Ferdinand State Forest
Compartment 01 Tract 10
Forester's Narrative

Location: This tract is located in sections 7 & 18, T3S, R3W in Ferdinand Township in Dubois County. It is situated in the main block of the property along the forest road and about half mile from the forest office. It is approximately five miles south-west of St. Anthony and 6 miles north-east of Ferdinand.

General Description: This tract constitutes approximately 111 acres of Ferdinand State Forest. About 87 acres is hardwood cover type, while approximately 24 acres is planted pine.

History:

Ownership History

Three prior owners make up this tract. Approximately 49 acres in Sections 7 and 18 were part of a 401.5 acre purchase from Frank J. and Genevieve Seng and Henry and Agnes Tretter in February 1934 as recorded in Book 94, Page 554. Twenty-two acres were purchased from Alois and Pauline M. Tretter in May of 1968 as part of a 77 acre purchase and is recorded in Book 149, page 208. The final 11 acres of the tract was part of a 40 acre parcel of a 265 acre purchase in March 1934 from Herman and Maria Diek.

Management History

The boundaries of this tract have changed from 93 in 1976 to 110 acres currently.

The first management plan was written in June 15, 1976 and was completed by Ben Hubbard. The tract consisted of 93 total acres with 52 acres commercial, 10 acres of pine and 31 acres of recreational area. This recreational acreage was designated mostly along the gravel and paved roads. It extends about five chains into the tract. The plan discusses a walnut plantation established in 1976. Recommendations included considering aesthetic considerations due to the recreation area as well as increasing the cutting cycle lengthened slightly to minimize disturbance. The final prescription also included some light pruning and cleaning in the pines adjacent to the road to improve appearance.

A plantation inspection was completed in August 1981 at which time the Black Walnut site was about 5 years old. The report indicated poor survival with the average height of the trees around 1.5 to 2 feet. Natural regeneration within the tract included yellow poplar, maple and sycamore. It was believed that the plantation was situated in a frost pocket that helped lead to the mortality.

Vine TSI was completed in April of 1988 by Branchville Labor Line. The method used was to cut stems less than 12" above the ground and treat with Tordon.

Another management plan was completed by Janet Eger in February 1988. This plan indicated the tract had a total Basal Area of 96.56 with the 10" class and up comprising 77.0 sq. ft. of the total. The largest part of the tract's volume came from white oak, black oak and scarlet oak. The tract had a total volume of 442,286 board feet or 6,910 board feet per acre. A harvest was prescribed for the tract removing about 2100 bard feet per acre over 64 acres.

The afore mentioned timber harvest was completed in October 1988 and removed 119,101 board feet. Black oak made up 41,250 board feet, scarlet oak made up 17,495 and white oak made up 17,459 board feet. The harvest was single tree selection with one 1 acre opening. The contract was split due to the close proximity to the recreation area. The yard was located on the ridgetop on the east side along the gravel road and possibly along the firelane on the west side. The pine in some of the areas was not harvested.

Post harvest TSI was completed in May of 1990 and covered 40 acres using axe girdle and treat. All work was completed by Branchville Labor Line. The opening was also completed. The opening was then thinned in August 2002 to release better quality yellow poplar, some black cherry and one red oak sprout. Vines were also cut and multiples were thinned.

Finally, exotic control was implemented in August of 2005. Numerous Ailanthus and multiflora rose stems were sprayed, cut and foliar sprayed.

Landscape Context
This tract has a moderate amount of farmland nearby; a small amount joins the tract on the northwest side. The largest portion is north and west of the tract. Residences dot the area, with the closest about 1/2 mile to the west. Forestland surrounds the tract on three sides.

Hydrology
The west half of the tract is cut off by a drainage that is currently backed up by beaver activity. The drainage is substantial especially on the southern end. Best Management Practices for four-foot streams should be applied if managed within this area. Smaller drainages flow into this drainage. Ferdinand lake lies just to the south.

Topography
The tract is bordered on the east by a ridgetop with fingers extending westward. There are seven fingers that extend and slopes are moderate to steep. In addition, a ridge finger extends south into the tract on the extreme north-west corner of the tract.

Soils
This tract has eight soil types.

