Indiana Department of Natural Resources - Division of Forestry

TM 902 Date: 7/15/2008

RESOURCE MANAGEMENT GUIDE

Compartment: 01 Tract: 10
County: Martin Section: 2 Township: 4N Range: 3W

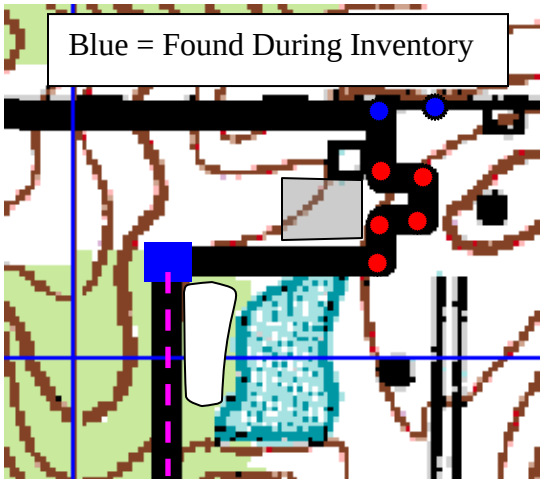
FORESTER'S NARRATIVE
By: Andrew S. Fox and Abe Bear

(Describe the area / timber / wildlife - Present stand, soils, regeneration potential, condition, timber types, private boundaries, forest protection, etc.)

ROADS AND BOUNDARIES:

Access to this tract is rather limited as this tract s is nearly land locked on three sides by private landowners, and by the state forest on the forth side. The only access is off of Wade Lane; a gravel road that dead ends at the northeast corner of the tract, but the property line in this area is rather confusing.

The eastern border to this tract has a very unusual shape, as there are several private landowners whose property adjoins the forest in peculiar ways. There has been some dispute in the past as to what the actual boundaries of the tract are, which lead to a survey of the property by two different surveyors, neither of which came to a full agreement as to where the line lays, and as such many different rebar markers were found.

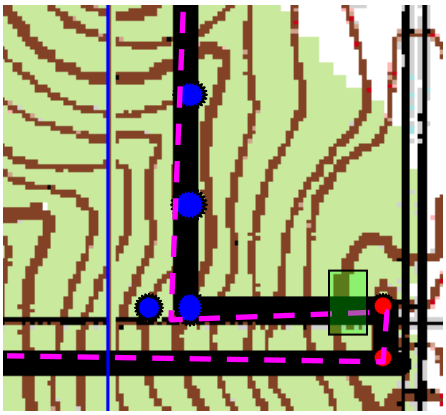


Starting in the north eastern corner of the tract a re-bar (marked in blue dot to the left) and metal fence post with multi-colored flagging set by a Mr. Anderson, a private surveyor, was found about ten feet into a pasture that belonged to a private land owner to the northeast. From the tract maps that are on file at the state forest, the property line should run south from this point for approximately one and a half chains at which point another rebar (marked as red dot) was supposed to have been set. Due to large amounts of understory growth this second rebar was not found. From here the line is suppose to turn east and run about one more chain to the middle of Wade Lane, where another rebar (red dot on map) is supposed to be installed in the road. The boundary line again turns south for one more chain to another rebar that is supposed to be in the middle of the road. From here the line turns west for approximately one chain where it turns south from a rebar and runs for another chain to yet another rebar. In all there are 6 rebar's that are supposedly installed in this corner making a knob in the northeast corner of the tract, but only one was found. Along with these rebar pieces five, brown, carsonite signs were posted to help mark the property lines, of which only one was found. This again is partially due to the large amount of understory growth in part of this area, but it is also believed that there has been some tampering by private land owners as a large portion of this knob is still partially maintained as a pasture (shown in gray above).

From the sixth rebar piece the property line turns west and runs for about five and a half chains to

a survey stone. The stone, mark by the blue square on map above, was flagged pink at the time of the inventory. From this stone a line was traversed south with a hand compass and flagged pink. All lines traversed during the inventory were flagged pink. A somewhat recently used pasture on the adjoining private property appeared to have encroached onto the state forest property by about ten to fifteen feet.

