

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

Resource Management Guide

Date: Dec, 2008

Selmier State Forest

Tract 7

**FORESTER'S NARRATIVE**

Prepared by Rob McGriff- District Forester

(Describe the area/timber/wildlife – Present stand, soils, regeneration potential, condition, timber types, private boundaries, forest protection, etc.)

Tract 7 is located in section 23, T 7N, R 8E, of Center Township in Jennings County. This tract contains 46 acres plus 5 acres for the service in the northeast corner of the Forest. This tract is bordered on the north by County Road 350N, on the east by County Road 100E, on the south by the Vernon Fork of the Muscatatuck River and on the west by the main road that dead ends within the forest. The service area, Selmier State Forest office, and manager's residence are located within this tract.

The topography in tract 7 is predominately rolling. This tract drains to the east and southeast into the Vernon Fork of the Muscatatuck River. The dominant soil types in the tract include Cincinnati silt loam (CKKC2 makes up 39% of the area, CkkB2 makes up 35.5% of the area), Haymond silt loam (HegAH makes up 9% of the area), Corydon – Rock outcrop complex (CrbF makes up 8% of the area), Nabb silt loam (NaaA makes up 3% of the area, NaaB2 makes up 1% of the area), Avonburg silt loam (AddA makes up 3.5 % of the area) and Jennings silt loam (Jae C2 makes up 2% of the area).

*Cincinnati silt loam, 6 to 12 percent slopes, eroded.*

This moderately well drained soil has a seasonal high water table at 2.0 to 3.0 ft. and is on side slopes on uplands. Slopes are 6 to 12 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above 60 inches. Available water capacity is moderate (7.1 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Droughtiness and water erosion are management concerns for crop production.

*Cincinnati silt loam, 2 to 6 percent slopes, eroded.*

This moderately well drained soil has a seasonal high water table at 2.0 to 3.0 ft. and on ridge tops and side slopes on uplands. Slopes are 2 to 6 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above 60 inches. Available water capacity is moderate (7.9 inches in the

upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Droughtiness and water erosion are management concerns for crop production.

*Haymond silt loam, 0 to 2 percent slopes, frequently flooded, brief duration.*

This well drained soil has a water table at a depth greater than 40 inches and is on flood plains. Slopes are 0 to 2 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is moderate (0.6 to 2 in/hr) in the most restrictive layer above 60 inches. Available water capacity is very high (12.5 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 5.5 to 6.5. The flooding hazard is a management concern for crop production.

*Corydon-Rock outcrop complex, 25 to 60 percent slopes.*

The Corydon soils are well drained, have a water table at a depth greater than 40 inches and are on side slopes on uplands. Slopes are 25 to 60 percent. The native vegetation is hardwoods. The surface layer is flaggy silty clay loam and has high organic matter content (4.0 to 6.0 percent). Permeability is moderate (0.60 to 0.20 in/hr) in the most restrictive layer above bedrock. Available water capacity is very low (2.4 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 6.0 to 6.6. Bedrock is at a depth of 10 to 20 inches. Droughtiness and water erosion are management concerns for crop production. The Rock outcrop consists of exposed vertical limestone escarpments.

*Nabb silt loam, 0 to 2 percent slopes.*

This moderately well drained soil has a seasonal high water table at 1.5 to 2.0 ft. and is on flats on uplands. Slopes are 0 to 2 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above 60 inches. Available water capacity is moderate (8.7 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Droughtiness is a management concern for crop production.

*Nabb silt loam, 2 to 6 percent slopes, eroded.*

This moderately well drained soil has a seasonal high water table at 1.5 to 2.0 ft. and is on ridge tops and side slopes on uplands. Slopes are 2 to 6 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (<0.06 in/hr) in the most restrictive layer above 60 inches. Available water capacity is moderate (8.3 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Droughtiness and water erosion are management concerns for crop production.

