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Take a look at this stream. Notice the grasses along the edge. These wetland areas are a great habitat for wading and marsh birds. The rare Least Bittern nests along Pushaw Stream using this habitat.



Rare Least Bittern

Next look at the water itself. On top, you may see a skimming dragonfly or some water insects such as Whirligig Beetles.

Below, streams offer diverse habitats of mud, rock, and vegetated bottoms used by many aquatic insects, such as stoneflies, caddis flies, and mayflies. Freshwater mussels also occur here. Rocks make great resting places for fish, where they can avoid the current.

Count how many trees around you show evidence of beaver. Beaver cut trees for food as well as construction material for their dams and lodges. Numerous lodges occur along the edges of this stream and you may see a beaver or two swimming. Although beaver attempt continually to build dams here, the current always washes them away.

Also, note the red nesting boxes along the stream bank. These are used by ducks that such as, Wood Ducks, Hooded Mergansers, and Goldeneyes. They will build nests in abandoned woodpecker holes, or other natural cavities, but they readily use the nesting boxes. Hirundo maintains the boxes so these ducks will have ample places to nest each year.

4

This point may look similar to the last, but look on the right side of the trail. This is a vernal pool. Vernal pools are shallow depressions in the ground that fill with water in the spring or fall, and dry up in the summer. These pools are interesting because they are fish-less. Spotted Salamanders, Blue-Spotted Salamanders, and Wood Frogs use the pools for nesting where fish won't harm them. Here, eggs develop into larvae and young adults before leaving to spend up to 10 months in the adjoining upland habitats. Protection of these pools and the surrounding area is critical to the survival of these species.

5

It looks pretty wild out here, but believe it or not, this has not always been a wildlife refuge. Before Oliver Larouche founded the Refuge in 1976, this part of the land was an active farm.

Have you ever seen a rock wall winding through a field or forest? Farmers would make them with rocks dug up during the clearing and plowing of their fields. Other farmers would pile the rocks, just like you see here. This rock piling now creates the perfect habitat for some of Maine's harmless snakes. This is called a hibernaculum, where snakes congregate to spend the winter.

On a bright spring or early summer day, snakes bask in the sun on these rocks. Most are Garter Snakes, but Eastern Racers, and Brown Snakes also occur here. These snakes are primarily insect eaters, though they will also eat slugs, earthworms, frogs, and small rodents. Snakes, in turn, are prey for foxes, raccoons, and raptors.

6

At one time, this was an actively plowed field. Now you are seeing results of what is called succession.

Over time, the land constantly changes, a process known as succession. Succession happens after cleared land is abandoned, or a fire or wind storm destroys trees in a forest. The land immediately begins to change and adapt.

When the farmer stopped plowing this field, it slowly began to fill in. First annuals, then perennials, followed by shrubs and small trees, such as Hawthorn, Dogwood, Cherry, and Crabapple take over. Finally, Birch, Maple, and Pine will occupy this old field. This field is in mid succession, while the pine stand nearby is in the later stages.

These very different habitats provide a variety of food, cover, and nesting areas for many animal species. Without these different stages of succession, some species would have nowhere to live, since each requires specific habitat conditions.

