

The Role of Riparian Areas



What is a Riparian Area?

Multispecies Riparian Buffer

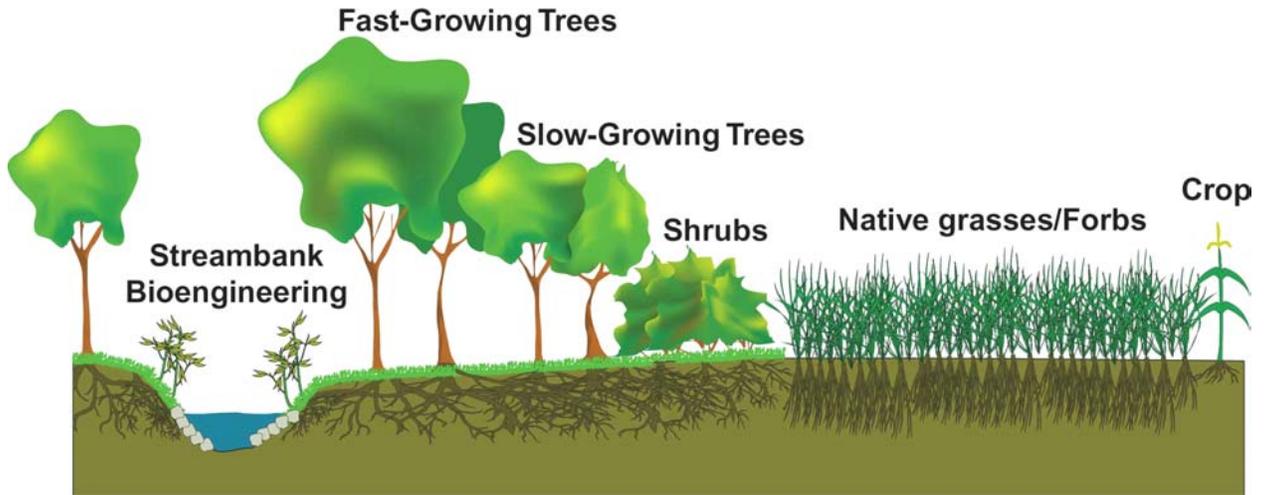


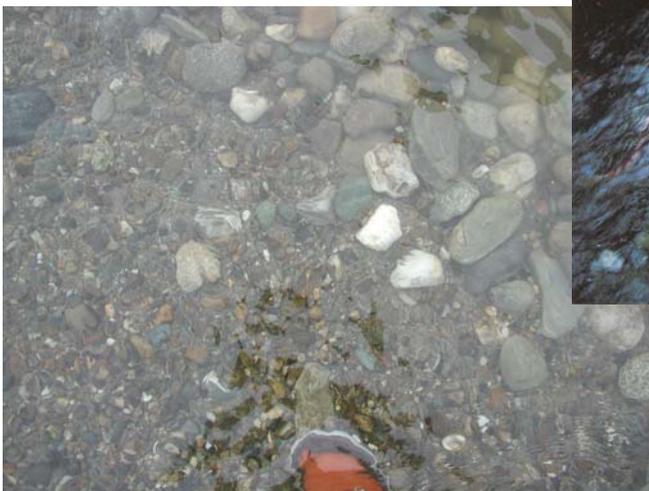
Illustration by: Tom Schultz

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A riparian area or zone is the land adjacent to a stream, pond, lake, or other waterway. This area includes the vegetation from the waters' edge through the forested upland near the waterway. The riparian area is important to people, animals and plants for many reasons. It has a network of characteristics that work together as a balanced system. The system will not function properly when one or more of the components are absent.

What are the Functions of the Riparian Area?

- Create Stable Banks
- Supply Streams with Organic Matter
- Maintain Water Quality
- Provide Woody Debris
- Provide Habitat
- Maintain Biodiversity
- Supply Shade and Maintain Cooler Temperatures



Bank Stabilization



Riparian vegetation is important for holding the soil together. The roots create a network within the soil to help reduce erosion.

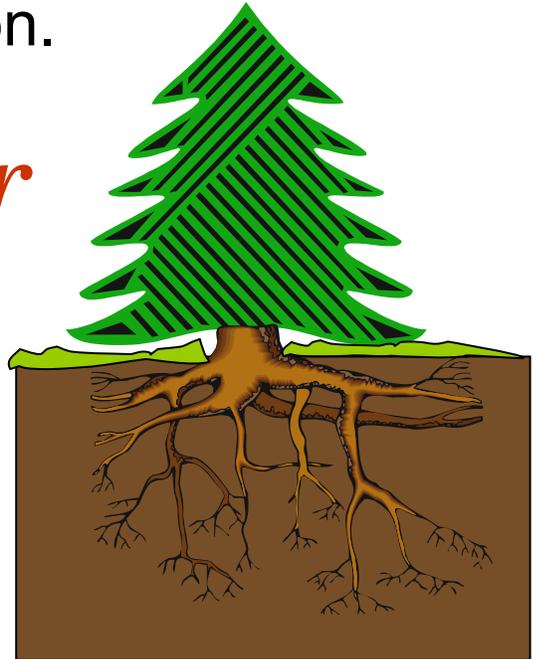


Organic Matter

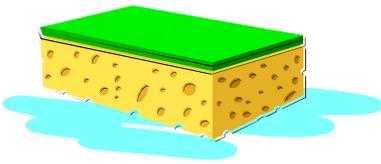
Leaves and other organic matter from streamside vegetation enter the water to provide a healthy amount of nutrients.



