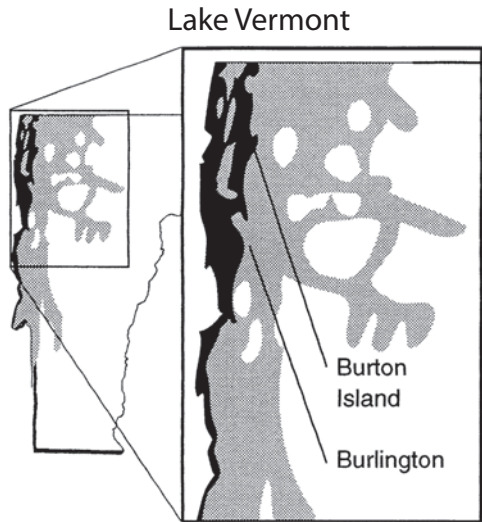


Station #8

If you stood in this spot 10,000 years ago, you'd be 300 to 400 feet under water. At that time a, large cold-water lake, Lake Vermont, had formed from the glacial melt water in the Champlain Valley. Since the St. Lawrence River was still blocked by the retreating glaciers further north, the waters here began to drain south down the Hudson Valley.



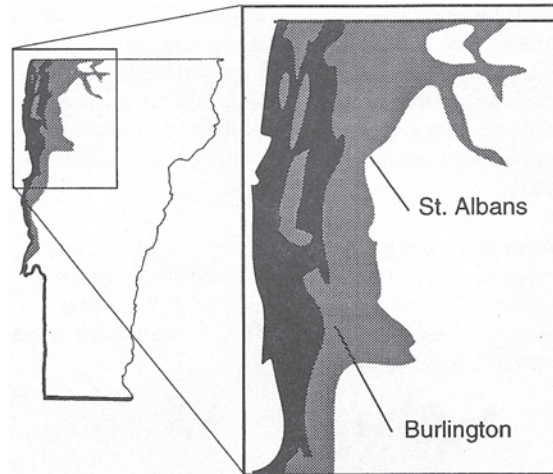
Station #9

If you look south, you will see Eagle Bay. Eight-thousand years ago you would have been looking at a larger body of water called the Champlain Sea.

The Champlain Sea was formed after Lake Vermont was freed from the glaciers to the north. The path to the Atlantic Ocean was no longer blocked, yet the land was still compacted from the weight of the glaciers. The oceans were full of the glacial melt waters, so the salt water flowed into the Champlain Valley forming a small sea.

We see no evidence of salt water here, but the well-preserved skeleton of a whale was found near Charlotte, a few miles south. The skeleton can be seen at the University of Vermont. It is known that during the Champlain Sea period Paleo-Indians living here utilized the seas for foods including whales, seals and sharks.

Champlain Sea



Station #10

These large hardwood trees and their snags are signs of a climax forest different from the hemlock forest we saw earlier. This forest consists of *Oak* and *Maple*. The dead trees include remnants of the transitional forest that was present before these trees.

What important roles do dead trees play in a forest system? Besides putting their nutrients back in the soil, they provide homes and resting places for many animals, large and small. Look carefully to see if there are any present inhabitants.



bur oak



silver maple

Station #11

You have reached Eagle Bay. Do you wonder how it acquired its name? Perhaps someone spotted a *Bald Eagle* passing overhead one spring afternoon, as eagles pass through every year.



As you gaze out over the water, remember that this valley is ever-changing. After the glacier melted, the land rebounded from weight that had been upon it, and perhaps began to tilt as well. Ocean water ceased flowing into the Champlain Valley, and fresh water began to drain north instead. The valley filled with the Lake Champlain that we know today. As you walk back, keep in mind that Lake Champlain and Burton Island have not always looked the way they do today. Each stage in their unique history has left its own impressions. By reading these signs, we can understand the natural history that shaped the landscape.



Burton Island State Park

P.O. Box 123

St. Albans, VT 05481

(802) 524-6353 (Operating Season)

Open Memorial Day weekend through Labor Day

www.vtstateparks.com

This document available upon request in large print, Braille, and audio cassette.

VT TDD Relay 1-800-253-0191

Printed on recycled paper.

03/09 RRA-ERP

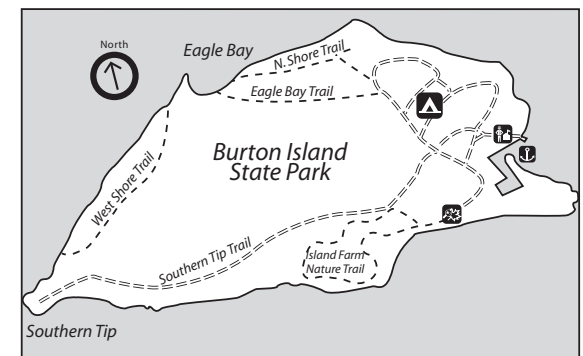
North Shore Nature Trail

GLACIERS AND FARMING THE SHAPING OF BURTON ISLAND'S LANDSCAPE

a self-guided interpretive trail

in 11 stations

The landscape of Burton Island has undergone many changes over the past 14,000 years. The island has been covered by glaciers, submerged under a huge, cold lake and was on a sea floor. It became part of a peninsula utilized by Native Americans, and later was farmed for more than 100 years by European settlers before becoming a Vermont State Park in 1960. Each stage of the island's history has left features for you to discover and explore. This self-guiding trail will help you visualize and understand the natural and cultural events of the area as you walk to scenic Eagle Bay on Burton Island's North Shore.