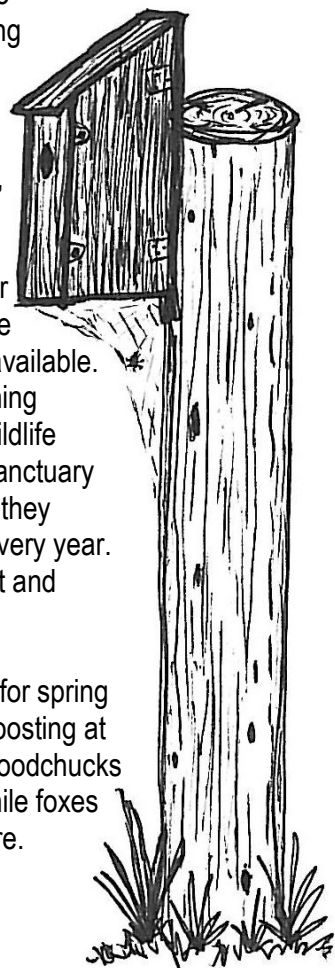




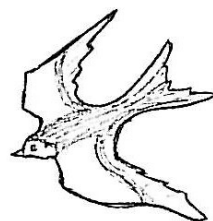
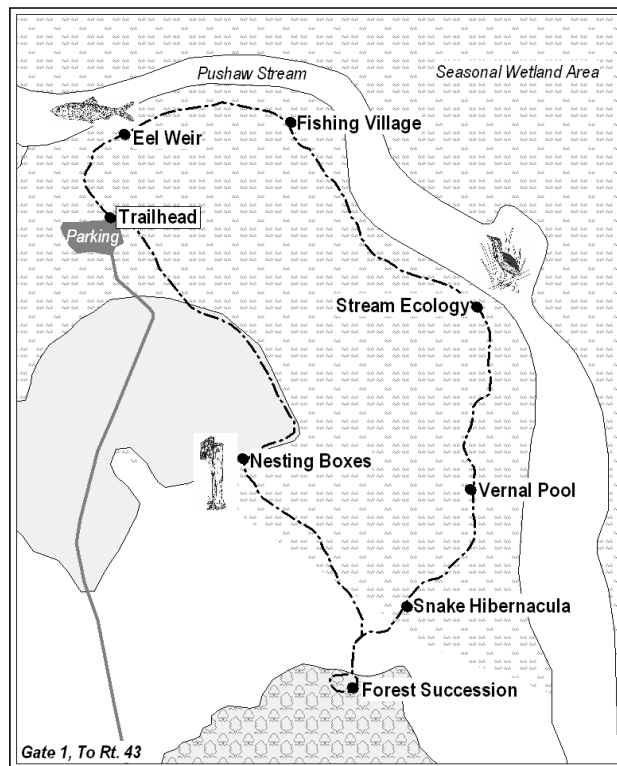
This is a maintained field. Otherwise, it would begin to fill in as we saw at the last station. Fields are maintained by mowing or burning and help diversify habitats available to wildlife. Some animals utilize fields and forest openings for nesting, roosting, and feeding. They soar over open fields catching insects or feed on insects found in the grass. One bird that frequents this field is the Tree Swallow, or in Latin: *Hirundo*. These beautiful birds are the namesake for this refuge. They return every year to nest in these boxes, along with the rare Bluebird.

These birds, much like the ducks on the stream, will commonly nest in cavities in trees created by woodpeckers, fires, or disease. However, these cavities are not always available. By building and maintaining these boxes, Hirundo Wildlife Refuge has become a sanctuary for these birds—a place they can rely on for nesting every year. Flying squirrels also nest and winter in these boxes.

Woodcock use this field for spring courtship and summer roosting at night. Deer, bear, and woodchucks graze on the grasses while foxes hunt small mammals here.



Hirundo Wildlife Refuge Interpretive Trail



Preserve. Protect. Educate.

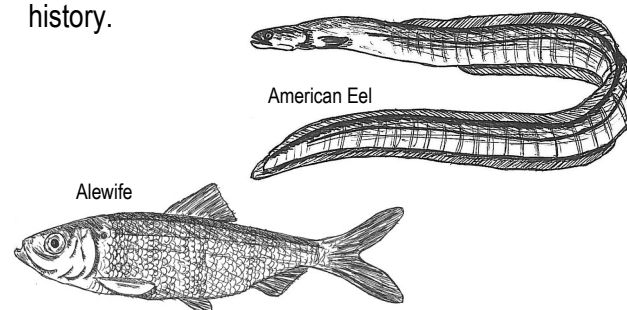
Hirundo Wildlife Refuge
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How did people travel before roads? You are looking at the answer: streams and rivers. Leading to the Penobscot River, Pushaw Stream was once a highway to important fishing and hunting areas for the Native American People.

Natives were not alone in using the Pushaw path. Alewives and eels have traveled through here for centuries on their way to and from the ocean. Eels will mate and spawn in the ocean, then travel up this stream to spend their lives in Pushaw Lake. Alewives mate and spawn in the Lake, then travel downstream to spend their lives in the Atlantic Ocean. Both species are important pieces of Hirundo history.

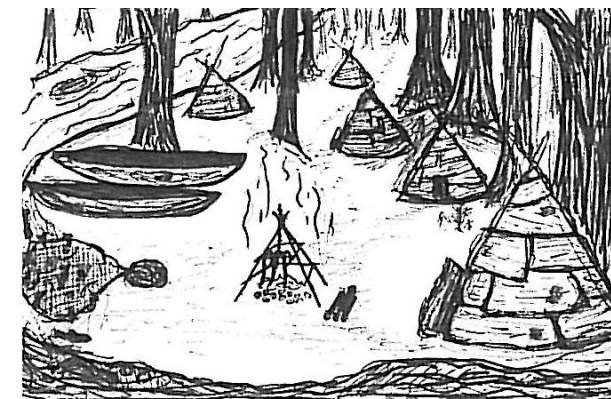


The cement blocks in the stream represent a large part of this history. They are the remains of an active eel weir, or eel screen, built in the early 1900's. The eel weir allows young eels and other fish to pass upstream during most of the year, but traps adult eels during the fall on their migration back to the ocean. These eels may spend up to 25 years in Pushaw Lake. They were sold as delicacies all around the world. This weir was active until the 1980's.

Alewives have stopped coming this far upstream due to the installation of dams in the last 100 years. The Penobscot River Restoration Project will change this, as dams are removed to help sea-run fish return to their original waters.



Notice the nearby excavations. You are standing on the site of a Native American fishing village. 7,000 years ago, you would be in the middle of a small (15-30 people) community of fishermen and their traveling families, much like the drawing below.



This location is important. The adjoining land has changed over time, but the stream has changed little. The shallow water with rapids made spearing and netting fish easy. Families came in the spring when fish were migrating and staid to hunt the vast surrounding marshes which have slowly turned into peatlands.

What is known of this site was discovered during an archaeological dig conducted in the 1980's by the University of Maine. Though soils are too acidic to preserve netting, many grooved stones were found that were used as net weights. Also, sharpened rocks and their shavings told of the tools the natives used to catch and process fish. Dates were determined by comparing the style of these tools to others found throughout the state.