Ferdinand State Forest
Compartment 05 Tract 06

Location
This tract is located approximately 1.3 miles north-west of Siberia and about 1 mile south-west of Ferdinand State Forest office building. It is found in Sections 16 & 17 T3S, R3W of Jefferson Township, Dubois County and Section 20, T3S, R3W of Clark Township, Perry County.

General Description
This tract is approximately 95 acres of hardwood forest, with a dominate overstory of oak-hickory.

History
Acquisition History
This tract is made up of acreage from three different purchases. The western 35 +/- acres was obtained from Albert G. Kendall as part of an 80 acre purchase in November 1940. The eastern 40 acres was acquired in 1939 from Cecil M. Wright as part of a 110 acre purchase. The final few acres were obtained from Thomas B. Nelson and Dessie Nelson in February 1950.

Resource History
A quickie cruise by Bill Hahn was completed in February 1974. Here the total acreage of the tract is approximately 106 acres, of which 76 acres are considered merchantable and contain about 268,332 board feet. Forester Hahn recommended a harvest in about 20 years.

A more comprehensive plan was completed in June of 1989 by Forester Janet Eger. At this time the tract was about 106 acres, with about 82 acres classified as commercial forest, 1 acre in permanent openings and about 23 acres of pine. The tract had a total basal area per acre of 97.8. The total volume was about 5,807 board feet per acre with approximately 2,062 board feet slated for harvest. Eger recommended an improvement harvest for fiscal year 1990-91 which was completed in March of 1990 and contained 111,864 board feet in 544 trees and 65 culls. The sale was sold to Etienne's Timber Harvest for $39,540.00.

Landscape Context
This tract is surrounded primarily by forest. Croplands follow along Hurricane Creek and Schnellville Road. Residential homes are also dotted along this area as well.

Topography, Geology and Hydrology
This tract consists of two main ridgefingers that descend westward from the north-east at various slopes to the drainage that flows into the Hurricane. The southern tract boundary is made up of another long ridge top that splits near the west line. The fork that goes

south makes up the southern boundary and the one heading north-west cuts off the south-west corner of the tract creating some steeper south-west facing slopes.

A drainage cuts through the eastern half of the tract extending from the north-west corner of the tract and curls around the southern boundary of the tract. Two smaller drainages flow into this drainage from the north-east.

Soils

This tract contains six different soil types. These differ by county as well. The four soil types found in Dubois County are as follows: Gilpin Silt Loam (GlD2) 12-18% slopes, eroded, Gilpin Berks Complex (GoF) 20-50% slopes, Wellston Silt Loam (WeC2) 6-12% slopes, severely eroded and Zanesville Silt Loam 6-12% slopes, severely eroded. The Perry County soils are as follows: Adyeville-Tipsaw Ebal complex (AccG) 20-50% slopes and Adyeville-Wellston-Deuchars Silt Loams (AbvD2) 8-20% slopes, eroded.

Dubois County Soils

Gilpin Silt Loam (GlD2), 12 to 18% slopes eroded- This strongly sloping soil is moderately deep and well drained. It is found on side slopes along drainage ways and hillsides. This soil has low available water capacity and is moderately permeable. Surface runoff is rapid. The surface layer has moderate organic matter content and is friable. The soil is in capability subclass IVe and woodland suitability subclass of 2r and a site index of 80.

Gilpin-Berks complex, (GoF), 20-50% slopes-This soil consists of moderately steep to very steep Gilpin and Berks soils that are moderately deep and well drained. These soils are on hillsides and are in the uplands. Individual areas of this soil are 50 percent Gilpin soils and about 35 percent Berks soils. The soils in this unit have low available water capacity and are moderately permeable. Surface runoff is very rapid. The surface layer has moderate organic matter content and is friable. The complex is in capability subclass of Vlle, while the Gilpin part is in woodland suitability subclass 2r and the Berks part is in woodland suitability subclass of 3f. The complex has a site index of 80.

