Indiana Department of Natural Resources – Division of Forestry
Draft
Resource Management Guide

Compartment 13 Tract 4

State Forest: Yellowwood
Tract: 6421304
Tract Acreage: 62
Forest Acreage: 62
Forester: David C. Vadas
Date: April 29, 2016
Management Cycle End Year: 2039
Management Cycle Length: 23

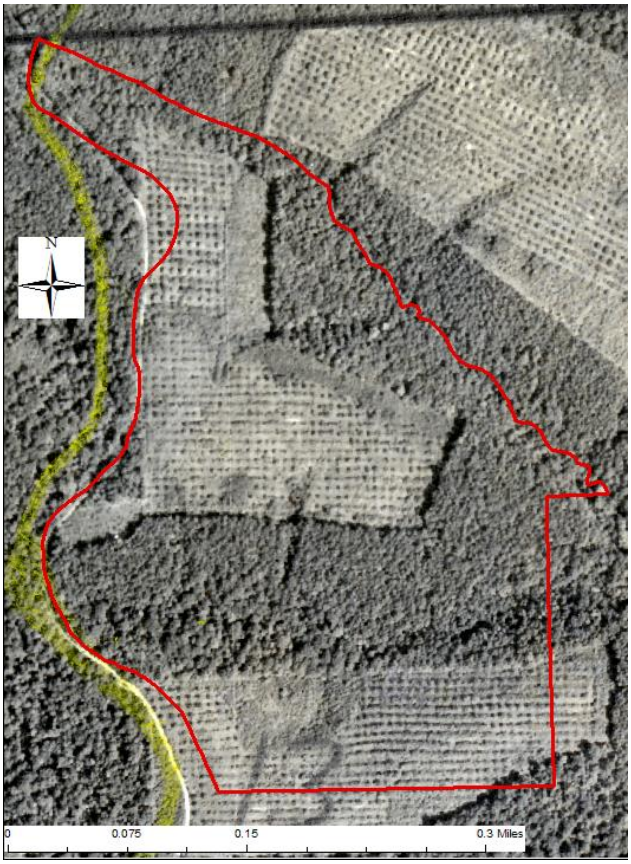
Location:

Tract 13 is located in Brown County, Benton Township, Section 13 – T10N – R1E. It is approximately 3.5 miles northwest of Trevlac, IN. and located at the north end of Possum Trot Rd.

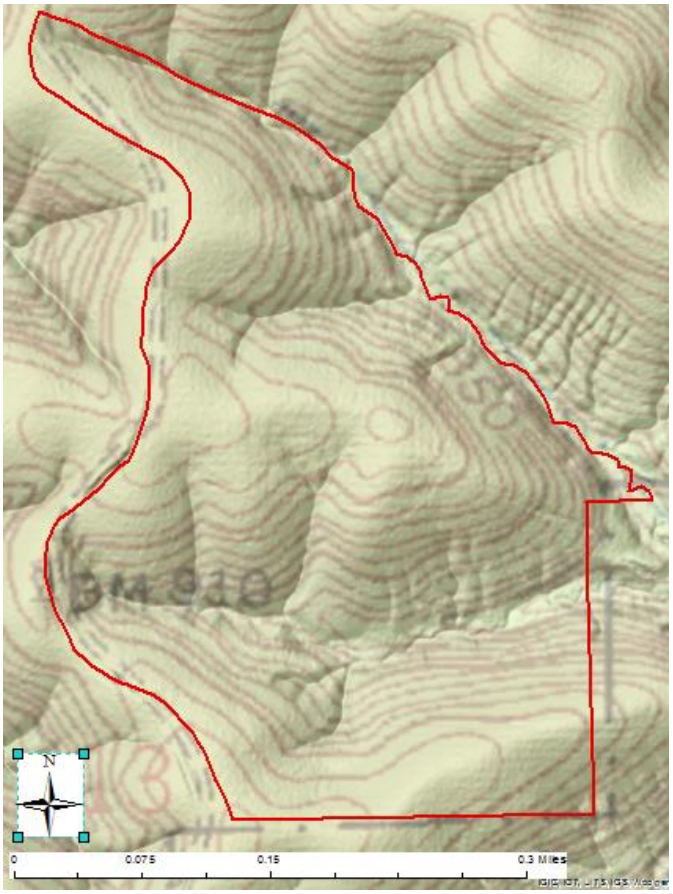
General Description:

