

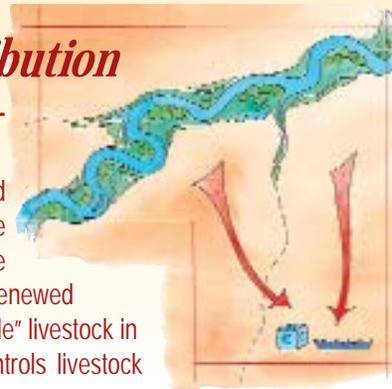
# On The Range, Out in the Pasture

## Successful Riparian Management

### *The First Step - Improving Livestock Distribution*

A first step in any riparian grazing strategy is to improve livestock distribution - to better balance out the grazing load over the landscape.

There is no textbook approach to this. Good distribution requires imagination, trial and sometimes error. The most common option is to place attractants in the uplands away from the riparian areas. Things like salt, minerals, watering sites, oilers, rubbing posts and alternate choices for shade and shelter will help draw animals away from riparian areas. There is renewed interest in animal placement where the stockman employs special herding techniques to "settle" livestock in more lightly-used upland areas. Electric fencing is a low cost and effective tool that controls livestock movement and timing of use especially during high risk periods such as early spring.



#### Where is it Effective?

Animal attractants and herding are most effective where there is little variation in topography, elevation and vegetation types. Distribution tools will be less effective with grazing periods of one month or longer and with season-long, continuous use.

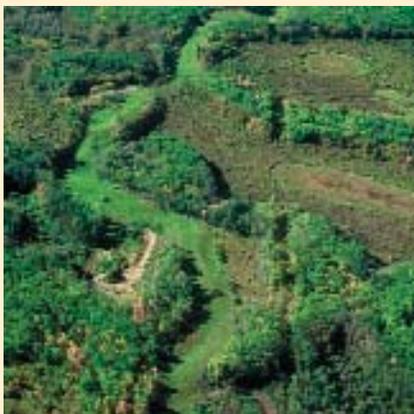
These tools are an incremental step towards tackling riparian management concerns. They are often best combined with other management actions.

#### Practices to Avoid!

*Salt blocks (plus minerals, oilers and rubbing posts) placed by the water encourage livestock to camp there and don't provide an incentive for better distribution. Moving salt away from water supplies is one of the easiest and cheapest changes available to start managing riparian areas better.*



#### Practices that Work!



*Roads and trails may funnel livestock to sensitive riparian areas. Drove trails that avoid riparian areas and link upland pastures are useful distribution tools. The Tulliby Lake Stockmen's Association uses a combination of drove trails, dugouts and salting to improve livestock distribution and riparian management on 17,000 acres of forest and riparian rangelands north of Marwayne.*



*Off-stream watering sites, permanent or portable, in the uplands, can draw livestock pressure away from riparian areas and achieve better use of upland pastures.*



*Providing feed and shelter away from riparian areas avoids heavy use and damage to woody vegetation, plus it reduces manure buildup and possible water contamination.*



*A forested buffer between upland pastures and shorelines, coupled with off-site water, can reduce pressure on wetlands and lakes.*

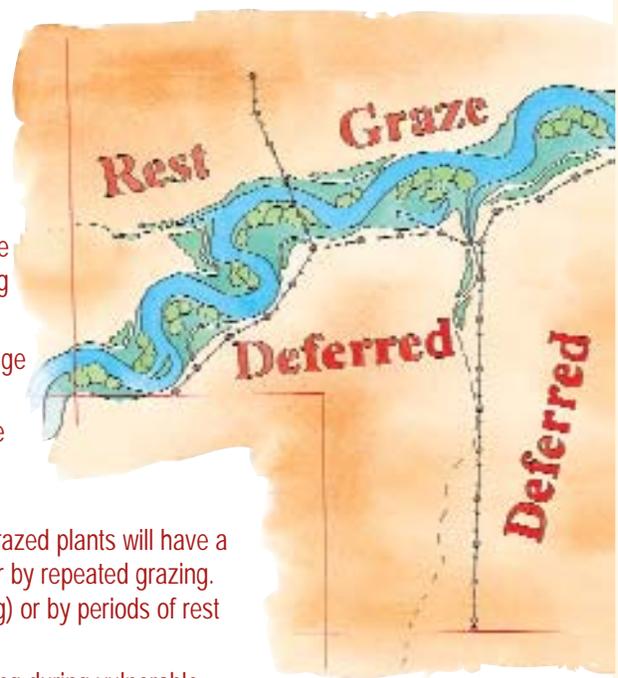
# Rotational Grazing

Rotational grazing involves a planned sequence of grazing and rest periods.

Rotational grazing normally requires subdividing the range into smaller pasture units. It is possible to implement a rotational grazing program with existing pasture units or even through herding practices.

A grazing rotation enables the manager to better apply the key principles of range management.

