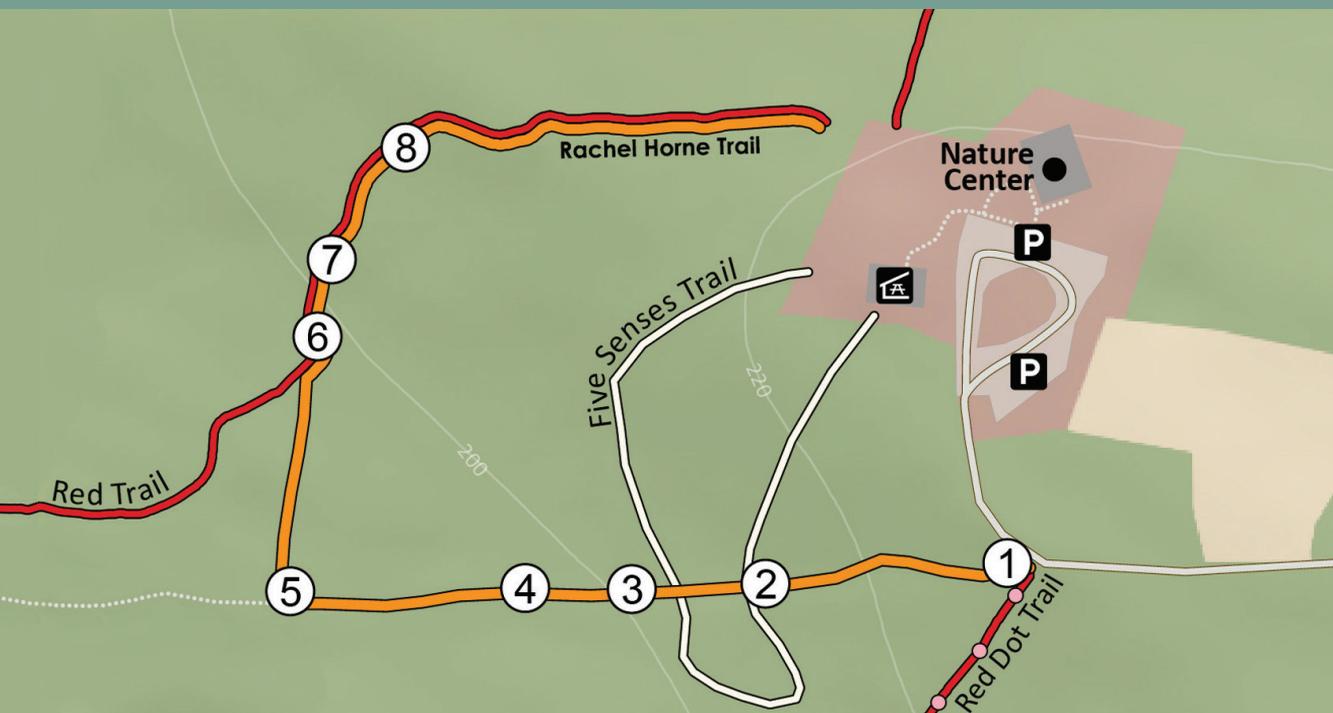


Rachel Horne Trail is a self-guided interpretive trail that is roughly a quarter-mile-long and will take approximately 20 minutes to complete. The trail is named for Rachel Horne, a well-known British naturalist and nature artist who relocated to New Jersey. In 1964, Horne helped establish the nature center in Washington Crossing State Park as the first year-round nature interpretive program in the New Jersey State Park Service.



The entrance to Rachel Horne Trail is located along the driveway, approximately 300 feet from the nature center entrance. The numbered stations in this brochure correspond to the orange and black numbered posts along the trail.

Station 1 Northern Mixed Oak Forest

The area you are about to enter is called a northern mixed oak forest and is fairly typical of many upland forests in northern New Jersey where the terrain is flat or gently rolling and where the soil is well drained. This forest is dominated by red, black and white oak with two or three species of hickory and scattered stems of beech, maple, ash and dogwood. It is one of about seven different types of woodlands present in Washington Crossing State Park. The oldest trees here date to the late 1800s and indicate the age of this old growth forest. Notice how strikingly different the mixed oak forest is from the much younger woodlot to the rear, on the other side of the roadway. A detailed look at the ground in the mixed oak forest will reveal the presence of few oak seedlings relative to a high number of other young hardwood trees. The park's large deer herd seems to prefer browsing young oaks to other species. This will affect the composition of this forest community in the future.



