



Cows and Fish Report

**Overview of Riparian Health Assessments and  
Other Riparian Evaluations Completed in Alberta,  
Excluding those Completed by Cows and Fish**

Cows and Fish

Alberta Riparian Habitat Management Society Report No. 031

## **Acknowledgements**

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## **About Cows and Fish**

Riparian areas are those areas along rivers, streams, lakes, wetlands, springs, and ponds that are strongly influenced by water and are recognized by water-loving vegetation. Cows and Fish is striving to foster a better understanding of how riparian areas function and how improvements in management strategies in riparian areas can enhance landscape health and productivity for the benefit of livestock producers, their communities and others who value these landscapes.

Cows and Fish Supporters and Members: Producers and community groups, Alberta Beef Producers, Trout Unlimited Canada, Canadian Cattlemen's Association, Alberta Agriculture and Food, Alberta Sustainable Resource Development, Alberta Environment, Department of Fisheries and Oceans, Prairie Farm Rehabilitation Administration, Alberta Conservation Association

Funding Associates: Alberta Environmentally Sustainable Agriculture

*Working with producers and communities on riparian awareness*

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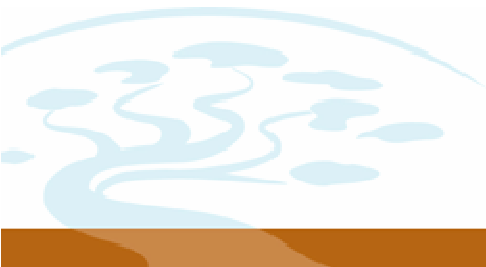
Palliser Environmental Services Ltd.

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Excluding those Completed by Cows and Fish**

**Prepared for:  
Alberta Riparian Habitat Management Society – Cows and Fish**

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## 1.0 Background

Riparian areas are transition zones between aquatic and upland systems. They are characterized by the presence of water for some or the entire year, saturated soils and unique vegetation that thrives in moist conditions. Riparian areas perform numerous functions in the environment, including flood protection, streambank protection and water quality treatment. These highly productive places are also rich in biodiversity.

Although riparian areas provide a wide range of goods and services that are enjoyed by humans, they are pressured from the cumulative impacts of altered land use, encroachment by development and drainage. It is essential that a consistent method of evaluating and quantifying riparian health is available to individuals, agencies and organizations. The riparian health assessment tools will help to identify and monitor riparian trends that will ultimately lead to improved management and maintenance of riparian functions. The Cows and Fish Riparian Health Assessment Field Workbooks offer one widely accepted/used tool to assess riparian health in Alberta, in other provinces (e.g. Manitoba, Saskatchewan and British Columbia).

The Riparian Health Assessment for Streams and Small Rivers – Field Workbook (Fitch et al. 2001) and the Riparian Health Assessment for Lakes, Sloughs, and Wetlands – Field Workbook (Ambrose et al. 2004) evaluate riparian health using a variety of criteria related to ecological status, community structure and site stability. Parameters that are considered in an assessment include vegetative cover, disturbance-caused species, undesirable species, invasive plant species, trees and shrubs (establishment, regeneration and utilization), human disturbance, streambank rootmass protection and stream channel incisement, to name a few. Parameters are intended to indirectly evaluate the ability of a site to perform ecological functions. For example, the presence of bare soil and absence of vegetative cover reduces the ability of a site to trap sediment and filter water.

A score is allocated to each parameter and an overall riparian health score is generated for a particular site. A score of 80% or above denotes a “healthy” site where all key functions are present. A score of 60 to 79% denotes a site that is “healthy but with problems” since most but not all key functions are present or some functions are impaired. This indicates that more attention should be given to management strategies on the site. A score of less than 60% denotes that a site is “unhealthy” and riparian functions are severely impaired. Measures must be taken if riparian functions are to be restored at unhealthy sites.

The Alberta Riparian Habitat Management Society (Cows and Fish) has field staff who regularly conduct riparian health assessments and inventories across Alberta. From 1997 through 2006, Cows and Fish have collected riparian health assessment and inventory data at over 1,500 riparian sites in Alberta. The purpose of this study was to identify sources of riparian health assessment and/or inventory data in Alberta that has been collected by landowners, organizations and government agencies other than Cows and Fish. Emphasis was placed on assessments that have used the Cows and Fish riparian health assessment methodology (e.g. Field Workbooks), but other riparian area or habitat surveys and evaluation work was collected through this review and reported accordingly.

This bibliography was developed in table format to document the general nature and scope of riparian health assessment and/or inventory information available. The information provided will allow researchers, watershed program developers and policy planners to understand the quantity and type of riparian health data present in Alberta.

## **2.0 Methods**

A contact list of people who may be conducting riparian health assessments in Alberta was developed in discussion with Cows and Fish. A letter explaining the riparian health assessment project was emailed to the people on the contact list. A table was attached to the email for respondents to easily provide their input. This table summarized riparian health assessment information by location of assessment (watershed, county/municipal district), waterbody name, number of sites assessed, method of assessment used, main findings (if appropriate), year the assessment took place and organization and contact information. Those people who did not respond within two weeks of the email distribution were contacted by phone and with a follow-up email. The contact list was updated as new information became available.

## **3.0 Results and Discussion**

### **3.1 Riparian Health Assessments Completed Using Cows and Fish Methodologies**

The response to the Riparian Health Assessment Survey was quite high. Of the 84 people and organizations contacted, 82% responded. However, only 20% of those who responded were able to provide riparian health assessment information, and in some cases the information provided was incomplete. Although some attempt was made to contact consulting companies, questions related to data ownership and limited time and resources to devote to this survey limited the response. Through follow up discussions it is quite clear that many organizations may not conduct riparian health assessments themselves, but they do support the methodology and distribute Cows and Fish information where possible (B. Meagher, Trout Unlimited Canada, pers. comm.).

