TM 903

# RESOURCE MANAGEMENT GUIDE

Martin State Forest

| Date | Comp/Tract | Sec/T/R | Township | Distance from city/town |
|---|---|---|---|---|
| 1/28/08 | C 7 T 3 | 24-3-3 | Halbert | 5 miles east of Shoals |

## FORESTER'S NARRATIVE

By: Darren Bridges and Jim Lauck

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

ROADS AND BOUNDARIES:

This tract is bounded on the east side by Hoosier National Forest. Old fence can occasionally be found along portions of this boundary, especially the northern half of the boundary. The south and most of the west boundary is a drainage that runs from southeast to northwest, until it intersects with a north-south running private property line (Don Wyman property). At this point, the west tract boundary follows the private property boundary due north for just under 100 yards before angling northeast along a southwest-running ephemeral drainage. As the drainage nears the top of the ridge, it becomes less apparent and the boundary is just an arbitrarily flagged line running across the ridgetop. From the top of the ridge, the tract boundary follows another ephemeral drainage down to the southeast and then east to the National Forest property line.

The only access to this tract is from firelane 7B which comes off of Elliott Cemetery road. The firelane is well maintained but has some very steep hills that will make timber access difficult.

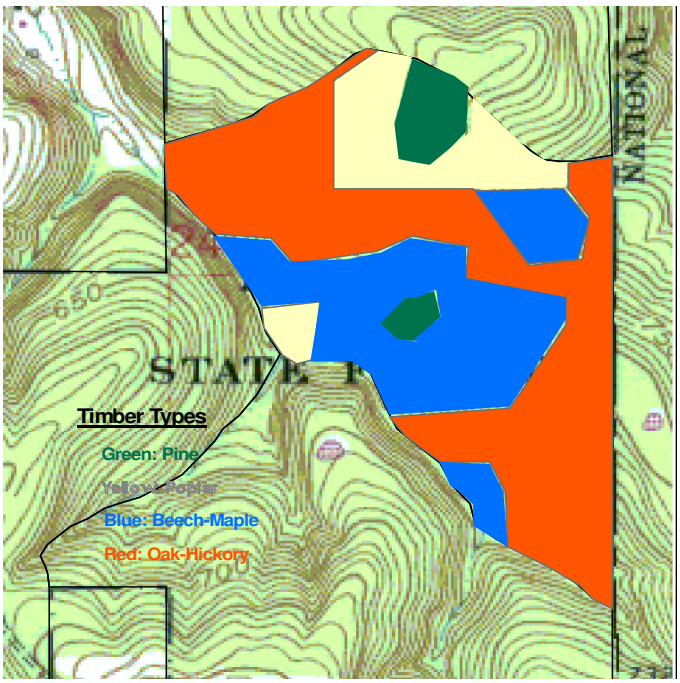
TRACT DESCRIPTION:

This tract lies primarily on the southwest slopes of a major ridge, running from the ridge on the northeast to a major drainage on the southwest. Approximately eight acres of the tract lie across the ridge on a northeast-facing slope.

The dominant timber type in this tract is oak-hickory, which makes up 62% of the inventoried volume. Beech-maple is the most abundant pole size making up 40% of the inventoried volume. A moderate amount of grapevine was found throughout the track. There were some signs of possible fire damage near the ridge top and on other small areas of the tract.

A natural gas pipeline operated by Indiana Gas Company (Vectren Energy) runs east-west through the southern tip of the tract.

In the middle of the tract some fence, wolf

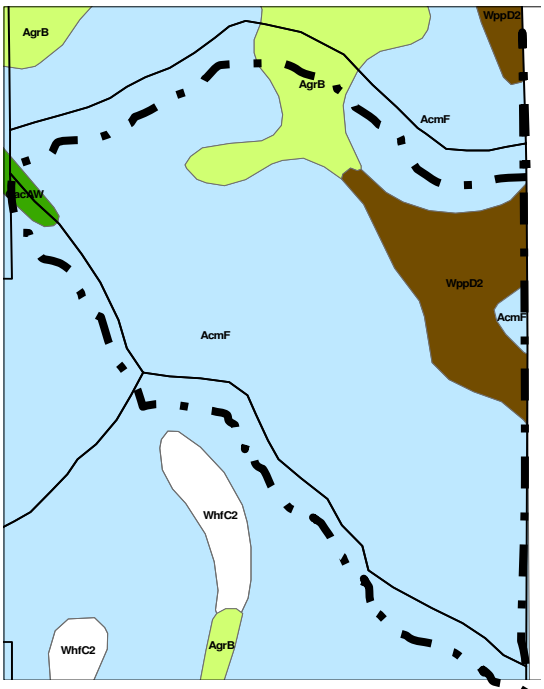


trees, flowers and a small spring were found along with a CFI plot.

