TM 902 Date: 5/21/2008

RESOURCE MANAGEMENT GUIDE

Compartment: 01 Tract: 11
County: Martin Section: 18 Township: 4N Range: 3W

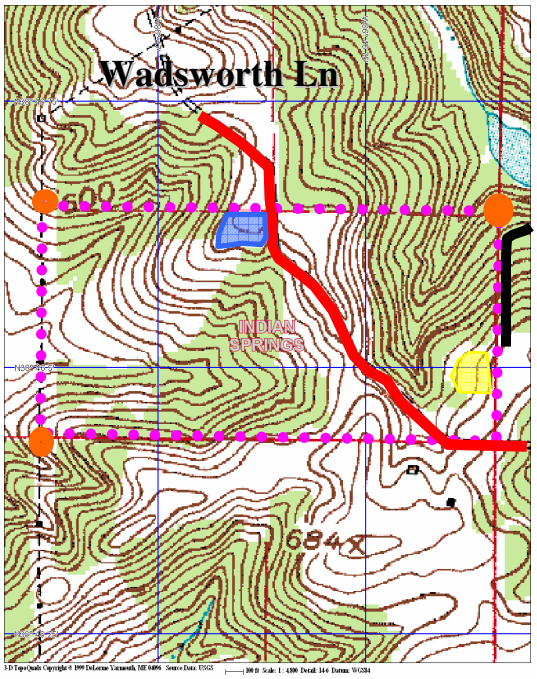
FORESTER'S NARRATIVE
By: Andrew S Fox

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

ROADS AND BOUNDARIES:

There are only two roads in contact with this tract of which only one is public. Wadsworth Ln. (marked in red on the map to the right) is an old county highway which is maintained up to the southeastern corner of the tract. It then follows, and makes up, the southern border of the tract for about fifty yards where it then turns northwest, running along a ridge at a northwest/southeast angle which it continues through the northern border of the tract. The section of Wadsworth Ln. that runs through the state forest property is no longer being maintained and as a result a culvert has washed out causing large erosion problems in this area and making the road impassible to anything other than an ATV.

The other road which comes into contact with this tract (marked in black on the map) follows along the northern two-thirds of the eastern tract boundary, on a private land owner's property. This road has recently been graded/bulldozed, cleared of trees and debris, and had new stone added to it. Near the northeast corner of the tract the road turns to the northeast following the edge of the ridge in this area.



From where Wadsworth Ln. turns from the southern border and heads northwest a fence becomes the southern border of the tract. Signs, bits of mostly downed fencing and newly installed fence posts run along the length of the southern border. Pink flagging was also hung at the time of inventory (shown as pink dots on the map) to help show the boundary. Starting at the southeast corner and running west the line follows along a wide ridge top which has several farm fields that run up to state forest property. Once off the ridge top the south boundary follows the side slope of the ridge. A steel fence post (shown as orange dot) with signs on it were found and marked with GPS and pink flagging.

From here a line was traversed north along more old fencing that marks the west boundary of the tract. This boundary crosses a large lowland area in which two major drainages meet. The foundations of an apparent stone fence remain beneath the wire fence that was found. The fence though did not appear to travel directly north/south when traversed, but rather a slight northeast/southwest direction. As a result of the possible inconsistency the western border was not entirely flagged during the inventory. Another steel fence post with signs and old flagging was found in the northwestern corner of the track, and was again

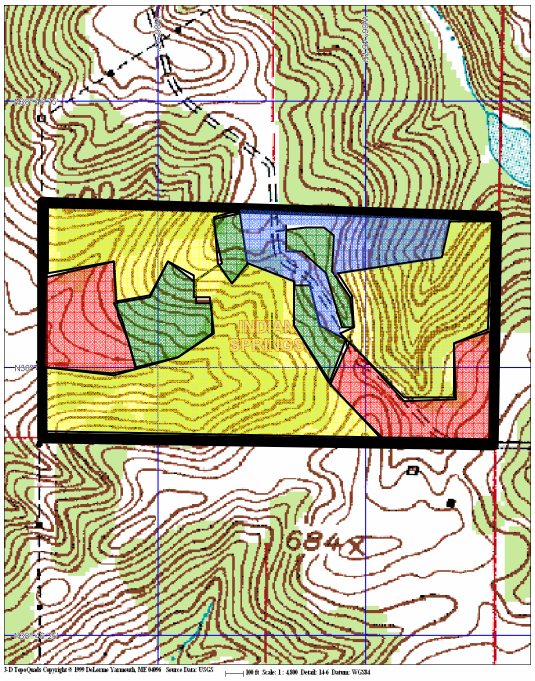
marked with more flagging and a GPS unit.

