

## **Riparian Buffers Station Instructions**

At this station you will be looking at the soil and plant community along the stream. A riparian buffer is the area that surrounds the stream you are sampling. It is composed of the soil, plants, and trees found in the area. This riparian buffer protects the water and the macro-invertebrates found there.

### **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 and add just enough water to form a ball.
3. Try and 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 the ribbon of soil you can produce on Blank #1.

If you have trouble using the flow chart, here are some helpful instructions:

1. Soil does not form a ball - SAND
2. Soil forms a ball, but does not form a ribbon – LOAMY SAND
3. Soil forms a ribbon from 1”-5” long – Wet a small pinch of soil and rub with your finger. Use your chart to determine the soil type by its “feel” and length of ribbon.

Using the sample of soil provided from a different area, perform the same ribbon test. Record the type of soil that most closely matches this sample in Blank #2.

As a group, take a soil core sample from the area. See if you can identify any soil layers present. Sandy loams are brown in color and clay soils are red or yellow. Sandy loams are higher in nutrients (food) and coarser in texture. Clay soils are lower in nutrients and finer in texture.

**What soil type (clay or loam) is found in this area?**

## **Trees**

Identify the three trees that are flagged by using your tree identification guide. Record your answers on the data sheet on the appropriate line. Each tree is flagged with a different color ribbon. Use the notes on your data sheet to help you identify the tree. If you have trouble, ask your station leader for some help.

The plants and trees do several things to improve the water in your stream and the animals that live there. **How many different ways can you list?**

**Answer the two questions on your data sheet by looking at the stream bank and the riparian buffer around your stream.**

### **Optional:**

**Measure a sample tree using the “stick” method.** Measure the distance from the tip of your fingers to your shoulder. Mark this distance on a stick or other straight object provided. Hold the stick straight in front of you 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 towards 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!

**Soil Horizons.** Use the soil coring tools provided to take a core of the soil in your buffer. Push and turn the coring device until the top of the core sampling cylinder is at ground level. Pull the tool out of the ground and look at your soil core. **Can you identify any soil horizon? How thick is each layer?**