- ◆ Animal distribution will improve because animals will be forced to use the overall range landscape more evenly. Livestock grazing will be less selective, especially in riparian areas.
- ◆ More effective rest will be achieved by shortening the grazing period. Grazed plants will have a better chance to rest and regain vigour rather than being stressed further by repeated grazing. Rest may be provided either by periods of deferral (delayed early grazing) or by periods of rest after grazing.
- ◆ Season of use can be controlled to avoid or reduce the stresses of grazing during vulnerable periods such as during spring runoff when banks are fragile and easily trampled and fall when browsing can be excessive.
- ◆ Better overall carryover of litter is achieved. More uniform grazing will reduce grazing intensity in riparian areas and make more efficient use of upland forage.



## Deferred Rotational Grazing at Beaverhill Lake



The Stauffer family (Milo, Bonnie, Scott, Darren and Julie) have a livestock operation that borders on Beaverhill Lake, near Tofield. Since 1983 they have developed an eight pasture rotation on about 980 acres of deeded and lease land. Four of the pastures are lakeshore ones; the remainder are upland ones. The rotation begins in late May on upland pastures, which defers use of riparian ones until July 15 in most years. Adjustments to drought conditions has meant supplemental feeding to allow deferral and to allow regrowth of riparian pastures. Grazing use in a typical season would be with 137 cow/calf pairs. Following use of each pasture, six weeks to two months of rest are provided, to allow regrowth, and then the grazing sequence is repeated. Since most of the pastures contain tame forages this sequence keeps the plants in a productive, vegetative state. Livestock are removed by September 30 and go onto stubble and hayland. Milo has reference areas in each of the eight pastures where he gauges utilization to meet a goal of 50% (take half-leave half). This provides good carryover of forage, to conserve moisture and to maximize regrowth. The sequence of pasture use changes from year to year based on pasture readiness.



*Rotational grazing allows better control of livestock distribution and provides growing season rest for lakeshore pastures.*



*Dugouts are fenced, with water pumped to troughs, to conserve water and reduce maintenance costs.*

Water developments facilitate this rotational system. Three fenced dugouts, with water pumped to troughs, are located so each supplies water to more than one pasture. This has increased water quality for livestock and has almost eliminated foot rot which was a chronic issue when livestock watered from the lake. Prior to 1983 and the development of cross-fencing, this was mostly one large pasture. It was very difficult to control livestock distribution and utilization; water supply was limited in the uplands and cattle parked on lakeshore areas. Investing in this grazing system has provided the Stauffer family with higher beef production, more control of livestock, drought proofing and a healthy lakeshore.

# Rotational grazing on the Stony Hill Grazing Co-op

The Stony Hill Grazing Co-op is located on the south side of the Cypress Hills, in southeastern Alberta. Grazing occurs on lease land and the Co-op has worked for many years with Public Lands and PFRA on ways to improve range management. Initially one pasture was a four section field of mostly native rough fescue, with some smooth brome on old cultivation. In the early 1990s the practice of placing salt in the same locations within the field, at the top of drainages, was changed to moving salt to new locations every time a salt block was required. This change in salting, coupled with water development of an upland spring, in 1992, started to show benefits. Cattle distribution became more uniform and less use was made of riparian areas. The condition of woody plants began to improve in coulees, draws and along Grant Creek. In 1999 Co-op members and agency staff decided a cross fence would further improve the initial results. The one large field was divided in half with a fence that followed natural topographic boundaries. Grant Creek flows through both fields.



*One of the benefits of rotational grazing has been better water storage in the riparian area and season long flows in Grant Creek.*

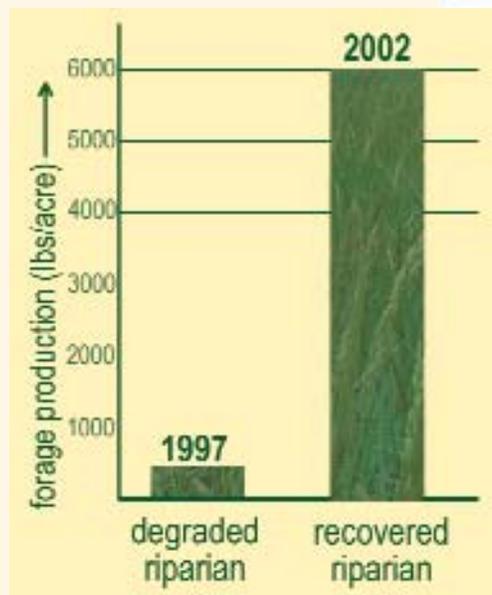


*before management change . . .*

These fields are grazed with 268 cow/calf pairs and about eight bulls. The sequence of grazing starts about June 1 and the first field is grazed for a month. Cattle are then moved into field two where they stay for two months, until late August. This provides substantial growing season rest to field one, which is then regrazed for the month of September. Field two gets growing season rest both early and late, especially beneficial for woody plants which can suffer heavy browsing in spring and fall.

In this rotational system the sequence of pasture use changes every four to five years to facilitate maximum rest and regrowth of woody plants in the riparian areas of one field, then the other. When one field has had multiple years of growing season rest, in spring and fall, woody plants develop better resilience to grazing. This system of rest and planned use has allowed the recovery of woody plants in field two and the recovery of sedges in both fields, while maintaining the same amount of grazing that occurred before the changes.

