Pike State Forest, Compartment 12 Tract 5
RESOURCE MANAGEMENT GUIDE

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

General Description
Compartment 12, tract 5 consists of approximately 204 acres. The tract contains hardwoods, pine, and grassy areas of reclaimed mine land. The hardwood stratum covers approximately 160 acres, and the pine stratum covers approximately 10 acres. The remaining 34 acres of the tract consist of open/grassy areas.

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 that became part of C12T5 was purchased from Herbert Cook in 1951. Additional parcels were purchased from the Ellis estate in 2003. Some vine TSI was completed in 1996.

Landscape Context
Surrounding landscape is primarily forested, water, 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 to easterly with finger ridges running north-south. Pike tends to not have exposed bedrock except in areas that have been mined.

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.

Fairpoint-Bethesda complex, 8-15% slopes (FbC)
These are moderately to strongly sloping, deep, well drained soils. They occur as mine spoil in surface mined areas on uplands that have been shaped and smoothed. Available water capacity is low, permeability is moderately slow, and surface runoff is medium or rapid. These soils are suitable for grasses and legumes. The soils are also suited to trees as long as suitable tree species are selected for the growing conditions. The soils have a

capability class of VIs but do not have a woodland ordination symbol. No site index is available.

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 good access. A portion of the northwest boundary of the tract touches the gravel county road, which is only access road to most of this portion of Pike State Forest. Also, there is a firelane that extends along the northern boundary of this tract. Several roadbeds extend down the ridge fingers from this firelane. This makes for very easy access to most of the tract. Additionally, there is currently Reclamation work going on in the new state property to the south of this tract. This reclamation work includes leaving rocked access roads in the area, which could possibly be tied in to the firelane along the north boundary of this tract. A way to cross the drainage on the south boundary of this tract will need to be devised.

Boundary

The tract boundary is almost entirely internal boundaries based upon geographic features such as ridges and valleys, as well as human created divisions such as firelanes. The northern boundary of the tract follows a county road and a firelane. The southeast portion of the tract boundary follows an old reclamation access road and a portion of an old railroad grade. The southwest portion of the boundary follows a significant drainage. There is also approximately 3/8 mile of boundary shared with private property. This is in the northwestern portion of the tract. This boundary was flagged during the inventory. There are wooden posts and signs on the two eastern corners shared with our boundary.

Wildlife

Turkey, deer, and various unidentified songbirds were either observed or heard during the inventory. 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 3,337 live trees of 11"+ DBH and 310 trees of 20"+ DBH of preferred species. These numbers exceed the live tree requirements of 1,845 trees of 11"+ DBH but fail to meet the requirement of 615 trees of 20"+ DBH. This means that 1,492 live trees of 11"+DBH would be available for removal in a harvest. The inventory determined that there were a total of 567 snag trees of 9"+ DBH and 10 snag trees of 19"+ DBH of preferred species. These numbers are less than the required 1,230 snags of 9"+ DBH and 205 snags of 19"+ DBH. This means that cutting of up to 1,492 live trees of a desirable species <20" should not cause harm to Indiana bats, but we should not cut any snags within the tract. It is standard policy to avoid cutting snags, and in fact post harvest TSI could increase the number of snags for habitat.

Communities
No rare, threatened, or endangered plants or animals were identified within this tract. However there was a Bobcat as well as a Broad-winged hawk located in neighboring tracts. It is very possible that these species could utilize this tract as part of their home range. The Broad-winged hawk is identified as foraging in edges, wet areas, open areas, woodland roads, and at margin of seasonal and permanent water. Foraging range is variable, but a 3km average diameter is mentioned for several species. That area includes all of tract C12T5. This particular area would include excellent habitat such as edges along reclaimed mine openings, permanent and seasonal water sources, state forest firelanes and access roads, closed canopy forest, and some early successional forest. The Bobcat has a home range of approximately 5 square kilometers, which could also include this tract. It requires similar undeveloped forested and edge conditions, with an emphasis on fallen logs and debris, thick undergrowth, etc. This area would provide good foraging habitat due to the reclaimed mine openings and associated edge with forested areas. The Bobcat does prefer downed trees, hollow logs, caves, etc as a den site, and prefers to change shelter daily. Caves do not form in the area and there are few areas of exposed rock, so down trees and snags, due to natural mortality, harvests, TSI, etc would provide good additional habitat.

This tract has a problem with invasive/exotic species, primarily in the vicinity of the county road. Multiflora rose and vine honeysuckle are the main problems, but some autumn olive is also present. These areas tend to also have lower quality timber. There was some treatment of the Multiflora rose and autumn olive, but more is present in the stand. A prescribed fire would help fight the exotics and promote oak regeneration in this area. A follow up treatment with herbicide should help with long term control of the exotic/invasives.

