Indiana Department of Natural Resources
Division of Forestry
DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **02** Tract: **19**
Tract Acreage: **53** Commercial Forest Acreage: **53**
Forester: **Amanda Smith (for Amy Spalding)** Date: **September 26, 2012**

Location

Y0219 is located in Section 18 of Township 8N, Range 2E of Brown County. It is located roughly 1.5 miles south of Belmont and 1.9 miles northeast of Lake Monroe. The Tract is accessible by a firetrail off of Dewar Ridge Road.

General Description

Y0219 consists of a total of 53 acres, all commercial, of mostly Oak-Hickory timber type along a diverse Mixed Hardwoods component. The timber resource ranges from small to large sawtimber in size and overall quality within Y0219 is moderate. A summary of the forest resources in Y0219 in relation to species dominance is noted below in Table 1.

Table 1. Overview of Forest Resources in Y0219 in July 2012

Overstory Sawtimber Layer	Understory Poletimber Layer	Regeneration Layer
White Oak	Chestnut Oak	American Beech
Chestnut Oak	Red Maple	Blackgum
Black Oak	Sugar Maple	Sugar Maple
Scarlet Oak	Yellow Poplar	Red Maple
Northern Red Oak	American Beech	Ironwood
Yellow Poplar	Blackgum	Black Oak
Bitternut Hickory	White Oak	Pignut Hickory
American Beech	Sassafras	White Ash
Sugar Maple	Pignut Hickory	Bluebeech
Sassafras	Shagbark Hickory	Chestnut Oak
Pignut Hickory	Bitternut Hickory	Flowering Dogwood
White Ash	Scarlet Oak	Red Elm
Persimmon	White Ash	Shagbark Hickory
Blackgum	Black Oak	Yellow Poplar
Red Maple	Eastern Redbud	Sassafras
Shagbark Hickory	Red Elm	*Bitternut Hickory
		*Northern Red Oak
		*Scarlet Oak
		*White Oak

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

History

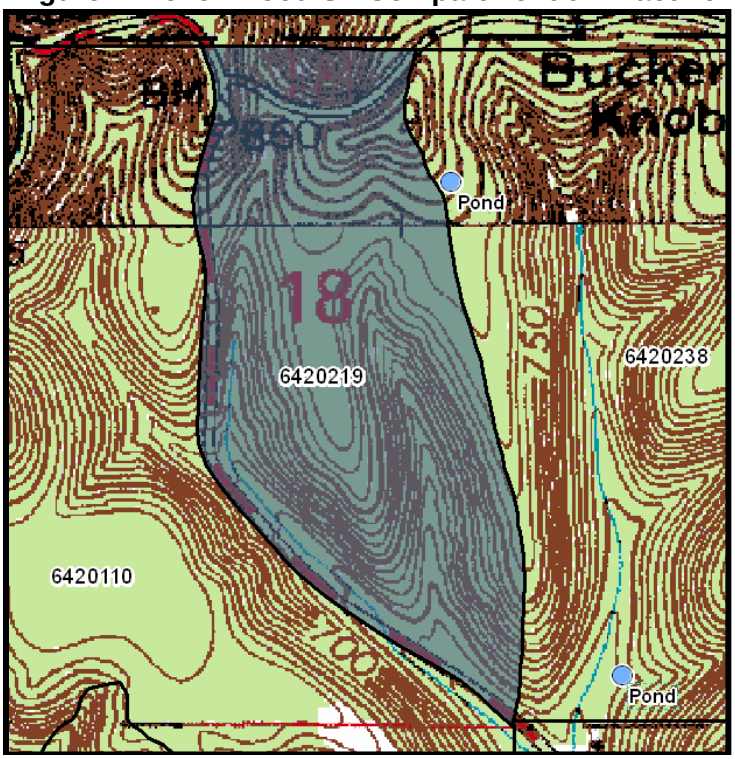
The land area that includes Y0219 (see Figure 1) was deeded to the State of Indiana in 1948 by Clarence and Mary Feiock. Historical aerial photography suggests that prior to government acquisition the valleys and ridgetops were farmed and the sideslopes likely to have been grazed. A boundary encroachment of a small pond and a two-car garage was first observed in 1975 by Forester Jim Akard. The property line was surveyed by Bob Vollmer in April of 1982; however the