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.

There are four old pine plantations apparent on the tract, all in some degree of natural conversion to hardwoods. An inventory done by Janet Eger in 1980 indicated five areas of pine, red and Virginia on the ridge and white pine in the bottoms. At that time the pine were 4-6" in diameter and beginning to stagnate.

SOILS:




There are three soil types on this tract. The first is **Adyeville-Wellston silt loams, 18 to 50 percent slopes, eroded.** It is colored blue 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 out sloping 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 second soil type is **Wellston-Adyeville-Ebal silt loams, 12 to 18 percent slopes, eroded.** It is colored red on the map. This sloping, deep, well-drained soil is found along slopes along drainages in upper lands. The usually have an area of 10 to 30 acres. The surface layer is dark grayish brown about five inches thick. This layer is also mixed with some brown sub-soil material. The Subsoil is a firm silt clay loam about 5 inches thick. The upper part of this is strong brown, and the lower part is yellowish-brown. The underlying soil is a yellowish-brown clay-loam with mottled channery and 15% sandstone fragments. This underlying soil runs to about 60 inches in depth. The available water capacity for this soil is high with moderate permeability, with very rapid surface run off. There is moderate organic matter content in the soil. Erosion will be a limiting factor when it comes to the logging operations, as this soil is highly erode-able.

The final soil type is **Apalona silt loam, 2 to 6 percent slopes.** It is coded yellow on the map and is found on the ridgetops. 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.

HISTORY:

This tract was purchased from Glen and Eva Terry in 1947 for the sum of $800.00. The tract was inventoried by Janet Eger in 1980, at that time a harvest was not prescribed. Roads mentioned in Eger's management guide have since been abandoned, and a new access road, firelane 7B, was constructed in the late 80's or early 90's to provide access from the Elliott Cemetery road. An earlier inventory was done by Bill Hahn, but there was no date on the write-up. It was most likely done in the early to mid 1970's.

The tract boundary was changed in approximately 2003 when the tracts were digitized for GIS. The northern boundary was changed to incorporate drainages rather than ridges as boundaries. This change reduces the number of potential drainage crossings during timber harvests.

RECREATION AND WILDLIFE:

General Description

The main forms of recreation in this area are hunting, gathering, and hiking. The steep terrain and numerous drainages in this tract make for a scenic hike in this area. There is evidence of both small and large game in this area, both turkey and deer were observed while doing the inventory. The oak-hickory forest provides a great food source while the overgrown pine plantations provide excellent cover. ATV traffic is heavy on the firelane and there are several trails that take off of the frielane that are well used.

Ecological Resource Review

The Indiana Division of Forestry Ecological Resource Review sets standards for the Number of snags of various size classes and the number of Indiana Bat Live Roost Trees per acre. These guidelines are compartment level standards. The results for C7T3 are listed below.

Live Roost Trees per Acre

| Size Class | Actual Number | Recommended Number |
|---|---|---|
| ≥ 11 inch | 17.15 | 9 |
| ≥ 20 inch | 5.94 | 3 |

Snags per Acre

| Size Class | Actual Number | Maintenance Level | Optimal Level |
|---|---|---|---|
| ≥ 5 inch | 3.4 | 4 | 7 |
| ≥ 9 inch | 1.5 | 3 | 6 |
| ≥ 20 inch | 1.2 | 0.5 | 1 |

A deficiency exists in snags ≥5 and 9 inches in diameter. It is important to remember that these are compartment wide standards and we have only examined Tract 1 above. The deficiency may be corrected when examining the entire compartment. In order to correct it on a stand level, it would be necessary create snags by girdling selected trees. When timber is harvested on this tract, this will be accomplished through TSI.

WATERSHED:

There are several small drainages in this tract that empty into a large drainage that eventually drains into Beaver Creek which is roughly a mile away.

## SILVICULTURAL PRESCRIPTION

By: Jim Lauck

Vine TSI is recommended in this tract before the harvest since vines were found throughout the tract.