The changes in Grant Creek are dramatic with the rotational system, and other management shifts. Forage production increased from about 600 lbs/acre to 6000 lbs/acre, a ten-fold improvement. That forage production is a reflection of the recovery of the riparian sponge that traps and holds moisture. Water flowed in Grant Creek, in the rotational pastures, throughout 2001, the driest on record for 130 years. Water quality is now higher; water is less turbid because the highly erodable soils are glued together with dense growth of sedges. These sedges have trapped substantial amounts of sediment; in places up to 10 cm in four years. Willows are reestablishing and their height and vigour are improving. With woody plant recovery, better snow trapping will occur and the watershed will store more water.

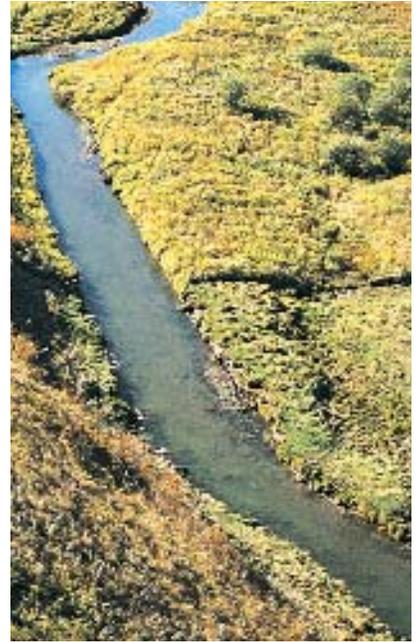
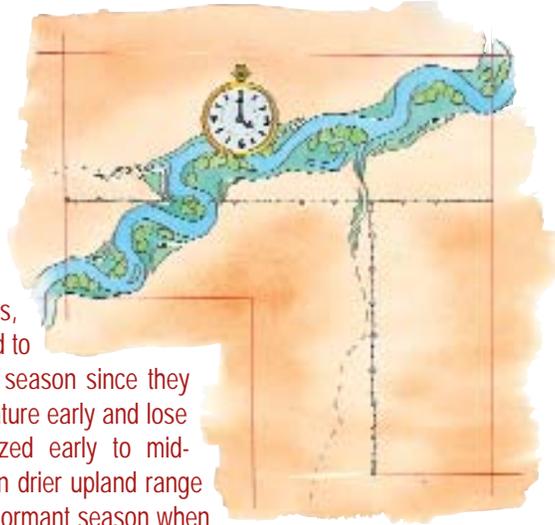


*. . . after management change*

# Time-Controlled Grazing

A general trend in grazing management on many Alberta ranches is to shorten the grazing time, particularly during the phase of most active plant growth.

On many foothill ranches, riparian or lowland fields tend to be used during the growing season since they tend to have species that mature early and lose nutritional value if not grazed early to mid-season. Forage supplies on drier upland range tend to be "banked" for the dormant season when native bunch grasses can be used to best advantage. This practice may be very beneficial to riparian areas. Time-controlled systems minimize grazing of the regrowth that plants require for rebuilding roots and energy supplies. The actual sequence of use may not change much from year to year.

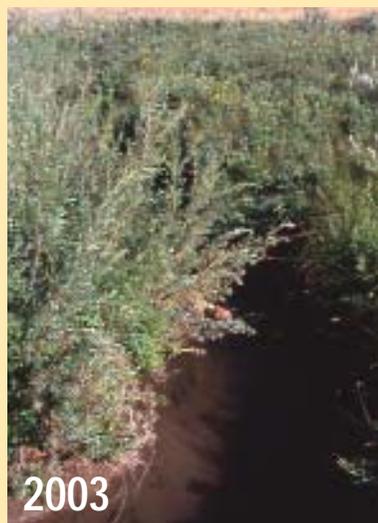


*Fenceline contrasts show differences in livestock management and how streambanks respond. The healthy riparian area is a result of time-controlled grazing on the Bluebird Valley Ranch.*



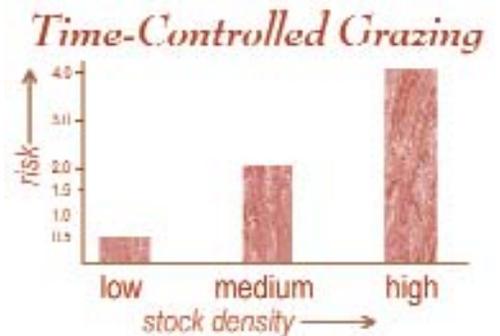
## Bar S Ranch

The Bar S Ranch, owned and managed by Clay Chattaway and sons Scott, Christian and Morgan, sits at the head of the Mosquito Creek watershed. A 260 acre pasture that straddles Mosquito Creek was used as a holding field prior to 1925. The field was next to the ranch headquarters and, in earlier times, had become a "sacrifice" area. In later times the field was used for breeding, early in the grazing season. Management changes by the Chattaways in the 1980s have led to progressively shorter grazing periods. Now, the field is consistently used in the late-June to late-July period. It is rarely grazed for more than three weeks during this period, providing growing season rest both early and late. Another late season grazing may follow, but the bulk of the grazing use occurs in summer.



## Risks of Time-Control

Time-control can be applied at light, moderate or heavy rates of stocking. There are places where heavy stocking for short periods can help you reach a resource management goal. However, there is increased risk with high livestock densities or stocking rates. Livestock become less selective in their grazing habits. If your goal is to restore woody plants, non-selective grazing may be very stressful to these species. Monitoring is the key. Be prepared to move animals if grazing impacts your riparian recovery goals.