State Forest is still seeking a resolution with the current land owner. The first forest resource inventory was started in November of 1980 by Forester Sieg who determined the timber to be of poor quality and did not finish the cruise, however, firewood cutting was recommended. Foresters Fischer and Duncan discovered and documented a timber encroachment on March 17, 1982. It was determined that three WHO (probably of veneer quality) and 17 firewood trees had been taken. Payment to the State for a resolution was made on September 26, 1983. Ninety plus ricks of firewood were cut by the public during a ridgetop thinning by Forester Duncan in November of 1982. Y0219 was reviewed for harvest on 3/20/84 but a harvest was not recommended at the time. Tract 19 previously contained the current Tract configuration and was subdivided into Tract 19 and Tract 19A by Forester Duncan in December of 1984; Tract 19A later became Tract 38. Both the 1975 land encroachment and the 1982 timber encroachment are now located on Tract 38. In 1984 trees were marked in 1984 by Forester Unversaw to thin the area's sideslopes. These were harvested under a commercial firewood agreement with David Axson. Forester Unversaw marked several more acres of TSI in March of 1985 to be removed as commercial firewood. The new Tract Y0219 was inventoried in 2000 by Forester Kaina (258 trees and 3,716 BF present per acre). The 2nd and most recent tract resource inventory was completed on July 31, 2012 by Forest Intermittent Amanda Smith. The results of this inventory are highlighted in the report below.

Landscape Context

The majority of the surrounding matrix is closed canopy hardwood forest. There are some small, open maintained recreational areas on the adjacent T.C. Steele Historic Site and the old Girl Scout camp. The northern headwaters and intermittently flooded marshes of Monroe Reservoir lie approximately 1 mile southwest of Y0219 providing habitats for migrating waterfowl as well as lowland mammals, herptiles and birds.

Figure 1. Yellowwood SF Compartment 02 Tract 19



Topography, Geology and Hydrology
The topography within Y0219 is typical of the Brown County Hills Natural Region. The Tract consists of two large southern sloping finger ridges. It has mostly southwest to eastern aspects in the Tract's southern portion whereas there are north to northeastern aspects that lay north of Bartley Ridge road. The ephemeral drainages feed into a mapped intermittent drainage running along the southwest boundary which eventually flows into Lake Monroe. In general, these upland soils were formed in residuum from sandstone, siltstone, and shale.

Soils
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 slopes. 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.

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 due to droughty conditions. This Complex has a site index of about 70 for northern Red Oak.

Access
Y0219 is accessible for management and recreational purposes by a firetrail off of T.C. Steele Road/Dewar Ridge Road. The entrance to the firetrail is fairly steep and will need improvements. A DHPA roadwork project will need to be reviewed by the Division of Forestry Archaeologist prior to completing any timber sale roadwork improvements.

Boundary
Y0219 is bordered by Yellowwood State Forest to its east and west. The Tract is bordered by privately owned property to the south and by the T.C. Steele Memorial to the north. Y0219's boundaries have been marked and repainted by orange paint along these lines for many years and are up to date. The east boundary of Tract 19 coincides with a ridgetop that forms the west boundary of 6420238. The west boundary of Tract 19 is Dewar Ridge Road which also forms the east boundary of Tract 6420110.

Wildlife
Wildlife resources in Y0219 appear abundant. Y0219 contains habitat for a variety of wildlife species. Forested habitat includes a large amount of contiguous Oak-Hickory and Mixed Hardwoods along the sideslopes, and riparian areas along streams. Sassafras, Grapevines, and other early successional shrubs are among those present that provide modest wildlife food resources. 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 resources for Squirrels, Wild Turkey, and White-tailed deer. Downed woody debris provides habitat and protection for forest floor wildlife and herptile species. Overall, Y0219 has an abundant supply of soft and hard mast. The mapped intermittent stream that runs along the southwest boundary of the tract provides a temporal water source for the area during nondroughty periods of the year. Two man-made wildlife ponds, one on the northwestern edge of 6420238 and the other in the southwestern portion of 6420238, provide some perennial sources of water for mobile wildlife as well as a source of water for breeding herptiles.

A Natural Heritage Database Review was completed for Y0219 in 2012. If Rare, Threatened or Endangered species (RTE's) were identified for 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 special 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 Y0219 will be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations.

Communities

Y0219 is composed of mesic upland hardwoods dominated by Mixed Oaks along with a few Mixed Hardwoods. The dominant overstory Oak timber species include White, Chestnut, Black, Scarlet and Red Oaks. Bitternut Hickory makes up most of the Hickory component. Yellow Poplar and American Beech constituted the majority of the remaining portion of Mixed Hardwoods in the overstory. The understory contains mostly Red and Sugar Maples, Tulip Poplar and Beech with a mixture of Oaks and Hickories. The regeneration layer is dominated by Mixed Hardwood species but does contain a component of Oak. The ground cover of Y0219 consists of mainly mesic to dry mesic species.

