Ferdinand State Forest
Comp. 8, Tract 6
August 14, 2009

FORESTER'S NARRATIVE

Location – This tract is located in Section 36, T4S, R3W in Perry County. It is approximately 2 miles southeast of Bristow.

General Description – This tract covers about 133 acres south of St. Isodore Church. Most of the tract is covered in native hardwoods, especially white oak, with shortleaf and other pines planted on some of the old field ridges. Most of the tract is dry to mesic soils with exposed rock in some locations and some rock outcroppings along the Yoho Branch.

History – This tract was purchased in 1951 by the US Forest Service from Radie Roach. In the spring of 1955 they planted the old fields to shortleaf pine (49 acres), white pine (11 acres) and Virginia pine (8 acres). First year survival was noted as excellent.

The tract was acquired by the State in 1965. About 1970 Bill Hahn did a cruise on the original 160 acre tract and found 2548 board feet/acre on 56 merchantable hardwood acres. The basal area was noted as being at 83.1 square feet/acre. The timber types included 80 acres of pine, 56 acres of merchantable hardwoods, 14 acres open and 10 acres of non-merchantable timber. He recommended a harvest in 5-10 years but this did not occur.

In 1987 a survey request was sent in because of a suspected timber theft on the south line of this tract and Tract 8 but this never occurred either.

In 1989, Doug Brown completed an inventory of the tract. He found 3,794 board feet/acre on 106 acres and also recommended a harvest. In 1992 the tract was marked for harvest and a vine TSI was completed using inmate labor. However, obtaining an easement from Styline Corp. to access the tract hit a snag and the easement was not obtained until 1993. In 1994 the firelane and wildlife openings were constructed by the Division of Fish and Wildlife to access Tract 6 and Tract 8. Due to the number of dead trees marked in 1992 and the concerns about an accurate volume estimate, the sale was remarked by Doug Brown and Pat McDaniel in 1995. The sale included both Tract 6 and Tract 8 and was sold to DMI Furniture in 1995. It included 404 trees, mostly black and white oak, 65 culls and 79,399 board feet off of 61 acres of what was then, Tract 6. Post harvest TSI was completed in 1998 by property personnel.

In 1999 the tract boundaries were changed from the section line to the Yoho Branch transferring about 27 acres from Tract 6 to Tract 8.

Landscape Context – This tract is in the extreme southern part of Ferdinand State Forest. It adjoins Tract 8 to the east and Tract 7 is about one half mile to the southwest but the next closest tract of State Forest land is 3 miles to the north or west. However, other public forestland lies nearby. Several small tracts of DNR Fish and Wildlife lie nearby and 1.5 miles to the east lays the large Forest Service Tipsaw Lake recreation area encompassing over 1000 contiguous acres. Styline/OFS own several hundred acres of forestland, mostly to the west and north. Most of the remaining landscape is in relatively small private ownerships with most of the uplands in forest or pasture and the valleys, especially the Sulphur Fork Creek valley to the south and the Anderson River valley to the west, in row crops.

Topography, Geology and Hydrology – This tract is located in the Crawford Upland natural region. This is unglaciated hill country characterized by short, steep slopes often broken by relatively flat benches and rocky bluffs. The geology consists of underlying sandstone often with a loess cap on the ridge tops. This tract is bisected almost in the middle by a southeast running drainage. This drainage and some of the others are very rocky. The entire tract drains into the Yoho Branch. The Yoho is a scenic, rocky, intermittent stream with short, rocky outcroppings on both sides of it. The Yoho flows into Sulphur Fork Creek which flows in to the Anderson River which then flows into the Ohio River.

Soils – There are four soils or soil complexes on this tract. 77% or about 102 acres are considered eroded to severely eroded, though all the soils are now stabilized. Many of these acres were planted to pine.

The largest soil group is the Adyeville-Wellston-Deuchars silt loam complex (AbvD2 and AbvD3). This complex covers about 86 acres, or 65% of the tract. These soils are found on the ridges and upper slopes ranging from 8 to 20%. The Adyeville and Wellston soils are well drained to somewhat excessively drained and moderate permeability. The Deuchars soils are moderately well drained with slow permeability. All three soils have moderately low to moderate organic matter. Available water capacity is low for the Adyeville soils and moderate in the Wellston and Deuchars soils. Bedrock ranges from 20 to 40 inches in the Adyeville soils, 40 to 60 in the Wellston and 60 to 80 in the Deuchars. All theses soils are stabilized now but 26 of these acres are classified as eroded and the other 60 acres are classified as severely eroded. Site index for upland oak on these soils range from 81 to 90.

The next most common soil is the Adyeville-Tipsaw-Ebal complex (AccG) found on 28 acres. These soils are found on the slopes over 20% and are very rocky. These soils are moderately well to somewhat excessively drained and have a moderate to high organic matter content. The Adyeville and Tipsaw soils, found higher on the slopes, have moderate permeability and low available water capacity. Bedrock on these soils is typically 20 to 40 inches. The Ebal soils, found lower on the slope, have very slow permeability and moderate available water capacity. Bedrock is 50 to 80 inches. The upland oak site index for these soils range from 70 to 80.

