Focus

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Riparian Areas

What are riparian areas?

Riparian areas are the transition zones between land and water environments. When healthy, these narrow strips of land along streams, rivers, and lakes are usually covered with dense vegetation, including trees, shrubs and grasses. The abundance of water and unique plant communities make riparian areas different from the drier uplands.

Riparian areas are a productive and valuable resource. They play a crucial role in the ecological health of our region's surface water. Yet, riparian areas are very fragile and must be managed carefully if we wish to retain their vegetation, soil, and the many social, economic, and environmental benefits they provide.

Benefits of riparian areas

Although riparian areas are relatively small compared to the surrounding area, they perform a number of very important functions. These functions include:

Stabilize banks – Shrubs and trees hold the soil along streams and lakes. This prevents bank collapse during periods of high water.

Reduce flooding and sedimentation – Trees and shrubs help retain runoff longer, which improves water infiltration into the soil and holds sediment that would otherwise be carried downstream.

Improve water quality – Trees, shrubs, and grasses along streams and lakes catch sediment, nutrients, pesticides, pathogens, and other pollutants before they enter the water.

Enhance wildlife habitat – Trees and shrubs provide habitat and travel corridors for many wildlife species. Wildlife must be able to travel to and from areas of quality habitat.

Keep water cool – Riparian vegetation shade streams and small lakes during the warm summer months. This increases the food and oxygen available for fish.

Regulate streamflow – Vegetation along streams improves water absorption and storage. Instead of flowing directly into streams, runoff is absorbed into the soil and groundwater reserves are recharged. This water flows underground into the stream much more slowly.

Improve scenery – Trees and shrubs along streams add diversity and beauty to the landscape.

Importance of riparian vegetation

The vegetation within the riparian area provides most of the benefits. Riparian vegetation consists of sedges and grasses as well as woody species including willow, cottonwood, and birch. Large woody species are often important to stabilize banks and capture contaminants.

Several factors influence what vegetation is found in riparian areas. These factors include climate, topography, groundwater availability, and soil type. Other characteristics such as steepness of the banks, flooding frequency, and seasonal flows also effect riparian vegetation.

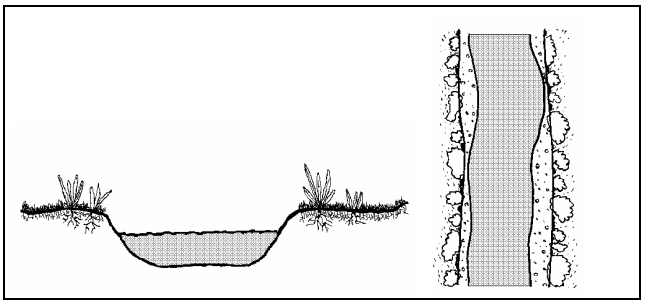
Characteristics of unhealthy riparian areas

Publication Number 00-10-023

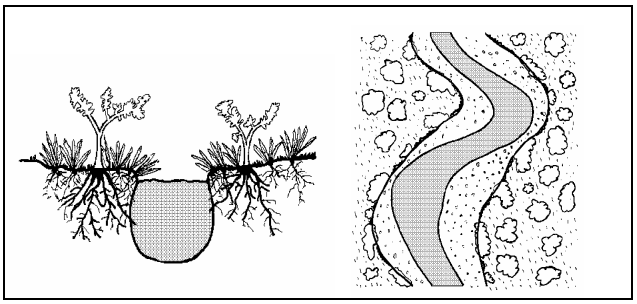
It is sometimes difficult to recognize a degraded riparian area, especially when it is degraded slowly over time or when changes occurred many years ago. Signs of riparian degradation include:

- Shallow-rooted vegetation and a lack of woody species
- A wide stream channel with shallow and/or muddy water
- Stream channel is straight and does not meander from side to side
- Exposed soil on bank of stream or lake suggesting bank collapse
- Invasion of non-native, undesirable plants

Below are cross-section and birds-eye views of two streams. Stream A has a straight, wide and shallow channel and lacks vegetation. On the other hand, a healthy stream B is narrow, deep and meanders within the channel. It also has significant streamside vegetation with deeper roots.



Stream A



Stream B

Conservation and restoration

Whether you live in a city or on a farm, it is in everyone's interest to protect our fragile riparian areas. When we do not take care of our riparian areas not only is water quality and fish habitat impacted, but increased flooding and erosion may cause severe property damage.

One way to conserve riparian areas is to create undisturbed or lightly used zones of native vegetation called buffers along streams, lakes and wetlands. On farms, this can mean fencing to limit access by livestock and diverting water to a stock tank. In town, buffers protect against polluted runoff from yards, streets, parking lots and rooftops.

Although planting vegetation and creating protective buffers can go a long way to restoring riparian areas, sometimes more sophisticated restoration methods are necessary. These methods include bank stabilization, in-stream structure, and meander reconstruction. Permits are required for many activities in and around streams, lakes, and wetlands. Experts should be consulted before any work is done.

For more information

For additional information, or if you are interested in restoring riparian habitat, contact the Natural Resource Conservation Service (NRCS), your local Conservation District, the Department of Fish and Wildlife or the Department of Ecology. Funding for restoration activities may be available. Ecology contacts are:

Chad Atkins
Eastern Regional Office – Spokane
(509) 329-3499

Ralph Svrjcek
Northwest Regional Office – Bellevue
(425) 649-7165

Christopher Coffin
Central Regional Office – Yakima
(509) 454-7860

Janet Boyd
Southwest Regional Office – Lacey
(360) 407-0245

If you need this publication in an alternate format, please contact us at 509-329-3503 or TTY (for the speech and hearing impaired) at 711 or 1-800-833-6388.