

# Riparian Health and Management

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## Historical Context

There is no simple answer to the question “how healthy were riparian areas in the past?” What is available to help us includes the written accounts of observations by explorers, surveyors, fur traders, naturalists and the Northwest Mounted Police. Some early artwork exists and early photographs of the late 1800s provide another visual window. We know from historical accounts that there were disturbances like buffalo grazing, fire, droughts and floods affecting riparian health. From those same records we understand that beaver populations were much higher historically than now. The effect of beavers on riparian health was probably positive, especially through the maintenance of higher water tables that would have enhanced the amount of woody vegetation. By looking at riparian sites today we can also gain insight into vegetation potential – what could have existed on the site.



Source: [www.cowsandfish.org](http://www.cowsandfish.org)

Based on all of these bits of evidence we can speculate that prior to settlement riparian areas were mostly healthy. Natural events such as floods, grazing from native ungulates, fire, droughts, beavers and landslides did affect riparian condition and the results of these disturbances meant health could vary over time and from reach to reach. Because of the natural resilience of these systems and the long return intervals between use and disturbance, it is likely that ecological function was restored relatively quickly.

## Current Status

Information on riparian health has been collected by Cows and Fish in the settled portion of Alberta since 1995, on streams, rivers, lakes and wetlands. Measurements have been done randomly, so as not to bias the results and reaches are selected that are representative of much larger portions of the riparian landscape. A total of 2059 reaches have been inventoried (to 2010), representing thousands of kilometers of riparian areas along streams and rivers and around wetlands and lakes. The measurements indicate that about 26% of Alberta’s riparian areas are healthy, 50% are healthy with problems, and 24% are unhealthy.



Source: [www.cowsandfish.org](http://www.cowsandfish.org)

Those figures tell us that riparian function is compromised in many of our watersheds. The results for Alberta are mirrored by the measurements for other provinces and numerous states including Montana and Idaho. Lights are flashing; these results suggest we have issues of deal with that go well beyond what could be expected in the natural variation of riparian health.

## **Issues and Future Challenges**

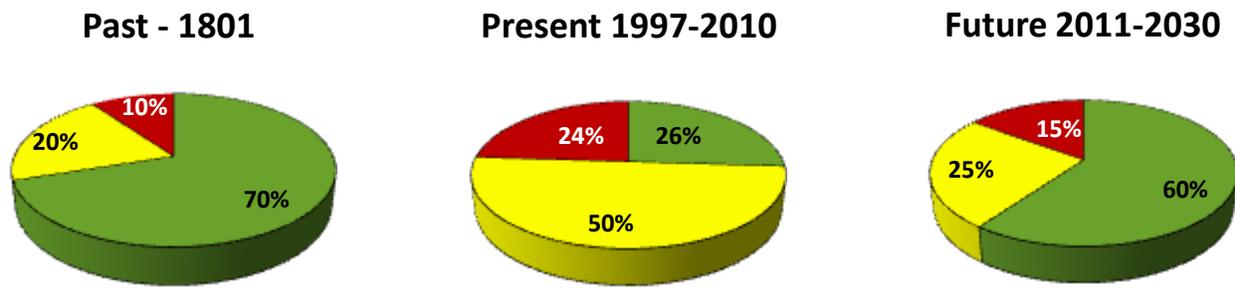
Healthy riparian areas sustain us, especially their ability to store, filter and buffer water, combined with their agricultural and biodiversity values. Sustaining ourselves will require maintaining healthy riparian areas and restoring many that have declined in health.

What should our goals be for riparian health? Clearly we all want these landscapes to be resilient, stable and provide us a long list of ecological services, whether we are livestock producers, farmers, anglers, bird watchers, cottage owners, hikers or downstream water drinkers. Riparian health can vary across the province, from stream to stream and around a lake, ranging from healthy to unhealthy. Some of this variation relates to how riparian areas evolved. However, our use of these landscapes represents an additive and cumulative effect which has often compromised resiliency. That effect could be a consequence of what has happened on the reach or what has happened upstream or downstream. Additional variation in riparian health is due to our use of these areas. In some cases, that use has lead to a decline in condition.