*Avonburg silt loam, 0 to 2 percent slopes.*

This somewhat poorly drained soil has a seasonal high water table at 0.5 to 2.0 ft. and is on flats on uplands. Slopes are 0 to 2 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low organic matter content (1.0 to 2.0 percent). Permeability is very slow (< 0.06 in/hr) in the most restrictive layer above 60

inches. Available water capacity is high (9.5 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Wetness is a management concern for crop production.

*Jennings silt loam, 6 to 12 percent slopes, eroded.*

This moderately well drained soil has a seasonal high water table at 2.0 to 3.0 ft. and is on side slopes on uplands. Slopes are 6 to 12 percent. The native vegetation is hardwoods. The surface layer is silt loam and has moderately low or moderate organic matter content (1.0 to 3.0 percent). Permeability is very slow (< 0.06 in/hr) in the most restrictive layer above 60 inches. Available water capacity is moderate (7.4 inches in the upper 60 inches). The pH of the surface layer in non-limed areas is 4.5 to 5.5. Droughtiness and water erosion are management concerns for crop production.

Access to tract 7 is good and can be attained from County Road 350N, the service area or the main access road through the forest.

All of Selmier State Forest was acquired from Stella M. Selmier in memory of her husband, Frank Selmier, in 1944. Most of Tract 7 was once open fields and either regenerated naturally or was replanted by Mr. Selmier in the 1920's and 1930's or by the Division of Forestry in the 1940's.

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

The latest inventory for tract 7 was completed in May 2008, when the entire forest was inventoried. This inventory shows tract 7 contains an estimated tract volume of 520,190 bd ft of timber. The results also show 139 sawtimber size trees per acre containing an estimated volume of 11,130 bd ft per acre. The total tract volume can be divided between an estimated harvest volume of 204,470 bd ft and an estimate leave volume of 315,720 bd ft.

The 2008 inventory shows the dominant tree species by volume in tract 7 are yellow poplar, white pine, shortleaf pine, sugar maple, black cherry, white oak, black walnut, red pine, Virginia pine, American sycamore, red oak and pignut hickory.

A forest inventory completed in October of 2004 (43 acres) shows the dominate tree species in tract 7 are tuliptree (43% by volume), pine (22%), miscellaneous species (14%), black cherry (16%), black walnut (5%), sugar maple (4%), oaks in the red oak family (3%), white ash (2%) and oaks in the white oak family (2%). Generally this tract is a saw timber size stand with several large saw timber size trees. Inventory results show that there are a total of 134 trees per acre; of these 39 trees per acre are greater than 14" in diameter at breast height.

The 1987 inventory results show an estimated leave volume of 135,762 bd ft of timber and an estimated harvest volume of 165,929 bd ft of timber. Thus the total estimated

volume of timber in 1987 for tract 7 was 301,691 bd ft. This inventory was completed in February 1987 by Mark Genda and was computed using Purdue University's tally scheme 6 inventory program.

This tract does contain a variety of habitats that are suitable for wildlife. Oak, hickory and walnut provide hard mast producing trees while black cherry, sassafras, hackberry, black gum and dogwood provide soft mast producing trees. The south boundary of the tract borders the Vernon Fork of the Muscatatuck River and provides a source of water and riparian habitat for wildlife.

Indiana state forests follow guidelines to provide habitat for the Indiana bat. These guidelines promote snags and desirable live trees. Inventory results from 2008 estimate there are 541 snags 9" DBH or greater and 22 snags 19" DBH or greater in tract 7. These estimates meet the guidelines of 276 snags greater than 9" DBH but fall short of the recommended 46 snags greater than 19" DBH. For desirable live trees, tract 7 contains 224 desired live trees 11" DBH or greater and 138 desired live trees 20" DBH or greater. These numbers of desirable live trees falls short of the recommended guidelines for both size classes.

The common tree species found throughout Selmier State Forest, and in tract 7, are tulip poplar, pine and other mixed hardwood species. Many of the tree species found growing on the upland flats are not the most desired species for Indiana bat habitat. However, crop trees are grown to a large diameter during forest management activities and mast producing trees are favored during management work for the food and habitat they provide for a wide variety of wildlife.

TSI work is regularly completed in different areas of the forest and this work creates snags. Snags are also not marked and left during timber harvesting operations.

