# Indiana Department of Natural Resources - Division of Forestry

## DRAFT
### RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **03** Tract: **22**
Tract Acreage: **90** Commercial Forest Acreage: 9**0**
Forester: **K. DeCosta** (for Laurie Burgess) Date: **1/31/2011**

**Location**
This tract is located in Sections 14 and 15 of Township 8N, Range 2E of Brown County. It is approximately 3½ miles southwest of Belmont and State Road 46. Access is off of Crooked Creek Road onto Miller Ridge Firetrail.

**General Description**
This tract is 90 total acres of closed canopy hardwood forest in Yellowwood State Forest, all of which constitute commercial acres. The forest resource is predominantly medium to large sawtimber Mixed Oak with some areas of Mixed Hardwoods. The tract inventory species composition is listed below in Table 1 according to their dominance:

**Table 1. Overview of Forest Resources**

| Sawtimber | Poletimber | Regeneration |
|---|---|---|
| Chestnut Oak | Chestnut Oak | American Beech |
| Scarlet Oak | Red Maple | Sassafras |
| White Oak | Sugar Maple | Yellow Poplar |
| Black Oak | White Oak | Red Maple |
| Northern Red Oak | Pignut Hickory | Sugar Maple |
| Pignut Hickory | Blackgum | White Ash |
| Sugar Maple | Shagbark Hickory | Pawpaw |
| White Ash | Scarlet Oak | Chestnut Oak |
| Shagbark Hickory | Yellow Poplar | Pignut Hickory |
| Yellow Poplar | Black Locust | Blackgum |
| Red Maple | Sassafras | Red Elm |
| Blackgum | Basswood | Shagbark Hickory |
| Basswood | White Ash | Bitternut Hickory |
| Black Walnut | Black Oak | Flowering Dogwood |
| Largetooth Aspen | | Blue Beech |
| | | American Sycamore |
| | | Black Oak |
| | | Basswood |

**History**
This tract and the land surrounding it were granted to Yellowwood State Forest on 10/30/1956 by the United States Government. Wildlife pond was constructed by the Division of Fish &

wildlife in 1960's. The tract designation was changed from tract 14 to tract 22 in 1984. The first new tract inventory was completed on 11/20/1990 by Forester Eckart which indicated a present volume of 5,113 BF/acre with a possible harvest volume of 1,529 BF/acre. Skid trail and log yard road construction was completed in 1991. Timber marking was completed by Forester Eckart on 1/3/1992. An archeological review on the timber sale was completed in February of 1992. A timber sale occurred on 8/19/1992 in which 90,350 BF of volume was sold to Rick Clark for $11,300.00. This timber sale was closed out on 8/20/1993. TSI marking was completed in August of 1993. Forest Intermittent K. DeCosta completed the most recent inventory on 1/31/2011.

**Landscape Context**
The majority of land surrounding this tract is managed State Forest. Brown County State Park borders a small segment of the southern boundary of this tract. Brown County State Park's forest resource is managed predominantly for recreational & aesthetic values and could be generally regarded as a closed canopy forestland of mid to late succession stage. Nearby acreage to the north and west is classified as the Crooked Creek Nature preserve due to the relative abundance of yellowwood trees. This nature preserve was dedicated in 1981.

**Topography, Geology and Hydrology**
Miller Ridge forms the northwestern boundary with several finger ridges extending into the tract. There are also two major coves in the northern half of the tract which present some accessibility limitations due to steepness. The dominant aspect is southwest although all aspects are represented within the tract. Topography ranges from 6% to 75% slopes. Underlying soils range from 27" – 54" in depth to weathered siltstone, interbedded with sandstone and/or shale bedrock. One mapped intermittent stream serves as the southwestern boundary of the tract; several other unmapped ephemeral drainages occur throughout the tract. The water resources from this tract drain into Little Blue Creek from Bales Hollow and from there into Salt Creek.

**Soils**
*WaD (Wellston-Berks-Trevlac complex, 6 – 20% slopes)* Moderately sloping to moderately steep. This soil type presents slight risks for erosion hazard and equipment limitation. Comprises approximately 20% of tract.