Station #1

Plants are some of the best indicators of land history events. Through a process known as *succession*, the vegetation of an area changes over time until it reaches a self-sustaining community. By looking at the species of plants present at a given time, it is possible to determine the successional stage and to surmise what may have happened to the land on which they live.

Here you see *Red Raspberry* bushes and small shrubs called *Staghorn Sumac*. These are some of the first plants to inhabit old fields when cultivation is abandoned. Because they require full sunlight, they do well in this habitat.

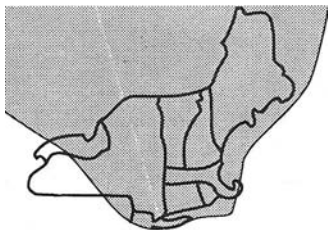


staghorn sumac

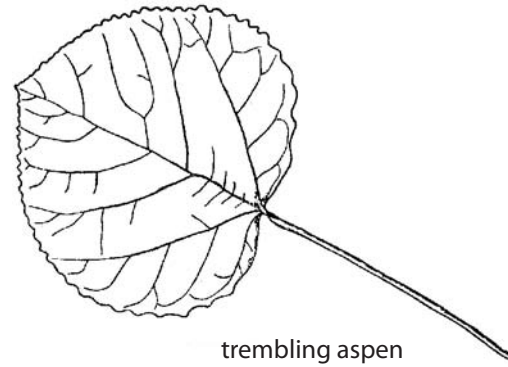
Station #2

Why is this rock here? Does it appear out of place? This stone is a *Glacial Erratic* carried by a glacier and deposited here as the glacier melted.

During the last glacier, known as the Wisconsin Glaciation, Vermont was covered with ice a mile high for 40,000 years. About 11,000 years ago, this glacier began to melt in a climatic warming trend. It left behind all of the material that it carried, including glacial erratics such as this boulder. These erratics are widely scattered over Burton Island, especially near the shore.



extent of the Wisconsin glaciation

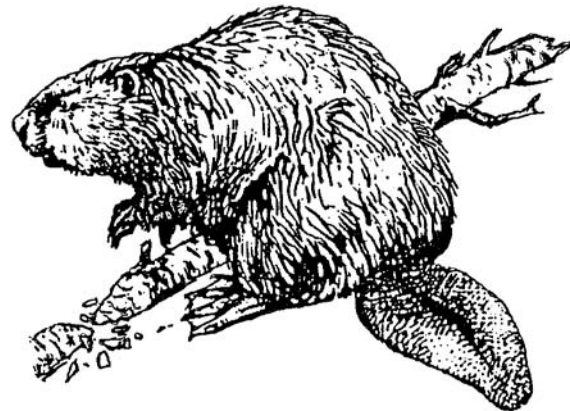


trembling aspen

Station #3

The *Trembling Aspen* or *Poplar* is an excellent example of an early succession tree. Identify it by its greenish-silver bark, and the small rounded leaves that “tremble” in the wind. This tree produces millions of tiny seeds that are dispersed by the wind. If they land in a sunny spot like an open field, they germinate quickly and grow rapidly – up to 5-10 feet in one year. What does the presence of this tree tell you about this location?

You may have noticed some chewed aspen stumps. These trees were cut by young beavers in the spring as they searched for a suitable stream on which to build their dams. Not finding one on the island, they left, but not before they ate the bark of a few aspens, their favorite food.



Station #4

Here is an interesting combination of plants. We find old *White Cedars* and *Red Cedars* growing along with plants such as *Goldenrod*. Why so few trees? The answer is the ground beneath your feet. The rock outcrops along the path also give a hint. Soil here is thin, and only the hardy cedars can survive. Succession at this point has reached its conclusion unless more soil can be established here.

Why does this spot have such thin soil? Knowledge of past land use tells us that this area was under pasture or plow for 100 years. Both practices can result in the loss of soil to water and wind erosion, leaving thin soil.



northern white cedar



eastern red cedar

Station #5

Imagine Abenaki hunters quietly stalking a white-tailed deer as it stops to drink here. For more than 8,000 years before European settlement, Native Americans lived in Vermont. Because of lower lake levels, Burton Island was a peninsula for much of this time.

The small marsh here is also undergoing a succession. It is gradually filling in with sediments. Soon, small shrubs and trees will grow here, and the site will no longer be a wetland. Earlier, when the Abenaki occupied this area, the wetland was likely an open pond.



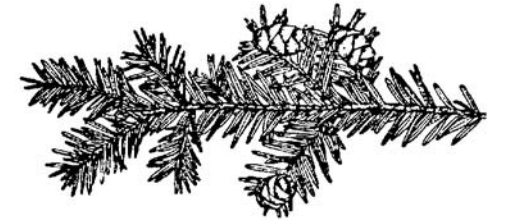
8,000 years ago

Station #6

As you walked to this spot did you notice a difference in temperature and light? Why do you think this is?

This is one of the few edges on the island that was not cleared for fields during the years this area was farmed. The trees growing here are evergreens known as *White Cedar* and *Eastern Hemlock*. Hemlock is a long-lived shade tree able to grow in the shade. It is considered a representative of succession’s climax in Vermont ecosystems. Some of the large hemlocks here are more than 200 years old.

Few other plants can live with so little light, making the ground under the hemlocks bare, except for a few types of mushrooms.



eastern hemlock

Station #7

Coming out of the dark forest, you enter another stage of succession here on the island. This is the *Transitional Forest*. It is the intermediate stage between our aspen forest and the hemlock forest. You are seeing *Paper* or *White Birch* trees with the white bark and young *Ash* trees. What does the presence of this forest tell you about this area?



paper birch leaf



green ash leaf