



# Wetland Health Assessments

## Fact Sheet 2015

LOCATION: BROOKDALE SITE

START DATE: AUGUST 2015

STATUS: IN PROGRESS

## Riparian health assessments of lentic wetlands at the Brookdale site

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### Background

Riparian areas are the part of the landscape directly adjacent to streams, lakes and wetlands. The vegetation and soils in these areas are strongly influenced by water and are very productive.

Prior to agricultural crop production, an abundance of natural wetlands occurred on the prairie and parkland ecosystems. It is estimated that up to 70% of wetland loss has occurred in settled areas across Canada with most of this loss attributed to drainage for agricultural production<sup>1</sup>. Wetlands in agricultural fields pose challenges for producers however, they still provide many important ecosystem services such as sediment trapping, nutrient and pesticide filtering, shoreline stabilization, water storage, aquifer recharge, carbon storage, salinity control and habitat for wildlife.

Understanding riparian health is the first step in identifying concerns and proactively addressing land management issues.

There are a number of land management techniques that are recommended for improving riparian area health including:

- Ü Planting buffer strips (native and non-native species);
- Ü Increasing setback distances for crop inputs; and
- Ü Squaring off field boundaries to improve efficiencies and restricting livestock access

### Objectives

- Ü To collect baseline health assessments to determine the overall condition of the 200 wetlands at the Brookdale site beginning in 2015 and repeated over three years.
- Ü To make specific land management recommendations that will improve or maintain the wetlands.



Riparian areas are part of the landscape directly adjacent to streams, lakes and wetlands that gradually grades from wet to dry.



In this photo you can see an example of damage to the riparian area because of pugs and hummocks caused by cattle hoof action.



Foxtail barley proliferates around this riparian area, reducing its overall score on the assessments.

## Project Design and Methods

The basic area upon which an assessment is made is referred to as a polygon and can be based on vegetation differences, geologic features, land management or other observable characteristics. A survey with a rating scale is then used which is useful for setting management priorities and determining if remedial action or further monitoring of riparian area health is required.

Assessment details:

- Ü Assessments began in late August 2015
- Ü 24 assessments completed
- Ü 12 of the 24 assessments were in the grazing system
- Ü 12 of the 24 assessments were in the cropping system



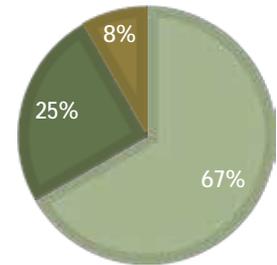
A healthy riparian area is pictured above with vegetation over the entire reach of the riparian zone.

## What did we find?

Of the unhealthy riparian areas, half occurred in the grazing systems and half in the cropping system. The top reasons for their low score was a very high density of invasive species; disturbance-caused undesirable plant species; and, a large area of the physical site severely altered by human cause. Only two of the riparian areas scored healthy. Although both occurred adjacent to the cropping system, these two wetlands were separated from this system by a fence which encompassed the entire reach of the riparian area. Both had diverse vegetation species covering the entire reach, low weed cover and little negative human impacts.

## SCORES OF 24 RIPARIAN AREAS AT BROOKDALE

■ Unhealthy  
■ Healthy with problems  
■ Healthy



## Key Messages

Healthy riparian areas have a high abundance of native or preferred plant species, low abundance of weeds/invasive species, and little human disturbance impacts or water withdrawal.

Best management practices include:

- Ü Planting buffers (native or non-native species) around riparian areas in annual cropping systems;
- Ü Utilizing off-site watering systems to improve water quality; and
- Ü Planned grazing to provide effective rest and avoid vulnerable periods.

Assessments of the Brookdale riparian areas will continue to be monitored and management decisions will utilize the results of the assessments.

*Wetlands and riparian areas provide a wide variety of ecological functions such as sediment trapping, nutrient and pesticide filtering, shoreline stabilization, water storage, aquifer recharge, carbon storage, salinity control and habitat for wildlife.*

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## References:

1. "Sustainable Agricultural Land Management around Wetlands on the Canadian Prairies". Accessed November 16, 2015 from <http://www.innovation/agriculture/practices/soil-and-land/riparian-areas/sustainable-agricultural-land-management-around-wetlands-on-the-canadian-prairies/?id=1231514224747> >
2. Ambrose, N., G. Ehlert, K. Spicer-Rowe. 2009. Riparian Health Assessment for Lakes, Sloughs, and Wetlands - Field Workbook Second Edition. Modified from Fitch, L., B. W. Adams, and G. Hale, 2001. Riparian Health Assessment for Streams and Small Rivers - Field Workbook. Lethbridge, Alberta. Cows and Fish program. 96 pgs