Resource Management Guide
Ferdinand State Forest – Compartment 2 – Tract 2

FORESTER'S NARRATIVE

Location – This tract is located in Sections 7 & 8, T 3S, R3W in Dubois County. It is located within 1 mile north of the office and about 2 miles southeast of Kyana.

General Description – This tract covers 148 acres in the valley of an unnamed tributary of the Hurricane Creek. It includes Coyote Hollow Lake. The tract is characterized by steep slopes with northeast, southwest and some east aspects. Excluding small acreages for the lake, dam and borrow areas and pine, the tract contains large, often overmature stands of oak, hickory, yellow poplar and other species.

History – This tract was acquired in three separate parcels at three different times. The first parcel was from Frank and Genevieve Seng and Henry and Agnes Tretter in February 1934. According to local historian Cornell Kemper, in a personal conversation, he said this 401.5 acre parcel was crucial to local efforts to acquire the 900 acres that the State required to initiate the establishment of the State Forest. Besides the large acreage and its location next to the core of the property, it was felt the former state legislator, Frank Seng, would donate the property. Supposedly he did, but Kemper claimed there was a lien on the property that the State had to pay to clear the title. This acquisition included the bulk of the modern Comp. 2, Tract 2, being all the acreage in the south halves of Sec.'s 7 and 8.

The second acquisition was in November 1936 from Lysander and Ola Jane Trent. This 120 acre parcel included about 20 acres in the northwest part of this tract. Finally, in June of 1945, the final 13 or so acres were acquired from Clifford and Elsie Huff. The inspection report for this acquisition indicated that this part of the parcel was "well covered with a good stand of mixed hardwoods in size up to 20" DBH".

The first recorded management activity that can be determined on this tract was in 1968. Arnold Crayden did an inventory on old Compartment A, Tract 1 that included all of today's 0203 and the part of 0202 found east of the drainage where Coyote Hollow Lake is. He found an average of 3062 board feet/acre on 60 acres. His recommendations included TSI over nearly the entire tract and a "pulpwood clearcut" on the ridge top (today's tract boundary) and the upper west slope. There is no record of either of these things being completed.

The next record of activity was an inventory in 1979 by Ben Hubbard. That would have been the same tract boundaries as today. He found 5,743 board feet/acre on 140 acres of commercial forest. He recommended two harvests, one for the impending dam construction and the other for timber management. The first, clearing 36 acres for the lake construction, was sold in 1979 to Norman Owen. He paid $18,328.78 for 863 trees containing 101,821 board feet (.18/board foot). The second prescribed sale does not seem to have occurred. However, in 1983, another sale was conducted in conjunction

with a sale in 0201. This sale included some of the same acreage as the previous sale to "salvage trees not harvested in 1979 and also to salvage trees included in the new borrow area". This was sold to DMI Furniture and included 303 trees and 34 culls containing 33,170 board feet.

Also in 1983 a research project was started by Ben Hubbard and Janet Eger. Their objective was to determine if it was cost efficient to convert low quality chestnut oak stands into pure white pine or pine hardwood stands. The project area was 2 acres straddling FL4 near the rock road and included part of 0201. The project included an inventory of the area, harvesting all stems over 4" using State personnel, selling those products (234 logs containing 7,290 board feet sold to DMI for $801.90 in March 1984), prescribed fire, planting white pine and follow up survival and growth surveys. Though a final conclusion was never drafted, the chestnut oak sprouts outpaced the pine and eventually most of the pine dropped out.

In 1985, after numerous delays, the dam for Coyote Hollow Lake was finally built. This was part of the larger Anderson River Watershed project of the Soil Conservation Service for flood control. Part of FL1 was rerouted where it went through the lake and the borrow area on the east side of the lake was planted to wildlife species. Most of the original plantings failed except the autumn olive which we are still trying to control today. Later, in the 1990's, after some erosion control structures were put in place, white pine was planted in the borrow area. Today those trees are becoming established and slowly reclaiming much of the area.

