

ESC20 Experiencing Brightwater (A)

Brightwater provides an opportunity to learn on and from the land! Our experience at Brightwater will infuse our knowledge from the **Aquatic Ecosystems** Unit with our learning outcomes for the **Terrestrial Ecosystems** Unit. **We will be examining the relationships between water, soil, and plants.**

Part 1: Aquatic Sampling

In this activity you will be collecting a water sample from the creek and examining its **chemical, physical, and biological factors**.

Physical Factors:

Air Temperature: _____ °C Water Temperature: _____ °C Sampling Station: _____

Weather: (circle one)



Place an X along the lines below:

Turbidity: Clear ----- Very Cloudy
 Speed: Slow ----- Fast

Chemical Factors:

Color: _____ Dissolved Oxygen: _____ pH: _____ Ammonia: _____ Nitrate: _____

Biological Factors:

Record the types of organism you have seen. Make a sketch of each organism. If you noticed anything cool or unusual, make a note in your notebook.

Type of Organism	✓	Name
Amphibia		Tadpole
		Frog
Minnows		Minnow
Hirudinea		Leech
Gastropoda		Snail
Bivalvia		Fingernail clam
Arachnidia		Fishing spider
		Water mite
Crustacea		Crayfish
		Side swimmer
Insects		Water flea
		Mayfly nymph
		Caddisfly larva
		Dragonfly larva
		Damselfly larva
		Predaceous diving beetle
		Whirligig beetle
		Water strider
		Water boatman
		Backswimmer
	Mosquito larva	
	Midgefly larva (bloodworm)	
Other (name or describe)		

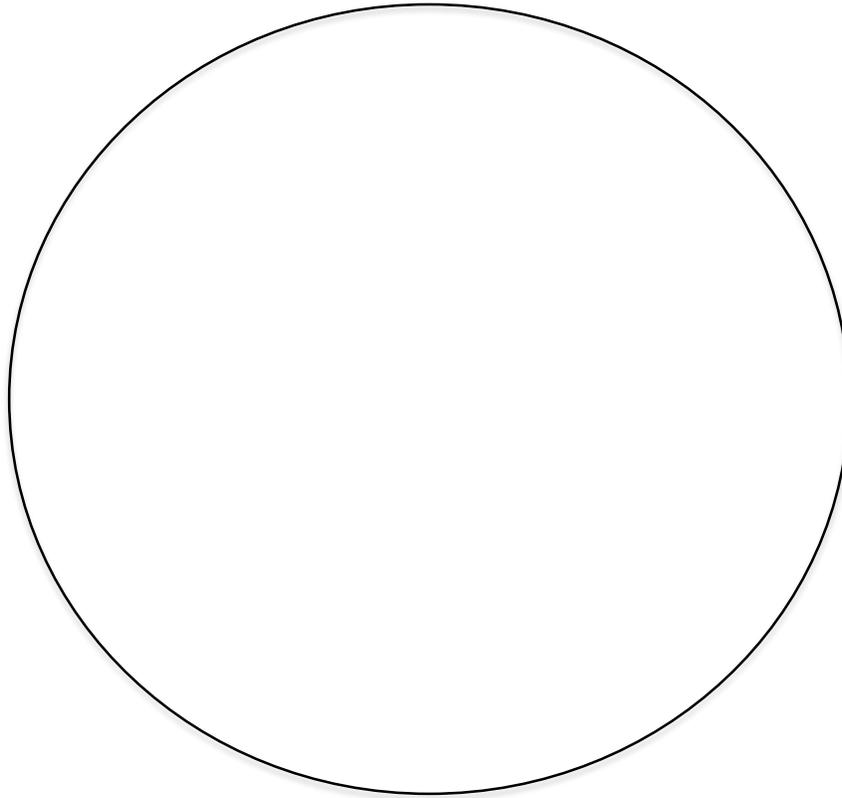
Part 2: Plant Study

In this activity, you will be **comparing** two different Terrestrial Ecosystems, the **riparian area** that is next to the creek and the **grasslands**. You will be using the plant identification guide books to help you identify the plants in your sample.