White-tailed deer (*Odocoileus virginianus*)



Yellow trout lily (*Erythronium americanum*)



Black and yellow garden spider (*Argiope aurantia*)

Station 2 The Forest Soil

The importance of soil in shaping the ecology of the landscape is ranked perhaps only second to climate. Although New Jersey is small in area, a great variety of soils throughout the state gives rise to a similar variety in plants and wildlife. The soils of the park consist of acidic reddish-brown silt and shale loams. The fine particles that make up this soil cause heavy rainfall to run off the surface faster than it penetrates. This gives rise to severe washouts along sloping trails like this one where the problem is increased by soil compaction from foot travel. The timbers that resemble steps placed across the trail behind you are actually called erosion control bars and serve to reduce soil erosion on the trail. Leaf litter and other organic material also tend to wash off the ground before it can break down to enrich the soil. Hence, the ground here is less fertile than many otherwise, more porous soils.



All photos courtesy of Wayne Henderek

Station 3 Storm Damage

The large number of downed trees here are the result of severe storms that struck the area in 2011 and 2012. Large oaks that have become top-heavy with maturity sometimes fail to support their own weight in strong winds and rain-saturated ground and blow over. Sunlight from openings left in the forest canopy provides growth opportunities for other plants. Unfortunately, non-native invasive species such as autumn olive, multiflora rose, Japanese stilt grass, mile-a-minute weed and other interlopers will take advantage of these opportunities to become established in the forest. This will likely displace many indigenous wildflowers, shrubs and trees.

Station 4 Natural Recycling

The log laying on the ground to the left is making an important contribution to the surrounding woodland. Nutrients it took out of the environment as a living tree are now being returned for use by future generations of plants and animals. Fungi, bacteria and other decomposers are breaking the log down into the materials from which it is made up. In the process, the log is serving as habitat, or an apartment house and grocery store, for the very organisms that act as recyclers. Some of these are ground beetles, carpenter bees, termites, ants, wood roaches, sowbugs and millipedes.

RACHEL HORNE TRAIL

Cover Photos:
 Top: Scarlet tanager (*Piranga olivacea*)
 Middle: Pileated woodpecker (*Dryocopus pileatus*), Eastern grey squirrel (*Sciurus carolinensis*)
 Bottom: Spring beauty (*Claytonia virginica*)

RACHEL HORNE TRAIL

Station 5 Multiple Trunks

When trees are killed above ground, their root systems sometimes survive and send up new shoots. If more than one of these shoots persist, the tree will develop with multiple trunks such as with this double-stemmed northern red oak. Logging practices, fire, insect damage or a topkilling disease can cause this phenomenon. The presence of several such trees in the area indicates a timber harvest in the mid-1900s. This trail runs along an old logging road from that era.

Station 6 The Redcedar Forest

Notice how dramatically different the forest is here from the previous section of the trail. You have left the mixed oak forest community and are entering the redcedar forest. The eastern redcedar tree (the tall evergreens nearby) associated with mixed species of oak, maple, ash and flowering dogwood dominates the cedar forest. The cedar forest is referred to as a successional forest, which means that it is a relatively young woodland. It developed from abandoned pastureland that was present up to the early and mid-1900s, prior to the land's acquisition as part of the state park.

Forest succession is ecological change that takes place in the community over the course of years, decades and generations. It comes about because all of the plants in the area are battling with one another for the resources of soil, water, minerals, space to grow and most of all, sunshine. Early on, the victors in that battle are the cedars because they grow faster and taller than other trees. However, in time the other hardwood trees will catch up to the sun-loving cedars, over shadowing them and shade them out. The cedars will thus, decline and the community will gradually transform into a different type of hardwood forest.

Station 7 Poison Ivy

The imposing, 'hairy' vines growing up the cedar trees to the right of the trail are poison ivy. It is common in fields, along trails, along wooded edges and in forest openings throughout the park. Beware! All parts of the plant contain an oily resin that produces a skin rash when touched by allergic individuals. The illustration below will help you recognize this plant that has three leaflets and white or sometimes green berries during the growing season. *Don't be a dope - avoid the hairy rope!*



Poison ivy (*Toxicodendron radicans*)



Red-tailed hawk (*Buteo jamaicensis*)

Station 8 Signs of Wildlife

Interesting wildlife abounds in the cedar forest community. Look for deer tracks and animal runs along the trail. Listen for the songs and calls of various birds hiding among the trees. Search tree trunks for hollows and nest cavities or areas of bark abraded by the feet of climbing mammals or the antlers of male deer. Peruse the ground for feathers, small bones, tufts of fur or the pellets left by nocturnal owls. Scan through the vegetative cover for nests and perhaps subtle movement from the animals themselves.

Proceed another 400 ft. and you will emerge from the trail near the nature center.



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