Exotic Species

Japanese Stiltgrass and Multiflora Rose were observed during the resource inventory mainly along the firetrails. As Brown County is a known location of the plant "virus" rose rosette disease, the populations of MF Rose are relatively stable. Control measures may be warranted if large populations are located in or surrounding planned regeneration opening. Eradication of Japanese Stiltgrass is unlikely; however, treatment to accessible areas prior to harvest operations should be considered to reduce viable seed in conjunction with prompt reseeding of disturbed areas.

Recreation

Y0219 is readily accessible by the public via a firetrail off of Dewar Ridge Road or from along Dewar Ridge Road. Hunting is permitted on State Forest property and this Tract also offers opportunities for off-trail hiking, hunting, mushrooming, and wildlife viewing.

Cultural

Cultural resources may be present on Y1605 but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

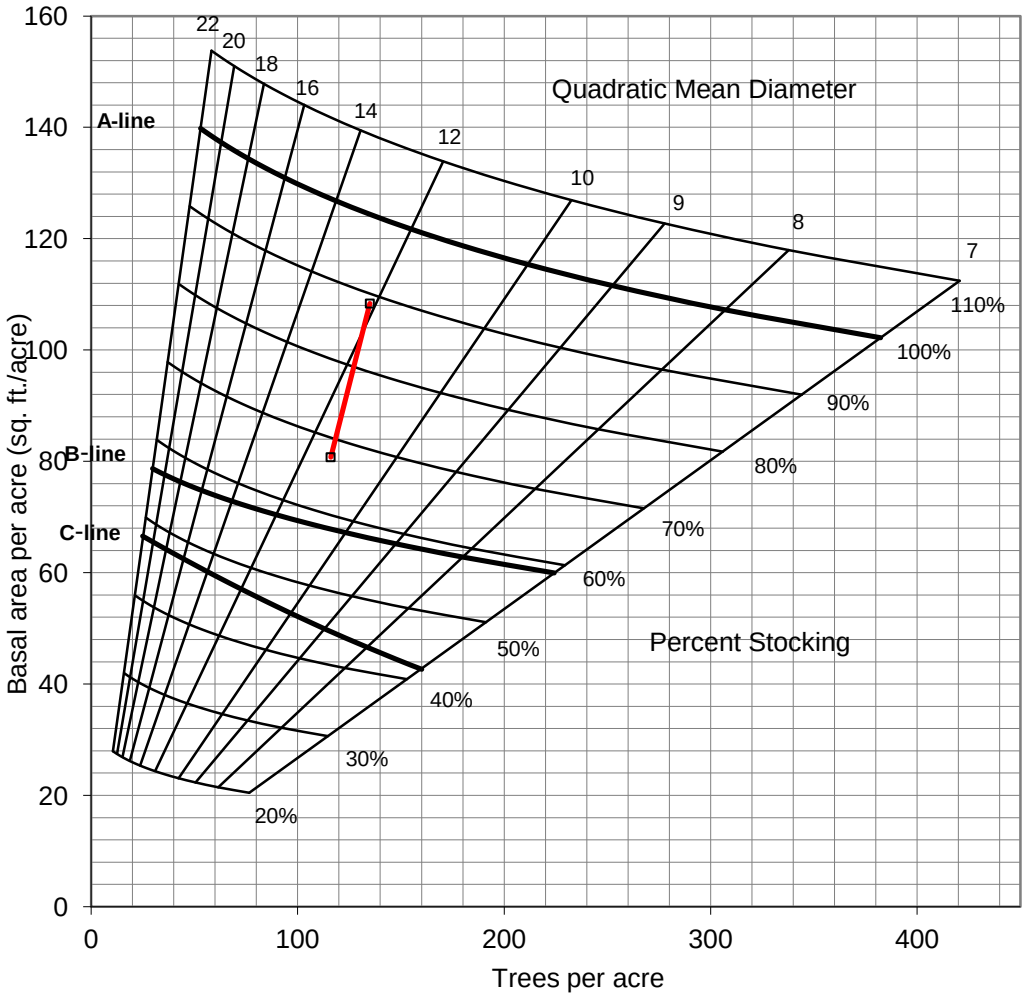
Tract Subdivision Description and Silvicultural Prescription

The overall stand structure for Y0219 is represented in the following Gingrich Stand and Stock table that follows the Tract Summary Data.