Grassland Plant Sample

Date: _____

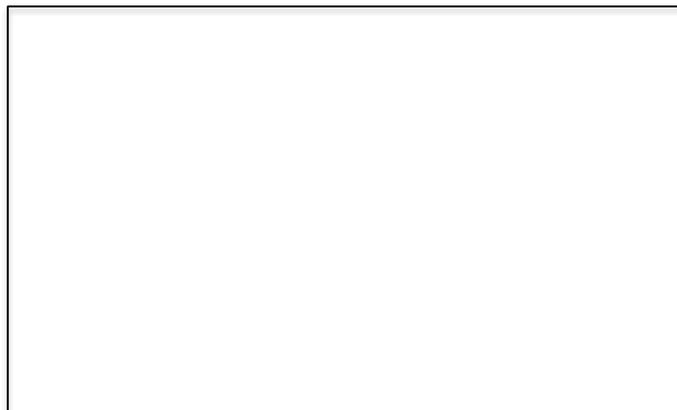
Weather Conditions: _____



% Grass: _____

% Non-Grass: _____

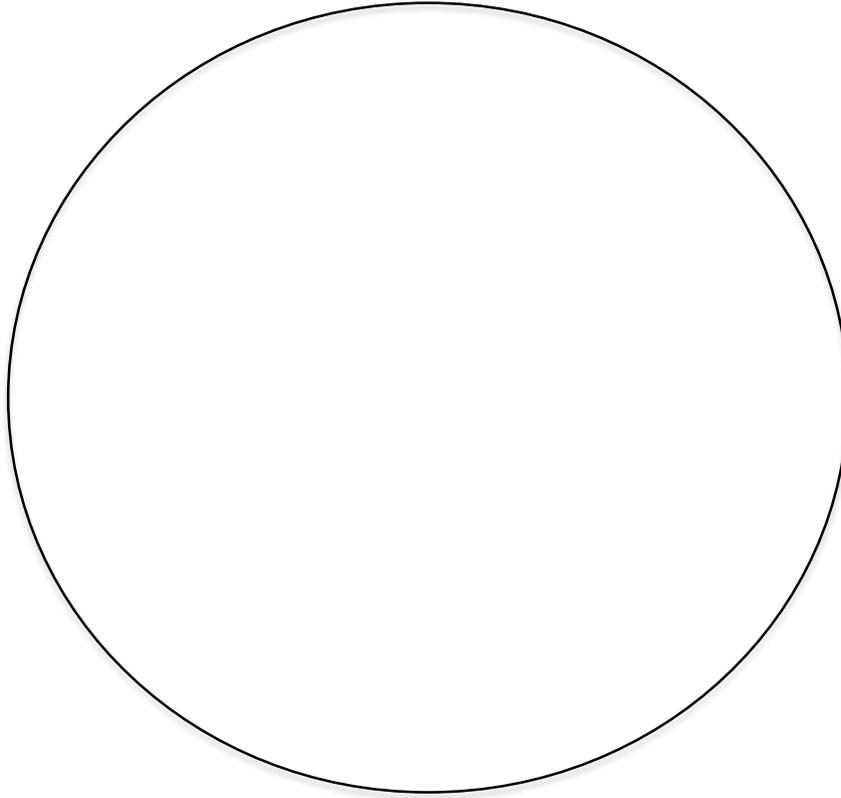
Sample Site



Riparian Area Plant Sample

Date:

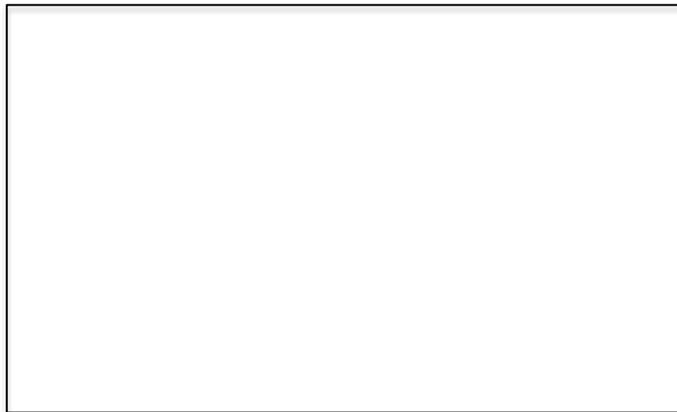
Weather Conditions:



% Grass: _____

% Non-Grass: _____

Sample Site



Part 3: Lab Analysis

1. Complete the following table for Water Analysis:

Test	Result	Range (Below, Normal, Above)	Impact (What ecological significance does this have?)
Turbidity			
Speed			
Color			
Dissolved Oxygen			
pH			
Nitrate			
Ammonia			

2. Based on your physical and chemical tests, what is the quality of Beaver Creek water?

3. Is it a healthy ecosystem for supporting life? Why or why not?

4. Based on the organisms you found, is it a productive ecosystem? Why or why not?

