



# DATA SHEET : RIPARIAN OBSERVATIONS

Name \_\_\_\_\_ Date \_\_\_\_\_

*Work in teams to complete the charts and illustrations described below. Base your responses on the same 100-meter section of riparian area you are assessing with the Riparian, Channel, and Environmental Inventory (RCE).*

## I. LAND USE

1. a. Measure the width of the forested/marshy riparian buffer.

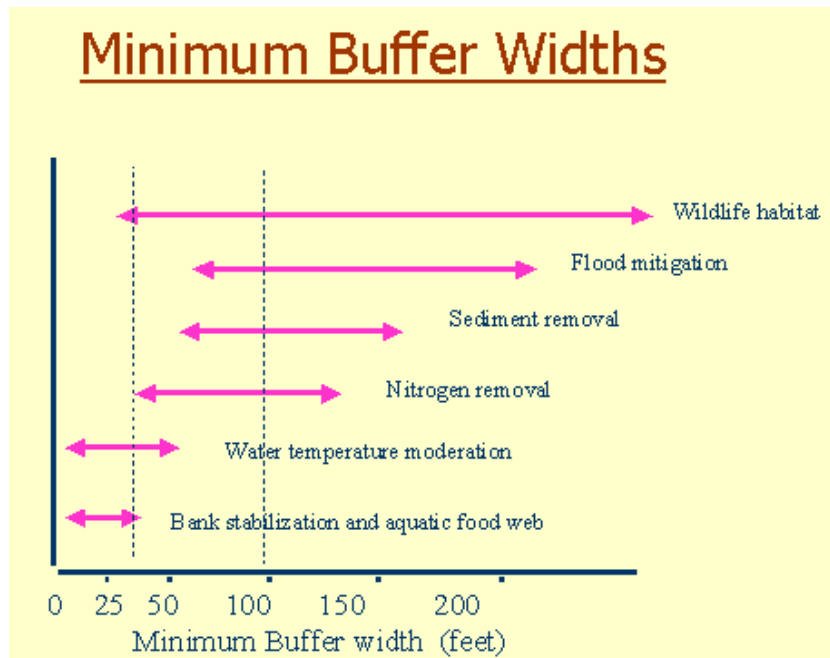
Left bank (if you're facing upstream): \_\_\_\_\_ meters = \_\_\_\_\_ feet

Right bank (if you're facing upstream): \_\_\_\_\_ meters = \_\_\_\_\_ feet

b. The figure below shows the minimum buffer widths needed for various riparian functions. Based on the width of the right bank and left bank riparian buffers you are studying, which functions does they provide? (Note that the minimum buffer widths are given in *feet*, not meters, in the figure below).

Left bank riparian buffer functions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Right bank riparian buffer functions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Source: Riparian Buffer Systems Website Slide Show  
[www.riparianbuffers.umd.edu/slide.html](http://www.riparianbuffers.umd.edu/slide.html)

c. Describe the land use patterns in detail at the different distances from the stream channel to complete the chart below.

<b>Distance from stream channel</b>	<b>Bank if you're facing upstream</b>	<b>Land use pattern</b> (e.g., undisturbed forest, wetland, monoculture corn field, Bi-Lo supermarket parking lot, residential housing, etc.)
1-5 meters	Left	
1-5 meters	Right	
6-10 meters	Left	
6-10 meters	Right	
11-25 meters	Left	
11-25 meters	Right	
26-50 meters	Left	
26-50 meters	Right	
51-100 meters	Left	
51-100 meters	Right	
101-200 meters	Left	
101-200 meters	Right	

## **II. COMPLETENESS**

2. Draw an aerial view of the stream channel and riparian area. Pay particular attention to the completeness of the forested/marshy buffer area, areas that are exposed versus areas that are covered with shrubs and grasses, and erosion in exposed areas. Use colored pencils or crayons and make a key for your illustration

**III. BIOTA**

3. Describe in detail the vegetation of the riparian zone within 5, 10, and 25 meters of the stream edge on both sides of the stream. Complete the chart below.

**UPSTREAM**

<i>Observation</i>	<b>LEFT BANK</b>			<b>C R E E K</b>	<b>RIGHT BANK</b>		
	<b>Distance from stream edge</b>				<b>Distance from stream edge</b>		
	<b>11-25 m</b>	<b>6-10 m</b>	<b>1-5 m</b>		<b>1-5 m</b>	<b>6-10 m</b>	<b>11-25 m</b>
<i>Trees Present or Absent</i>				<b>C R E E K</b>			
<i>Types of trees present</i>							
<i>Trees Young or Mature</i>				<b>C R E E K</b>			
<i>Other types of plants</i>							
<i>Approximate % of vegetation types</i>	____% forest	____% forest	____% forest	<b>C R E E K</b>	____% forest	____% forest	____% forest
	____% shrubs	____% shrubs	____% shrubs		____% shrubs	____% shrubs	____% shrubs
	____% grass	____% grass	____% grass		____% grass	____% grass	____% grass
	____% other (specify)	____% other (specify)	____% other (specify)		____% other (specify)	____% other (specify)	____% other (specify)

**DOWNSTREAM**

4. Investigate the animal life (insects, amphibians, reptiles, birds and mammals) on the ground, in the vegetation and canopy, and under rocks and logs on both sides of the stream and look for evidence of animals such as scat, tracks, burrows, or chewed vegetation within 5, 10, and 25 meters of the stream edge. Complete the chart below with your observations, combining data from both banks.