The next most common soil is the Apolona silt loam (AgrC2). This soil covers about 16 acres of the broader ridge tops on slopes from 2 to 12%. Apolona soils are moderately well drained and have a seasonally high water table at 2 to 3 feet. They have moderately low to moderate organic matter content, very slow permeability and moderate available water capacity. Bedrock is at a

depth of 72 to 100 inches. These soils are all classified as eroded and most were planted to pine. Site index for upland oak is 60.

The last soil found on this tract is a Gatchel loam (GacAW), covering about 3 acres. This soil is found in the flat "bottoms" of the Yoho, north of the firelane. These soils are described as being "occasionally flooded, very brief duration". Gatchel soils are somewhat excessively drained, has moderately low organic matter content, slow permeability and moderate available water capacity. There is no site index listed for Gatchel soils.

Access – Access to this tract is from the county road south of St. Isodore Church and across the Styline/OFS easement on Firelane 31. This firelane continues on into Tract 8 but the whole road is abused by illegal ATV traffic and is washed out in several places. Due to these washes and crossing the Yoho it is very difficult to get all the way to the end of the firelane. Even getting to the second wildlife opening will require significant dozer work to make it truck accessible. Once into the tract it lays so that most of the tract is easily accessible to equipment.

Boundary – The east line of the tract is the Yoho Branch and Tract 8. The other lines are all shared with private landowners. The south line was marked last year with Tract 8's boundaries but the west and north lines have not been marked yet. They probably will not be marked until this fall or winter.

The only trespass noted is the ATV traffic on the firelane but even this is not as bad as it has been in the past. During the cruise I noticed that the owner to the north has harvested some timber but it does not look like the line was compromised.

Wildlife – It was noted during the cruise that there was a scarcity of deer sign in this tract. Talking to some other people it was felt that this area was hit hard by the epizootic hemorrhagic disease last year and the population may be low this year. This forester also wonders how the deer and other wildlife fare with such high tick populations. It would be surprising if the ticks did not cause some stress and/or mortality in some wildlife.

However, this tract does offer a lot of diversity for wildlife. While the pine themselves may not be great habitat for most wildlife, the multiple, broken stands create lots of edge. And in places where the pine is breaking up or blown down it has created some areas of early successional forest. The wildlife openings created in 1994 are mowed on a five year rotation to maintain them in grasses and brush. The Yoho is a wide stream but it dries up in most years though pools of water may persist. The most consistent source of water would be the pond created in the second opening. The best habitat is provided by the native hardwoods including the oaks and hickories for hard mast; and persimmon, sassafras, black gum and dogwood for soft mast. Private and other public property nearby provide much of the same types of habitat creating wildlife benefits extending beyond this tract's borders. Species noted during the cruise by either sight or sign include hawks, mourning dove, box turtles, turkey, crow, deer, snakes, pileated woodpecker and numerous song birds.

A search of the Natural Heritage Database was dated 6/19/07. If any ETR species were noted, the plan of activities for this tract took those into consideration.

Current policy on managing for the federally endangered Indiana bat requires a certain component of living and dead trees of specific sizes and species. This tract meets the live tree requirements but falls short for the snag target. Live tree targets focus on species that have been identified as being preferred by the Indiana bat. Species on this list that were found on this tract include: red oak, post oak, red elm, shagbark hickory, sugar maple, white ash and white oak. The targets are a minimum of 9 trees/acre over 11" DBH with at least 3 of these being over 20" DBH. This tract currently has 21 trees/acre over 11" and 3.9 trees/acre over 20" in these species. Snag targets are at least 3/acre over 9" DBH and .5/acre over 19" DBH. This tract currently has 3.9 snags over 9" DBH but only .3/acre over 19".

Another wildlife habitat component we sample for is cavity trees. Cavities can be tough to identify in the crowns during the best of circumstances, but cruising in the summer makes it especially difficult. So these numbers are most certainly low. The targets for trees with cavities are 4 trees/acre over 7" DBH, 3 trees/acre over 11" DBH and .5 trees/acre over 19" DBH. This tract falls short of those goals. The number of cavity trees identified were 3.5 trees/acre over 7", 2.7 trees/acre over 11" and 1.0 trees/acre over 19".

Having a large pine component in this tract decreases the suitability for Indiana bat and to a lesser extent, the formation of cavity trees. Indiana bats are not known to use pine trees and while they are certainly capable of forming cavities, they seem to be less common in pines. Converting pine stands into hardwood stands will provide more benefits for wildlife in the long term.

Communities – Most of this tract is dry to dry-mesic. These areas, mostly the south to west slopes, often had green-brier and poison-ivy present but sometimes were limited to grasses, mosses and lichens. Some of the ridges and north slopes had slightly better sites and may have a component of Christmas fern and other more mesic species but spicebush and jewelweed, wet-mesic site species, were rarely noted. Unfortunately, the exotic species are much more common in this tract than the adjacent 0808. While 0808 is nearly a pure oak-hickory hardwood stand, this tract has the old field sites that allowed the introduction and establishment of some exotics. Other exotics, particularly autumn olive, are slowly getting established, even under a hardwood canopy from adjacent private lands where they were extensively planted. Other exotic species noted included vine honeysuckle and multiflora rose.