In 1990, Janet Eger completed an inventory of 0202B. This was the southern part of the tract to the lake on the east. She found 8,911 board feet/acre on 54 acres and consisting mostly of black oak, red oak, white oak and yellow poplar. She also determined that the basal area was very high at about 114 square feet/acre. She prescribed a vine TSI, which was completed in March 1990 with inmate labor. She also prescribed a harvest which was sold in November 1991 to Waninger Timber. The sale included 282 trees containing 124,113 board feet on 45 acres and brought $45,125. This was a very light, conservative harvest and the quality was deemed very good. This was followed up with post harvest TSI in 1993, also done with inmate labor.

In 1995, Doug Brown did an inventory on 0202A. He found 9,554 board feet/acre on 63 acres of commercial forest. The basal area here was also very high at 116 square feet/acre. This tract was characterized by large trees and often, steep slopes. During this time there were concerns from some neighbors on the protection of these large, and in their minds, possibly old growth trees. While I did not believe it to be old growth, the large trees, including the then 44" red oak (now 48"), the steep slopes and the proximity to Coyote Hollow Lake induced me to recommend no active timber management in this area.

Since 2005 we have actively tried to eliminate some of the exotics on the main block of the property. This has included spraying multiflora rose and autumn olive along the roadsides and using basal spray on those species in the lake borrow area.

Landscape Context – This tract lies in the main block of the Forest. It is nearly completely surrounded by Forest property and mostly hardwood forests. Many of the slopes and uplands on private property in the area are also woodlands, mostly hardwoods. Many of the valleys on private land are in agriculture. Some pasture and hay ground is also found in the area. All the non farm development in the area is residential homes on lots from 2 to 20 acres. Population density remains relatively low but owning property next to the Forest is an attraction and usually sells quickly and for a premium price.

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 typical of the region, however, the slopes tend to be a bit steeper than average. A ridge forms the east, west, north and south boundaries and a narrow finger ridge pokes into the tract on the west side. The slopes, particularly the north slopes in the two valleys created by this ridge finger, tend to be long and steep.

The side drainages flow into an unnamed tributary of the Hurricane Creek. Right before this tributary exits State property is where they built the dam for Coyote Hollow Lake. Probably 90 – 95% of the tract falls in the lakes watershed, the rest flowing into the tributary below the dam.

Soils – Most of this tract, 91 acres, is in a Gilpin-Berks complex. These soils consist of about 50% Gilpin silt loams and 35% Berks soils. These soils are on the steep side slopes over 20%. These soils are moderately deep and well drained. Available water capacity is low, permeability is low and organic matter content is low. Site index for upland oak is 80.

The next most common soil type, found on 24 acres, is Gilpin silt loam. All these acres are classified as being eroded to severely eroded. These soils are found on some of the lower slopes on either side of the lake. This includes the borrow area on the east side of the lake that probably should be classified as something else, as all the top soil was removed and used in the dam. Gilpin soils are moderately deep, well drained soils on strongly sloping to steep side slopes. Available water capacity is low, permeability is moderate and organic matter content is low to moderate, depending on the degree of erosion. Site index for upland oak is 80.

Zanesville silt loam is found on about 15 acres. This soil is found on the ridge tops along the rock road, FL 1 and the ridge finger sticking in from the west side. All these acres are classified as being eroded. Zanesville soils are deep, moderately well drained and slowly permeable. They have a fragipan between 24 and 32 inches deep that can cause a seasonally high water table in the winter and spring and restrict root growth. Available water capacity is moderate and organic matter content is moderately low. Site index for upland oaks on Zanesville soils is 68.

About 8 acres of the ridge top along FL's 1 and 4 is in a Wellston silt loam. These are all considered eroded. These soils are found on slopes from 6 to 12%. They are deep, well drained and moderately permeable soils. The organic matter content is low and available water capacity is medium to high. Site index for upland oak is 71.

About 4 acres in the bottom of the drainage, both above and below the lake is classified as Burnside silt loam. The description for this soil says it is subject to occasional flooding. However, I do not believe the area below the dam ever floods though the area above would if the lake filled up. These soils are deep and well drained. They have low available water capacity and are moderately permeable. They have moderate organic matter content and the site index for yellow poplar is 96.

The remaining 5 or 6 acres is water in Coyote Hollow Lake.

