

AGRICULTURE

Cattle wintering sites and livestock grazing

How they affect water quality and riparian areas

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Cattle Wintering Sites

Manure is a valuable source of nutrients for growing crops on the farm. However, manure also contains nutrients, organic matter and

microorganisms that can contaminate water sources.

In some areas a fairly common practice for cattle producers is to feed and bed cattle in low sheltered areas beside creeks, rivers, lakes or dugouts. The manure accumulation

at these sites can contribute contaminated runoff to these water sources during spring snow melt or heavy rainfall events. Cattle with unrestricted access to water sources can contaminate them with manure and sediment trampled in from the stream banks. Cattle that are allowed continuous access to streams for watering and grazing will eventually destroy all the rooted vegetation along the stream banks which can lead to serious stream bank erosion by water. The sediment deteriorates water quality and riparian habitat for fish and other aquatic life. Some Alberta studies have shown that even small cow-calf operations with fewer than 50 cow-calf pairs can impact water quality.

Nutrients like phosphorus from manure can rapidly increase the algal growth in dugouts, lakes and rivers. For

example there is enough phosphorus in one cow's manure for one day to cause a significant algal bloom in one million litres of dugout water. This is why dugout water can rapidly deteriorate in water quality over time where cattle are allowed direct access to a water source. When algae die and decompose, dissolved oxygen in water can be depleted and cause fish kills. Decomposing algae can also generate offensive taste and odor problems in water. Blue green algal toxins can be fatal to livestock. Manure itself creates a large biological oxygen demand on water. For example, one cow's manure from one day can deplete all the dissolved oxygen in 30,000 litres of water.

Water sources contaminated with manure contain fecal coliform bacteria and may have other disease-causing microorganisms such as

cryptosporidium and giardia. These microorganisms are a threat to public health and reduce weights and cattle productivity.

Several factors influence the management and environmental suitability of a cattle wintering site. Some physical characteristics such as slope, soil type, water table and climate are beyond the producer's control. Other factors that can be managed include cattle density, runoff control, feeding method and location of water supply. Whenever possible, try to pick a wintering site away from water sources and where little or no runoff flows down through the site. Also set up an alternative water supply to protect the water source.

The Livestock Coffee Shop

During these dry years, notice where your cows like to spend a lot of their time? Likely, it is on riparian areas, those green zone areas around your lakes, sloughs, and alongside creeks, that grow plants like willows, grasses, grass-like (sedges), cattails and bulrush. You might overhear your cows saying, "As long as our owner don't mind, let's stay a while. We can graze, water, re-graze, and ruminate about

those by-gone wet years".

Riparian plants, having lived on this land for thousands of years, are adapted to changes in nature, like drought and lower fertility. In terms of total acres on the farm, riparian areas may not add up to much. However, they are a place where forage grows in abundance. For example, 60 acres of riparian area on a section of pasture, can contribute to the overall pasture by as much as 2 weeks of grazing for a 100 cow-calf pair operation. Managing riparian areas, in their natural state, can provide opportunities for sustainable and profitable forage production and grazing. Riparian areas can also reduce costs associated with weed control and fertilizer.

However, riparian areas that are grazed too early, too heavy, too often, and do not receive enough effective rest are riparian areas that are susceptible to erosion and producing less dependable forage like foxtail barley, thistles and other weeds. When this happens the riparian area is not providing you with a cost effective grazing option. Other benefits and values may suffer too, such as: water quality, the watershed, downstream users, fish and wildlife.

Over the next several weeks, our working group will discuss how you can protect and use your riparian areas for sustainable livestock grazing, water quality, and other benefits. For example:

- learn how these riparian areas work and function properly;
- recognize the early warning bells when riparian areas are moving from a healthy towards an unhealthy state; and
- consider some tools and techniques to help get your cows away from the coffee shop, and control that urge for a "second cup".

Riparian Tip

The glue that helps keep our community healthy and strong is understanding each other, sharing common values, and acting upon that common interest. The glue that helps keep riparian areas healthy is the riparian plant community, a community that is full of young, mature, and older plant species acting together to protect the creek and lake banks from erosion.