Resource Management Guide

State Forest: Owen-Putnam **Compartment:** 06 **Tract:** 02
Forester: R. Duncan **Date:** August 2009
Management Cycle End Year: 2029 **Management Cycle Length:** 20 Years

Location

Compartment 6, tract 2 lies in the west central portion of section 21, township 11N, range 4W, Morgan Township, of Owen County, Indiana. It is approximately 10 miles northeast of the town of Spencer.

General Description

This tract is a 79-acre managed, multiple use parcel located at the north end of the 701 acres contained in compartment 6. The Timber type is predominantly closed canopy mixed upland hardwoods with approximately 20 acres of Virginia and White Pine located along the ridge top in the central portion of the tract. The over-story consists of medium to large sawlog sized Yellow Poplar, White Pine, Shagbark Hickory, White Oak, Pignut Hickory, Sugar Maple, and Sassafras. The quality of merchantable timber is average. The pole-sized under-story consists mostly of Virginia Pine, Eastern White Pine, Sugar Maple, Sassafras, Yellow Poplar, Shagbark Hickory, Northern Red Oak, Red Maple, Largetooth Aspen, White Oak, American Beech and Black Cherry. Advanced regeneration is represented mostly by Sugar Maple and American Beech. However, Red and White Oak are represented well in the earlier stages of regeneration. This area exhibits good opportunities for multiple use management, including timber management, wildlife management, soil and water conservation and public recreational activities, such as, hunting, hiking, gathering, viewing and interpretation. In addition, the tract contains a horseback/mountain bike riding trail, two fire trails and a power line right-of-way.

History

Owen-Putnam State Forest was established in 1948 with most of its landholdings purchased as smaller non-contiguous tracts in the 50's and 60's. Compartment 6 tract 2 has been managed for several years having a property wide TIMPIS inventory conducted in 1988 and 1989, a tract inventory conducted in May of 2005, and pre-harvest timber stand improvement in the form of grapevine control conducted in 2005**.**

Landscape Context

Generally the area surrounding this tract is predominantly closed canopy deciduous forest with small isolated pine stands, some early successional areas, some old field, some pasture, some hayfields and some small open water wetlands. The private properties surrounding this

compartment and tract are primarily mixed hardwood forests containing scattered single family dwellings with some pasturing and very little agriculture.

Topography, Geology and Hydrology

This tract is generally comprised of ridges and valleys of nearly level to steep south, southwest and southeast slopes with some level ground along the ridge top plateau in the north central portion of the tract extending gradually downhill to the south.

The soils are generally comprised of shallow to moderately deep, well-drained soils on nearly level to steep slopes. These soils occur throughout the Illinoian glaciated areas of the county. In the event a harvest operation is performed, the existing haul road can be utilized. However, care must be taken during the planning and execution of skid trails due to the erosive nature of these soils. Best Management Practice (BMP) guidelines should be followed to preserve soil and water quality (Forest Practices Working Group, Indiana Woodland Steward Institute).

Water sheds from the east side of the tract into a mapped intermittent stream. Water sheds from the west side of the tract into a road ditch and then into a mapped intermittent stream.

Soils

The tract is composed primarily of shallow to moderately deep, well to excessively drained silt loam soils underlain with sandstone, siltstone and shale with moderate to severe erosion on slopes from 6% to 35% contained within the Muskingum, Wellston and Zanesville soil series. In addition, the tract contains soils such as the philo silt loam associated with bottomlands along small streams. Also, there is evidence of past soil abuse, due to the inclusion of the Gullied land soil type, probably the result of abandoned fields and feed lots.

Most of the soils in this tract are found in large areas of forest and are best suited as such.