*BgF (Berks-Trevlac-Wellston complex, 20 – 70% slopes)* Moderately steep to very steep slopes and well drained soils. This tract is comprised of approximately 70% of this soil type and presents moderate to severe erosion hazards, severe equipment limitations, slight -moderate seedling mortality, and slight windthrow hazard. Management considerations should include building haul roads on a contour and constructing water bars to prevent erosion.

*Be (Beanblossom)* This soil type is deep and moderately well drained, gently sloping, or nearly level. It is subject to occasional flooding and so presents equipment limitations. This soil type comprises approximately 10% of the central and southern creek bottom areas of this tract.

**Access**
Access to this tract is off of Crooked Creek Road. Miller Ridge Road is a gated firetrail off the east side of Crooked Creek Road and serves as part of the boundary of this tract. Road improvements to this roadway were recently completed during timber harvests on other tracts in

2008 and 2009. An old haul road and log yards are present along the eastern and western ridges in this tract but are in poor condition and would need to be cleared before reuse. The existing haul road and 2 log yards on the eastern ridge are shared with adjacent tract 19 and could be reused if a combined harvest is recommended.

**Boundary**

This tract is mainly bordered by State Forest except a small segment of boundary on the tract's south boundary that is coexistent with Brown County State Park. This State Forest/State Park boundary is marked in orange paint so as to identify property lines for hunters that recreate on State Forest property.

**Wildlife**

Wildlife is particularly abundant in this tract. A Natural Heritage Database review was completed on the tract; no records of Rare, Threatened or Endangered species have been recorded within the tract. Nearby records include Timber Rattlesnake, Hooded Warbler, Black-throated Green Warbler, Worm-eating Warbler, and Red-shouldered Hawk. Forest management would benefit these Warbler species by allowing the growth of dense understory conditions suitable for nesting habitat. Timber Rattlesnakes are benefitted by the woody debris left over from timber harvests as it provides cover for them and habitat for their prey such as small mammals. The current inventory was conducted during winter so no migratory breeding birds were present. Other bird species detected include Golden-crowned Kinglet, White-breasted Nuthatch, Downy Woodpecker, Red-bellied Woodpecker, Red-shouldered Hawk, Pileated Woodpecker, Northern Cardinal, Carolina Chickadee, Tufted Titmouse, Northern Flicker, Eastern Towhee, Hairy Woodpecker, Blue Jay, American Robin, Dark-eyed Junco, and Red-headed Woodpecker. Other species detected during the inventory include Eastern Chipmunk, White-tailed Deer, Grey Squirrel, Wild Turkey, Grey Fox, Raccoon, and Coyote. Two Ruffed Grouse were flushed during the inventory; portions of this tract will be managed towards providing suitable Ruffed Grouse habitat where possible. Management considerations for Ruffed Grouse include creating small groups of early successional forest stands as well as regenerating Largetooth Aspen stands. According to the Indiana Division of Fish and Wildlife's Wildlife Management Fact Sheet, Ruffed Grouse are forest interior species with an early successional hardwood forest habitat preference. Early successional areas are young forested stands with a high number of small woody stems. This habitat type is naturally created by forest disturbances such as fire, insect & disease outbreaks, windstorms and tornadoes. Proper forest silvicultural prescriptions such as group selection openings as well as small clearcuts can approximate the natural habitat disturbances that Ruffed Grouse are adapted. Statewide populations of Ruffed Grouse as well as the American Woodcock have severely declined in Indiana due to loss of early successional forest habitats. No deficiencies were found in the Wildlife Habitat Feature Summary as shown below. All levels of legacy trees and snags exceeded maintenance levels. One wildlife pond was also discovered in the tract; wildlife ponds provide important breeding habitat for native amphibians as well as critical water reservoirs for forest mammals during drought periods. These wildlife ponds were mostly created by the Division of Fish & Wildlife in the 1965.

| | Maintenance Level | Optimal Level | Inventory | Above Maintenance | Above Optimal |
|---|---|---|---|---|---|
| **Legacy Trees *** | | | | | |
| ***11"+ DBH*** | 810 | | 1857 | 1047 | |
| ***20"+ DBH*** | 270 | | 271 | 1 | |
| **Snags (all species)** | | | | | |
| ***5"+ DBH*** | 360 | 630 | 1111 | 751 | 481 |
| ***9"+ DBH*** | 270 | 540 | 772 | 502 | 232 |
| ***19"+ DBH*** | 45 | 90 | 101 | 56 | 11 |