Access – Access to the tract is good with a rock property road forming the west boundary. Access within the tract is good as well with Firelane 1 forming much of the south boundary and Firelane 4 forming much of the north boundary. Access to the part of the tract lying east of the lake would have to be by crossing the dam or coming from the east across Compartment 2, Tract 3.

Boundary – The west boundary is the rock property road going from the campground to the firetower area. This is a good all weather road but is usually closed off to the north during the recreation season. The south line is Firelane 1 and a ridgeline running east. Here it joins the Hulsman property and runs north to a cornerstone below the dam. Then the line continues east to a ridgeline. The ridgeline forms the east boundary between 0202 and 0203. The north line is partly a private boundary with Huff. The private line turns north about ¼ mile to the west of the east ridgeline but that corner has never been located definitely. The tract boundary continues northwest along Firelane 4 to the rock road. The Hulsman line was flagged and painted in 2005. There were no trespasses noted at that time. The Huff line has not been identified as of this writing.

Wildlife – This tract should provide good wildlife habitat. Water is available year round in the Coyote Hollow Lake and much of the year in some of the drainages. The large oak and hickory trees should provide plenty of hard mast most years. Denning opportunities should be available in the large, mature trees and habitat diversity is offered in the areas that trees are dying and creating small openings. During the inventory species seen or noted by signs included waterfowl, deer, songbirds, squirrels, hummingbirds, woodpeckers, ground hog, mud turtle, tree frog, starlings (flying over migrating), cardinals, crows and hawks.

Current policy on managing for the federally endangered Indiana bat requires a certain component of snag and live trees of specific species and sizes. This tract meets the requirements for the live trees but not the snags. Live tree requirements are a minimum of 9 trees/acre over 11" DBH with at least 3 of those being over 20" DBH. This tract currently has 22.3 trees/acre over 11" and 8.4 trees/acre over 20". These are all of

species known to be preferred by the Indiana bat. Snag requirements are a minimum of 6 snags/acre over 9" DBH with at least one over 19". The inventory found about 4.7 snags over 9" and only .7 snags over 19". These were of all species.

Communities – The north slopes and east-west valleys in this tract are on pretty mesic sites. The plant communities here would include Christmas fern, spring flowers and occasionally even spicebush. The south slopes and the ridgetops are dryer and consist more of greenbrier and associated species. The main valley above the lake is low and swampy. Plants here included nettle, jewelweed and wiregrass. The borrow area on the east side of the lake is slowly recovering and returning to tree cover. However, grasses and numerous exotics, including autumn olive, multiflora rose and crown vetch still inhabit part of the area.

Recreation – While this tract is not considered in the recreation area, it is close and gets a fair amount of recreational use. The lake attracts some fishermen who are willing to walk into it. The Twin Lakes Trail, a hiking and mountain bike trail, runs nearly ½ miles through the tract. Other hikers and hunters regularly walk the firelanes and woods in this tract. Hunting use is very common especially during deer, turkey and squirrel seasons. One major parking area is on this tract at the entrance to firelane 1, while another parking area is located across from firelane 4. Yet another parking area is located at the north trailhead of the Twin Lakes Trail. All these parking areas provide access to this tract.

Tract Stand Descriptions and Silvicultural Prescriptions – For description purposes, this tract was broken down into four stands. They were commercial hardwoods, pine, water and permanent openings.

Commercial Hardwoods – This stand consisted of 134 of the tracts 148 acres. Much of this stand contains large, mature to overmature oak, poplar and hickory trees. This was particularly true of the north slopes of the two east-west valleys where a 48" red oak was found, the slope on the west side of the lake, and the valleys to the south of the lake. The south facing slopes of the two valleys and the ridgetops were often smaller oaks, particularly chestnut oak. The slope east of the lake is partly scrub stuff in the dam borrow area and lower quality oak higher up the slope. The basal area for this stand averages about 120.1 square feet/acre and the volume averages 10,408 board feet/acre. This is mostly white oak (22%), chestnut oak (20%), black oak (18%), yellow poplar (13%) and red oak (12%). Quality ranges from fairly high on the best sites to poor on some of the dryer, chestnut oak sites. Succession is well on its way to converting much of this stand to beech maple. The large oak trees are dying and dropping out of the stand and the understory is dominated by sugar maple stems. Some of the dryer sites have primarily black gum in the understory. Unfortunately, the maple succession on the best sites will probably go on. The oak will be maintained as long as possible and the stands prepared for either succession to maple if the quality is there or regenerated to yellow poplar if not. On some of the dryer sites, oak may be maintained with some effort.

