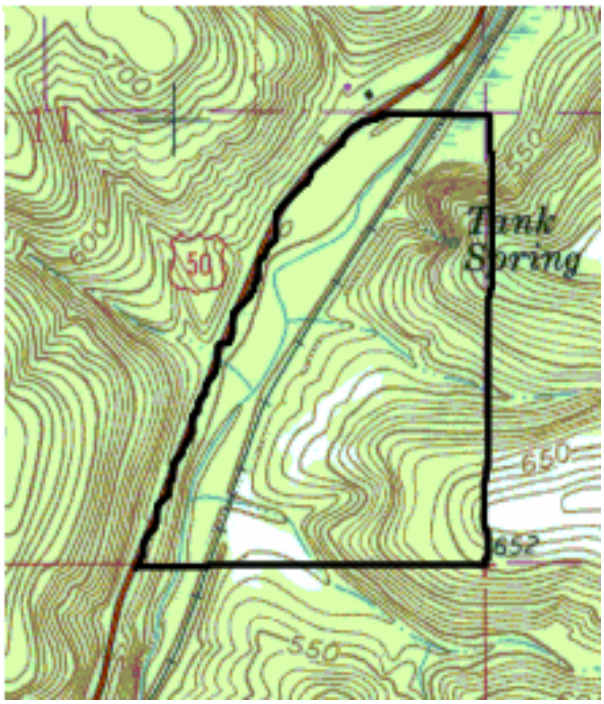
TM 902 Date: 4-20-09

RESOURCE MANAGEMENT GUIDE
Martin State Forest

Compartment: 6 Tract: 3 - Tank Spring Nature Preserve
County: Martin Section: 11 Township: 3N Range: 3W
By: Abe Bear

ROADS AND BOUNDARIES:



This tract is bounded on the west by US Hwy 50. State forest land continues across the highway. Property south of this tract is also owned by Martin State Forest. Land to the north and east is privately owned. The south tract boundary is not marked, since it is state owned. Since this tract is a Nature Preserve, signs may be posted along this boundary in the future. The east and north boundaries both border private land. No obvious boundary marks were present along either boundary.

Access to this tract is poor. The creek and railroad make access from the west difficult. A deep ravine and long distance make access from the south unlikely. If timber management was an option, access would be sought across private land to the east.

TRACT DESCRIPTION:

This tract was designated as a Nature Preserve in 1997. The presence of Tank spring and a second large spring made this a logical designation. The Nature Preserve designation does not allow for timber management. Day use type recreation such as hunting, hiking, and bird watching are allowed on the Nature Preserve. A foot trail loops from the southern border north around Tank Spring and back to the south. The trail is well established, but not used heavily enough to be worn down to bare soil.

The topography varies across the tract. The western side lies along Beaver Creek. This area is level bottomland containing typical bottomland hardwoods such as: sycamore, cottonwood, elm, boxelder, and black walnut. Much of the bottomland obviously floods frequently. Garlic mustard is quite thick throughout the stand. The timber west of the creek appears to have been harvested in the past, but no good record of such a harvest was available. The bottomland area east of the creek contains almost all of the tract's black walnut, some of which are of rather good quality. The Bottomland Hardwood timber type comprises 34 percent of the tract acreage. Beavers have constructed several dams in the northern portion of the bottomlands. Between the railroad tracts and the upland area is a wetland of about 2 acres in size. No recent beaver activity was noted during the inventory, but several of the dams are still holding water. The flooding has killed many of the trees resulting in snags standing in or near the open water. While timber value has been lost, this makes for great wildlife habitat.

The broad ravine bottom on the south edge of the tract contains lower value timber and shows signs of past livestock grazing. Multi-flora rose, honey locust, and eastern red cedar are common in this area. This stand type continues south onto the tract south.

The upland portion of the tract is generally dominated by oak-hickory timber with mixed hardwoods stands residing in the coves and old field areas. As a timber type, Oak-Hickory makes up 44 percent of the tract acreage. The timber quality in this type is generally good with little fire damage

present. Stocking was slightly heavy with a basal area of 131. In most areas, the stands contained trees from pole to large sawtimber size. Only one point fell in an obviously declining stand of overmature timber.

