Pike State Forest – Compartment 12, Tract 6
RESOURCE MANAGEMENT GUIDE

Location
This tract is located in Pike County, Sections 13 & 14, Township 2 South, Range 7 West, approximately 4 miles southeast of Winslow.

General Description
Compartment 12, tract 6 consists of approximately 146 acres. The entire tract is classified as part of the hardwood stratum. There are no areas that would be considered non-timbered. There were no areas that the inventory identified to be primarily pine, but the aerial photo does identify a small amount of pine near the southern tract boundary. There are no openings, water bodies, mined areas, etc.

History
This tract is comprised of several separate purchases. The first parcel was purchased from the Board of Commissioners of Pike County in 1935. The second parcel was purchased from the Ellis estate in November 2001. The newest parcel was purchased from the Ellis estate in September 2003.

Landscape Context
Surrounding landscape is a rural setting. Cover types consist of forested, water, farmland, or open reclaimed mine areas. The town of Winslow is about 4 miles away to the northwest.

Topography, Geology and Hydrology
The tract has varied topography with ridgetops, bottomland areas, and slopes up to 30%. The tract consists of a primary ridge trending southeast, east, and northeast, with finger ridges coming off of this main ridge. The bottomland areas tend to be near the tract edges, particularly the northwest and east tract boundaries. A mapped intermittent stream is located along the northwest boundary of the tract, and the east boundary borders a swampy area. Pike tends to not have exposed bedrock except in areas that have been mined. There were few or no indications of exposed bedrock in this tract.

Soils
Belknap silt loam, frequently flooded (Bg)
This is a deep, somewhat poorly drained soil located on broad flood plains. It is flooded for brief or long periods during winter and spring. Available water capacity is very high. Permeability is moderate, and surface runoff is slow. Most areas of this soil type are used for cultivated crops but are also well suited to trees. Capability class is IIw and woodland ordination symbol is 6A. All woodland management concerns for this class are “slight” and the site index is 75.

Gilpin silt loam, 15-30% slopes (GnE)

This is a strongly sloping, moderately deep, well drained soil located on side slopes on uplands. Available water capacity is low, permeability is moderate, and surface runoff is rapid. The soil is fairly well suited to trees with primary management concerns being equipment limitation and erosion hazard. The soil has a capability class of VIe and the woodland ordination symbol is 4R. Management concerns are moderate for erosion and equipment limitation, and slight for seedling mortality and windthrow hazard. Site index is 80.

Wellston silt loam, 15-30% slopes (WeE)
This is a strongly sloping to steep, deep, well drained soil located on sideslopes in uplands. Available water capacity is high, permeability is moderate, and surface runoff is rapid. The soil is fairly well suited to trees with primary management concerns being hazard of erosion, equipment limitation, and plant competition. The soil has a capability class of Vie and the woodland ordination symbol is 4R. Management concerns are moderate for erosion and equipment limitation, and slight for seedling mortality and windthrow hazard. Site index is 71.

Zanesville silt loam, 2-6% slopes (ZaB)
This is a gently sloping, deep, moderately well drained soil located on ridgetops in uplands. Available water capacity is moderate, permeability is moderate above the fragipan and slow in the fragipan, and surface runoff is medium. A fragipan is located at a depth of 24 to 36 inches. This restricts the downward movement of water and creates a perched water table above the fragipan in winter and early spring. The soil is fairly well suited to trees. It has a capability class of IIe and a woodland ordination symbol of 4A. All woodland management concerns for this class are “slight”. Site index is 68.

Zanesville silt loam, 6-12% slopes (ZaC3)
This is a moderately sloping, deep, moderately well drained soil located on sideslopes in uplands. Available water capacity is moderate, permeability is moderate above the fragipan and slow in the fragipan, and surface runoff is rapid. A fragipan is located at a depth of about 24 inches. This restricts the downward movement of water and creates a perched water table above the fragipan in winter and early spring. The soil is fairly well suited to trees. It has a capability class of IVe and a woodland ordination symbol of 3D. Management concerns are moderate for seedling mortality and slight for erosion hazard equipment limitation, and windthrow hazard. Site index is 60.

