Indiana Department of Natural Resources – Division of Forestry

RESOURCE MANAGEMENT GUIDE

State Forest: Greene-Sullivan Compartment: 9 Tract: 11
Forester: Tom Tompkins Date: 4/16/13
Management Cycle End Year: 2033 Management Cycle Length: 20 Years

Location

Compartment 9, Tract 11 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.

DRAFT

General Description

Tract 11 is approximately 105acres. The various land use components can be delineated as follows:

Closed Canopy Forest – 103ac
Water/Riparian Areas – 2ac

Two small unnamed lakes and a small water hole make up the two acres of water within this tract. The central and western portion of the tract consists of old strip mine spoil banks and the outer edges of the tract consist of reclaimed strip mine banks from more recent mining. 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 11 is bordered by State Forest property on all sides; the western boundary is a fire trail running north south from the Frank Lake boat ramp. The north boundary is a drainage and Frank, Juniper, and Plum Lakes. The east and south boundaries are a drainage containing a couple small unnamed lakes. The tract is 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. Frank, Juniper and Plum lakes lie along the north boundary of tract 11 and a drainage makes up the eastern and southern boundaries containing a few small 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

This 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. A system of trails already exists within the interior of the tract with many trails running east-west.

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	Target Snag Density: Goal	Target Snag Density: C9T11
Including at least this many snags per acre ≥ **5”**:	4	33.6
Including at least this many snags per acre ≥ **9”**:	3	10.9
Including at least this many snags per acre ≥ **19”**:	0.5	0.2

Table 2 shows how the 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 target for snags 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	Preferred Roost Trees per Acre: Goal	C9T11
TOTAL minimum roost trees per acre **≥11"**:	9	15.6
Including at least this many roost trees **≥ 20"**:	3	2.1

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 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): 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. Ailanthus was found in three areas within tract 11, one area was very large (1-2 acres with trees up to 18"), and these were mapped during the inventory. Control of the ailanthus should be done as soon as possible to reduce spread. Other species should receive treatment prior to harvest activities.

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

Cultural
No cultural features were observed within this area. If present their location is protected. Adverse impacts to significant cultural resources noted will be avoided during any management or construction activities.

Stand Descriptions and Silvicultural Prescriptions
C9T11 Mixed Hardwood– 60 ac (Harvest Ac – 60)

Current Condition

This stand was inventoried in April of 2013. The topography, soil map, GIS data, and old aerial photography for this area indicates that nearly the entire stand was strip mined during the early 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
Black Cherry	42%	26%	M-L
Cottonwood	18%	7%	M-L
Red Maple	7%	5%	S - M
Hackberry	7%	7%	S - M
Sycamore	6%	4%	M
Pin Oak	6%	4%	M - L
Black Walnut	4%	2%	M
White Ash	3%	2%	S - M
American Elm	2%	2%	S

S = Small Sawtimber; M = Medium Sawtimber; L = Large Sawtimber,

The canopy is dominated by poor quality black cherry and cottonwood. Mid story trees consist of maple, hackberry, black locust, box elder, elm, ash and red maple. Regeneration is mostly box elder, elm and ash. The species composition is very poor, except for a few scattered oaks and walnut. Most species have poor form and height and the cherry appears to be declining.

