Indiana Department of Natural Resources—Division of Forestry

RESOURCE MANAGEMENT GUIDE

State Forest: Greene-Sullivan Compartment: 9 Tract: 12
Forester: Tom Tompkins Date: 4/16/13
Management Cycle End Year: 2033 Management Cycle Length: 20 Years

Location

Compartment 9, Tract 12 is located near the center of Section 18 – T6N – R7W of Greene County. The area is approximately 3/4 of a mile south east of the town of Pleasantville.

General Description

Tract 12 is approximately 38 acres. The various land use components can be delineated as follows:

Closed Canopy Forest – 18ac
Forest Edge – 13ac
Water/Riparian Areas – 7ac

Five small unnamed lakes make up the seven acres of water within this tract. The north one half of the tract is strip mine banks while the south one half is newer reclaimed ground. Reforestation in these areas 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

The majority of the land area of the tract was deeded to the state forest in 1949 from Central Indiana Coal Company. The area was mined from 1936-1940 as part of the Allandale Mine. The more recent mining areas around the edges of the tract were mined from 1965 to 1975 as part of the Hawthorne Mine and were deeded to the state in 1975 from Peabody Coal Company.

Boundary and Landscape Context

Tract 12 is bordered by private property on the south and west sides. The west border is County Road 900 E and the east boundary is a fire lane and Frank Lake. The tracts are surrounded by forested area. Pleasantville lies less than a mile to the northwest and reclaimed, un-forested mine land lies to the south.

Topography, Geology and Hydrology

Spoil banks running within the tract curve following the shape of the eastern boundary of tract 11. Tract 12 contains 5 unnamed lakes.

Soils

All of the soils within the tract are composed of mine spoils.

St/FcG - Strip mines
86.25Acres
Component: Strip mines (90%)
This component is on spoil piles. Slopes are 18 to 35 percent. The parent material consists of Loamy materials overlying graded shaly regolith. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Access

These tract can be accessed from the fire trail either from Pleasantville road, or County Road 900 E. The more recently mined areas are flat enough to allow good skidding without constructing trails.

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

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: Reclaimed Mine Land	☐	☐	☐	☒	☐	☐	☐

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 and reclaimed mine lands. Virtually every habitat type above 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

Diameter (DBH) Distribution	Goal	C9T12
Including at least this many snags per acre ≥ **5”**:	4	35.9
Including at least this many snags per acre ≥ **9”**:	3	5.8
Including at least this many snags per acre ≥ **19”**:	0.5	0

Table 2 shows how the tract compares with the DoF guidelines for forest stand snag density. The data suggests that the tract greatly exceed target goals in the maintenance level for snags 0-18” but does not meet the target for trees over 19”. The outer portions of the tract consist of mostly young pole timber so the potential for large snags in these areas is low which may have brought down the entire tract average. In the near future, a post harvest TSI treatment could increase the number of standing, large diameter snags in the central portion of the tract.

TABLE 3

Diameter (DBH) Distribution	Goal	C9T12
TOTAL minimum roost trees per acre ≥**11”**:	9	15.8
Including at least this many roost trees ≥ **20”**:	3	1.3

Table 3 shows how the tract compares to the Indiana Bat guidelines for live roost trees. The inventory data suggests that the stand is deficient in the large size class. This is mostly due to the fact that the only roost species present in this size class is cottonwood; therefore most trees in the stand are below 20” diameter. Based on the inventory data, it is likely that this particular area may remain deficient for some time as trees mature.

IDNR Natural Heritage Database Review

A NHDB review was conducted and one species of special concern was located near the tract. There is one record of a bird, (American Bittern) located to the south of the tract in the open reclaimed mine lands.

Habitat

American bitterns most often breed in shallow wetlands dominated by tall emergent vegetation, including cattail marshes, wet meadows, bogs, shrubby marshes, and occasionally hayfields. When compared to the Least Bittern, the American Bittern uses a wider variety of wetland types, less densely vegetated sites, shallower water depths, and exclusively freshwater habitats.

Management

The biggest threat to the listed species is the loss of habitat. The American bittern is not a forest dwelling species therefore it will not be impacted by any proposed management activities.

