

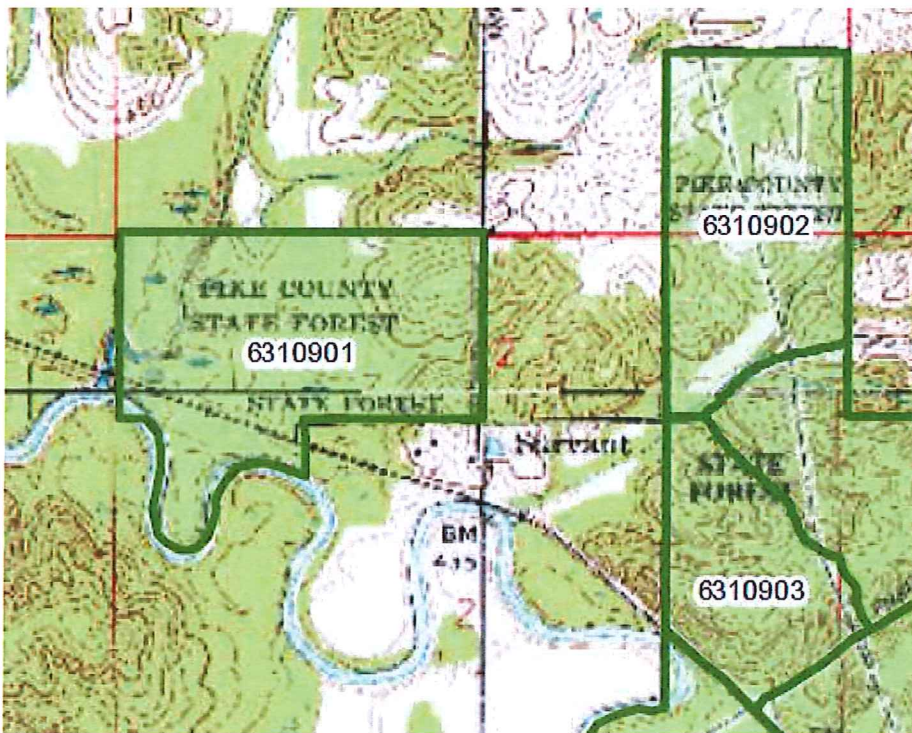
Indiana Department of Natural Resources
Division of Forestry
DRAFT

RESOURCE MANAGEMENT GUIDE

State Forest: **Pike**
Tract Acreage: **91**
Forester: **Doug Brown**

Compartment: **09** Tract: **1**
Commercial Forest Acreage: **81**
Date: 8/7/2012

Location: This tract is located in Sec. 2, T2S, R7W in Pike County. It is about 2.5 miles east of Winslow and adjacent to the platted, but vacated, town of Survant.



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Note: Some graphics may distort due to compression.

FORESTER'S NARRATIVE

Location: This tract is located in Sec. 2, T2S, R7W in Pike County. It is about 2.5 miles east of Winslow and adjacent to the platted, but vacated, town of Survant.

General Description: About 75% of this tract lies in the bottoms of the Patoka River and a tributary, Lick Creek. The rest is a west slope coming off CR 650E to the bottoms and the rest of the tract. Lick Creek runs through the tract as does the railroad tracks creating some access issues beyond just flooding and soil conditions. An old county road serves as a firelane through the tract but it is often too wet to be driven.

History: This tract was purchased in two separate parcels. The first parcel, the east 36 acres, was purchased in a sheriff's sale in 1934 from Mahlon and Malinda Brown. It was part of a larger purchase that also included parts of Compartment 11, Tracts 1, 2, 3, and 4. This purchase totaled 265.31 acres and averaged about \$12.58 an acre. The second parcel, the west part including the oxbow below the railroad tracks, was purchased in 1935 from the Pike County Board of Commissioners.

The only early record of management is a planting map from 1938 that showed 11.5 acres in the northeast and southeast corners. They were planted to jack, red and shortleaf pines.