Figure 1

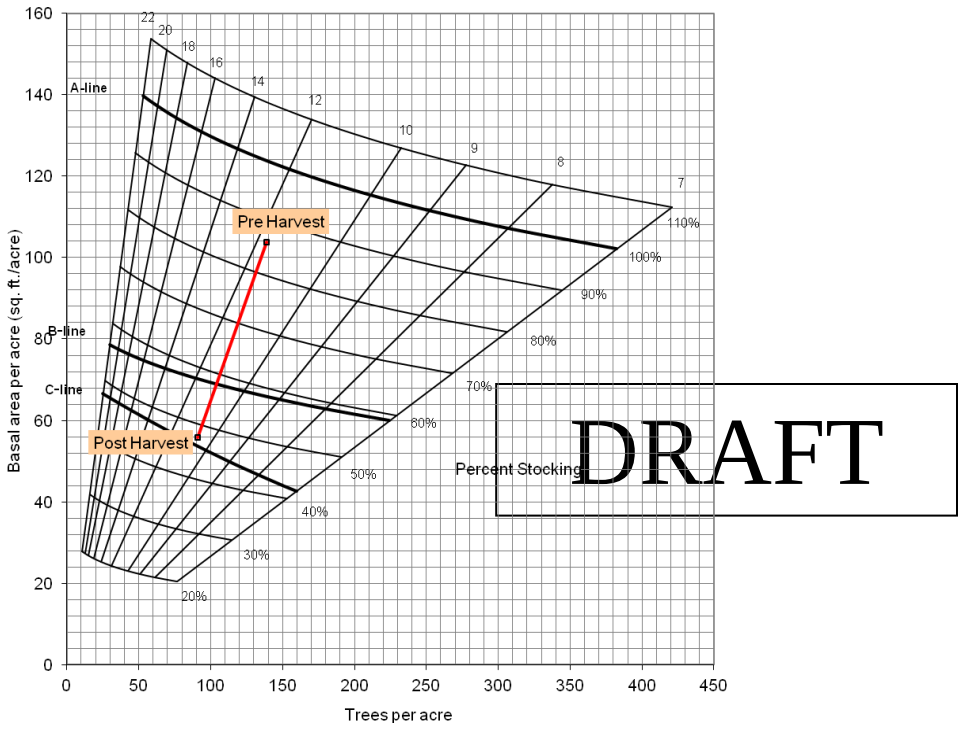

Figure 1 shows the stocking level of this stand both before and after the proposed timber harvest. The stand has a current stocking of 86%, with a BA of 103.8 sq.ft. and 139 trees/acre. The volume of this stand is 4,565 bdft/acre. After the harvest the stand will approach a stocking of 46% with a BA of 55.8 sq.ft. and 91 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 60 acres. In areas with large amounts of poor quality or undesirable trees group selection openings can be created to regenerate the areas. Marking should focus on removing cherry that are dying and trees/species that have poor form or are undesirable. It is also possible, with adequate resources, that a large portion of this stand could be harvested in a regeneration opening with the goal of invasives control and replanting to a more desirable species composition.

The inventory suggests that at least 126,060bd.ft. could be harvested from this stand. Overall, the majority of the sawtimber volume would be comprised of black cherry (38%), cottonwood (32%), red maple (7%), white ash (7%), elm (5%) and pin oak (5%). The remainder of the volume would be comprised of box elder and hackberry. Primary crop trees include cherry, walnut and oaks. The harvest should result in a residual stocking of 46%, 55.8 ft² BA, 91TPA, and 2,411 bd.ft./ac.

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, opening completion and follow up invasive control.

C9T11 Reclaimed Area– 43 ac (Harvest Ac – 43)

Current Condition

This stand was inventoried in April of 2013. 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	24%	10%	M - L
Red Maple	20%	14%	M
Red Oak	13%	7%	S - M
Pin Oak	12%	5%	M - L
Black Cherry	11%	7%	S
White Pine	10%	3%	M
Black Walnut	4%	2%	S - M
White Ash	3%	3%	S - M
Black Oak	3%	2%	S - M

S = Small Sawtimber; M = Medium Sawtimber, L = Large Sawtimber

The canopy is dominated by black cherry, black locust, red maple, cottonwood and ash. Mid story trees consist of oaks, black locust, box elder, elm and red maple. 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 average form and height.

Figure 2

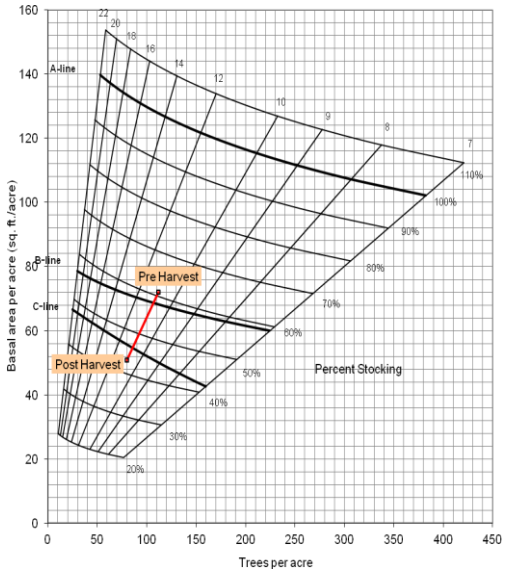

Figure 2 shows the stocking level of this stand both before and after the proposed timber harvest. The stand has a current stocking of 62%, with a BA of 72 sq.ft. and 112 trees/acre. The volume of this stand is 2,773 bdft/acre. After the harvest the stand will have a stocking of 44% with a BA of 50.8 sq.ft. and 80 trees/acre.

Prescription
The inventory suggests that no harvest is needed in this area at this time. However on the ground observation found that some areas may benefit from a very light thinning. This thinning would concentrate on removing undesirable species and trees with poor form, releasing oaks and other quality crop trees.

The inventory suggests that at least 20,340bd.ft. could be harvested from this stand. Overall, the majority of the sawtimber volume would be comprised of red maple (45%), cottonwood (35%), and white ash (20%). Primary crop trees include oaks and cherry The harvest should result in a residual stocking of 44%, 50.8 ft² BA, 80 TPA, and 2,300 bd.ft./ac. The marking forester may also choose to exclude this area from the harvest area and allow it to grow and mature on its own.

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.

Summary
Control of ailanthus should be conducted as soon as possible.

Harvesting in Tract 11 should occur with a harvest in tract 12. 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*
Ailanthus TSI	2013 - 2014
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

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.