Ashley Schiff Preserve Science Walk

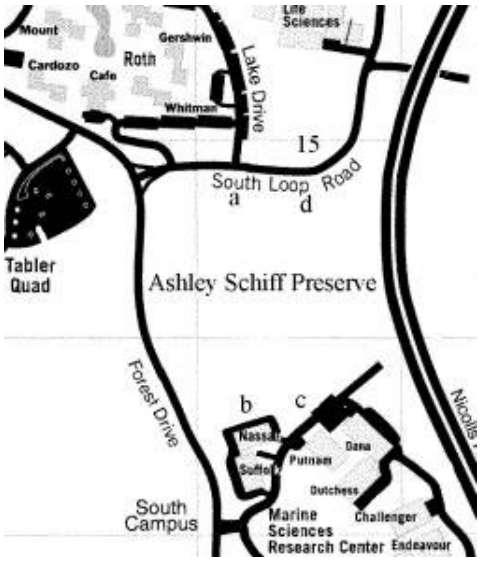
SUNY Stony Brook Campus

Take only pictures. Leave only footprints.

For a printable double sided four-fold brochure of this science walk on 8.5" x 14" paper link here.

Link to this site that describes the history and uses of the Ashley Schiff Preserve as well as many photos.

This site has photos and names of plants in the Ashley Schiff Preserve during the seasons.



To begin this Science Walk enter the Ashley Schiff Preserve on the path immediately south of Lake Drive across South Loop Road at point a.. Continue on this path until you come out on the road immediately north of Nassau Hall point b. Go east along the road about 100 yards where another path enters the Ashley Schiff Preserve point c. Exit the walk at point d. Stop 15 is across from d on the north side of South Loop Road There are numbered signs at most of the stops. Click on the thumbnail image to get a larger image of west campus.


Forest Stratification

Welcome to the Ashley-Schiff preserve. Here you will observe living and physical objects in their natural states. This is a deciduous forest, in which most of the trees lose their leaves after the growing season.

When walking the trail, observe the large rocks embedded in the surface. There are a variety of rock types, and they certainly are not all the same size. In fact, these rocks didn't originate on Long Island. During the last Ice Age, a huge glacier carried rocks and sediment from the north. Rocks of every size, as well as sand and clay were deposited by the glacier. Much of the surface material in the forest is till, a mixture of rocks, sand, and clay.

When only a part of a buried rock is visible at the surface there is no way of telling how large it may be by looking at it. As the glacier retreated, blocks of ice were also wholly or partially buried. After these blocks melted, they left depressions on the surface. These depressions are known as kettle holes. On Long Island, these kettle holes range in size from meters to kilometers in diameter and up to 30 meters in depth. For example, Lake Ronkonkoma is kettle lake, a large kettle hole filled with water.

Besides the fascinating geological features found in the Ashley-Schiff preserve, biological processes are evident in the forest. The most obvious is the variety of trees and plants.

The different species of plants in the forest may be identified by observing features of the leaves, twigs or bark. Information is included with this brochure to help you identify some species of trees and other plants in the forest. Some trees come with their own pleasant surprises such as that of the Sassafras; crushing it's leaves, you may enjoy one of nature's aromas.

There are other organisms that share the forest with the plants. Although they are not as visible, their effects are seen throughout the forest. Bacteria and fungi are the decomposers of the forest, and are known as nature's "little cleaners". The decaying wood on the forest floor is a result of their efforts. They are also the reason why the fallen leaves do not accumulate throughout the years.

Just about everyone on Long Island has walked into some type of woods in their lifetime. A trail such as this is intended to show things that you may never have noticed (or thought of) before. For instance, by observing the direction of the fallen trees, one may infer meteorological events that occurred some time in the past. Also, few ever think about what lies beneath the surface, such as the soil that took thousands of years to create or the complex root systems of the plants. There is also a discovery station that shows a forest in its early stages, a concept rarely contemplated by most people.

We pose questions in this trail guide in order to encourage people actually to think about what they are seeing. Hopefully, those that walk the Ashley-Schiff trail at Stony Brook will come away thinking, "I never thought of that".

Enjoy your visit. However, do be careful! **Poison ivy** is common in this forest. Not only on trees but also as ground cover. If the plant has leaves of three, let it be.

Discovery Stations

Welcome to the Ashley-Schiff preserve. As you walk the nature trail, you will come upon fifteen discovery points that are numbered. Please take a moment to read the descriptions provided below. They will aid in the identification of the preserve's more prominent plant species and in understanding the interworkings of its ecological processes.

1. Exposed Till

As the glaciers that once covered Long Island receded, many of the sediments they left behind were unsorted sediments, which consists of rock of different sizes called till. Observe the shape of the cobbles exposed here. What caused them to be shaped this way? Did the rock fragments all come from the same rock?

2. Forest Environment

Stop, look, and listen. Practice your observation skills. You are standing in a deciduous forest, in which most of the trees will lose their leaves after the growing season. Identify the different sounds that you hear at this station. Which are natural and which are not?

3. Garnet Bearing Rock

Look down on the path. You will see a rock type called a schist. This is a rock formed by subjecting clay and feldspar to intense heat and pressure. A close look at the rock reveals larger crystals on its surface. These are garnets, a semi-precious stone. You may also see some mica in this rock along with the other minerals. How did this rock get to the surface of the earth after being formed far below the surface?

