

THE NEW YORK BOTANICAL GARDEN

Outdoor Self-Guided Visit: *Westchester Indian Trail Walk*

TEACHER GUIDE

Welcome to The New York Botanical Garden! How could natural ecologies meet your basic human needs? Conduct a field study with your students as you navigate a self-guided visit through the Thain Family Forest along centuries-old original Native American-laid footpaths. Use the information in this walking guide, the suggested activities, and accompanying reproducible student field guide to help students gain a sense of place in history as well as find and identify the natural resources that Native Americans used to survive.

Recommended for use for grades 4–7



ABOUT THE NATIVE AMERICANS:

The land the Garden encompasses, including the Forest, served as a travel-through location and temporary overnight stop between East River shell fisheries and weather-protected interior land. Native Americans who travelled through here were part of the Algonquin Federation, a loose group made up of 40–50 sub-tribes reaching from Delaware to the Schoharie Valley in New York.

The southern branch of the Westchester Indian trail came across Fordham University's campus, through present day Garden land and made its way to a ford across the Bronx River about 150 feet north of the Pelham Parkway bridge. There was a cross-over trail (the Aquahung trail) which followed the east side of the river and connected the south and north branches of the Westchester trail.

The Siwanoy (Munsee dialect-speaking) occupied the east side of the Bronx River and the Weckquaeskec (Renenu dialect-speaking) occupied the west side, but both tribes traversed both sides of the property. There were no permanent dwellings on Garden property, but there was at least one further south, alongside the present-day zoo.

At least two middens (shellpiles) were revealed on Garden grounds: one on the hillside where the present-day Ruth Howell Family Garden is located and another, located at Daffodil Hill.

ABOUT THE FOREST:

The Forest, which borders the Bronx River to the west in the Garden, is a native 50-acre, old-growth forest. Much of New York City was once covered by forest such as this. When you walk through, you will walk along many trails which were originally Native American

migration footpaths.

ABOUT THE RIVER:

The Bronx River, originally called "Aquehung," or "River of High Bluffs," by the Native Americans who lived and fished along it, begins near the Kensico Reservoir in Valhalla, N.Y. (Westchester County). The river winds 23 miles south through the Bronx, eventually emptying into the East River. It is the only fresh water river in New York City (the Hudson and East Rivers are tidal estuaries).

By the early 1600's the river was used for the purpose of powering mills with water power, and this continued into the 18th century. A remnant of this industry, the Stone Mill, built in 1840 by the Lorillard family, can be seen today.

ABOUT THE PLANTS AND ANIMALS:

The natural resources Native Americans used to meet their basic human habitat requirements can be readily found along forest trails. Some signage pointing out

Some Animal Resources:

Animal (*Past)	Use
White-tailed Deer, Elk, Moose *	Hunted for meat, hides, antlers.
Frogs	Consumed fresh or dried.
Snakes	Consumed fresh or dried.
Black Bear*	Hunted for fur, meat and claws. Used grease for cooking, emollient/makeup.
Ducks, geese, raptors, cranes, herons	Eggs collected for food, feathers for robe decoration.
Turtles	Caught and eaten; Shells used for rattles or other instruments.
Raccoons, Beaver	Hunted for fur; Grease used as emollient.
Gargantuan Fish Runs* Alewife Herring	Caught in season and consumed or dried. Successful resurgence.
American Eel	Caught in fall using weirs mounted at mouths of streams. Skinned/dried meat.

resources may exist throughout the forest, but you might use a key to familiarize yourself with them further.

Some Plant Resources:

Plant	Use
Common Spicebush <i>Lindera benzoin</i>	Treated illness including coughs, arthritis, and measles.
Southern Arrowwood <i>Viburnum dentatum</i>	Durable wood used to make arrow shafts.
Mapleleaf Viburnum <i>Viburnum acerfolium</i>	Bark used medicinally for stomach ailments.
American Beech <i>Fagus grandifolia</i>	Food, compounds made from bark and leaves used for burns, frostbite, tuberculosis.
Sweet Birch <i>Betula lenta</i>	Oil of wintergreen for flavoring, medicine, birch beer. Saplings for wigwam building.
Sugar Maple <i>Acer saccherum</i>	Sweet sap for syrup. Saplings/bark for wigwams.
Shagbark Hickory <i>Carya ovata</i>	Nuts consumed. Wood for construction. Saplings for wigwam's arched roofs.
Tulip Tree <i>Liriodendron tulipifera</i>	Dugout canoes. Saplings/bark for wigwams.
Poison Ivy <i>Toxicodendron radicans</i>	Used to poison arrows for hunting and warfare.
Sweetgum <i>Liquidambar styraciflua</i>	Aromatic sap for gum. Bark for wigwams.
Common Moonseed <i>Menispermum canadense</i>	Fruits, roots, and leaves for stomach ailments and skin diseases.
Hillside Blueberry <i>Vaccinium pallidum</i>	Gathered and eaten.
Roundleaf Greenbrier <i>Smilax rotundifolia</i>	Roots treat minor skin irritations. Shoots edible.
White Oak <i>Quercus alba</i>	Acorns consumed. Dug-out canoes.
Flowering Dogwood <i>Cornus florida</i>	Bark to treat malaria.