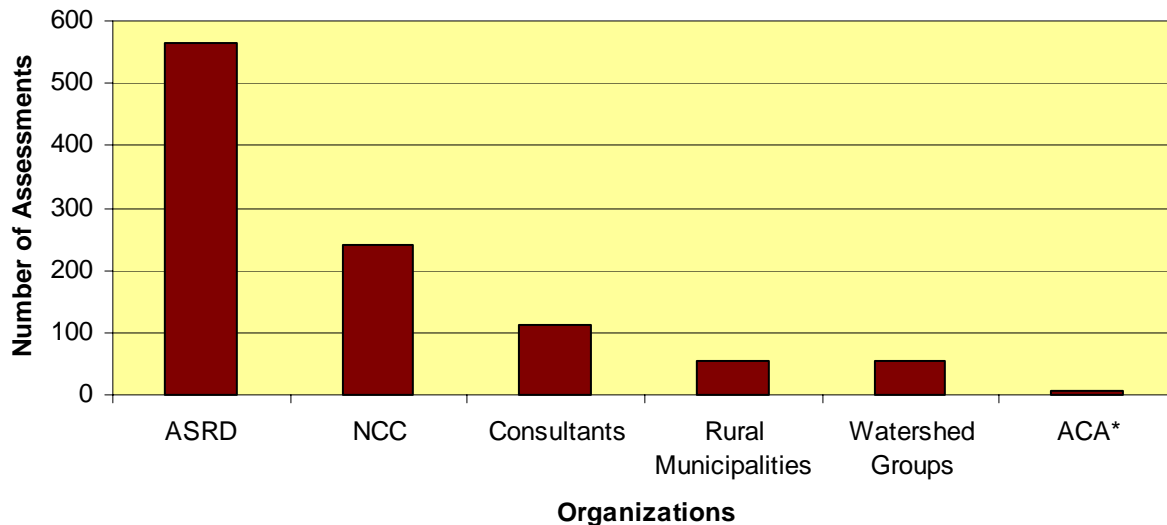
Since 1999, approximately 1034 riparian health assessments have been completed by organizations, municipalities and agencies other than Cows and Fish using the Cows and Fish Field Workbooks (Figure 1). This is likely an underestimation of actual assessments completed since data was generally not in a readily useable format and it was difficult to obtain. From the detailed reports that were provided, lotic assessments accounted for 81% of the riparian health assessments completed (Table 1).

Many large organizations use the Cows and Fish riparian health assessment methodologies for lentic and lotic systems as standard procedures. These include Alberta Sustainable Resource Development (ASRD) - Lands Division, the Nature Conservancy of Canada (NCC), and the Alberta Conservation Association (ACA). Some of these organizations could not provide detailed information, but were able to summarize their programs according to the total number of assessments completed. In addition to larger organizations, the Alberta Environmentally Sustainable Agriculture Rural Extension Staff (AESAR), consultants and watershed groups use the Cows and Fish riparian health assessment methods.

#### **Alberta Sustainable Resource Development – Lands Division**

More than 50% of the riparian health assessments completed in Alberta, by others than Cows and Fish, were completed by ASRD. Alberta Sustainable Resource Development participated in the development of the Cows and Fish lentic and lotic riparian health assessment methodologies and their Rangeland Agrologists (Lands Division) continue to use these methods for assessment of public lands. Grazing leases are normally renewed every ten years and along with rangeland health assessments, riparian health assessment is part of that process. Assessments may be done more frequently, depending on the location. Riparian health data is

stored in a departmental database referred to as the GLIMPS System. Currently a total of 332 lentic and 232 lotic riparian health assessments have been completed.



**Figure 1. Number of riparian health assessments completed in Alberta by other individuals, organizations and agencies other than Cows and Fish. \*This figure only represents the riparian health assessments reported at time of printing.**

#### **Nature Conservancy of Canada**

The Nature Conservancy of Canada (NCC) reported 242 riparian health assessments completed using the Cows and Fish methodology since 2002. Range and riparian health assessments form part of a baseline report prepared for lands secured through conservation easements or purchased. Small consulting firms, such as Rangeland Conservation Services Ltd., are retained by NCC to conduct the assessments. The baseline reports include wildlife observations, descriptions of soils and geology, and also benchmark photography of the property. The photography is updated annually and provides another monitoring tool for the sites. The range and riparian health assessments will be repeated in the same locations approximately every five years.

#### **Alberta Conservation Association**

The Alberta Conservation Association (ACA) uses the Cows and Fish methodology for riparian health assessments as standard protocol, in particular on lands that require new Crown Management Plans. The ACA reported seven assessments completed west of Calgary. In practice, ACA uses the Cows and Fish methodology as standard protocol. Although actual numbers of riparian health assessments could not be obtained, due to the timing of the request for information (i.e. February), it is widely used by ACA across the Province. Discussions with ACA staff suggest that riparian health assessments may have been completed on well over 100 sites across Alberta.



**Table 1. Riparian health assessments completed using the Cows and Fish methodologies, excluding sites evaluated by Cows and Fish.<sup>1</sup> Note that the table is arranged alphabetically by major watershed and then by year. The Alberta category denotes that the watershed was unknown.**

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
Alberta	-	Various Ephemeral, Seasonal and Temporary Wetlands	38	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	-	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
Athabasca River	Lac Ste Anne	Connor Creek	2	Cows and Fish Field Workbook	Fenced area was Healthy, while unfenced area was Unhealthy.	West Central Conservation Group (WCCG)	2006	Confidential <sup>2</sup>
Athabasca River	Lac Ste Anne	Paddle River	3	Cows and Fish Field Workbook	200 m were found Unhealthy	West Central Conservation Group (WCCG)	2006	Confidential
Battle River	-	Wet Meadow	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential
Battle River	-	Dugout	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential
Battle River	-	Beaver Dam	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2003	Confidential
Battle River	-	Beaver Creek	2	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Battle River	-	Tide Creek	3	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Battle River	-	Sounding-Sunken Lakes (R-K1)	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Battle River	-	Sounding-Sunken Lakes (TR-A1)	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Battle River	-	Sounding Creek	1	Cows and Fish Streams	Healthy	Jacques Whitford-	2006	Jacques

<sup>1</sup> Note that the data collection methods were not verified and may or may not reflect precisely the Riparian Health Assessment methods used by Cows and Fish. Some modifications to the riparian health assessment may be included in the tabular data provided.

<sup>2</sup> Requires landowner permission.