Cuba silt loam (Cu) is a frequently flooded soil found on flood plains on 0-2% slopes. It is a well-drained soil with a water table at more than 40 inches. It has moderately low organic matter and its permeability is moderate. This soil has a very high available water capacity. This soil is found on approximately 12 acres surrounding the major drainage on the west side of the tract.

Gilpin Silt Loam (GlD2) is found on 12-18% slopes and is eroded. It is a well-drained soil with a water table at greater than 40 inches. It is on sideslopes in uplands. It has moderately low organic matter content. Permeability is moderate above 60 inches and available water capacity is low. Bedrock is at 20-40 inches. This soil is found on 11.6 acres mainly on the north-west facing toes of the centrally located slopes.

Gilpin Silt Loam (GID3) is found on 12-18% slopes and is severely eroded. . It is a well-drained soil with a water table at more than 40 inches. It is found on side slopes in uplands. It has moderately low organic matter and its permeability is moderate. It has a low available water capacity and bedrock is found at 20-40 inches. It is found on 10.5 acres on south facing slopes on the southern boundary.

Gilpin Silt Loam (GlE) is found on 18-25% slopes. This soil is well drained and the water table is found at greater than 40 inches. It is found on sideslopes. It has moderately low organic matter and permeability is moderate. Its available water capacity is low. Bedrock is found at 20-40 inches. This soil is found on 4.5 acres on the south-west facing slopes and ridgefingers in the central part of the tract.

Gilpin-Berks (GoF) is found on 20-50% slopes. The Gilpin portion is well-drained and the water table is found at more than 40 inches. It is found on side slopes. It has moderately low organic matter and permeability is moderate. It has low available water capacity and bedrock is found at 20-40 inches. The Berks portion is a well-drained soil with a water table at greater than 40 inches. It also is found on sideslopes, has moderately low organic matter and moderate permeability. Bedrock is found at 20-40 inches. This soil makes up the largest portion of the tract with 54 acres and is scattered throughout the tract.

Wellston Silt Loam (WeC2) is found on 6-12% slopes and is eroded. It is a well-drained soil and has a water table at more than 40 inches. It is found on side slopes. It has moderately low organic matter and permeability is moderate. Its available water capacity is moderate. Bedrock is found at 40-72 inches. It makes up only about 2 acres in the west facing slopes in the lower 1/3 of the tract.

Zanesville Silt Loam (ZnC2) is found on 6-12% slopes and is eroded. It is a moderately well drained soil with a seasonally high water table at 2-3 feet. It has moderately low organic matter and permeability is very slow. It has moderate

available water capacity. Bedrock is found at 50-90 inches. This soil makes up about 14 acres with the largest part on the ridgetop on the east side of the tract.

Zanesville Silt Loam (ZnC3) is found on 6-12% slopes and is severely eroded. It is moderately well drained and a seasonal high water table at 1.5 to 2.5 feet. It has moderately low organic matter and permeability is very slow. The available water capacity is moderate. Bedrock is found at 50-90 inches. It makes up about 4.5 acres on the north-west slopes in the northeast corner of the tract.

Access

This tract has good access. The tract is bordered on two sides by forest roads. The primary ridgetop makes up the east side of the tract and the fingers extending from it allow good harvest potential for over 75% of the tract. The remaining portion of the tract that may cause problems is in the north-west corner of the tract as it is on the opposite side of the drainage and the firelane that runs to that area is impassable. A previously used yard is found on the ridgetop about midway down the east side of the tract in the bend of the road.

Boundary

This tract is bordered on three sides by state forest. FSF roads make up the southern and eastern boundaries. The western boundary follows a drainage that runs southeast. The northern boundary is bordered by private property. Some evidence exists along the line a county survey marker has been set at the center of the section line and State Forest signs were placed at the quarter section lines. There is also some fencing on the west side of the stone.

Wildlife

Wildlife in this tract is typical of the area. Deer, turkey, squirrels, raccoon and other species typical to the Midwestern hardwood forest thrive here. Various songbirds and herps also abound in this area. Signs noted within the tract include deer paths and squirrel nests. Species observed include deer, nuthatch, blue jays, squirrels and chipmunks.

Habitat positives include lots of herp environment, for example down trees, water sources and lots of woody debris. Hunting pressure is probably moderate to heavy as deer stands were noted in the tract. Since parts of both the eastern and southern boundaries are within the safety zone, it reduces the number of acres hunted.