Recreation
Recreation uses in this tract would include hunting, hiking, etc. Pike receives heavy use by hunters, and hunters were observed in the tract during the inventory. 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.

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

Tract Subdivision Description and Silvicultural Prescription

Hardwood
Approximately 160 acres (78%) of the tract consists of commercial hardwoods. The inventory data estimates the hardwood stratum contains 5,930 bd. ft. per acre of sawtimber volume, a total of 948,580 bd. ft. Harvest volume was estimated to be 1,980 bd. Ft. per acre, a total of 317,090 bd. Ft. Residual volume was estimated to be 3,950 bd.

Ft. per acre, a total of 631,490 bd. Ft. Attached stocking guide illustrates that the current number of trees and basal area in this stratum corresponds to a 72% stocking. Harvesting based upon the trees that were selected in the inventory would reduce this stocking to 59%, which is almost exactly on the B-line of the chart.

White oak, Black oak, and Yellow poplar are three of the most predominant species in the hardwood stratum. Estimated White oak sawtimber volume is 229,920 Bd. ft., Yellow poplar is 219,010 Bd. ft., and Black oak is 127,770 Bd. ft., for a total of 576,700 Bd Ft. These three species account for approximately 60% of the volume in the tract. Other common species include Scarlet oak, Pignut hickory, White pine, Red oak, White ash, American beech, Sugar maple, Shagbark hickory, etc. The quality of this stratum tends to be rather low in the areas adjoining the county road. Species composition is of lower quality, smaller size, and tends to be infested with more exotics than the other areas of the tract. A prescribed fire may benefit this area. Some of the soils on this tract have a site index in the 60s, which might be good areas to concentrate on some oak regeneration. Pole oak that could be released with either commercial thinning or TSI were noted at several inventory points. The lower elevations in the tract, usually Gilpin and Wellston silt loams, were growing mixed hardwoods such as Yellow poplar, Sugar maple, American beech, etc. There did not appear to be major issues with low quality timber, and these areas should be managed on individual tree selection.

Pine

Approximately 10 acres (5%) of the tract consists of planted pine. The inventory data estimates the pine stratum contains 8,380 bd. ft. per acre of sawtimber volume, a total of 83,750 bd. ft. Harvest volume was estimated to be 2,030 bd. ft. per acre, a total of 20,260 bd. ft. Residual volume was estimated to be 6,350 bd. ft. per acre, a total of 63,490 bd. ft.

The planted pine is distributed among five different locations within the tract. These are typical ridgetop sites and are identified on the attached timber type map. White pine is the most common species within the strata, although there is some pole sized Virginia pine present. Yellow poplar and Scarlet oak are also present in the pine strata, with Yellow poplar footage being nearly equal to the White pine footage present. This indicates that some hardwoods have already managed to begin competing with the existing White pine for the future stand. Options available would be to minimize management activities in the pine, which would allow the hardwood conversion to continue at the current pace, or to create group selection openings to increase the rate of conversion to native hardwoods. Even though the pine here is not native, it does produce some wildlife benefit for species such as turkeys, owls, hawks, etc. However, no species of special concern were noted in the area that would be using the pine as habitat. There are opportunities for crop tree release and some possibilities for oak regeneration within the pine, especially in the pine growing on the Zanesville soils.

Open

The remainder of the tract consists of open areas, mostly located along the southern portion of the tract. These are either water bodies, or they are previously mined areas that have been reclaimed. The combination of closed canopy forest, open areas and edge, as

well as water sources makes an excellent wildlife habitat. There has been some tree planting in these areas, at the time of the inventory trees were dormant and survivorship could not be determined. At the south end of the tract, water impoundments were constructed as part of the reclamation process.

Summary Tract Silvicultural Prescription and Proposed Activities
Inventory data supports a prescription for a commercial thinning in this tract. Inventory indicated a thinning of 1,980 bd. ft. per acre. TSI would be beneficial in the hardwood stratum both in terms of grapevine removal and crop tree release. Also, a vine TSI would be beneficial and could be completed by property labor staff. A limited pine harvest is recommended for the tract. This harvest would include creating openings in one or two of the pine stands located in the eastern portion of the tract. This pine is growing on soils that have some possibility for supporting oak regeneration. Several inventory points indicated potential for oak regeneration if pine the pine were removed. The remaining pine in the tract could be left for wildlife purposes and habitat diversity. Also, the firelane accessing this tract has some minor rutting and pooling of water. Spreading rock will help maintain good access. Hardwood and pine harvesting could be scheduled as soon as 2009. TSI should be scheduled for after the harvest. Prescribed fire is recommended for approximately 12 acres, to be scheduled for spring 2009. The tract should have another inventory conducted in 15 years.