Rick Burgeson inventoried the tract and wrote a management plan in 1971. He noted red and Virginia pine in the east half, sawtimber in the bottom east of Lick Creek (about 26 acres) and mostly "river birch, junk and briars" in the rest. He estimated about 2500 board feet/acre on the sawtimber area and recommended a sawtimber improvement cut in about 5 years on the sawtimber area.

In 1976 Steve Brandsasse sold some pine trees (80 or 99 depending on the record) for \$271. These would have come off the east end of the tract "inside area bounded by Firelane 14".

In 1981, Janet Eger inventoried and wrote plans for C. 1, T. 1A and 1B. In 1A (west of the firelane), she found about 3075 board feet/acre on 42 commercial acres. She noted a lower basal area and growth rate than expected on a bottomland site. She also recommended a sale of 10 – 12 acres in the middle of the tract. This would be a "regeneration harvest consisting of an opening and single tree selection". In 1B (east of the firelane) she found about 1464 board feet/acre on 22 acres of commercial forest. The other 18 acres was in pine. She made no recommendations but noted the "1/4 – 1/2 A opening" in the red pine, assumed to be from the

1976 sale. She also noted the heavy honeysuckle in the Virginia pine and commented on the overall poor and small size of any hardwoods in the tract.

After amending the management plan due to storm damage and new information on bottomland management, Janet Eger and Ben Hubbard had a sale covering 25 acres and removing 284 trees containing 49,148 board feet. Most of this volume was in silver maple (50%) followed by Shumard oak (13%), sycamore (12%) and pin oak (11%). The sale objectives, per the amended plan, were to remove the storm damaged trees and reduce the basal area to 50 – 60 feet to encourage advanced regeneration.

In 1983, Charlie Keller and staff completed the post harvest TSI, including completing a 4 acre opening.

In 1998 John Zvirblis did an inventory and plan for a combined C. 1, T. 1. He found an average of 5100 board feet/acre on 59 acres of commercial forest after excluding 22 acres for lack of access, 6 acres of pine and 3 acres in the railroad right of way. His basal area was high at 117 square feet but it was felt at the time that both the volume and basal area were too high. He noted the presumed location of the 4 acre regeneration opening and stated there was a stand of “post and pole to small sawtimber sweetgum, red maple, and pin oak”. He also noted the heavy concentration of a bottomland grass, broadleaf uniola, that may have been retarding tree regeneration in the opening. John recommended a precommercial TSI and vine control and to re-evaluate the tract in 10 years.

In 1998, due to the combination of Pike and Ferdinand State Forests the tract was renamed Compartment 9, Tract 1.

In 1999, Pike personnel completed a vine TSI over the entire tract.

Landscape Context: This tract is an isolated tract at Pike but other State Forest land is within $\frac{3}{4}$ of a mile south and $\frac{1}{4}$ mile to the east. Sections of the Patoka River National Wildlife Refuge are nearby as well. The bottoms part of this tract is part of a much larger bottoms stretching along the Patoka River west into Gibson County and east past Pikeville. The private lands in the area are mostly wooded or small ridge top fields with scattered homesites. Very little agriculture is within one mile of the tract and the only urban area is Winslow, 2.5 miles to the west. There has been significant mining done in the past to the north and the south, both at least 1 mile away.

Topography, Geology and Hydrology: This part of Pike County is unglaciated and often characterized by long, narrow ridges and steep hillsides. The soils are derived by material weathered from underlying sandstone, siltstone and shale and capped by a thin layer of loess. The Patoka River has cut out a valley that is somewhat out of proportion with the size of this

small river. This tract is mostly in the bottoms next to the river and a tributary, Lick Creek, with a gentle slope rising out of the bottoms toward the ridge top to the east. The entire tract drains into either directly the Patoka River or first into Lick Creek and then the river.

Soils: There are 6 different soils on this tract. About 69 acres, or over 75% of the tract, is in soils that are frequently flooded. 13 acres are in soils that are considered eroded or severely eroded. These soils are where the pine plantations were and are now considered stable.

