Resource Management Guide
Compartment 14 Tract 02

Ferdinand State Forest June 18, 2009
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Location: This tract is located at the N ½ of the NW ¼ of Section 23 T2S R7W, The S ½ of the S ½ of the SW ¼ of Section 14 T2S R7W.

General Description: This tract covers 118.2 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 mostly fielded with early successional plants peppered in groups. Plants like blackberry bushes and staghorn sumac are present in areas over the mine spoils. An effort was made to plant trees here as well. 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 next to 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 land was acquisitioned with two different purchases. The northern 1/3 was acquired from James C. Ellis on January 3, 2006 in a large purchase. The rest of the tract was also purchased from James C. Ellis on September 27, 2007 in another 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 commercially valued timber was harvested, trees were then harvested for firewood. This is evidenced by numerous stumps still present throughout the tract.

Landscape Context: This tract is within large area of state forest. It is surrounded on all sides by state land.

The previous land use for this tract (and the surrounding areas) is 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 N/NW 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. The topography is rolling hills and a general sloping to the southwest into the open water present on the southern boundary of the tract. Much of the water that drains off of this tract is held within these retaining ponds. Rock lined canals were installed to further facilitate this. There are two drainages on the tract that run roughly north south.

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:

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.

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.

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.

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. Permeablity 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.

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.

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.

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.

Boundaries: The northern boundary of this tract is marked by a fire lane. This fire lane loops around to the east and marks the eastern boundary as well. 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. The western boundary is marked by a drainage ditch.

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 a water 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. 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 keep this area as a wildlife clearing. Whitetail deer trails were noted in this area. There is quite a bit of edge habitat where the mine spoils transition to forest. This edge habitat is especially good for 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 is 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 203 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 147 additional snags of 5"+, 201 snags of 9"+, and 59 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. Ailanthus was found in one spot in the center of the west half of the tract. It consisted of perhaps 6 saplings. It is delineated on the cover type map included within this plan. 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. While it is easily accessible from the firelane, this firelane is gated keeping the public off of it. This tract is accessible via walking the firelane from the closest road but most likely this does not happen very often as other tracts are easier to get to in the area. With the open water 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 of high value currently. After being so extensively logged in the 1970's it needs some maintenance and time to attain higher value. There are some small pockets of timber that were missed in the previous logging operations resulting in some higher valued timber. Additionally, the stocking of this site is at about 58%. This is almost right on the B line of the Gingrich chart which makes the site fully stocked. While the site is currently fully stocked, performing any thinning/TSI right now runs the risk of

making the site understocked. Because of this, the site should be given some time to increase the stocking before any trees are harvested.

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

There is a lot of reclaimed mine spoils on this tract. Approximately 30% 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 cultivation of these trees would not make a comparable return. The highest value of this land may be for wildlife use as open habitat areas and/or early successional habitat 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 and/or the BA is low. Additionally, some of the timber along here is non-commercial as there are very steep slopes present.

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 sites that have very low value as well as some sites that have a 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. This will do much to increase the overall value of the timber of 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 Ailanthus, Honeysuckle, Montiflora Rose, and Black Locust

2019 – Vine TSI

2019 – Inventory

2020 – Commercial thinning and TSI

2021 – Post harvest TSI / understory control for oak regeneration.

2030 – Oak regeneration evaluation

2030 – Inventory

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