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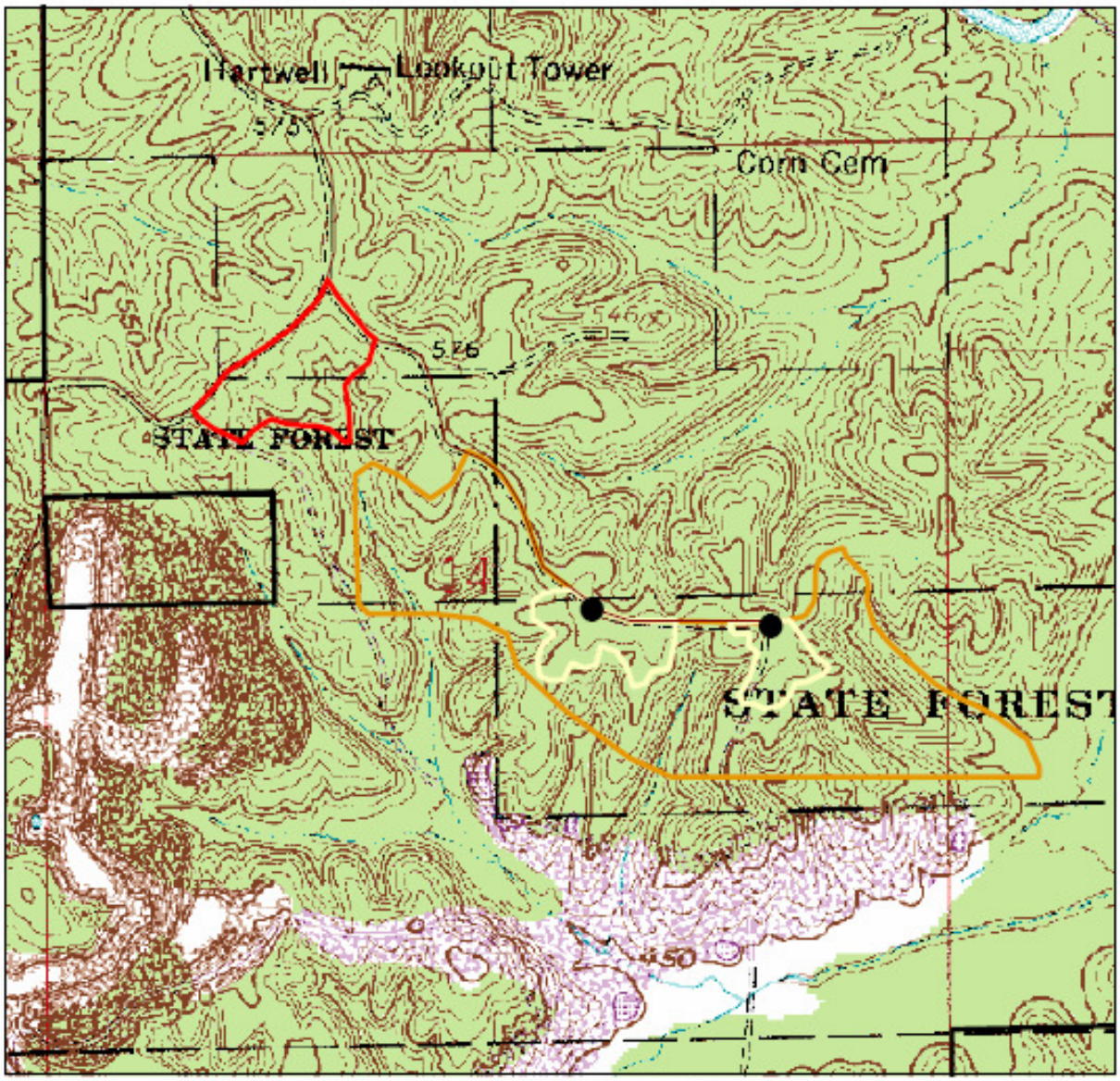
You **must** indicate "Pike C12 T5" in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

Compartment: 12
Tract: 5
Forester: Jamie Winner
Date: 7/7/2008
INVENTORY SUMMARY
State Forest: Pike
Commercial Forest Acreage: 160.00
Non-Commercial Forest: 10.00
Recreation Use Acreage: 0.00
Permanent Openings: 0.00
Acreage in Other Uses: 34.00
Average Site Index: 69
Average Annual Growth: 0
BA (Trees > 10"): 51.90
BA (Trees < 10"): 21.40
TOTAL AREA: 204.00 **Total BA** / **Acre** 73.30

Ferdinand/Pike State Forest
Compartment 12 Tract 5



Legend

- Yard
- Property Boundary
- Roads
- Possible Pine Harvest
- Possible Hardwood Harvest
- Planned Prescribed Burn

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0 0.125 0.25 0.5 Miles