While traversing the northern border of the tract, wire fencing and a stone fence foundation were found, but they did not align with the line that was traversed. Upon further investigation it appears that the steel fence post in the northwestern corner of the tract does not sit at the corner where the fencing from the northern and western borders meets. Instead the steel fence post is about 4-5 feet to the north of this actual fence corner. It is not clear which is correctly placed at this time. Another post was found in the northeast corner and was once again marked with flagging and GPS.

When traversing the eastern border of the tract old fencing was found once again and was flagged pink. Starting from the southeast corner of the tract the eastern border runs along a ridge top heading north and then continues down along the side slope of the same ridge and runs into the fore mentioned post about two thirds of the way down the slope. At the top of the ridge an air field borders the state forest property, and actually comes onto the state property. An area of about two acres in size on the state forest property has been cleared and maintained as part of the Wadsworth runway (shown in yellow on map). There is no easement for this area of land found in the available records.

TRACT DESCRIPTION:

Throughout this tract evidence of farming, logging, grazing was evident. At least one open well that was previously fenced off, and possibly two other well locations (all marked by blue area on map above). The wells were flagged pink to alert hikers and hunters that may use the area of possible danger. Many old farm fields were observed and are marked in the timber type map below as the early succession hardwoods. Throughout much of the mature hardwood sections of the tract it was noticed that most mature trees (70+ years old) were "wolf trees" or open grown trees of poor timber quality. These wolf trees indicate that the area was either heavily logged around the time that they were seedlings (1930's or earlier), or that this area was used for livestock grazing after they were established. Either way many of these trees should likely be removed in order to promote higher quality timber and improved stand vigor.



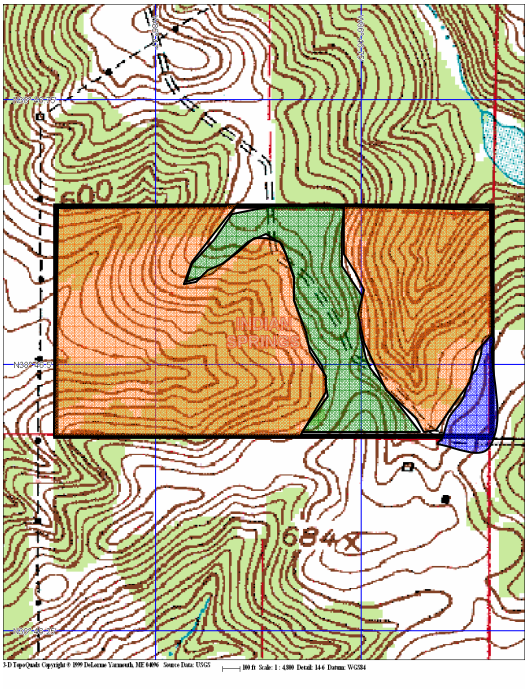
Overall this tract is dominated by four different timber types. These types include early succession hardwoods (shown as red on the map to the left), mature oak/hickory stands (shown in yellow), mixed hardwoods (blue) and planted pine stands (green). The pine stands are mostly found along the ridge tops of the tract except where old home and field sites were located, in which case early succession hardwoods are present. The pine stands are being naturally replaced by hardwood species. Mature hardwoods, mostly oak/hickory, dominate most of the rest of the tract. Of the merchantable timber the oak/hickory timber types represent 66% of the present volume. Throughout the tract many old bits of fencing were noticed at the time of inventory. Many of these were just running along the side of Wadsworth Lane, most likely as part of an old field or pasture fence. Other pieces did not seem to have any purpose or sense of meaningful direction, as they were in the middle of the tract and did not seem to run along straight lines or any particular boundary.