Our goals need to reflect that agriculture, urban development, transportation networks, recreational use, industrial uses and water management will have impacts and we cannot return to pre-settlement conditions. However, we should see progressively better riparian health as we adopt better land use practices, phase out some land uses and restore function to riparian landscapes. We will find that maintaining and restoring riparian health will have significant benefits.

The restoration of riparian area health is a series of pathways that begin with some basic questions:

- What did the riparian area look like in the past (sometimes the distant past)?
- What are the characteristics (physical and vegetative) now?
- What direction is the riparian area heading under present management?
- What is the potential of the riparian area if management changes are made?



Riparian health is described in the following categories:

	HEALTHY; all riparian functions are being performed
	HEALTHY, WITH PROBLEMS; many functions are being performed but signs of stress are apparent
	UNHEALTHY; most functions are severely impaired or have been lost

In most cases, riparian area health didn't change overnight. The unraveling of riparian areas and the decline in health are changes that have been going on for decades - largely unnoticed, unobserved, but cumulative in effect. It's part of our history of development. The rate of recovery will be based on when we start and where we live. Water is the driver of riparian areas so recovery will be slower in arid areas and faster in well-watered ones. Changes in the watershed or drainage area which affect amount and timing of runoff will also be a factor in predicting recovery rates. What is possible depends on the degree of change on the riparian reach, how many pieces are left to aid recovery and the willingness to engage in restoration efforts.

**References and Links**

[www.cowsandfish.org](http://www.cowsandfish.org) – the official website of Alberta's Cows and Fish Program

[Alberta Agriculture, Food and Rural Development](#) - the official web site of the Province of Alberta's department of Agriculture, Food and Rural Development.

[Prairie Farm Rehabilitation Administration](#) - the official web site of Agriculture and Agri-Food Canada's Prairie Farm Rehabilitation Administration (PFRA) featuring information on land and water resource protection and rural growth.

[Cows and Fish: Caring For The Green Zone:](#) Riparian Areas and Grazing Management  
How riparian systems work, the things that can disturb their healthy function and grazing strategies to keep them healthy. (40 pages)

#### [Riparian Areas: A User's Guide to Health](#)

What does health of a flood plain or shoreline look like? By tuning our eye to key things to look for, we can take the next step - ensuring we maintain or focus on where to begin to improve riparian area health. (46 pages)

#### [Along the Water's Edge Video](#)

Interviews with ranchers who provide messages about the importance of riparian areas to their operation. (17 min, 40 sec)

#### [Biodiversity and Riparian Areas](#)

This four-page fact sheet includes: What is biodiversity and why is it important? How do riparian areas fit into biodiversity? How do our actions influence biodiversity?

#### [Water Quality and Riparian Areas](#)

How do riparian areas improve water quality? What are the benefits of improved water quality? How can you promote healthy riparian areas? A brief, but useful fact sheet to address these questions.

#### [Looking at my Streambank](#)

A simple riparian health checklist that quickly identifies how healthy the riparian area along your river, creek or stream is. Can be used as a first step when looking at riparian health, prior to a more in-depth riparian health assessment.

#### [Looking at my Lakeshore](#)

A simple riparian health checklist that quickly identifies how healthy your lakeshore or wetland is. Can be used as a first step when looking at riparian health, prior to a more in-depth riparian health assessment.

#### [Riparian Health Assessment and Inventory](#)

Wondering how to measure the health of your riparian area? This 4-page fact sheet will give you some ideas on why you may want to look at the health of your riparian area, and how you can use the information to make management decisions. It also describes the differences between riparian health assessment and inventory, the benefits of both, and how Cows and Fish can help.

[Riparian Health Assessment for Streams & Small Rivers Field Workbook](#) (Landowner's Guide to Riparian Health) A pocket guide for landowners to easily determine the health of their riparian area and as a training aid for resource managers.