Indiana Department of Natural Resources
Division of Forestry

Resource Management Guide

Ferdinand State Forest – Pike Unit
Compartment 12 Tract 03

Pike State Forest
Amanda Bradshaw-Burks
Site Index: 78

December 15, 2009

Location: S ½ Section 11 T2S R7W, Marion Township, Pike County, IN. This tract lies about two miles NE of August, IN.

General Description: This tract is 125 acres. The entire tract is covered by closed canopy deciduous forests. The eastern border of the tract is marked by the Patoka River; along this area there are riparian zones.

History:
This tract grew from 91 acres to 166 acres in 2003 due to a large land purchase from the James C. Ellis Estate. The previous tract's delineation began about 6.5 chains to the east of the fire tower, therefore the only definite management history we have will pertain to the aforementioned 91 acres.

Previous to this expansion the tract was split in two and numbered as tracts 5 & 6. For tract #5 (containing 47 acres) an initial cruise was done sometime around 1970 by Bill Hahn. Steve Brandsasse completed a comprehensive management plan for the area in 1975. At that time the tract held a total of 2,863 board feet per acre and with about 2,190 board feet assigned for harvest. A harvest incorporating at least two openings was prescribed. This tract was inventoried again in 1983, indicating approximately 4,525 board feet per acre with about 1,253 board feet available for harvest. A harvest of 61,090 board feet was completed in 1992 with post-harvest TSI marked and completed in 1995. The harvest removed approximately 103,039 board feet over 45 acres.

For the old tract 6, an inventory was done in 1976 that indicated approximately 1928 board feet per acre with only 935 board feet per acre indicated for harvest. A timber harvest was prescribed for the tract. The tract was cruised again in 1985 by Janet Eger and was found to have 5,282 board feet per acre with approximately 1,657 board feet available for harvest.

Grapevine TSI, post harvest TS, and marking of an opening was done in March, 1983 over a portion of the tract. A harvesting trespass was noted on this site (labled as # 4 & 5 in the report) in Jan. 1990. The purchaser of the sale "had created a skid trail which crossed the west boundary of the state property" as said in J. Eger's account. The trespass was resolved with Ellis.

An inventory was done over the entire 125 acres of this tract in December, 2003 by Gretchen Herbaugh. It was found to have 3,670 board feet per acre with 310 board feet per acre available for harvest. Vine TSI was done over the entire tract from March

2007 to Feb. 2008. A thinning of an opening was done in an area of YEP in Oct. 2005. Also exotic control was done along the road to the southwest of the fire tower. It was treated for Autumn Olive, Ailanthus, and Bush Honeysuckle with a 20% Tahoe solution.

Landscape Context:
This track is located within the interior of compartment 12. It is surrounded by state land. The local use of land is for timber production and recreation. There are a fair number of recreational uses on and around this tract. Horse back riding trails, camping, and hiking are all available. Also, there is a retired fire tower present on the west side of the tract.

Topography, Geology and Hydrology: Because of the proximity to the Patoka River a portion of this tract consists of the Patoka River watershed. This area floods for brief to long periods of time. Low lying areas along the river which remain wet for most of the year create unsuitable conditions for logging operations for much of the year. From this low-lying riparian area there are steep slopes present as you move towards the interior of the tract. The interior of the tract has a number of steep slopes as well. There is a stream in a drainage that is located along the northern border of this tract.

Soils:
Gilpin-Berks Loams (GoF), 25-50% slopes.- This is a moderately deep well drained soil on narrow sideslopes. The soil is composed of 60% Gilpin and 25% Berks but both are very intricately mixed. The Gilpin soil has rippable shale bedrock at 37 inches and the Berks soil has rippable sandstone bedrock at 22 inches. The available water capacity is low in Gilpin and very low in the Berks. Permeability is moderate in Gilpin and moderately rapid in Berks soil. Surface runoff is very rapid on both soils. Organic matter is moderate. The woodland ordination symbols for these soils are 4F for Berks and 4R for Gilpin. The soil has a land capability class of VIIe and a site index of 80.

