RESOURCE MANAGEMENT GUIDE

State Forest: Morgan Monroe Compartment: 06 Tract: 13
Forester: H. Hefner Date: 2/9/2009
Management Cycle End Year: 2029 Management Cycle Length: 20 years

Location

Sections 9, 10, Township 10N, Range 1E in Monroe County, Indiana. The tract is located on the east side of Forest Road one mile south of the Morgan County / Monroe County line and 8 miles south of Martinsville, IN. This area is commonly referred to as compartment 06 tract 13 of the Morgan Monroe State Forest.

General Description

Tract 13 contains 99 acres of which 95 are commercial forestland. The non-commercial acres include roads, log landing, small pond, hiking trail, research tower and roadside picnic site. The research tower stations the Indiana University long-term carbon sequestration project. The goal of the project is to document the exchange of carbon dioxide. The website for the AmeriFLUX / FLUXNET tower and research information is www.indiana.edu/~co2/index.html. There is a buffer where no management occurs of 600 feet surrounding the tower. The general cover type for the stand is mixed hardwood forest. A portion of the Low Gap 10 mile hiking trail as well as the shorter Mason Ridge hiking trail cross through this tract.

History

This portion of state forest property was purchased from W. J. Holliday in 1930. The tract management file shows a history of management on the site. A timber sale was sold on the east end of the tract in 1974. There were 70,593 Bd. Ft. of lumber sold to Dan Cramer of Martinsville, IN. In 1984 white oak, red oak and black walnut seedlings were underplanted in a cove site. Additional low thinning and understory control was included in 1985 as well as replanting of seedlings that had died. A salvage timber sale was sold in 1991 on the east side of the tract that also included tracts 11 and 12. This harvest had a total of 207,146 Bd. Ft. and was bought by Helmsburg Sawmill, Inc. out of Helmsburg, IN. The total sale price was $28,000.

Topography, Geology and Hydrology

This tract consists mainly of southeast and south aspects. The majority of the tract is moderately steep slopes with flat ridgetops. Some slopes are very steep creating harvest limitations. The tract is part of the Honey Creek Watershed which flows into Lake Lemon. There are two mapped intermittent creeks within the tract.

Soils

Berks-Weikert complex (BkF) 25-75% slope. 65% of the tract. Steep to very steep slopes. Some harvest limitation on steeper slopes. The site index for Red Oak is 70, Black Oak is 70 and Virginia Pine is 70.

Bedford Silt loam (BdB) 2-6% slope. 20% of the tract. Gentle to moderate slopes. No harvest limitations. Site index for Yellow Poplar is 90, White Oak is 70, and Red Oak is 75.

Wellston-Gilpin Sitl loam (WmC) 6-20% slope. 15 % of the tract. Moderately steep slopes. Minimal harvest limitations. Site index for Yellow Poplar is 90, Red Oak is 71 and Virginia Pine is 70.

Access

There is great access to this site both off of Main Forest Road as well as Orcutt Road. A log landing on the tract was recently used for a timber harvest on tract 6370611. This landing is accessed from Orcutt Road. The haul road to this landing is in good condition.

Boundary

Boundary marking is up-to-date for this tract. The state-painted boundary lines bordering private property will be honored for this tract's management. A portion of the no hunting zone boundary lies within the tract.

Wildlife

Wildlife resources in this tract are plentiful. This tract supports many woodland species including, but not limited to: White-Tailed Deer, Wild Turkey, Eastern Grey Squirrel, Fox Squirrel, chipmunks, hawks, owls and various songbirds.

Indiana Bat

There has been a relatively high success at capturing the Indiana bat near tract 1613. Since the Indiana bat is know to spend time during the summer in the area special care needs to be taken to retain current snag trees and create new ones. Snag trees are deficient within the tract and need to be left unharvested where possible. For optimal habitat the Indiana Bat Habitat Guidelines indicate that 241 snag trees greater than 9 inches and 99 snag trees greater than 19 inches are lacking in the current stand. This comes to 2.4 snags greater than 9 inches and 1 snag greater than 19 inches per acre. Post harvest TSI can girdle cull trees to increase snag trees on the tract. Besides snag trees certain live tree species such as shagbark hickory are known to be used by the Indiana bat as roost trees and care to retain these trees should be practiced wherever possible.