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
				and Small Rivers and Alberta Lotic Wetland for Large River Systems		AXYS		Whitford-AXYS 2006
Battle River	-	Wet Meadow	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Battle River	-	Intermittent Stream	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2003	Confidential
Battle River	-	Battle River	3	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Bow River	MD Foothills	Spring	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Bow River	MD Foothills	Priddis Creek	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Bow River	MD Foothills	Priddis Creek tributary	2	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Bow River	MD Foothills	Spring	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Bow River	MD Foothills	Spring	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Bow River	MD Foothills	Spring	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential
Bow River	MD of Rocky View	Grand Valley Creek - Unnamed Reservoir	1	Cows and Fish Field Workbook (Lentic)	Unhealthy <sup>3</sup>	Alberta Conservation Association	2004	Confidential
Bow River	MD of Rocky View	Horse Creek - Unnamed Lake	1	Cows and Fish Field Workbook (Lentic)	Healthy with <sup>4</sup> Problems	Alberta Conservation Association	2004	Confidential
Bow River	MD of Rocky	Jumpingpound	1	Cows and Fish Field	Unhealthy <sup>5</sup>	Alberta Conservation	2004	Confidential

<sup>3</sup> Main problems with vegetation and physical properties. Density and distribution of invasive plant species, ground compaction, extensive hummocking, human caused bare ground, low productivity and the replacement of preferred woody species with silverberry/wolf willow.

<sup>4</sup> Main problems: presence, density and distribution of invasive species, undesirable species, the human alteration of the site's physical properties (e.g. hummocking, and ground compaction).

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
	View	Creek - Unnamed Lake		Workbook (Lentic)		Association		
Bow River	MD of Rocky View	Jumpingpound Creek - Unnamed Slough (intermittent)	1	Cows and Fish Field Workbook (Lentic)	Unhealthy <sup>6</sup>	Alberta Conservation Association	2004	Confidential
Bow River	MD of Rocky View	Jumpingpound Creek - Unnamed Lake	1	Cows and Fish Field Workbook (Lentic)	Unhealthy <sup>7</sup>	Alberta Conservation Association	2004	Confidential
Bow River	MD of Rocky View	Jumpingpound Creek - Unnamed Slough (reservoir)	1	Cows and Fish Field Workbook (Lentic)	Unhealthy <sup>8</sup>	Alberta Conservation Association	2004	Confidential
Bow River	MD of Rocky View	Jumpingpound Creek - Unnamed Lake	1	Cows and Fish Field Workbook (Lentic)	Healthy with Problems <sup>9</sup>	Alberta Conservation Association	2004	Confidential
Bow River	MD Bighorn	Unnamed Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Bow River	MD Foothills	Fish Creek	3	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Bow River	MD Foothills	Fish Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Bow River	MD Foothills	Berney Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Bow River	-	Man-Made Lake	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Bow River	MD Bighorn	Creek	1	Cows and Fish (2002)	Unhealthy	Nature Conservancy of	2006	Confidential

<sup>5</sup> Main problems due to human alteration of vegetation and physical properties, extensive human caused bare ground, ground compaction, hummocking, the proximity of a gas plant access road, the presence of a rail-bed, low productivity, absence of woody species, and the presence and distribution of invasive species.

<sup>6</sup> Main problems due to vegetation and physical properties. Ground compaction and hummocking, density and distribution of disturbance caused undesirable species and proximity of a secondary roadway to the riparian area.

<sup>7</sup> Main problems: human alteration of physical properties. Extreme ground compaction, extensive hummocking & human caused bare ground.

<sup>8</sup> Main problems due to human alteration of physical properties. Hummocking and ground compaction. Presence, density and distribution of invasive species (e.g. Canada thistle), and disturbance caused undesirable species.

<sup>9</sup> Main problems due to human alteration of the site's vegetation and physical properties. The density and distribution of disturbance caused undesirable species and invasive plant species, the proximity of a major roadway, ground compaction, and hummocking.

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
				(Lotic Wetland Health Assessments)		Canada		
Bow River	MD Bighorn	Stream	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential
Bow River	MD of Rocky View	Jumping Pound Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
North Saskatchewan River	County of Wetaskiwin	Bigstone Creek	3	Cows & Fish	-	County of Wetaskiwin	1999	Confidential
North Saskatchewan River	County of Wetaskiwin	Pipestone Creek	3	Cows & Fish	-	County of Wetaskiwin	1999	Confidential
North Saskatchewan River	County of Wetaskiwin	Battle River	3	Cows & Fish	-	County of Wetaskiwin	2000	Confidential
North Saskatchewan River	County of Wetaskiwin	Pigeon Lake Creek	3	Cows & Fish	-	County of Wetaskiwin	2000	Confidential
North Saskatchewan River	County of Wetaskiwin	Sun Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan River	County of Wetaskiwin	Mink Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan River	County of Wetaskiwin	Poplar Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan River	County of Wetaskiwin	Modeste Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan River	County of Wetaskiwin	Horseshoe Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan River	County of Wetaskiwin	Washout Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan River	County of Wetaskiwin	Muskeg Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan	County of Wetaskiwin	Lloyd Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
River								
North Saskatchewan River	County of Wetaskiwin	Rose Creek	3	Cows & Fish	-	County of Wetaskiwin	2001	Confidential
North Saskatchewan River	Leduc County	Whitemud Creek	3	Cows & Fish	-	County of Wetaskiwin	2005	Confidential
North Saskatchewan River	Leduc County	Irvine Creek	3	Cows & Fish	-	County of Wetaskiwin	2005	Confidential
North Saskatchewan River	Leduc County	Clear Water Creek	3	Cows & Fish	-	County of Wetaskiwin	2005	Confidential
North Saskatchewan River	-	Loyalist Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River	-	Ribstone Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River	Brazeau County	Unnamed tributary of Buck Creek	1	Cows & Fish Field Workbook	Pugging & hummocking with slumpage	West Central Conservation Group (WCCG)	2006	Confidential
North Saskatchewan River	Brazeau County	Skunk Creek	1	Cows & Fish Field Workbook	Unhealthy	West Central Conservation Group (WCCG)	2006	Confidential
North Saskatchewan River	Rannach Community Pasture -County of Two Hills	Unnamed Stream	1	Cows and Fish Field Workbook	Healthy with Problems	County of Two Hills	2006	Yes
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006

<sup>10</sup> These unnamed Creeks were assessed by Jacques Whitford-AXYS as part of a larger study. It is assumed that these were all located in the North Saskatchewan River watershed.