Zanesville Silt Loam (ZaB), 2-6% slopes- This soil is found on gently sloping, deep, and moderately well drained soil on ridgetops in uplands. Sandstone bedrock is found at 78 inches. The soil has moderate available water capacity and permeability is moderate above the fragipan and slow in the fragipan. Surface runoff is medium. There is a firm and brittle fragipan at 24-32 inches and a perched seasonal high water table is in or above this fragipan during winter and early spring. Organic matter content is moderately low. Erosion is the major hazard for this soil. The soil has a land capability classification of IIe, a woodland ordination symbol of 4A and a site index of 68.

Gilpin Silt Loam (GnE3), 15-25% slopes, severely eroded.- This is a strongly sloping and moderately deep, well drained soil on narrow side slopes. It has sandstone bedrock at 29 inches. In some areas depth to bedrock is at 15-20 or 40-50 inches. There are some areas of gullied land. The soil has low available water capacity, permeability is moderate and surface runoff is very rapid. Organic matter content is low. The soil's land capability is VIIe, a woodland ordination symbol is 4R and a site index is 80.

Zanesville Silt Loam (ZaC3), 6-12% slopes, severely eroded- This soil is found on moderately sloping, deep and moderately well drained soils. The Available water

capacity is moderate. Permeability is moderate above the fragipan and slow in the fragipan. Surface runoff is moderate in cultivated areas. There is a slowly permeable fragipan at a depth of about 2 feet. The perched seasonal high water table is above the fragipan during winter and early spring. Organic matter content is low. The land capability class is IVe, it has a woodland ordination symbol of 3D and a site index of 60.

Wellston Silt Loam (WeE), 15-30% slopes- This soil is found on strongly sloping to steep hills. It is a deep, well drained soil on sideslopes in uplands. There is sandstone bedrock at 60 inches. The available water capacity is high, permeability is moderate and surface runoff is rapid. Organic matter is moderately low. The major hazard for this soil is erosion. The soil has a land capability classification of VIe, has a woodland ordination symbol of 4R and a site index of 71.

Steff Silt Loam (Sf), frequently flooded- This is a nearly level, deep, moderately well drained soil on flood plains. The soil is flooded for brief periods in winter and spring. This soil has high available water capacity, permeability is moderate and surface runoff is slow. There is a seasonal high water table at a depth of 1 ½ to 3 feet during winter and spring. Organic matter in this soil is moderate. Plant competition is the main concern. Land capability unit is IIw, it has a woodland ordinance of 4A and a site index of 80.

Gilpin Silt Loam (GnE), 15-30% slopes- This is a strongly sloping to steep, moderately deep and well drained soil on side slopes in uplands. The subsoil is 29" thick and fractured sandstone bedrock occurs at 35 inches. The soil's available water capacity is low, permeability is moderate and surface runoff is rapid. Organic matter content in the surface layer is moderate. Erosion is a major hazard. The soil's land capability is VIe, the woodland ordination symbol is 4R and the site index is 80.

Belknap Silt Loam (Bg), frequently flooded- This soil is a nearly level, deep and somewhat poorly drained soil on flood plains. The soil is flooded for brief or long periods of time during the winter and spring. The soil has a very high available water capacity. Surface runoff is slow and a seasonal high water table at 1 to 3 feet in the winter and spring. Organic matter content is moderately low. This soil is well suited for trees. The land capability subclass is IIw, the woodland ordination symbol is 6A and the site index 90.

Access: Access is very good to this tract. Head west on State Rd. 64, then head northeast on Co. Rd. 650 E. Turn right onto the road that accesses fire tower. This puts you in the western corner of the tract. From here the fire lane follows the entire southern boundary providing very good access to the entire tract. Access to the interior of the tract is by foot.

Boundary: The southern boundary is made up of the fire lane. The Patoka River makes up the eastern boundary, and the northern boundary is marked by a drainage ditch with a stream in it.