Specifically, the tract is composed of the following soils:

MmG - Muskingum Stony Silt Loam, 35-70% Slopes
Gu - Gullied Land, Residuum
WoG - Wellston and Muskingum Soils, 35-70% Slopes
ZaC2 - Zanesville Silt Loam, 6-12% Slopes, Moderately Eroded
WmE2 - Wellston Silt Loam, 18-25% Slopes, Moderately Eroded
Ph - Philo Silt Loam
ZnD3 - Zanesville Soils, 12-18% Slopes, Severely Eroded
WoF2 - Wellston and Muskingum Soils, 25-35% Slopes, Moderately Eroded
ZaB -Zanesville Silt Loam, 2-6% Slopes

(Soil Survey, Owen County USDA, SCS - Series 1959 No. 38)

Access

To access the tract take S.R. 46 approximately 5-miles west of the town of Spencer to Fish Creek Rd., then travel north on Fish Creek Rd. approximately 4.0 miles to Atkinsonville Rd., then travel west on Atkinsonville Rd. approximately 1.0 mile to the mountain bike trailhead parking lot and cabled fire trail on the right hand side of the road. Another 0.5 miles further up the road on the right hand side is a cabled forest access/fire trail. Management and logging access to this tract is good via the fire trails. The tract is also easily accessible to the public via the mountain bike parking lot on Atkinsonville Rd and the multi-use trail that traverses the area.

Boundary

Tract boundaries follow predominant topographical features with Atkinsonville Road delineating the tract boundary to the southwest and a mapped intermittent stream delineating the tract boundary to the east. Private property borders this tract to the west along boundary line P to Q and Q to R and follows old fence line and new fence constructed by the Rubles following a Harlos survey. Corner P is marked with rebar set by Harlos and a metal T-post set by property personnel. Corner Q is marked with rebar set by Harlos and a metal fence post set by property personnel. Tract boundaries occurring along private property lines have been identified with orange flagging.

Wildlife

Wildlife resources in compartment 6 tract 2 seem abundant. Common species and sign observed include Eastern Grey Squirrel, Fox Squirrel, Chipmunks, White-Tailed Deer, Wild Turkey, Opossum, Raccoon, Eastern Box Turtle, raptors, woodpeckers, songbirds, toads, frogs and various small stream aquatic life.

This tract contains habitat for a variety of wildlife species. Habitat includes mixed hardwoods containing oak, hickory and beech that provide mast for deer, turkey and squirrel. The pine stands provide benefits such as winter cover, roosts for grouse and turkey and browse for deer. Snags and cavity trees provide nesting, bugging and roosting opportunities for woodpeckers, songbirds, and small mammals. Rotten logs, crater knolls and the mapped intermittent stream provide habitat for herptiles and aquatic vertebrates.

A review of the Natural Heritage Database was conducted on October 8, 2008 to locate and identify any known endangered, threatened or rare animal species. The review did not identify any endangered, threatened or rare (E.T.R.) species within the project area. However the review did identify 7 E.T.R. animal species (Sharp-shinned Hawk, Least Clubtail, Dragon Hunter, Loggerhead Shrike, American Badger, Bobcat, Fat Pocketbook) within 10 miles of the tract (Carl Hauser, Division of Forestry – Property Program Specialist), with the closest being approximately 3-miles away. Six of the seven records are at least 20 years old, with one having no recorded date. None of the recorded E.T.R. species are dependent upon unmanaged Old-Growth forest habitat for their existence or survival. The Sharp-shinned hawk occupies a wide variety of forests throughout North America. The Bobcat is a very adaptable predator that inhabits wooded areas as well as semi-desert, urban edge, forest edge and swampland

environments and is not solely dependent on deep forest habitat. The Loggerhead Shrike almost entirely prefers open spaces, with their habitat typically being grasslands interspersed with scattered trees and shrubs. The Dragonhunter lives along streams and hunts in direct sunlight. The Least Clubtail lives along small rivers and large streams. The Fat Pocketbook lives in large rivers.

With regard to the strategy for consideration of the Indiana bat and other wildlife species, a snag and live roost tree inventory, including species identification and tree diameter measurement, was performed in compartment 6 tract 2. An analysis of that data was conducted, with the following results.

The snag inventory data resulted in the tract containing 41.1 snags per acre $\geq$ 5 inches in d.b.h. (diameter breast height - d.b.h.) with 8.2 of those snags being $\geq$ 9 inches in d.b.h. and 0.4 of those snags being $\geq$ 19 inches in d.b.h.

