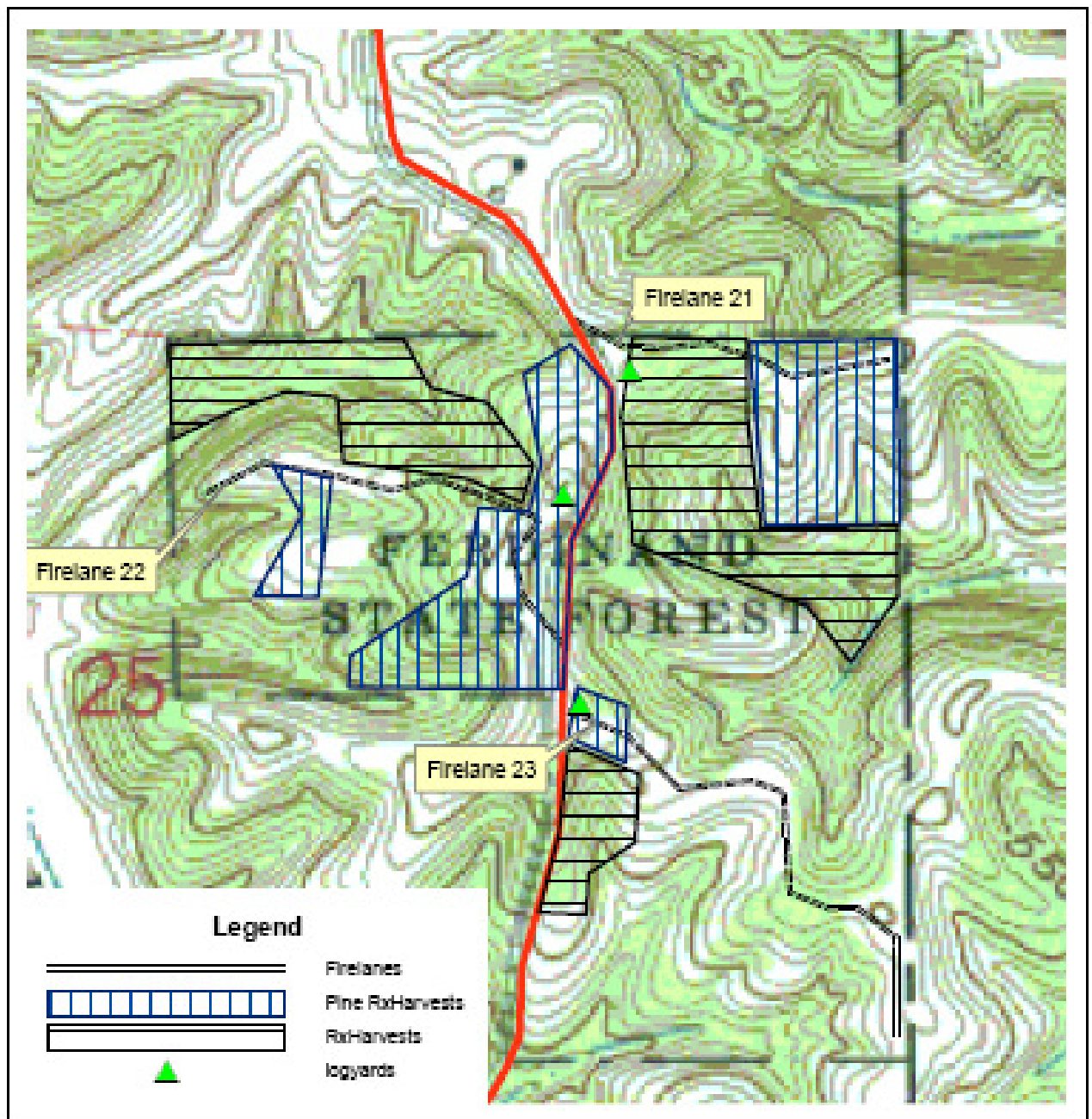


Ferdinand State Forest  
Comp. 2, Tract 11  
Section 25, T3S, R4W  
Potential Harvest Map



**FORESTER'S NARRATIVE**  
**Ferdinand State Forest C2, T11**  
**September 29, 2005**

**Location** – This tract is located in Section 25, T 3S, R4W. This is in the southeast part of Dubois County about 3 miles east of the town of Ferdinand. The tract's east boundary is on the Dubois/Perry County line.