Upon consultation of the Natural Heritage Database, six species were found nearby this tract *Buteo lineatus* (Red Shouldered Hawk), *Buteo platypterus* (Broad Winged Hawk), *Miniotilta varia* (Black and White Warbler), *Wilsonia citrine* (Hooded Warbler), *Helmitheros vermivorus* (Worm Eating Warbler) and *Gophus hybridus* (Cocoa clubtail).

All of these species are species of special concern in Indiana.

Gophus hybridus is associated with sandy or silty bottom rivers. The nearest sighting of this species is found 0.75 mile from the center of the tract near a small lake. Since most research suggests this species prefers large turbid rivers with moderate current and sandy bottoms, it is unlikely that this is a permanent species. In addition, any management activities within this tract will not directly or indirectly affect the known location.

Buteo lineatus prefers open, mature forests in lowlands such as swampy woods and bogs. It is often found near open water, clearings and rivers and is very adaptive to urban areas. Some research indicates that selective harvesting is increasing competition, however if the canopy is not brought below 70% competition with *Buteo jamaicensis* (Red-tailed hawk) does not increase.

Buteo platyterus lives in dense unbroken deciduous and mixed woodlands. It spends most of its time beneath the canopy during breeding and is very secretive. Most individuals nest near open water and utilize parts of woodlands for nesting that *B. jamacensis* and *B. lineatus* do not. It is often found feeding by roads, trails or wetlands. Since this species has been known to renovate old crow, other raptor or squirrel nests it may be difficult to determine if any individuals are nesting within this tract. Since this tract does border the lake, it may be possible for nesting to be occurring within this tract. Care should be taken if this species is spotted at any time during activity.

Miniotilta varia is a summer resident only in this area. It typically breeds in second growth deciduous and mixed forests. This species nests on the ground next to the base of the trees. Although this species is listed as a species of special concern in Indiana, it is widespread and abundant in others (Cornell Lab of Ornithology)

Wilsonia citrina prefers forests with some shrubby understory especially along streams and ravine edges. It inhabits young and mature forests. A dense shrub layer and scant ground cover is preferred. This species will nest in wooded areas as small as 12 acres if they are near a larger acreage of forestland. Since selective harvesting and small group selection increases the shrub layer, harvesting may be beneficial to increasing habitat. Although this is a species of special concern in Indiana, it has been found to be common and increasing in some areas.

Helmitheros vermivorus is associated with steep slopes with dense understory and is listed on the Audubon watch list. Its dependence on large forests makes it vulnerable to population decreases. This species forages in the understory and nests on the ground. Research has indicated that this species is tolerable of

forest management. In some cases, selective logging may prove beneficial due to the increased understory produced because of harvesting.