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy with Problems	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy with Problems	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy with Problems	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy with Problems	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy with Problems	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy with Problems	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
North Saskatchewan River <sup>10</sup>	-	Unnamed Creek	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy with Problems	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
Oldman River	Cardston County	Unknown Lake in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Unknown Lake in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Unknown Lake in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Unknown Lake in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
				Assessments)				
Oldman River	Cardston County	Unknown Lake in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Unknown Lake in Waterton River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Unknown Lake in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Unknown Lake in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	stock pond in Waterton River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	wet meadow in Waterton River basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Intermittent stream in Belly River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Intermittent stream in Waterton River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Waterton River	3	Cows and Fish (2002)(River Health Assessment)	Healthy with Problems upstream to Healthy further downstream	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Intermittent Stream in Waterton River Basin	2	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy in upper reach to Healthy with Problems in lower reach	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Intermittent Stream in Waterton River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy (high density of invasives)	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Perennial Stream in Waterton River Basin	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	Cardston County	Perennial Stream	1	Cows and Fish (2002)	Healthy (well	Nature Conservancy of	2002	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
		in Waterton River Basin		(Lotic Wetland Health Assessments)	vegetated, low disturbance)	Canada		
Oldman River	Cardston County	Waterton River	3	Cows and Fish (2002)(River Health Assessment)	Unhealthy near campground (upstream) to Healthy with Problems downstream	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic A	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic B	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic C	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic D	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic E	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic A	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic B	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic C	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic D	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Lentic E	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Unnamed tributary Waterton River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Unnamed tributary Waterton River	1	Cows and Fish (2002) (Lotic Wetland Health	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential



Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
				Assessments)				
Oldman River	MD Pincher Creek	Yarrow Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Smith Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Blind Canyon Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Yarrow Creek Springs	3	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy to Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Connelly Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Spring	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
Oldman River	MD Pincher Creek	Waterton River	3	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy to Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Oldman River	MD Pincher Creek	Cottonwood Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Oldman River	MD Pincher Creek	Cottonwood Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential
Oldman River	MD Pincher Creek	Dungarven Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy to Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Oldman River	MD Pincher Creek	Crooked Creek	4	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Oldman River	MD Pincher Creek	Belly River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
Oldman River	MD Pincher Creek	Pond a	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential
Oldman River	MD Pincher Creek	Pond b	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential

<b>Watershed</b>	<b>County or Municipal District</b>	<b>Water Body Assessed</b>	<b># of Sites</b>	<b>Method of Riparian Assessment</b>	<b>Main Findings</b>	<b>Agency/ Organization/ Contact</b>	<b>Year Assessed</b>	<b>Report/ Data Availability</b>
Oldman River	MD Pincher Creek	Pond c	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential
Oldman River	Cardston County	Lentic D	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	Lee Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	Milk River Tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	St. Mary's River tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	St. Mary's River tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	St. Mary River Tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	St. Mary's River	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	St. Mary's River	3	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems to Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	St. Mary River Tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	St. Mary River Tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	Lentic A	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	Lentic A	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	Lentic B	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston	Lentic C	1	Cows and Fish (2002)	Unhealthy	Nature Conservancy of	2004	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
	County			(Lotic Wetland Health Assessments)		Canada		
Oldman River	MD Crowsnest Pass	Crowsnest River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Crowsnest Pass	Allison Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Crowsnest Pass	Crowsnest River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Crowsnest Pass	Crowsnest River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Crowsnest Pass	Leitch Collieries Stream	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Crowsnest Pass	Crowsnest River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Crowsnest Pass	Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Belly River	3	Cows and Fish (2002)(River Health Assessment)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Belly River Unnamed tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Belly River Unnamed tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Dungarven Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems to Healthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Crooked Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Cottonwood Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Crooked Creek	3	Cows and Fish (2002) (Lotic Wetland Health	Healthy with Problems to	Nature Conservancy of Canada	2004	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
				Assessments)	Unhealthy			
Oldman River	MD Pincher Creek	Mill Creek Tributary	4	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Unhealthy to Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
Oldman River	MD Pincher Creek	Lentic A	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
Oldman River	Cardston County	AK-R1	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	AK-R1	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	unnamed creek on Belly River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Waterton River tributary	3	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Waterton River tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	unnamed creek on Belly River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Unnamed Tributary#1	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Unnamed Tributary#1	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Unnamed Tributary#1	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Peter's Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Milk River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Unnamed Tributary#2	1	Cows and Fish (2002) (Lotic Wetland Health	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
				Assessments)				
Oldman River	Cardston County	Unnamed Tributary#1	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Unnamed Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	MD Crownest Pass	creek NW 28	3	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy to Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Oldman River	MD Pincher Creek	Drywood Creek	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems to Healthy	Nature Conservancy of Canada	2005	Confidential
Oldman River	Cardston County	Belly River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	Cardston County	Waterton River	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	Cardston County	Stream	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	Cardston County	Lentic A	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Pincher Creek	A-Lo(2)	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Pincher Creek	WI-1	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Pincher Creek	Dungarven Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Pincher Creek	Cottonwood Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Pincher Creek	Unnamed tributary of Crowsnest river	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Pincher Creek	Unnamed tributary of Cottonwood Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential

<b>Watershed</b>	<b>County or Municipal District</b>	<b>Water Body Assessed</b>	<b># of Sites</b>	<b>Method of Riparian Assessment</b>	<b>Main Findings</b>	<b>Agency/ Organization/ Contact</b>	<b>Year Assessed</b>	<b>Report/ Data Availability</b>
Oldman River	MD Pincher Creek	Cottonwood Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A1	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A2	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A3	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A4	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A5	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A10	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A11	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A12	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A13	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A14	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	TR-A15	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R1	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R2	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R3	1	Cows and Fish (2002)	Healthy with	Nature Conservancy of	2006	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
				(Lotic Wetland Health Assessments)	Problems	Canada		
Oldman River	MD Ranchlands	K-R4	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R5	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R6	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R7	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R9	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R10	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R11	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R12	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R13	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R14	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R15	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Oldman River	MD Ranchlands	K-R16	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Peace River	County of Grande Prairie	Beaverlodge River	15	Cows and Fish Field Workbook (Lotic)	Unhealthy	West County Watershed Group, County of Grande Prairie	1999-2003	-
Peace River	Northern Sunrise	Hear River	2	Cows and Fish Field	Unhealthy	Smoky Applied	2005 & 2006	-