The data exceeds the suggested minimum "maintenance" level of 4 snags per acre $\geq$ 5 inches in d.b.h. and it exceeds the suggested "optimal" level of 7 snags per acre $\geq$ 5 inches in d.b.h. In addition, the data exceeds the suggested minimum "maintenance" level of 3 snags per acre $\geq$ 9 inches in d.b.h. and it exceeds the suggested "optimal" level of 6 snags per acre $\geq$ 9 inches in d.b.h. However, the data falls short of the suggested minimum "maintenance" level of 0.5 snags per acre $\geq$ 19 inches in d.b.h. (IDNR – Division of Forestry, Resource Management Strategy for the Indiana Bat on Indiana State Forests, April 2008) Management in the form of post harvest timber stand improvement (T.S.I.) could be performed to increase the number of snags $\geq$ 19 inches in d.b.h.

The live roost tree inventory resulted in the tract containing 18.6 "preferred" live roost trees per acre $\geq$ 11 inches in d.b.h. with 3.6 of those "preferred" live roost trees being $\geq$ 20 inches in d.b.h. This exceeds the strategy's suggested minimum of 9 "preferred" live roost trees per acre $\geq$ 11 inches in d.b.h. with 3 of those preferred live roost trees being $\geq$ 20 inches in d.b.h. (IDNR – Division of Forestry, Resource Management Strategy for the Indiana Bat on Indiana State Forests, April 2008)

Timber harvesting objectives in this tract should consider the retention of trees containing cavities suitable for cavity nesting species, as well as, the retention of the "preferred" live roost trees listed in table 3 of IDNR – Division of Forestry, Resource Management Strategy for the Indiana Bat on Indiana State Forests, April 2008.

As a result of the data gathered and its analysis, compartment 6 tract 2 as prescribed by management, should be well represented with habitat appropriate to the number, size and species of live and dead trees suitable for consideration of the Indiana bat and its suggested habitat requirements as well as those of other wildlife species.

Communities

Most of this tract is of the dry to dry-mesic forest community type with some mesic sites located along the lower slopes and drainages.

A review of the Natural Heritage Database was conducted on October 8, 2008 to locate and identify any known endangered, threatened or rare plant species or communities. The review did not identify any endangered, threatened or rare (E.T.R.) species or communities within the project area. However the review did identify three E.T.R. plant species within 10 miles of the tract (Carl Hauser, Division of Forestry – Property Program Specialist), with the closest being approximately 3-miles away. Two of the three records are at least 20 years old, with one being recorded in 2007. Two are grasses (Sharp-Scaled Manna Grass and Grove Meadow Grass) and one is a sedge (Cypress-Knee Sedge). None of these species are typically found in the forest interior and as such should not be directly affected by forest management activities.

Exotic species are present in the tract with small scattered occurrences of Multi-Flora Rose and Autumn Olive. Control measures should be proposed, possibly during post-harvest timber stand improvement activities, whereby herbicides could be applied to treat these occurrences before their populations expand.

Recreation

The tract is also easily accessible to the public via the mountain bike parking lot on Atkinsonville Rd and the multi-use (horse, bike, and hike) trail that traverses the area.

This area exhibits good opportunities for multiple use management, including timber management, wildlife management, soil and water conservation and public recreational activities, such as, hunting, hiking, gathering, viewing and interpretation.

Cultural

Cultural resources such as old building sites, homes, barns etc. and their location on state forests are protected. To the best of our knowledge this tract does not contain any cultural resources. There is an old fence line along the western boundary of the tract adjacent private property.

Tract Description and Silvicultural Prescription

This tract was not divided into subdivisions.