**General Description** – This tract covers an estimated 123 acres. It straddles CR 540 E with roughly 40 acres on the west side and roughly 80 acres on the east side. The tract is slightly over 120 acres because the deed includes a small strip of land between the road and the south 40 on the east side. This tract is in a remote area and receives a far amount of use, some being illegal. The entire tract is forested with a very complex mixture of hardwoods and various pine species. In 2004, some storms caused some major blowdowns in this tract, particularly to pine.

**History** – This tract was purchased in 1951 from Carl Heim and his wife, Georgene. The inspection report states that about 43 acres of the tract was open and needed to be planted. The rest was supposedly covered with mixed hardwoods that had a tie cut in 1945. Given the current conditions, the amount of open land seems grossly underestimated. This seems to have been common at that time. In 1963 one half interest in the mineral rights was purchased separately from R.W. and Ruth Stratton.

There does not seem to be a record of the pine plantings but they must have occurred sometime around or after the mid 50's. The first record of a management activity in the tract was an inventory Janet Eger did in 1979. She found 44 acres of commercial forest and 80 acres of pine. The commercial forest area averaged 3338 board feet per acre and was highest in white oak, red oak, sugar maple and black oak. She also identified two areas of TSI, one being in the northwest corner, the other along the east line. No record of this activity has been found. She also noticed evidence of a harvest that she estimated to have been 15 – 20 years before. It is unknown if this was the tie cut from 1945 or if there had been another cut in the meantime.

In 1993, Doug Brown had a small sale on both sides of the road in the north part. 24,993 board feet were harvested in 147 trees on 13 acres. A .67 acre opening was created in this sale also. The Branchville Labor Line completed post harvest TSI in January and February 1994. In April 1994, using FFA volunteers from Forest Park High School, 300 red and white oak seedlings were planted in the opening. Maintenance was conducted in 1996, 1998 and 2005.

In May of 2004 this tract was hit pretty hard by a storm that did extensive damage to several stands of white pine. Also there was a small area of hardwoods damaged near the west boundary. Consideration was given to having a salvage sale for the pine, but since the desire was to harvest all the pine and it had been over 20 years since the last inventory, the decision was made to do a new inventory and plan first.

**Landscape Context** – This tract sits in a relatively undeveloped landscape. There are no homes adjacent to the tract and the only road is a rock road. Most of the surrounding landscape is in hardwood forest. There are also some pine stands. The rest of the land is in some kind of agricultural production. Some of the bottoms to the east and west are in crops. The other areas, particularly the ridges, are either in hay or pasture.

**Topography, Geology and Hydrology** – This tract straddles a ridgeline running in a general north – south direction. Most of the tract falls on this ridge line or the adjacent slopes, primarily south to southwest slopes. The slopes are not usually steep though there are a couple of exceptions. There are also a couple of areas of intermittent stream bottoms on the tract. The prominent geologic feature on this tract is a sandstone bluff or rock face that extends for perhaps over 500 feet.

The drainage for the tract primarily flows to the west, to Friday Branch and Ferdinand Run, or to the east to Cyclone Branch. Ferdinand Run and Cyclone Branch both flow into Hurricane Creek which flows into the Anderson River about 3 miles due south of the tract. The Anderson eventually flows into the Ohio River.

**Soils** – Most of this tract (107 acres) is in some kind of Gilpin silt loam. Gilpin soils are moderately deep, well drained soils found on the upland slopes from 12 to 50 percent. These soils are moderately permeable and have moderate organic matter content. Their site index is 80 for upland oaks. The next most common soils are the Zanesville silt loam soils (11 acres). Zanesville soils are deep, well drained soils found on the upland slopes 6 to 12 percent. They are slowly permeable with low organic matter content. Zanesville soils have a fragipan at a depth of 24 to 42 inches. Their site index is 60 to 68 depending on the degree of erosion. Four acres is in a Wellston silt loam. This is a deep, well drained soil found on the upper slopes 6 to 12 percent. These soils are moderately permeable and have a moderate organic matter content. The site index for Wellston soils are 71. The last soil is a Tilsit silt loam found in the very northeast corner of the tract. Tilsit soils are deep and well drained and found on the ridgetops with 2 to 6 percent slopes. These soils are slowly permeable and have a moderate organic matter content. Tilsit soils have a fragipan at a depth of 20 to 28 inches. These soils cover about 1 acre of the tract and have a site index of 70. Overall, about 46 acres is classified as eroded soils and another 8 acres is classified as severely eroded. This includes about two acres that is classified as gullied. Currently, all soils are stabilized.