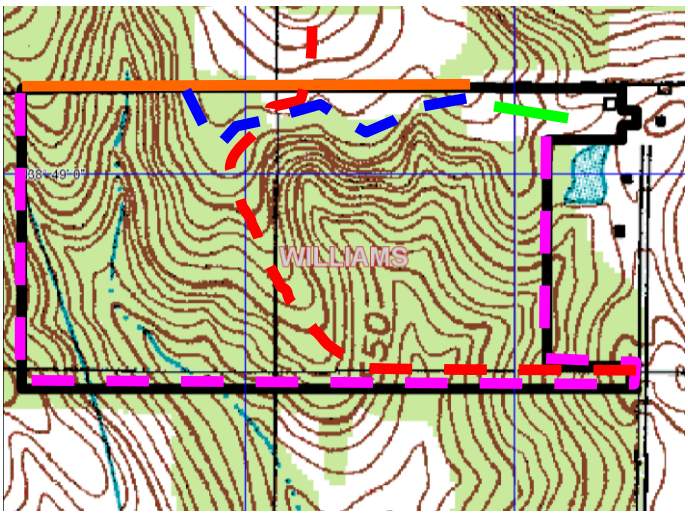
About ten chains south of the survey stone an east/west running woven-wire fence was discovered extending from a railroad tie at the state forest boundary to the east. Next to the railroad tie, a rebar was found and flagged pink. About ten feet south of the railroad tie a north/south barbed wire fence that appeared to be much older than the woven wire fence was noticed in a shagbark hickory tree. Approximately one chain south from the railroad tie and rebar, another rebar was discovered along side a metal fence post and a 15-inch pignut hickory. Also near this second rebar piece, another north/south running piece of barbed wire fence was found due west in a 6 inch sugar maple, suggesting another fence line.



Approximately one chain south of the second rebar piece, two more were discovered, each with a metal fence post. These two pieces were about thirty feet apart from each other at an azimuth of 261 degrees from the eastern most piece to the western piece. An old barbed wire fence was found running north/south between the two pieces, and is believed to be apart of the line running from the sugar maple near the previous rebar piece. From the eastern most rebar piece the property line turns east, running to the Wade Lane, where another rebar piece is installed in the road. The line then turns south for about a chain, at which point it turns west again and extends from another rebar piece in the road, following an old woven wire fence line.

The woven wire fence extending from Wade Lane makes up the southern border of the tract for about one-half mile. Some signs warning of private property are posted along this border and it was flagged pink at the time of inventory, and is so reflected on the map below by the dashed pink line. A 24-inch shagbark hickory that has two corners of fencing running into it represents the southwestern corner of the tract.

From the hickory tree, a mostly downed woven wire fence runs north making up the western boundary of the tract. This fence line was flagged pink at the time of the inventory. The fence line extends for about a quarter mile, and ends near the corner of a private landowner's yard. An old state forest property boundary sign was found near the corner as well.



From the northwest corner another woven wire fence extends east and makes up the northern border of the tract. This fence line was flagged orange at the time of the inventory and corresponds as such on the map to the left. The fence runs for a little more than quarter mile until it intersects with a north/south running fence, which makes up the western boundary for the adjoining tract of state forestland to the north. At this intersection there are supposed to be two rebar pieces installed, but they were not noticed at the time of inventory. It was noticed, however, that there was a second fence line about thirty feet to the north of the northern boundary of the tract and running parallel to it.

Other bits of old fencing were also found throughout the entirety of the tract. Many of the bits of

fence did not follow a straight line and often seemed to have no purpose. It is assumed that many of these fence bits were part of old pastures or farm fields, especially those found on the ridge towards the northern boundary of the tract.

There is only one usable road/trail found in this tract along the northern border (marked by light green line on map above), but this road is not being maintained very well. The trial is only 10 feet wide in a few places as it has grown up over the years, and only extends about a thousand feet into the wooded portion of the tract.

