

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

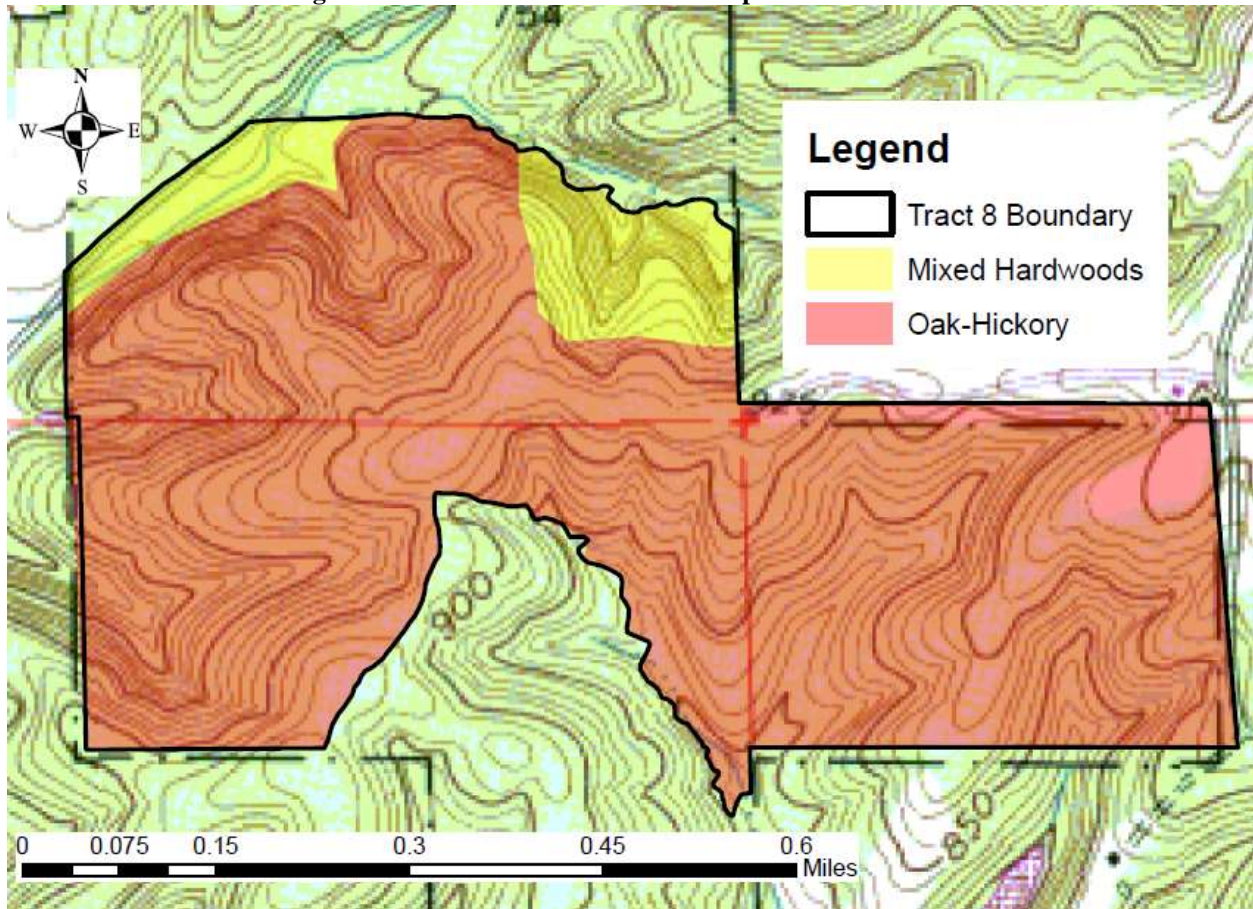
State Forest: Yellowwood
Tract Acreage: 192
Forester: Michael Spalding
Management Cycle End Year: 2035

Compartment 12 Tract 8
Commercial Acreage: 192
Date: December 31, 2015
Management Cycle Length: 20 years

Location

This tract is located in Sections 8, 16, and 17 of Township 10N, Range 2E in Jackson Township of Brown County. It is approximately 3 ½ miles northwest of the town of Helmsburg. Public access is from a parking lot on Carmel Ridge Road.