**Access** – This tract has good access. County Road 540 E runs right through the middle of the tract. Firelanes 21, 22 and 23 provide access to most areas of the interior. A few areas are inaccessible due to slope or drainages.

**Boundary** – The entire boundary of this tract is private boundaries. This is two miles in length. The lines were not ran or marked during this inventory due to it being scheduled for a survey this coming year. The east line is partly defined by a fence and pasture. There is a cornerstone in the southeast corner. The south line east of the road is marked by a tree line and some posts. Not sure of their accuracy but they looked good. The road forms the south half of the west line. The west half of the south line may have a metal

rod near the road and does have a cornerstone on the west end. The north half of the west line has been in disagreement for years. There is fencing but it is very erratic. Over the years I have shot this line from the stone and always felt like the fence, as well as the grazing it contained, went well onto State property. We never had a good anchor on the north end but recently the north line was surveyed by a new owner to the north. The northwest corner, as marked, was farther east than I expected, further confusing the west line. The north line, while being surveyed, is not marked along the entire length. There are stakes on both corners and where the line crosses the road.

Besides the suspected trespass on the west side, there have been issues on the north line. The previous neighbor used Firelane 21 to access his property to the east of us. This was not a problem until we tried to put a gate on the lane. The entrance to the firelane is actually on the neighbor. When we had the timber sale in there we used an old road that stayed on State property to access the firelane with a skidder. The firelane and the access to the east have not been discussed with the new landowner.

**Wildlife** – From a wildlife perspective, this tract is typical of other upland forested areas. All the common wildlife species, both game and non-game are likely to be present. It is known that the tract gets hunting pressure for at least deer and turkey and probably other forest game species including squirrels and raccoons. A check with the Natural Heritage Database did not identify any ETR species and there is no reason to expect anything rare or endangered exists on the tract. However, the rock bluff does provide a relatively rare habitat that may host a species not commonly found in other areas.

Overall, the tract provides a wide range of habitats for common species. There are a mix of hardwood and pine, and now, open areas from the storm damage. The hardwood and pine are very mixed creating a lot of edge, but smaller contiguous areas. Both hard and soft mast are common and should be plentiful in most years. Water may be a limiting factor in dry years. Water is probably present most times around the sandstone formation but there are no permanent water sources within the tract. However, water is available in ponds and creeks on adjacent private ground.

Species, or their evidence seen during the inventory include: woodcock, woodpeckers, turkey, morning dove, squirrel, nuthatches, several hummingbirds, ground hog, deer, turkey vulture, cat bird, crows, bluejays, turtle and other song birds. This is surely only a fraction of the species that utilize the area as the inventory was conducted in the late summer/early fall when many species, particularly birds, are relatively quiet.

Current policy on managing for the Indiana bat requires a certain component of snag and live trees of specific species and sizes. This tract meets the guidelines for live trees but not for snags. Snag requirements are a minimum of 6 snags/acre over 9" DBH with at least one over 19" DBH. This tract currently has 13.1 snags/acre over 9" but only .8 snags over 19". Of these, only 2.0 snags/acre over 9" and .3 snags/acre over 19" were of species preferred by the Indiana bat. Live tree requirements are a minimum of 9 trees/acre over 11" DBH and a minimum of 3 trees/acre over 20" DBH. Currently this tract has a total of 34.1 trees/acre over 9" and 5.3 trees/acre over 20". The number of

trees of preferred species is significantly less at 4.1 and 1.4 trees/acre respectively. Trees designated as leave trees from the inventory totaled 21.9 trees/acre over 9" (9.5 for preferred species) and 3.3 trees/acre over 20" (1.7 for preferred species). Any management activities in this tract that remove larger trees of the preferred species may have a short term negative impact. However, by encouraging younger stems of the preferred species and especially encouraging hardwoods to take over the pine areas, the long term benefits to the Indiana bat should be improved.