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
	County			Workbook		Research and Demonstration Association (SARDA)		
Red Deer River	-	RK-2	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	RK-3	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	AK-R3	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	AK-R4	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	AK-R1	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	AK-R2	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	RK-1	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	RK-6	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	RK-7	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	RK-4	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	RK-5	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	AK-R5	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
Red Deer River	-	Pond SE	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential



Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
Red Deer River	-	Pond NE	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Red Deer River	-	Slough SW	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Red Deer River	-	Lake W	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Red Deer River	-	Lake E	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Red Deer River	-	Rumsey Moraine (R-K1)	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Red Deer River	-	Rumsey Moraine (TR-A1)	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2006	Confidential
Red Deer River	-	Rumsey Moraine (TR-A2)	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Red Deer River	-	Red Deer River	1	Cows and Fish Streams and Small Rivers and Alberta Lotic Wetland for Large River Systems	Healthy	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS 2006
Red Deer River	-	Red Deer River	2	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2006	Confidential
Red Deer River	Red Deer County	Piper Creek	1	Cows and Fish Field Workbook (Lotic)	Healthy with Problems	Conservation Coordinator, Red Deer County	2006	Confidential
Red Deer River	Mountain View and Red Deer County; MD of Rocky View	Little Red Deer River and tributaries	32	Cows and Fish Field Workbook	28% Healthy, 31% Healthy with Problems, 41% Unhealthy	Little Red Deer River Watershed Initiative (LRDRWI)	2001, 2002, 2003, and 2004	LRDRWI 2005
Red Deer River	Red Deer County	Medicine River - Unnamed Tributary	1	Cows and Fish Field Workbook (Lotic)	-	Conservation Coordinator, Red Deer County	2006	-
Red Deer River -Medicine River	Red Deer County	Tindistoll Creek	1	Cows and Fish Field Workbook (Lotic)	Unhealthy	Conservation Coordinator, Red Deer County	2006	Confidential
South Saskatchewan	-	South Saskatchewan	1	Cows and Fish Streams and Small Rivers and	West Side - Healthy; East Side	Jacques Whitford-AXYS	2006	Jacques Whitford-AXYS

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
River		River - East and West Side		Alberta Lotic Wetland for Large River Systems	- Unhealthy			2006
South Saskatchewan River	-	Ross Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
South Saskatchewan River	-	Ross Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
South Saskatchewan River	-	Manyberries Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
South Saskatchewan River	-	Ketchum Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2002	Confidential
South Saskatchewan River	-	Ketchum Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2002	Confidential
South Saskatchewan River	-	Gros Venture Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
South Saskatchewan River	-	Gros Venture Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
South Saskatchewan River	-	Thelma Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
South Saskatchewan River	-	Unnamed 1	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
South Saskatchewan River	-	Unnamed 2	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2003	Confidential
South Saskatchewan River	-	Unnamed 3	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2003	Confidential
South Saskatchewan River	-	Ross Creek Tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2004	Confidential
South Saskatchewan River	-	Ross Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy	Nature Conservancy of Canada	2004	Confidential
South Saskatchewan	-	Ross Creek	1	Cows and Fish (2002) (Lotic Wetland Health	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Assessment	Main Findings	Agency/ Organization/ Contact	Year Assessed	Report/ Data Availability
River				Assessments)				
South Saskatchewan River	-	Peigan Creek Tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2004	Confidential
South Saskatchewan River	-	Peigan Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
South Saskatchewan River	-	Peigan Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
South Saskatchewan River	-	Peigan Creek Tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
South Saskatchewan River	-	Etzikom Creek	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Healthy with Problems	Nature Conservancy of Canada	2005	Confidential
South Saskatchewan River	-	J-R1	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
South Saskatchewan River	-	J-R2	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
South Saskatchewan River	-	J-R3	1	Cows and Fish (2002) (Lentic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
South Saskatchewan River	-	Mackay Creek tributary	1	Cows and Fish (2002) (Lotic Wetland Health Assessments)	Unhealthy	Nature Conservancy of Canada	2006	Confidential
Vermilion River	Counties of Vermilion River, Minburn, Two Hills & Beaver	Vermilion River	58	Lotic Health Assessment Sheet (from RWRP Lotic Health Assessment) & comment page & photos	-	Westworth Associates Environmental Ltd., WaterWAYS Working Group	1999	Contact County of Minburn Ag. Fieldman
Vermilion River	Beaver County	Waskiewa Creek	1	Cows and Fish Field Workbook	Healthy with Problems	County of Two Hills	2006	Confidential

## **Alberta Sustainable Agriculture Rural Extension Staff**

The Alberta Environmentally Sustainable Agriculture (AESAs) Program developed a partnership between Alberta Agriculture and Food and rural municipalities. This partnership supports Rural Extension Staff (RES) positions within most county and municipal districts across Alberta. It is mainly through the AESA RES positions that riparian health assessments are completed in rural municipalities.

Since 1999, 11 counties/municipal districts have conducted at least one riparian health assessment. Within the rural municipalities represented, about 56 riparian health assessments have been completed by AESA RES staff using the Cows and Fish Workbooks. During telephone interviews, many of the RES staff hired more recently did not think they had adequate knowledge to conduct the riparian health assessments. However, some AESA RES staff participated in an extensive training course hosted by Cows and Fish in 2006. These AESA RES staff subsequently felt that they had the necessary skills to conduct riparian health assessments within their respective municipalities and were identifying sites to complete in 2007.