Figure 1. Yellowwood State Forest Compartment 12 Tract 8



General Description

Y1208 contains 192 forested acres. Of this, 18 acres are mixed hardwoods and 174 acres are oak-hickory. The timber is predominantly medium to large sawtimber and the overall quality is very good with the exception of some fire damage and mortality. The tract inventory species composition is listed below in Table 1 according to their dominance.

Table 1. Relative Abundance by Number of Trees Per Acre

Overstory Trees (13.5” DBH and larger)	Pole Trees (5.5 to 13.4” DBH)	Saplings (.5 to 5.4” DBH)
<p>black oak 26% white oak 17% pignut hickory 10% yellow-poplar 10% <i>sugar maple</i> <i>northern red oak</i> <i>red maple</i> <i>shagbark hickory</i> <i>scarlet oak</i> <i>American basswood</i> <i>American beech</i> <i>white ash</i> <i>blackgum</i> <i>bitternut hickory</i> <i>sassafras</i> <i>American sycamore</i> <i>largetooth aspen</i> <i>black cherry</i></p>	<p>sugar maple 23% red maple 21% American beech 12% white oak 11% <i>blackgum</i> <i>pignut hickory</i> <i>shagbark hickory</i> <i>sassafras</i> <i>yellow-poplar</i> <i>white ash</i> <i>northern red oak</i> <i>black walnut</i> <i>eastern white pine</i> <i>black oak</i> <i>red elm</i></p>	<p>American beech 53% sugar maple 30% <i>red maple</i> <i>blackgum</i> <i>yellow-poplar</i> <i>pignut hickory</i> <i>red elm</i> <i>shagbark hickory</i> <i>white ash</i> <i>black oak</i> <i>sassafras</i></p>

History

Former Tract 8:

February 9, 1953 – Timber sale with another tract. 34,682 board feet sold.

November 1974 – Inventory. 89,419 board feet.

February 1975 – Timber sale with another tract. 90,121 board feet sold.

June 1976 – TSI

January 1993 – Inventory

March 15, 1995 – Timber sale with Tract 9. 149,536 board feet sold.

February 28, 1996 – TSI performed to complete regeneration openings.

Former Tract 9:

December 23, 1974 – Inventory. 3,121 board feet harvest per acre and 3,422 bd ft leave per acre

February 1975 – Timber sale with another tract. 64,100 board feet sold.

Former Tract 10:

April 1978 – Timber sale. 35,798 board feet sold.

July 1979 – TSI

August 27, 2002 – Inventory

September 21, 2006 – 106,629 board feet sold.

New Tract 8:

February 12, 2015 – Tracts 8, 9, and 10 combined to make new tract 8.

September 14, 2015 – Inventory completed.

Landscape Context

The landscape surrounding Y1208 is primarily closed canopy forest with some small open pastures and grassy fields. Several large church camps contribute to the ownership of the large areas of forest within this landscape. Much of this part of Yellowwood State Forest is in relatively smaller ownerships. Due to the close proximity of this tract to State Road 45 and nearby State Road 135, development pressure of single-family residences is higher than in other areas of Yellowwood State Forest. Also due to the large amount of private ownership, there are many small private ponds and lakes. The greatest threats to forestland in this landscape will continue to be loss of forest due to clearing for residential home construction and the invasive plants that are routinely introduced during home landscaping efforts. Another major threat will also continue to be unmanaged high-grade harvesting on some of the private lands.

Topography, Geology and Hydrology

Most of Y1208 is composed of gentle to moderately steep slopes. The northern slope above the perennial stream is very steep and much of it cannot be accessed with harvesting equipment. The underlying bedrock in this tract is made up of sandstone, siltstone, and shale. Some glacial influence is present in here as well, and can be verified by the presence of glacially-deposited granite boulders in the intermittent streams. Half of the tract acreage flows into drainages that eventually become Brier Creek, which in turn flows into Beanblossom Creek. The other half of the acreage flows into a perennial stream that becomes part of Bear Creek, which in turn flows into Beanblossom Creek as well.

