

MICHAEL DEBBI PARK TRAIL GUIDE

Michael Debbi Park
Nature Trail
Buena Vista Township
New Jersey



White Oak, Quercus alba

This guide was produced by the Buena Vista Township Environmental Commission with grants from the New Jersey Department of Environmental Protection, Office of Intergovernmental Affairs and ANJEC (Association of New Jersey Environmental Commission)

The Buena Vista Township Environmental Commission meets monthly at the Municipal Building, call to confirm meeting.

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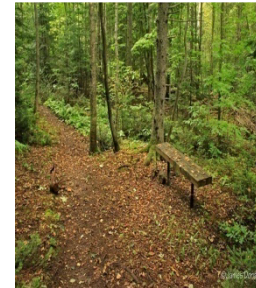
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Michael Debbi Park Nature Trail



Environmental Links

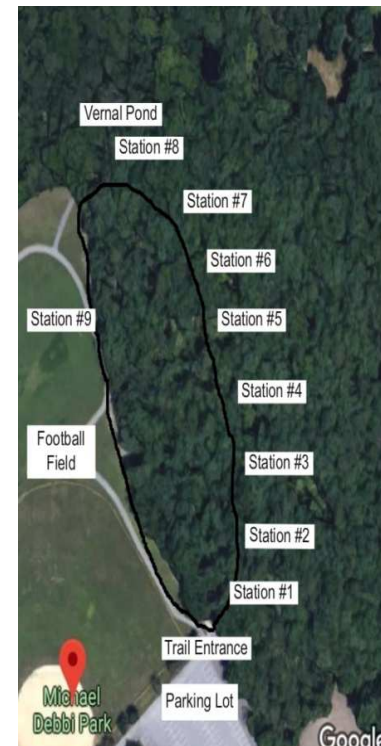
www.greategg.org **Great Egg Harbor Watershed Association**
www.state.nj.us/pinelands **New Jersey Pinelands Commission**
www.state.nj.us/dep **NJ Dept. of Environmental Protection**
www.tnc.org **The Nature Conservancy**
www.njconservation.org **New Jersey Conservation Foundation**
www.weymouthnj.org **Weymouth Township**
www.pinelandsalliance.org **Pinelands Preservation Alliance**
www.anjec.org **Assoc. of NJ Environmental Commissions**



Atlantic White
Cedar Leaf

Residents can protect the Watershed by:

- * Planting or leaving buffers of native vegetation along stream and wetlands.
- * Planting native species that need less water.
- * Not mowing your lawn right down to the stream bank or wetlands.
- * Not throwing leaves or grass clipping into streams or wetlands.
- * Leaving naturally occurring debris such as logs or rocks in a stream, they provide shelter for aquatic life.
- * Properly maintaining your septic system.
- * Installing water-efficient toilets and shower heads.
- * Using environmentally friendly products.
- * Properly disposing of oil and other household chemicals.



Station #1 Decaying Logs

These decaying logs are being eaten by fungi which breaks down the trees woody tissue and converts it to food. Fungi are one of the few organisms that can digest wood.

There are many kinds of insects found here including termites. They also play an important role in breaking down the wood so other plants can reuse its stored nutrients. Ants and beetles are also common and feed on wood, vegetation, and other insects.



British Soldier
Lichen



Pyxie Cup
Lichen

Lichens and mosses are found on logs, trees, and on the ground along the trail. Lichens are plants made of algae produces food through photosynthesis and the fungi supplies water and minerals. The British soldier lichen is the most common, grows to $\frac{3}{4}$ on an inch tall, and can be recognized by its bright red cap.

Mosses are small green plants with short stems and tiny leaves. They grow in mats and are valuable because they are able to soak up rain water and slowly release it into the soil. There are 274 species of mosses found in New Jersey.



Green Shield
Lichen



Moss

Station #2 Oak and Pine Trees

Along the trail there are many kinds of trees including white oak, post oak, chestnut oak, sassafras, American holly, and black gum. Oaks are members of the beech family of trees with 65 species found in North America and about 900 species worldwide.

Oaks are divided into two groups. White oaks have blunt leaves and their acorns mature in one year. Black oaks have pointed leaves and their acorns mature in two years. The white and chestnut oak can grow up to 80 feet tall. They are an important commercial hardwood and were used in early shipbuilding in the area. Many animals feed on their acorns including birds, squirrels, chipmunks, mice and turkeys.



