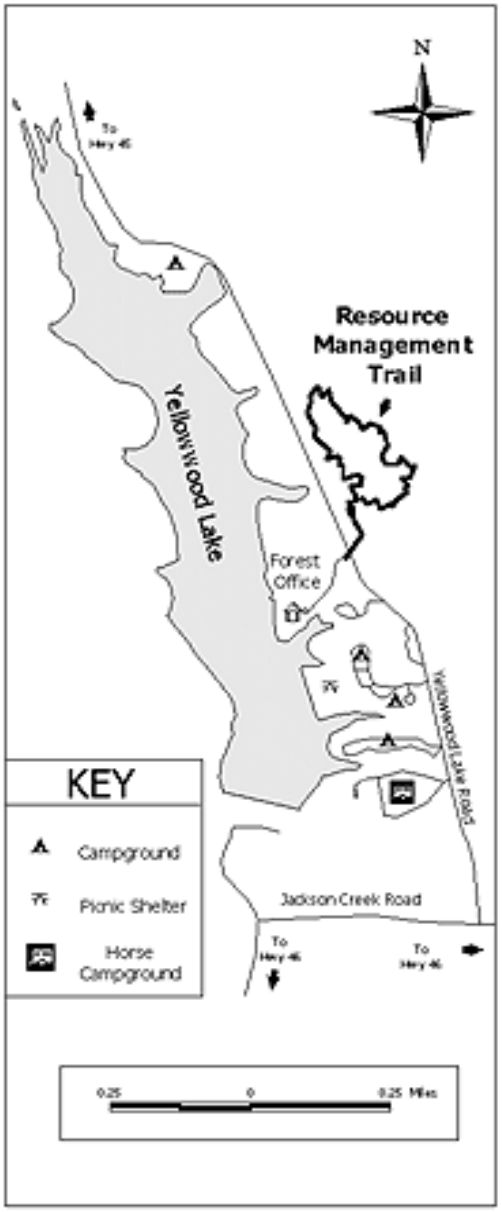
RESOURCE MANAGEMENT TRAIL MAP



RESOURCE MANAGEMENT TRAIL

A 1.25 mile self-guided interpretive trail exploring the management of Yellowwood's natural resources.

YELLOWWOOD STATE FOREST

772 Yellowwood Lake Road
Nashville, IN 47448
(812) 988-7945

Thank you for hiking the Resource Management Trail. If you have comments or questions about forest management at Yellowwood or are interested in arranging a guided group tour, please stop in the forest office.

Welcome to the Resource Management Trail, a 1.25 mile self-guided trail in Yellowwood State Forest. Indiana's State Forests are managed under a multiple use management philosophy. The forest is managed for a variety of uses: timber, recreation, historic resources, wildlife, lake and watershed protection, aesthetics, and special plant and animal communities. The trail will take you through two areas: one area marked for a timber harvest in 2007 and one area that was harvested in 1995. Along the trail, there are 20 stops to introduce you to the forest, to explain timber management, and to illustrate the multiple use management philosophy. The trail is marked with white diamonds.

Caution! Poison Ivy Alert

Poison ivy (*Rhus radicans*) grows along this trail, particularly in the pine stand near the trailhead. Contact with this plant can cause an itchy and sometimes painful skin rash. Poison ivy has leaves in sets of three and may have white berries. At Yellowwood, the plant can be found either as a vine winding up trees or a low woody plant. An old rhyme provides wise poison ivy advice:
"Shiny leaves of three, leave it be! Berries white, poisonous site!"

Please remember that the Resource Management Trail is for hiking only; use of horses, bicycles or motorized vehicles is prohibited.

1. Hints of History Imagine this spot with all the trees gone. Picture farm fields and a small log cabin with day lilies, daffodils, and yuccas. You now have an image of what this area probably looked like during the late 1800's. Settlers cleared the ridge tops and valleys for agriculture. Additional trees were removed from the hillsides to provide lumber and railroad ties for a growing population. By the early 1900's, settlers were deserting their farms due to crop failure. Although the houses are gone and the fields reforested, the forest still holds hints of its history. The pine trees that surround you were planted to slow the soil erosion from the abandoned fields. Today we are trying to locate the old homesites to protect the cultural history of the forest.