The tract's 62 acres are covered with hardwood forests, including oak-hickory and mixed hardwoods. As shown on the 1939 aerial photos, 31 of the 62 acres in this tract were not native, natural hardwood forest. The grid pattern of the small trees in 1939 indicates that these open areas were farm fields that had been planted or were fruit orchards. This land was originally acquired as part of the Beanblossom Project of the Land Utilization Program. The program purchased marginal farmland from people and resettled those people onto more productive farmland elsewhere. Most of this tract was actually acquired through a trade. Land originally purchased by the Resettlement Administration was traded to Mr. Gallahue for this land. The most recent harvest in this tract occurred in 1959. This was primarily a light thinning and removed 10,520 board feet from the north facing slope in the southern part of the tract. The remaining forest areas were young growth at that time.

6421304 – 1939 Aerial Photo



6421304 Tract Map



History:

- October 30, 1956 – State of Indiana acquired land from US Government
- 5-21-59 - Timber Sale
- 9-77 - Inventory/Cruising
- 9-28-77 - Resource Management Guide
- 1981 - Backcountry Area Designation
- 4-20-16 - Inventory/Cruising
- 4-29-16 - Resource Management Guide

Landscape Context:

The surrounding landscape near the tract is predominantly closed-canopy deciduous forest. The primary block of the State Forest lies to the west and north. Private landownerships dominate to the south and east with a mix of developed areas, forest and agricultural lands.

Other minor cover/habitat types present include Open water (lakes, ponds, rivers, streams, etc.) and grasslands.

Landscape level forest threats include parcelization and development of private land tracts, and introduction of invasive plants that are routinely introduced during home landscaping efforts.

Topography, Geology, Hydrology:

The general topography of this region consists of unglaciated, sharply dissected hills, narrow ridges and valleys. The underlying bedrock is Mississippian sandstone, shale, and siltstone.

This tract lies within the Bear Creek-Beanblossom Creek subwatershed. Water resources within this hydrologic boundary are part of the Beanblossom Creek watershed.

Riparian features (intermittent streams and ephemeral streams) are present on portions of the tract. General riparian management zone (RMZ) guidelines will be implemented in these areas in accordance with the *Indiana Logging and Forestry Best Management Practices Field Guide.*

Soils:

Typical soils in this area are moderately drained to well drained soils that formed in residuum (formed in place on bedrock). A thin layer of loess covers some of these soils. The major soils in this tract are listed below.

BgF- Berks-Trevlac-Wellston complex, 20 to 70 percent slopes
These moderately steep to very steep well drained soils are on hillsides in the uplands. They are fairly well suited to trees. Erosion hazards and equipment limitations are main management concerns due to slope. Consideration should be given during sale planning and implementation of Best Management Practices for Water Quality. This complex has a site index of about 70 for northern red oak.

WaD- Wellston-Berks-Trevlac complex, 6 to 20 percent slopes
These moderately sloping to moderately steep, well drained soils are on side slopes and narrow ridgetops in the uplands. They are well suited to trees. Seedling mortality can be an issue on south facing Berks soils due to droughty conditions. This complex has a site index of about 70 for northern red oak.

Access:

This tract is accessible via Possum Trot Road. The gate is approximately 3miles north of the intersection of Possum Trot road and North Shore Drive. Access within the tract is excellent.

This tract has a large parking area at its southern boundary that was established to serve as one of the main entry and access points for resource management, hikers, hunters and other backcountry users. A major forest access road is gated adjacent to the parking facility and serves well as an emergency access for forest visitors. This roadway is well maintained and forms the west tract boundary of the tract, providing good access into the northeastern portion of the Back Country Area.

Boundary:

Privately owned property borders this tract. Private boundaries were last reviewed in 2014 and last marked in 2014.

The majority of the remaining tract boundaries adjoin other State Forest tracts and are generally defined by deep ravines and mapped intermittent streams.

State lines are in the process of being surveyed by the Division of Forestry Surveyor. Property lines and corners are planned to be marked with carsonite posts.

Wildlife:

This tract contains diverse vegetation and wildlife resources (age, type, structure) conducive to providing habitat for a variety of wildlife species. Habitat includes:

- contiguous oak-hickory canopy
- scattered mixed hardwood stands

Hard mast trees such as oaks, hickories, and American beech provide food source to squirrels, turkey, and white-tailed deer.