Wellston Silt Loam (WeC2), 6 to 12 percent slopes-This moderately sloping soil is deep and is well drained. This soil is on narrow ridgetops and sideslopes along drainage ways. This soil has high available water capacity and is moderately permeable. Surface runoff is medium. The surface layer has moderate organic matter content and is friable and easily tilled. The soil is in capability subclass of IIIe, woodland suitability subclass of 2o and a site index of 71.

Zanesville Silt Loam (ZnC2), 6 to 12 percent slopes, eroded-This moderately sloping soil is deep and well drained. This soil is on uplands. It is on ridgetops and upper parts of side slopes along natural drainageways. This unit includes eroded and unrecorded soils. This soil has moderate available water capacity and is slowly permeable. Surface runoff is medium. The surface layer has moderate organic matter content and is friable. Depth to a seasonal high water table ranges from 2 to 3 feet during the months of December through April. A very firm and brittle fragipan at 24 to 32 inches, restricts the downward

movement of roots. The soil is in capability subclass IIIe and woodland suitability subclass 3o and a site index of 68.

Perry County Soils
Adyeville-Wellston-Deuchars Silt Loam (AbvD2). The Adyeville soils are somewhat excessively drained, have a watertable at a depth greater than 40 inches and are on sideslopes on uplands. Slopes are 8 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content. Permeability is moderate in the restrictive layer above the bedrock. Available water capacity is low. Bedrock is at a depth of 20-40 inches. The Wellston soils of this category are well drained, have a watertable at a depth greater than 40 inches and are on sideslopes and uplands. Slopes are 8 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content. Permeability is moderate in the most restrictive layer above 60 inches. Available water capacity is moderate. The Deuchars soils are moderately well drained, have a seasonal high water table at 2 to 3 feet and are on sideslopes on uplands. Slopes are 8-20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content. Permeability is slow and available water capacity is moderate. Bedrock is at a depth of 60-80 inches. Site index is 70-80.

Adyeville-Tipsaw-Ebal complex (AccG) is found on 20-50 percent slopes and is very rocky. Adyeville-Wellston-Deuchars Silt Loam (AbvD2). The Adyeville soils are somewhat excessively drained, have a watertable at a depth greater than 40 inches and are on sideslopes on uplands. Slopes are 8 to 20 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content. Permeability is moderate in the restrictive layer above the bedrock. Available water capacity is low. Bedrock is at a depth of 20-40 inches. The Tipsaw soils are somewhat excessively drained, have a watertable at a depth greater than 40 inches and are on sideslopes on uplands. Slopes are 20-50 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderate or high organic matter content. Permeability is very slow in the most restrictive layer above bedrock. Available water capacity is moderate. Bedrock is at a depth of 50-80 inches. Site index is 80-90

Access
Access to this tract is excellent. Firelane 18 creates the northern boundary of the tract as well as part of the western boundary. Internally the access is good with ridgetops extending from the eastern side of the tract towards the central part of the tract. The drainage cutting through the western half of the tract creates some crossing issues; however, access to those areas it restricts can be obtained via the ridgetop to the south. The ridgetops provide excellent access for skidding. Logyard locations are possible along Firelane 18 on the east side of the tract.

Boundary
This tract is surrounded on the north, east and south sides by State Forest Property. The west side of the tract is bordered by private property. There is a corner stone on the northwest corner as well as on the section line on the south west side.

Wildlife

This tract has the wildlife indicative of an uplands hardwood harvest living within its boundaries. Several deer were seen during the course of this inventory as well as deer crossings. Den trees were also noted scattered throughout the tract. Greenbrier is heavier on some of the ridgtops and would provide excellent cover for such species as rabbits and turkeys. A whippoorwill was also flushed on the southeast side of the tract. Other wildlife noted in this tract were various songbirds, squirrels, hawks, crows and turtles. Hunting pressure is most likely moderate as a few deer stands were found scattered around the tract.