Small invertebrates help break down these materials, which, in turn, are eaten by larger invertebrates and fish. It is a necessary and important food web for all organisms.



Water Quality



A sponge
and filter...



Riparian vegetation is like a sponge. Water from rain and snow-melt is absorbed into the soil instead of washing the soil away. This filters and recycles sediment and excess nutrients that would otherwise enter the stream. It also raises the groundwater level, which means there is more available drinking water.

The riparian zone keeps the water clear and clean for fish spawning areas (gravel beds).

...equals
clear, clean
water.



Woody Debris

Woody debris refers to the large pieces of wood like tree trunks and branches that enter the stream naturally. Woody debris is important for:

- Creating Stable banks
- Controlling gravel and sediment movement
- Providing habitat for organisms to grow, hide, feed and reproduce
- Helping reduce water velocity in the stream



Photo by G. Galovich, Oregon State University Lincoln County Extension Service

Habitat



Fish

Fish use woody debris as protection from predators and for finding food.

Invertebrates

Insects and other invertebrates use these areas to feed, hide, and reproduce.

Mammals

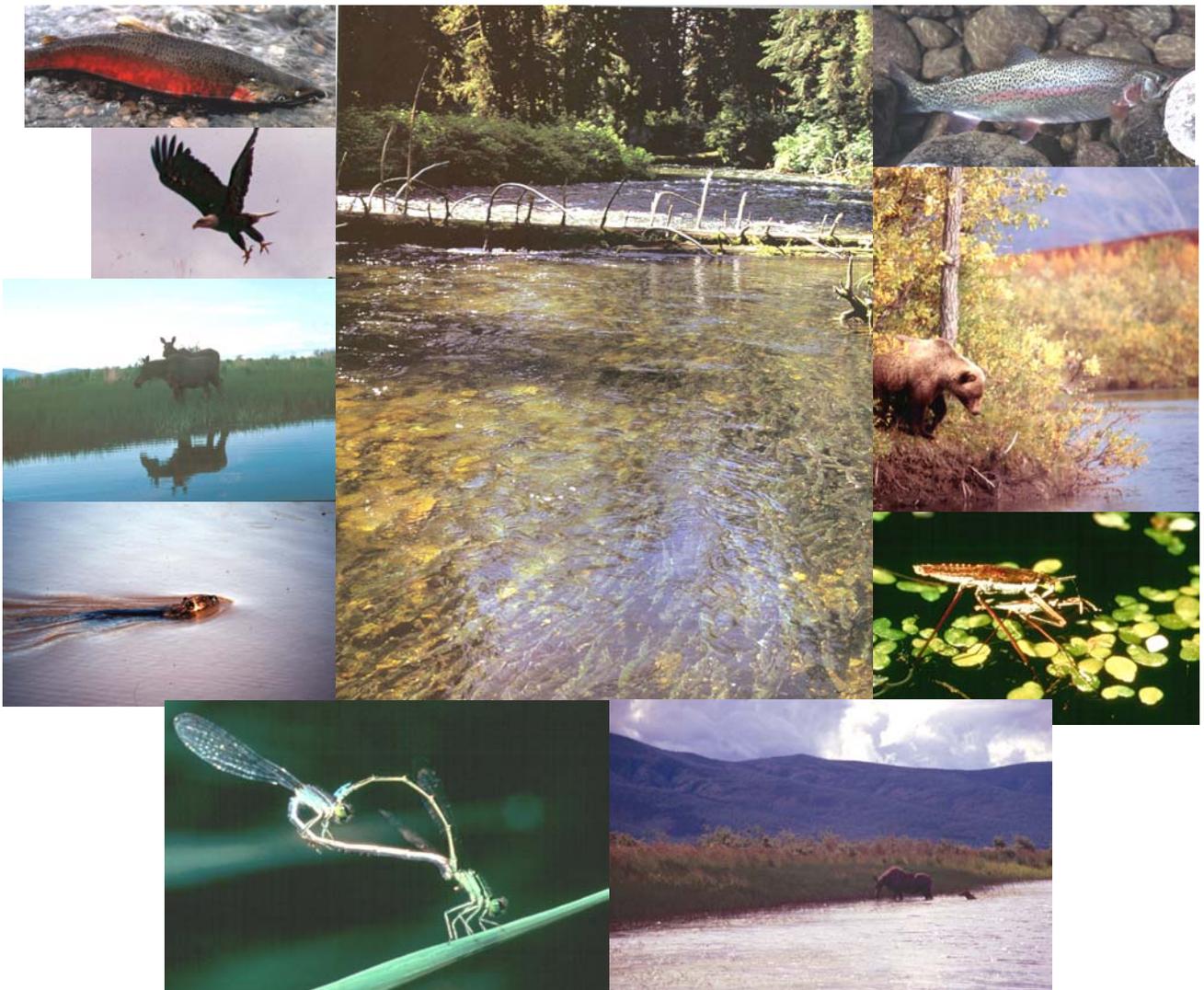
Riparian areas serve as a corridor between upland areas and the waterway for many mammals. Some spend more time in or along the waters' edge than others.