*Careful monitoring will help you reduce the risk to your riparian areas.*

# Rest-Rotation Grazing

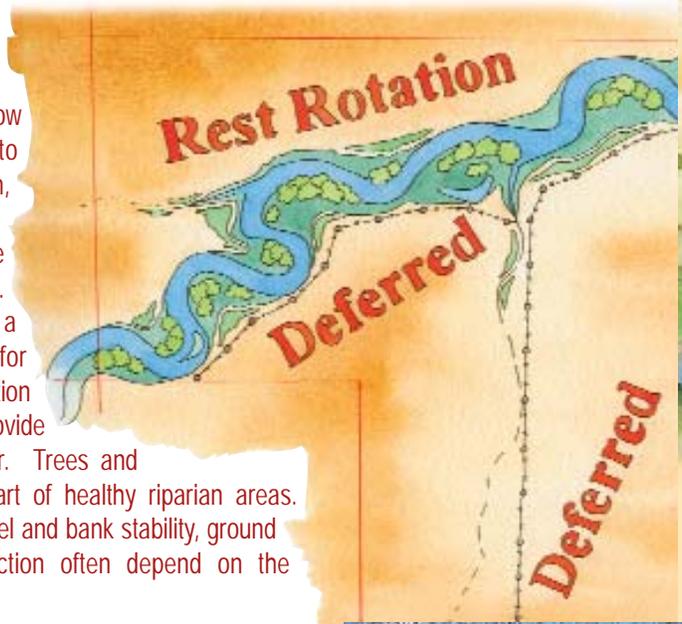
When it's critical to restore woody vegetation in riparian areas, a more conservative grazing strategy like rest-rotation grazing may be necessary.



*Woody seedlings like this willow plant, will establish under deferred grazing, but may be grazed out during the dormant season. Rest-rotation helps to add this critical woody component to your riparian area.*

A deferred rotation may allow new woody seedlings to establish in the short term, but without sufficient rest, the young plants may be grazed out by livestock. Rest-rotation grazing is a method to consider for maintenance or perpetuation of trees and shrubs that provide your livestock with shelter. Trees and shrubs are an integral part of healthy riparian areas. Riparian values like channel and bank stability, ground water and forage production often depend on the presence of "big wood".

Rest-rotation means providing a field with a rest period for the entire growing season or even calendar year. In some cases, rest may need to be applied for a series of years! For example, if riparian cottonwoods are unable to establish or get above the reach of cattle, there will be no recruitment of young trees to replace the old ones that eventually die and fall over. In these circumstances, a field may require many years of complete rest to allow new seedlings to establish and grow into forms that are more resistant to grazing. The amount and sequence of rest periods will depend on the species of trees and shrubs you have in your riparian area.



*This riparian area shows no regeneration of woody plants and will require rest-rotation grazing to establish them. Livestock can be managed to allow plants to return and reach a grazing resistant stage.*



*This cottonwood sapling has established itself but is not yet resistant to livestock use.*



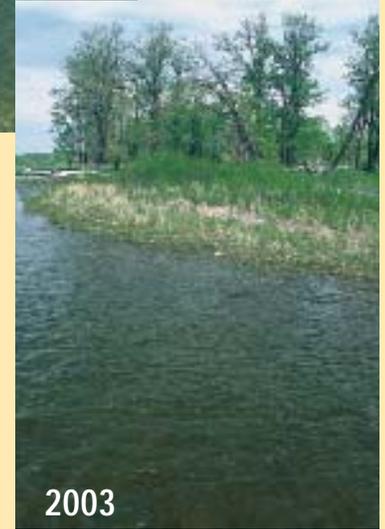
*These cottonwoods have reached a grazing resistant pole stage and the riparian area can absorb grazing pressure. Monitoring is key to ensure this vital component of the riparian area is maintained.*

*Tiny seedlings to tall trees grow - If we let them!*



## Bar U Ranch

The Bar U Ranch was established in 1882 on Pekisko Creek, south of Longview. The original headquarters, about 320 acres, is now a National Historic site managed by Parks Canada. The riparian bottomlands of Pekisko Creek have had very heavy use by livestock, through all seasons, for approximately 112 years. In 1994 it appeared all that was left on the site were cottonwoods between 80 and 100 years old with no other age classes or species of woody vegetation. Flooding in 1995 showed the weakness in the system without new woody vegetation to slow streambank erosion. Adequate rest for many riparian systems can be provided with seasonal rest periods and the pasture can still provide some forage. The Bar U contains a cottonwood forest that requires multiple years of total rest to allow tree and shrub seedlings time to establish and produce enough growth to make them resistant to grazing. The riparian area was fenced in 1997 to provide complete rest from grazing. The uplands continue to be grazed and provisions were made for livestock water from Pekisko Creek. New age classes of poplars appeared, as did other woody species. This showed that the natural capital of plant species was present as seed stock. The system just needed more rest to take the pressure off the “spring” that was held down by grazing. Careful grazing may be possible in the future as recovery levels are achieved.