Zanesville silt loam, 12-18% slopes (ZaD3)
This is a strongly sloping, deep, moderately well drained soil on narrow side slopes in uplands. Available water capacity is moderate, permeability is moderate above the fragipan and slow in the fragipan, and surface runoff is rapid. A fragipan is located at a depth of about 24 inches. This restricts the downward movement of water and creates a perched water table above the fragipan in winter and early spring. The soil is fairly well suited to trees with primary management concerns being erosion hazard, equipment limitation, and seedling mortality. It has a capability class of VIe and a woodland ordination symbol of 3D. Management concerns are moderate for erosion hazard,

equipment limitation, seedling mortality, and slight for windthrow hazard. Site index is 60.

Access
This tract has very good access. The tract shares a firelane as a common boundary with Compartment 12 Tract 5 to the south and can be used to access either tract for management activities. A portion of the firelane was an old county road and is currently soft and rutted in a few places. It would be beneficial to have some rock spread to firm it up. Equipment should be able to access most of the tract easily, since most of the finger ridges tend to join up with the main ridge containing the firelane.

Boundary
This tract is entirely surrounded by other state forest property; therefore it shares no boundaries with private property or other agencies. The boundary follows topographic features. A drainage delineates the north boundary for its entire length. A railroad grade designates the east boundary for its entire length. The south boundary is a firelane for the western portion and a drainage for the eastern portion.

Wildlife
Turkey, deer, rabbits, songbirds, Blue herons, and a Bald eagle were observed. See the "communities" section for a discussion of rare, threatened, or endangered wildlife that may be utilizing this tract.

In terms of Indiana Bat habitat, the inventory determined there were a total of 1,758 live trees of 11"+ DBH and 411 trees of 20"+ DBH of preferred species. These numbers exceed the live tree requirements of 1,314 trees of 11"+ DBH but fail to meet the requirement of 438 trees of 20"+ DBH. This means that 444 live trees of 11"+DBH would be available for removal in a harvest, but there would be a deficiency of 27 trees of 20"+ DBH. The inventory determined that there were a total of 124 snag trees of 9"+ DBH and 45 snag trees of 19"+ DBH of preferred species. These numbers are less than the required 876 snags of 9"+ DBH and 146 snags of 19"+ DBH. This means that cutting of up to 444 live trees of a desirable species <20" should not cause harm to Indiana bats. Although according to the data live trees of 20"+ DBH should not be harvested, there is opportunity to increase the numbers of these larger trees with some commercial thinning and/or TSI. It is standard policy to avoid cutting snags, and in fact post harvest TSI could increase the number of snags for habitat.

Communities
Two species of rare, threatened, or endangered species are listed as being in this tract. The species listed are the Yellow-crowned Night-heron *(Nyctanassa violacea)* and the Blue Scorpion-weed *(Phacelia ranunculacea)*.

The Blue Scorpion-weed has a global rank of apparently secure (G4) but has an Indiana state ranking of critically imperiled (S1). There is limited information available about the species. Its listed habitat is riverine woods and moist alluvial forests. Excessive canopy gaps could cause heating and drying of the forest floor, which could have a negative

impact on the species. Management activities should avoid disturbance in the small area of the tract where this plant occurs.

The Yellow-crowned Night-heron has a global rank of secure (G5) but has an Indiana state ranking of imperiled (S2). There is not a specific location identified on the heritage database review, but the habitation area may be near or within this tract. Its habitat is listed as being in areas near water. In this particular location, its preferred habitat includes riparian and forested wetlands. There is a wetland in an adjoining tract which would fulfill this habitat requirement. It also feeds in shallows, wetlands, and along ponds and rivers. Avoiding disturbance to the designated habitat should not pose a problem. Proposed management activities in this tract are constrained to ridge tops and slopes that do not adjoin the wetland.

Recreation
Recreation uses in this tract would include hunting, hiking, etc. Pike receives heavy use by hunters, and a hunting stand was noted to be in this tract. The firelanes in this tract facilitate usage by users on foot. There is potential for expansion of recreational use in this tract. There is potential for the horse trail system to be expanded through this tract, due to the purchase of Ellis property to the south. There is some unauthorized recreation use of ATVs on the east boundary of this tract. The old railroad grade is being used by the ATVs.

