

Indiana Department of Natural Resources - Division of Forestry

Ferdinand State Forest
Compartment 8, Tract 2
October 5, 2010
Forester: Doug Brown

FORESTER'S NARRATIVE

Location: This tract is located in Sec. 13, T4S, R3W in Perry County. It is approximately 2.5 miles northeast of Bristow.

General Description: Most of the tract's 139 acres is covered with hardwood forests, especially oak-hickory timber types. Most of the old fields planted to pine decades ago have either died out or were harvested in 1998 and are regenerating very nicely to hardwoods. Access is good with a county road running through the middle of the tract and a short firelane penetrating the eastern part of the tract. Timber quality tends to be average or better in vigor and form as most of the oak has not reached maturity. An old homesite and adjacent private property has contributed to one of the worse cases of ailanthus infestation on the property.

History: 137 acres of this tract was purchased in 1951 from Wayne and Doris Sturgeon for \$10 an acre. They withheld 2 acres as a home for their parents.

The pines were planted on the open ground in about 1958. The first record of any management was when Bill Hahn inventoried the tract in 1973. He reported about 2108 board feet/acre on 89 acres of hardwoods. He also noted two areas of cutting about 10 years prior, one in the northwest corner the other in the southeast part. He felt these were probably theft of firewood.

In 1986, the 2 acres that was originally withheld, was purchased from the Grace Kozicki Estate for \$350.00 and acre.

In 1991, Doug Brown did an inventory and plan. He found 5,297 board feet/acre on 122 acres of commercial forestland. He also noted trespass problems, this time in the northeast corner. Per his prescription, the vines were TSIed in 1991, the firelane constructed in 1993 and a timber sale conducted in 1993. This sale removed about 50,899 board feet of timber, mostly black oak, red oak and tulip poplar. Jimmy Rhodes bought it for \$22,000 and he logged it in the fall of 1993. Post harvest TSI was completed in 1995.

In 1998, 124.75 cords of pine was sold to Indiana Pine for \$623.75. The intent was to capture a new market for "low value" pine (Virginia, shortleaf and jack) some of which

was TSIed in 1995 or came down in a major snow storm in March 1996. Six openings, ranging from .1 to 3 acres in size, were marked. A post harvest TSI was completed in 2002.

In 2007 and again in 2010, an effort was made to control the ailanthus with Tahoe 4 basal spray. While control of existing stems is very good, some sprouting and missing stems requires follow up treatments.

Landscape Context: This tract is an isolated parcel for the State Forest; however, other Forest tracts are located within 1 mile to the west and 1.25 miles to the northwest. Other public land includes Hoosier National Forest property to the east, including the large Lake Celina recreation area about 1.5 miles to the northeast. Most of the rest of the surrounding area is in relatively small, private farms or homesteads. The valleys tend to be in some type of agricultural production as well as some of the broader ridge tops. The slopes and narrower ridge tops tend to be in hardwood forests or sometimes planted pine.

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. The tract consists of a relatively minor ridge, where the county road is, and the associated ridge fingers and slopes on either side. The mostly ephemeral streams on the tract flow into one or more unnamed intermittent streams, mostly off of State land. Those to the east of the ridge eventually flow into the Middle Fork of the Anderson River. Those to the west eventually flow into the Maggity Branch and then into the Middle Fork Anderson River, just east of Bristow.

Soils: There are four soils or soil complexes on this tract. 71 acres, or over 50% of the tract, are considered eroded to severely eroded, though all of the soils are now stabilized. Many of these eroded acres were planted to pine.

The largest soil group is the Adyeville-Tipsaw-Ebal complex (AccG). This complex covers about 67 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 group is the Adyeville-Wellston-Deuchars silt loam complex (AbvD3). This complex covers about 35 acres. 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 are moderate in 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 of these soils are classified as severely eroded though they are vegetated and stable now. Site index for upland oak on these soils range from 81 to 90.