There was no evidence of fire on the tract, but vines were quite evident throughout most of the tract. The greatest concentration of vines was noted in the southwestern corner of the tract, where not

only grapevines were present, but also Japanese honeysuckle was causing damage. The honeysuckle was causing many trees to be pulled down, and become completely covered by the vine. If measures are not taken soon to control the vine problem in these areas, tree mortality will become a large problem.

Under the pine plantations there are **good amounts of oak regeneration becoming established** as seedlings and will soon need to be released slightly to help further their growth. This is encouraging as in other portions of the mature hardwoods there are high quality oaks/hickories that could potentially be very valuable. As well the mature stands are beginning to transition to the beech/maple timber type, so the recruitment of new oak seedlings will be a great addition to the tract.

SOILS: (Info obtained from USGS's 1988, Soil Survey of Martin County, IN,)



There are two major soil types found on this tract, and one minor type which covers only 2.5-5 acres in the southeast corner of the tract. This soil type is the **Zanesville silt loam, 2 to 6 percent slopes.** It is coded blue on the map and is found on a ridge top in the tract. It is a gently sloping, deep, well drained to moderately well drained soil. The surface layer is an eight-inch thick brown silt loam underlain by a roughly three-foot thick silty clay loam subsoil. A firm fragipan, which restricts root penetration, exists in the lower part of the subsoil. In some areas, the lower portion of the subsoil is extremely acid. Available water capacity is moderate and permeability is moderate above the fragipan and slow in the fragipan. This slow permeability restricts downward water movement through the soil and often results in the soil being saturated in the winter and spring. Surface runoff is medium. Organic matter content in the surface layer is moderate. Erosion hazards and equipment limitations are slight for this soil; however, winter/spring logging may be restricted due to the saturated soil conditions. Site index for Northern Red Oak on this soil is fairly low at 68.

The largest soil type found on this tract is the **Wellston-Berks-Gilpin complex, 18-70 percent slopes.** 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.

The final soil type found on this tract is the **Zanesville silt loam, 6 to 12 percent slopes, eroded (ZaC2).** This soil is coded green on the map and is found on some ridgetops and upper side slopes. It is a moderately sloping, deep, well to moderately well drained soil. The surface layer is a five-inch thick layer of brown silt loam. The subsoil layer, about 39 inches thick, is friable silt loam over a silty clay loam. This is underlain by a silt loam fragipan, which restricts root penetration and downward water movement. This restriction to water movement often results in saturated soil conditions in the winter and spring. Available

water capacity is moderate, and permeability is moderate above and slow in the fragipan. Surface runoff is rapid, requiring measures such as water turnouts and bars to properly remove water from roads and yards. The organic matter content is moderate in the surface layer. Erosion hazards and equipment limitations are slight for this soil; however, winter/spring logging may be restricted due to the saturated soil conditions. Site index for Northern Red Oak on this soil is fairly low at 68.

HISTORY:

This tract was obtained by the Indiana Division of Forestry through a land exchange with the United States Forest Service. The exchange took place on Aug. 19, 1985, and included approximately 1,870 acres of land being awarded to the state of Indiana. Since that time not a whole lot has been done with the tract. It was inventoried in 1988 by forester Janet Eger, who found there to only be 48 acres of commercial timber on the property and around 150,000 bd. ft. of volume in 14 hardwood species. The other 32 acres were mostly old fields and home sites that were in the very first stages of succession, or had been planted to pine. The airstrip that was noticed during the current inventory was also present on the state forest property at the time of the 1988 inventory as well. The only other activity on the tract since then has been a grape vine TSI operation in October of 1988.

RECREATION AND WILDLIFE:

Access to and from this tract is good since a county road runs through the tract, but parking is not, as there is only one parking spot on an adjacent piece of state forest property. Due to this relative ease of access there is great opportunity for recreation, but primarily in the forms of hunting and hiking. There are no other established recreational facilities on this tract and it should remain so. There are many steep slopes with several rock outcrops, among large hardwood trees, that provide great views while hiking. As well the abundance of both wildlife and wildlife habitat make for excellent hunting opportunities.