Cultural
No cultural resources were identified during this inventory.

Tract Subdivision Description and Silvicultural Prescription

Hardwood
Approximately 146 acres (100%) of the tract is included in the hardwood stratum. The inventory data estimates the hardwood stratum contains 5,870 bd. ft. per acre of sawtimber volume, a total of 857,130 bd. ft. Harvest volume was estimated to be 2,230 bd. Ft. per acre, a total of 324,910 bd. Ft. This number is probably artificially high. Residual volume was estimated to be 3,650 bd. Ft. per acre, a total of 532,220 bd. Ft. Attached stocking guide illustrates that the current number of trees and basal area in this stratum corresponds to a 79% stocking. Harvesting based upon the trees that were selected in the inventory would reduce this stocking to 63%.

Yellow poplar and White oak are the most predominant species in the tract. Together they account for 44% of the total tract volume. Other common species include Pignut hickory, Shagbark hickory, Sweetgum, Scarlet oak, Black oak, and Red oak. A portion of this tract was purchased in 1937, but a majority of it was purchased from the Ellis estate in 2003. The new acquisition has obviously been cut hard and without follow up TSI. The result is generally lower quality stands in those areas. During some inventory points, it was noted that an “opening” of sorts had been created but all the sawtimber beech had been left. This indicates high-grading. In another area, an “opening” had been created, but the only species remaining tended to be young Dogwood and Blackgum.

The harvest data supplied in the above paragraph may not be "practical" harvest amounts. One reason is because some of these areas needed to be thinned, but the thinning is not necessarily commercial. The tract tends to have areas with few or no trees to harvest contrasted with other areas where an opening was prescribed, or an individual tree selection of several trees per acre. Also, there are questions of excessive wetness, access, or rare, threatened, and endangered species concerns. These concerns limit the identified potential harvest area to 58 acres out of the 146 total acres. There is also a limitation from cutting live trees 20" or larger DBH. See Indiana Bat Guidelines for clarification. There was some inadvertent benefit to the hard cutting before state acquisition. Some plots were noted to have good oak and/or cherry regeneration coming in. A few other areas have potential for oak regeneration with pre-harvest understory TSI.

Pine

There was not an official designation of a pine stratum in this tract due to very low volumes of pine indicated on the inventory. The inventory data indicated a total of 7,090 bd. ft. of Virginia pine in the tract. Most of the Virginia pine is low quality and is being replaced by native hardwoods through succession. The inventory did not have any White pine included, but White pine was noted as being near several plots. The pine does tend to be concentrated along the southern edge of the tract, along the firelane. Management of this pine could easily be included with any management activities in compartment 12 tract 5.

Summary Tract Silvicultural Prescription and Proposed Activities

Inventory data supports a prescription for a commercial thinning in this tract. Inventory indicated a thinning of 2,230 bd. ft. per acre. The total estimated harvest volume was 324,910 bd. ft., but the actual numbers are probably much lower due to reasons specified in the hardwood stratum write-up in the management guide. An opening was prescribed for two areas in the inventory. An additional opening is prescribed for the pine within the southern edge of the tract. This should be combined with pine management in compartment 12 tract 5. The general prescription for this tract is that it needs an improvement cut, TSI, or a combination of both. Some areas are not going to have potential for commercial thinning, and these areas need to be covered by TSI. Improvement work is needed with vines, opening creation within low quality timber, and crop tree release. Bat guideline limitations from cutting live trees of 20" or greater will make it more difficult to complete timber stand improvement work, since some of the larger trees left in the tract were either low quality or damaged in some way. Some could be girdled during TSI to create more snag habitat.