2. Central Hardwood Forest You are now looking out over a second growth central hardwood forest. The central hardwood forest occupies the central portion of the eastern United States excluding the Appalachian Mountains. It is characterized by its wide variety of trees with oaks being the dominate trees. Yellowwood State Forest is considered a second growth forest because the land was cleared and has been reforested.

3. Meet the Trees Along the next section of trail, trees have been identified with signs to help you learn some of the tree species of the central hardwood forest. Information about the families of trees is provided below.
Ash: The most common ash in the area is the white ash. It has a hard wood used for handles, containers, and baseball bats. An insect called the Emerald Ash Borer is causing considerable mortality in these trees.
Hickory: Shagbark hickory, pignut hickory, and bitternut hickory are found frequently in Yellowwood State Forest. Hickory is the favorite wood for tool handles, flooring and cabinets. Hickory nuts are an important wildlife food.
Oak: White oak is Yellowwood's most valued timber tree. The wood is very strong and heavy. It is used to make fine furniture. The wood of the other oaks common in the area (red, black, scarlet, chestnut, and chinquipin) are similar to white oak although not as strong or as durable. Oaks are an important food source (acorns, buds) for wildlife.
Maple Sugar maple and red maple can be found along the trail. Maple is used for furniture and is a favorite for dance floors and bowling alleys. Maple syrup is made from the tree sap. Seeds, buds, and twigs are used as wildlife food.
Beech The American beech is easily identified by its smooth gray bark and papery feeling leaves. Beech is used for inexpensive furniture. Its triangular nut is eaten by wildlife. Large beeches often have cavities that make good wildlife dens.

PRE-HARVEST AREA The forest along this section of trail has been marked for a timber harvest in 2015.

4. Why Manage for Timber? Think of this forest as a giant garden. To grow the best crop possible, a gardener will weed and thin. In a forest, a timber harvest is a powerful management tool that allows a forester to "weed and thin" the forest. Trees remaining after the harvest will have less competition and should grow faster. Harvesting timber from the forest also provides raw material to the forest products industry. Timber sales provide revenue to state and county governments. Fifteen percent of timber sale revenue goes to the county to aid rural fire departments.

5. Inventory The first step in managing the forest is to do an inventory to gather information about cultural resources, unique features (rock outcroppings, streams), special plant and animal habitats, and trees (size, density, health) in the area. The forester estimates the volume of wood in the trees. Volume is measured in board feet (BdFt). A board foot is a piece of wood 12 in x 12 in x 1 in. The marked white oak behind the sign has an estimated volume of 550 BdFt (from the stump to where the tree forks). Market value of this high quality tree is about $558 (2012 dollars). Lower quality white oaks of the same size may only have a value of $200..

6. Marking After doing an inventory, the forester determines whether or not to harvest the area. If there is going to be a harvest, the forester will select individual trees to sell. Each of those trees is marked with paint in three places. Find the marks on the scarlet oak in front of you. The "stump mark" is used after a sale to verify that only marked trees were harvested. The meaning of the marks on the trees is as follows:

-- Harvest Tree Has a band around the tree

X Cull Tree Tree has no timber value but will be removed to benefit surrounding trees.

--➚ Directional Falling The arrow is a message from the forester telling the logger which direction to fall the tree to protect the surrounding trees.

--/ Partial Volume Tree Tree has timber value but it has a major defect. For example, the scarlet oak in front of you has a scar on the side of the tree that will reduce its timber value.

The next 3 stops will provide examples of how a forester selects which trees to harvest.

7. Thinning Before you is a stand of white oak. All the trees are of good quality, but there are too many in this area. The forester selected a few trees to be removed. The remaining trees will have less competition for sunlight and nutrients.

8. Salvage A forester may mark trees that are diseased or have been knocked down during a storm (like those behind the sign). If a tree is going to be salvaged, it should be done within a year of falling. If more than a year passes, the logs decay beyond what is useable for timber.