The next most common soil is the Apalona silt loam (AgrC2, AgrC3 and AgrB). These soils cover about 26 acres of the broader ridge tops with slopes from 2 to 12%. Apalona 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. Nearly all of these soils are considered eroded to severely eroded and many were planted to pine. Site index for upland oak is 60.

The last soil group on this tract is the Ebal-Deuchars-Kitterman complex. This group covers about 11 acres. It is found on slopes 12 to 24% and are located in the major drainage on the east side of the tract and a small part of the drainage on the west side of the tract. All of these acres are classified as eroded. The Kitterman soils are similar to the Ebal and Deuchars soils in that they are all moderately well drained, have moderately low to moderate organic matter content and slow to very slow permeability. However, the Kitterman soils have a higher seasonal water table (1 to 2 feet vs. 2 to 3 feet), low water capacity and bedrock is much closer (20 to 40 inches vs. 50 to 80). The Kitterman soils site index for upland oak is lower also at 65.

Access: Access to this tract is very good as a county road runs through the middle of it. A firelane built before the last harvest improved access to the major ridge running east of the road. While the rest of the tract does not have road access, most of it is accessible, at least for logging equipment, using the other ridge fingers. A few drainages need to be crossed to access parts of the tract and a couple of corners may be considered inaccessible due to tough stream crossings.

Boundary: The boundaries have not been remarked as part of this inventory yet but past evidence is noted here: The entire tract is made up of private boundaries. There is a cornerstone on the northwest corner and there is one on the southwest corner where we have the 1 acre school exception. Besides the true cornerstone there are three "L" stones showing the boundaries of the exception. The rest of the lines are usually marked with fencing, fence remnants or at least tree lines. The exception to this is the 10 acre inholding. There is not any on the ground evidence and I was convinced during the 1991 inventory that the topo map is incorrect in the way it shows the piece. There has not been any work since then to locate the lines any more exact. The lines were all last flagged in 1994 and the west line between the 1 acre exception and the 10 acre inholding was last flagged in 1999. During this inventory the only trespass noted was a lightly used ATV trail on the ridge in the southeast corner.

Wildlife: This tract offers a lot of diversity for wildlife. The pine and particularly the declining pine stands offer a lot of edge and brushy, early successional habitat. The mature hardwoods offer plenty of hard mast with oak and hickory and the black gum, cherry, sassafras, beech, persimmon and brush species offer other food sources for many

birds and mammals. Culls and cavity trees should be abundant enough to provide den sites for birds, squirrels, mice, raccoons, opossums and other cavity dwellers. A limiting factor, especially during late summer or early fall, may be a dependable water supply. The small ephemeral streams would not flow much of the year though pools may hold water for longer periods. Species noted during the cruise by either sight or sign include turtles, squirrels, vole, frogs, deer, blue jay, woodpeckers and numerous song birds.

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 requirement and some of the snag requirements but falls short in the 19"+ DBH snag goal. 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, 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. The tract currently has 16 trees/acre over 11" and 5.7 trees/acre over 20" DBH in these species. Snag targets are at least 3/acre over 9" DBH and .5/acre over 19" DBH. This tract currently has 3.4 over 9" and only .45 over 19" DBH.

A search of the National Heritage Database was made and any species noted have been considered in the writing of this management plan.

Communities: The sites on this tract generally run from dry/mesic to mesic. The narrow ridge tops and south and west slopes generally would tend to be on the dry end of this range and understory composition would tend to be more greenbrier and poison ivy. The broader ridge tops and the north and east slopes may tend to be on the other end and have species like Christmas fern and yellow root. A couple of sites, those near the bottom of some of the steeper slopes were very mesic with spicebush and even almost wet species like jewelweed. Exotic species noted included Japanese honeysuckle, stiltgrass, multiflora rose, autumn olive and ailanthus.

Recreation: There are no recreation facilities on this tract except two parking areas. It is believed that these are mostly used by hunters accessing the tract for deer, squirrel and turkey hunting. Other users probably include mushroom hunters and possibly hikers, bird watchers and other hunters such as raccoon or opossum hunters. There is evidence of some dumping near these parking areas and illegal hunting of herbs and roots is also possible.