Wildlife: This tract supports wildlife that is typical of the area. Animals witnessed were crows, squirrels, and song birds.

A Natural Heritage Database review was obtained for this tract. If rare, threatened or endangered species 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.

Current policy on managing for the federally endangered Indiana bat requires a certain component of snags and live trees of specific sizes and species. This tract meets the live tree target in the 20"+ size class. This tract does not meet the snag requirements in the 5"+, 9"+ and 19"+ size classes. In order to meet the requirements 49 additional snags of 5"+, 91 snags of 9"+, and 28 snags of 19"+ need to be created. This is easily done by girdling trees that are appropriate to reach this goal.

Communities: The dominant forest type on this tract is oak/hickory. Along with the oak/hickory, there are a high number of yellow poplar trees present within this cover type.

Along the Patoka River (on the east side of the tract) the cover type consists of bottomland hardwoods. Many of these trees are very large; but also, many of these trees are low value due to either their species or damage that is present to them.

Honeysuckle is present on this tract. It was noted along the horse trails and also in the corner by the old firetower.

Montiflora rose was noted in the western corner.

Recreation: This tract has a large number of recreation opportunities present within it. A fire tower is present on the western corner. While it is no longer functioning and has been closed; it still draws interest. This tract is covered with horse riding trails. These trails cover much of the tract. Along with these trails there is horse camping available within the tract just to the north of this one. There is much evidence of illegal ATV use on this trail. It seems that the horse trails and firelanes are being used as ATV trails. In addition, there are a number of areas where the ATV's have been creating their own trails. Additional recreation opportunities on this tract are hiking, bird watching, and non-timber forest product harvesting.

Cultural: Cultural resources may be present on this tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

Tract Subdivision Description and Silvicultural Prescription:
The majority of this tract is covered by oak/hickory. The stand is dominated by white oak, yellow poplar, sugar maple, shagbark hickory, and black oak. There are many large sawtimber yellow poplars present that are in various states of decline and/or stress. There are some small pockets of high quality white oak (or white oak with the potential for high

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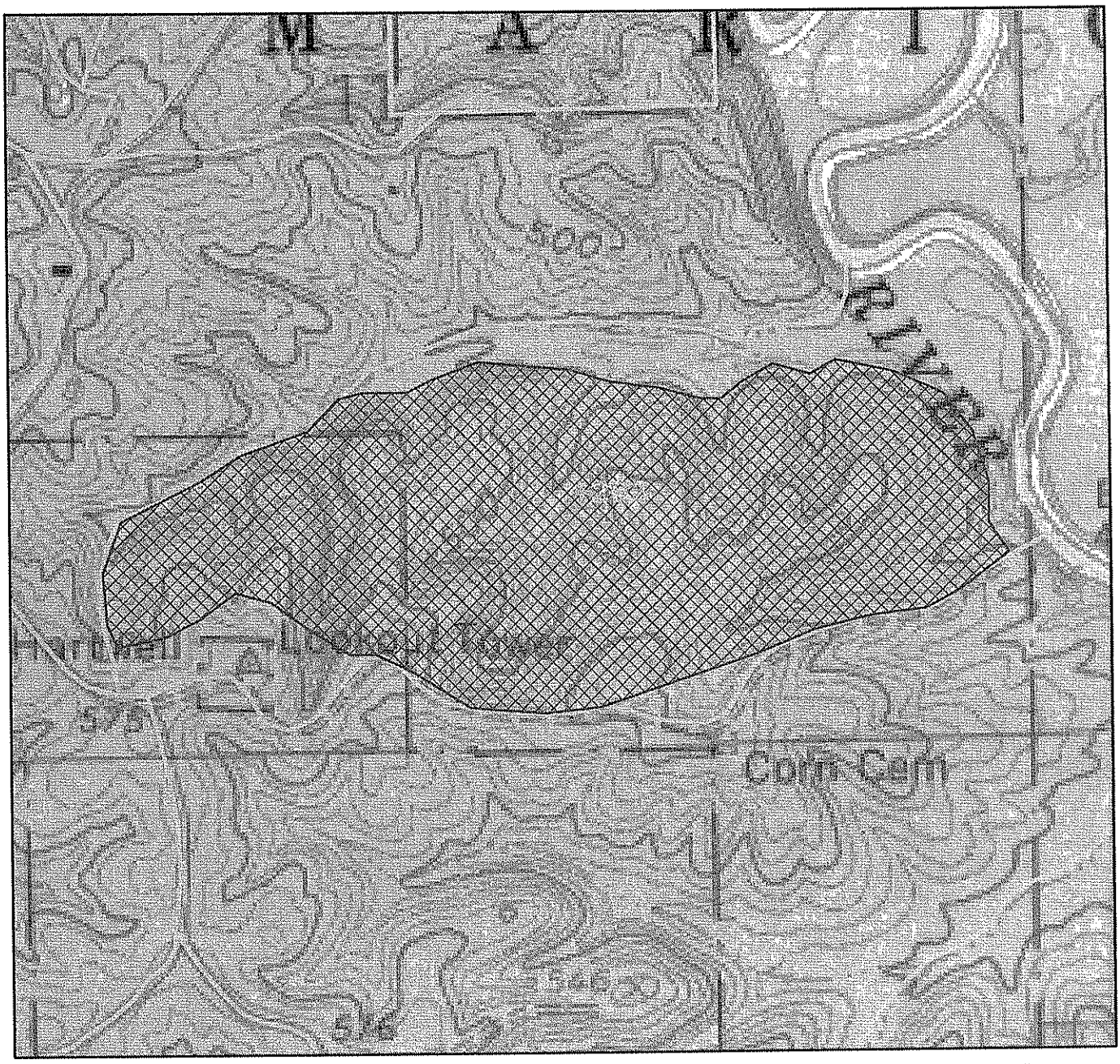
Proposed Harvest Area