*** Species Include:** AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

## Communities

A Natural Heritage Database review was completed on the tract; no RTE records were found within the tract. Nearby records include several Yellowwood trees as well as one Butternut tree. Both of these tree species would be benefitted by forest thinning or group selection openings. Butternuts on the Y-MMSF Property regenerate well in group selection openings and this type of harvest is helping to keep this rare species present in the forest. Yellowwood trees were found within the tract in 2001 as determined by the 2001 Yellowwood Tree Inventory. The 2011 tract inventory was conducted during winter and snow cover so other endangered or threatened plant species that may have been present in the tract were undetectable.

## Recreation

This tract is in an area accessible to handicap hunters during hunting seasons. In addition to hunting, other recreational opportunities include hiking, wildlife viewing, and cross country skiing. Public access is from the gated fire trail off of Crooked Creek Road that enters Miller Ridge. The south boundary of the tract is painted in orange so hunters can avoid hunting State Park Property. The "D" horse trail runs along Miller Ridge to the north of the tract.

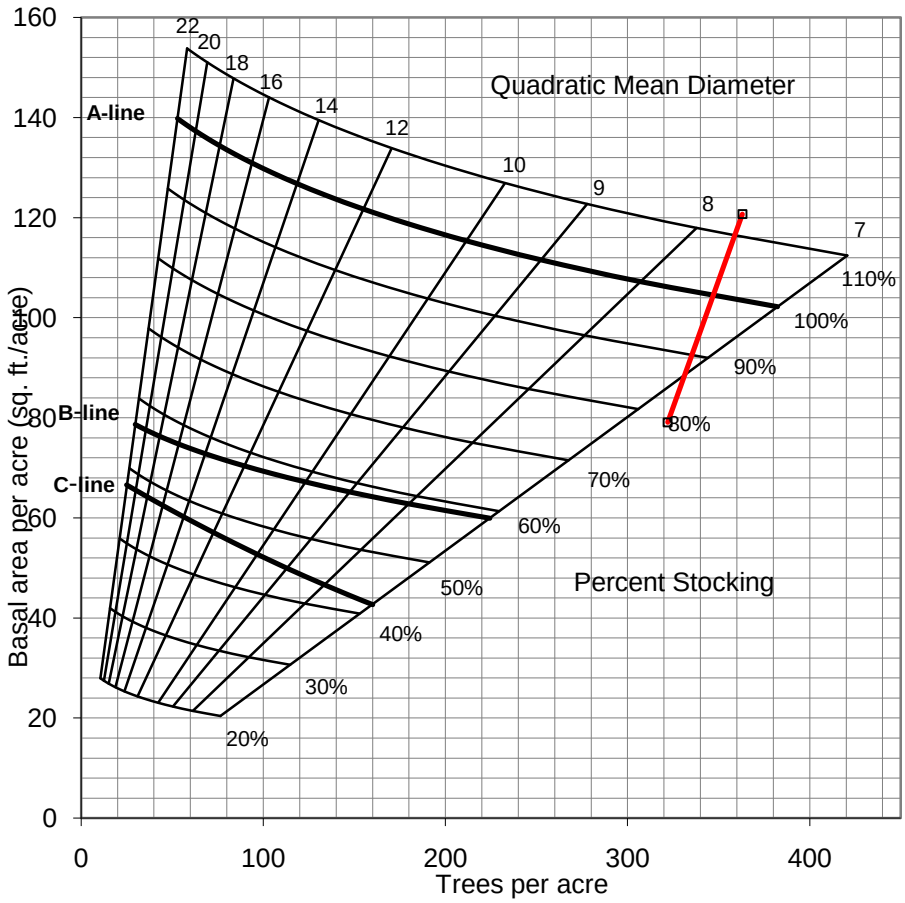
## Cultural

No cultural sites were observed during the inventory. In the event cultural resources are discovered their location(s) will be documented & submitted to the Division's archaeologist. All cultural sites will be buffered from any forest management operation.

## Tract Subdivision Description and Silvicultural Prescription

### Tract Summary Data

Total Trees/Ac.= 363 Overall % Stocking = 112% (Over-stocked)
Sawtimber & Quality Trees/Ac.= 67 BA/A= 120.7 sq.ft./Ac.
Present Volume = 7,230 Bd. Ft./Ac.
Harvest Volume = 2,510 Bd. Ft./Ac.
Growing Stock Volume = 4,720 Bd. Ft./Ac.