While doing the inventory several wildlife species were notice on the tract and signs of many more were quite visible. Barred owls, grey squirrels, eastern box turtles and wild turkey were directly observed at the time of inventory, while signs of white-tailed deer, red-tailed hawks, various salamanders, several song bird species, and many other forms of wildlife were evident throughout the tract. The habitat types on this tract, being quite diversified, lend themselves very well to a large mosaic of different wildlife. There are no known Threatened or Endangered species on this tract, bobcat, hooded warbler, worm-eating warbler and great blue heron have all been observed within a mile of the tract.

Indiana Division of Forestry
Forest Resource Management
Wildlife Review Checklist – Revised May 2007

Date of Review:	June 4, 2008		
State Forest:	Martin State Forest		
Inspected By:	Andrew S Fox		
Compartment:	C 1	**Township:**	North 4
Tract(s):	T 11	**Range:**	West 3
Total Acres:	80	**Section(s):**	18

1. Does the Natural Heritage Database identify any Endangered, Threatened or Rare species or "significant areas" documented from this tract or nearby?

The worm-eating warbler, hooded warbler, great blue heron and bobcat have all been observed within a mile of the tract.

2. Describe the vegetative cover/land use matrix within a 2.5 mile radius of this tract:

   a. A majority of the land within the matrix area is __ publicly owned, _X_ privately owned. (mark one)

   b. Which of the following land cover types are present in the matrix area (mark all that can be easily identified as present from aerial photos, use two marks to identify the most prevalent type)?

      _XX_ Closed-canopy forest
      _X__ Brushy/early successional areas
      _X__ Open fields
      _X__ Open water
      _X__ Developed areas

   C. Does tract contain any habitat/habitat type, which is otherwise missing or poorly represented within the 2.5 mile radius matrix area? Yes/No

   No

   If yes, explain:

   D. Has the land use pattern within the matrix area shown obvious significant change within the last 15 years? Yes/No

   No

   If yes, explain:

3. Have there been documented sightings or other evidence of current or recent past (20 years) occurrences of rare, threatened or endangered species within this tract?

   Not to my knowledge.

4. List the expected short term (<5 years) and long term (>5 years) effects the proposed forest resource management activities will have on the following habitat types within this tract:

   A. Closed canopy forest

   Short term: A decrease in a range of 0-100% in canopy cover can be expected with the management activities planned for this tract. Most of the change will be in the 0 – 15% range. Any regeneration openings will have 100% canopy removal.

   Long term: None, except in regeneration openings where the effects will diminish as regeneration begins to become established and density reaches a point to where the crown will begin to close. This will occur in approximately 10 to 20 years.

B. Understory woody vegetation

Short term: Due to the increased light and moisture penetration by means of a more open canopy, the density and growth rates or vegetation would increase, especially in regeneration openings.

Long term: None in most of the tract. In regeneration openings the effects will remain favorable for fast and vigorous growth for ten to fifteen years at which time crown closer should begin to take place and effects will begin to diminish.

C. Herbaceous vegetation

Short term: Some increase in growth could be noted in areas where the crown is thinned from the harvest. Growth rates and density should increase dramatically in regeneration openings with full light and moisture availability. Species composition will also probably change in the openings.

Long term: Same, with diminished effects as the canopy closes.

D. Streams, Lakes and Ponds

Short term: Some slight sedimentation and possibly slight warming of stream water due to lack of canopy shading.

Long term: None.

E. Subterranean None

5. List any conditions that would suggest that the management proposal for this tract would require further evaluation by any additional wildlife management specialists?

N/A

6. Were any additions, changes or amendments made to the proposed forest resource management activities specifically to enhance or protect wildlife populations or wildlife habitat?

No

If yes, explain:

Additional Comments:

Evidence of the following species were either observed or heard during the field review of tract(s):
Deer, frogs, turtles, squirrels, white turkey, barred owl, red-tailed hawk etc.

References cited: Natural Heritage Database

Date: 8/7/06 **Compartment 01** **Tract 11**

ADDENDUM TO ADDRESS INDIANA BAT MANAGEMENT STRATEGY

(Discuss any adjustments to management activities that are needed to comply with guidelines.)