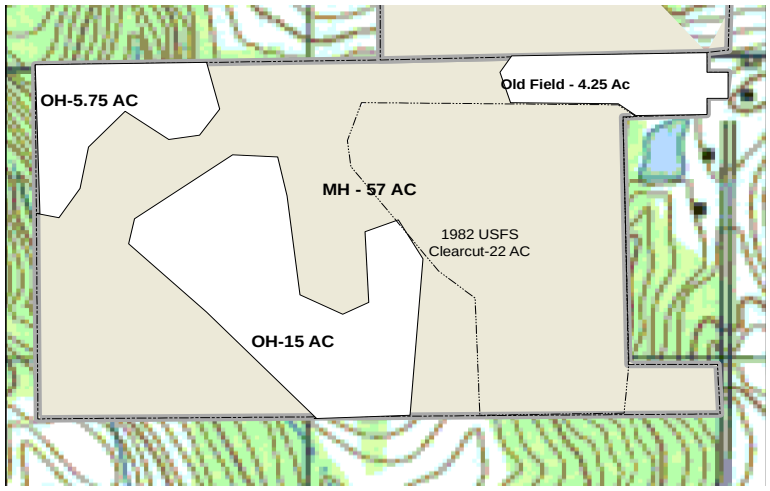
An un-useable old roadbed is present in the tract (shown by blue dashed line on map above) from when a county road passed through the tract more than thirty years ago. The roadbed is grown over but could easily be re-established for use as a firelane. The installation of a permanent firelane on this tract would be beneficial both for wildfire control and the implementation of silvicultural operations.

One suggested course for establishing a permanent firelane in this tract is to use the existing trail and old roadbed. This would be the easiest option as it resides on the top of the ridge and there is already the beginning foundation of the work completed. The only concern would of some erosion control issue that may arise with the steep hillsides that the old roadbed runs along.

A second, less desirable, option would be to follow the red dashed line on the map above. This option would start from the old well and utility pole encroachment site (shaded light green on map above and to the right), which is already well suited for a parking unit and log yard. Due to the age of the timber in this area, access is not a top priority. In the future, access in this location may be beneficial.

TRACT DESCRIPTION:

Timber Types



The major topography on this tract consists of an east/west running ridge that parallels the northern border of the tract, and a north/south spur ridge that basically bisects the tract. The eastern and western borders also parallel/ reside on two large ridges or side slopes of ridges. Two large drainages lie on either side of the spur ridge, between the eastern and western borders, and drain away to the south. The resulting aspects from this topography are south, east and west.

Access to timber east of the intermittent stream should be quite simple via a route along the northern border and south along the main ridge. Timber west of the stream would be more difficult to access and keep within the Indiana BMP requirements. It is feasible to cross the stream with a portable bridge near the south property line, but due to a deep side drainage, that option would only grant access to about half the area west of the stream. In order to access the ridge top in the northwest corner, the skid trail would have to cross the stream at the toe of the ridge or access would have to be granted from the north by the neighboring landowner. Crossing the stream in this location would be problematic due to the soft soil, steep slope, and the required skid along the stream.

Grapevines were quite common in the early succession mixed hardwood portion of the tract but were generally absent from the rest of the tract. The invasive shrub Asian bush honeysuckle was also noticed in many places on the tract. A timber stand improvement project should be implemented in order to remove grapevines and invasive plant species. Fire damage was not prevalent on the tract.

Timber on this tract can generally be divided into two types, mixed hardwood and oak/hickory. Within the mixed hardwood type is a twenty-two acre clear-cut that was implemented by the US Forest

Service in the drainage to the east of the spur ridge in 1981-82. All merchantable stems down to 6 inches in diameter were removed. As a result, there is now a nice hardwood mixture of early successional trees (i.e. yellow poplar, black cherry) that are about 6-9 inches DBH. This clear-cut stand is shown on the map above. With the average diameters in the clear-cut being so small, there is only an estimated 3,900 bd. ft. per acre of merchantable saw timber in the mixed hardwood type. While there will not likely be any timber harvest in this stand in the near future, a TSI operation to select and release crop trees should be conducted as soon as possible.

