Name: MadiR.
Science – 8A (8B)
Due Date:

Introduction to Riparian Areas

Guiding Question: What does a healthy stream look like?

L.T. I can make an evidence-based evaluation of the health of Tumalo Creek based on riparian vegetation data.

Learning Target	Developing	Proficiency	Mastery
1A I can explain how riparian vegetation contributes to the health of a stream	Notes contain the main ideas and have an organization to them	Notes are organized and capture the most important information with adequate detail	Pictures/diagrams or color enhance notes; the way in which the notes are written demonstrates deep thought and understanding

Directions: Read the information about riparian vegetation and take notes on the most important information. Specifically, you should gather information about the following:

A. Define riparian zone
B. Discuss the difference between wetland plants and upland plants
C. Differentiate between obligate and facultative wetland plants
D. Provide a detailed discussion of the importance of riparian vegetation, describing the important roles that a healthy riparian zone plays.
E. Describe what a healthy riparian zone looks like

Main Idea	Supporting Details
The riparian zone is an area of land adjacent to flowing water	1. It contains elements of both aquatic and terrestrial ecosystems 2. Both of these ecosystem influence to each other 3. Land influences aquatic ecosystem by contributing organic debris, sediments, and nutrients 4. Water influences the terrestrial ecosystem by saturating soils, elevating the water table, flooding the surface, and depositing sediment
Wetland plants Vs. Upland plants	1. Wetland plants are often found in the riparian zone 2. Upland plants are farther from a water source 3. Riparian to upland is more like a continuum of vegetation that changes as the water content of the soil changes 4. Upland plants will not survive in hydric soils
Obligate vs. facultative	1. Obligate wetland plants grow in only hydric soils 2. Facultative wetland plants occur in dryer soils that are periodically saturated with water 3. These wetland plants are both found in upland and wetland areas

Main Idea	**Supporting Details**
Healthy riparian zone	1. In the aquatic zone there should be woody debris 2. In the riparian zone, closet to the water should be obligate wetland plants then facultative wetland plants 3. In the upland zone there should be upland plants 4. The water should be cool and there should be ample shade 5. The stream should be gravelly, narrow and deep 6. And there should be high late summer flows in the stream
Why the riparian vegetation is important	1. Riparian vegetation adds to surface water during dry periods by storing it in a watershed 2. The plants ability to absorb rain and moisture helps prevent flooding and pollution 3. Trees provide an overhead canopy that shades the steam and keep it cool
	4. Low hanging branches stream side provide shelter for fish 5. Woody debris contributed by trees that fall into the stream provide habitat variety, it also control sediment flow 6. Vegetation that falls into the stream provides a food source for aquatic invertebrates
	7. Plant roots stabilize the stream banks 8. Riparian vegetation provide habitat for. Birds and other wildlife spices

Vegetation

To complete a stream reach survey, it is important to have a fundamental understanding of vegetation in the **riparian zone.** The riparian zone is the area of land adjacent to flowing water. It is an unique area, containing elements of both aquatic and terrestrial ecosystems which mutually influence each other. The land influences the aquatic ecosystem by contributing organic debris, nutrients, and sediments to the water. The water influences the terrestrial ecosystem by saturating soils, elevating the water table, flooding the surface, and depositing sediments.

Because of the effects of water on the riparian zone, streamside areas typically consist of plants that are water dependent, often referred to as **wetland plants.** Plants that are not water dependent are generally categorized as **upland plants.** However, nature is never that clear-cut. The transition from riparian to upland is more like a continuum of vegetation that changes as the water content of the soil changes.

Obligate wetland plants, such as cattails, skunk cabbage, and some species of willows, grow only in **hydric** soils (soils saturated with water). **Facultative** wetland plants, such as red alder, western red cedar, and stinging nettles, occur in drier soils that are periodically saturated with water; they are found in both wetland and upland areas. Upland plants, on the other hand, will not survive in hydric soils.

Vegetation may also vary with different soil types, textures, erodibility, and the steepness and exposure (north-facing, south-facing, etc.) of the slope it is growing on. Contact your local Soil Conservation Service for information about soils and vegetation in your area. For information on wetland plants, start with *Adopting A Wetland: A Northwest Guide*. It has a great bibliography on wetland publications.