## Butters Ranch

The Butters family ranch west of Cochrane, in the Ghost River watershed. Many years of livestock grazing coupled with beaver activity resulted in most of the woody vegetation, especially willows, to disappear from Robinson Creek. Robinson Creek has streambanks vulnerable to erosion, particularly without the roots of woody plants to hold them together. To allow woody plants to regenerate, Erik Butters has used temporary electric fencing to exclude cattle from the riparian area, while grazing the upland portion of the pasture. He has successfully used this, both for summer and winter grazing, to provide both growing season rest and to eliminate any browsing, trampling or rubbing during the dormant season. Single strand wire, supported with temporary posts and powered with a 12V battery has been effective for discouraging cattle from accessing the riparian area. The system is very portable, relatively inexpensive and is used elsewhere to provide better control and distribution of livestock in upland pastures. Erik has used portable electric fencing as a way to provide rest and allow woody plants to recover since 1998. Willow regeneration is occurring, but is not yet at the stage that grazing could resume.



*Rest-rotation, using temporary electric fencing has allowed this fragile area to revegetate.*



# Riparian Pastures - A Landscape Approach

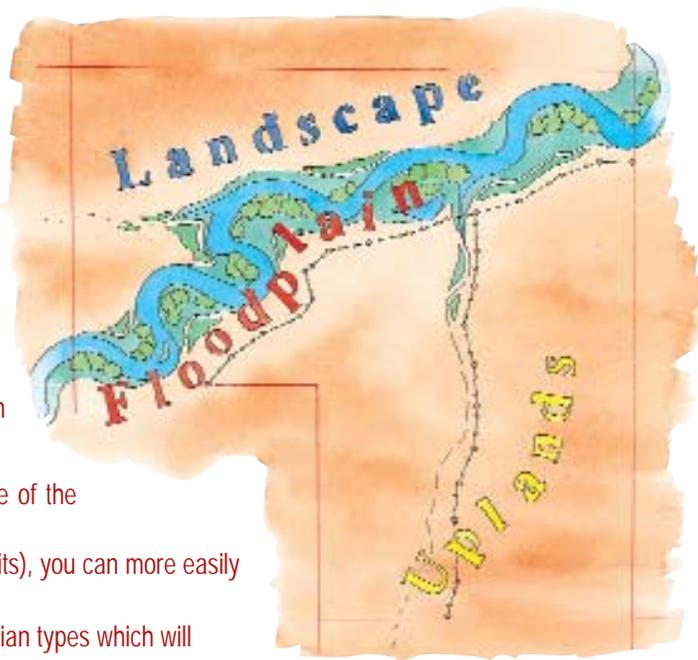
Rotational grazing systems deal with recurring patterns or sequences of grazing and rest. The riparian pasture option takes us the next step to consider how we define and fence pasture units.

Moving to a riparian pasture system means defining fields in a manner that reduces the variation within a given field, such as fencing uplands separately from the floodplain.

Like rotational strategies, riparian pastures also will be grazed in a planned, purposeful sequence. However, the major difference between riparian pastures and other rotational strategies is the separation of range pasture units on a land type or landscape basis.

Often more fencing is required but a riparian pasture is one of the most successful options because:

- ♦ when land is fenced "like-with-like" (in homogeneous units), you can more easily control livestock distribution;
- ♦ animal distribution is improved in both uplands and riparian types which will often allow you to increase your sustainable carrying capacity;
- ♦ providing effective control over livestock grazing during high risk periods allows for the most rapid recovery of riparian area health and productivity; and
- ♦ as a component of your riparian area goal, a riparian pasture will help you restore and maintain woody vegetation.



## Vandervalk Ranch Riparian Pasture

Jack and Merry Vandervalk, of VxV Farms, have applied a riparian pasture strategy on their ranch on Lyndon Creek, west of Claresholm. One of their pastures has been fenced as a riparian pasture for 40 years. Grazing use in a typical season would involve 50 heifers for one month during the mid-March to mid-April time frame, followed by 140 yearlings for a week between April 15 and May 5. Yearlings are allowed to return in July to graze a certain amount of forage regrowth. Forage species here are well adapted to growing season use as long as grazing intensity is carefully regulated and an adequate rest period is provided. In this pasture, rest is provided from early-May to July, and then again after the regrazing period.



*This field has been grazed as a riparian pasture for 40 years.*



*Sediment trapped on Vandervalk's riparian pasture after spring floods shows riparian vegetation doing its job - building a productive riparian area.*

Over the years, Jack Vandervalk has learned to take his cues for managing riparian pastures from monitoring livestock use of woody species. He recognized early that prolonged, dormant season grazing will progressively set back the woody species that he needs to stabilize streambanks and provide shelter for his livestock. He has met those needs by shifting livestock use to upland, native pastures to avoid dormant season use in his riparian pasture.