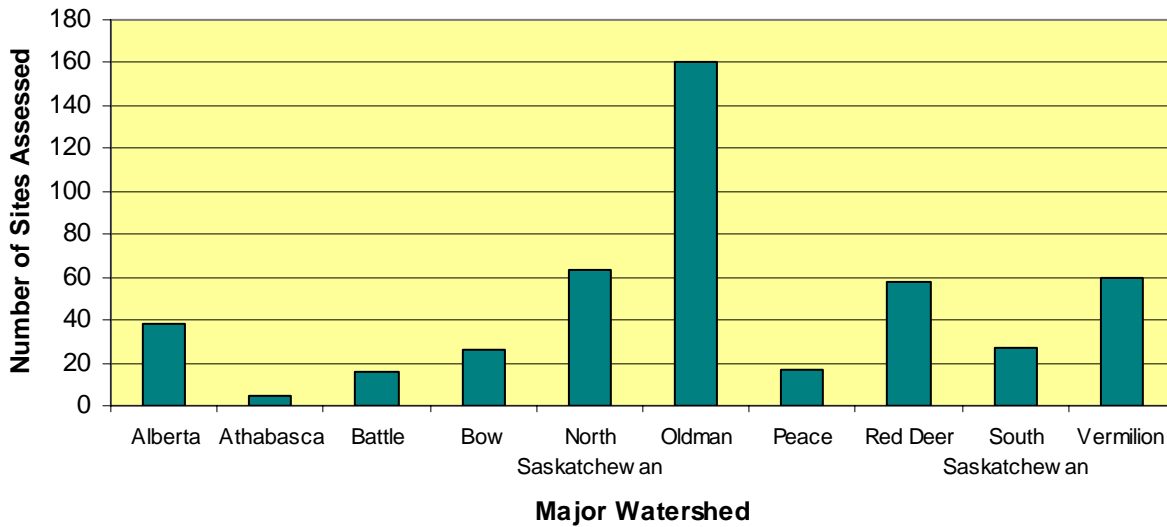
## **Consultants**

Consultants reported the use of the Cows and Fish riparian health assessment methods. Jacques Whitford-AXYS completed riparian health assessments on 53 sites (38 lentic sites and 15 lotic sites) in 2006. Smaller companies such as Rangeland Conservation Services Ltd. and Westworth Associates Environmental Ltd. also conduct riparian health assessments using the Cows and Fish methods, generally for other organizations such as NCC or watershed groups. Information from consulting companies was generally difficult to locate and obtain. There are likely more firms using the Cows and Fish methods than those reported in this survey.

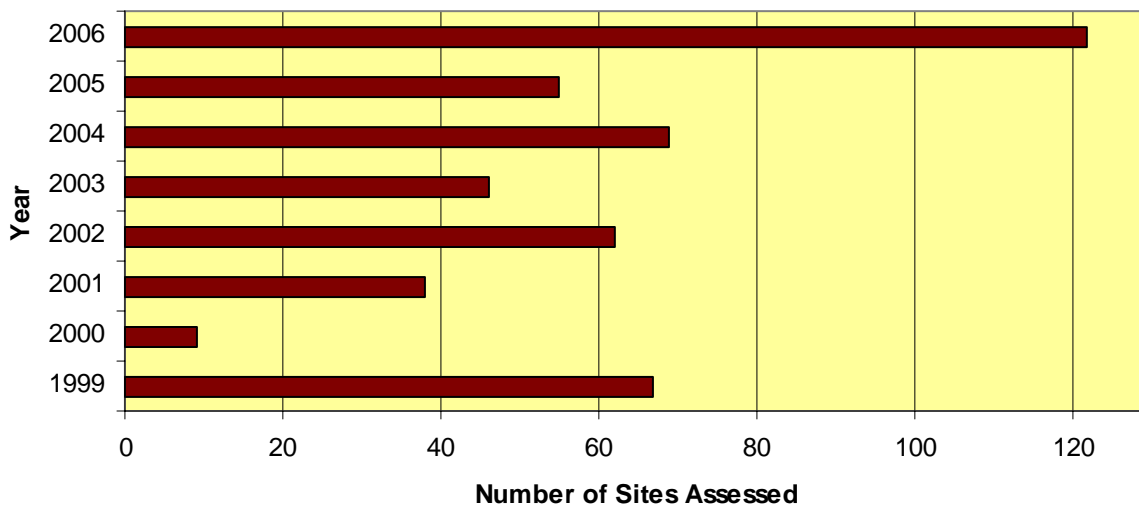
## **General Observations**

The majority of the reported riparian health assessments were conducted in the Oldman River watershed (Figure 2). Assessments were also completed in the North Saskatchewan River, Vermilion River and Red Deer River watersheds. No results were reported for the Milk River watershed. Since 2000, the number of riparian health assessments being conducted has increased, with the greatest number completed in 2006 (Figure 3).

The number of riparian health assessments completed annually by rural municipalities, watershed groups and individuals is fairly low compared to that reported by larger organizations and government. The smaller groups have great potential to complete more assessments given that the Cows and Fish Riparian Health Assessment Field Workbooks have only recently been developed. The Riparian Health Assessment for Streams and Small Rivers – Field Workbook was published in 2001 and the Riparian Health Assessment for Lakes, Sloughs, and Wetlands – Field Workbook was recently published in 2004 (Fitch et al. 2001; Ambrose et al. 2004). Cows and Fish have also increased their training opportunities to provide rural municipalities, landowners and consultants with opportunities to develop expertise in riparian health assessment. The training programs increase individual confidence in the methods and this will be reflected in the use of the Field Workbooks. For consistency and quality assurance of data collection, particularly for monitoring purposes, completion of appropriate training courses is strongly encouraged.



**Figure 2. Number of riparian health assessments conducted in each major watershed. This figure only represents the detailed information that was reported in Table 1. The Alberta category summarizes information where the actual watershed was not reported. The South Saskatchewan watershed only includes information collected in Alberta.**



**Figure 3. Number of riparian health assessments completed since 1999 by agencies, consultants, rural municipalities and watershed groups using Cows and Fish methods. This figure only represents the detailed data that was reported in Table 1.**

