

**Indiana Department of Natural Resources**  
**Division of Forestry**  
**DRAFT**

**RESOURCE MANAGEMENT GUIDE**

State Forest: **Pike**  
Tract Acreage: **36**  
Forester: **M. Vogel & A. Smith**

Compartment: **13**    Tract: **03**  
Commercial Forest Acreage: **30**  
Date: **1/2/2014**

**Location**

Tract 1303 is located in Pike County, Section 35, T1S, R9W, in Logan Township (Columbia, according to deed). It is approximately five miles northwest of Oakland City. The tract is accessible off of County Road 1050.

**General Description**

Tract 1303 is considered Patoka River floodplain forest. It contains 36 acres, with about six acres designated as open water, an area that has increased since the last inventory was conducted in 1988. The remaining 30 acres are composed of bottomland hardwoods. At this time most of the tract is characterized by shallow standing water, thin overstory, and little merchantable timber. The 1988 inventory described the land west of this tract as an open field. Today its character varies between herbaceous marsh and shrub swamp. The northern edge and west side of the tract have the features of a seasonal shrub swamp, including shin- to thigh-high standing water. A sliver of land, which is still wet and muddy but has no standing water, runs south from the east side of the tract down through the center, where it reaches the county road. Forester Janet Eger's 1980 inventory notes indicate the presence of young pole size trees in the southeast, a portion of the tract occupied by this drier area. Another small section of drier land is located in the northwest corner of the tract. This part of the tract was reported in the 1988 inventory notes to have the highest basal area for the tract, and was subject to damaging wind-throw during a storm in December, 1987. These drier bottomland hardwood areas are visibly distinct from the wetland areas in the aerial photo. Overstory trees in these drier parts are mostly pin oak and red or silver maple, with a small number of scattered bitternut hickories, honeylocusts, Schumard oaks, swamp chestnut oaks, and sycamores. Green ash, American elm, blackgum, sweetgum, and hackberry can be found in the midstory. A few shrubs, like privet, and vines, including greenbrier, various creepers and grape species, and poison ivy grow on the forest floor with some green ash, red and silver maple, pin oak, and sweetgum regeneration. Many of the largest sawtimber size trees in this area are snags or are in poor condition, though a few dominant silver maples and pin oaks appear vigorous and healthy. Many dead down trees can be found throughout the tract.

The 1988 inventory materials show an oak-hickory component, among other species of which there is no sign of today, and a proposed timber sale area in the northern third of the tract. The tract appears to have become more saturated and its composition has changed since that time. With westward movement from the drier sections toward the edge of the tract, the water rises and the number and size of overstory trees decreases. Pole size silver maple, green ash, and river birch are the most common trees. Reeds, rushes, and grasses appear in the water. The canopy is

completely open along most of the western edge of the tract. The water is thigh-high and many decomposing logs rest in it. The only overstory trees are widely-spaced remnants of sycamore snags. Sapling size willows, swaths of cattails, and dense, impenetrable thickets of buttonbush are clumped in the water. Janet Eger’s inventory notes from 1980 report extensive mortality of pin oak, river birch, and sweetgum on the western edge. Wind-throw and high standing water were determined to be likely causes. A summary of the forest resources in tract 0105 in relation to species dominance is noted below in Table 1.

**Table 1. Overview of Forest Resources in tract 1303 in July 2013**

<b>Overstory Sawtimber Layer</b>	<b>Understory Poletimber Layer</b>	<b>Regeneration Layer</b>
Silver Maple	Silver Maple	Green Ash
Pin Oak	River Birch	American Elm
American Sycamore	Green Ash	Silver Maple
Green Ash	Blackgum	River Birch
Sweetgum	American Elm	Red Maple
Red Maple	Red Maple	Blackgum
Swamp Chestnut Oak	Hackberry	Red Elm
Honeylocust	Pin Oak	
Shumard Oak	Sweetgum	
American Elm		
Bitternut Hickory		
Blackgum		