The inventory notes recommend an intermediate cut throughout most of the tract. Estimated volumes indicate that a harvest of more than 4,000 bd.ft. per acre is possible but a more realistic number would be 2,000-2,500 bd. ft per acre. Improvement cutting would be the primary method used, releasing higher quality crop trees while removing lower quality trees. Low thinning and selection thinning would also be used to both remove merchantable trees in the lower crown classes that are not likely to survive until the next harvest, as well as to release high-quality, lower crown class trees from the competition of lower quality, upper crown class trees. Group selection and single tree selection would also be used in parts of the tract to regenerate those stands, with group selection being used in areas of high mortality or over-mature trees.

The inventory indicated oak regeneration is present in the understory of some of the pine stands. TSI of understory and mid-story competition will be planned to increase the amount of ambient light available to these seedlings. This will allow these seedlings to continue to develop under the protection of the overstory pines. At some future point the pine overstory will be removed and additional TSI will be preformed to encourage continued development of the oak.

While there is a good road leading through this tract, it is steep. An alternate route will be explored before the tract is marked for harvest. In the meantime, routing maintenance will be continued on the existing road.

# Indiana Division of Forestry Tract-level - Ecological Resource Review

| | | | |
|---|---|---|---|
| **Date of Review:** | 12-10-08 | | |
| **State Forest:** | Martin | | |
| **Forester:** | Abe Bear | | |
| **Compartment:** | 7 | **Township:** | 3 N |
| **Tract(s):** | 3 | **Range:** | 3 W |
| **Total Acres:** | 40 | **Section(s):** | 24 |

## 1. Tract-level Habitat Overview

Using readily available resources (aerial photos, area maps, GIS, personal knowledge, etc.), estimate the proportion of each cover/habitat type within **1 mile** of tract center.

| Habitat/cover type | 0% | 0 < 1% | 1-10% | 11-50% | 51-90% | >90% | Unknown |
|---|---|---|---|---|---|---|---|
| Closed-canopy deciduous/mixed forest | ☐ | ☐ | ☐ | ☐ | ☒ | ☐ | ☐ |
| Pine/conifer plantations or natural stands | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Early successional forest (≤ 20 years old) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Shrub-scrub or old field | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Grasslands/hayfield | ☐ | ☐ | ☒ | ☐ | ☐ | ☐ | ☐ |
| Cropland, pastures, feedlots | ☐ | ☐ | ☐ | ☒ | ☐ | ☐ | ☐ |
| Open water (lakes, ponds, rivers, streams, etc.) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Riparian areas | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Developed areas | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other: | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

1.1. Consider whether the proposed management activities for the tract would significantly alter the relative proportion and availability of habitat/cover types throughout the assessment area. Consider both short- and long-term changes and conditions. Discuss in the tract Resource Management Guide the possible impacts on habitat/cover types that would be completely converted or significantly reduced due to the proposed management activities. Consult with DoF Forest Wildlife Specialist, if necessary.

1.2. Consider whether the proposed management activities would significantly disrupt travel/dispersal corridors or create isolated habitat units separated from larger units of similar habitat. This is especially important when species of special conservation need have been observed in the area and could be affected by such habitat fragmentation. If applicable, address these considerations in the Resource Management Guide, including short- and long-term impacts. Consult with DoF Forest Wildlife Specialist, if necessary.

1.3. Consider whether the proposed management activity will increase the likelihood that specialist interior forest species would be affected by generalist species using forest edge habitats. Where practical, avoid situations where the perimeter of proposed regeneration (or permanent) openings would be located within 200 feet of maintained forest edges. Maintained edges include those between forest and terrestrial habitats maintained to not naturally revert into forest, such as agricultural fields, developed areas, "daylighted" permanent roads, or maintained utility right-of-way corridors. **Consult with DoF Forest Wildlife Specialist if the proposed management activity will include one or more regeneration or permanent openings totaling ≥ 5 acres within 200 feet of maintained forest edges.**

1.4. Where applicable, discuss in Resource Management Guide compliance with guidelines regarding cover types affected by proposed activities, such as the use of Best Management Practices where open water and riparian areas occur.

## 2. Structural Habitat Features (Snags, Cavity Trees, and Roost Trees)

| | YES | NO |
|---|---|---|
| 2.1. Were structural habitat features included in tract inventory? | ☒ | ☐ |
| 2.2. If done, did structural habitat feature inventories meet or exceed all compartment-level guidelines? | ☐ | ☒ |
| 2.3. Are inventory summaries for structural habitat features included in this tract's management file? | ☒ | ☐ |

If "no" is checked in any box above, provide an explanation in tract Resource Management Guide. If "no" is checked for **2.2**, consider if further tract-level management is necessary and address in tract Resource Management Guide.