Belknap silt loam, frequently flooded – This is the soil that covers the most acres in the tract at about 39 acres. These are the soils that are in the second terrace of flooding and are located in the northwest corner and most of the center of the tract. Belknap soils are on slopes of 0 to 2% and obviously flood on a regular basis. The soils are somewhat poorly drained and have a site index of 90 for pin oak.

Steff silt loam, frequently flooded – This soil covers about 28 acres and is located adjacent to the Patoka River and Lick Creek. This soil is the first to get flooded and normally does flood at least once a year if not more. These soils are on slopes of 0 to 2% and are considered moderately well drained. The site index for Steff soils is 100 for sweetgum.

Gilpin silt loam – The Gilpin soils are an upland soil found on the slopes of 15 – 30%. It covers about 13 acres, all in the eastern third of the tract. About 10 of these acres are considered severely eroded. Gilpin soils are well drained and have bedrock 20 to 40 inches deep. Site index for these soils is 95 for yellow poplar.

Pekin silt loam – Pekin soils are the transition soils from the bottomland Belknap and the upland Gilpin. They are on slopes from 2 to 6% and cover about 4 acres. They have a fragipan at a depth of 24 to 38 inches. They are moderately well drained and the site index is 70 for white oak.

Hosmer silt loam – Hosmer soils are an upland soil found on the ridge tops. There are two areas with this soil, one on each of the east corners. It covers about 3 acres and all of them are considered eroded. The slope ranges from 2 -6% and it has a fragipan at a depth of 20 to 36 inches. These soils are moderately well drained and have a site index of 68 for white oak.

Bonnie silt loam, frequently flooded – This is the last soil type on the tract covering about 2 acres. This soil is located along the south line of the middle of the tract. It is bordered by Steff and Belknap soils. These soils are considered to be backswamp areas on flood plains. Slopes are from 0 to 1% and they are poorly drained. Besides being frequently flooded they are also frequently ponded. Part of this area has water ponded on it most, if not all, year. Site index is 90 for pin oak.

A very small part of the tract is in the Patoka River. This in addition to rounding contributes to the above acreages not being equal to the tract acreage.

Access: Access to this tract is very good as CR 650E forms the east boundary. Truck transportation is possible from there to the north and possibly the east, but the Iron Bridge to the south limits heavy truck use in that direction. Within the tract an old county road runs along the south line from 650E forming the boundary with Survant. This road runs about ¼ mile west, then turns north for ¼ mile. At this point, the old road continued north but is not passable. The current road turns to the east and returns to 650E. No one questions this last section is a property firelane and it is gated off at the county road. The county does not claim the first two sections and insists that road is not public. I have tried recently and it was also tried in the past to gate the road either at 650E or a short distance in at the western end of Survant. At this point the road only accesses State land and a single private landowner south of the road. However, this landowner refuses to cooperate and insists the road is still public. Consideration has been given to putting a gate where the road turns to the north but this has not been done. Nevertheless, the entire road is seasonally wet and has soft, muddy spots. More than one careless driver has had to be pulled out of these mudholes.

Boundary: The east boundary is CR 650E. The old county road makes up the first quarter mile of the south line and the Patoka River marks most of the rest of the line. There was not any evidence noted for a short jog between the road and the river. There was also not any evidence noted on the west line. The north line is partially marked by the firelane and occasionally a faint tree line west of the road. None of the lines were marked during this inventory.

Wildlife: Wildlife signs noted during the November 2011 to January 2012 inventory included plenty of deer sign, rabbits and birds including pileated woodpeckers and buzzards. Other common wildlife should be expected as well including raccoons, opossums, coyotes, turkeys and numerous other species. Along the river or during flooding waterfowl is probably also present as well as river otters, fish and birds that prey on fish, such as herons. The wildlife amenities of the tract include year round water, plenty of cover, especially in the brushy, open bottomlands and breaking down pine stands, and plenty of dead, dying and den trees. Drawbacks, at least for some species, may be the seasonal flooding (turtles and other slow moving land loving species) and large areas of bottoms that have very little protective ground cover. Deer hunting activity was noted during the cruise and it is a known turkey hunting area in the past.

