Water Quality and Riparian Areas

Cows and Fish Fact Sheet

Riparian Areas Improve Water Quality

Healthy riparian areas improve and maintain water quality because they:

Trap sediment

The lush growth around lakes, wetlands, streams and rivers catches sediment, nutrients, and contaminants. During runoff, especially when the soil is frozen, upright plants help to maximize this trapping function.

Reduce erosion

Riparian vegetation buffers the effects of soil erosion caused by runoff or flooding. The roots of trees, shrubs, sedges and other riparian plants bind and hold soil, shorelines and streambanks in place and slow runoff or flood waters. Reduced erosion means less sediment in lakes and streams. Less sediment equals cleaner water.

Store nutrients and contaminants

Plants and soil in riparian areas take up, use and store nutrients and contaminants from runoff and floods, keeping them out of the water. Cattails and other riparian plants are good at removing nutrients from water.

The Benefits of Improved Water Quality include...

Good Wildlife Habitat

Less sediment in the water means better habitat for aquatic animals such as fish and amphibians.

Healthy Livestock

Cattle and other livestock are healthier and make greater weight gains when they have access to clean water.

Clean Drinking Water

High water quality means safety for consumers and reduced water treatment costs.

Safer Water

Clean water poses fewer risks for the people who use it.

How Do Riparian Areas Vary in their Effectiveness to Improve Water Quality?

- The effectiveness of riparian areas varies because of different soil types, slopes, and how water moves underground. Riparian areas are more effective at improving water quality where slopes are gentle and where water flows through the plant's root zone in the riparian area.
- Healthy, well vegetated riparian areas can be good at removing sediments, as well as microbes, nutrients, and pesticides attached to those sediments, but are less effective at trapping or filtering dissolved nutrients and pesticides.
- The more runoff (or flooding) that occurs in a relatively short time, the less effective riparian areas are at filtering sediments, nutrients, and pesticides because the area becomes saturated with moisture and sediments. Effectiveness is reduced as the ratio of healthy, well-vegetated riparian area to unvegetated area decreases. Extensive clearing and intensive land use in the watershed may contribute more sediment and contaminants to riparian areas.

How Can I Promote Healthy Riparian Areas?

Promote Healthy Vegetation in Riparian Areas

Diverse herbaceous and woody plants of various sizes and ages will create the structure needed to trap sediment and contaminants as well as uptake some nutrients.

Increase the Width of Buffers

Maintain a well-vegetated buffer area alongside riparian areas. Buffers mimimize impacts from cultivated fields, wintering sites or other intensively used areas. The wider the buffer outside of the riparian area, the more effective it is at improving water quality.

Encourage the Principles of Range and Pasture Management

Provide effective rest to maintain plant vigour. Aim for evenly distributed livestock use, avoid vulnerable periods (wet soils and periods when shrubs can be overused), and balance forage supply with livestock needs.

Try a Variety of Management Techniques

Consider alternate water sources for livestock. Place supplemental feed and mineral supplement away from riparian areas, control timing of use, and reduce manure build up in riparian areas. Manure builds up where cattle linger for shade or shelter. Riparian areas are often favorite lingering spots, but manure build up can be a concern if nearby waterbodies are affected.

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Working with producers and communities on riparian awareness

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