In 1988 a property wide inventory (TIMPIS) was conducted, including Compartment 6 tract 2. The results estimated the tract to contain 3869 Bd. Ft. of total sawtimber per acre, with a stocking level of 97% and a harvest proposed in the year 2004. The tract was again inventoried in May of 2005. The data estimated the tract to contain approximately 7815 Bd. Ft. of total sawtimber per acre with an estimated 3418 Bd. Ft. of harvest sawtimber per acre with 121.9 Sq. Ft of basal area per acre, in trees $\geq$ 6 inches in diameter at breast height (d.b.h.), and a stocking level of 99 % with an average tree diameter of 12.8 inches.

The over-story consists of large sawlog sized Yellow Poplar, with medium to large sawlog sized Northern Red oak, Shagbark Hickory, White Oak, Pignut Hickory and Sugar Maple with a strong presence of Eastern White Pine. The quality of merchantable timber is average. The pole-

sized under-story consists mostly of Virginia Pine, Eastern White Pine, Sugar Maple, Sassafras, Yellow Poplar, Shagbark Hickory, Northern Red Oak, followed by Red Maple and Largetooth Aspen. Advanced regeneration is represented mostly by Yellow Poplar, American Beech, White Ash, Sugar Maple and Dogwood with Northern Red Oak present at a respectable 12 saplings per acre and Red and White Oak well represented in the earlier stages of regeneration.

The current stocking level of 99% indicates the tract is essentially overstocked. The dominant sawtimber sized poplar, oak and hickory are overly competing for resources. With the overcrowded sawtimber species and a good oak-hickory residual stocking, this tract would benefit from a timber harvest in the form of an intermediate cutting.

The recommendation is to perform an intermediate harvest using the single tree selection method whereby thinning and reducing competition amongst the maturing quality trees and preferred species, in addition to harvesting the low quality, damaged, diseased, dying and poorly formed trees as well as harvesting less desirable species.

Management in the form of Timber Stand Improvement (TSI) should be performed to control grapevines, release preferred crop trees through the culling of low volume, poorly formed trees and less desirable species and to encourage early successional (Oak) regeneration through the creation of canopy gaps and a reduction in understory shade tolerant species (maple, beech, pine). Standing dead trees (snags) and cavity trees will be given consideration for retention as habitat for wildlife, such as the Indiana Bat. In addition, the girdling of select cull trees $\geq$ 19 inches in diameter could be performed through post harvest TSI to address the suggested guidelines of the Strategy for the Consideration of the Indiana Bat (IDNR – Division of Forestry, Resource Management Strategy for the Indiana Bat on Indiana State Forests, April 2008).

The overall goal of this prescription is to thin the tract and reduce competition among the larger trees, improve timber species composition and to create favorable growing conditions for early successional timber species, while providing forest wildlife habitat. As with all forest management activities, Best Management Practice (BMP) guidelines will be followed to protect soil and water resources (Forest Practices Working Group, Indiana Woodland Steward Institute).

Proposed Activities Listing

2005 - Tract Inventory
2006 - Tract Management Plan
2007 - Pre-Harvest TSI
2008 - Harvest Marking and Sale Layout
2009 - Timber Sale
2012 - Post-Harvest TSI and Exotic Control
2012 - BMP Monitoring

Attachments (on file in the property office)

- Topographical Map (USGS - 7.5 Minute Series, Cataract Quadrangle)
- Soil Type Map (USDA, SCS - Series 1959 No. 38 Soil Survey, Owen County)

- Aerial Photograph (2003)
- Upland Central Hardwoods Timber Stocking Guide (USDA-Forest Service, Northeastern Area NA-MR-7)
- Timber Inventory Summary Reports (Two2Dog Brand Software)
- Natural Heritage Database Review Map (10/08/2008, C. E. Hauser)
- Archaeological Clearance Application (Feb. 4, 2009)
- Archaeological Clearance Letter (A. J. Ariens, Forest Archaeologist)

To submit a comment on this document, click on the following link:
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Owen-Putnam State Forest

Topographic Map
Compartment 6 Tract 2

79 - Acres

USGS - 7.5 Minute Series
Cataract Quadrangle

N
W E
S

Tract Boundary - Haul Road - Log Yard - Horse/Skid Trail -

Pine Stand - Mapped Intermittent Stream -