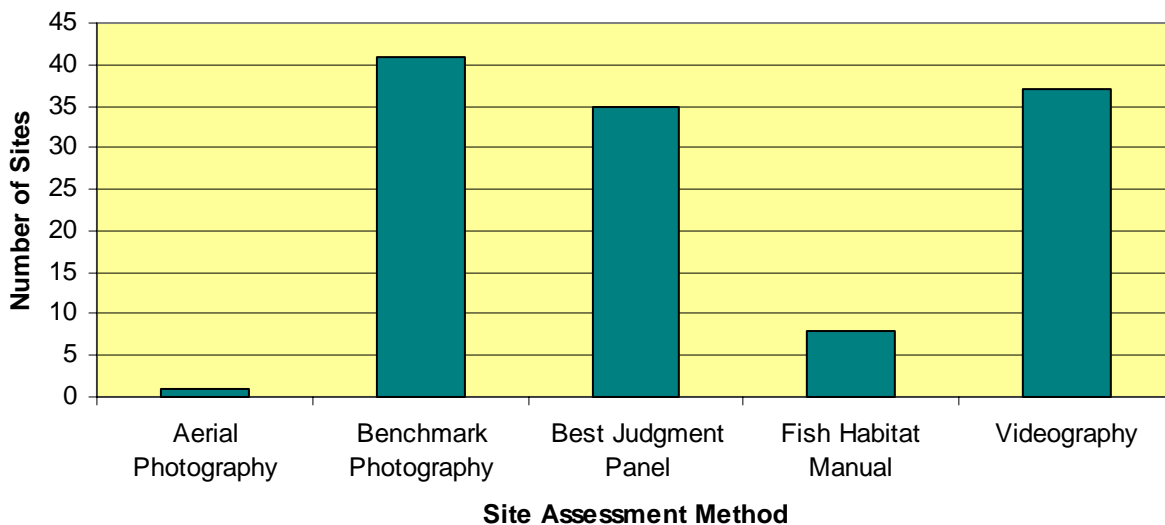
### 3.2 Riparian Evaluations and Surveys Completed Using Other Methodologies

The intent of this report was to understand how many riparian sites have been assessed using the Cows and Fish riparian health assessment methodologies by organizations other than Cows and Fish. However, in receiving the various responses, it became apparent that some of the riparian work completed in Alberta has used different methodologies to evaluate riparian areas. This section reports on the use of other methodologies.

Approximately 122 sites were reported in this study that evaluated riparian areas using methods other than those developed by Cows and Fish (Figure 4). These techniques included aerial photography, benchmark photography, best judgment panels and aerial videography.

Aerial videography accounted for 30% of the other types of riparian evaluation methods being used. Although many aerial flights have been completed to survey riparian areas, it should be noted that these images have not been evaluated using a health score system to date. No assessment criteria have been created to make these flights an effective evaluation tool, although a number of these studies are taking place.

Another method that is being used is benchmark photography. The City of Calgary inventoried West Nose Creek at approximately 41 sites in the watershed (WER 2003). This accounts for 34% of the documented “other methods” being used to inventory and evaluate riparian areas (Figure 4). The effectiveness of benchmark photography to assess riparian health depends on the ability to return to the same site in subsequent years to collect photographs for comparison and evaluation through time. This is a qualitative type of riparian evaluation tool compared to the Cows and Fish methods.



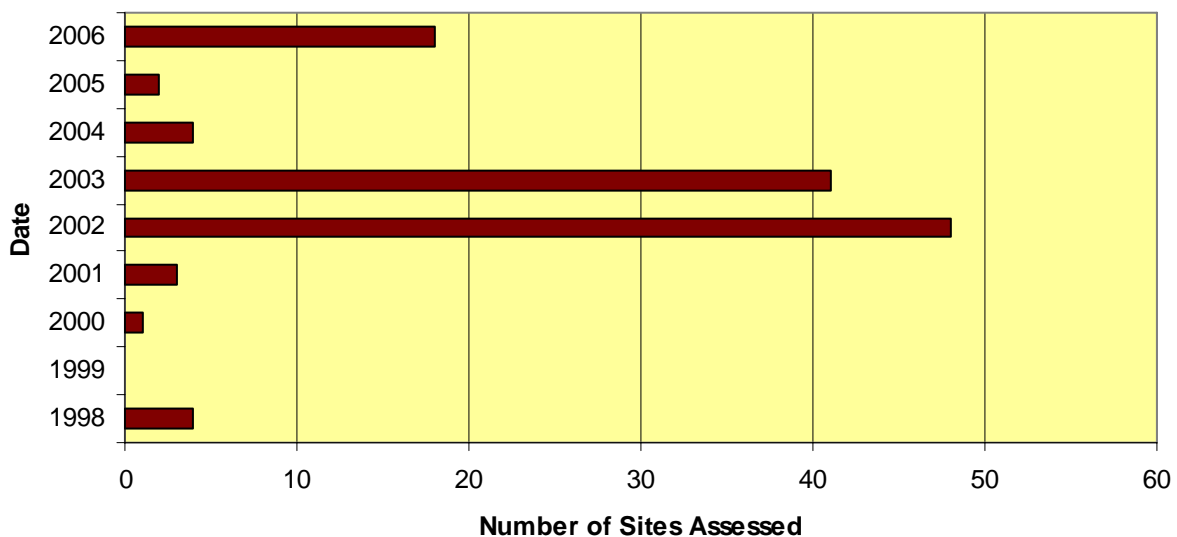
**Figure 4. Methods currently being used to evaluate riparian areas, other than those developed by Cows and Fish.**

Other government organizations, colleges and universities (e.g. Lethbridge Community College, Olds College and the University of Lethbridge), and consulting companies have collected data pertaining to various aspects of riparian function (e.g. stream bank stability or sinuosity), but it is generally not in a readily accessible or useable form. Generally, these types of riparian

evaluations were conducted as part of larger environmental impact assessments or research studies.

For example, Fisheries and Oceans Canada receive completed aquatic habitat assessments during administration of their regulatory role but the information would be predominantly biophysical descriptions of instream habitat. The information may be available (if a project underwent an environmental assessment) but it is not readily accessible and is contained in Fisheries and Oceans Canada libraries and in larger reports. This information is generally more subjective than the riparian health scores that are calculated by the Cows and Fish riparian health assessment methods.

Unlike the increasing trend in the reported use of the Cows and Fish riparian health assessment methods (Figure 3), the “other methods” do not demonstrate a clear trend (Figure 5). A concerted effort was recently made by Alberta Environment to survey riparian areas using aerial videography which resulted in the recent increase in number of sites assessed in 2006 (Figure 5). Prior to this, very few studies have been undertaken. It is likely that there are more riparian evaluations that have not been represented in this study that use alternative methods to those developed by Cows and Fish. However, this information is not readily accessible.