White Oak



Black Oak

The sweet gum tree is a member of the witch hazel family and grows up to 100 feet tall. It is an important timber tree and is used for furniture, plywood, and pulpwood. It is an introduced species in the Pine Barrens and often grows in and along the edges of old fields. It produces a long stemmed, green, bal-like fruit that turns brown in the fall and its seeds are eaten by songbirds and squirrels.



Sweet Gum



Atlantic white cedar

Atlantic White Cedar

The Atlantic white cedar is not located on the trail but found in the park property and is common in the Pine Barrens. It grows up to 90 feet tall and 3 feet in diameter. Record size trees have grown 125 feet tall and 5 feet in diameter. It was harvested and cut by area mills into products including siding, shingles, and for ship building.

Atlantic white cedar swamps provide habitat for many kinds of plants and animals. Threatened and endangered species found there include the Pine Barrens tree frog, northern pine snake, bog turtle, and the timber rattlesnake. Rare plants such as the swamp pink lily, curly grass fern, and the dragon's mouth orchid are also found in cedar swamps.

Atlantic white cedar was once common throughout most of New Jersey. Large stands were found in the Pine Barrens, the Hackensack Meadowlands, and near Sandy Hook. The historical population was approximately 115,000 acres of which about 30,000 acres survive. Loss of wetlands habitat, lack of proper management, over harvesting, and a rise in the ocean level have caused decline. Deer browsing is also a major problem. The New Jersey Forest Service is currently developing plans to preserve New Jersey remaining stands.

Station #9 The Forests Edge

There are many different kinds of plants and trees that grow in the forest's edge along the ball fields. The cow wheat is a member of the snapdragon family that grows up to 1 foot tall. It has a tiny, tubular white flower with a yellow edge. It is common along trails, roadsides, and fields and bloom throughout the summer.



Cow Wheat

The dwarf dandelion is a member of the sunflower family and grows up to 1 foot tall. It has a solitary yellow flower that blooms throughout the summer. It is common along fields, roadsides and disturbed areas.



Dwarf Dandelion

The sweet fern is not a fern but a small shrub and a member of the wax myrtle family. It has long, narrow, fern-like leaves with tiny resinous dots and produces a fragrant odor when crushed. It is common in sandy areas and along the edge of forests and produces small flowers or catkins in the spring. It should be avoided in the late summer because it is a favorite hiding spot for chiggers.



Sweet Fern

The pitch pine is the most common pine tree in the Pine Barrens and grows up to 70 feet tall. It produces cones that take a couple of years to mature and its seeds are eaten by wildlife. It has needles that are usually in bundles of 3 and it is fire resistant. Pitch pine resin was used by colonists to produce turpentine and for axle grease. The short leaf pine is also found in the Pine Barren and has short needles that are usually in bundles of 2.



Pitch Pine



Short Leaf Pine

Station #3 Blueberries and Shrubs

The lower part of the forest is known as the understory layer or shrub layer. Plants common here include the black huckleberry, inkberry, high bush blueberry, mountain laurel, teaberry, and sweet pepperbush.

The commercially cultivated blueberry was developed in southern New Jersey from native plants through cross pollination and breeding by 1916. Along with the cranberry it is one of the few commercial crops that thrive in the Pine Barrens acidic soil.



Blueberry Fruit

The mountain laurel is a member of the heath that grows up to 20 feet tall. It has large clusters of white and pink flowers that bloom in June. Its hard wood was used for eating utensils and tool handles. The smaller sheep laurel has clusters of pink flowers.



Mountain Laurel

The sweet pepperbush grows is a member of the white alder family and grows up to 10 feet tall. It has round clusters of tiny white flowers that bloom in August. The flowers are very fragrant and draw bees and hummingbirds.



Sweet Pepperbush

The teaberry is a small member of the heath family and grows up to 6 inches high. It has a small, bell-shaped flower that bloom in the spring and a small red berry that ripens in the summer. Its berry was once used to flavor candies, medicine, and chewing gum.



Teaberry

Station #8 Maple Swamp and Vernal Pond

The red maple grows in wet woods, wetlands, and along streams. It grows up to 80 feet tall and produces winged, red seeds in early May. Colonists made brown and black dyes from its bark and its wood is used for furniture.

The black gum or tupelo also grows in wet woods and along swamps and grows up to 80 feet tall. It has shiny leaves and a small fruit that ripens in the fall and is eaten by birds and mammals.



Red Maple



Black Gum

Vernal ponds are bodies of water only present during the wet, spring months. These temporary ponds do not have fish and provides a safe spawning area for frogs and salamanders.