Birds

The riparian area is home to many birds. Among them are migratory birds, song birds, waterfowl, and raptors.

Biodiversity

Riparian areas support a wide variety of plants and animals. Because riparian areas are transition zones between water and upland areas, they have unique characteristics in creating habitat for a variety of animals and plants.



Shade

Trees and shrubs that line the streambanks provide shade. Fish and invertebrates use shade to hide, find food, and keep cool.



Shade keeps water temperatures cool, which means there is less evaporation and more dissolved oxygen in the water for the aquatic animals.

Problems that Arise with the Removal of Riparian Vegetation



Increased Water Velocity & Loss of Property

When streams meander, have woody debris, and have stable banks that retain water, water velocity will



remain relatively low. If some of these components are absent, the water will move faster and can become destructive to streambanks and habitat.



Photo by S. Johnson, Oregon State University Lincoln County Extension Service

Without a healthy riparian area, land or structures that are too close to the water could be lost.

Removal of Fish Spawning Grounds

When excess sediments are washed into the stream, the result is increased turbidity (siltiness of the water) and deposition of sediment on the stream bed. This means that fish, including salmon, lose critical spawning areas to lay eggs. In addition, fry that have not emerged from redds (nests) could potentially be buried.

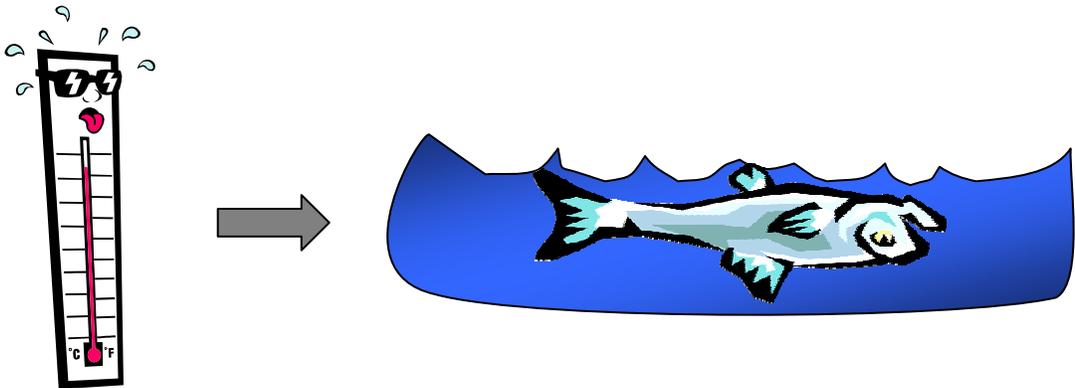


Photo by G. Galovich, Oregon State University Lincoln County Extension Service

Fish and invertebrates will also have difficulty getting oxygen with a lot of silt in the water because it will irritate their gills.

Increased Water Temperature & Nutrient “Pollution”

Water temperatures will increase if shade is removed, which means less dissolved oxygen is available in the water.



Lawns that meet the waters' edge allow excess fertilizer, organic matter (e.g. grass clippings), pesticides, and soil to run directly into the water. Riparian areas help absorb a majority of these items.



What Can be Done?

Prevention

The best way to keep our drinking water clean, retain streambanks and property, and maintain functional habitats for wildlife and fish is to prevent the loss of riparian areas.

- *Don't cut trees and shrubs away from streams.*
- *Refrain from building structures near the waters' edge. Building and structure setbacks are a **minimum** of **50 feet** from the ordinary high water line.*
- *The recommended amount of riparian zone is a **minimum** of between **52 to 100 feet** from the ordinary high water line, depending on the type of waterway and fish present. But **MORE** is better!*
- *Leave woody debris in the water.*
- *Pass along knowledge to others.*

What Can be Done?

Rehabilitation

Fixing these areas can improve our water quality, reduce bank erosion and excessive flooding, and provide habitat.



- *Allow natural vegetation to return to streambanks.*
- *Replant natural plants next to streams. Willows and other fast growing plants work well to start.*
- *Work with local groups to restore areas that are in poor shape.*