## 3. Special Habitats

Are any special habitats present within or near tract? (check if 'yes')

☐ Permanent wetlands and pools (typically annual inundation; not including created "wildlife ponds")

- ☐ Seasonal/ephemeral wetlands and pools
- ☐ Wildlife ponds (created)
- ☐ Springs/seeps
- ☐ Sinkholes, caves, or other karst features
- ☐ Ledges, rock outcrops, cliffs, talus slopes
- ☐ Other:

For each special habitat present, refer to appropriate guidelines in DoF Procedure Manual and address management/planning considerations in the tract Resource Management Guide. If impacts are unavoidable, describe possible short- and long-term impacts and how these may be mitigated. Also, be sure to document the location of each special habitat.

## 4. IDNR Natural Heritage Database Review

| | YES | NO |
|---|---|---|
| 4.1. Was a Natural Heritage Database review done? | ☒ | ☐ |
| 4.2. If a review was done, has there been recent (≤ 20 years) documented evidence of plant or animal species listed as endangered, special concern, threatened, or rare within or near this tract? | ☒ | ☐ |
| 4.3. Are the results of the Natural Heritage Database search included in this tract's management file? | ☒ | ☐ |

If "no" is checked for **4.1** or **4.3**, provide an explanation in tract Resource Management Guide. If "yes" is checked for **4.2** and species, habitats, or communities of special conservation need could be affected by management activities, address this in the Resource Management Guide in terms of possible short- and long-term impacts. Include how you will address the conservation for each of these species/habitats/communities while planning for management activities.

## 5. Non-native Invasive Species

In the table below, list all non-native invasive species that were observed during inventory or are known to exist within or near this tract. Consider level of management needed for each species, address management/monitoring in the tract Resource Management Guide, and map occurrences.

| | Management Actions (check all that apply) | | | |
|---|---|---|---|---|
| **Species** | **Immediate Management Required** | **Monitoring/ Re-evaluation Recommended** | **Addressed in Management Guide?** | **Mapped?** |
| | ☐ | ☐ | ☐ | ☐ |
| | ☐ | ☐ | ☐ | ☐ |
| | ☐ | ☐ | ☐ | ☐ |
| | ☐ | ☐ | ☐ | ☐ |
| | ☐ | ☐ | ☐ | ☐ |
| | ☐ | ☐ | ☐ | ☐ |

## 6. Other Species Or Sign Observed During Inventory:

**Comments/Notes:**

TM 901 Inventoried by: Darren Bridges

Date: 12-11-2007

RESOURCE MANAGEMENT GUIDE

STATE FOREST: Martin COMPARTMENT: TRACT: C7T3

INVENTORY SUMMARY

ACREAGE IN: 120

Commercial Forest: 120
Non-Commercial Forest:
Recreation Use:
Permanent Openings:
Other Openings:
TOTAL AREA: 120

Average Site Index:
Average Annual Growth
Total B.A. / Acre = 103.8
B.A. - Trees ≥14" = 74.2
B.A. - Trees <14" = 29.6

(Estimated Tract Volumes for Commercial Forest Area - Bd. Ft., Doyle Rule)

| Species | Growing Stock | Harvest Stock | Total Volume |
|---|---|---|---|
| White Oak | 166,400 | 114,300 | 280,700 |
| Black Oak | 97,700 | 136,600 | 234,300 |
| Yellow-Popular | 115,200 | 59,200 | 174,400 |
| American Beech | 41,900 | 65,100 | 107,000 |
| Pignut Hickory | 37,300 | 40,700 | 78,000 |
| Northern Red Oak | 63,100 | 12,300 | 75,400 |
| Shagbark Hickory | 15,100 | 48,400 | 63,500 |
| Sugar Maple | 29,600 | 28,100 | 57,700 |
| Scarlet Oak | 10,500 | 13,500 | 24,000 |
| Blackgum | 5,200 | 10,500 | 15,700 |
| White Ash | 8,500 | 10,500 | 19,000 |
| Red Maple | 9,000 | 8,700 | 17,700 |
| Largetooth Aspen | 0 | 5,200 | 5,200 |
| Red Pine | 4,900 | 0 | 4,900 |
| Red Elm | 4,100 | 0 | 4,100 |
| Chinkapin Oak | 0 | 3,100 | 3,100 |
| Sassafras | 0 | 1,300 | 1,300 |
| TOTALS (tract) | 608,500 | 557,500 | 1,166,000 |
| TOTALS (per acre) | 5,070.8 | 4645.8 | 9716.6 |

**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 C7 T3" 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.