

Indiana Department of Natural Resources – Division of Forestry

RESOURCE MANAGEMENT GUIDE

State Forest: Greene-Sullivan Compartment: 7 Tract: 4
Forester: Tom Tompkins Date: 2/22/13
Management Cycle End Year: 2023 Management Cycle Length: 20 Years

Location

Compartment 7, Tract 4 is located in the SE quarter of Section 2 – T6N – R8W of Sullivan County. It is approximately 6 miles south of the town of Dugger.

General Description

This tract is approximately 35 acres. The various land use components can be delineated as follows:

- Closed Canopy Forest – 31 ac
- Open Land – 2 ac
- Water/Riparian Areas – 2 ac

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Almost the entire forested area consists of long narrow, steep mounds of mine spoil. Reforestation in this area has been highly successful. The mixed overburden consisting of mineral rich coarse fragments from lower in the overburden and fine textured soil from the top-dress material has resulted in a suitable growing medium with good soil drainage, nutrient retention, and productive biotic interactions. The southern end of the tract also has an old rail grade running north-south. There are several drainage ditches running through the tract, the outlet from the smaller of twin lakes and the outlet of the larger of twin lakes runs along the east edge of the tract and Hwy 159. A wildlife opening is located in the east central portion of the tract and is maintained by periodic mowing.

History

The forested area consists of 65 year old mine spoils and is typical of most of the forest at Greene-Sullivan. This area was mined from 1946 – 1947. The tract was originally acquired from Central Indiana Coal Company, Inc in July, 1949. Old tract records indicate that the north half of the tract was selectively harvested in 1988.

Boundary and Landscape Context

The tract is bordered by county road 700 South to the south, and State Hwy 159 on the east. The north and west boundaries of the tract are the larger of twin lakes and compartment 7 tract 3.

Topography, Geology and Hydrology

Spoil banks run north-south and east west through the tract. The smaller of Twin lakes is contained within the tract. The outlet for the larger Twin Lake forms the northern boundary of the tract and flows into Spencer Creek. Spencer creek runs north-south along most of the eastern edge of the tract.

Soils

There are no natural soils mapped in this tract. The entire tract consists of mine spoils and reclaimed ground.

Access

The tract can be accessed from CR700S to the south where there is a fire lane running between Twin Lakes. Skid trails run throughout the western and northern portions of the tract from thinning of this area in the past. The southeast portion of the tract is flatter and has the old rail grade as access.

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Wildlife Habitat Features & Ecological Resource Review

Wildlife habitat suitable for a wide variety of native species should be optimized throughout the tract in order to promote and maintain a high level faunal diversity.

Cover/Habitat Overview

Habitat/cover type	0%	0 < 1%	1-10%	11-50%	51-90%	>90%	Unknown
Closed-canopy deciduous/mixed forest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pine/conifer plantations or natural stands	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Early successional forest (< 20 years old)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shrub-scrub or old field	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grasslands/hayfield	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cropland, pastures, feedlots	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open water (lakes, ponds, rivers, streams, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Riparian areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Developed areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Table 1 shows the estimated proportion of each cover/habitat type within 1 mile of tract center. The majority of the area is reclaimed grassland and closed canopy deciduous/mixed forest. The grassy areas are converting to shrub-scrub and early successional forest type habitats. Virtually every habitat type is represented to some extent in the sample area. This diverse landscape has resulted in a large amount of maintained forest edge and open grassy areas. The proposed management activities will not significantly alter the relative proportion and availability of habitat/cover types in the assessment area.

Structural Habitat Features

TABLE 2

Diameter (DBH) Distribution	Target Snag Density	
	Goal	C7T4
<i>Including</i> at least this many snags per acre $\geq 5''$:	4	3
<i>Including</i> at least this many snags per acre $\geq 9''$:	3	3
<i>Including</i> at least this many snags per acre $\geq 19''$:	0.5	0

TABLE 3

Diameter (DBH) Distribution	Preferred Roost Trees per Acre	
	Goal	C7T4
TOTAL minimum roost trees per acre $\geq 11''$:	9	10
<i>Including</i> at least this many roost trees $\geq 20''$:	3	0.3

Table 2 shows how this tract compares with the DoF guidelines for forest stand snag density. The data suggests that the stand is a little low on snags between 5" and 9" diameter and is lacking in snags greater than 19" diameter. However large diameter snags were observed during the inventory but did not fall within any sample plots.