## Silvicultural Prescription

This inventory was completed on January 31, 2011. 31 prism points were completed over 90 acres (1 point for every 2.9 acres). Inventory results are given above. This tract is presently overstocked and a timber harvest is prescribed. Several areas throughout the tract would benefit from regeneration. These areas are composed of low quality & cull Scarlet/Mixed Oak trees, dead & dying oaks from insects & disease infestations as well as modest windthrow damage. The timber harvest throughout the rest of the tract in healthier stands should focus on thinning from above and below to release the higher quality, more vigorous croptrees as well as to improve croptree spacing. The removal of mature & declining stems, suppressed crowns, deformed trees, and trees with crown damage is also recommended through an improvement cutting. Portions of this tract have a healthy oak-hickory component in the understory; these trees could be released by the removal of low quality & less valuable overstory trees. White Ash should be removed where feasible in a sanitation cutting to reduce habitat for Emerald Ash Borer. Black Locust was found around the flat ridgetop area in the northern and eastern portions of the tract; these invasive trees are mostly poletimber and should be marked for harvest or treated during post-harvest TSI. Grapevines were also noted throughout the ridgetop area and should be treated during postharvest TSI in areas where they pose a threat to quality trees. Due to the presence of Ruffed Grouse within this tract and adjacent tract 19, the proposed timber harvest could be helpful in creating habitats that would retain this locally declining grouse population as well as promoting their expansion. Creating a mosaic of group selection

regeneration and modest clearcut openings could increase early successional forest habitats as well as provide areas of dense understory and ground cover necessary for other breeding songbirds. In addition the creation of modest regeneration openings within this tract would be helpful in retaining and recruiting additional populations of state threatened and locally rare hardwood species such as the Yellowwood tree and Butternut trees. Largetooth Aspen stands that are identified within the tract could also be regenerated. The proposed timber harvest can utilize existing haul roads and log yards, although some clearing of these would be needed before reuse. A modest sized, combined harvest is planned for 2011–2012 for this tract along with adjacent tract 19.

## Volume Estimates: Yellowwood SF Comp. 03 Tract 22

**(January 2011 Inventory Data)**

| Species | Harvest | Leave | Total |
|---|---|---|---|
| Chestnut Oak | 45,540 | 115,400 | 160,940 |
| White Oak | 40,790 | 105,230 | 146,020 |
| Scarlet Oak | 41,140 | 77,810 | 118,950 |
| Black Oak | 41,050 | 35,800 | 76,850 |
| Northern Red Oak | 10,470 | 30,730 | 41,200 |
| Yellow Poplar | 22,860 | 3,570 | 26,430 |
| Pignut Hickory | 850 | 20,700 | 21,550 |
| White Ash | 18,130 | 0 | 18,130 |
| Sugar Maple | 1,560 | 12,610 | 14,170 |
| Shagbark Hickory | 0 | 8,410 | 8,410 |
| Black Walnut | 0 | 6,300 | 6,300 |
| Basswood | 1,010 | 2,910 | 3,920 |
| Largetooth Aspen | 2,910 | 0 | 2,910 |
| Blackgum | 0 | 2,770 | 2,770 |
| Red Maple | 0 | 2,390 | 2,390 |
| **Tract Totals (Bd. Ft.)** | **226,300** | **424,620** | **650,920** |
| **Per Acre Totals (Bd. Ft./Ac.)** | **2,510** | **4,720** | **7,230** |

**Proposed Activities Listing**

| *Proposed Management Activity* | *Proposed Date* |
|---|---|
| Archaeological Review | 2011-2012 FY |
| Road Construction & Rehab | 2011-2012 FY |
| Timber Marking | 2011-2012 FY |
| Invasives Treatment | 2011-2012 FY |
| Timber Sale | 2011-2012 FY |
| Post Harvest TSI | 2011-2012 FY |
| ReInventory and Management Guide | 2031 |

**Attachments**

Included in Tract File:

- Topo Map of Tract Features

- Tract Soils Map
- INHD Review Map
- Stocking Guide Chart
- Ecological Resource Review
- TCruise Reports

**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.