Indiana Bat Strategy

The Indiana Division of Forestry recognized the potential to enhance the Indiana bat habitat on its lands by implementing comprehensive management principles. These management principles include obtaining data on size, species, and numbers of snag trees. Snag trees and certain specific species are an integral part of the Indiana bat policy as they are prime roosting sites for maternal colonies.

The inventory determined there were a total of 9.6 snags per acre – 9 inches dbh to 19 inches dbh and 0.3 snags per acre for 19-inch dbh and above. These meet the requirements under the guideline of 5 snags per acre 9-19 inches dbh. The number of large snags falls short of the requirement (1 snag per acre >19" dbh) so snags should be maintained while marking any harvest and promoted during the TSI processes.

In addition to the snag requirements the bat policy calls for a minimum of 3 live trees/acre >20 inches dbh and an additional 6 live trees per acre >11 inches. These should be of a species having characteristics favorable to the Indiana bat. For preferred species the numbers were 19.5 trees per acre for 11-20 inches and 5.5 trees/acre for 20 inches and greater. If the tract is managed as inventoried, the 20"+ would fall under the guidelines leaving only 2.7 trees per acre. Care should be taken to make an effort to maintain these upper diameters of preferred species.

A search of the Natural Heritage Database returned no Endangered, Threatened or rare species within the tract's boundaries or within the immediate area.

Forest Condition

This tract is 95 acres of predominately oak-hickory forest, with smaller areas of mixed hardwoods, yellow poplar and pine. The tract currently contains an estimated 487,700 board feet, a basal area per acre of 84.3 and 291 trees per acre. The stand's stocking is at about 75% with an average tree diameter of 7.5. If the stand is harvested as inventoried, the basal area per acre will fall to 71.7 in 286 trees per acre. This will maintain a fully stocked status, but will reduce the stocking percent to 63% and an average tree diameter of 6.8.

Recreation
This tract has no formal recreation areas designated within its boundaries, but it is located in an area that is popular with illegal ATV riding. Hunting is a poplar activity within this tract as well, as a number of deer stands both recent and decayed were noted in this tract.

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

This tract is divided into the following stand types: Oak-hickory, Mixed Hardwoods, Yellow Poplar and Pine Conversion.

Oak-Hickory
This timber type covers approximately 72 acres of the tract's total acreage. It is found on the majority of the side slopes and some of the ridge tops. The largest part of the volume comes from White Oak which contains a total of about 2,600 board feet per acre and has an average diameter of about 20 inches. Quality for this species is varied with some areas containing small and low-forking trees. Other areas contain nicer white oak that are crowded by larger and overmature black oak. Black Oak is the second most dominate species in this timber type with an estimated 1,711 board feet per acre and an average diameter of around 18 inches. The black oak in this stand is typically overmature, low forking and crowding nicer white oak. In some areas, the tops are quite large and the removal of just a few individuals will make good openings in the canopy. Black Oak should make up the bulk of the harvest, releasing white oak, red oak and in some cases better black oak. Red Oak is considerably less in volume and in number of trees, but most of the individuals in this tract are fairly decent and could be favored during harvest operations.

As a whole, the timber type contains approximately 5,650 board feet per acre in about 246 trees per acre. The stand is considered fully stocked, but at the lower level of this status at 75%. If the area is harvested as inventoried, the stand will maintain this fully stocked status at 65%. A harvest for the area will help reduce the amount of crowding of better quality White Oak, Red Oak and Black Oak. White Oak should not be omitted altogether from the harvest tally as there is a good deal of improvement that can be made with this species by removing low forking and other poor quality individuals that will release better quality White Oak, Red Oak and even some Black Oak. Harvesting should remove about 1900 board feet per acre.

Understory species in this type class are dominated by sugar maple, white oak and pignut hickory with regeneration made up mostly of sugar maple and beech. Grapevines and exotics do not seem to be an issue in this type as well.

