Indiana Department of Natural Resources
Division of Forestry
Draft
RESOURCE MANAGEMENT GUIDE

State Forest: Greene-Sullivan Compartment: 5 Tract: 5
Forester: Tom Tompkins Date: 12/30/13
Management Cycle End Year: 2033 Management Cycle Length: 20 Years

Location

Compartment 5, Tract 5 is located in the W 1/2 of Section 31 T7N R7W and the SE ¼ of Section 36 T7N R8W. The tract is approximately 1.25 miles East of Bucktown.

General Description

This tract is approximately 211 acres. The various land use components can be delineated as follows:

Closed Canopy Forest – 148ac
Water/Riparian Areas – 35ac
Open Canopy Forest – 11 ac
Wildlife opening/grasslands/fire Trail – 17ac

Corky, Almond and Green Ash lakes as well as a few small pits make up the 35 acres of water within this tract. The entire tract consists of medium to large strip mine spoil banks that run NW-SE which contain a mix of hardwood and pine species. 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.

History

This tract was deeded to the state forest in May of 1964 from Sentry Royalty Company. The area was planted to trees some time shortly after that. The 1966 air photo of the area shows not trees present in the tract.

Boundary and Landscape Context

The tract is bordered by State Forest property on all sides except for a small 2 acre parcel located within the tracts eastern boundary along truck road. The east boundary is Truck Road, the south boundary is the southern shore of Corky Lake and Bucktown Road, the western boundary is the access road across Reservoir 29 dam and the northern boundary is a fire trail running from Truck Road and connecting with the dam on Reservoir 29. The tract is surrounded by forested area and open water; there is an area of grassland on the northwest side of Reservoir 29 as well.

Topography, Geology and Hydrology

Medium to large rocky spoil banks run northwest to southeast throughout the tract. The tract contains the Dam for Reservoir 29. Water flows from there into Corky and Green Ash Lakes located below the dam. Almond lake is located in the south central portion of the tract and flows underground south towards Corky Lake. There are also numerous smaller pits of water throughout the tract. During the inventory some areas of flowing water coming from underground were seen between spoil banks.

Soils

St- Strip mines

This classification is for coal extracted mine spoils and has not been evaluated for forest management and productivity.

Access

This sale can be accessed on the East side from Truck Road, from the south off of Bucktown Road and from the fire trail that runs along the top of the Reservoir 29 dam. There is also a horse trail running along the northern boundary of the tract. Access to the interior of the tract will be very difficult as most of the strip mine spoils have very steep slopes and have many large rocks in them. The northern ¼ of the spoil banks have pointed rocky tops however the rest of the spoil banks were somewhat flattened after mining and are 20-40 feet wide but are still uneven with large rocks.

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 of faunal diversity.

Cover/Habitat Overview

TABLE 1

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

Table 1 shows the estimated proportion of each cover/habitat type within 1 mile of tract center. The majority of the area is closed canopy deciduous/mixed forest. 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. 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

	Target Snag Density	
Diameter (DBH) Distribution	**Goal**	**C5T5**
Including at least this many snags per acre ≥ **5”**:	4	20.7
Including at least this many snags per acre ≥ **9”**:	3	6.8
Including at least this many snags per acre ≥ **19”**:	0.5	.25

Table 2 shows how this tract compares with the DoF guidelines for forest stand snag density. The data suggests that the tract greatly exceeds target goals in the maintenance level for snags 0-18” but does not meet the goals for snags over 19”. This is mostly due to the small average diameters within the stand, most trees over 20” are the healthiest most vigorous trees in the tract and therefore not many of them have become snags. If these trees remain and die as standing snags, then this should result in an increase in the upper level diameter distribution in this category. In the near future, a post harvest TSI treatment could increase the number of standing, large diameter snags.

TABLE 3

	Preferred Roost Trees per Acre	
Diameter (DBH) Distribution	**Goal**	**C5T5**
TOTAL minimum roost trees per acre ≥**11”**:	9	13.5
Including at least this many roost trees ≥ **20”**:	3	1.9

Table 3 shows how this tract compares to the Indiana Bat guidelines for live roost trees. The inventory data suggests that the stand is sufficient in trees from 11-19” size classes for live roost trees but not in trees over 20”. This is mostly due to the fact that this is a relatively young forest with very few trees over 20” in the tract.

