

in the park that is not extensively altered. As you proceed along this path, the phragmites laden wetlands on your left will gradually give way to the Cove. The river's edge will have mostly willow and silver maple trees. River shoreline shrubs will include false indigo and willow shrubs. The current and soil on the river side prohibit the growth of **emergent** plants which dominate the Cove.

From May through October the Cove is lush with vegetation. One of the dominant plant species is **spatterdock** (also called cow lily, yellow pond lily, or southern spatterdock). This plant is food to animals such as deer, muskrat, beaver, waterfowl, and fish. It also provides shade and shelter for small animals. Spatterdock will only grow in areas that are at the mean low water mark or higher. Channels of water will meander throughout the Cove where the water is too deep to support spatterdock. Other common Cove plants include arrow arrum, broad-leaved arrowhead and cattail, pickerel weed, and wild rice. Many of these plants thrive away from the trail where there is more exposure to sunlight. Perhaps the best way to see the Cove is by kayak or canoe. Egrets are familiar late spring and summer visitors. These birds were on the verge of extinction because their feathers were a fashion fad in the 1920s. Now their raw beauty contributes to the majesty of the Cove. Numerous species of birds use the Cove as resting-places and nesting sites for their annual migrations. Through the efforts of "The Friends of Palmyra Cove", this place has become a sanctuary for migrating birds. If you are ambitious enough to follow the trail to its terminus, you will find an uninhabited osprey nest where the Cove meets the river. Many aquatic animals that inhabit the Cove also use the river. Obviously, the health of the Delaware and its tributaries has a significant impact on the Cove habitat.

Eventually, we hope to join the Pennsauken Creek section of the park with the Cove Trail via a footbridge. As you begin your return journey, recall the variety of habitats in this urban oasis and how fragile life can be for their inhabitants. It is only through efforts of individuals that the Palmyra Cove Nature Park and similar places can endure. We must all do our part to preserve these jewels for future generations. Perhaps Ralph Waldo Emerson expressed why: "Nature predominates over the human will in all works of even the fine arts, in all that respects their material and external circumstances. Nature paints the best part of the picture, carves the best of the statue, builds the best part of the house, and speaks the best part of the oration."

Palmyra Cove Environmental Education Foundation is a 501(c) (3), non profit organization established to preserve habitats and provide environmental education and recreational activities for all to visit.

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Hiking In Palmyra Cove Nature Park



Trail maps are available on the information table.

Hiking Palmyra Cove Nature Park

The 350 acre Palmyra Cove Nature Park hugs the shoreline of the Delaware River between the Pennsauken Creek and the Tacony Palmyra Bridge. More than 8 miles of trails weave through upland forests, wetlands meadows, a picnic area and along the banks of the Delaware River and Pennsauken Creek. Our diverse habitats yield a variety of fauna and flora. New Jersey Audubon Society researchers have recorded 348 species of plants, 250 species of birds, at least 16 species of terrestrial mammals, and a minimum of 7 species of reptiles and amphibians. The Delaware River, tidal cove, and Pennsauken Creek are known to contain 49 species of fish.

The Cove habitats are a lesson in **succession** (see exhibit in Environmental Discovery Center (EDC)). Most of the site is made up of dredge material that has succeeded into forests. Some areas are still active dredge cells used by the Army Corps of Engineers but have become viable wetlands for plants and animals. The most natural area in the park is the **Cove** located a mile south of the Environmental Discovery Center.

We will begin our hike just south of the EDC where the red path meets the parking lot. It is important to stay on our trails because of the number of ticks in the taller grasses and shrubs. The staff of the Burlington County Bridge Commission beautifully maintains our trails. It is possible to hike the entire park and be free of ticks if you stay on the trail and avoid tall grass and heavy brush. Moving along the Cove Trail (red road) you will see some fairly tall trees. The dominant tree in the park is the **eastern cottonwood**. It is not native to this area but became established as a result of the dredge fill. Mature cottonwood trees have dark, deeply furrowed barks. Their leaves are triangular with pointed tips and teeth along the edges. They release cottony seeds in late spring that almost look like snow flurries. Other common trees to look for in this area is ailanthus and locust. This part of the trail is good for sighting birds. Baltimore orioles, American goldfinch, morning doves, robins, and scarlet tanagers. Sometimes osprey and cormorants will appear near the river.