Cultural: Cultural features, if present, were noted and considered in this plan. It is the policy of the Division of Forestry to protect all cultural resources.

Tract Stand Descriptions and Silvicultural Prescriptions: For description and planning purposes this tract was broken down into three stands. They were managed forest, protected forest and pine.

Managed Forest – This stand covered 132 of the tracts 139 acres and consists of yellow poplar; black, red, white and scarlet oaks; pignut and shagbark hickories; white ash;

beech and sugar maple. It also includes some isolated or remnant Virginia and white pine. Also included are the 1998 pine openings totaling around 6 acres. These openings are regenerating nicely with a good component of oak in them. The basal area in this stand averages 114.4 square feet per acre and the volume averaged 7818 board feet per acre. This is mostly yellow poplar (29%), black oak (22%), white oak (18%), red oak (12%) and pignut hickory (7%). Quality is mostly average to slightly above average. While yellow poplar is the major species it is almost universally in decline in the stand, regardless of size or location. This is presumed to be due to drought stress over the last few years but 2010's record drought would not have taken affect yet, so the worst may be yet to come. For this reason and others, many of the sites in this stand may be sites we want to manage for oak, though it may be difficult at times. Certainly the south and west slopes and the ridge tops should be managed for oak but some of the north and east slopes as well. The oak for the most part is doing well. The previous harvest was conservative but thinned the stand enough that the crop trees are still healthy. Overall, the oak is getting mature but is not overmature yet and does not need to be removed in the next harvest. Much of the white oak, black oak and red oak should continue to grow into the next cycle. The prescription for this stand is to have a harvest to remove the declining poplar and thin the oaks. Understory TSI will need to be completed to encourage oak regeneration before the next harvest cycle, which very well may be a significant regeneration event.

Protected Forest – This stand was classed as 3 acres based on the one inventory point that fell in the south site. However, it should also include another site to the north as well. Both of these sites are on ridge tops, near the county road and have little, if any quality timber volume on them. The north site is mostly brushy with small scattered trees. The south site has a number of large trees, mostly catalpa, including one 34" in diameter. This is the area that the ailanthus got started on as well. The management goal for this stand is cultural protection. These sites will not have active timber management involving equipment that may disturb the sites. However, that does not mean vegetation management will stop. While timber production is not the focus, increasing wildlife opportunities will be an objective during the TSI operations and the battle against the exotic ailanthus will continue as well.

Pine – There was one relatively intact stand of pine left on this tract after the 1998 pine harvest. It was a narrow band of red and Virginia pine along the road near the fire lane on the east side. This pine was not harvested because it fronted the road and some of it is in the questionable area of the inholding tract. The red pine ranges from 8 to 12" DBH and the Virginia ranges from 14 to 16" DBH. Both are stagnant and in general decline. The stand also includes hardwood regeneration of red maple, dogwood, beech, black locust and some oak. The prescription for this stand is to remove all the pine and regenerate to hardwoods.

Silvicultural Prescription

The first priority for this tract is to continue to control the ailanthus. This should continue at least annually until it is under control. The second priority is to thin the 1998 pine openings to release the oak regeneration and control any vine issues.

Then the boundaries should be marked clearly for both the public and future management operations.

This tract is ready for a harvest. The harvest should concentrate on removing the declining yellow poplar and thinning the oak. The harvest volumes from the inventory indicate a potential of over 400,000 feet on 128 acres. Most of this will be single tree selection; however, a couple of small regeneration openings may be made including the red/Virginia pine stand that should be removed at this time also.

Following the harvest, TSI should be completed. Whenever desirable and practical, 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 for wildlife.

Regeneration openings should be monitored annually to ensure that ailanthus or other exotics do not become a problem. It is possible seedlings are there now that may be missed, seed may be laying in the soil waiting for sunlight, or new seed may come in from trees on or off the property. 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 in 2030.

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Proposed Harvest Map
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