**Communities** – This tract has a variety of plant communities. Some of the drier ridgetops have dry site species including greenbrier and blueberry. These species are also found on some of the sites degraded by severe erosion dating to before State ownership. Other, better sites have spicebush and other mesic species. The sandstone formation also contains ferns and other species that benefit from the cool, moist habitat. The pine areas and some of the hardwood areas have vine honeysuckle present. Though these have not developed into thickets yet, the storm damaged areas are places they may develop if the regeneration does not shade it out first. Besides honeysuckle and tree regeneration these areas are also developing a brushy community of briars and weeds. Most of the hardwood areas probably have communities that are typical of mesic sites including Christmas fern. Invasive species noted in the tract include vine honeysuckle, ailanthus and paulownia.

**Forest Condition** – The commercial hardwood part of this tract (53 acres) is currently about 85% stocked with a basal area averaging 96.9 square feet/acre and 205.4 trees/acre. This is an average tree diameter of about 9.4". 11.8 trees/acre (nearly 6%) and 10.5 square feet of basal area (nearly 11%) are in pine species including white, Virginia and red. This is partially due to the intertwined nature of the various stands and also the inclusion of some of the blow down areas into the commercial hardwoods. During the inventory process nearly all of the pine was recommended for removal to encourage either existing hardwoods or hardwood regeneration. The volume for the commercial acreage averaged about 7141 board feet/acre. This was mostly in YEP, BLO, WHO and PIH. Due to some poor soils, storms, environmental conditions and overstocking, many of these trees are of poor form, in decline or defective.

The pine areas, particularly the WHP, has been heavily impacted by the May 2004 storm. There are many areas of blowdowns, ranging from one or two trees, to 5 acres or more. Some areas the trees are intermittently damaged, others are rootwadded and some areas are nearly completely leveled. Part of the noncommercial hardwoods, around the sandstone formation, was also heavily damaged.

**Recreation** – This tract gets a lot of recreation use for an outlying area. The legitimate uses include hunting, hiking, foraging and exploring the sandstone formation. The illegitimate uses include ATV and horse use, camping, parking and littering.

**Cultural** – Cultural resources may be present on the tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction projects.

**Tract Subdivision Description and Prescription** – For description purposes this tract was broken down into four stands. These are commercial hardwoods, noncommercial hardwoods, white pine and other pine.

Commercial hardwoods – This stand encompasses about 53 acres. They are scattered throughout the tract and stand boundaries are often very vague. In general terms they are found on the slopes and bottoms of the tract. However, they also include some of the ridge top pine areas that suffered enough blowdown that the hardwoods are most of what is left. One larger area of about 21 acres is found in the northeast 40, another about 21 acres in the northwest 40 and about 8 acres on the west side of the southeast 40. These areas are primarily oak-hickory (27 acres), followed by yellow-poplar (10 acres), mixed hardwoods (10 acres) and beech-maple (6 acres). The area averages 7141 board feet/acre of volume. This is primarily YEP (30%), BLO (13%), WHO (11%), PIH (11%) and WHP (7%). While the stand only averages 85% stocking, some of the areas are overstocked. In contrast, some of the areas in the blowdown may only have saplings or poles stocking them. In addition, the quality overall was below average. YEP is often suffering from overmaturity, drought and storm damage. Some of the oak is overmature while others are of poor form or quality. Much of the WHP, particularly in this stand, was storm damaged and needs removed to fully convert to hardwoods. Despite having a harvest only 12 years ago, this stand is ready for a thinning harvest. Some of the trees left from the last harvest were damaged by the storms. Other areas were not harvested in 1993. YEP has continued to decline in the last 10 years due to maturity and droughts and other species have also suffered. A thinning and possibly at least one regeneration cut should improve the stand and allow it to move into the future in better condition than it is at present.

Noncommercial hardwoods – This stand covers about 8 acres. It is primarily the area on the west end of the northwest 40 around the sandstone formation. This area should be considered sensitive and avoided during management activities. Two other, small areas were also included in this stand. One is on the south line of the west 40 and the other is on the east line of the northeast 40. These areas are inaccessible due to steep slopes or deep drainages. Their timber value is minimal and not worth the damage and effort it would entail to remove it.