Current policy on managing for the federally endangered Indiana bat strives for a certain component of living and dead trees of specific sizes and species. This tract meets the live tree goal and some of the snags but falls short on the 19" + DBH snag goal. Live tree targets focus

on species that have been identified as being preferred by the Indiana bat. Species on this list found on this tract include silver maple, green ash, white ash, shellbark hickory, black locust, sugar maple, American elm and red elm. The targets are a minimum of 9 trees/acre over 11" DBH with at least 3 of these being over 20" DBH. The tract currently has 13.5 trees/acre over 11" and 3.9 trees/acre over 20" in these species. Snag targets are at least 3/acre over 9" DBH and .5/acre over 19" DBH. This tract currently has 6.5/acre over 9" but only .26/acre over 19".

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.

Communities: The majority of this tract would be considered a bottomland hardwood forest. Depending on elevation and canopy cover, the ground vegetation consisted of species you would expect here including grasses and spicebush. Where the canopy was opened up by storm damage the grass was quite thick. Some of the bottomland areas had denser canopy cover and there was almost no ground vegetation. Getting out of the bottoms and going up slope produced a range of vegetative communities. Species including Christmas fern, spicebush, briars and some greenbrier were present. Exotics noted included Japanese honeysuckle and multiflora rose.

Recreation: This tract is outside of the main block of the property so there are not any constructed recreational facilities except a small parking area on the northeast corner. The property is available for non developed recreation including hunting, hiking, bird watching, foraging and similar pursuits. It is known to be used for hunting, especially deer, but turkey, squirrels, raccoon and possibly waterfowl may also be hunted from time to time. Horses and ATV's are not allowed though it is known they use the tract, especially the ATV's.

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

Tract Stand Descriptions and Silvicultural Prescriptions: For description and planning purposes this tract was broken down into two stands, commercial forest and non-commercial forest.

Commercial Forest – The area that is available for commercial timber harvesting covered about 81 of the tract's 91 acres. This is everything except the 10 acres or so on the west side of Lick Creek that is not currently accessible. The commercial forest does include the area between the railroad tracks and the river because a road crosses the tracks from Survant and runs along the tracks. The ownership of this road is unknown but the railroad did use it several years ago when they replaced the bridge on Lick Creek.

This stand is carrying about 5,849 board feet of timber/acre. The majority of this volume is sweetgum (23%), pin oak (19%), silver maple (19%), red maple (13%), sycamore (11%) and yellow poplar (8%). The basal area is about 130.6 square feet/acre. The stand is quite variable since it includes the bottoms as well as the upland slope and even the old, breaking up pine stand. Part of the southwest corner has suffered from some storm damage over the last few years that has opened up the canopy but regeneration is limited due to the heavy grass established in places. Nearly everywhere the sweetgum was in poor condition, either due to maturity or beaver and/or ice damage. Much of the red and silver maple and yellow poplar is also in decline. However, the oak, primarily the pin oak, seems to be doing quite well and seems to be growing well in the area harvested in 1981. There is not a lot of oak in the upland part of the stand.

After a pre-harvest vine TSI, a harvest is prescribed for this stand. In many places once the sweetgum and damaged or poor quality maples are removed there is very little stocking left. So these areas should be considered for a regeneration cut. Areas that have a good stocking of oak or other species could be thinned to favor those trees. If the access can be worked out south of the railroad tracks then a total of about 78 acres could be harvested, the exception being a small area that seems to hold water all year. Of that 78 acres about 23 could be regenerated. Following the harvest TSI should be completed.

Non-Commercial Forest – This is the 10 acres that lies on the west side of Lick Creek. If access could be obtained this area could be harvested as well but since that is unlikely, it was separated out. This area is similar to the area on the east side of Lick Creek. It is all bottomland and the species composition is much the same. The basal area in this stand is 140 sq. ft./acre, the volume is about 8,475 board feet/acre and the average diameter is 10.4". These numbers are higher than the commercial stand but those include the upland sites as well. If anything, the storm damage was greater in the non-commercial stand.

