

Grazing Livestock in Riparian Areas

'Riparian areas' are the transitional zones between water bodies and upland areas. Fully functional, healthy riparian areas provide valuable services that include filtering and trapping runoff, recharging groundwater, slowing soil erosion along banks and gullies, supporting biodiversity, and producing abundant forage for livestock throughout the growing season. Riparian areas can be damaged when livestock are allowed access to graze and/or drink from the adjacent water body. However, with careful management that accounts for the unique characteristics of riparian areas, riparian grazing can be done without long-term degradation.

Grazing that maintains or increases riparian health is an art and a science, and requires determining the appropriate stocking rate and grazing period for the available forage, controlling access to water, allowing for adequate rest periods, and introducing livestock only when soil moisture conditions are acceptable. These and other considerations are described below.

Riparian Grazing Considerations

Stocking Rates

A cow requires about 2-3% of her body weight in forage every day. By estimating the forage yield of the riparian area, you can determine an appropriate stocking rate over a given time period that does not lead to

overgrazing. Keep in mind that water is the limiting resource for most plants, and forage yields may vary greatly in wetter and drier years. Ongoing monitoring is essential to adjust plans to reflect current growing conditions.

Access to Water

Cattle drinking directly from the stream or wetland can destabilize the bank, muddy the water, and contribute to nitrification of the water supply. Off-stream or off-site watering areas prevent degradation of stream banks and improve water quality. Plus, cattle experience better gains when they have access to clean water!

Rest Periods

Letting riparian areas rest during the growing season enables plants to re-grow leaves and root mass post-grazing. Keep in mind that overgrazing is a function of time, and can result from staying in a riparian area for too long or returning to a grazed riparian area before plants have fully recovered. Monitor for regrowth, bare ground, and changes in species composition to determine whether a riparian area needs more rest.



Figure 1. Riparian areas provide forage, shade, and water for cattle.

Moisture Conditions

Wet soils are vulnerable to pugging and compaction, especially in the spring. Graze in low moisture conditions to avoid damaging sensitive streambanks.

Grazing Management

Cattle may linger around riparian areas on summer days due to the availability of water and shade. Thus, allowing cattle to simultaneously access riparian areas and upland areas can lead to overutilization of the former and underutilization of the latter. Fencing your riparian area as a separate pasture makes it possible to better manage the grazing process and to exclude livestock from particularly sensitive areas.

Livestock Preference

It is important to be aware of the palatability of different riparian species to livestock. Trees and shrubs tend to be browsed more intensively in late summer and fall, when grasses have cured and good forage is lacking. Livestock are particularly fond of willow, dogwood, saskatoon, and young aspen and balsam poplar trees.

Riparian Reforestation and Grazing

There is growing interest among farmers and ranchers across Alberta in restoring riparian area health and functionality by planting trees, shrubs, and herbaceous species. Integrating riparian reforestation and riparian grazing can be a delicate balance, but the two practices need not be mutually exclusive. Indeed, grazing *prior* to planting in the spring can help seedlings get a jump start in growth before their

herbaceous neighbors regrow and begin competing with them.



Figure 2. Mid-summer is usually a good time for riparian grazing, due to low moisture conditions and high forage availability.

On the other hand, grazing of restored riparian areas in the first couple of years *after* planting should be avoided or minimized. If you are planning on grazing the riparian area in the first couple of years, then it is recommended that you primarily plant species that are not preferred by livestock (e.g. spruce, pine, fir, gooseberries, currants, cranberries, etc.), and/or install protective measures to safeguard them from browse. If possible, grazing should be done in mid-summer when moisture conditions are low and there is plenty of herbaceous forage available. Grazing at this time also gives seedlings a chance to recover before winter and

allows for taller grasses to grow up around seedlings, providing shelter and trapping snow.

Note that there is not a single model to follow for grazing riparian areas, and this information is only intended to provide some guidelines and processes to consider. It is most important to monitor your site, as it has specific needs and requirements, and adjust as necessary.

This article was completed using information from the following sources:

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All photos were taken by AWES.

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