



## Riparian Forest Buffer Station Instructions

The purpose of this station is to demonstrate the importance of the riparian forest buffer to the stream's water quality and aquatic animal life. A **riparian forest buffer** is an area of trees, shrubs, and other vegetation located along a body of water. You will investigate soil types, identify plant species and communities, and distinguish native from invasive species.

After completing this station, you will understand how riparian forest buffers hold stream banks in place, protect streams from polluted stormwater runoff, and provide food and habitat for aquatic and terrestrial organisms.

To complete this station, follow the instructions below.

### Soils (Ribbon Test Method)

1. Place a portion of soil found in this area in the palm of your hand. You should use an amount about the size of a walnut.
2. Add water from your squeeze bottle to the soil, while trying to form a ball. Try to add just enough water to form a ball, and no more.
3. Squeeze a ribbon of material from this sample, as directed on the USDA Soil Texturing Field Flow Chart. Record the type of soil that most closely matches your ribbon of soil on the appropriate line of the "Riparian Forest Buffer Data Sheet."

If you have trouble using the Soil Texturing Flow Chart, use these helpful tips:

1. If the soil does not form a ball, it is SAND.
2. If the soil forms a ball but does not form a ribbon, it is LOAMY SAND.
3. If the soil forms a ribbon between one and five inches long, wet a small pinch of soil and rub it with your finger. Use the Flow Chart to determine the soil type by its "feel" and the length of ribbon.
4. Using a soil sample from a different area, perform the same ribbon test. Record on your data sheet the type of soil that most closely matches this sample.
5. As a group, take a soil core sample from the area. See if you can identify the soil layers present, based on the colors and textures. Sandy loams are brown in color; clay soils are red or yellow. Sandy loams are coarser in texture (and higher in nutrients). Finer in texture, clay soils are lower in nutrients.

### Trees

Use the tree identification guide to identify the three trees that are flagged. Record your answers on the data sheet. Measure the diameter of each flagged tree using measuring tape and include this information on the data sheet. Be sure to measure the diameter of the tree four-and-a-half feet from the ground.

### Site Characteristics

What are the general characteristics of the site? Describe the soil and slope of the area, circling the appropriate description on the data sheet.

### Vegetation

What types of non-tree vegetation are most prevalent at the site? Include the most common shrubs, grasses, flowers, and other plants. If you know the name of the plants, record them in the data sheet; if you do not know the names, describe what they look like.

### Optional

**Tree Measurement Activity.** Measure a sample tree using the "stick" method. To begin, measure the distance from the tip of your fingers to your shoulder. Mark this distance on a stick or another straight object provided by your site leader. Hold the stick straight in front of you, vertically, with the bottom of your hand on the measured arm distance. With both eyes open, look at the bottom of your hand and the top of the selected tree. Walk toward or away from the tree until the base and top of the tree line up with the bottom of your fist and the top of the stick. Measure the distance from where you are standing to the base of the tree. This distance is the same as the height of the tree!