**History**

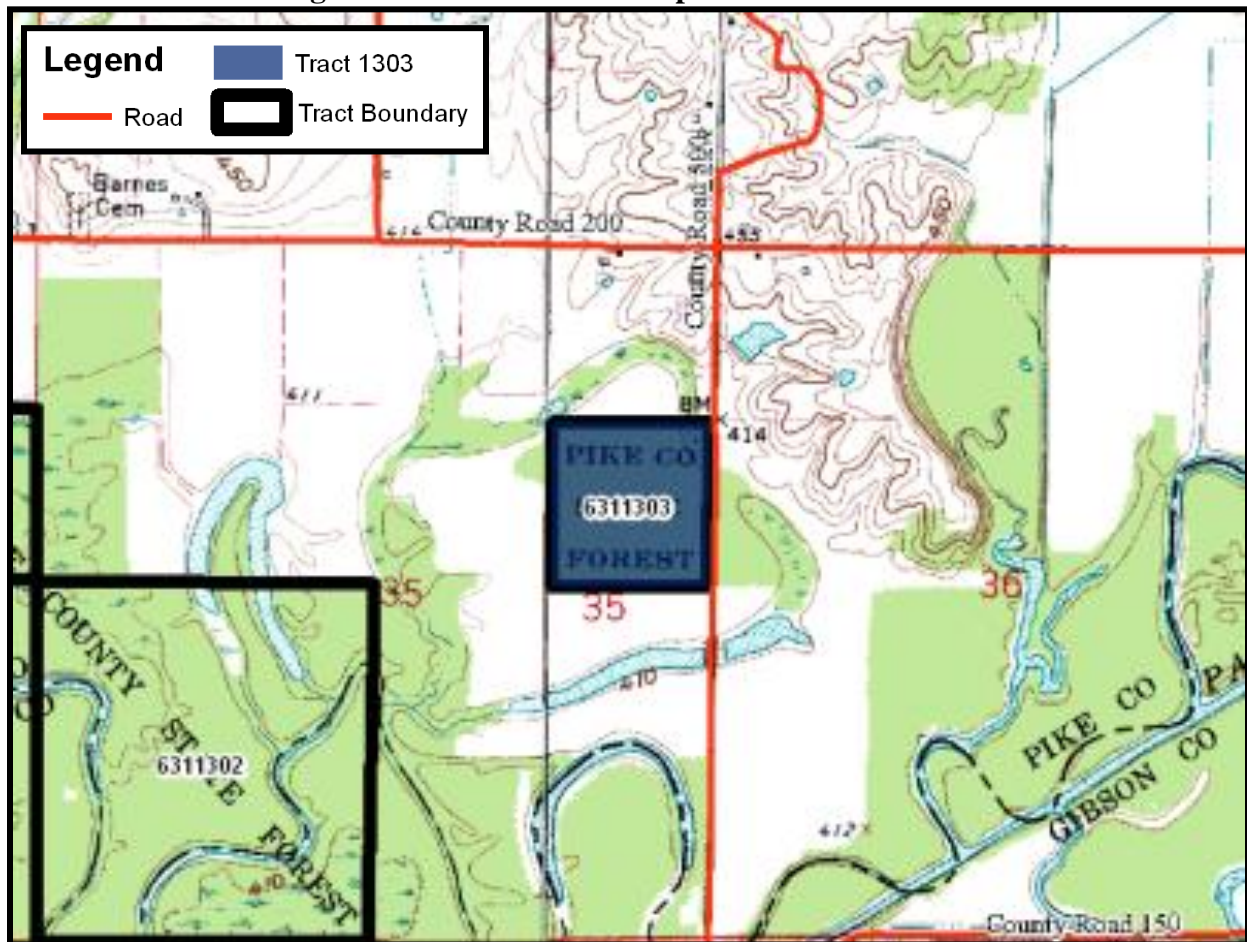
The land area that includes tract 1303 (see Figure 1) was purchased by the state of Indiana in 1938 from the F.A.C. Investment Company at a public auction. The earliest inventory on record was conducted around 1970 by forester Bill Hahn, which found a total of 53, 360 board feet in the tract, with 2,226 board feet per acre. The 1980 inventory estimated a basal area of 3,067.59 board feet per acre and was conducted by forester Janet Eger. Forester Eger then planted 1,500 bald cypress seedlings in the northeast corner of tract 1303 where a natural opening had occurred due to overstory mortality. Forester Eger then re-inventoried the tract in 1988 and found there to be 4,778.72 board feet per acre volume. In 1988 Eger recommended a harvest of about 5,400 board feet per acre on the tract, followed by TSI and replanting, as part of an even-aged management approach, and she suggested it could be a useful research area in the future. There is no record of a harvest having taken place. Grapevine and poison ivy vine TSI was conducted in November of 1995 by foresters John Zvirblis, Allan Faith, and Steve Beard. The current tract resource inventory was completed on July 11, 2013 by Miranda Vogel.