IDNR Natural Heritage Database Review

A Natural Heritage Database review was completed for the tract. If Rare, Threatened or Endangered species (RTE’s) 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)			
	Immediate Management Required	Monitoring/ Re-evaluation Recommended	Addressed in Management Guide?	Mapped?
Multiflora Rose	☐	☒	☒	☐
Japanese Honeysuckle	☐	☒	☒	☐
Autumn Olive	☐	☒	☒	☐
Bush Honeysuckle	☐	☒	☒	☐
Ailanthus	☒	☒	☒	☒
Privet	☐	☒	☒	☐
Japanese Barberry	☐	☒	☒	☐
Oriental Bittersweet	☐	☒	☒	☒

The entire tract has a scattering of multiflora rose, honeysuckle, and autumn olive. Bush honeysuckle is very thick in the eastern 1/3 of the tract. Privet, Barberry, and oriental bittersweet were found in small numbers within the tract. Ailanthus was found in 7 locations within the tract and was mapped. Ailanthus should be controlled as soon as possible to prevent its spread. Second priority is bush honeysuckle. Other species should be controlled on a targeted basis prior to harvest activities occurring in the tract.

Recreation

Opportunities for recreation in this area include hunting, fishing, horseback riding, hiking and bird watching. There is a horse trail along the Northern tract boundary.

Cultural

Cultural resources may be present on this tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction activities.

Stand Descriptions and Silvicultural Prescriptions

Inventory Summary

Compartment: 05 Tract: 05 Inventory Date: 12/17/2013

	Acres		Basal Area Sq. Ft./Acre
Commercial Forest:	148	Sawtimber:	68.0
Non-Comercial Forest	9	Pole Timber:	50.0
Permanent Openings:	17	Culls:	2.4
Roads/Trails:	2	Sub-Merchantable:	1.3
Water:	35		
Total:	211	Total Basal Area:	121.7

Estimated tract volumes for commercial forest area - Bd. Ft. Doyle Rule

Species	Harvest Stock*	Growing Stock	Total Volume
A. Sycamore	23,420	208,200	231620
E. Cottonwood	75,280	70,740	146,020
Virginia Pine	93,070	8,680	101,750
Sweetgum	14,200	74,030	88,230
Shortleaf Pine	25,960	15,490	41,450
N. Red Oak	0	39,130	39,130
Red Maple	0	14,990	14,990
Black Oak	0	14,640	14,640
White Oak	0	12,440	12,440
E. White Pine	0	11,990	11,990
Shingle Oak	0	4,340	4,340
Pin Oak	0	4,330	4,330
American Elm	0	4,110	4,110
Swamp White Oak	0	3,650	3,650
Black Cherry	0	3,540	3,540
Black Locust	2,810	0	2,810
River Birch	0	1,730	1,730
Black Walnut	0	1,460	1,460
Totals	234,740	493,490	728,230

**Harvest stock was calculated using data collected based on a single tree selection harvest*

C5T5 Mixed Hardwood/Pine – 148 ac

Current Condition

This stand was inventoried in December of 2013. The topography, soil map, GIS data, and old aerial photography for this area indicates that the stand was strip mined. The dominate trees in this stand vary by area and are approximately 50 years old.

The canopy is dominated by sycamore, cottonwood, sweetgum, Virginia pine, shortleaf pine, and oaks. Mid story trees consist of sycamore, Virginia pine, shortleaf pine, sweetgum and red maple. Regeneration is mostly sweetgum, elm, and box elder. The species composition is fair to good. Most species have good form and height but appear to be growing slowly due to closed canopy and overstocked conditions. Many of the oaks have good form and are scattered throughout the central portion of the tract.