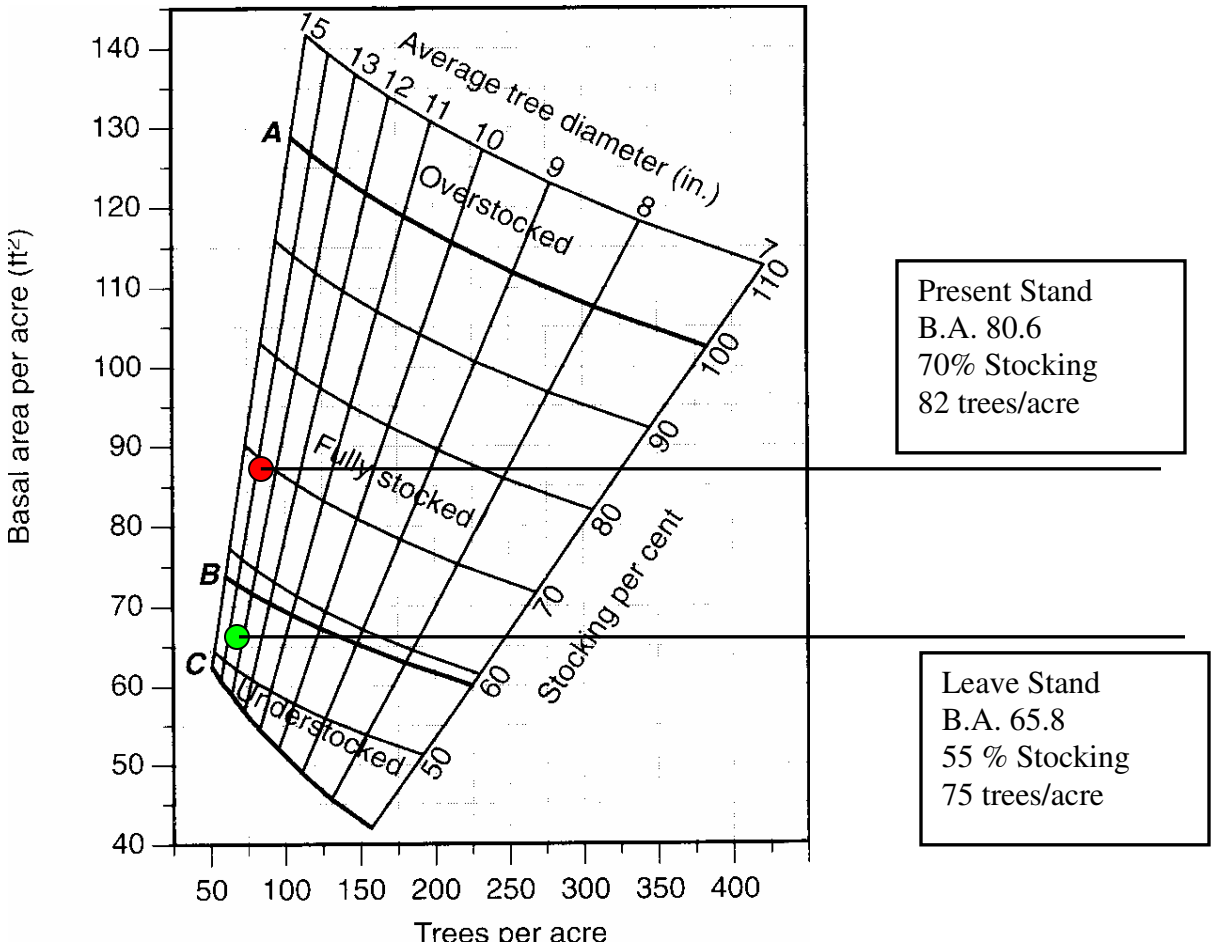
The *Wildlife Review* and *Indiana Bat Guidelines Report* are stored in the Property office files.

Recreation

This tract is in the main block of the property just across from the lake and is an aesthetically sensitive area. The tract, while partially in the safety zone, does see some hunting activity. The tract is bordered by Firelane 3 and Foxey Hollow Trail. Hunting is also a possibility outside the Safety Zone. The tract's trails include both hiking and mountain biking trails. Foxey Hollow is a mountain bike trail and Firelane 3, a hiking only trail, runs through the tract.

Forest Condition

This tract is a mixture of hardwood and pine. Hardwoods make up approximately 84 acres while pine stands make up around 27 acres. Hardwood timber types include oak-hickory, yellow poplar and sycamore. Pine stands are Virginia Pine and white pine.



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 and Prescription

Oak-hickory

This timber type covers approximately 56 acres of the tract and is broken up into two areas. One is on the east side of the drainage and covers approximately 36 acres, while the other covers the entire portion of the tract west of the drainage and makes up about 20 acres. This timber type contains 7,557.9 bd ft. per acre with approximately 156,980 bd ft. inventoried as harvest volume.

On the east side, this timber type is found on both the ridgetops and side slopes in the central part of the tract. On the west side, the type is found on the south facing slopes and ridgetop.

The overstory is predominately made up of white oak, which makes up about 54% of the volume. Most of this white oak has good form and quality, but there are some small areas that are showing defects and poorer form. Some of this damage may be result of previous logging or self-limbing. In general, the black oak is of poorer quality and is competing with the white oak. While black oak only makes up 18% of the total volume, it makes up 39% of the harvest volume. The black oak in this stand typically has some damage, is low forking and is mature to overmature. By removing this black oak in many locations, the white oak will be opened up; however, there are some areas where white oak will need to be removed to release better white oak. These areas typically have lower black oak volume.

The understory for this stand is comprised of American beech, pignut hickory, sugar maple and some white oak. Reproduction includes beech, sugar maple and pignut hickory.