Exotic/Invasive Species

Species	Management Actions (check all that apply)		Mapped?
	Immediate Management Required	Monitoring/ Re-evaluation Recommended	
Multiflora Rose	☐	☒	☐
Japanese Honeysuckle	☐	☒	☐
Autumn Olive	☐	☒	☐
Bush Honeysuckle	☐	☒	☐
Ailanthus	☐	☒	☐
	☐	☐	☐

Multiflora rose and Autumn Olive were present throughout the tract in abundance. Japanese and Bush Honeysuckle were present in small amounts throughout the tract. All of the species should be controlled prior to any harvest activities occurring in the tracts.

Recreation

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

Cultural

No cultural features were observed within this area.

Stand Descriptions and Silvicultural Prescriptions

C9T12 Mixed Hardwood Area– 18 ac (Harvest Ac – 18)

Current Condition

This stand was inventoried in March of 2011. The topography, soil map, GIS data, and old aerial photography for this area indicates that nearly the entire stand was strip mined during the 1940's. The dominant trees in this area 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 sawtimber species present in the harvest area.

SPECIES	% VOL.	% BA	Size

			Class
Red Oak	34%	10%	M - L
Shingle Oak	12%	4%	M
Hackberry	12%	4%	S - M
Cottonwood	10%	2%	M - L
Pin Oak	10%	2%	M
Black Cherry	9%	4%	M
Green Ash	7%	2%	S - M
Box Elder	3%	2%	S - M
Sweetgum	3%	2%	S - M

S = Small Sawtimber

M = Medium Sawtimber, L = Large Sawtimber

The canopy is dominated by red oak, shingle oak, hackberry and black cherry. Mid story trees consist of oaks, black locust, box elder, cherry, and ash. Regeneration is mostly elm, box elder, and ash. The species composition is poor except a few areas with quality oaks and maple. Most species have ok form and height.

Figure 3

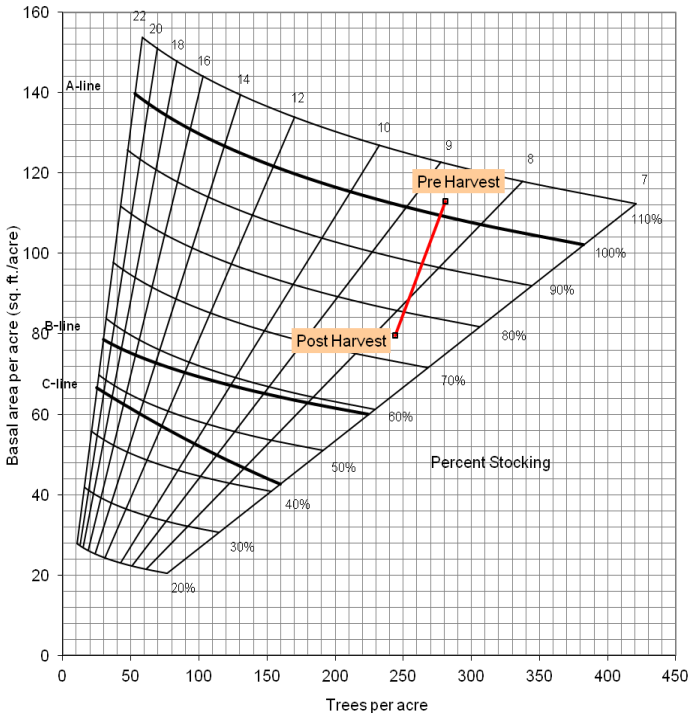

Figure 3 shows the stocking level of this stand both before and after the proposed timber harvest. The stand has a current stocking of 103%, with a BA of 112.9 sq.ft. and 281 trees/acre. The volume of this stand is 2,729 bdft/acre. After the harvest the stand will have a stocking of 75% with a BA of 79.5 sq.ft. and 244 trees/acre.

Prescription

The main objective in this stand should be to remove poor form and undesirable species to release crop trees expected to maintain good growth for the next 25 years. This can be accomplished by selectively marking throughout the 18 acres. In areas with large amounts of poor quality or undesirable trees group selection openings can be created to regenerate the areas.

The inventory suggests that at least 19,370d.ft. could be harvested from this stand. Overall, the majority of the sawtimber volume would be comprised of cottonwood (25%), pin oak (24%), green ash (19%), hackberry (12%), and sweetgum (8%). The rest of the harvest will consist of shingle oak and black cherry. Primary crop trees include oaks and red maple. The harvest should result in a residual stocking of 75%, 79.5 ft² BA, 244TPA, and 1,653 bd.ft./ac. The harvest should be conducted along with C09T11.