GUIDELINES--

- *3 live trees per acre 20+ inches DBH and (an additional) 6 live trees per acre 11+ inches DBH (of species with desired characteristics.(i.e. – shagbark, shellbark and bitternut hickory, black, green and white ash, shingle, post, white and northern red oak, slippery and American elm, black locust, eastern cottonwood, silver maple and sassafras).*
- *5 snags per acre 9+ inches DBH and (an additional) 1 snag per acre 19+ inches DBH.*

Snag Trees

The inventory indicated that there were a total of 6 snag trees per acre greater than a DBH of 9", and the bat management guidelines call for five trees per acre. The inventory also indicated that there was and additional .1 snag trees of 19" or greater DBH; the guidelines call for one tree per acre.

In order to come into compliance with the bat management policy, an additional one snag 19" or greater DBH should be created per every acre. These trees can be marked and deadened as a part of the post harvest TSI operation. There are an estimated .9 cull trees per acre that can be used for this purpose.

Live Trees

The inventory indicated that there were a total of 2 live trees per acre 20+ inches DBH of the desired species. The guidelines call for 3 trees per acre. The inventory also indicated that there were a total of 12.3 additional live trees per acre 11+ inches DBH of the desired species. The guidelines call for 6 trees per acre.

In order to come into compliance with the bat management policy, an additional 1 live tree per acre 20+ inches DBH should be left.

WATERSHED:

There are three dominant ridges on this tract, the most prevalent of which bisects the tract. Two ridges flank the east and south boundaries of this tract and give both north and west aspects along the respective ridges. The ridge that runs through the middle of the tract runs on a NW-SE angle from nearly the southeast corner of the tract to about the middle of the northern border at which point it turns slightly more west and follows the northern boundary of the tract. A finger ridge does jut off to the west from this central ridge and extends about a quarter of the length of the tract. Heading west water is funneled by the ridges along the northern and southern boundaries, into a rather large drainage a few hundred yards past the western border of the tract. This drainage empties into Opossum Creek, which shortly empties into Indian Creek. The east fork of the white river is the major outlet for all drainages within the region.

East of the tract's central ridge, water is once again funneled by the central ridge and by the ridge running along the eastern boundary of the tract. The water flows northeast for nearly a quarter mile until

is reaches a man made pond on private property. The drainage then continues to the east and dumps into Indian Creek, which eventually flows into the White River.

TM 903
Date: 5/21/2008 Compartment 1 Tract 11

SILVICULTURAL PRESCRIPTION

By: Andrew S Fox
Reviewed by: Jim Lauck

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

The most pressing matter for this tract is the TSI of grape and Japanese honeysuckle vines. Cutting where possible should be utilized to kill any vines present, as well as herbicide use to prevent re-sprouting.

The repair of old fencing and installation of new fencing around open wells should be conducted as soon as possible too.

Repairing the culvert along the public road that runs through the tract will be necessary in order to ensure access for future timber operations.

A shelterwood treatment should be performed in the pine stands that contain adequate oak advance regeneration. This would involve deadening understory trees to encourage growth of the oaks. A thinning of pine plantations maybe necessary within the next five years as oak and hickory seedlings that are establishing underneath these pines will need to be released. Girdling of the pines may be the most effective form of thinning, as there is likely no market to conduct an actual harvest and there will likely be less damage done to the seedlings as a result of leaving the pines standing. Also the benefit of use of the girdled trees as dens by wildlife will be added to the tract.

At the same time of release in the pine stands, TSI and crop tree selection should be conducted on the early successional hardwood areas of the tract. This will help increase stand vigor in these portions of the tract while, at the same time, improving timber quality and over all health.

It is suggested that a timber harvest be conducted on some of the mature oak/hickory stand in order to capture mortality and to maintain /improve high standards of quality. In the areas where previous grazing and/or improper logging has been practiced, less vigorous, poorer quality trees should be removed in order to promote a healthier stand, and regenerate a new cohort.

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 "Martin C1 T11" 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

RESOURCE MANAGEMENT GUIDE

Date: 5/21/2008 Compartment 1 Tract 11

Specific Practices For Accomplishment

By: Andrew S. Fox

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

Year Planned	Practice	Year Accomplished
2009	Vine TSI and invasives control	
2009-10	Repair washed-out culvert	
2009-11	Pine Thinning/Shelterwood and Early Succession Hardwood TSI	
2015	Improvement harvest	
2016	Post-harvest TSI	
2020	Perform a new inventory	