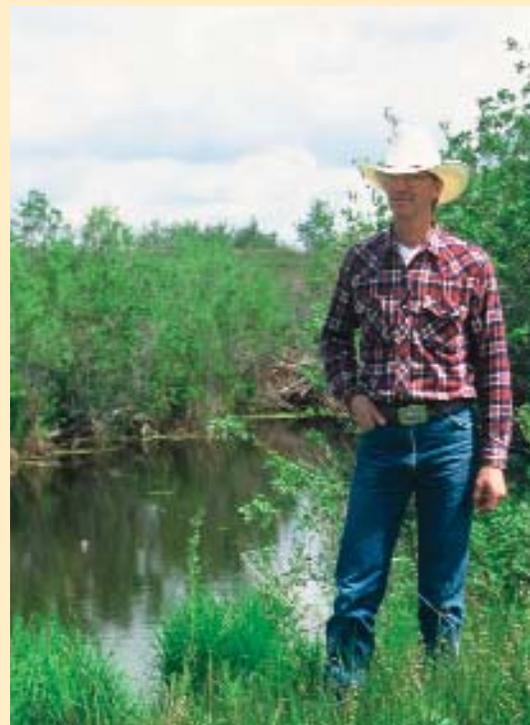


## Riparian Pasture - Graminae Red Angus Ranch

Lyle Voegtlin has applied a riparian pasture strategy on a portion of Amisk Creek, near Tofield, since 1985. About 120 acres are fenced on topographic boundaries forming a pasture composed of some upland, but mostly riparian bottomland. Animals are held on hayland early in the year, deferring use of the riparian pasture and providing growing season rest in May. The earliest cattle are put in the pasture is June 1 and the latest they are held is September 30, but the entry and exit dates are variable based on observations of pasture condition. If the spring is dry, livestock are held later on hayland. Pasture readiness is assessed based on moisture and growth. Multiple entry points are used to aid distribution and to ensure the sequence of pasture use changes from year to year. Utilization levels are monitored to ensure there will be litter reserves to conserve moisture and recycle nutrients. Animals are removed early enough to allow late season regrowth and to minimize browse use of woody plants.

There are several instructive things about management on this ranch:

- ◆ year to year variation in moisture and growing conditions is recognized;
- ◆ annual management is based on grass available rather than on average stocking rates;
- ◆ growing season rest is provided both early and late;
- ◆ the sequence of grazing use is based on moisture availability and pasture readiness;
- ◆ the riparian area is drier when grazing begins and there is less hoof damage and compaction; and
- ◆ there is a high degree of involvement in observing and assessing the pasture before, during and after grazing.



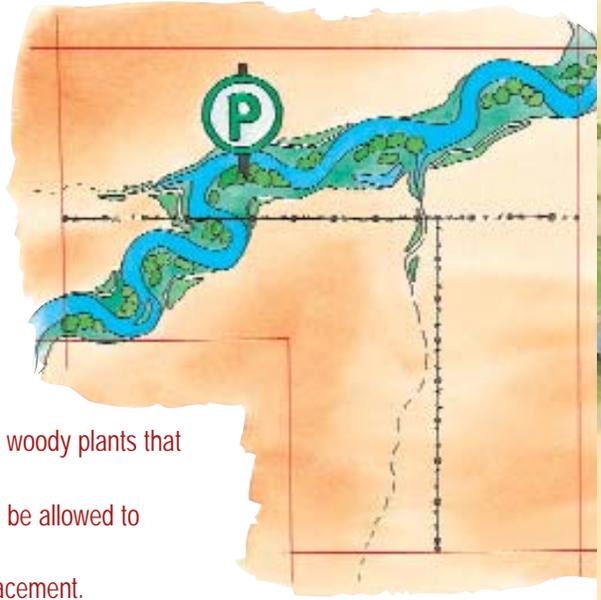
Riparian pasture management has produced a very healthy pasture and riparian area capable of sustaining livestock use. Cattle water from three preferred sites that have solid footing. Additional off-stream water development is planned to enhance livestock gain, improve better distribution and conserve water.

*Riparian pastures provide effective control of grazing and allow riparian areas to maintain health and productivity*

# Holding Pastures

Holding pastures are those fields where livestock are held or “parked” for prolonged periods such as for winter feeding or calving, and where supplemental feeding is normally provided.

These fields may provide shelter through topography and/or wooded cover. Holding pastures may also describe fields where animals are gathered and held at high stocking densities for a relatively short period.



## Problems Posed by Holding Pastures

- ◆ Holding pastures in riparian areas can experience very serious livestock impacts due to trampling of banks and intensive use of herbaceous and woody plants. Repeated, heavy use will threaten the woody plants that are so vital for livestock shelter and bank stability.
- ◆ Cattle browsing may damage woody seedlings and saplings that must be allowed to “release” and replace older trees or shrubs that age and die.
- ◆ In short, sustainable livestock shelter depends on tree and shrub replacement.



## When can holding pastures work?

Holding pastures are hard to manage. The first step in successful management of these pastures is recognizing that livestock shelter and stable banks are the first priorities. Don't rely on the forage produced in these pastures.

In order for riparian areas to be maintained within holding pastures:

- ◆ Don't regard the vegetation in a holding pasture as forage. Provide adequate supplemental feed although sometimes livestock will still prefer native vegetation over supplemental feeds.
- ◆ Provide ease of access for livestock to water, or provide off-site watering locations.
- ◆ Direct herd pressure to the most resistant areas of the field through placement of supplements.
- ◆ Monitor livestock use of woody regrowth and forage. Provide more rest if tree replacement is suppressed, or provide alternative shelter.