The prescription for this tract includes the need to control the vines before any disturbance activities take place. Next, I would like to burn the slope south of firelane 4.

Total area would be about 35 acres. The objective would be to control the regenerating black gum and encourage oak regeneration. While the entire slope would be burned, the most benefit would probably be on the upper slopes in the chestnut oak types. Following the burn, a harvest could be conducted on about 130 acres. Most of the areas would be treated as a thinning to release better quality and vigorous oaks from overmature and lower quality trees. Where these better oaks are not available the decision will need to be made whether to regenerate the area, convert to sugar maple or leave as is. The potential is here for some significant openings. Some of the south slopes and ridges could be managed for oak. The overstory oaks could be thinned and the understory controlled to promote oak regeneration and development.

Pine - There was very little pine on this tract. One point landed in the white pine planted on the lake borrow area. These pine were so small that none were picked up on the prism but they are becoming established and stabilizing the site. This site is very degraded due to the top soil being removed for the construction of the dam. Plantings following the dam construction were largely failures except some autumn olive and a few other plantings. The exotic species have largely been controlled since then. Some volunteer hardwoods have colonized the site including sycamore, blackgum and yellow poplar. Since it will be a very long time before this area is capable of commercial production the objective will be to reforest the site and benefit wildlife.

A second point picked up a little patch of Virginia and white pine in the north end of the tract. The pine is breaking up and a number of hardwoods, including oak, are coming in. However, other species as well as vine honeysuckle and multiflora rose are also colonizing the area. The overstory could be removed either during the hardwood harvest or through TSI afterwards encouraging the hardwoods. This stand would be in the burn area which might help control some of the exotics.

Water - Coyote Hollow Lake inhabits about 5 or 6 acres of this tract. The lake is stocked and is used by the public. The lake is in fine shape and the fisheries is managed by the Division of Fish and Wildlife. There are not any specific recommendations for the lake at this time, however, timber management activities will need to keep the lake in consideration, both from a water quality and an aesthetic perspective.

Permanent Openings – There is about 4 acres of permanent openings associated with the lake. This includes the dam and spillway areas. These are maintained as open for the structural and operational integrity of the lake and not for wildlife. They are kept in a grassy stage and mowed on an annual basis.

SILVICULTURAL PRESCRIPTION

The first thing that needs to be done is to control the grapevines. This should be done as soon as possible to allow the sprouts to die before there are any canopy openings from a harvest.

The next thing should be a controlled burn on the slope south of FL 4. This should be about 35 acres. The objective of the burn would be to control understory competition, primarily black gum, and promote oak regeneration.

Following the burn a timber harvest could be marked. This tract, like many tracts on the Forest, has a high volume of overmature and often dying timber. As inventoried, there could be as much as 900,000 board feet marked for removal. In reality there would probably be much less than that. There will probably be some regeneration openings but not as much as the 40 acres noted in the inventory as being potential openings. Marking should preserve as much oak as is viable and where possible, encourage its regeneration.

Following the harvest, Timber Stand Improvement should be performed. At this time the areas not harvested could be looked at for any possible treatment. This includes the Virginia pine stand on FL 4.

Exotic control should be continued as needed, especially in the borrow area. Few exotics were noted in the wooded areas and eliminating the seed source in the borrow area should help this continue.

Maintenance of the dam and fisheries should continue under the direction of the Division of Water and the Division of Fish and Wildlife.

Any openings created in this harvest should be evaluated 10 years later for any needed thinning treatments.

And finally, the next inventory should be scheduled for 2022.