The oak/hickory component of this tract (indicated with diagonal shading on the map above) covers around twenty-one acres. This part of the tract has not been harvested in at least thirty years. The result is that the average diameter of the saw timber in this portion of the tract is between 20 and 26 inches DBH. Along the borders of the tract there are some rather large trees measuring 33 inches or more, especially along the western border. One "wolf" white oak found on the tract was measured at 51 inches in diameter at breast height. A timber harvest in this area would help maintain vigor and encourage regeneration. In the oak-hickory timber type there is estimated to be about 3,200 bd. ft. per acre of harvestable timber.

One area of particular interest is the west slope of the central spur ridge. This slope is comprised almost purely of high quality white oak. While the stocking is quite heavy, trees appear to be healthy and little mortality was noted.

There is a remnant white pine plantation on top of the spur ridge along the northern border of the tract. This plantation is about two acres in size, but is breaking up due to mortality and is naturally reverting to hardwoods.

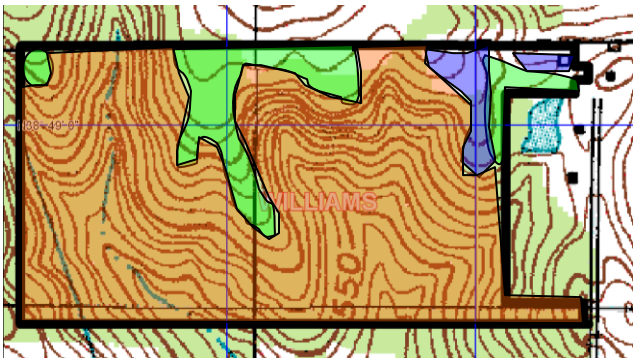
While too small to be typed out separately, there is a beech/maple component found along some of the creek bottoms. While these areas are mostly dominated by beech and maple species, there is still a strong presence of the oak/hickory timber type.

When both timber types are combined, the inventory showed that there was an estimated volume of 5,149 bd. ft. per acre of which 2,052 bd. ft. per acre is thought to be harvestable. Of the estimated volume the oak /hickory timber type made up 55% with yellow-poplar being the second highest at 33%. The overall basal area for the tract is around 109 square feet per acre.

SOILS:

There are three soil types present on this tract with **Wellston-Berks-Gilpin complex, 18-70 percent slope** comprising the majority of the tract. It is colored orange on the map. Individual areas are usually about 47 percent Wellston soil, 25 percent Berks soil and 18 percent Gilpin soil, but the mix of soil types is so intricate that it's impractical to map them separately. These well-drained soils are found on most of the side slopes in this tract and are characteristically deep to moderately deep. The surface layer is typically silt or channery silt loam and the subsoil, which is roughly 36" deep, is silt loam (Wellston), channery silt loam (Gilpin) or channery loam (Berks). Available water capacity is very low in the Berks soil, low in the Gilpin soil and high in the Wellston soil. Permeability is moderate to moderately rapid, and surface runoff is rapid to very rapid. Organic matter content in the surface layer is moderate to moderately low. Erosion hazards are moderate to severe on these soils, but can be compensated for by using gentle grades for skid trails and by installing water bars and outsloping the roads to remove water. Site indices for these soils are 70 to 80 for Northern Red Oak and 90 to 95 for Yellow Poplar.

Soil Types



The next most common soil is **WID-Welston-Ebal silt loam, 10 to 18 percent sloping**. and is mostly located on the ridge tops of the tract (shown in green at left). These moderately and strongly sloping, deep soils are found on side slopes in the up lands. The Wellston soil is usually well drained and the Ebal soil is moderately well drained. This soil is actually made up of about 50 percent Wellston soil and 40 percent Ebal soil, but they are so intermixed that it is impractical to show them separately. In both the Wellston and Ebal profiles, the surface layer is a dark grayish brown silt loam, between 4 and 5 inches deep. The Wellston soil then has a subsurface layer that is made up of brown silt loam, and runs about 8 inches thick. The Ebal soil does not have a subsurface layer, but it does have a subsoil layer, as does the Wellston. The subsoil layer in the Ebal is 55 inches thick and is a strong brown, firm and very firm channery silty clay and channery clay in the upper parts and very firm yellowish brown clay in the lower parts. The Wellston subsoil is 24 inches thick made up of a friable, strong brown silt loam and a silty clay loam in the upper parts and a brown silt loam in the lower parts. The underlying material in the Wellston to a depth of 60inches is mottled in the upper part and 20% sandstone fragments in the lower. The underlying material to a depth of 70 inches is yellowish brown shaly clay. These soils are poorly suited to cultivated crops but well suited to tree growth. Seedling mortality and windthrow are the major concerns on these soils when dealing with forest growth. The woodland ordination symbol for the Wellston soil is 4A and the Ebal is 4C