**Landscape Context**

1303 is composed of wetlands and floodplain forest. Private mine land, wetlands, floodplain forests, and agriculture fields lie to the north and south of tract 1303 while sections of the Patoka River National Wildlife Refuge and Management Area lie to the east and west of the tract. The newly extended Interstate 69 runs over the Patoka River east of the tract. The Patoka River National Wildlife Refuge and Management Area was established in 1994. The Refuge is managed by the U.S. Fish and Wildlife Service. It runs along a length of the river in Pike and

Gibson Counties, encompassing upland areas that were strip-mined for coal beginning in the 1920s and alluvial bottomlands that were drained for agriculture in the 1920s. The bottomlands were drained by dredging the Patoka River, however, the project failed and many residents abandoned their farmlands. Acid mine drainage and siltation caused damage to wildlife and vegetation before the regulations of the Surface Mining Control and Reclamation Act were put in place in 1977. Stated goals of the Patoka River National Wildlife Refuge and Management Area include reclaiming the abandoned mining areas and restoring the wetlands, which will be achieved by re-foresting 75 percent of the land acquired for the Refuge, and converting old farmlands to forest or prairie habitat for wildlife. Particular interest lies in creating suitable habitat for the federally endangered Interior Least Tern (U.S. Fish and Wildlife Service reference: <http://www.fws.gov/refuges/profiles/index.cfm?id=31560>).

**Figure 1. Ferdinand SF Compartment 13 Tract 03**



**Topography, Geology and Hydrology**

Tract 1303 is almost completely flat. Bottomland hardwood species are most concentrated on the dry finger of land running from near the northeast edge down along the eastern half, nearing the center before it reaches County Road 1050, and on the dry patch of land in the northwest

corner. A short length of an old Patoka River oxbow lies in the northeast corner. The tract is subject to flooding from Houchins Ditch which runs just south of the tract.

### **Soils**

**Belknap (Bg)** is a frequently flooded silt loam which makes up the majority of the tract. It severely limits haul road and log yard construction potential and makes the area poorly-suited for harvesting activities.

**Bonnie silt loam (Bo)** occupies a very small area on the west edge of the tract. It is also frequently flooded and low in strength.

**Bonnie silt loam ponded (Bp)** can be found in a very small area on the east edge of the tract, butting up against the old oxbow in the northeast corner. It is also frequently flooded, low in strength, and poorly suited for log landings.

**Henshaw silt loam (HeA)** lies in a very small area on the south edge of the tract. This soil occurs on 0-3 per cent slopes. This soil is moderately suited for log landings but is low in strength.

**Water** covers the area taken up by the short length of an old Patoka River oxbow in the northeast corner of tract 1303.

### **Access**

County Road 1050 forms the eastern boundary of tract 1303 and provides access to the tract. The road is approachable from the north or south via Indiana 57. When 17-mile Houchins Ditch overflows and floods the road just south of the tract, the other route coming down from the north can be used.

### **Boundary**

A line shared by Triad Mining property, owned by the James River Coal Company, and a small parcel of U.S. Fish and Wildlife Service land make up the northern boundary of tract 1303. County Road 1050 marks the eastern boundary of the tract. Tract 1303 butts up against the Skinner property to the south and to another parcel of U.S. Fish and Wildlife Service land to the west. A dirt road, faintly visible from CR1050, was reported to delineate the south line, but it is overgrown and presently under water. Some partial fencing was reported on the north line, but it is also overgrown and often under water. A timber theft on three to four acres in the southwest corner of the tract in 1987-88 prompted new signs to be placed at three corners, and one on the east side by the county road. An old Fish and Wildlife Service sign is still visible along the northeast corner of the tract.