Pre harvest TSI should consist of invasive species control throughout all portions of the tract. Post harvest TSI may consist of crop tree release, cull removal, vine control, and follow up invasive control.

C9T12 Forest Edge Area– 13 ac (Harvest Ac – 0)

Current Condition

This stand was inventoried in March of 2011. The topography, soil map, GIS data, and old aerial photography for this area indicates that nearly the entire stand was strip mined during the 1960's to 70's. The dominant trees in this area are approximately 30 years old. Listed below is a table showing size classes and the percentage by volume and basal area (BA) of the major sawtimber species present in the harvest area.

SPECIES	% VOL.	% BA	Size Class
Cottonwood	28%	5%	M - L
Red Oak	20%	5%	M
White Pine	14%	2%	S - M
Shingle Oak	9%	0.5%	L
Sycamore	7%	2%	S
Black Cherry	6%	2%	S
Sweetgum	6%	2%	S
Hackberry	5%	2%	S
Virginia Pine	5%	2%	S

S = Small Sawtimber

M = Medium Sawtimber, L = Large Sawtimber

The canopy is dominated by black locust, cottonwood, and red oak. Mid story trees consist of oaks, black locust, box elder, elm and red maple. Regeneration is mostly elm, box elder, oaks and ash. The species composition is poor except a few areas with quality oaks and maple. Most species have ok form and height.

Figure 4

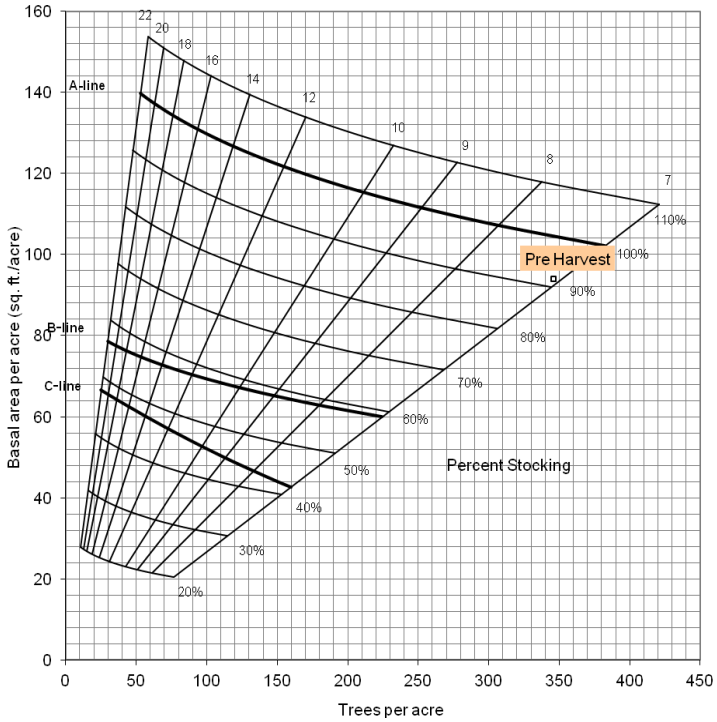

Figure 4 shows the stocking level of this stand. The stand has a current stocking of 92%, with a BA of 94 sq.ft. and 346 trees/acre. The volume of this stand is 1,204 bdft/acre.

Prescription

The inventory suggests that no harvest is needed in this area at this time. TSI operations may be conducted to remove undesirable species and release some of the crop trees as well as control invasives and vines.

Summary

Control of ailanthus should be conducted as soon as possible.

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 tracts would need to be closed to the public during harvesting operations. Therefore, hunting 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	2019 - 2020
Pre-Sale TSI	2019 - 2020
Timber Marking	2019 - 2020
Harvest	2020 - 2022
Close Out	2021 - 2022
TSI (Post-Harvest)	2021 - 2023
Re-Inventory	2033

Attachments

Attach the following items.

- Maps (Inventory, Tract, Exotics)
- Ecological Review
- T Cruise reports
  - Harvest/Leave Summary Reports (Per Acre & Total)
  - Indiana Bat Habitat Guidelines