Generally, Selmier State Forest offers dispersed recreational opportunities. Tract 7 receives minimal public use because it is the restricted area (for hunting) around the office, residence and service area. There is only one short fire trail/ access road in tract 7.

An invasive species project was completed in July 2008 to treat barberry and multiflora rose in tracts 6 and 7. The project was completed by JF New. The contractor treated the barberry and multiflora rose with Excort XP (metsulfuron Methyl 60%) mixed with a surfactant in a water solution.

## **Selmier State Forest**

### Inventory Overview

In May 2008 a forest inventory was completed on each tract (tracts 1-7) of Selmier State Forest. This data was gathered to assist with harvesting and other silvicultural management decisions. Data for this inventory was collected by property manager/district forester Rob McGriff, by Jackson-Washington State Forest resource specialists Mike Spalding and Jacob Hougham, and by summer student Jake Florine. The data was processed by resource specialist Mike Spalding, and this report was prepared by property manager Rob McGriff.

Another tract level, forest-wide inventory was completed at Selmier State Forest in February 1987 under the Supervision of property manager/district forester Joe Schuerman. Other inventories have been completed between 1987 and 2008 as needed for specific tracts. These inventories and other management activities are reported in the forester's narrative for each tract.

After the 2008 inventory was completed, windstorms in June and September damaged many trees within Selmier State Forest. Just from general observations, I speculate that 5% to 20% of the estimated volume in some tracts may have been lost due to wind damage. However, even after the wind damage, the forest-wide inventory is a valuable management tool.

**Harvesting Schedule:**

The 2008 forest inventory along with historical records and current knowledge of the forest resources were used to develop a proposed harvesting rotation. This report is prepared to give future foresters information about which tracts may need silvicultural treatments.

<u>Tract #</u>	<u>Acres</u>	<u>Suggested Harvest Timeframe</u>	<u>2008 inventory harvest volume</u>
7	46	2010 – 2014	204,470 bd ft
3	72	2014 – 2018	202,830 bd ft
1	61	2018 – 2022	114,280 bd ft
5	39	2022 – 2026	-----
6	36	2026 – 2030	-----
4	51		-----
2	34		-----
2a	<u>11</u> 350	2078	-----

**Invasive Species:**

Invasive plant species can be found throughout Selmier Forest and are becoming more numerous and problematic. During the 2008 forest inventory general observations of invasive plants were recorded at plot center. Over 70% of the plots had invasive plants within close proximity to the plot center. The most common invasives include multiflora rose, barberry and Japanese honeysuckle. Other invasive species observed include bush honeysuckles, garlic mustard, ailanthus, burning bush, Japanese stiltgrass, trumpet creeper, wintercreeper euonymus, English ivy, autumn olive and privet.

In 2008 the first commercial contract for controlling invasive species was completed on 96 acres of Selmier State Forest. Property staff also treat invasive plants in the forest.

All of these invasive species have seed sources outside the forest boundaries and will continue to encroach into the forest.

### **Indiana Bat Guidelines – snags and desirable live trees:**

In most tracts Selmier State Forest does not meet the IDNR guidelines for large snags or for tree species desired by the Indiana bat.

The severe windstorms in 2008 occurred after the data for the inventory was collected created several snags throughout the forest. Continued TSI work after each harvest will also create additional snags. Snags should also not be marked for removal when marking timber sales.

Selmier State Forest is dominated by yellow poplar, pine and other upland flat timber species. This timber type does not contain an abundance of tree species desired by Indiana bat. The highly productive sites and the regeneration openings created by recent timber harvest tend to promote yellow poplar, cherry, ash and other fast growing hardwoods. However the riparian area along the Muscatatuck River and some areas with a greater concentration of oak and hickory may provide better habitat for Indiana bats. Generally crop trees at Selmier State Forest are grown to a large diameter and mast producing trees are favored during forest management work for the food and habitat they provide for a variety of wildlife.

### **Natural Heritage Database:**

A Natural Heritage Database review was obtained for this tract. 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.

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