### **Wildlife**

A Natural Heritage Database Review was completed for tract 1303 in 2013. 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.

According to the U.S. Fish and Wildlife Service, this area occupies the north-south flyway of the Wabash River Basin, an important path of travel for many migratory birds. The wetlands furnish feeding and nesting habitat for migratory waterfowl, shorebirds, and neotropical songbirds. Numerous frogs and toads, three raccoons, a deer, songbirds, crows, a blue heron, and a green heron have been observed in the tract. Crayfish middens cover much of the ground.

The Division of Forestry has instituted procedures for conducting forest resource inventories so that the documentation and analysis of live tree and snag tree densities are examined on a compartment level basis in order to maintain long-term and quality forest habitats. The number of snags found in the tract exceeds the maintenance level for suitable Indiana Bat habitat, but due to the species composition of the tract, the paucity of large living trees, the number of Legacy Trees above 20 inches in DBH is lower than desired.

**Live Legacy Trees\* and Snags inventoried July 2013 on 1303**

	<b>Maintenance Level</b>	<b>Optimal Level</b>	<b>Inventory</b>	<b>Available Above Maintenance</b>	<b>Available Above Optimal</b>
<b>Legacy Trees *</b>					
11"+ DBH	324		475	151	
20"+ DBH	108		43	-65	
<b>Snags (all species)</b>					
5"+ DBH	144	252	662	518	410
9"+ DBH	108	216	300	192	84
19"+ DBH	18	36	105	87	69

\* **Species Include:** AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

**Communities**

Tract 1303 is composed of a mix of wet-mesic floodplain forest, wet floodplain forest, forest swamp, and shrub swamp community types. The dominant overstory timber species include silver maple, pin oak, American sycamore, and green ash. The understory contains mainly silver maple, river birch, green ash, black gum, and red maple. The ground cover of tract 1303 consists of mainly poison ivy, buttonbush, privet, greenbrier, various creepers and grape species, cattails, grasses, and swamp privet.

**Recreation**

Likely recreational activities on this tract include bird watching, wildlife viewing, hiking, photography, and hunting. The Fish and Wildlife Service encourages bird-watching, photography, hunting, and hiking in the surrounding area, but no further sign of recreational use is apparent within the tract at this time. U.S. Fish and Wildlife personnel encountered on the county road claimed to see hardly anyone in the area.

## 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 activities.

### Tract Subdivision Description and Silvicultural Prescription

The overall stand structure for this tract is represented in the following Gingrich Stand and stock table that follows the individual stand summary.

