Riparian Grazing Strategies

Riparian Grazing Plans

(One of a series)

Benefits of grazing management plans that take riparian areas into account include:

- Improved animal performance and reduced incidence of disease.
- Increased forage production in the riparian zone.
- Enhanced shelter for cattle and habitat for wildlife.
- Reduced bank erosion, increased stability of shorelines and less sediment in the water.
- Reduced risk of water contamination by manure.
- Water management provides a measure of drought proofing.

A grazing plan can improve or maintain forage production and optimize animal performance. Planning can help identify potential problems and provide ways to avoid or solve those problems.

All grazing management requires an investment of time and money, but management changes don't have to be dramatic. They can be made incrementally over a number of years.

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4 Steps to Developing and Implementing a Grazing Plan

Step 1.
Conduct an inventory and assess conditions

Begin by preparing a map of the area.

On the map, identify all the components of your pasture including the riparian area and associated upland areas. Indicate land uses, roads, fences, yard sites and the location of livestock watering points and supplemental mineral and feeding sites. Also outline problem areas or unhealthy areas such as eroded sites, saline areas and vegetation damage.

Other useful information includes forage type and stand condition, class and numbers of livestock and their patterns of use and distribution and a history of grazing and pasture management.

Next, visit the riparian area and record the current condition of the area noting the following:

- Vegetation types and densities including trees, shrubs, grasses, weeds and other vegetation, as well as the amount and approximate age class of woody vegetation.
- Also note the degree of use of woody vegetation by animals (i.e. browse), and the amount of decadent and dead wood standing.
- How much bare ground is there? Any hoof damage caused by livestock?
- Also indicate the amount of stream channel erosion and the amount of streambank structurally altered by livestock and human activity.

Assessment of the riparian area should include looking at surrounding areas, including upstream. Photographs are useful for before-and-after comparisons.