<b>Distance from stream edge</b>	<b>What types of animals are most common here?</b>
<b>1-5 meters</b>	
<b>6-10 meters</b>	
<b>11-25 meters</b>	
	<b>Animal evidence present here? If so, what kind of evidence?</b>
<b>1-5 meters</b>	
<b>6-10 meters</b>	
<b>11-25 meters</b>	
	<b>General Animal Life Observations:</b>
<b>1-5 meters</b>	
<b>6-10 meters</b>	
<b>11-25 meters</b>	

5. Draw an aerial view of the stream channel and aquatic vegetation, distinguishing among algae, mosses, small and large plants. Use colored pencils or crayons and make a key for your illustration.

6. Use a kick net or D-net to collect aquatic life from four locations of the stream: in a riffle, a pool, a rocky area, and a gravelly/sandy area. Identify and quantify any fish or macroinvertebrates collected. Complete the chart below, recording the types of aquatic life found in the different sections of the waterway. (*Note: Because kick nets and macroinvertebrate sorting and identification materials are not included in this module, this activity is limited to schools participating in the Creek Connections water quality monitoring program and other schools that already have the necessary equipment*).

Aquatic Organism	Number Caught in Given Stream Location			
<i>Fish:</i>	<b>Riffle</b>	<b>Pool</b>	<b>Rocky area</b>	<b>Gravelly/Sandy area</b>
<i>Sculpins</i>				
<i>Darters</i>				
<i>Other fish:</i>				
<i>Macroinvertebrates:</i>	<b>Riffle</b>	<b>Pool</b>	<b>Rocky area</b>	<b>Gravelly/Sandy area</b>

#### **IV. PHYSICAL and TEMPERATURE CHARACTERISTICS OF STREAM**

7. Draw an aerial view of the stream channel illustrating straight and curvy sections, debris dams, bars, braids, riffles, pools and other prominent physical characteristics where present. Use colored pencils or crayons and make a key for your illustration.

8. Record the water and air temperature at different locations in the stream, riparian area, and upland and complete the chart below. Take all water temperatures at mid-depth and all air temperatures at chest height. Record the temperature at other stream locations of your choice and select two upland sites characteristic of the surrounding land use. Specify exactly where these additional stream and upland temperatures are taken.

<b>Stream Location</b>	<b>Water Temperature (°C)</b>
Mid-stream	
Shaded section 1m from shore	
Exposed section 1m from shore	
Other:	
1.)	
2.)	
3.)	

<b>Land Location</b>	<b>Air Temperature (°C)</b>			
	<b>Distance from stream edge</b>			
<i><b>Riparian sites:</b></i>	<b>1 m</b>	<b>5 m</b>	<b>10 m</b>	<b>25 m</b>
Shaded, vegetated area				
Exposed, unvegetated area				
<i><b>Upland sites:</b></i>				
1.)				
2.)				
3.)				

9. Use a trowel to collect soil samples at various locations in the riparian area and upland, specifically, approximately 1, 5, 10, 25, 50, and 100 meters from the stream edge and at two other locations of your choice. Be sure to specify the locations of the two “Other” samples in the chart below. Store the soil samples in the cups labeled with the distance from the stream edge at which the sample was collected. As you collect each sample, note the land use at the collection site. Record this information on the chart below. Collect all of your samples and then compare the texture, color, smell, moisture, and the presence or absence of organisms and plant material in the samples. Record your observations on the chart below in the corresponding row and column.

Sample Site (Distance from stream edge)	Land use (e.g., forest, cropland, pasture, wetland, parking lot, housing, commercial, industrial, etc.)	SOIL				Organisms/Plant Material? (circle “Present” or “Absent.” If “Present,” specify the types of organisms or plant material in the soil.)
		Texture (e.g., fine, coarse, gravelly, sandy, gritty, smooth, sticky, etc.)	Color (e.g., black, dark brown, brown, light brown, gray, etc.)	Smell (e.g., earthy, musty, like rotten eggs, etc.)	Moisture (wet, moist, or dry)	
<b>1 meter</b>						Present / Absent
<b>5 meters</b>						Present / Absent
<b>10 meters</b>						Present / Absent
<b>25 meters</b>						Present / Absent
<b>50 meters</b>						Present / Absent
<b>100 meters</b>						Present / Absent
<b>Other #1:</b> _____ _____						Present / Absent
<b>Other #2:</b> _____ _____						Present / Absent