Table 3 shows how this tract compares to the Indiana Bat guidelines for live roost trees. The inventory data suggests that the stand currently sustains maintenance level conditions for this habitat in the small diameter class but is deficient in the large class. The only species currently prevalent in this tract that fall into this category and/or are likely to persist and develop into this category are cottonwood, white pine and black walnut. Based on the inventory data, it is likely that this particular tract may remain deficient for some time. Managing for black walnut and retaining some large cottonwood and white pine throughout the tract are the best options for managing for future bat habitat.

IDNR Natural Heritage Database Review

A Heritage Database Review was completed for this tract. If rare threatened or endangered 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/Invasive Species

Species	Management Actions (check all that apply)		Mapped?
	Immediate Management Required	Monitoring/ Re-evaluation Recommended	
Multiflora Rose	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Japanese Honeysuckle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Autumn Olive/Bush Honeysuckle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Phragmites	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Japanese honeysuckle was observed along the forest edges, some autumn olive and bush honeysuckle were spotted during the inventory. Multiflora rose was present throughout the tract. Phragmites is present along the shoreline of Twin Lake. Because this tract will not be harvested in the near future, invasive control could be done concurrent with harvest in compartment 7 tract 3.

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Recreation

Opportunities for recreation in this area include ~~hunting, fishing, and bird watching~~

Cultural

Locations of cultural features, if present, are protected. Adverse impacts to significant cultural resources noted will be avoided during any management or construction activities.

Stand Descriptions and Silvicultural Prescriptions

C7T4 – 35 ac (Forested Ac. 31)

Current Condition

This stand was inventoried in the winter of 2012/13. The topography, soil map, GIS data, and old aerial photography for this area indicates that the stand was strip mined during the mid 40's. The dominant trees in this area (31 ac) are approximately 60 years old. Listed below is a table showing size classes and the percentage by volume and basal area (BA) of the major species present in the forested area.

SPECIES	% VOL.	% BA	Size Class
Black Walnut	41.1%	26.2%	S
Red Maple	15.5%	7.2%	P-M
Cottonwood	9.3%	2.4%	L
Black Oak	6.4%	2.4%	M
White Pine*	5.8%	1.4%	M-L
White Ash	5.7%	2.4%	M-L

Shingle Oak	4.9%	2.4%	P - M
Hackberry	3.9%	4.7%	S
Black Locust	3.9%	2.4%	S - M

P = Poles, S = Small Sawtimber

M = Medium Sawtimber, L = Large Sawtimber

* According to the original inventory white pine comprised almost half of the stand volume and BA. This was due to sample plot locations landing in two very small pine areas in the tract. The above volumes have been adjusted to more accurately reflect stand composition.

The canopy is dominated with cottonwood, black walnut and red maple. The walnut is mostly within the northern portion of the tract. Intermediate and midstory trees are comprised of maple, hackberry and black locust. Regeneration in the tract is made up of maple, elm, box elder and sycamore. The northern portion of the tract consisting of mostly black walnut is of good quality and form. The south portion consists of mostly poor quality maple, with some mature and declining white pine. This area could be harvested at this time to remove all undesirable and mature species. This area would benefit from enrichment planting after the harvest because no desirable seed source exists in the surrounding area. The harvest in the southern portion will most likely occur when the northern portion is also ready to be harvested again because of the areas small size.

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The tract has a current stocking of 60%, with a BA of 70 sq.ft. and 107 trees/acre. The volume of this stand is 2,490 bdf/acre.

Prescription

The main objective in this stand should be to allow the trees to continue growing in the current condition. The stocking level is adequate for good growth and most crop trees have release. In 10-20 years a harvest could be done to release crop trees and allow them to continue to grow in size as well as remove all undesirable species in the southern portion of the tract.

The inventory suggests that approximately 20 mbf could be harvested from this tract, but the current stocking and on the ground observation indicates that no harvest should be conducted at this time.

Invasives in this stand are present but not as thick as other areas on the forest. Invasives and vine control could be done in concurrence with pre-harvest TSI on compartment 7 tract 3. Some girdling of very poor quality black locust trees could also be done to release more desirable species.

Tract Summary

Wildlife habitat, timber quality, and biodiversity should be enhanced as a result of the proposed TSI operations.

Due to the small size of this stand and the close proximity to C7T3, this tract should be included with the tract 3 TSI.

Proposed Activities Listing

Proposed Management Activity

TSI

Re-Inventory

Proposed Date

2015 - 2016

2023

To submit a comment on this document, click on the following link:

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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. Note: Some graphics may distort due to compression.

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