Snags (standing dead or dying trees), are an important wildlife habitat features in Indiana's forests. They are used by a wide range of species as essential habitat features for foraging activity, nest/den sites, decomposers (e.g., fungi and invertebrates), bird perching and bat roosting. Additionally, snags are an important contributor to the future pool of downed woody material. Downed woody debris provides habitat and protection for many species and contributes to healthy soils.

Forest wildlife species depend on live trees for shelter, escape cover, roosting and as a direct (e.g., mast, foliage) or indirect (e.g., foraging substrate) food resource. The retention of live trees with certain characteristics (legacy trees) is of particular concern to habitat specialists such as species of conservation need like the Indiana bat.

In concert with various agencies and organizations, the DoF has developed compartment level guidelines for two important wildlife structural habitat features: **Forest Snag Density, Preferred Live Roost Trees**. Current assessments indicate the abundance of these habitat features exceed recommended base levels in all diameter classes. Current assessments indicate the abundance of these habitat features meet or exceed recommended base levels in all diameter classes. It is important to note that these are compartment level guidelines and that even though the estimated tract data does not quite meet all target levels; it is likely that suitable levels are present for this habitat feature in the surrounding landscape. The prescribed management will maintain or enhance the relative abundance of these features.

Communities:

Listed below are the general community types found in this tract.

Dry-mesic upland forest
Dry-mesic upland forests are one of the most prevalent forest communities in Indiana. This community occupies an intermediate position along a soil moisture gradient. Trees grow well, but the canopy is usually more open than in mesic forests.

The dominant trees found are white oak, red oak, and black oak. Other plants and animals characteristic of this community are: shagbark hickory, mockernut hickory, flowering dogwood, hop hornbeam, blackhaw, broad-headed skink, white-footed mouse, eastern chipmunk.

Mesic upland forest

Mesic upland forests are found throughout the state, but are most common in hilly regions where slopes and aspect reduce excessive evaporation and wildfire. They generally occur on north-facing slopes, in ravines, and on level soil with moderately high available moisture. Ideal soil moisture conditions tend to result in dense overstories and, in undisturbed stands, an understory of shade-tolerant species.

Sugar maple, American beech, yellow-poplar, red oak, and basswood are the typical dominant trees in a mesic upland forest. Other plants that are found in this community include pawpaw, Ohio buckeye, blue beech, bitternut hickory, red mulberry, and bladdernut. Tiger salamanders, wood frogs, and wood thrushes are some animals commonly found.

A Natural Heritage Database review was completed for this tract on June 22, 2016. If Rare, Threatened or Endangered (RTE) species were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

Exotic and Invasive Species:

Below is a list of invasive species identified during the inventory. If identified, priority control should be given to ailanthus and bush honeysuckle. These would be treated as soon as practical, with individuals and smaller areas being targeted if needed. A broader and/or situational approach should be taken with the species noted below. Control measures for these species could be warranted for larger scale road & trailside treatment projects, planned regeneration openings, pre or post-harvest TSI projects, etc. Post-harvest control of stiltgrass is most easily accomplished through successful seeding of fescue or other highly competitive non-invasive seeding mixture. Stilt grass was treated on the fire trail along the western border of this tract and around the parking lot in 2014, 2015, and 2016.

- **Crimson Barberry**
- **Multiflora Rose**
- **Japanese Stiltgrass**

Recreation:

This tract is within the 3,000 acre Back Country Area of Morgan-Monroe and Yellowwood State Forests. This recreational designation was given to this area in 1981 and allows hikers to back pack camp within the Back Country Area. Although this recreational designation was given to the area, the original guidelines and all guidelines published since have included this area as multiple use to include hiking, hunting, and timber management, among others. No hiking trails are present in this tract; however, backpack camping is still permissible in this area if all other guidelines are followed. Due to the adjacent parking lot, hunting and mushroom hunting are both popular activities in this tract.

Cultural:

This tract was reviewed for cultural sites during the forest resource inventory. Cultural resources may be present on this tract but their location(s) are protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

Tract Description and Silvicultural Prescription:

The current forest resource inventory was completed on April 20, 2016 by Forester D. Vadas. A summary of the estimated tract inventory results are located in the table below.