Figure 1

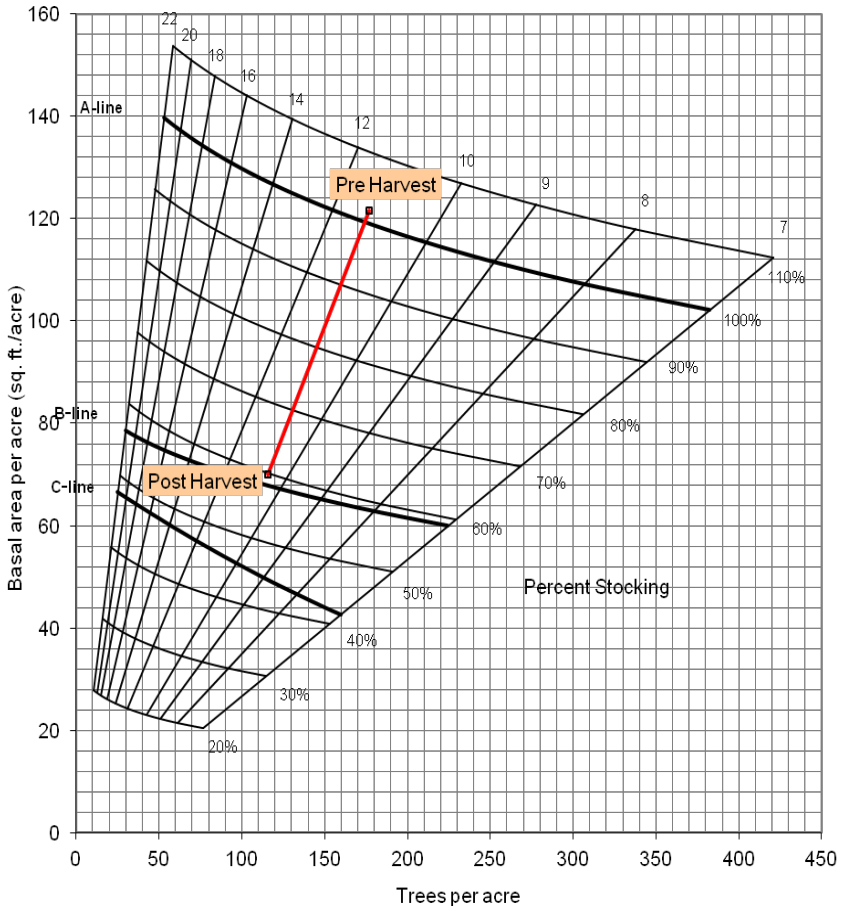

Figure 1 shows the stocking level of this stand both before and after a single tree selection timber harvest. The stand has a current stocking of 102%, with a BA of 121.6sq.ft. and 177 trees/acre. The volume of this stand is 4,921 bdft/acre. After the harvest the stand would have a BA average of 70.0 sq.ft. and 116 trees/acre.

Prescription

Even though this tract has a fairly good species mix and decent tree form, due to the difficult access and large rocky spoil banks, this tract may be better suited for even aged management.

This could be done by harvesting the majority of the timber off a third of the tract each harvest cycle. This would allow for improved management and recreation access to the tract while still leaving 2/3 of the area forested during any one management cycle. Oaks or other desirable hardwoods could be left as a seed source to improve species composition in the tract. Harvest layout would buffer water bodies as needed to protect water quality and important attributes.

Pre harvest TSI should consist of targeted invasive species and vine control throughout all portions of the tract. Post harvest TSI may consist of opening completion and follow up invasive control.

C5T5 Forest Edge – 11 ac

Current Condition

This stand was inventoried in December of 2013. The topography, soil map, GIS data, and old aerial photography for this area indicates that the entire stand was strip mined in the past. The dominant trees in this stand are approximately 50 year old. Listed below is a table showing size classes and the percentage by volume and basal area (BA) of the major species present.

SPECIES	% VOL.	% BA	Size Class
Sycamore	49%	36%	P -M
Virginia Pine	21%	27%	P
Black Locust	11%	9%	P
Cottonwood	9%	9%	L
River Birch	6%	9%	P
Red Maple	6%	9%	P

P=Pole
S = Small Sawtimber
M = Medium Sawtimber, L = Large Sawtimber

The canopy is dominated by sycamore, Virginia pine and cottonwood. Mid story trees consist of Virginia pine, sycamore, red maple, and black locust. Regeneration is mostly elm, red maple, and sycamore. The species composition is poor. Most species have acceptable form and height but have many branches due to the open canopy.