Soils

Beanblossom Channery Silt Loam, occasionally flooded (Be) (8.9 acres)

This nearly level and gentle sloping, deep, moderately well drained soil is on floodplains, alluvial fans, and colluvial benches. It is fairly well suited to trees. Wet periods contribute to equipment limitations. Rooting depth is restricted for some trees, i.e. black walnut, due to coarse fragments in its subsoil. This soil has a site index of 95 for yellow-poplar.

Berks-Trevlac-Wellston Complex, 20 to 70 percent slopes (BgF) (135.2 acres)

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 the 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.

Wellston-Berks-Trevlac complex, 6 to 20 percent slopes (WaD) (24.8 acres)

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.

Wellston-Gilpin silt loams, 6 to 20 percent slopes, eroded (WeC2) (23.1 acres)

These moderately sloping to moderately steep, well drained soils are on side slopes and ridgetops in the uplands. They are well suited to trees. This complex has a site index for northern red oak of 71 in the Wellston and 80 in the Gilpin.

Access

Public access to Y1208 is through a parking lot off of Carmel Ridge Road. From the intersection of Carmel Ridge Road and State Road 45 west of Helmsburg, travel north on Carmel Ridge Road 3.2 miles to the parking lot on the left (west) side of the road.

Boundary

The eastern 1/3 of this tract is bounded on the north, east, and south by private property lines. Much of this eastern portion follows Carmel Ridge Road. From the east to the west, the northern boundary follows an intermittent stream that empties into a perennial stream. At that point, the boundary continues west along Richards Road. The western boundary follows a private property line. The southern boundary from west to east follows a private property line, then a ridgetop, and eventually travels down an ephemeral valley that becomes an intermittent stream. All of the private property boundaries are marked with orange blazes.

Wildlife

Y1208 has an excellent stocking of wildlife resources in the form of mast producing oak and hickory trees. There is a dearth of early successional wildlife habitat. While much of the tract is dominated by a good stocking of relatively healthy trees, there are aggregations of declining oak, ash, and declining yellow-poplar that may lend themselves to creating regeneration openings and young forest habitat.

A Natural Heritage Database Review was completed for Y1208. If Rare, Threatened or Endangered species (RTE's) were identified for this tract, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

The Division of Forestry has instituted procedures for conducting forest resource inventories so that the documentation and analysis of live tree and snag tree densities are examined on a compartment and tract level basis in order to maintain long-term Indiana bat habitat. Crown release performed during timber harvests will stimulate the growth of the selected residual trees and will enhance their vigor. Timber Stand Improvement (TSI) following the harvest is planned which will increase standing snag counts. Management practices conducted on Y1208 will be conducted in a manner that will maintain the long-term and quality forest habitats for wildlife populations. Current snag tree densities are above recommended maintenance levels for all diameter classes.

Communities

Y1208 is primarily dominated by mesic to dry oak-hickory forest communities. These oak-hickory communities are being taken over by an understory of American beech, red maple, and sugar maple sapling and pole trees. This is not only affecting the composition change of the overstory but also the herbaceous layer as well including greenbrier and painted sedge among other plants. There are

Y1208's current forest resource inventory was completed in September 2015 by forester Michael Spalding. A summary of the inventory results are given above and a compilation of the total volume by species is presented in Table 3 below. Y1208 is currently fully stocked and a managed timber harvest is prescribed. Singletree and group selection cuttings are prescribed to thin and release desirable residual trees, remove suppressed and poorly formed trees and to regenerate areas that contain aggregations of low stocking, excessive fire or windthrow damage, or overmature trees. A major focus of this harvest will be for salvage of trees for the following four reasons: windthrow from multiple storm events, drought mortality and decline in yellow-poplar, ash due to emerald ash borer, and declining oak, especially black oak, likely onset by the 2012 drought and becoming worse. For the purpose of this report Y1208 was segregated into two cover types based on their general forested cover types (see Figure 1.).