The Mixed Hardwood timber type was the third most common type with 16 percent of the area. The typical species mix in this type includes: yellow poplar, American beech, white ash, black cherry, sugar maple, white oak, northern red oak, and various hickories. These stands are dominated by the fast growing yellow poplar and black cherry. Timber quality is not as high in these areas as in the Oak Hickory stands.

A small portion of the tract (3 %) was a mix of hardwoods and pines. The pine (red and white), along with yellow poplar, black locust, and alder was planted in 1980-1981 in open areas. None of the pine inventoried was large enough to fall into the sawtimber class. It is generally being out competed by the yellow poplar.

Grapevines are numerous throughout the tract, especially in the ravines and bottomland areas. In several areas they are damaging trees and negatively impacting timber value. Given the Nature Preserve status, they will not be controlled.

SOILS:

The majority of the tract is upland forest dominated by Adyville-Tipsaw-Wellston Complex. This complex is well drained to somewhat excessively well drained. This drainage is due to the steep slopes and the presence of rock in the soil. This soil is generally forested since the steep slopes and presence of rock make farming impractical. Site index for yellow poplar is 90.

The bottomland portion of the tract is Wirt loam. This soil is frequently flooded but the duration of flooding is short. Wirt loam is well drained. Where not forested, this soil is often farmed. Site index for yellow poplar is 95.

HISTORY:

This land was purchased by the United States government in 1943 in a "taking" action. The land was managed by the US Forest Service prior to being transferred to the State of Indiana in 1966. The tract was inventoried prior to 1980 by state personnel. The general recommendation was to let the timber grow, perform TSI in the bottomland areas to release black walnut crop trees, and plant the approximately 8 acres of open area. Planting was done in 1980 and 81, and consisted of red and white pine, black locust, black alder, and yellow poplar.

RECREATION AND WILDLIFE:

General Description

Since this tract is a Nature Preserve, recreation is the main use of the area. The Tank Spring hiking trail provides visitors with a rugged but rewarding hike to Tank Spring. This is the longest foot trail at Martin State Forest.

Due to the presence of Beaver Creek, a beaver pond, and deep forest habitat, a wide range of wildlife makes its home on the tract. Common species include white-tailed deer, wild turkey, raccoon, squirrels, song birds, snakes, turtles, and even fish.

A review of the Indiana Natural Heritage Database showed the presence of Worm-eating Warbler, *Helmitheros vermivorus* (1993) and bobcat, *Lynx rufus* (2003) within one mile of the tract.

Ecological Review and Specific Habitat Guidelines

This tract is in compliance with the Division of Forestry's Wildlife Habitat Feature guidelines. Legacy trees, Snags, and Cavity trees are all above the maintenance levels. These numbers are only expected to increase as trees continue to mature and die of natural causes.

	Maintenance Level	Optimal Level	Inventory
Legacy Trees			
11" + DBH	702		2014
20" + DBH	234		372
Snags			
5" + DBH	312	546	439
9" + DBH	234	468	315
19"+ DBH	39	78	42
Cavity Trees			
7"+ DBH	312	468	428
11"+ DBH	234	312	339
19"+ DBH	39	78	213

WATERSHED:

The entire tract is drained by Beaver Creek which meanders east for approximately four miles before joining the East Fork of the White River just south of Shoals.

SURROUNDING LANDSCAPE:

The land surrounding this tract is a mosaic of state, federal, and privately owned land. Most of the land is forested due to the roughness of the topography.

SILVICULTURAL PRESCRIPTION

The management objective for this tract is to preserve the area. It is understood that forgoing timber management is an active management decision. As the trees currently occupying the tract mature and die, they will be replaced by more shade tolerant species such as American beech and sugar maple. This progression is already obvious by looking at the species composition of the understory. Grapevines will continue to prosper and form arbors in the canopy, eventually pulling tops from trees.

Invasive species control is permitted in Nature Preserves. This tract would benefit from the control of multi-flora rose and garlic mustard. The multi-flora rose is limited to the old pasture area in the southern portion of the tract. This may be controlled via herbicide application, but will likely die out as the understory shade thickens. The garlic mustard will be nearly impossible to control in the bottomland floodplain. Seed continually washes downstream from properties to the north. It can however be contained to the bottomland area. The spread should be monitored and if necessary plants entering the upland areas will be treated with herbicide.

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