Resource Management Guide
Compartment 14 Tract 06

Ferdinand State Forest June 18, 2009
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Location: This tract is located in portions of the E ½ of the NW ¼ of Section 22 T2S R7W and the W ½ of the NW ¼ of Section 23 T2S R7W. It lies about 1.25 miles to the east of Augusta, IN.

General Description: This tract covers 62 acres. It is forested on approximately two thirds of the tract and the rest of the tract is reclaimed mine spoils. There is open water present on the southeast portion of this tract. The forested areas were very heavily logged down to firewood sized trees sometime in the 70's. The reclaimed mine spoils are currently grassy fields with early successional plants peppered in groups. Plants like blackberry and staghorn sumac are present in areas over the mine spoils. An effort was made to plant trees here at one time. Planted trees present are Willow, Autumn Olive, River Birch, and Big-Toothed Aspen. Yellow poplar and White ash are naturally regenerating on some areas of the spoils where it meets up with the forest. Overall the mine spoils are grassy fields with sporadic single trees or groups of trees that have an average DBH of around 4".

History: This tract was purchased from James C. Ellis on September 27, 2007 in a large purchase. Due to the recent purchase of this land, this inventory is the first action taken on it by the DNR.

The southern part of the land was mined for coal and then the spoils were reclaimed. The land was seeded with grass and some trees were planted. On the far southern portion there are a few retaining ponds that lead to a small dam on the west side.

The forested part of this tract was logged pretty extensively in the 1970's. After all of the commercial value timber was harvested, trees were harvested for firewood. This is evidenced by numerous stumps still present throughout the tract.

Landscape Context: This tract is within a group of 8 tracts that make up compartment 14. This tract is on NW side of this grouping and is connected on the east, west, and southern boundaries to other tracts of this compartment. Compartment 12 is just to the north and tract 1209 connects to the northern boundary of tract 1406.

The previous land use for this tract (and the surrounding areas) was both coal strip mining and timber harvesting. The areas that have been mined have all been reclaimed. The forested areas were extensively harvested and are now starting to recover some value. Both the forested and reclaimed spoils areas are now being managed for timber and/or wildlife value. This is true for all the tracts in this area. The mine reclamation area to the north of this tract is currently under further reclamation and it has been planted with trees mechanically as of June, 2009.

Topography, Geology and Hydrology: This tract is located in the watershed surrounding the Patoka River. Much of the water that drains off of this tract is held within the retaining ponds on the southern portion of the tract. Rock lined canals were installed to further facilitate this. The topography is rolling hills and a general sloping to the southwest into the open water present on the southern boundary of the tract. There are two drainages on the tract that run roughly north south and are used as the borders for the east and west sides of the tracts.

The geology of this area consists of underlying shale and sandstone. As indicated by the history of mining, there are seams of coal in the area surrounding the tract.

Soils:

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.

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.

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.

Fairpoint-Bethesda complex (FbC) - These moderately sloping and strongly sloping, deep, well drained soils occur as mine spoil in surface-mined areas on uplands that have been shaped and smoothed. Also included are some abandoned haul roads. The subsoil

is 60" thick. Available water capacity is low and permeability is moderately slow. Surface runoff is medium or rapid. The abandoned haul roads and mine dumps cannot support vegetation unless major reclamation measures are applied but they are fairly well suited to a wide variety of grasses and legumes for hay or pasture. The organic matter content is very low in the surface layer. The land capability class is Vls. No woodland ordination symbol is assigned. No sight index is given.

Fairpoint-Bethesda complex (FbG) – These steep and very steep, deep, well drained soils are in surface-mined areas on uplands. Included with these soils in mapping are abandoned haul roads and narrow, elongated pits that contain water. The pits and roads are extremely acid and can support little, if any, vegetation unless major reclamation measures are applied. They occur as narrow elongated mounds of discarded overburden. In some areas the slope is less than 25 or more than 70%. The subsoil is 60" deep. Available water capacity is low and permeability is moderately slow. Surface runoff is very rapid. The organic matter content is very low in the surface layer. Most areas are used a woodland. The land capability classification is Vlle. No woodland ordination symbol or site index is assigned.

Access: Access to this tract is very good. A fire lane runs along the entire northern border. Access to the interior of the tract is limited to foot traffic.

Boundary: The northern boundary of this tract is marked by a fire lane. Drainage ditches mark both the east and west boundaries. The southern boundary is marked by a strip of marshy/open water area. This boundary lies through the middle of this wet area so there is no good way to mark it.

Wildlife: This site has a wide variety of habitats present so it has the potential to support a wide variety of critters. All along the southern border there is open water that is most likely there all year long. This provides habitat for many species of wildlife that require an aquatic habitat. Numerous frogs were heard in this area. A beaver house was seen and ducks were witnessed on the water. It is unclear if there are any fish in these ponds as they are man made and have never been stocked.

To the north of the water is reclaimed mine spoils. Here the area is grass with small trees sporadically present. Autumn Olive has been planted in this area which is a good mast tree for wildlife. This early successional area has the potential to support a variety of species that require this habitat; specifically, songbirds. Due to the degradation of the soil here, it would be easy to maintain this area as a wildlife clearing. Whitetail deer trails were also noted in this area. There is quite a bit of edge habitat where the mine spoils transition to forest. This edge habitat is especially favored by whitetail deer.