Figure 2

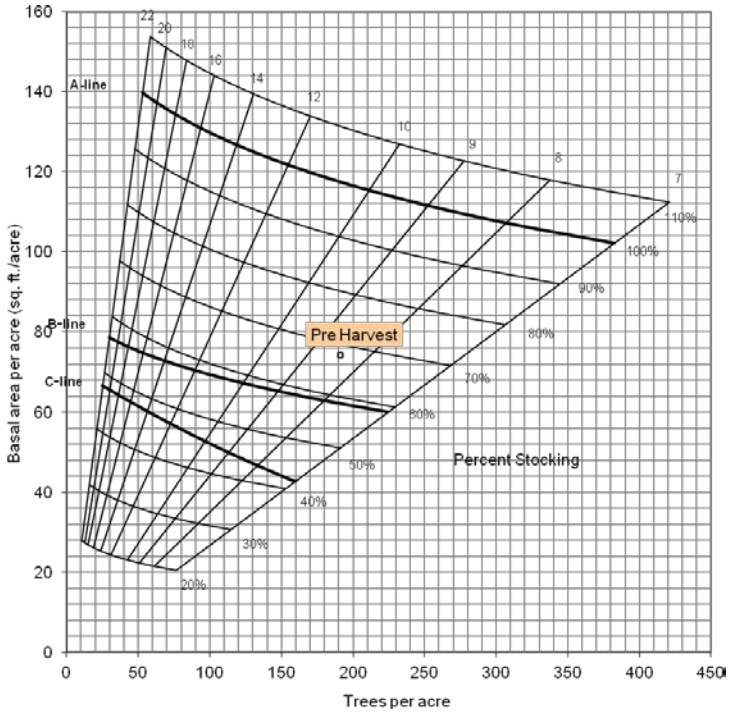

Figure 2 shows the stocking level of this stand. The stand has a current stocking of 68%, with a BA of 74.3sq.ft. and 191 trees/acre. The volume of this stand is 0.837 bdft/acre and 9.4 cords/acre.

Prescription
The stand is made up of portions of the edge of the tract as well as interior peninsulas of timber surrounded by water. The majority of this area will likely not be in harvest area because of its proximity to water and because there is no access. Areas that are just along the roads or trails included in this stand may be selectively harvested if they are near trails or they may be included in the even aged management of the rest of the tract. Monitor invasive species and targeted control where needed.

C5T5 Open Land – 17 ac

Current Condition
There are two areas that make up these 17 acres, the first being the area along the fire trail and horse trail that run the entire northern boundary of the tract and the second being the Reservoir 29 Dam. These areas consist primarily of grasses with some woody vegetation starting to grow in.

Prescription
The areas along the northern portion of the tract will be maintained as a wildlife opening through periodic mowing to control woody vegetation.

The Reservoir 29 dam will also be maintained as an opening but will be kept completely void of woody vegetation by use of fire or herbicide treatment. This is to remain in compliance with dam safety regulations.

Tract Summary

Control of ailanthus should be conducted as soon as possible as a targeted species.

The majority of the forest edge stand has too difficult of access and too poor of species composition be harvested. The open lands will remain as wildlife openings. The interior portions of the tract will be harvested using even and uneven aged management systems.

As long as harvesting operations are not conducted during wet periods and skidding and hauling equipment remain in designated areas, there should not be any long lasting negative impacts to the soil. Wildlife habitat, timber quality, and biodiversity should be enhanced as a result of the proposed harvesting and TSI operations.

The tract would need to be closed to the public during harvesting operations. Therefore, hunting and fishing activities would be adversely affected during this period. However, there are numerous locations in the surrounding property that offer the same opportunities.

Proposed Activities Listing

Proposed Management Activity	*Proposed Date*
Skid Trail / Log Yard Construction	
Pre-Sale TSI/Invasives control	2014-2017
Timber Marking	2014- 2024
Harvest	2015-2025
Close Out	
TSI (Post-Harvest)	
Re-Inventory	2033

Attachments

Attach the following items.

- Maps (Inventory, Tract, Exotics)
- Ecological Review
- T Cruise reports

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