9. Mature Trees Another reason to select trees for harvest is to remove mature trees that will not remain healthy until the next harvest. The two scarlet oaks on either side of the trail are marked because they are mature. It is unlikely that they would survive until the harvest.

10. Management by not Selecting Just because an area is included within the boundaries of a timber harvest, does not mean that trees will be marked for a harvest. If the stand is in good condition, no trees will be marked.

11. Natural Mortality Throughout the forest, trees die naturally. These trees will slowly decay and return nutrients to the soil.

POST-HARVEST AREA The forest along this section of the trail was harvested in 2005.

12. Tree Removal After the trees are cut, they are moved to an area called a log yard where they are loaded on to trucks and hauled to sawmills. The logs are moved from the forest to the log yard with a machine called a skidder. You are standing on an old skid trail. The log yard for this sale was located at the top of the hill. To protect the lake, the logs were taken to the top of the hill even though the road can be seen from here. By maintaining a buffer between the harvest area and the lake, the chances that soil disturbed while harvesting will erode into the lake are reduced.

13. Canopy Gap The area you are seeing is an area where a few trees were removed. This can also occur when either one large tree is either removed or dies or a few smaller trees are removed or die. These canopy gaps can initially create growth in the lower levels of the forest but soon lose sunlight as surrounding larger trees fill out their tops and close off the sunlight getting to the lower layers of growth.

POST-HARVEST AREA . The forest along this section of the trail was harvested in 1995.

14. Regeneration Opening You are standing on the edge of a regeneration opening. In areas of the forest where everything is mature or of poor quality, a regeneration opening is created to restart the forest. Some of the most important timber species trees (oak, hickory, tuliptree, cherry) are shade intolerant. Shade intolerant species require a disturbance that opens up the forest canopy and allows more light to reach the forest floor. This opening was created in 2005 and is approximately 0.25 acres in size. The openings make good habitat for wildlife species such as deer, rabbits, and grouse.

15. Regeneration Take a look around. How many different species of trees can you find growing in the regeneration opening? (Italics for the number of species we counted) Regeneration happens by two methods within the opening. The first method is by stump sprouting. The small chestnut oak near the sign was cut when the regeneration opening was created. New shoots are sent up from the root system of the cut tree. The second method is through germination of seeds stored in the forest soil. We have encouraged the growth of the better trees in this opening by reducing competition- Timber Stand Improvement.
(16 species: white oak, chestnut oak, red oak, black cherry, white ash, American beech, tuliptree, red maple, sugar maple, sassafras, big toothed aspen, shagbark hickory, flowering dogwood, sycamore, smooth sumac, winged sumac)

16. Wildlife Tree I Large hollow beech trees have no timber value and could have been removed as part of the regeneration opening. The trees were left for species diversity and wildlife. Cavities in the trees provide good nesting and den sites. In addition, the beech trees provide a wildlife food source (buds, nuts, sap, twigs).

17. Tree Tops A tree top lies behind this sign. After a Timber sale. Ether the area will be opened up to the public for firewood cutting or the tops are left to decay and return to the soil.

RETURN TO 2005 HARVEST AREA

18. Wildlife Tree II This dead standing tree is called a snag. Snags are important to forest wildlife. The tree provides a perch for birds. The decaying wood is home to insects which in turn provide food for insect eating birds such as woodpeckers. As the park peels away from the tree, it provides shelter for bats and insects.

19. Visual Enhancement Area (VEA) In the forest from the sign to the road, minimal management is done. Individual trees may still be removed. The area is left to provide a pleasant view to people passing on Yellowwood Road.

20. Riparian and Other Special Areas Areas along streams, "riparian areas", are given extra protection. In addition, places like the small rock outcrop across the stream are also protected because they provide unique habitat.

OUR MISSION

The Indiana Department of Natural Resources' Division of Forestry promotes and practices good stewardship of natural, recreational and cultural resources on Indiana's public and private forest lands. This stewardship produces continuing benefits, both tangible and intangible, for present and future generations.

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