As you proceed along the Cove Trail, there will be a turn to your left (still following the red path) leading to an area characterized by a lower elevation and a proliferation of **phragmites** (also called a common reed). This parcel of land is an active dredge deposit cell. The U.S. Army Corps of Engineers has used this place to store dredge fill. You should see a pipe and supporting structure to the right of the interpretive sign. This dredge cell is essentially a man-made wetland. Water in the cell is supplied strictly by rainfall. The past two summers the cell was dry which meant fewer waterfowl, fish, reptiles and amphibians. With the presence of water in the winter and spring of 2003, life has blossomed again. Red winged blackbirds thrive in the phragmites and scattered willow trees. An abundance of barn, bank, and tree swallows zoom above the water. Nesting boxes rim the shoreline and are often inhabited by the swallows. Geese, mallards, ruddy ducks, and herons are not uncommon in this area.

The dominant plant species in this dredge cell is phragmites, an invasive plant that was brought to the United States from Asia. Phragmites is highly aggressive and reproduces by seeds dispersing from the plumage on top and sending out runners from the roots. It often eliminates native species such as cattail. In some parts of the United States there have been concerted efforts to destroy phragmites by using fire, pesticides, cutting, and digging it out. Most attempts to destroy it have

been unsuccessful. The plant thrives in disturbed places such as dredge cells and construction projects. Phragmites offers hiding places for predators and is not part of the diet of many native species. Opponents of trying to control phragmites argue that it is a waste of time and money. They point out its benefits that include prevention of soil erosion.

Leaving the dredge cell via the south rim, you enter a climax succession forest. The cottonwood trees dominate this landscape. The undergrowth includes many stinging nettles, Japanese knotweed, poison ivy, and Japanese honeysuckle. Deer tracks are rampant but it is not uncommon to find the 4 claw marks from a red fox. The numerous fallen logs are homes to small mammals and are play an important part of the ecology of the forest. Throughout their lives, trees collect nutrients from the environment and use them to build new bark, wood, branches, leaves, and so on. When a tree dies, its nutrients are recycled back into the environment through **decomposition**. Animals, such as bark beetles, move into trees and start the process of decomposition even before a tree has died. These creatures may hasten the death of the tree. Wood-eating insects as well as **fungi** and **bacteria**, invade a dead or dying tree, paving the way for other invaders. Here's a look at some common things may find on, in, and around dead wood.

Any decaying wood is sure to have fungi, moss, lichens, and other plants growing on it. Wildflower, tree, and other plant seeds that land on a soft decomposed log may sprout and grow. Plants and fungi absorb nutrients from the decaying wood, and as they grow, penetrate the wood and break it apart. Lichens, as they grow, release a weak acid that breaks down the wood. Moss keeps the log moist, making it a suitable place for other plants to live.

Termites, sowbugs, carpenter ants, and wood roaches are all examples of creatures that eat or tunnel through wood. Many of those animals also eat other kinds of vegetable matter, such as dead leaves. As all of them chew their way through the wood, they help break down a log.

Bark beetles eat through the living tissue just under the tree's bark. Evidence of their work is easy to find on most dead logs. The tunnels of those tiny insects create intricate patterns in the wood underneath the bark.

Some animals, such as centipedes and spiders, feed on the sowbugs, millipedes, and other **scavengers** that feed on the decaying log. The predators, become meals for the birds, skunks, and other animals that tear into a log to find food.

Many creatures depend on decaying logs as places to hide from predators or to find shelter from the elements. Patent leather beetles, click beetles, and other animals may spend the winter inside a rotting log. Some beetles, wasps, slugs, and other animals lay their eggs in decomposing wood. Salamanders may wait in the relative coolness and dampness of a fallen log during the day and then hunt for food at night. As these animals burrow into the log they also help to break it down.

The forest area also has birds that would not be seen at the dredge cell. One in particular, the downy woodpecker is often heard and sometimes seen. Males are black and white on heads and wings with a red spot on the nape of its neck. Look for open areas at the edge of the forest that contain dead trees. These trees are often good nesting places for horned and long-eared owls. The Environmental Discovery Center has several pictures captured by the many photographers that visit the park.

Make your way back to the Cove Trail, turn left (south) and you will be paralleling the river which is to your right. The Cove is the only ecological community