The Importance of Healthy Riparian Zones

A riparian zone is the swath of land adjacent to a river or stream. It's the transition area (known as an ecotone) between the uplands and the river.

The size of the riparian zone can vary, depending on the landscape. It may be a small corridor of vegetation hugging the river or a large network of wetlands stretching far into the floodplain.

Why are riparian zones important?

The riparian zone encourages natural flows

During a flood, the riparian zone helps absorb water. It also slows the velocity as the water spreads into the floodplain.

Riparian vegetation helps prevent the river from down-cutting or cutting a straight path, thus promoting the meandering nature of channels, increasing groundwater recharge, and maintaining an elevated water table.

Why are riparian zones in trouble?

The condition of a riparian ecosystem reflects the cumulative effects of all the activities in its watershed.

Extractive industries and haphazard development

Logging, grazing, mining, agriculture and urbanization all affect both the quantity and quality of water entering rivers, as well as the amount and quality of leaf litter and deadfall which serve as essential food and habitat resources for aquatic organisms.

In many cases these activities are synergistic and take place directly in the riparian zone, damaging or obliterating the riparian ecosystem.

Dams

A dam can flood upstream riparian zones and prevent the flow of water and sediment to riparian zones downstream. Water held behind dams is often released in unnaturally large quantities, flooding and scouring downstream riparian areas.

Even when water is released from a dam in a manner that mimics the river's natural flow cycle, the dam prevents sediment from being carried below the dam. This makes it harder for some riparian vegetation, which depends on sediment for seed beds, to establish and grow.

Diversions and withdrawals

Surface water withdrawal for irrigation, mining, or municipal uses can also harm the riparian zone. The lowered stream flow that results from these withdrawals reduces the vigor of riparian vegetation, and ultimately can cause its death and prevent its re-establishment. Groundwater withdrawal can also affect the riparian zone because of the hydraulic connection between surface flow and alluvial groundwater. A drop in the water table results in a reduced stream flow, which compromises the health of riparian vegetation.

Non-native species

Non-native species that have been introduced into the riparian zone, either accidentally or deliberately, can wipe out native species. Non-native plants are often hearty and quick spreading, but don't provide food or useful shelter for native birds and wildlife.

Recreation can damage riparian zones

Off-road vehicles, hikers who stray off-trail, anglers, mountain bikers, campers, picnickers, and others who are drawn to the river's edge can damage vegetation, cause bank erosion, and otherwise degrade riparian ecosystems. To learn how you can reduce your own impact on sensitive areas, visit Leave No Trace.

How can riparian zones be protected and restored?

The good news is, riparian zones are resilient.

They can repair themselves if we let natural processes take place and if we alter or minimize damaging activities.

We can:

- Manage resource-extraction activities (e.g., forestry, mining and grazing) so they not directly or indirectly harm natural riparian ecosystems.
- Make sure other uses of the land such as agriculture, urban and suburban development and road construction respect the integrity of riverine and riparian systems.
- Educate hikers and others who enjoy the outdoors about proper behavior in riparian areas.
- Maintain and restore riparian buffer zones. Establish regional policies to determine appropriate buffer widths. Establish similar policies for floodplains that allow rivers to naturally rise and recede.
- Develop programs to control and eliminate non-native species that have invaded riparian zones.

Information taken from American Rivers: http://www.americanrivers.org/

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