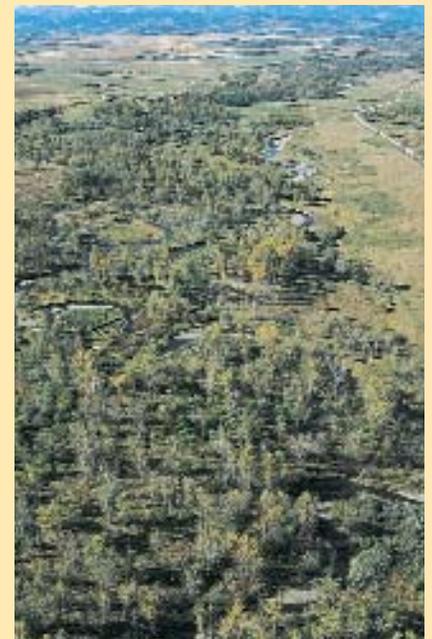
## McPherson Ranch

The McPherson Ranch maintains an example of a successful holding pasture on Pekisko Creek, west of High River. The 120 acre field is used as a feeding site for 130 heifer calves from November to February, followed by 50 to 70 two year old heifers from March to mid-May. The field may also shelter a few horses and sick cows year round. McPhersons

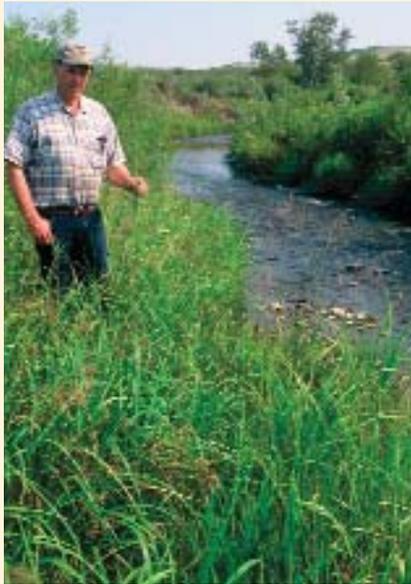
maintain light grazing pressure on the riparian vegetation by providing adequate supplemental feed, by moving grazing pressure away from the cottonwood forest, and by providing off-stream water, in all seasons. Although livestock are present during vulnerable periods, this management combination has allowed regeneration of the woody plant community.



*Careful grazing management on the McPherson Ranch allows regeneration of tree and shrub species.*



*The McPherson Ranch maintains a holding pasture in a riparian area dominated by cottonwood trees.*



*This holding field on the Mt. Sentinel Ranch is used and riparian health maintained with careful management.*



## Mount Sentinel Ranch

The Mt. Sentinel Ranch west of Nanton, owned and operated by Francis and Bonnie Gardner and family, maintains a holding field near the ranch headquarters. Stimson Creek flows through this field which has been operated as a holding pasture since the ranch was established in the late 1890s. The field is used periodically, throughout the year, with the primary uses being to winter bulls and to provide summer horse pasture. Riparian area health in this holding pasture has been maintained with supplemental feeding, moving grazing pressure onto the upland portions, and limiting access to the stream for livestock watering.



*Supplemental feeding is key to successfully managing holding pastures.*

### *Holding Pastures - Is One Horse Too Many?*

Acreage life draws many people to the country where the desire may be to have a small livestock operation or provide pasture for a few horses. However, many acreage properties lack the forage resources and the land base to adequately sustain livestock. Too many animals grazing too small a parcel of land can lead to serious degradation of soil and vegetation, especially in riparian areas. Some properties may not have enough forage to support even one horse or cow.

How big must an acreage be to support livestock and not damage range and riparian areas? The following table provides an estimate of the forage supply or carrying capacity that land parcels of 3 to 40 acres would provide for horses or cow/calf pairs. The table values indicate the number of horses or cow/calf pairs that could be sustained for a five month grazing period, assuming that adequate supplemental feed would be provided for the balance of the year. For example, if you have a 10 acre property that consists mainly of a grassland vegetation type you may be able to graze up to 3 horses or cow/calf pairs for five months. The shaded portion of the table highlights those combinations of acreage size and pasture type where forage resources are inadequate to support livestock. For those acreages, the presence of grazing animals will lead to resource degradation, especially in riparian areas.



Calculate Your Grazing Potential by Acreage Size and Vegetation Type

Vegetation Type	Parcel Size					
	3 acre	5 acre	10 acre	20 acre	30 acre	40 acre
Grassland	0.9	1.5	3.0	6.0	9.0	12.0
Willow Forest	0.1	0.2	0.5	0.9	1.4	2.0
Poplar Forest	0.1	0.2	0.3	0.6	0.9	1.2
Coniferous Forest	0.05	0.1	0.2	0.3	0.5	0.6

*Inside the shaded portion there isn't enough forage to support livestock; outside is an estimate is how many could be supported for up to five months.*

Many other factors are also used to estimate livestock carrying capacity such as animal size, soil type of the pasture, the current condition of the pasture and the amount of moisture normally received for the area. Additional tools listed in **Other Resources and Materials** may be needed to fine tune the number of livestock that an acreage may sustain.

