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 “Aquehunk,” 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:

Some Plant Resources:

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

Some Plant Resources:

<table>
<thead>
<tr>
<th>Plant</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Spicebush</td>
<td>Lindera benzoin</td>
</tr>
<tr>
<td>Southern Arrowwood</td>
<td>Viburnum dentatum</td>
</tr>
<tr>
<td>Mapleleaf Viburnum</td>
<td>Bark used medicinally for stomach ailments.</td>
</tr>
<tr>
<td>American Beech</td>
<td>Fagus grandifolia</td>
</tr>
<tr>
<td>Sweet Birch</td>
<td>Betula lenta</td>
</tr>
<tr>
<td>Sugar Maple</td>
<td>Acer saccharum</td>
</tr>
<tr>
<td>Shagbark Hickory</td>
<td>Carya ovata</td>
</tr>
<tr>
<td>Tulip Tree</td>
<td>Liriodendron tulipifera</td>
</tr>
<tr>
<td>Poison Ivy</td>
<td>Toxicodendron radicans</td>
</tr>
<tr>
<td>Sweetgum</td>
<td>Liquidambar styraciflua</td>
</tr>
<tr>
<td>Common Moonseed</td>
<td>Menispermum canadense</td>
</tr>
<tr>
<td>Hillside Blueberry</td>
<td>Vaccinium pallidum</td>
</tr>
<tr>
<td>Roundleaf Greenbrier</td>
<td>Smilax rotundifolia</td>
</tr>
<tr>
<td>White Oak</td>
<td>Quercus alba</td>
</tr>
<tr>
<td>Flowering Dogwood</td>
<td>Cornus florida</td>
</tr>
</tbody>
</table>

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

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.

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).

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).

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.)
**Human Ecology Discussion**

Have students read the quotes printed on the journal cover to compare human viewpoints about land use. Then discuss:

- **Written 400 years ago what do you think these quotes could describe?**
- **How do they compare?**

Human needs shape our interactions with the environment we rely on and live in. European explorers like Henry Hudson and those who followed him, took different approaches to meet their needs when reaching America’s land. Discuss modern day industries such as asphalt, brick, and construction.

- **Thinking about human needs, what are your basic needs?**

Groups brainstorm and list their ideas in the chart in their notebooks. Walk around to support, then lead, group discussion:

<table>
<thead>
<tr>
<th>Basic Human Habitat Requirements</th>
<th>Sense of</th>
<th>Meaning:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food/Medicine</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
<tr>
<td>Water</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
<tr>
<td>Shelter</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
<tr>
<td>Childcare</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
<tr>
<td>Transportation</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
<tr>
<td>Energy</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
<tr>
<td>Money</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
<tr>
<td>Order/Gov’t</td>
<td><img src="image_url" alt="Image" /></td>
<td><img src="image_url" alt="Image" /></td>
</tr>
</tbody>
</table>

- **How might these needs differ from the Native Americans’ who lived here 400 years ago, thousands of years before? List Native American needs in the journal. (Mostly the same.)**
- **Then, have students list the resources they use to meet their needs in journal.**

Explain to students that during this field trip they will walk Indian footpaths to find and identify resources this land provides and imagine how these resources met the seasonal needs of the Native Americans who lived and travelled through before us.

**Forest Walk/Student Investigations**

2. When you first arrive along the river’s edge, provide students with a boundary and ask them to choose a spot to sit and look at the river and resources around them for a given amount of time (3–10 minutes depending on the grade level and interest). Prompt students to:

- **List the things you see around the river.** The quieter they are the better chance to see, smell, and hear. Animals in a forest are quiet because their lives depend on it. (That is why it may be rare to spot more than a few of them.)

- **Based on your human habitat needs, would this spot be suitable to live?**

3. Walk north toward the bridge. As you walk, prompt students to:

- **Use their journal keys to identify some of the plant and animal life they pass. Discuss how these were useful resources.**

4. Continue your walk north under the bridge toward the Mill View Trail.

5. When you reach the Mill View Trail, allow students time to walk and explore at their own pace whilst reading the informational signage throughout the trail. Continue to use the Plant and Animal Key in their journals to identify resources they notice along the path.

6. The Mill View Trail connects to the Sweetgum Trail. Turn right (north) on this trail and continue walking over a small footbridge with more informational signage. Allow time for students to read the signs and notice how the small streams meet and join the Bronx River.

7. Continue walking until you reach the Hester Bridge, which spans over the river. Turn right (east) and walk over the bridge, allowing students time to view the waterfall.

- **Lead a discussion about how the health of a river affects plants and animals which can inhabit it. Alewife herring and beaver are two examples of animals which have returned after much pollution in the Bronx River.**

8. Continue walking on the path and turn left down the hill stairs on to Waterfall Trail. Head to the waterfall to get a closer look at it and the hillside beside it.

On the east side of the river, just below the Family Garden on the hillside is the site of a midden. A midden is a big deposit of shells left by Native Americans. Essentially a trash heap, it indicates that Native Americans chose this spot seasonally to camp as they passed through. Prompt students to:

- **Discuss the resources around them and explain why Native American would have chosen this spot to camp. (Based on: proximity to East River for fishing, proximity to fresh drinking water from river, flat for building wigwams, sheltered from the wind)**

9. After viewing the waterfall and midden, take Waterfall Trail south along the river and head back under the Hester Bridge, toward the Goldman Stone Mill and Stone Mill Road.

10. When you reach Stone Mill Road, you can turn right to head back to where you started—the Everett Garden Gate and Picnic Pavilions.

**RECOMMENDED TEACHER RESOURCES:**

- bronxriver.org
- nybg.org
- Youtube.com: Bronx River Restoration
- Youtube.com: Science Seminar Series
- 400 Years of Forest Management at NYBG with Wayne Cahily
- NYBG in Bloom iPhone App

**RECOMMENDED CHILDREN’S BOOKS:**

- **Non-fiction:**

- **Fiction:**

**NYC Social Studies Scope and Sequence**

- Grade 4 Unit 1 Native Americans: First Inhabitants of New York State
- Grade 5 Unit 1 Geography and Early Peoples of the Western Hemisphere
- Unit 2 The United States
- Grade 7 Unit 1 Early Encounters: Native Americans and Explorers

**NYS Common Core Learning Standards**

- (Literacy in Social Studies/History)
  - W.4-8.1 Text Types and Purposes
  - W.4-8.2 Text Types and Purposes
  - W.4-8.7 Research to Build and Present Knowledge
  - W.4-8.10 Range of Writing
  - SL.4-8.1 Comprehension and Collaboration
  - SL.4-8.4 Presentation of Knowledge and ideas
  - L.4-8.1 Conventions of Standard English
  - L.4-8.4 Vocabulary Acquisition and Use
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!