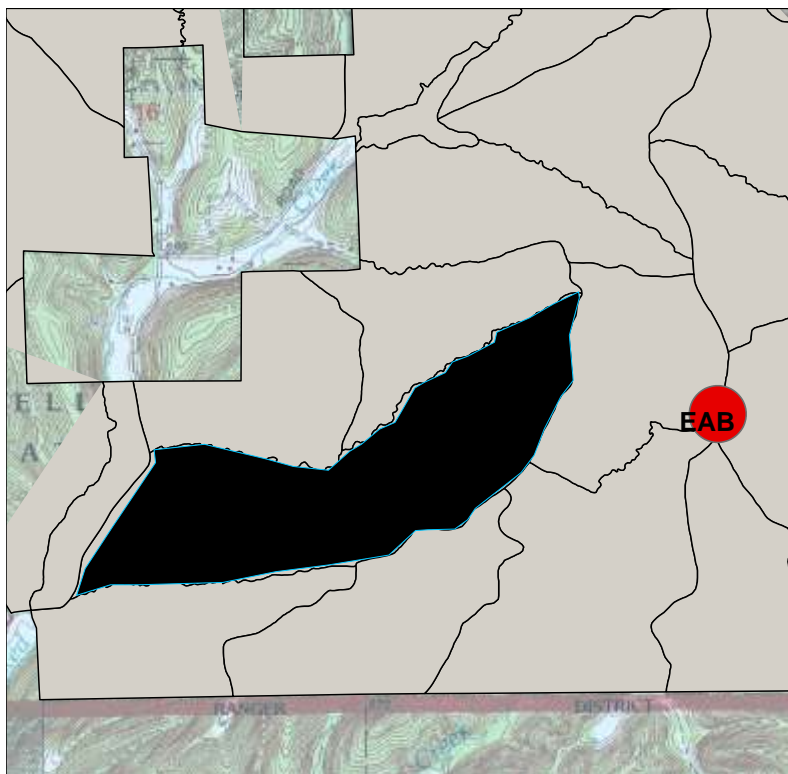
Communities

Lake Monroe waters begin 0.8 miles south of the tract - the floodplain watershed above these waters provides seasonal wetland habitat for wetland and migratory wildlife species. Adjacent tracts to the northeast contain some coniferous forest that provide wintering habitat for many wildlife species. The ridgetops and sideslopes are comprised mostly of mesic upland hardwoods dominated by Mixed Oaks and Mixed Hardwoods. These overstory timber species include Yellow Poplar, Sugar Maple, White Oak, Chestnut Oak and N. Red Oak with a small remnant of Virginia Pine and Shortleaf in the central portion. The understory consists mainly of Sugar Maple, American Beech, Red Maple, and White Oak. The ground cover consists of mainly mesic to dry mesic species. Adjacent tracts to the north contain some Yellowwood trees which are listed as State Threatened.

Invasive/Exotic Species

Japanese Stiltgrass and Multiflora Rose are the main invasive species present on Y0327. Multiflora Rose is dispersed throughout the property with the heaviest infestation being towards the south east side along the creek. Stiltgrass is present in the floodplain and on top of the main ridge on the old skid trails. Stiltgrass treatments are planned for the summer of 2015 whereas the Multiflora Rose would be treated where present in high populations in planned regeneration openings during the planned postharvest Timber Stand Improvement (TSI) project.

Figure 2. Emerald Ash Borer Damage Oct. 2014



Emerald Ash Borer (EAB) is an invasive insect from Asia that has decimated Ash species across the United States. Scattered Ash mortality has been observed in southern Indiana the past several years and has is expected to dramatically increase. EAB damage to White Ash was observed (see Fig.2) in a tract 0.5 mile east of Y0327 in October 2014. The presence of this pest warrants an attempt to salvage some of the Ash trees in this area.

Recreation

The primary recreational uses of Y0327 are hunting, hiking and wildlife viewing. Public parking

is available at the parking lot located off of Crooked Creek Rd. A portion of the Tecumseh Hiking Trail runs through Y0327 and the Miller Ridge Firetrail along the eastern portion of the tract is available seasonally as access for the YSF disabled hunters. Given the moderate recreational use of Y0327 special management considerations will need to be prescribed to reduce interactions between hikers, hunters and timber harvest practices.