Exotic Species

Mulitflora Rose and Bush Honeysuckle were found on the site during the inventory. Eradication of the invasive species should be scheduled prior to harvest operations.

Communities

The main plant community found on the site is upland, mixed hardwoods. The cover type is characterized by white oak, red oak, hickory, sugar maple, and American beech.

Many species of interest have been found in or around 0613. These include timber rattlesnake, bobcat, cerulean warbler, Kirtland's snake, hooded warbler, butternut, green adders-mouth orchid, trailing arbutus and Indiana bat. The only species observed within the tract is the bobcat.

Bobcats or Lynx rufus have a home range between 5 to 25 square miles. The bobcats' diet consists mostly of rabbits but they also consume other small vertebrates. Male bobcats can grow up to 28 pounds with a life span of 12-13 years. Harvesting should not affect the bobcats' use of the tract except when the loggers are working. Harvesting will create habitat for their main food source as well as create auxiliary den sites.

No other ETR species have been found on the site but the listed species in the heritage database report could be aided with a harvest. The timber rattlesnake enjoys south aspect slopes and rock outcroppings, however little habitat of this type was found during inventory. Although there are no signs of hibernacula, tops leftover from harvest will provide habitat for prey that the snake can forage for. The cerulean warbler and hooded warbler both like fragmented canopies with dense understory. Harvesting will increase density of understory plants temporarily. The Kirtland's snake enjoys wet grassy areas which are not found on the site. Butternut trees were not observed during inventory but if regeneration openings are created on the tract this would give opportunity for regeneration of the species. Indiana bat habitat will be unharmed and even made better by the creation of snag trees. Trailing arbutus like pine stands acidic soils which are found in this area but in very small patches. The low harvest in the pine stand will limit the possibility of harming unobserved plants.

Recreation
This tract has many possibilities for recreation uses. Some of the more common recreation that can be expected within the tract and surrounding area include: jogging, hiking, birding, traversing (with a compass and map), wildlife watching, mushroom hunting, tree identification, and photography. The tract is crossed by the Mason Ridge and Low Gat hiking trails and also contains a well used picnic roadsite.

Cultural
There are no known cultural sites within this tract. Adverse impacts to significant cultural resources will be avoided during any management or construction projects, should any sites be discovered.

Tract Silvicultural Prescription
There are three dominant forest stands on this tract.

A. The east end of the tract is dominated by yellow poplar and mixed hardwoods. This area of the tract was harvested in 1974. The area has a good assortment of mixed hardwood. The timber is medium sawtimber with some large sawtimber trees intermixed. An improvement harvest would be beneficial to remove larger or unwanted trees releasing more desirable growing stock. The major species include poplar, maple, aspen, oak, and hickory. Advanced regeneration on the tract is dominated by beech, maple and sassafras. A small portion of this tract is set aside from harvesting due to the Indiana University carbon sequestration project.

B. This part of the tract makes up the majority of the stand. The dominant cover type is oak/hickory forest with medium to large sawtimber. There are some areas of the tract that will have limited harvesting. Portions of this stand lie within the research buffer and Main Forest Rd. visual enhancement area. The remaining portion of this section is recommended to have normal single tree and group selection harvest.

C. The third part of the tract is a small white pine planting along the Forest Road. This area may only cover a total of 5 acres but is narrow and long. With the Main Forest Road and hiking trail being nearby, harvesting is limited to single tree selection.