#### Tract Summary Data

Total Trees/Ac. = **76 Trees/Ac.**

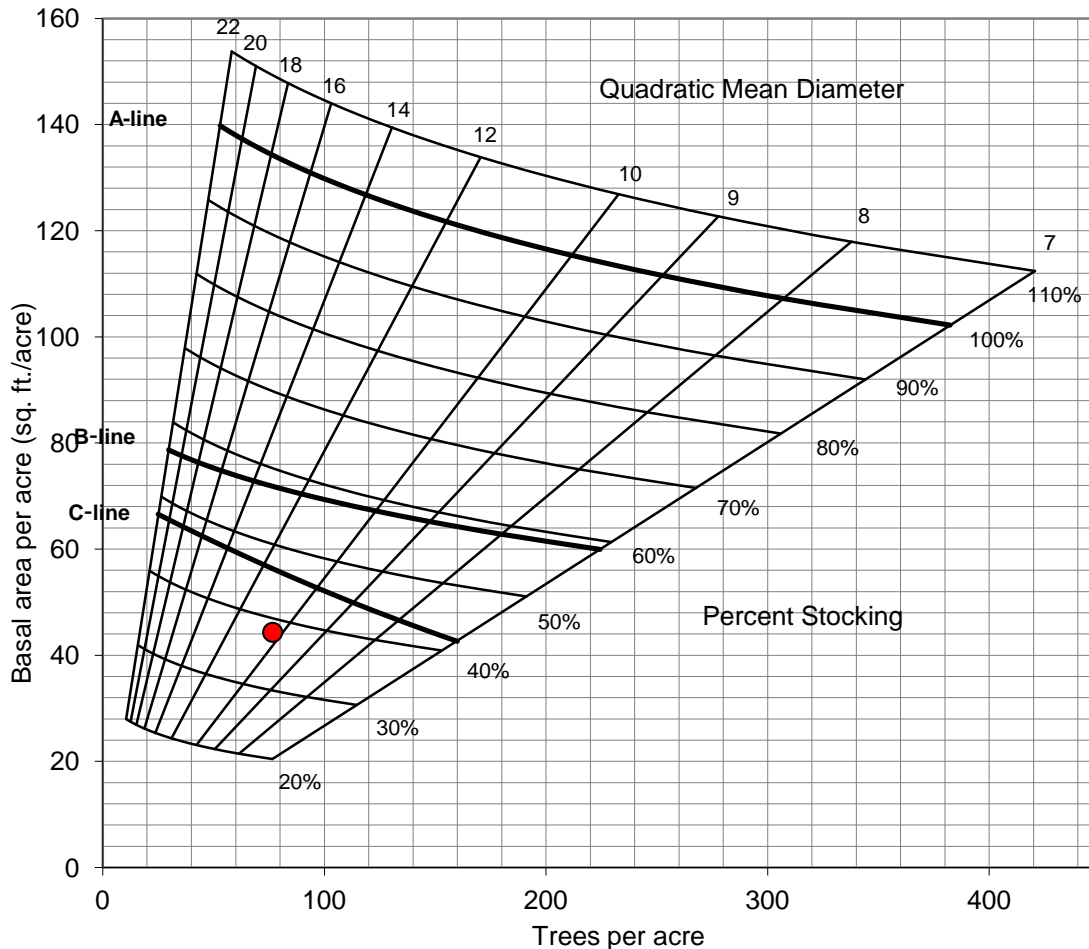
BA/A = **44.7 Sq. Ft./Ac.**

Present Volume = **2,437 Bd. Ft./Ac.**

Overall % Stocking Hardwoods = **38%** (Understocked)