Overall, grapevines are not a problem for this stand, but multiflora rose was found in the western portion, near the northern boundary line.

Pine

Pine in this stand is comprised mainly of eastern white pine and Virginia pine. The type makes up about 27 acres and is found in the southern tip on the south-west facing slopes, along the drainage in the north-central portion of the tract and on the mid to upper slopes in the northeast corner. The timber types contributes 8,283.4 bd.ft per acre with white pine constituting 5,847.7 bd.ft.per acre, Virginia pine making up 906 bdft. per acre. Yellow poplar makes up 918 bd. Ft. per acre.

Virginia pine is found only along the forest road on the southern portion of the tract. Some are very large and merchantable, while the smaller individuals are dying out. Hardwoods have not found all the gaps. Since this area is close to the road, aesthetics may be a concern should a harvest be implemented.

The remainder of the pine acreage is primarily white pine. Not all areas are fully stocked. Some are beginning to die out on the peripheries of the areas. Within the stands, most are large sawlog to very large sawlog trees and some have good form. Very few are dying out and hardwoods have yet to get a foothold. Regeneration increases as move to the northeast tip of the tract. Understory species include black cherry, white pine, pignut hickory, red pine, sugar maple and white ash.

The white pine could be harvested in order to expediate the conversion to hardwoods, especially in the north-east tip where aesthetics may be less of a concern.

Yellow Poplar

This timber type makes up only a small portion of the tract, comprising 18 acres. These areas are typically on the periphery of the pine areas where the pine is beginning to convert to hardwoods. This timber type is found only in the northern 1/3 of the tract. This type contributes about 6,671 board feet per acre.

Quality and form vary with location. In the areas directly surrounding the pine, the stands are very open crowned and some have broken tops or have poor tops. There is a good deal of understory in some and very bare in others.

In areas farther out from the pine, some individuals are large and narrow topped and removal would release some white oak, while other areas are thinly stocked, but are quality hardwoods.

Sycamore

Making up only about 10 acres of the tract, this timber type is found along the drainage that cuts through the center of the tract. Some areas see flooding and have only an herbaceous layer. The area is very open and even has a good number of down trees. Sizes also vary, with the smaller diameters showing dieback.

Reproduction varies from nothing to American beech. Regeneration includes such species as sugar maple, American beech, dogwood, American elm, black gum and red maple.

This timber type contributes only 5,158 board feet per acre. The drainage that this timber type lines would need to be addressed if crossing during harvest operations is necessary.

Silvicultural Prescription

This tract has 74 acres total that are ready for harvest. The bulk of this area, approximately 62 acres is on the east side of the drainage and covers most of the ridgetops and sideslopes. A smaller area of around 12 acres lies to the west of the drainage and consists mainly of south and south-west facing slopes. This harvest may need to be divided to exclude portions of the acreage to permit aesthetic values from being compromised; therefore, the two areas are described separately below.

The largest harvestable area is the hardwood portion of the tract. Covering 57 acres, the main objective of this harvest would be to remove the mature to overmature, poorly formed and defective black oak and white oak that are crowding the better quality white oak and in some cases, better black oak. Harvesting over the hardwood portion alone will remove around 3,071 board feet per acre for a total of 175,050 board feet.

Due to the maturity and mortality of the pine areas within this tract, they are also prescribed a harvest. This acreage would include approximately 17 acres of eastern white pine and Virginia pine, removing around 175,590 board feet. However, due to the location of this pine along the main forest road, aesthetics would be compromised in the southern tip of the tract. If this area is avoided, the acreage would be reduced by around 7 acres and the volume would be much less.

For both areas, care should be taken to retain as many snags as possible in order to maintain or improve Indiana bat habitat. Post harvest TSI that will be

completed on the stand will also help this tract reach the necessary level of snags.

In addition, it may be advisable to restrict logging activities around recreation season.

Logyards were previously used on one of the eastern ridgetop as well as along the drainage in the central part of the tract. Previously used skid trails should be used whenever possible.

Inventory in 2022.

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Ferdinand State Forest
Compartment 01, Tract 10

Sections 7 & 18, T3S, R3W
St. Anthony Quad. Jefferson Twp.

Harvest Area- 74 Acres, 1550 bf/acre

November 15, 2006