The Importance of Riparian Vegetation

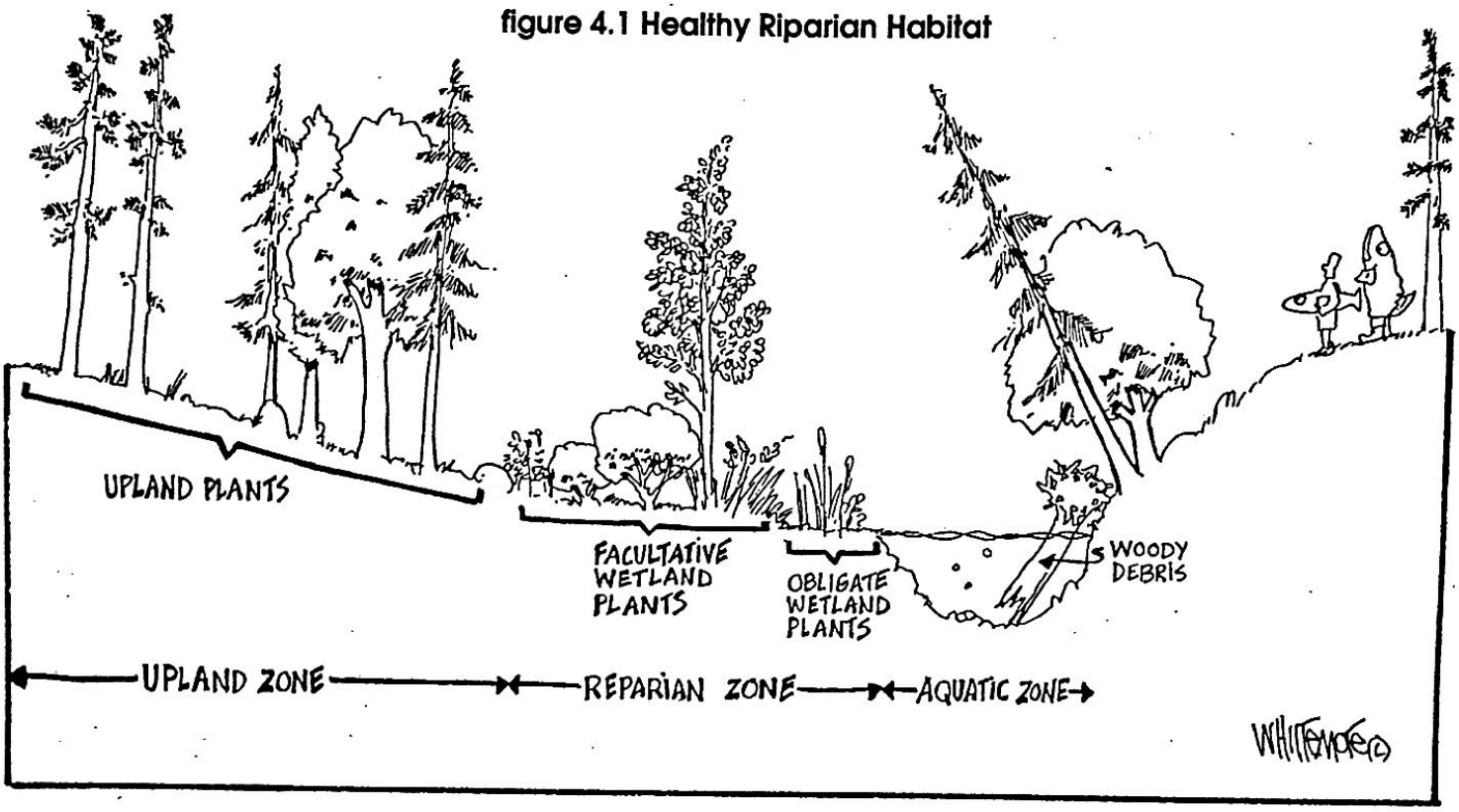
On Back

The figures on page 61 illustrate the difference between a healthy and unhealthy riparian area.

The positive role riparian vegetation plays in the health of aquatic and terrestrial system is enormous:

1. • Vegetated areas help augment surface flows during dry times because they absorb rain and moisture, storing it in the watershed.
2. • Vegetated areas help prevent flooding and pollution because their ability to absorb rain and moisture reduces and filters runoff.
3. • Trees provide an overhead shade canopy that keeps stream temperatures cool.
4. • Logs, root wads, low-hanging branches, and other streamside vegetation that hangs over the water provide protective cover for fish.
5. • Trees contribute large woody debris to streams, which creates varied habitats such as riffles and pools, and controls the flow of sediment, keeping it out of spawning gravels.
6. • Vegetation provides a food source for aquatic invertebates by dropping leaf and other organic material into streams.
7. • Plant roots along the stream stabilize stream banks and prevent erosion.
8. • Riparian vegetation provides important habitat for many species of birds and other wildlife.

figure 4.1 Healthy Riparian Habitat



A Healthy Riparian Zone

good shade, cool water
abundant woody and organic debris in stream
abundant vegetaion and roots to protect and stabilize banks
gravelly, narrow, deep channel
good fish and wildlife habitat
good water quality
high forage production
high water table and increased storage capacity
higher late summer stream flows

An Unhealthy Riparian Zone

little shade, warm water
lack of woody and organic debris in stream
little vegetation and roots to protect and stabilize banks
silty, wide, shallow channel
poor fish and wildlife habitat
poor water quality
low forage production
low water table and decreased storage capacity
reduced late summer stream flows

figure 4.2 Unhealthy Riparian Habitat