Table 1. Harvest/Leave species and volume inventoried 1/20/2009

Species	Harvest	Leave	Total
American Beech	7,620	7,200	14,820
American Elm	0	21,890	21,890
American Sycamore	3,760	0	3,760
Basswood	0	3,050	3,050
Bitternut Hickory	0	6,060	6,060
Black Cherry	0	3,470	3,470
Blackgum	0	2,140	2,140
Black Oak	59,140	80,450	139,590
Black Walnut	3,180	21,050	24,230
Chestnut Oak	3,850	1,390	5,240
Eastern White Pine	0	29,720	29,720
Honeylocust	0	3,930	3,930
Largetooth Aspen	4,670	0	4,670
Northern Red Oak	31,910	80,330	112,240
Osage-orange	0	850	850
Pignut Hickory	2,600	11,050	13,650
Red Elm	0	900	900
Red Maple	2,650	3,820	6,470
Sassafras	12,790	15,600	28,390
Scarlet Oak	1,910	3,530	5,440
Shagbark Hickory	3,600	6,970	10,570
Sugar Maple	10,830	38,390	49,220
White Ash	36,860	7,940	44,800
White Oak	28,360	114,080	142,440
Yellow Poplar	162,470	190,620	353,090
Total	376,200	654,430	1,030,630
Total per Acre	3,800	6,610	10,410

Overall, the tracts predominant timber type is oak-hickory and yellow poplar. Dominant species composition within the tract is as follows: yellow-poplar 22.3%, white oak 14.5%, sugar maple 10.1%, black oak 9.2%, red oak 8.6%, and hickory 5.3% (includes shagbark, pignut and bitternut hickory). According to December 2008 inventory data, the estimated tract volume per acre is 10,430 bd ft/acre. The estimate for harvest is 3,810 bd ft/acre with a leave volume of 6,620 BF/acre. Present basal area for the tract is 92.7 sqft/acre. The average number of trees per acre is 69 pulpwood and sawtimber trees.

According to the Gingrich hardwood stocking guide the tract is fully stocked at 71%. Understory regeneration within the tract is dominated by American beech and sugar maple.

This tract will be managed under uneven-aged management, meaning that singletree selection and group selection can occur throughout the tract. Based on the tracts current stocking a harvest is recommended to improve the quality of the stand and to maintain the oak-hickory and yellow poplar composition. Opening(s) less than ten acres in size will provide regeneration of shade intolerant species. These opening(s) will be located within the tract as determined by the marking forester. Throughout the entire tract single tree selection will focus on removing damaged and mature trees to provide for the growth of younger and healthier trees. As this tract is adjacent to the Main Forest Road a visual enhancement area (VEA) exists along the western tract boundary. Singletree selection can occur within the VEA, but care will be needed to maintain aesthetics from Main Forest Road.

Tract Proposed Activities

Boundary marking will occur in the summer of 2009. A tract map with layout of yards, skid trails, and haul roads will be submitted for a Division of Historical Preservation and Archaeology (DHPA) review. Timber marking may occur in the fall of 2010 and winter of 2010/2011. Roadwork will begin as soon as DHPA approval is granted. As timber is marked grapevines can be cut as part of pre-harvest TSI. Upon sale approval, the timber will be put up for sale in 2011/2012 and will have a contract length of two years. Post harvest TSI will be performed after completion of harvest operations. A new forest inventory will occur in the year 2029.

Harvesting timber will change the overstory species composition and density. Canopy gaps will stimulate residual canopies as well as understory plants as a result of increased light. Modest ground cover exposure to mineral soil will stimulate early successional species growth and development. Soil loss will be minimized as log yards and water bars will have seed and straw applied to prevent soil movement. The skid trails and haul roads will quickly re-vegetate after harvest operations cease. Little to no impact to water quality should occur as the use of Best Management Practices (BMP) will reduce runoff from directly entering streams. Recreational use of the tract will be limited during harvest operations to provide for the safety of recreation users and timber harvest operators. Wildlife populations of early to mid successional groups will moderately increase as a result of the harvest. Regeneration openings will promote species that thrive in early successional habitat.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Boundary Marking	2009/2010
DHPA	2009/2010
Timber Marking	2010/2011
Timber Sale	2011/2012
Road Work	2011/2012
Timber Sale Completion	2012/2013
Post Harvest TSI	2013/2014
Inventory	2029/2030

Attachments (On file in Property Office)
Topographic map with tract subdivisions
Aerial photo with tract subdivisions
Soil type map of area
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 "Morgan-Monroe C6 T13" 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.