Yellow Poplar

Yellow poplar does not have too much of a presence in this tract. It comprises only about 10 acres of the tract and is spread out through the tract is small islands. Most of these islands are on the side slopes along or at the heads of drainages. One small patch is on a ridgetop. This area is most likely due to the conversion of the area from pine to hardwoods that has occurred over the past several years due to past harvest operations and natural progression of these areas. This type contains about 4,398 board feet per acre with an average dbh of around 18 inches. The majority of this type is in the smaller diameters however, with about 2,038 board feet of yellow poplar having an average diameter of around 15 inches. In most of the areas the trees are small in diameter, but look healthy. There are only a few poorly formed individuals. On the sideslope areas they are typically mixed with pignut hickory, black oak, some pine, sycamore and maple. On the ridgetop, the dominate co-species is white oak. There is also a good amount of white oak reproduction in this area as well. Harvesting in these areas would be minor as these areas are typically small diameter trees and stocking is fairly low. However, in the small acreage on the ridgetop, harvesting could be a possibility, but the species to remove would most likely be poorer formed white oak that is crowding other white oak. This area also once had a skid trail through it during a previous harvest and since it lies in an area surrounded by Oak-Hickory timber type would probably be so again, therefore some individuals would need to be taken to allow for harvesting operations.

Mixed Hardwoods

This timber type makes up about 14 acres of the tract's acreage. It is found along the major drainage on the west side of the tract as well as in two small areas on the west side. These two smaller areas are most likely a result of past harvesting activities. This timber type contains approximately 1900 board feet and averages about 14 inches in dbh. The major species found in these areas is sugar maple with yellow poplar and American sycamore rounding out the top three. Along the drainage, form and quality are typical of trees found in this context; most are poorly formed and show some defect. Larger sawlog sized trees are scattered and there is an abundance of undergrowth consisting mostly of spicebush. Since the two patches on the east side of the tract are due to past harvesting activities and pine influence species composition varies and individuals tend to be small diameter trees. This area would mostly likely be disturbed again should a harvest occur in this tract. Regeneration in these areas typically consists of sugar maple, dogwood, American beech and sassafras. There may be an occasion to remove certain individuals during harvest of neighboring areas for removal of trees or salvage, but no harvest is designated for any of these areas.

Pine Conversion

There is 4 acres of standing or recently fallen pine on this tract. This acreage is found in the upper north-west corner of the tract and contains 2400 board feet per acre. The dominate species include: Yellow poplar, pignut hickory, eastern white pine and Virginia Pine. In this area, the pine is scattered and is nearly gone. Large sawlog sized hardwoods truly dominate this area. The pine is typically smaller diameters with white pine averaging about 4.7 trees per acre and Virginia Pine averaging about 3.6 trees per acre.

The stocking in some portions of this acreage is relatively high but consists mainly of pole sized trees. Since the location of this pine is somewhat inaccessible and low in volume, a harvest is not logical; however the area may be fully converted during the completion of TSI. Regeneration in these areas is dominated by sugar maple and black oak.

Silvicultural Prescription for Compartment 05, Tract 06

This tract is ready for harvest on approximately 52 acres of the tract's 95 acres. The harvest area should include much of the eastern half of the tract. The objective of this harvest is to release better quality white oak, red oak and some black oaks by removing poorer formed and overmature black oak, poorly formed pignut hickory and yellow poplar. White oak should also be examined as some areas have many poorly formed, low forking individuals that are crowding better quality white oak and in some cases, red oak. Approximately 2,000 board feet per acre of the tract's total footage should be removed. This will produce a harvest of approximately 104,000 total board feet.

This tract can be combined with neighboring tracts to produce a single sale that will help lessen the impact to the area by reducing logging activity to a single cycle.

Post harvest TSI should be completed over the entire tract to help aiding in the conversion of the pine areas to hardwoods and to improve overall stand structure as well as increasing the number of favorable snags per the Indiana Bat Guidelines.

The tract should be reinventoried in 2021.

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Ferdinand State Forest
Compartment 05, Tract 06
Sections 16 & 17, T3S, R3W Tract Acres: 95
St. Anthony, St. Meinrad, Birdseye & Bristow Quads.
Dubois County

Prescribed Harvest Area
52 Acres