Given the lack of access to this stand the prescription is to manage for wildlife first and timber second. Trees that provide dens or mast could be favored over other trees and exotics should be watched for.

RESOURCE MANAGEMENT GUIDE		<u>Delete</u>	<u>New</u>	<u>Print</u>
TM 901, 902, 903, 904				
State Forest:	<u>Pike</u>	Forester:	<u>Doug Brown</u>	
Compartment:	<u>9</u>	Date:	<u>8/7/2012</u>	
Tract:	<u>1</u>			

INVENTORY SUMMARY			
Commercial Forest Acreage:	<u>81.00</u>	Average Site Index:	<u></u>
Non-Commercial Forest:	<u>10.00</u>	Average Annual Growth:	<u>0</u>
Recreation Use Acreage:	<u>0.00</u>		
Permanent Openings:	<u>0.00</u>	BA (Trees > 10"):	<u>61.70</u>
Acreage in Other Uses:	<u>0.00</u>	BA (Trees < 10"):	<u>68.90</u>
TOTAL AREA:	<u>91.00</u>	Total BA / Acre	<u>130.60</u>

(Estimated Tract Volumes for Commercial Forest Area - Bd. Ft., Doyle Rule)

Species	Growing Stock	Harvest Stock	Total Volume
SWG	24360	84390	108750
PIN	73970	14800	88770
SIM	22930	64930	87860
REM	31390	29980	61370
SYC	40680	11550	52230
YEP	9100	26540	35640
ZSO	7610	0	7610
RIB	970	5840	6810
GRA	0	3800	3800
SWO	3480	0	3480
BLC	0	3260	3260
SHO	2450	0	2450
BLO	0	2070	2070
BLW	1900	0	1900
PIH	1900	0	1900
WHA	0	1710	1710
BLL	0	1200	1200
SUM	0	1050	1050
SCO	970	0	970
SAS	0	970	970
TRACT TOTALS:	221710	252090	473800

TRACT TOTALS:	<u>221710.00</u>	<u>252090.00</u>	<u>473800.00</u>
PER ACRE TOTALS:	<u>2737.16</u>	<u>3112.22</u>	<u>5849.38</u>

SILVICULTURAL PRESCRIPTION

The first priority in this tract is to control the grapevines. Since they are easier to control before the harvest it is recommended that they be treated this year.

The boundaries are pretty clear with the exception of the back, or west, line. All the boundaries should be marked however for the sake of the public and ease of management. At some point the south road needs to be resolved and if possible gated off to keep people from getting stuck and tearing up the road.

By 2015 a timber sale could be marked in the commercial area. The sale could cover about 78 acres and remove as much as 250,000 board feet. Effort should be made to favor the oaks as much as possible for release. Areas needing regeneration, especially in the bottoms, probably will not regenerate to oaks without some effort, so early successional species should be expected such as the maples, birch, ash, sycamore and cottonwood.

Following the harvest, TSI should be completed. Finishing the openings would be the most important but the area west of Lick Creek could also be checked for any improvements to wildlife habitat or any exotic problems. Oak, hickories and walnut should be favored when possible both in the bottoms and the uplands. When practical, trees to be deadened, especially those over 5" DBH, should be girdled and left as snags for wildlife.

Regeneration openings should be monitored for exotics and thinning. The bottomland sites may need thinning in as little as 5 to 8 years.

The tract should be scheduled for another inventory and plan in 2032.

SPECIFIC PRACTICES FOR ACCOMPLISHMENT

(tree planting, TSI, harvest, special product sales, wildlife habitat work, erosion control, unique areas, recreation, etc.)

Year Planned	Practice	Year Accomplished
2015-2016	Vine TSI on entire tract	
2015-16	Boundaries marked and south part of fire lane resolved. Also investigate access south of RR.	
2016	Timber Sale. As much as 78 acres and 250,000 board feet.	
2017-19	TSI	
2017-2021	Monitor openings for exotics and schedule thinnings	
2032	Inventory and management plan.	