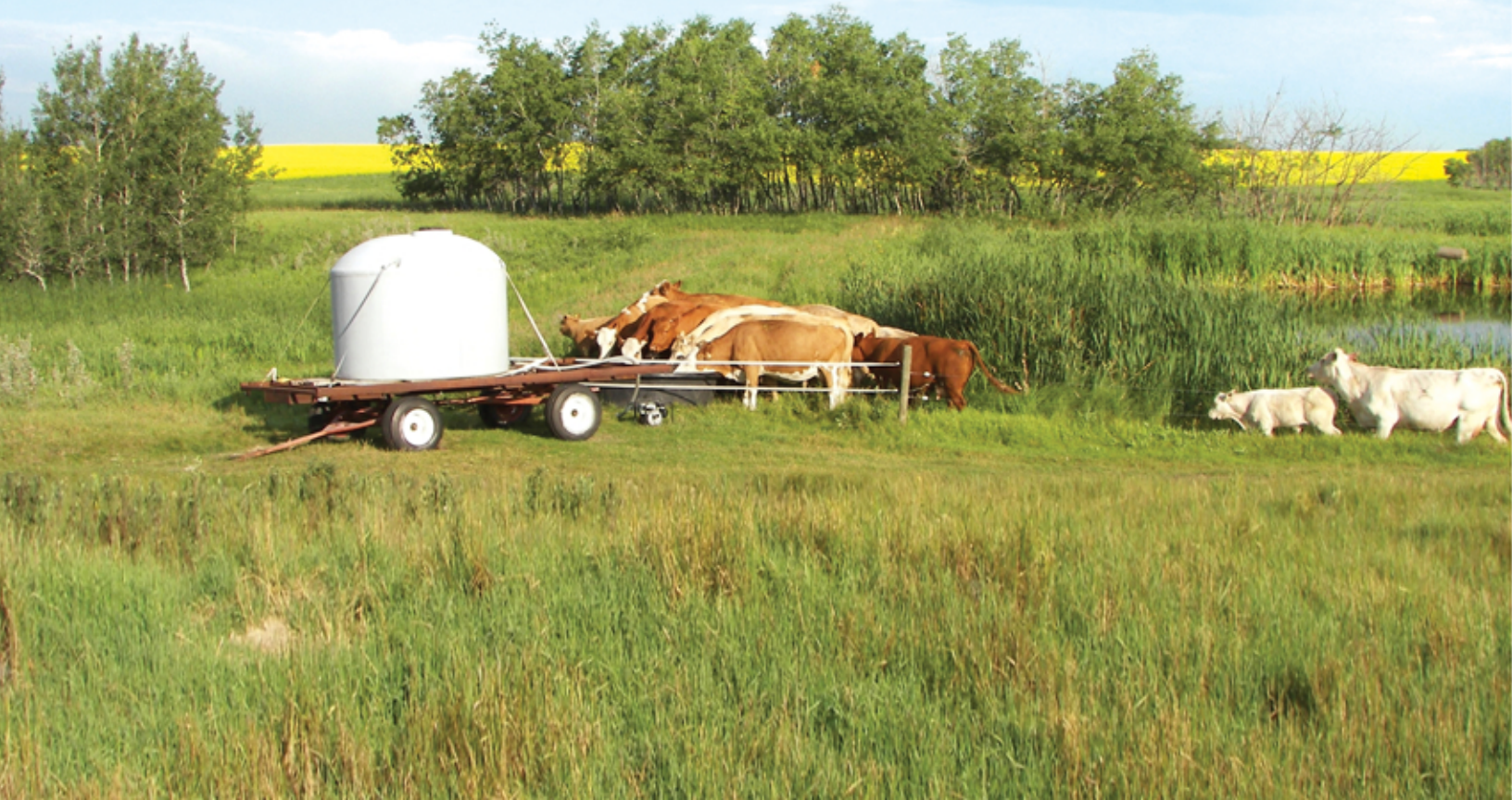
Step 2.
Define objectives and goals

The next step is to define long-term objectives as well as short term (operational) goals.

Examples of objectives include:

- Increased forage production.
- Improved water quality.
- Provide fish and wildlife habitat.
- Provide recreation.
- Preserve special areas.
- Protect cultural and heritage sites.
- Sustain resources such as berries, fuel wood.
- Attract tourism (e.g. bed and breakfast, outfitting).

Goals are steps taken to achieve the objectives. The goals should be as specific as possible, realistic and attainable. For example, to meet the objective of "increased forage production", one goal may be to ensure 50 per cent carry-over of forages into the next spring. Another may be to restrict livestock access to the riparian area until after June 1. If there are several goals, priorities should be identified. If resources are limited it is important to concentrate on the highest priorities.



Step 3.
Develop and implement an action plan

Each grazing management plan will be site-specific and correspond to the farm conditions and plan goals. The plan should allow for its implementation in stages depending on available resources. If resources are limited, the simplest and most cost-effective changes could be made first.

The action plan should be guided by these four key principles of pasture management:

Balance animal demand with the available forage supply

Balancing forage supply and demand means ensuring that the amount of forage required by livestock does not exceed what the area can supply. In addition to what the animals actually consume, enough residue forage must be left behind to protect the soil and to ensure the pasture remains healthy for the following season. This is achieved by selecting a stocking rate related to the carrying capacity of the pasture.

A sustainable stocking rate reduces risk, allows maintenance of a herd size through the highs and lows of moisture and forage, and provides long-term stability and flexibility to the operation.

When setting stocking rates for pastures containing riparian areas, livestock distribution must be considered. If the stocking rate is based on an entire pasture but livestock are only using the riparian areas, the riparian areas will be overused. It may not be effective to reduce the stocking rate to adjust for highly uneven use across the pasture. It may be necessary to improve animal distribution rather than reduce the stocking rate.

Distribute grazing pressure

Encouraging better herd distribution throughout the entire pasture will relieve grazing pressure on the riparian area. This may be accomplished in a numbers of ways including providing feed, mineral supplements, oilers, water and shelter (artificial or natural) away from riparian areas to reduce damage to woody vegetation, and manure build-up in the riparian area. Fencing the pasture into paddocks is also an option, but may require a significant financial investment.

Avoid or minimize grazing during sensitive periods

In spring or early summer, saturated soils along streambanks are most susceptible to hoof and trampling damage. In addition, browsing of new woody plant growth is especially damaging to the plants at this time of the year. Delaying grazing of the riparian area until mid or late summer can reduce the effects of trampling and allow plant growth to get off to a good start.