quality) present over the tract. In many areas the timber type is on its way to converting to a beech/maple stand. While in some areas this is the best timber that can be grown; in other areas the oak/hickory should be encouraged to utilize the land to its highest value. The general form of the trees present on this tract is average to good. The current stocking is around 96% -- very close to the A (overstocked) line. It would benefit this tract to have a timber sale. This would act to capture the value of the trees that are currently in decline and are not likely to survive to the next inventory/evaluation. Also, it will release the crop trees that are present. A timber sale over 91 acres containing about 260,000 board feet is recommended. After this harvest the stocking of the tract would be around 68% or fully stocked.

A prescribed burn is recommended on this site with the intention of encouraging oak regeneration. While there is a high amount of oak present on this site there are very few oaks in the understory. It is recommended the burn be performed 3-5 years after the harvest. This will allow for the fire intolerant species (yellow poplar, maple, beech) to be fire killed while preparing a suitable seedbed for oak. An evaluation of the site and a burn plan will be written before the prescribed burn is completed. As this are is used widely for recreation this would be an ideal opportunity for interpretive signs explaining these management techniques and how they benefit the forest.

The vine TSI that was previously done on this tract was effective and vines are not a problem at this point.

The riparian area along the Patoka River is covered in bottomland mixed species. Dominate species are sycamore, sweetgum, and silver maple. Many of the trees are very large sawtimber sized. Despite this, this timber should be left on site to maintain water and soil quality. Not only is this area very wet but it is also surrounded by steep slopes. This makes it very difficult to get machinery in here. In addition, the timber is of low value due to species and/or defect. By leaving the trees here the aesthetics are maintained along the horse trail and also water and soil quality is assured for the area.

Summary Tract Silvicultural Prescription and Proposed Activities:

2011: Harvest about 260,000 board feet over about 91 acres.

2012: Post harvest TSI

2014: Evaluate harvested area for prescribed burning. Write burn plan.

2015: Perform prescribed burn.

2020: Oak regeneration evaluation of burned area

2020: Release oak seedlings

2021: Hardwood/oak regeneration evaluation of harvested area

2030: Inventory

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