Cultural

Y0327 was reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on Y0327 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 overall stand structure for Y0327 is represented in the following Gingrich Stand and Stock Table (Table 2) that follows the individual Tract Summary.

Tract Summary Data

Total Trees/Ac. = **140 Trees/Ac.**

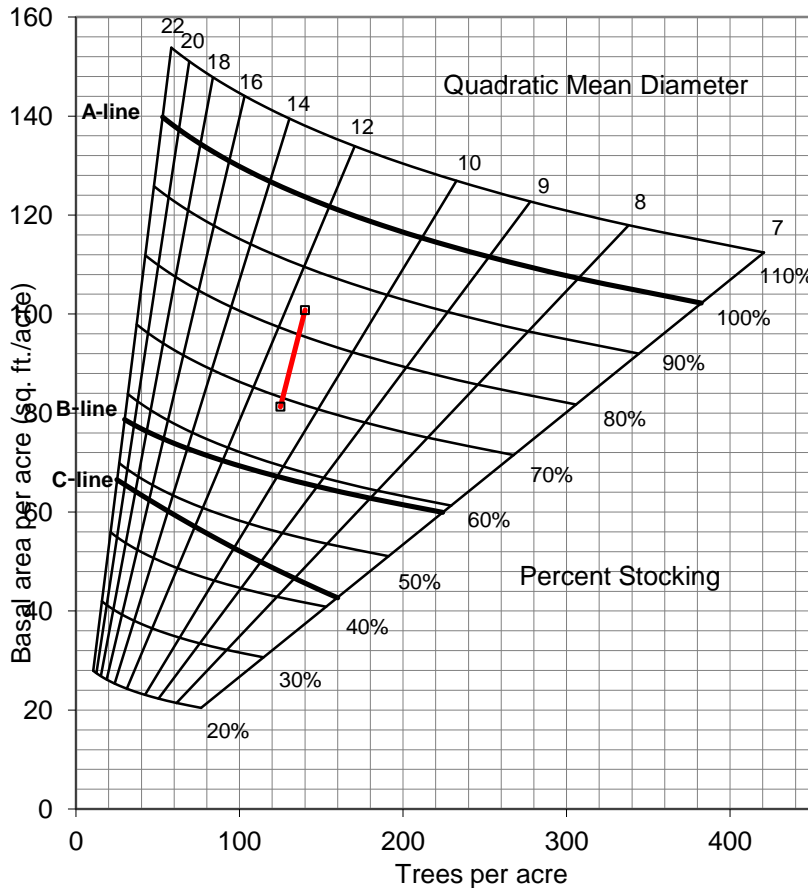
Overall % Stocking = **84% (Stocked)**

BA/A = **100.8 Sq. Ft./Ac.**

Sawtimber & Quality Trees/Ac. = **28 Trees/Ac.**

Present Volume = **8,230 Bd. Ft./Ac.**

Table 2. Gingrich Stand and Stock Table for Y0327 in July 2014



Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed on July 21, 2014 by Forest Intermittent Jordan McGuckin. 53 prism points were sampled over 196 acres (~1 point for every 3.70 acres). A tract summary of the forest resource inventory is given above and a present volume by species breakdown of the summary is given in Table 3 below. Y0327 has small to medium sized sawtimber with basal area of sawtimber stems ranging from 30 sq.ft./acre to 110 sq.ft./acre. Over half of the plots tally 50 sq.ft./acre or more. Currently, Y0327 is fully stocked and a singletree selection cutting to thin and release desirable croptrees and to remove suppressed and poorly formed trees is prescribed. Group selection cuttings are prescribed to regenerate areas of poor stocking, excessive mortality and storm damage or in aggregations of timber areas that have low vigor. Yellow Poplar is the most dominant timber species however a significant number of these trees show decline and dieback in the crown or are already dead due to the drought and scale damage that occurred in 2012. A managed timber harvest over the entire tract is prescribed. The tract's forest resource is composed of interspersed Mixed Hardwoods and Oak Hickory timber types.