In the autumn, streambanks are less susceptible to trampling, but care must be taken to ensure enough plant cover remains to protect the soil and trap sediments during spring run-off. In addition, livestock actively seek out trees and shrubs at this time of year. If the level of browse is not monitored, fall and winter grazing can be very damaging to woody plants.

Wintering livestock in the shelter of a riparian area can negatively impact the health of the riparian area. Not only will a high stocking density affect the vegetation and soils, manure can accumulate, which can wash into the associated water body in the spring.

Provide adequate rest after grazing

Energy stored in the roots of plants is needed to initiate growth in the spring. If plants are continuously grazed without time to recover, their health and productivity will decline. Eventually these plants may be replaced with undesirable species. It is important to give plants time to rest while they are still growing to rebuild energy reserves. Rest in the fall following a summer grazing period provides time for plant re-growth, especially of woody vegetation before winter.

Step 4.
Monitor the effectiveness of the management plan

A monitoring program must be initiated from the beginning to provide a benchmark against which progress may be measured. The grazing system may need to be modified if the desired results are not being achieved.

Vegetation in riparian areas can respond quickly with improved management. Greater plant vigour and forage yields may be visible within a few months. Recovery of the plant portion is a positive signal that recovery of other components is on the way. On the other hand, obvious changes to the shape and condition of the streambanks and channels may take years.

Program Partners

- Agriculture and Agri-Food Canada
- Ducks Unlimited Canada
- Environment Canada
- Fisheries and Oceans Canada
- Manitoba Agriculture, Food and Rural Initiatives
- Manitoba Cattle Producers Association
- Manitoba Conservation
- Manitoba Habitat Heritage Corporation
- Manitoba Water Stewardship

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For more information please contact:
Riparian Program Coordinator, Manitoba Habitat Heritage Corporation
200-1555 St. James Street,
Winnipeg, MB. R3H 1B5
Phone: (204) 784-4358
Fax: (204) 784-4359
Email: mhhc@mhhc.mb.ca

This and other related material, including a stocking rate calculator, an aerial photo library and other pasture management tools, can be found at www.riparianhealth.ca

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Management Options - Grazing Systems

A managed grazing system will enhance livestock production and maintain or improve the plant community in the riparian area.

Rotational grazing

In a rotational grazing system, larger pastures are divided into smaller paddocks and each is grazed according to an overall plan. Although creation of a rotational grazing system may require investment in fences and alternate water sites, forage production and management flexibility are enhanced. The timing and intensity of grazing in the riparian area can be controlled.

When grazing is concentrated on a small area for a short period of time – often just a few days – the animals use the whole pasture more evenly. Grazing is less selective and results in a more efficient use of all the forages present, especially in riparian areas. Each paddock of the pasture is rested at some time during the growing season, allowing plants to rebuild energy reserves and root systems.

Riparian pasture system

In a riparian pasture system, pastures are separated into units based on a land type or on a landscape basis. For example, tame pasture is fenced separate from native pasture, riparian areas are fenced separate from upland areas.

In this system, livestock distribution in both riparian areas and uplands can be more easily controlled, which may allow for increased carrying capacity. In addition, there is more control over livestock grazing during high-risk periods, which can help recovery of riparian health and productivity.

Fencing a riparian area into a corridor and providing a long rest period can be useful in some situations, especially when streambanks are highly susceptible to damage because of soil texture, topography or continually saturated soils. Fencing out the riparian area may also be advantageous where objectives such as improved water quality are a priority. Corridor fencing is not usually the preferred choice for riparian pasture management, but when other management options have failed to restore riparian health, it may be the best alternative.

Other pasture systems

Although creating separate riparian pastures can fit well into a rotational grazing system, dividing pastures this way is not the only option. Large pastures that include riparian areas can be divided so that riparian areas are present in all paddocks. In these areas, fences generally run across creeks or streams, and uplands are included with the riparian areas. In this case, the riparian area is the benchmark for the management of the paddock. This practice is common where the entire pasture is located within a valley and the creation of a separate riparian pasture would result in a narrow corridor along the stream.

It is important that the stocking rate is based on the area that the livestock actually use, that there is sufficient time for re-growth to occur after the grazing period, and adequate carry-over of forage exists along the riparian areas.

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