4. How Large is This Rock?

The rock exposed here is pegmatite. It mainly consists of large crystals of quartz and feldspar. Look closely for visible crystal shapes on the rock's surface. Describe what you see. Since most of this rock is buried, how could one determine its true size? How large

could this rock be? What forces in nature could move a rock of this size?

5. Kettle Hole

You are now standing in a kettle hole. This was a place where a large block of glacial ice was incorporated in the glacial sediments. As the ice melted, it left this depression. Would you expect all kettle holes to be the same size or shape? Once the ice melted, where did the water go?

6. Fallen Trees

Look around and you will see many trees that have fallen and are now resting on the ground. Do you see a pattern in the direction that they fell? What forces of nature are strong enough to topple trees? Does weather play an important role in the forest environment?

7. Where Do Leaves Go?

Every year, these trees in this deciduous forest lose their leaves. One would expect that the pile of leaves on the forest floor would grow thicker each year. If this is actually happened, would you be able to walk the forest easily? Dig down through some of the litter you see around you. Notice how the character of the litter changes with depth. So what is happening to the forest leaves? What are the processes involved? Finally, who are the major players of these processes?

8. Topography

Note that the topography in this part of the Ashley Schiff Preserve is very irregular with many small ridges and valleys. These small ridges and valleys were formed by the glacier that pushed from the north to the south. Note that the small ridges and valleys generally have an east-west trend. As you go over a ridge the underlying sediment is exposed. Is this sediment the same as you saw at stop 1?

9. Wood Decomposition

Like all living things, trees eventually die. When this happens, the properties of the wood are transformed. Take a look at the rotting wood at this station. Use your sense of touch to compare this wood with that of a living tree. What role do you think insects and microorganisms have in changing the wood's properties? Do you think that all wood decomposes at a similar rate?

10. Succession: The Evolution of a Forest

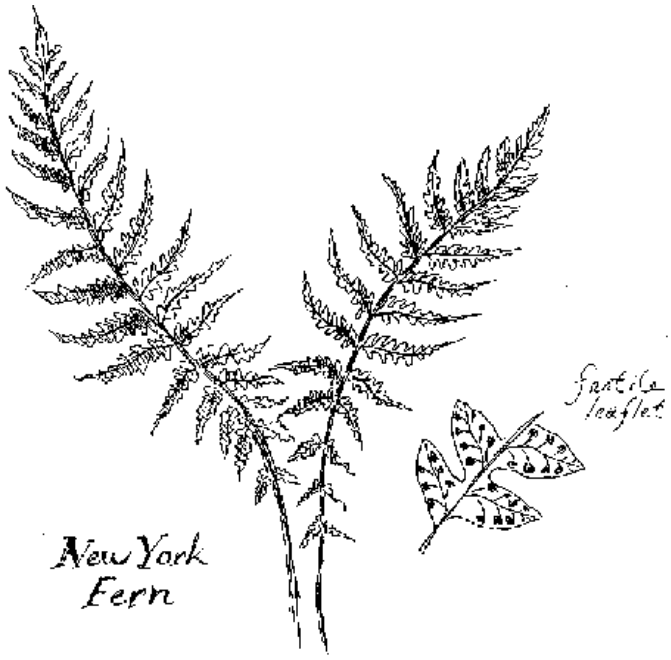
Here we look at how a forest evolves over time. The forest that you have been walking in has not always looked this way. Changes in climate and the effects of fire have naturally changed its appearance many times. Look at the open field ahead of you. This is the beginning of a forest. Are the plants in the field similar to the ones in the forest? Why or why not? Compare the growing conditions of an early forest to a mature forest. How long do you think that this "young" forest will take to look like the forest you have been walking through?

11. <u>Sassafras</u>

A common plant in this forest is sassafras. The leaves can be used for making tea. Break off ONE sassafras leaf, crush it between your fingers and smell it. Does its smell remind you of anything familiar? See if you can locate any black birch trees using your identification chart. Take a leaf from that and smell it -- you'll be pleasantly surprised! Humans have used plants for many purposes. Name some useful plants and their uses.

12. Ferns

A fern is a plant that does not produce any seeds. New ferns are produced through the production of spores, which are located on the underside of the leaves. Look at the undersides of the fern's leaves. Are there any spores present? If present, they would look like small brown dots. If they are not present, can you explain why they are not there? How might nature transport these spores? How are other types of seeds transported? (Hint: Think of the fruits you eat.)



13. Roots

As you walk the trail, look down and you will see many roots that cross your path. When a seed germinates, the roots are usually the first structure established. What do roots provide the plant? Notice the roots at this location (specifically, the largest root at this station). How large do you think this root is? Can you find the tree to which this root belongs? How far down into the earth and away from the tree do roots extend?

14. Leaf and Bark Comparison

At this spot, there are many types of trees in one area. Look at the leaves and compare them to the identification chart. Can you match the leaves here to the tree name? Some clues to a tree's identity can be found by looking at its bark. The bark serves a protective function for the tree, like armor; but unlike armor, the bark must be able to grow as the tree grow wider. Compare the different barks here. Some may be smooth while others are deeply grooved or even flake off. Why would nature produce different types of bark? For what purposes have humans used bark?

15. The Great Kettle

As you cross over the road when exiting the preserve, you will encounter a very large kettle. Notice how the steepness of the sides compares to other kettles that you have seen earlier on the trail. Why is this kettle larger than the others? How thick do you think the glacier was that covered this area?

This guide to the Ashley Schiff Preserve Science Walk was written by **Walter Gurzynski** and **Reid Solomon** for the **Earth Science Research Project** of the Department of Geosciences, SUNY at Stony Brook

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