**SSL: Habitats: Native Seed Collection**

**Available: September & October**

**Time required: >90 minutes for full lesson; >45 minutes for action only**

**Next Generation Science Standards**

**Disciplinary Core Ideas**

* LS2.C Ecosystem Dynamics, Functioning, and Resilience
* Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shirts in all its populations.

**Crosscutting Concepts**

* Stability and Change
* Small changes in one part of a system might cause large changes in another part.

**Environmental Literacy**

1. Environmental Issues. The students will develop and implement a local action project that protects, sustains, or enhances the natural environment.

**Enduring Understandings:**

* Natural resources are used by living things in a variety of ways.
* Natural resources need protection and conservation in a given environment.
* As resources are used in a habitat, the environment is changed.
* Human resource use can cause changes that have social, economic, and environmental impacts.

**Mastery Objectives:**

Students will be able to:

* Define what is meant by a “native plant” and explain why such plants are beneficial to a local ecosystem.
* Explain what a “riparian buffer” is and how it affects the watershed.

**Background:**

The Smith Center is a collection site for the Potomac Conservancy’s *Growing Native* program in which *v*olunteers collect native tree seeds across the region for local nurseries. Hardwood seedlings are needed to support expanding reforestation and restoration efforts in the Potomac River watershed. Maryland and Virginia state nurseries are experiencing a shortage of native seedling stock due to the ever-increasing demand for trees, particularly for new streamside forest projects. A majority of this program's tree seedlings are used to create diverse and healthy riparian buffers.

Riparian buffers are natural vegetative filters that are located between upland landscapes and waterways. They have positive effects on habitat, water quality and air quality. Riparian buffers provide food, shelter, travel corridors and breeding space for wildlife on the land and in the water. They filter excess nutrients from surface runoff before the water enters the waterway. And, trees and plants in the buffer capture rainfall and pollutants from the air and change the chemicals into useful carbon compounds.

**Project Prep:**

1. Meet with your coordinator beforehand to become familiar with best collection areas and identification guides. If at Summit Lake or Skycroft, be sure to remind your coordinator to bring the necessary materials from the Smith Center.
2. For full lesson: a presentation on the Promethean board is available at the Smith Center, and a poster board is available for other sites
3. Gather equipment (all located in large plastic bin outside White Oak Hall):
   1. White Growing Native bags (~2 per small group)
      1. If none left, you can also use paper bags
   2. Growing Native tags (same amount as bags)
   3. Scale
   4. Writing utensils

**Project Details**

1. Preparation/Explain (~20% of time)
   1. Full Lesson
      1. Share presentation with students
   2. Action Only
      1. Engage students: *What is a native plant? Why are native trees important?* Today we are going to collect seeds from native trees so that local nurseries can help propagate these seeds and more native trees can be planted.
      2. Discuss the background information and show the students the identification guides
2. Action (~65% of time)
   1. Full Lesson and Action Only
      1. Divide students into groups and assign each group a species to collect. Multiple groups can collect the same species. Give each group an identification guide to their species.
      2. Give each group 2 bags and instruct them to collect only their designated species in their bags. Assign them to a general location that is heavily populated with their species.
      3. **Do not collect any rotten seeds!**
      4. When collection is complete, have each group weigh each bag and fill out the bag tags with (1) name (2) phone number (school # is okay) (3) collection site (4) species of parent plant and (5) weight of full bag.
      5. Attach the tag to the bag and place bag in large plastic bin.
3. Reflection (~15% of time)
   1. Full Lesson
      1. Have students brainstorm and then share with class their answers to reflection questions in presentation
      2. Record in their journals if applicable
   2. Action Only
      1. Have students share their answers to following questions:
         1. What did you do and how did it benefit the environment?
         2. How will you share what you learned and continue your action with your family, community, and school?
      2. Encourage them to record in their journals if applicable