# Corridor Fencing

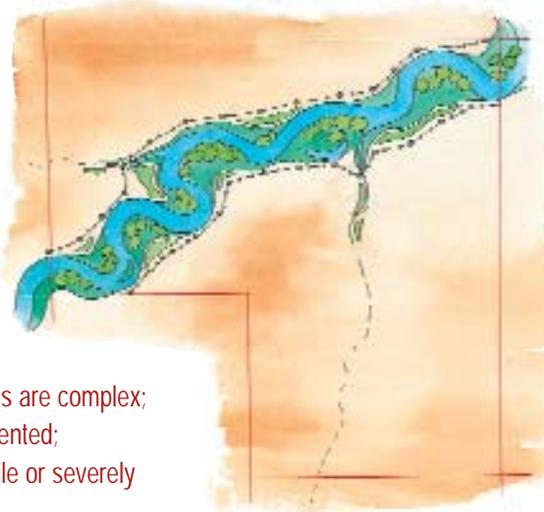
Corridor or exclusion fencing involves eliminating livestock grazing on a narrow fringe of the riparian area.



*Some riparian areas are too fragile and valuable for other reasons to be grazed by livestock. These areas are candidates for fencing, especially water sources like springs and seeps.*

Corridor fencing can be a valuable first step to raise awareness about riparian area management by demonstrating the effect of rest on riparian vegetation. It is probably best applied in the following situations where fencing can be a feasible option:

- ◆ where topography and vegetation patterns are complex;
- ◆ where land holdings are small and fragmented;
- ◆ for banks or shorelines that are very fragile or severely degraded;
- ◆ on low gradient streams, that are laterally stable and not subject to severe flooding; and
- ◆ where other resource values such as water quality or fish are of a higher priority.



Generally, corridor fencing is considered a measure of last resort when other management options have failed to restore riparian health. Fencing livestock out of the stream or lakeshore corridor may fail to deal with grazing problems (or other land use issues) on all of the landscape units which make up a ranch. Corridor fencing is expensive, requires proportionately more fencing for area protected than any other option and maintenance costs may, over the long term, out-weigh those of construction.



## The Elkhorn Ranch

Hilton and Alta Pharis from Lundbreck have co-operated with many of their neighbours in applying corridor fencing along Todd Creek to restore riparian condition. Corridor fencing has been a valuable tool in the community to demonstrate the value of management in restoring riparian vegetation and fish and wildlife habitat.

On the Pharis' Elkhorn Ranch, one field is used for the dual purpose of hay and pasture. Given the proximity of the site to the ranch headquarters and the fragile nature of the wooded drainage, corridor fencing was the favoured option. Access for livestock watering is provided through fenced access points.

After over ten years of recovery, there is some concern about the build up of vegetation in the riparian corridor. The Pharises are experimenting with some limited grazing using a few animals for a short period of time in the fall to reduce some of the buildup of old grass. This may have some additional beneficial effect on willow regeneration by reducing the competition between reed canary grass and willow shoots.



*Corridor fencing was very effective for rapid riparian recovery within five years.*



*Limited fall grazing removes some of the grass buildup and may spark some additional willow growth.*

## The Raven and North Raven Watersheds

Since the 1970s, corridor fencing has been the favoured option for landowners along several spring-source streams near Caroline, such as the Raven and North Raven rivers. These streams have low gradients, and are stable, meandering systems with very high values for fisheries and water quality. Streambanks are composed of fine soils and without vegetation can be very erodible. With the assistance of provincial agencies and conservation groups many kilometres of these streams have been fenced, crossings installed and improved water sites developed. Although corridor fencing has meant loss of some riparian areas to agricultural production, this fencing has had other benefits. Stream fencing created many opportunities for rotational grazing, by dividing larger pastures into smaller units with less variation. This has helped deal with distribution problems, by giving livestock less choice, and allowing better control to effectively use upland areas of many pastures. Fencing, with improved water development, reduced veterinary costs,



especially foot rot which is a problem with livestock use of wet soils in riparian areas. Many people have seen reduced livestock deaths from drowning, either young stock in spring high water, or animals falling through the ice.

Streambank fencing provided valuable insight into the vegetation potential of many reaches and the extent of recovery possible with the removal of grazing pressure. The restoration of trout habitat and angling success has also translated into business opportunity for some landowners. Water quality improvements, based on less erosion, reduced sediment transport and better nutrient management, are important to downstream water users, including domestic water supplies for towns and cities.



1973 - before streambank fencing.



1986 - streambank fencing has allowed banks to revegetate, improving bank stability and water quality.

## Grazeable Corridors - An Alternative

Many corridor fences create a space too narrow to be effectively grazed. If the goal is to have some grazing use, a wider corridor could be fenced. Wider corridors would be cheaper to build and maintain with some grazing benefits. When reintroducing grazing into the corridor, these things need to be considered:

- ◆ grazing should be temporary and use may not happen every year;
- ◆ the corridor isn't a place to park livestock, so use should be short and not more than a few days;
- ◆ multiple entry and exit locations will help distribution in the narrow corridor; and
- ◆ avoid the vulnerable periods of spring and fall and use only after riparian recovery has occurred.



Building a wider corridor provides the potential of some grazing and a reduction in maintenance costs.