Y0327 is comprised of 196 acres of Mixed Hardwoods containing Yellow Poplar, Mixed Oaks, Hickories, and Maples. This tract is located in the portion of Yellowwood State Forest where forest management emphasis promotes early successional hardwood forest. Management efforts in this designated area will include evaluating areas that could promote early successional habitat for a variety of species including but not limited to Ruffed Grouse, American Woodcock and early successional migratory songbirds. The objective here is providing consistent acreage of the young forest growth that these wildlife species require to maintain their populations.

Overall this tract is proposed for a timber harvest with a mix of the following harvest strategies. 1) Singletree selection in those areas of Mixed Hardwoods that need a reduction due to high stocking levels with an emphasis on retaining the higher quality stems. This includes several areas of quality White Oak. 2) Areas of Maple where it is dominant could also be thinned using an improvement cutting to promote quality hardwoods. 3) Emerald Ash Borer (EAB) is currently very close to this tract, if not already present. There is a significant amount of White Ash that is present within the tract as well as in nearby tracts. The decline and mortality of White Ash in this portion of YSF is expected to significantly increase. Ash utilization and regeneration strategies will be incorporated into the tree selection process accordingly. Ash timber in nearby tracts will also be reviewed for inclusion in the proposed harvest for this tract. 4) Group selection openings may also be marked as deemed appropriate based on areas that contain aggregations of poor stocking, low vigor or high concentrations of EAB threatened Ash trees. There are also portions of the tract that contain moderately high aggregations of Yellow Poplar that need to be evaluated for regeneration due to the decline in vigor of this species from the past years of drought and Tuliptree scale effects. These species groups would be the most suitable for inclusion in the longterm management for maintaining early successional wildlife habitat. Encouraging Ash regeneration ahead of the expected wave of mortality will help capture Ash seed production before EAB induced tree mortality.

The Indiana guidelines for Best Management Practices (BMP's) will be followed during the timber harvest and closeout activities to maintain water quality. The prompt installation of water diversions following harvesting will be employed to minimize any effects to neighboring water resources. The proposed harvest will entail both singletree and group selection cuttings. Singletree selection will remove low grade, poorly formed, and declining overstory individuals so that spacing of croptrees is improved to increase the growth of the residual stand. Group selections will be prescribed in aggregations of timber that are inadequately stocked, contain poor quality, or contain stockings with declining vigor.

A riparian area exists along the northern and southern boundaries of Y0327 which are mapped intermittent streams. The management within these areas will be prescribed according to current Division of Forestry guidelines.

Portions of or all of Y0327 will be submitted for a postharvest Timber Stand Improvement (TSI) project along with any invasive work if deemed appropriate by the administering forester. A field review for regeneration opening success is planned 3-4 years after opening TSI completion.

Given the recent inventory and growth of Y0327's forest resources, this tract is suitable for a 15 year management cycle wherein growth and development of the tract's forest resource is evaluated by a forest inventory every 15 years. The current inventory indicates a possible harvest of between 300 and 400 MBF. A timber sale is proposed for FY2014-15 or FY2015-16.

Table 3. Estimated Present Volumes from July 2014 Inventory in Y0327

SPECIES	TOTAL BF
Yellow Poplar	389,620
Sugar Maple	270,930
White Oak	187,460
Chestnut oak	179,040
Northern Red Oak	132,500
Black Oak	110,960
White Ash	73,960
Scarlet Oak	62,860
American Beech	52,420
Shagbark Hickory	30,920
Black Walnut	23,420
Bitternut Hickory	11,110
Red Elm	9,070
Chinkapin oak	7,700
Blackgum	6,740
Black Cherry	5,950
Hackberry	5,300
Basswood	5,300
Sassafras	5,240
Black Locust	2,360

TRACT VOLUME PER ACRE	8,230
TRACT TOTAL VOLUME	1,613,770

Proposed Activities Listing

Proposed Management Activity

DHPA Timber Sale Project Review
 Access Roadwork Rehabilitation
 Timber Marking & Invasive Evaluation
 Stiltgrass Preharvest Treatment(summer)
 Timber Sale
 Postharvest TSI & Invasives Follow-up
 Regeneration Opening Review

 Reinventory and Management Guide

Proposed Period

CY2015
 CY2015-2016
 CY2015
 CY2015
 CY2015-2016
 Within 2 years of harvest
 Within 3-4 years of
 Postharvest TSI
 CY2029

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