White pine – This stand covers about 35 acres. The condition of this stand is really what prompted this inventory and management plan. There was a need to address the storm damage and see what needed done to move the tract forward. Currently this stand is primarily located on eroded ridge tops and side slopes. Most of the stand is in the west 40 and totals about 18 acres. Most of this was damaged by the storms and some of it severely damaged. Probably three inventory points were classified as hardwoods instead of pine because of the extensive damage. There is also about 8 acres in the very northeast corner of the tract. Much of this was severely damaged with nearly all the trees down or broke off. Another 8 acres or so is in the southeast 40. This is mostly around firelane 23. Despite the damage, this stand is still averaging 8225 board feet/acre of volume. This is mostly WHP (82%), followed by YEP (9%), WHO (4%) and BLO (3%). The other 2%

includes VIP, WHA, REM, SCO, AME and SHH. The WHP ranged from 8 to 28" DBH with the majority falling in the 14 – 18" range. The stand needs to be converted to hardwoods and in fact the storm had already started that process. The question at this time is if the pine is merchantable. The damaged pine, even that still standing is probably too far gone. Living pine could still be salvaged if a market exists. The problem with the blow down areas is that so little pine exists in that it may not be worth climbing over the downed stuff to get to. These areas probably are going to have to be TSIed to encourage desirable hardwoods. But some of them may be so wild and wooly that it may be better to wait a few years for the regeneration to get a start. These areas are already flushing growth and may prove problematic because of honeysuckle, ailanthus and even paulownia was seen growing in these areas.

Other pine – The final 27 acres is lumped into this stand. This is all found east of the county road and most of it is in the south 40. Often these pine are found on the more severely eroded slopes. These pine are generally in stands of either VIP or REP. The VIP is mostly south of the firelane and covers about 14 acres. The VIP ranges from 2 to 14" DBH with most of it between 10 – 12". It is usually associated with hardwoods including sawlog sized YEP, BLC, BLO and SUM and pole sized SUM, BLC, REO, SAS, REM, PER and DOG. The VIP is stagnant and is not going to get better. It is probably best to convert these areas to hardwoods. The VIP averages about 1100 board feet/acre in volume plus pulp volume but is probably not merchantable due to access and small total volume. So again, TSI is probably the best option. The REP covers about 12 acres and is mostly located on the slope north of firelane 23. It ranges from 6 to 14" DBH but the vast majority falls in the 6 to 10" range. There are fewer hardwoods associated with the REP but the most common ones are YEP in the sawlog size and SUM, BLC, SAS and REM in the pole sized classes. One point also had several sawlog sized WHP. The REP averages less than 200 board feet/acre plus some pulp volume so again, the likelihood of marketing the pine is remote. Nonetheless, these areas should be converted to hardwoods.

## **TRACT PRESCRIPTION AND PROPOSED ACTIVITIES**

Hopefully, the tract will get surveyed in the next year. This has been a priority for a while and a contract is getting real close to accomplish this. This will clarify any problems we have, especially on the west side.

The first thing this tract needs silviculturally is a vine TSI. Vines were quite common especially in the area east of the road. The blowdown areas are probably not going to be very accessible for a while and vines would be difficult to locate in that mess so those areas could be skipped, though the edges should be checked.

The WHP could try to be marketed in the next couple of years as well. This would concentrate on the remaining standing stands and not the blowdown areas where everything is down or damaged. Areas of partial blowdown, where standing, living trees still exist, could also be marked. Most of these areas, particularly the ones next to the blowdowns, are going to be susceptible to damage and future blowdowns. Depending on

how the areas are marked and the amount of volume still standing in some of the blowdowns, there could be as much as 130,000 board feet or more removed from 30 – 35 acres.

The hardwoods could be marketed after the pine sells, or if the pine is not marketable, instead of the pine. Most likely that is going to be in about 5 years. While the quality is not great and the timber areas are somewhat scattered, a hardwood sale could produce about 150,000 board feet over 37 acres.

Following any sales, post harvest TSI should be conducted, paying particular attention to the openings. Some areas may have honeysuckle problems and problems with other exotics including ailanthus and paulownia. The REP and VIP areas could be converted at this time as well. Snag trees for the Indiana bat should be created when feasible as well.

After two years of growth, the blow down areas are already too grown up to try and complete with TSI. However, they should be monitored from time to time for problems and desirable regeneration. If things progress well, about 2014 these areas could receive some thinning to favor the desirable regeneration and eliminate any vines. Any openings created from timber sales should also be thinned about 10 – 12 years after being completed.

The net result of these actions is going to be the elimination of most of the pine in the tract. It is also going to result in considerable regeneration areas, maybe as much as half the tract. However, the tract should be healthier going into the next management cycle. There will be more hardwoods, younger and more vigorous hardwoods and the quality should be better. There should be no negative long-term impact on wildlife or soil found on the tract.

Finally, the next management cycle should get started with the next inventory scheduled for 2020.

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