Tract Summary Data for Y0219 – July 2012

Total Trees/Ac. = 606 Tr./ac. Overall % Stocking = 89% (Fully Stocked)
BA/A = 129.2 ft^2/ac. Sawtimber & Quality Trees = 46 Tr./ac.
Present Volume = 7,100 BF/ac.

Table 2. Gingrich Stand and Stock Table for Y0219



Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed on July 31, 2012 by Intermittent Forester Amanda Smith. 26 prism points were sampled over 53 acres (1 point for every 2.03 acres). A tract summary of the forest timber inventory is given above and a detailed species breakdown of the summary is given in Table 3 below. Y0219 is fully stocked and a timber harvest is prescribed. The proposed timber sale on this Tract would likely yield from 75 – 200 MBF. Y0219's forest resource is composed of 2 Stratums based on the 2 major timber types and size classes mentioned below.

Oak-Hickory Stratum

As the Oak-Hickory component of the Eastern Hardwood Ecosystem provides the most significant wildlife and timber resource values the retention of this Stratum is important in the Property's longterm forest management program. The Oak-Hickory timber type covers roughly 77% of Y0219 or about 41 acres. The overstory is dominated by WHO, BLO, REO, SCO, and BIH with an average basal area of 101.5 square feet per acre. Singletree selection is prescribed to remove the 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 in a free thinning 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 selections may be prescribed to create regeneration openings where there is an abundance of advanced regeneration of Oak and Hickory seedlings or where the forest overstory has too low of stocking of quality timber. It was observed during the resource inventory that some WHO crowns are experiencing decline in 2012. 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. Salvage of downed trees from recent storm events could also be conducted during the proposed timber harvest.

Mixed Hardwoods Stratum

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 23% of the tract or about 12 acres. The overstory is dominated by SUM, REM, AMB, YEP, CHO, and WHO with an average basal area of 81.7 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 quality Oaks, Hickories and other favored species from crown competition of lesser-valued timber species. The result of these prescribed cuttings will increase timber diversity as well as enhance future wildlife habitat as most of the hardwood species within the Mixed Hardwood component are neither heavy mast producers nor tend to provide valuable timber resources. Improvement cuttings in this Stratum will also be applied to remove low-forking, leaning, overtopped/suppressed intermediates, epicormically sprouting, and deformed trees. Group selections may be prescribed in areas of low quality stems, disease/damaged stems, low basal area, or maturity. Regeneration openings will most likely return to Mixed Hardwoods with a strong component of YEP. Overall, marking objectives within the Mixed Hardwood Stratum should consider Oak and other species of significant wildlife value as the best croptrees for future conservation. Much of this Stratum's YEP appeared to be in modest decline as a result of the past three years of drought and the Tulip Poplar Scale insect infestation that occurred in the late spring of 2012. The affected YEP will need careful review when Y0219 is marked as continued mortality is expected. Sugar Maple borer damage was also noted in understory SUM throughout the Tract. In time this pest creates a girdling dead area on the bole of the tree that results 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. Salvage of downed trees from recent storm events could also be conducted during the future timber harvest.

Given the recent inventory and growth of Y0219's forest resource, this Tract is suitable for a 15 year management cycle wherein growth and development of the forest resource is reevaluated by a forest inventory every 15 years. To minimize reentry periods into this area, a combined tract timber sale to include Tract 38 of Compartment 02 and Tract 10 of Compartment 01 is being planned for FY13-14.

Table 3. Y0219 Inventory Sawtimber Volume Estimates in July 2012

Species	Total Volumes
White Oak	101,310
Chestnut Oak	69,290
Black Oak	68,940
Scarlet Oak	48,160
Northern Red Oak	24,450
Yellow Poplar	19,980
Bitternut Hickory	18,000
American Beech	8,000
Sugar Maple	5,820
Sassafras	3,600
Pignut Hickory	2,500
White Ash	2,390
Persimmon	1,860
Blackgum	710
Red Maple	710
Shagbark Hickory	600
Tract Totals (BF)	**376,320**
Tract Totals Per Acre (BF/Acre)	**7,100**

Proposed Activities Listing

Proposed Management Activity	***Proposed Period***
DHPA Timber Sale Project Review	CY2013-14
Roadwork Rehabilitation	CY2013-14
Timber Marking & Invasive Evaluation	CY2013-14
Timber Sale (in conjunction with 6420238 & 6420110)	FY2013-14
Postharvest TSI & Invasives Follow-up	CY2014-2018
Reinventory and Management Guide	CY2027

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