The final soil type found on this tract (coded blue on the map) is the **Wellston silt loam (WeB), 2 to 6 percent slopes.** This gently sloping, deep, well-drained soil is found on ridgetops. The surface layer is about 23 inches thick and is friable. The upper portion is a strong brown silty clay loam, and the lower part is a yellowish brown silt loam. The underlying material is about 8 inches of yellowish brown channery loam in which there is the content of sandstone fragments is a about 15 percent. Sandstone bedrock is found at about 41 inches. The available water capacity is high while surface runoff is only medium. Both the permeability and organic matter content are moderate. The woodland ordination symbol for this soil is 4A while the site index is 71 for northern red oaks and 90 for yellow poplars.

HISTORY:

This tract of land was originally part of a larger parcel owned by the family of Delbert C Rhodes, under the name of Wild Rose Ranch. Mr. Rhodes decided to sell the land to the United States Forest Service in 1971 after his wife passed away. On November 1st, 1971 Mr. Rhodes sold the property for a sum of $12,019.20. While in possession of the Untied States Forest Service a clear cutting operation was performed on approximately twenty-two acres of the tract in 1981.

It is not certain at this time how the state obtained possession of the tract as the records are unclear, but it is more than likely that the tract was a part of the numerous land trades between the United States Forest Service and the Indiana Division of Forestry. We do know however that the tract of land was obtained in late 1981 or early 1982.

In the spring of 1990 it was discovered that an adjacent landowner had accidentally place a well and utility pole on the narrow piece of land in the southeastern corner of the tract. After this encroachment a survey had to be conducted in order to document and try to resolve the problem. Because there was no permit available for such an encroachment at the time, the landowner was instructed by the state forester at the time to relocate the well and utility pole from the state property to the property

owner's actual property within a reasonable time. Later in the same year that decision was reversed and a permit was developed and granted for this particular parcel.

It was after the survey mentioned above was conducted it was realized that there was another encroachment by a different landowner. Apparently another adjacent landowner had two structures, a gravel road, and a mowed yard in this portion of the state forest.

Silviculturaly, not much has taken place on this tract since coming into possession of the state. In 1988 an inventory was conducted by Janet Eger who found there to be an approximate volume of 224,750 bd. ft. on the 42 acres considered commercial forest at that time. A timber harvest was marked and was scheduled for 1995 but failed to sell, even after thee attempts. The sale would have included 220 trees with an approximate volume of 51,844 Bd Ft. The only bid that was submitted was from White River La. Homes for $7226.60 which fell below the minimum acceptable bid.

RECREATION AND WILDLIFE:

Hiking and hunting are the only feasible recreation activities that are applicable due to the lack of adequate access. Because this tract has not been harvested in over twenty-five years, there are many large mature trees on the tract. The large trees along with some steep terrain make for some beautiful hiking. They also make for good white-tailed deer and wild turkey hunting.

This tract offers outstanding wildlife habitat due to the presence of two distinctly different forest types. This complexity offers foraging and escape habitat for game species such as deer, turkey, rabbit and squirrel while also providing habitat for early or late successional specialists. The presence of two man made ponds within a mile radius of the tract should increase the potential for reptile and amphibian presence. Some of the wildlife species that were noticed at the time of the inventory were white-tailed deer, various squirrel species as well as song bird species, red-tailed hawk, bull frogs, spring peepers, raccoons, etc. While these few species were directly observed it is realized that there are many more that inhabit this tract.