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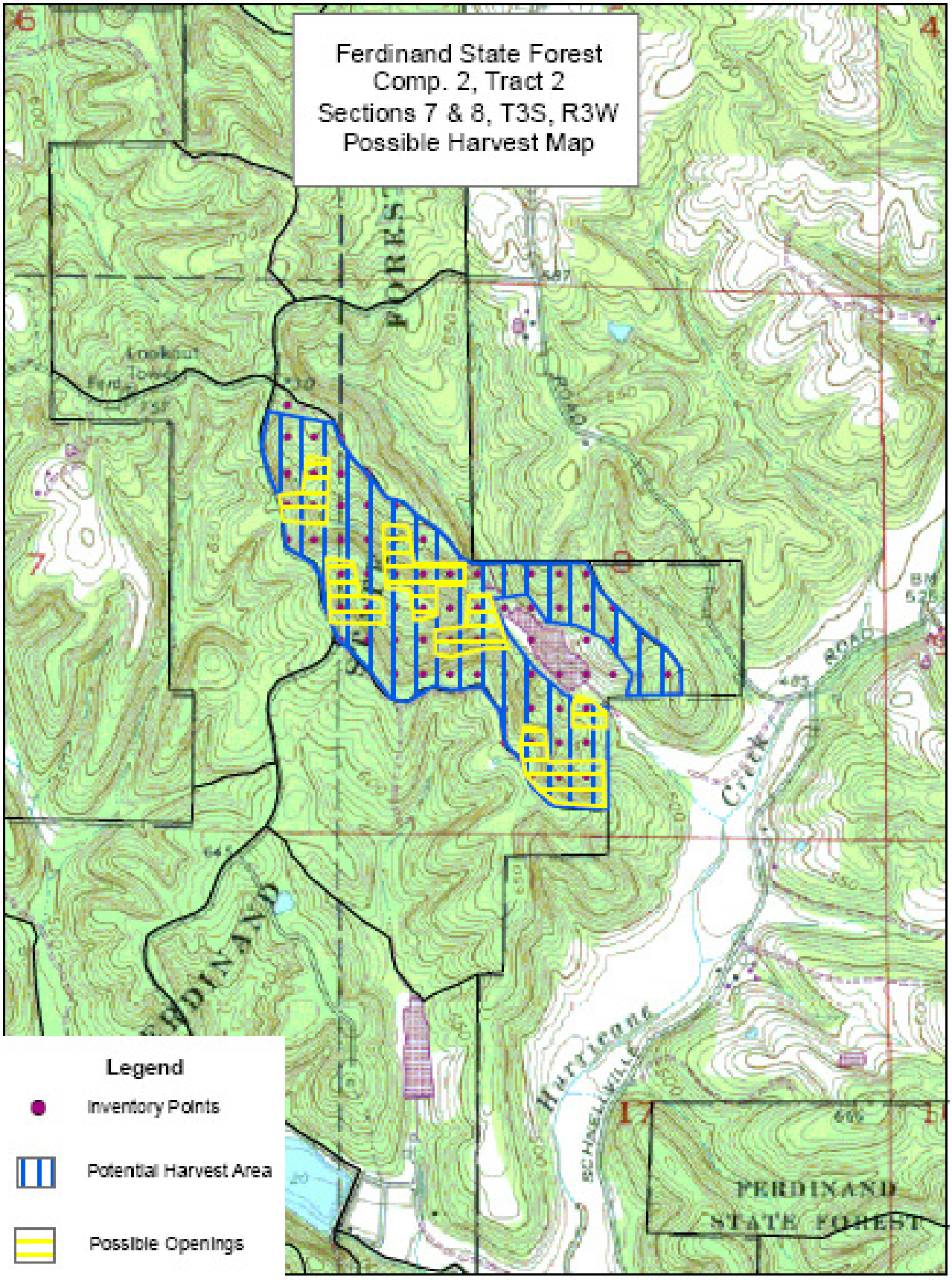
Ferdinand State Forest
Comp. 2, Tract 2
Sections 7 & 8, T3S, R3W
Possible Harvest Map
Legend
Inventory Points
Potential Harvest Area
Possible Openings
FERDINAND
STATE FOREST

Ferdinand State Forest
Comp. 2, Tract 2
Possible Prescribed Burn
Approximately 33 Acres