Tract Summary Data

Total Trees/Ac. = 87 **Trees/Ac.** BA/A = 108.1 **Ft²/Ac.**
Present Volume = 10,710 **board feet per acre** Harvest Volume = 100,000-200,000

2016 Inventory Estimated Volumes

Species	Board Feet
black oak	178,230
yellow-poplar	156,970
northern red oak	144,120
white oak	61,820
pignut hickory	18,960
American basswood	13,190
red maple	13,000
chestnut oak	12,300
scarlet oak	10,120
blackgum	8,510
sassafras	8,010
sugar maple	7,430
shagbark hickory	6,630
white ash	6,350
bitternut hickory	6,160
black cherry	3,610
largetooth aspen	3,230
Totals	658,640

This tract has 3 management units (stands). Below is a list, approximate acreages, general stand descriptions and silvicultural prescriptions.

Descriptions

Oak-Hickory/Mixed Hardwood

The timber type is predominantly mature oak-hickory with mixed hardwoods, such as yellow-poplar, sugar maple, white ash, red maple, and American beech, more common on north and east slopes. A mix of diameters is present, but the trees consist of a mostly medium to large sawtimber size classes. Oak species account for the majority of the total volume in the tract, with black oak and northern red oak being the most prevalent. The understory is dominated by sugar maple and American beech. Old fire damage is common throughout this cover type showing itself mainly on the larger yellow-poplar stems. There is some evidence within the north central portion of the tract of a harvest (old stumps) within the last 30 years however there is no current record of a harvest in the tract file. There is a fair amount of recently wind thrown oaks as well that should be salvaged.

Mixed Hardwood

The timber type is predominantly mixed hardwoods with some oak-hickory present as well. Primary species include yellow-poplar, American basswood, red maple, and various oaks, especially northern red and black oaks. A mix of diameters is present, but trees consist of mostly medium to large sawtimber size classes. The understory is dominated by American beech, sugar maple, and spicebush.

Old Field

These areas are located on ridgetops and were open agricultural lands at one time. This stratum is composed mostly of saplings, poles and small to medium sawtimber sized trees. Dominant tree species include yellow-poplar, oaks, sassafras, red maple, and assorted hickories. Some of the larger sawtimber trees are open-grown and generally of fair to poor quality.

Prescriptions

A managed timber harvest is prescribed for this tract. While the harvest will primarily focus on salvage, thinning and improvement harvesting will also occur. Trees targeted for removal will include those containing severe fire damage, grazing damage, shade tolerant mixed hardwoods on oak-hickory sites, and other trees needed to release higher quality and healthier residual trees.

Emerald Ash Borer is widespread and killing Ash throughout Indiana, including Brown County and Yellowwood State Forest. Ash trees noted within this tract indicate significant EAB infestation and increasing mortality. When an infected ash tree dies, the wood quickly starts to breakdown and decay. Within a year following death, the wood is often too degraded to be utilized for commercial wood products. A sanitation harvest is therefore prescribed to utilize the majority of ash trees before they die and decay. This prescribed management will also allow ash seed to be captured in the seedbed and new seedlings generated before the loss of seed bearing ash trees to EAB. Many ash trees throughout the forest will not be utilized due to the rapid spread of EAB and mortality of ash across the infested landscape.

Due to extensive damage resulting from recent insect infestations, past droughts, and wind events, a select salvage harvest is also prescribed for this area. Trees primarily affected and recommended for removal include yellow-poplar, white ash, scarlet oak, and black oak. While single tree is the selection system, canopy gaps are anticipated where there are concentrated and heavy collections of EAB affected ash and declining trees.

Trees favored for retention will generally be the healthier, larger diameter, and large crown trees. No group selection openings will be marked due to the recreational designation restrictions placed on the Back Country Area for timber harvesting.

TSI

A Timber Stand Improvement (TSI) is prescribed for this tract. Work should include the following:

- Grapevine Control – Grapevines were not observed to be common within the tract but should be treated postharvest in the riparian areas.
- Exotic Control – The April 2016 resource inventory was completed just as leaf out was emerging. Barberry was observed to be scattered throughout the tract with some pockets containing modest sized clumps that are actively regenerating. This species is recommended to be treated in the spring when it is most noticeable before the other native species emerge.

- Post-harvest TSI may also be implemented to deaden cull trees and selected marked trees not removed during the managed harvest. This action will recruit standing snags and large woody debris for wildlife benefits.

Schedule:

Proposed Management Activity	*Proposed Period*
Pre-Harvest TSI/ Invasive Treatments	2017
Timber Marking	2017
Road/Landing Work	2017
Timber Sale	2017
BMP Review	2018-2019
Post Harvest TSI/Invasive Treatments	2018-2020
Access maintenance and rehab as needed	2017-2039
Reinventory and Management Guide	2039

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