An inquiry was made to the Natural Heritage Database in order to determine if there were any known threatened or endangered wildlife that existed on this tract, the results of which came back negative (see attached map).

WATERSHED:

The major direction of stream flow in this tract is to the south. The majority of the northern border runs atop and parallel to a large ridge. A spur ridge extends south off of the northern ridge, and basically bisects the tract. To the west of this spur ridge, a major drainage is formed by two large drainages that merge somewhat parallel to the western border of the tract. On the east side of the spur ridge another large drainage forms from the convergence of several smaller gullies and drainages. The two major drainages that form on either side of the spur ridge flow to the south out of the tract and merge to form an intermittent creek less than a quarter mile to the south. Water continues to flow south dumping into Indian Creek, which flows off to the southwest, eventually emptying into the east fork of the White River.

SURROUNDING LANDSCAPE:

The area surrounding this parcel is a mix of forest and agriculture land. NSWC Crane, which is heavily wooded, is approximately 1.5 miles north and west of the tract. The area between this tract and

CRANE is mostly wooded making this part of a much larger block of forestland. The land south and east of the tract is roughly equally forest and small agricultural fields.

TM 903 Date: 7/22/2008

RESOURCE MANAGEMENT GUIDE

Compartment: 01 Tract: 10
County: Martin Section: 2 Township: 4N Range: 3W

SILVICULTURAL PRESCRIPTION

By: Andrew S Fox and Abe Bear

(Describe silvicultural practices needed [if any] - harvest, TSI, tree planting, wildlife habitat, erosion control, natural regeneration, etc.)

The first issue that should be considered is the installation of an access road. It is recommended that the old roadbed along the northern border of the tract be re-established as a firelane. A parking unit may be constructed in the southeast corner with possibly a firelane extending west from the unit down the hill and then turning north following the spur ridge up to intersect with the northern firelane. This route would require crossing a fairly broad drainage which may not be feasible. See map on page 2 of the TM 902 report of this inventory for better representation. Building these firelanes would allow for better public access, easier wildfire management, and ability to perform silvicultural operations. It is believed that one of the reasons that past timber sales on this tract have failed was due to the lack of good access.

A timber harvest should be conducted on the mature portion of this tract in order to capture some of the pending mortality and reduce basal area in the heavily stocked portions. The timber harvest should remove between 1,700 and 2,000 bd. ft. per acre focusing on overly mature trees and those of poor quality. The existing stand can be managed through improvement and selection harvests for at least one more cycle. There are no areas where large openings should be created during the next harvest. In the future, it may be necessary to use a shelterwood or large group opening technique to regenerate intolerant species. Due to the presence of high value white oak on a large portion of the tract, it is advisable to attempt to time the sale to coincide with good timber markets. The timber harvest should be held after the construction of firelanes in order to help ensure the sale of the timber.

A post harvest TSI operation should be preformed to ensure the regeneration establishment of desired tree species. Paired with this TSI should be crop tree selection and release within the old clear-cut portion of the tract. Desired crop tree species in this area would likely be black cherry, oak, hickory, and tulip. Soft mast producing wildlife trees such as persimmon and blackgum should also be favored where appropriate. At the time of the crop tree release, a grapevine control and invasive plant eradication effort should be conducted. All invasive plants and problematic vines should be cut and sprayed with herbicide to ensure eradication.

To submit a comment on this document, click on the following link:
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

You **must** indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

TM 904 Date: 7/22/2008

RESOURCE MANAGEMENT GUIDE

Compartment: 01 Tract: 10
County: Martin Section: 2 Township: 4N Range: 3W

Specific Practices For Accomplishment
By: Andrew S Fox and Abe Bear

(Tree planting, TSI, harvest, special product sales, wildlife habitat work, erosion control, unique areas, recreation, etc.)

Year Planned	Practice	Year Accomplished
2010	Construction of firelane along northern tract boundary. Also construct a parking area and short access road/firelane in the southeast portion of the tract.	
2011	Improvement harvest of western half of the tract, removing 1,700 to 2,000 bd. ft. per acre	
2012	Post harvest TSI operation on harvested area. Crop tree release, grapevine and invasive control in early succession area.	