The fowler's toad is very common and breeds in vernal ponds during rainy nights in the late spring and early summer. It has a very loud nasal waah call. The northern gray tree frog also breeds in the late spring and early summer on rainy nights. It has a very loud trill call which is similar to the red bellied woodpecker.



Fowler's Toad



Northern Gray Tree Frog

Station #7 Pink Lady's Slipper Orchid and Rare Plants of the Pine Barrens

The pink lady's slipper is the largest and most common native orchid. It is found in rich woodland areas, blooms in mid-May, and is also along the trail. Its scientific name "Cypripedium acaule" is derived from the Latin for "shoe of Venus".



Pink Lady's Slipper
Orchid

Orchids are the most complex, developed, and numerous members of wildflowers with over 15,000 species, most are found in tropical regions. About 30 species are found in Southern New Jersey. They are long lived and have very complex colorful flowers and take years to grow large enough to produce a flower.

Most orchids have a symbiotic relationship with underground fungus. The orchid supplies the fungus with sugar in exchange for nutrients from the soil. The fungus cannot be transplanted, making orchids nearly impossible to move.

The Pine Barrens has many rare plants including bog asphodel and Pickering's morning glory which are found nowhere else on earth. Other rare species include the Pine Barrens gentian, swamp pink lily, false asphodel, and rare orchids such as the yellow fringed orchid, crested yellow orchid, and dragon's mouth orchid.



Dragon's Mouth
Orchid



Swamp Pink
Lily

Station #4 Wildlife

Not including birds, there are about 34 species of mammals that are found in the Pine Barrens. Those common in the park includes the white tail deer, raccoon, red and gray fox, gray squirrel, opossum, eastern cottontail rabbit, and chipmunk. The white tail deer grows up to 3 and ½ feet tall and feeds on vegetation. It has a white tail it flashes when it senses danger or when it runs. The red fox grows up to 30 inches long and is reddish-brown in color. It eats berries, insects, and small mammals and has its young in burrows it digs in the ground.



White Tail Deer



Red Fox

There are about 30 species of reptiles and 24 species of amphibians found in the Pine Barrens. The eastern box turtle is common, grows up to 6 inches long, and feeds on insects, foliage, and berries. It is able to draw its legs and head inside its closed shell. The northern fence lizard grows up to 7 inches long and is brownish-gray. It is on its stomach. The rough green snake is lime green in color and grows up to 30 inches long. It climbs through shrubs and trees looking for the insects it feeds on and is common.



Eastern Box Turtle



Northern Fence
Lizard



Rough Green
Snake

Station #5 Birds

There are many kinds of birds found in the park. Some birds spend the entire year in the area. They are called year-round residents and include the Carolina chickadee, chipping sparrow, cardinal, blue jay, red bellied woodpecker, American goldfinch, and tufted titmouse.



Chipping Sparrow

Other birds migrate to the area in the spring to nest and raise their young during the summer. They are called summer residents and include the scarlet tanager, gray catbird, pine warbler, black and white warbler, ovenbird, and ruby throated hummingbird. Most of these spent the winter months in Central and South America.



Ruby Throated Hummingbird



Black and White Warbler

Some birds pass through the area migrating north in the spring and back south in the fall. They are called spring-fall migrants and include the red crossbill, yellow-rumped warbler, palm warbler, and indigo bunting.



Yellow-rumped Warbler

The best way to observe birds in the park is to sit quietly on a bench and not make any sudden movements. This allows the birds nearby to become use to your presence. Once they feel safe and that you are not a threat they may go about their daily routine and may even come very close.

Station #6 Charcoal Production

The charcoal industry was very important in the area and existed from the mid 1700's to the early 1900's. Charcoal made from oak and pine trees was used to fuel the furnaces in the production of bog iron and glass. The iron furnaces used large amounts of charcoal, up to 1,000 acres of trees were required to produce enough charcoal to fuel an iron furnace for one year. Since it took approximately 20 years for the trees to grow to sufficient size, 20,000 acres were needed to keep a single iron furnace supplied with charcoal.

Charcoal is partially burned wood in which the water and other impurities have burned off in the absence of oxygen. It burns much hotter than wood and was a very important fuel source. Charcoal was produced by slowly burning wood in stacks from 10 to 20 feet high. The stacks were covered with wet sod and was then lot by dropping a burning piece of wood through a hole on the top which was then sealed shut. Vent holes were used to control the fire and allow the wood to burn without oxygen. The wood was burned for 7 to 10 days and then was ready for the market. Area charcoal was shipped to New York City and Philadelphia. The wider use of coal and other fuels eventually led to the end of the charcoal industry by the early 1900's.



Charcoal Pile Without Sod Covering