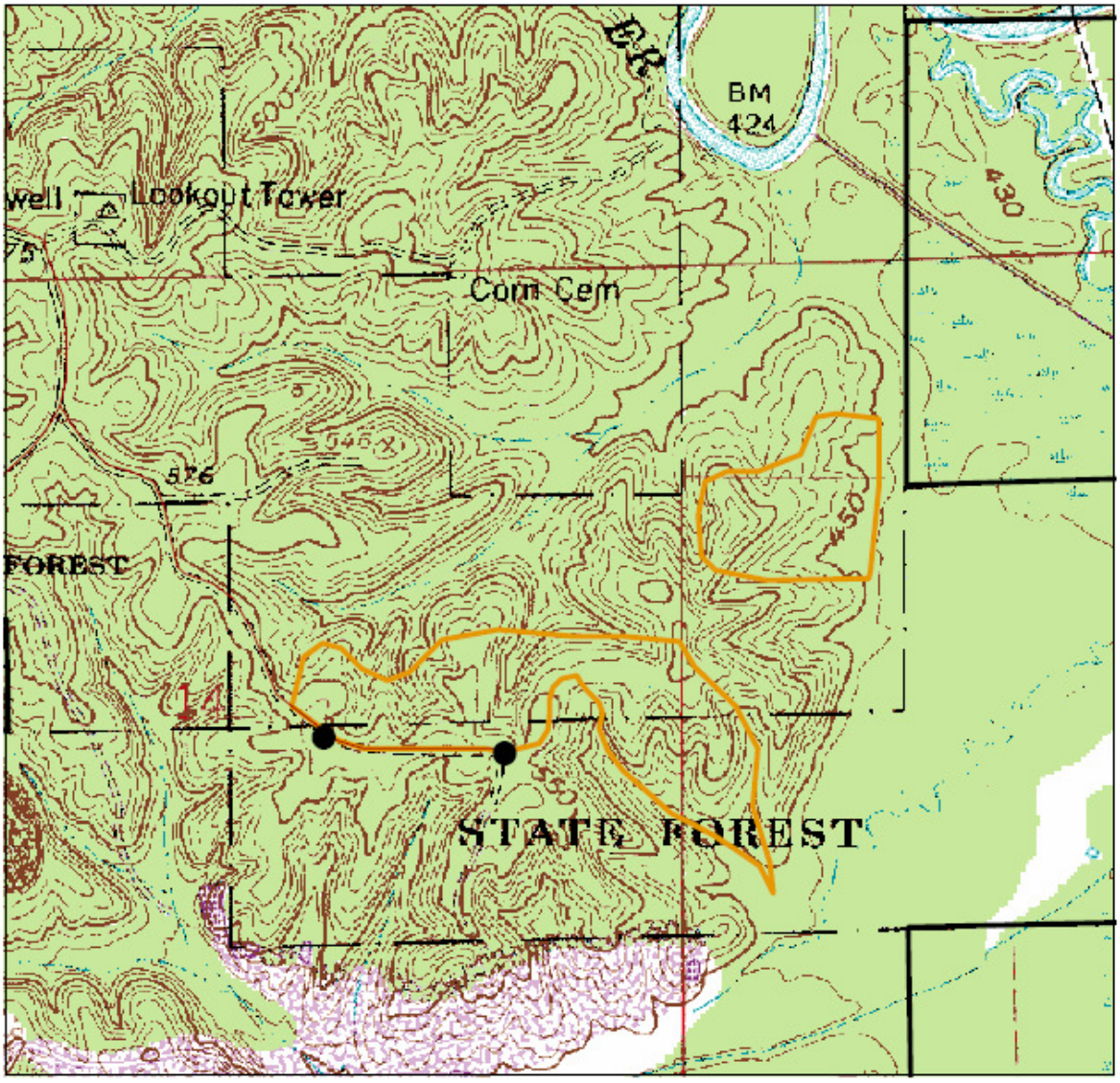
To submit a comment on this document, click on the following link:
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

You **must** indicate "Pike C12 T6" 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.

RESOURCE MANAGEMENT GUIDE

INVENTORY SUMMARY
State Forest: Pike
Commercial Forest Acreage: 146.00
Non-Commercial Forest: 0.00
Recreation Use Acreage: 0.00
Permanent Openings: 0.00
Acreage in Other Uses: 0.00
Average Site Index: 69
Average Annual Growth: 0
BA (Trees > 10"): 63.30
BA (Trees < 10"): 30.20
TOTAL AREA: 146.00 **Total BA** / **Acre** 93.50

Ferdinand/Pike State Forest
Compartment 12 Tract 6



0 0.1 0.2 0.4 Miles

Legend

- Possible Yarding Areas
- Roads
- Property Boundary
- Possible Harvest Area