Sawtimber & Quality Trees/Ac. = **20 Trees/Ac.**

**Table 2. Gingrich Stand and Stock Table for Hardwoods for 1303 in July, 2013**

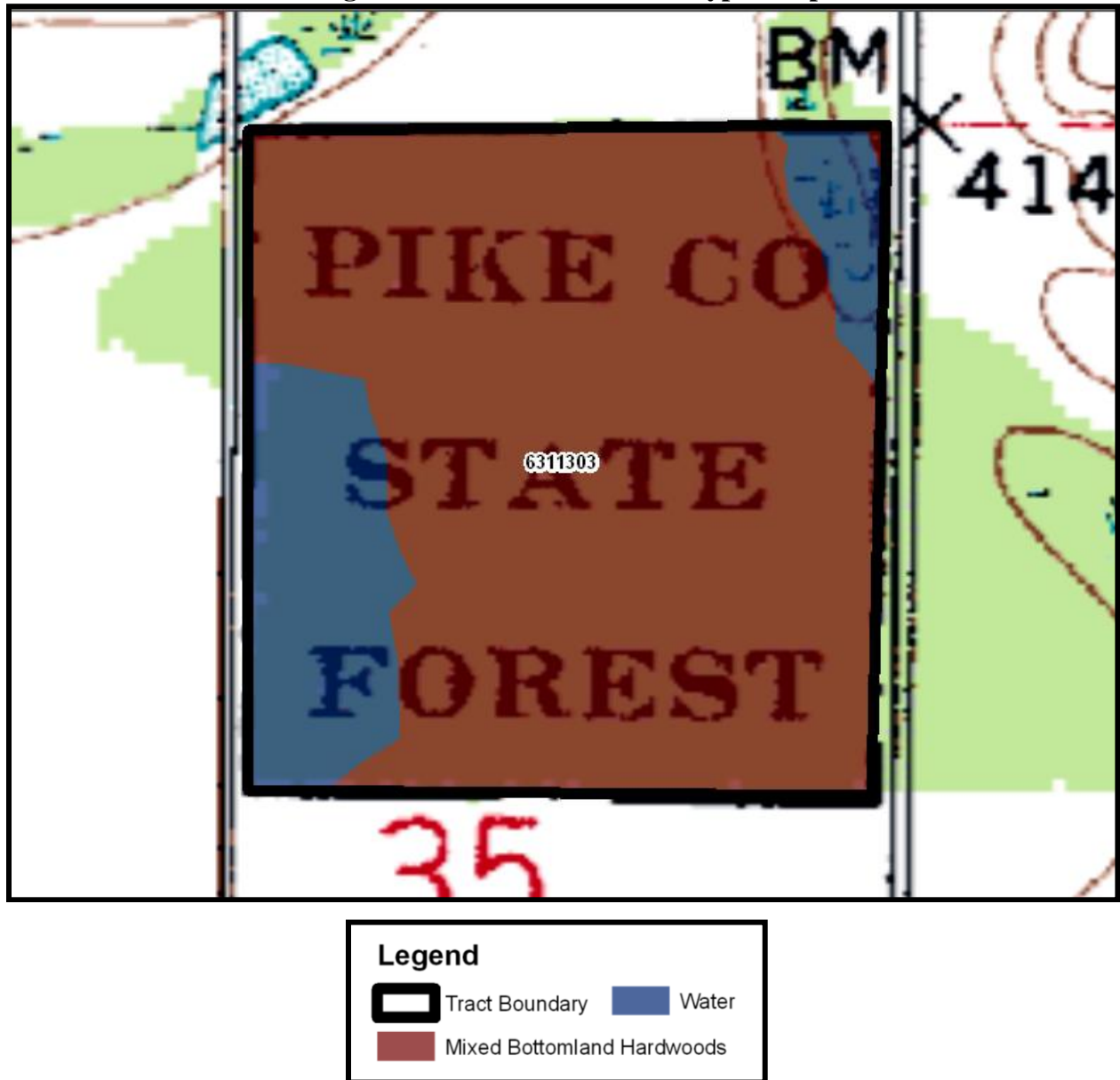


#### Summary Tract Silvicultural Prescription and Proposed Activities

The current forest resource inventory was completed on July 11, 2013 by Miranda Vogel. Twenty-four prism points were sampled over 36 acres (1 point for every 1.5 acres). A tract summary of the forest resource inventory is given above and a species breakdown of the

summary is given in Table 3 below. The tract's forest resource was divided into 2 different stratum types during the inventory; mixed bottomland hardwoods and open water.

**Figure 2. Tract 1303 Stratum Types Map**



**Mixed Bottomland Hardwoods Stratum**

The mixed bottomland hardwoods timber type covers roughly 83.3% of the tract or about 30 acres with an average basal area of 44.7 square feet per acre. This stratum type is considered understocked at approximately 38%. Silver maple and pin oak dominate in areas with living

sawtimber sized trees. Average DBH found for these trees is 16.9” for sawtimber sized silver maple, 21.6” for pin oak, and 16.3” for red maple. Average number of board feet per acre is 2,437. This value is lower than the one found in the 1988 inventory. The last two inventories conducted in this tract take note of significant mortality from wind-throw and standing water. It is likely that the tract is even more saturated today than it was during the last inventory, which would account for the low stocking level. If the standing water remains at its present level, it seems likely the number of hardwood species in most of the tract will continue to dwindle and the tract will carry on with the transition from a bottomland hardwood forest to more of a woody shrub swamp. A woody shrub swamp may not provide much timber production; however, it does perform many functions and services for the benefit of wildlife.

**Summary Tract Silvicultural Prescription and Proposed Activities**

No management activities are recommended at this time.

**Table 3. Overview of Sawtimber Volume Estimates in 1303 in July of 2013\***

<b>Species</b>	<b>Total</b>
Silver Maple	954
Pin Oak	798
American Sycamore	394
Green Ash	160
Sweetgum	158
Red Maple	126
Swamp Chestnut Oak	72
Honeylocust	70
Shumard Oak	66
American Elm	51
Bitternut Hickory	46
Blackgum	30
<b>Tract Totals (Bd. Ft.)</b>	<b>87,732</b>
<b>Per Acre Totals (Bd. Ft./Ac.)</b>	<b>2,437</b>

**Proposed Activities Listing**

**Proposed Management Activity**

Reinventory and Management Guide

**Proposed Period**

CY2028

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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.