1) Mixed Hardwoods (18 Acres)

The mixed hardwoods area contains medium to very large sawtimber trees of average to excellent quality. Much of the mixed hardwoods areas are dominated by yellow-poplar and ash. Unfortunately, many of the yellow-poplar are either dead or in serious decline from the 2012 drought, and the ash will also be dead within one to three years from the already present emerald ash borer. Most, if not all, of the regeneration opening efforts will be focused in these areas for the previously given reasons. Areas with a sufficient stocking of healthy trees will receive single tree selection. Other trees targeted for removal should include damaged, defective, suppressed, intermediate, mature, and other dominant and co-dominant trees needed to release healthier, more vigorous, and higher quality residual trees. The old regeneration openings from prior harvests have heavy grape vines and these need to be treated either pre-harvest or during the post-harvest TSI.

2) Oak-Hickory (174 acres)

The oak-hickory areas are dominated by pole to large sawtimber trees of low to excellent quality. The mid-story and understory are heavily dominated by the shade tolerant species American beech, sugar maple, and red maple which left unmanaged would cause a drastic change in the forest type. The other serious problem with the oak-hickory forest in this area is a significant amount of oak decline, primarily in the black oak. Size of trees and slope position do not seem to be major factors as 16" to 18" DBH black oaks are dead on good soils. Dead and declining black oaks are scattered throughout in the medium and large sawtimber size classes. This harvesting in this area should focus on salvaging the declining black oak and removing mixed hardwood species in the midstory and overstory. In areas of pure oak and hickory, those trees that have the healthiest crowns and best quality stems should be favored for retention and targeted for release by harvesting trees around them.

Table 3. Volume estimates from the September 2015 inventory on Y1208

Species	Totals
black oak	635,920
white oak	335,890
yellow-poplar	296,340
northern red oak	172,570
pignut hickory	162,360
sugar maple	82,540
white ash	57,520
scarlet oak	57,490
American basswood	39,110
red maple	37,410
shagbark hickory	36,770
American sycamore	18,750
bitternut hickory	16,260
American beech	15,630
blackgum	13,290
black cherry	6,370
sassafras	5,850
largetooth aspen	4,140
TOTALS	1,994,210

Summary Tract Silvicultural Prescription and Proposed Activities

The prescription for Y1208 combines singletree selection and group selection with a heavy emphasis on salvaging dead and declining yellow-poplar and black oak, windthrown trees, and all accessible merchantable ash trees. Group selections will primarily occur in the mixed hardwoods areas of ash and yellow-poplar. The Indiana guidelines for Best Management Practices (BMP's) will be followed during the timber harvest and closeout activities to maintain water quality. The prompt installation of water diversions following harvesting will be employed to minimize any effects to neighboring water resources. Singletree selection will remove low grade, poorly formed, and declining overstory individuals so that spacing of croptrees is improved to increase the growth of the residual stand.

Portions of or all of Y1208 will be submitted for a postharvest Timber Stand Improvement (TSI) project along with any invasive work if deemed appropriate by the administering forester. A field review for regeneration opening success is planned 3-4 years after opening TSI completion.

Given the recent inventory and projected growth of Y1208's forest resources, this tract is suitable for a 15 year management cycle wherein growth and development of the tract's forest resource is evaluated by a forest inventory every 15 years. The current inventory indicates a possible harvest of between 500 to 600 MBF. Much of this volume is anticipated to come from salvaging yellow-poplar, ash, and black oak. A timber sale is proposed for FY2015-16 or 2016-17.

Proposed Activities Listing

<u>Proposed Management Activity</u>	<u>Proposed Period</u>
Archeological Review & Clearance	CY 2016
Roadwork Improvement	CY 2016
Timber Marking/Spot invasive treatment/vines	CY 2016
Timber Sale	FY2015-16 or 2016-17
TSI and Invasives Retreatment (if needed)	CY 2017-18
Reinventory and Management Guide	CY 2035

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