There are a number of seasonally wet, marshy areas on this tract. These areas have the potential to support small aquatic animals that require this type of habitat as well as providing a water source for other wildlife.

The rest of the tract consists of closed canopy forest. This area most likely supports wildlife that is typical of the area. Wildlife noted in this area are whitetail deer, box turtles, songbirds, and toads.

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 11"+ size class but not within the 20"+ size class. Within this larger size class 107 additional trees are needed to meet the requirements. The best way to achieve this is to allow pres-selected trees that are close to the size requirement the time needed to mature to this size.
This tract does not meet the snag requirements in any of the size groups. In order to meet the requirements 211 additional snags of 5"+, 149 snags of 9"+, and 31 snags of 19"+ need to be created. This is easily done by girdling trees that are appropriate to reach this goal. These trees could be culls or lower valued species (within the desired species list for the Indiana bat).

A search of the Natural Heritage Database was dated 6/15/09. If any ETR species were noted, the plan of activities for this tract took those into consideration.

Communities:
The dominant forest type here is oak/hickory. There is a bit of mixed hardwoods that border the firelane on the northern boundary. This is due mostly to the planting of non-typical species in this area. Species such as River Birch, Black Locust, and Bigtoothed aspen were planted here.

There are a number of invasive species present on this tract. Honeysuckle is prolific in the reclaimed mine spoils areas and is present sporadically throughout the site. Montiflora rose is also present throughout the tract but not in especially high numbers. Autumn olive is present in the reclaimed mine spoils area. It is assumed that this was planted to provide wildlife mast when this area was being rehabilitated. Black locust is present along the fire lane on the northern boundary of the tract but the number of trees is few and these could be taken out during a TSI operation.

Recreation: No sign of recreational activities is present on this site. It is easily accessible to the public from the NW corner where the road meets the fire lane. With the open water on this tract there is the possibility of duck hunting or furbearer trapping. Deer and turkey hunting are other recreational possibilities on this site, as well. Further recreational opportunities include hiking, bird watching, and non-timber forest product harvesting.

Cultural: Cultural resources are to be protected on State Forests. If any resources were noted on this tract the plan of activities took them into consideration.

Tract Subdivision Description and Silvicultural Prescription: The timber on this tract is not currently of particularly high value. After being so extensively logged in the 1970's the site is in need of some work and time to attain higher a value. It does seem that there are some small pockets of timber that were missed in the previous logging

operations resulting in some higher valued timber. These pockets, however, are small and do not occur very frequently. The stocking of this stand is around 80%. This is fully stocked with room for a thinning before becoming understocked.

This tract has a few distinct cover types. For descriptive and planning purposes each cover type will be described separately.

There are a lot of reclaimed mine spoils on this tract. Approximately 25% of the tract is composed of this. As stated earlier, there are very few trees present on these sites and what trees are present are very small. It is recommended that these sites be left alone and kept as wildlife openings. Due to the degradation of the soil through strip mining these sites will most likely maintain themselves as openings with no intervention. Due to soil compaction on these areas, tree planting is not recommended. Species that would do well on these sites are generally undesired species so any work and time put into the cultivation of these trees would not make a comparable return. The highest value of this land is most likely for wildlife use as open areas and/or early successional areas. The areas of open water will be left as is.

There are some areas of mixed hardwoods along the firelane on the north side of the tract. The area is a thin strip along the road. Here some planting was done of River Birch, Bigtoothed Aspen, and Black Locust. It is recommended that this area is left for now and then reevaluated at the next inventory. Currently, many of the trees are small pole sized and/or the BA is low. Additionally, some of the timber along here is non-commercial as there are very steep slopes present. There is a small stand of almost pure River Birch present on the northern border of this tract. The trees are small (4" to 8"). Management for this small stand will be the same as what is recommended for the mixed hardwoods.

Lastly, the rest of the tract is covered in Oak/Hickory. Scattered among the Oak/Hickory are some very small pockets of almost pure Yellow Poplar. Because of their small size and for simplicity sake, these pockets of Poplar will be included with the management guidelines of the Oak/Hickory. Much of the timber here is either large pole or small sawtimber sized. Additionally, there are many mature double or ever triple stumped trees; the result of stump sprouting from the previous cut. There are some areas that have very low valued timber as well as some areas that have a relatively higher value and/or the potential for high(er) value. Generally, the whole site would benefit from a TSI/commercial thinning followed by time to gain value. The poorly formed and undesired species can be taken out to release the crop trees and to encourage oak regeneration. This will do much to increase the overall value of the timber of the site. Grape vines are present throughout the oak/hickory stand on this site. A vine TSI would benefit the site.

Note: Due to the low value of the timber present it may be beneficial to plan any commercial thinnings with one or more of the adjacent tracts to make the sale more attractive to bidders.

Summary Tract Silvicultural Prescription and Proposed Activities:

2010 – Treat Honeysuckle, Montiflora Rose, and Black Locust

2019 – Vine TSI

2019 – Inventory

2020 – Commercial thinning and TSI

2021 – Post thinning TSI

2030 – Oak regeneration evaluation

2039 – Inventory

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