Recreation – Technically, this tract is landlocked to the public. Despite this, it does get a fair bit of public use. A few deer stands were noted in the tract but not as many as normally expected. The most noticeable use is the illegal ATV use on the firelane. They run the road from end to end and beyond. This traffic seems to have decreased some the last couple of years but it is still heavy enough to keep the vegetation down and increasing the washing of the firelane. Other activities that are probably happening on this tract to some degree is squirrel and turkey hunting.

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 Stand Descriptions and Silvicultural Prescriptions – For description and planning purposes this tract was broken down into three stands. They were commercial hardwoods, pine and wildlife openings.

Commercial hardwoods – This stand covered 84 of the tracts 133 acres. It covered most of the slopes and drainages while the other stands were primarily found on the ridge tops. This stand consists of mature hardwoods, primarily oaks and yellow poplar. The basal area averages over 119 square feet per acre while the volume averaged 7435 board feet per acre. This is mostly white oak (53%), yellow poplar (15%), black oak (10%), shortleaf pine (8%) and red oak (4%). Quality is mostly average. Most of these acres are to be considered as oak sites and tend to be on the dry side of mesic or on soils degraded to the point of being oak sites. Other small areas, such as lower north slopes or coves, were only slightly better sites. Here yellow poplar, ash and sugar maple may be present but are of poor quality or struggling. The white oak is doing best on all sites and was most often selected as growing stock. When present, the yellow poplar and red oak were usually selected for harvest due to decline and poor quality. When a point fell near the edge of a pine stand, all the pine was recommended for removal as part of the prescription for the pine stand type. The prescription for the commercial hardwood stand is to thin, removing the lower quality poplar and oaks and releasing the better formed and vigorous trees, usually the white oak. Most of these areas were also recommended for understory work to remove the shade tolerant pole sized maples and beech. This could be done either by TSI or a prescribed burn with the objective of encouraging oak regeneration.

Pine – The pine covered about 38 acres. Most of these acres are on the ridge tops and on old eroded field sites. When the Forest Service planted the pine in 1955 they planted 68 acres to shortleaf (49 acres), white (11 acres) and Virginia (8 acres). There is one small area of white pine left east of the first wildlife opening but it is rapidly breaking up. The rest of the areas are dominated by shortleaf pine, though the Virginia and sometimes white, were lesser components. Overall, the stand averaged 8,620 board feet/acre with shortleaf pine being 77% of the volume followed by white pine (7%), red maple (6%) and yellow poplar (4%). Most of the Virginia pine is pole sized and not likely to get any larger. As mentioned, the white pine is breaking up due to storm damage. The shortleaf, while for the most part being intact and seemingly healthy, should be removed and replaced with native hardwoods. While hardwoods are mixed in with the pine, they are usually of poor quality or vigor and often are too few to leave. Therefore, the prescription for this stand is to remove all the trees and regenerate. While oak may come up in some places, this will primarily be regenerated by yellow poplar, ash and red maple.

Wildlife openings – There were 11 acres classified as wildlife openings based on inventory points. However, this is most likely overestimated. By using GIS and an aerial photo it appears the wildlife openings are actually less than 3 acres. These two areas are located on the ridge tops and are currently covered by brush and small trees reaching up to 10 feet tall or so. They were constructed on old fields planted to shortleaf pine when the Division Fish and Wildlife built the firelane in 1994. The northern opening also has a wildlife pond built in it. They are maintained by Fish & Wildlife by mowing every 5 years. The next scheduled mowing is in 2010.

Silvicultural Prescription

The west and north boundaries were not marked during the cruise so they should be identified this fall or winter. Then next year, the road needs to be improved into Tract 8. While truck access is probably not reasonable for Tract 8 the road needs to be truck accessible at least to the second wildlife opening in Tract 6.

Once these tasks are completed the tract should be ready for marking a harvest. This sale will be combined with Tract 8 due to logistical reasons. Tract 6 could carry a sale involving up to 250,000 feet of hardwoods and 350,000 feet of pine. The sale would mainly thin the hardwoods with possibly a small regeneration opening or two. The pine would be completely removed and allowed to regenerate to hardwoods. The hardwoods would mostly be the poorer quality and declining trees and release the longer living and more tolerant oaks. Trees removed would mostly be yellow poplar, white oak, black oak and red oak. Due to the low numbers of snags and cavity trees, these existing trees should be left as often as is reasonable.

Following the sale, post harvest TSI needs to be completed. Whenever desirable, understory control should be performed in the hardwoods to encourage oak regeneration. Trees designated for removal, particularly trees over 5" DBH, should be girdled and left as snags instead of being felled. Exotic control could also be addressed at this time.

Within 10 years of completing the TSI, any regeneration openings should be evaluated for TSI and vine control. At that time the status of any oak regeneration can be evaluated in the thinned areas and if necessary, further action taken.

This tract should be scheduled for another inventory and management plan for 2029.

Doug Brown, Forester

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