MORE "ABOUT" FOR THE WESTCHESTER INDIAN TRAIL WALK CONTINUES ON THE NEXT PAGE...

HOW NATIVE AMERICANS FULFILLED BASIC HUMAN NEEDS:

Food and Medicine

Foraged: Generally sustaining hunters and gatherers based on seasons and travel locations- Primarily ate local fresh plants (fruits, berries, leaves and nuts) and animals, fish, oysters, and w/no other choice, travelled to and waded in cold coastal waters to find clams and oysters. Evidence of diet containing shells, bones, and acorn caps learned by inspection of middens located outside of wigwams.

Horticulture: Planted maize to supplement year-round foraging. Team planted corn, beans and squash; Stored dried corn, and beans in grass-lined pits in wigwam or longhouse. Preserved squash, saved seeds, and dried and smoked fish.



Water

Obtained water from freshwater streams, springs and ponds; rain, and snow melt. Found groundwater aquifers and released water for quench.

Streams in forest channel water to the Bronx River and then the East River, eventually emptying into the Long Island Sound. Forest creates natural barriers against flooding, and filters waste (no sewers) through natural microbial process of soil.

The Bronx River provided fresh, clean drinking water and areas alongside served as places to camp or live.

Shelter and Clothing

Scouted for good campsites which met criteria of: proximity to coastline (for food), fresh drinking water, relatively flat land for building, and land formations to protect from wind. Rock shelters, big trees, wigwams, and longhouses used. Wigwams built by burying saplings upright, bending them to create an arched roof, then lashing sapling crossbeams on the structure horizontally to the ground. Structure was then covered w/

overlapping sheets of bark stripped from old-growth trees. Protected bodies with fur from animals like beaver and deer.



Childcare

Children lived, played, worked and learned how to provide for themselves (foraging, carrying supplies) with the support and assistance of their parents and extended family.

Energy and Transportation

"Wood and Muscle"; Walking was main form of transportation. Had to live/camp in close proximity to resources. Walked between coastal areas to protected inland areas seasonally (carrying supplies). Felled trees, built and paddled canoes, built fires, hoed small fields. Communicated news while travelling.

Sense of Meaning: Money, Barter

Gathered and caught food from beaches, shores and tidal pools and traveled across harbor waters to trade for corn, pottery, and wampum (decorative beads used as money— shells on a string).

Sense of Meaning: Spirituality

Had a rich spiritual life based on elaborate belief system which included ceremonial dances and storytelling. Storytelling explained world and served as reminders for fruitful ways of living respectfully and gratefully within earth's seasons and cycles. Bronx River held significance and was used for annual ritual baths

TWO VIEWS FOR LAND USE:

Everything in life is a circle. Everything is alive—the animals, the birds, the plants on Earth and the plants of the seas, the water, the air and the stones—and everything must be respected. All things are part of Earth, which gives us everything we need. *Native Plant Story*

- The land was "as pleasant as one need tread upon." *Johann de Laet, Dutch Chronicler*
- "A convenient place abounding with grass..."
- "a land excellent and agreeable, full of noble forest trees and grape vines."

Robert Juet (Henry Hudson's first mate)

BEFORE YOUR VISIT:

An effective Garden field trip begins with careful planning and preparation.

Take advantage of the free "Teacher Pre-Trip Pass" to orient yourself with the Thain Family Forest, Bronx River, and many Garden collections before bringing your group.

The New York Botanical Garden is a museum of plants in beautiful displays. The Garden is lucky to have a river and forest on its property. As a group discussion, have students define a museum setting and implications of a river running through a forest in a city. Discuss the types of behaviors you use when visiting a museum.

Advise students that while visiting they will need to stay on Garden paths, not touch or pick parts of plants, and be mindful of other visitors. Please take care not to litter in the river or forest.

This is an outdoor walk of almost one mile and could take approximately 45 minutes at a moderate pace. Encourage students to wear comfortable footwear and to dress appropriately for spending time outdoors.

If you bring lunch, your group can eat at the Clay Family Picnic Pavilions located close to the Everett Garden Gate. Restrooms and water fountains are located close to the picnic area. *(Plastic bag use is discouraged in the Garden—bags often fly away and get caught in trees and animal habitats.)*

Download the student *Native American Walk Journal*. Make a copy for each student to fold in to a booklet. Bring pencils on the day of your visit.

AT THE GARDEN

If you arrive by bus, your group will check in at the Everett Garden Gate (School Group Entrance) and walk straight along Stone Mill Road until just before you reach a bridge. Take the trail on the right just before the bridge which leads you in through a portion of the Forest toward a paved path next to the Bronx River. *(Other Forest entrances are marked on the map.)* When you arrive at the River, notice that this wide path extends south toward Pelham Parkway and the Bronx Zoo and north leading under the bridge toward the Mill View Trail into the Forest. *(The estimated walking time is 10 minutes.)*



Points of Interest

- 1** Bronx River's Edge
- 2** Hester Bridge
- 3** Waterfall/Midden Site
- 4** Goldman Stone Mill
- 5** Clay Family Picnic Pavilions
- 6** Midden Site

*Garden etiquette requires school groups to consume lunch at the Clay Family Picnic Pavilions. Thank you!