**Figure 5. Number of riparian assessments completed since 1999 by agencies, consultants, rural municipalities and watershed groups using methods other than Cows and Fish. This only represents the detailed data that was reported.**

**Table 2. Other methods used to assess riparian areas in Alberta.**

<b>Watershed</b>	<b>County or Municipal District</b>	<b>Water Body Assessed</b>	<b># of Sites</b>	<b>Method of Riparian Documentation</b>	<b>Main Findings</b>	<b>Agency/ Organization/ Contact</b>	<b>Month and Year Assessed</b>	<b>Reference</b>
Athabasca River	County of Athabasca	Buck Lake	1	Videography	-	ACA/SRD	Jul. 2002	ACA 2002
Athabasca River	MD of Bonnyville	Lac La Biche	1	Videography	-	ACA	Jul/Aug 2005	Mills 2005
Battle River	County of Wetaskiwin/ County of Leduc	Pigeon Lake	1	Videography	-	ACA/SRD	Jul. 2002	ACA 2002
Beaver River	MD of Bonnyville	Moose Lake	1	Videography	-	ACA/SRD	Jul. 2001	ACA 2002
Beaver River	MD of Bonnyville	Fork Lake	1	Videography	-	ACA/SRD	Jul. 2002	ACA 2002
Beaver River	MD of Bonnyville	Charlotte Lake	1	Videography	-	ACA/SRD	Aug. 2002	ACA 2002
Beaver River	MD of Bonnyville	Ethel Lake	1	Videography	-	ACA/SRD	Aug. 2002	ACA 2002
Beaver River	MD of Bonnyville	Hilda Lake	1	Videography	-	ACA/SRD	Aug. 2002	ACA 2002
Beaver River	MD of Bonnyville	Muriel Lake	1	Videography	-	ACA/SRD	Aug. 2002	ACA 2002
Beaver River	MD of Bonnyville	Jessie Lake	1	Videography	-	ACA/SRD	Jul. 2001	ACA 2002
Beaver River	MD of Bonnyville	Moose Lake	1	Videography	-	ACA	Jul/Aug 2005	Mills 2005
Bow River	-	Mainstem	7 Reaches	Best Judgment Panel	Reach 1 Degraded; Reach 4 Moderately Impacted to Heavily Impacted	AENV	2002	Golder Associates Ltd. 2003
Bow River	City of Calgary	West Nose Creek	41	Benchmark Photography	-	City of Calgary	2003	WER 2004
Bow River	MD of Rocky View	Nose Creek	23:53 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	MD of Rocky View	West Nose Creek	24:19 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	MD of Rocky View	Grand Valley Creek	6:38 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	-	Bow River Section B	11:11 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	MD of Rocky View	Horse Creek	7:24 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	MD of Rocky View	Big Hill Springs Creek	10:37 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	MD of Rocky View	Jumpingpound Creek	6:21 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	-	Bow River Section A	4:09 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	MD of Rocky View	Elbow River	28:27 Min.	Videography	-	AENV	Sep. 2006	Walker 2006



<b>Watershed</b>	<b>County or Municipal District</b>	<b>Water Body Assessed</b>	<b># of Sites</b>	<b>Method of Riparian Documentation</b>	<b>Main Findings</b>	<b>Agency/ Organization/ Contact</b>	<b>Month and Year Assessed</b>	<b>Reference</b>
Bow River	MD of Rocky View	Bragg Creek	12:21 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	(Millarville)	Fisher Creek	8:14 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	(Turner Valley)	Ware Creek	5:20 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	-	Bow River Section C Right Bank	~7:14 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Bow River	-	Bow River Section C Left Bank	15:29 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Milk River	Cardston County/ County of Warner/ County of Foremost	Mainstem	Entire Mainstem	Aerial Photography	-	Fisheries and Oceans Canada	2005	Contact Fisheries and Oceans Canada (Lethbridge)
North Saskatchewan River	County of Smoky Lake	Bonnie Lake	1	Videography	-	ACA/SRD	Jul. 2002	ACA 2002
North Saskatchewan River	County of St. Paul	Vincent Lake	1	Videography	-	ACA/SRD	Sep. 2000	ACA 2002
North Saskatchewan River	County of St. Paul	Vincent Lake	1	Videography	-	ACA/SRD	Sep. 2001	ACA 2002
North Saskatchewan River	Lac Ste. Anne County/ Parkland County	Isle Lake	1	Videography	-	ACA/SRD	Sep. 2002	ACA 2002
North Saskatchewan River	Parkland County	Wabamun Lake	1	Videography	-	ACA/SRD	Sep. 2002	ACA 2002
North Saskatchewan River	Lac Ste. Anne County	Lac Ste. Anne	1	Videography	-	ACA/SRD		ACA 2002
Oldman River	MD of Pincher Creek	Pincher Creek	4 Sites	Fish Habitat Manual - Stream Stability and % Bank Vegetation	-	Lethbridge Community College	1998	LCC 1998
Oldman River	-	Oldman River	8 Reaches	Best Judgment Panel	Moderately Impacted	AENV	2002	Golder Associates Ltd. 2003
Oldman River	-	St. Mary River	3 Reaches	Best Judgment Panel	Moderately Impacted to Degraded	AENV	2002	Golder Associates Ltd. 2003
Oldman River	-	Belly River	4 Reaches	Best Judgment Panel	Moderately Impacted to	AENV	2002	Golder Associates Ltd.

Watershed	County or Municipal District	Water Body Assessed	# of Sites	Method of Riparian Documentation	Main Findings	Agency/ Organization/ Contact	Month and Year Assessed	Reference
					Heavily Impacted			2003
Oldman River	-	Waterton River	3 Reaches	Best Judgment Panel	Unchanged to Heavily Impacted	AENV	2002	Golder Associates Ltd. 2003
Oldman River	MD of Pincher Creek	Pincher Creek	4 Sites	Fish Habitat Manual - Stream Stability and % Bank Vegetation	-	Lethbridge Community College	2004	LCC 2004
Oldman River	MD of Ranchland/ MD of Pincher Creek	Crowsnest River	54:10 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Oldman River	MD of Pincher Creek	Pincher Creek	56:15 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Oldman River	MD of Pincher Creek	Todd Creek	42:35 Min.	Videography	-	AENV	Sep. 2006	Walker 2006
Oldman River	MD of Ranchland/ MD of Pincher Creek	Willow Creek	1:02:05	Videography	-	AENV	Sep. 2006	Walker 2006
Red Deer River	-	Red Deer River	8 Reaches	Best Judgment Panel	Reaches 5, 6, 7 Moderately Impacted to Heavily Impacted	AENV	2002	Golder Associates Ltd. 2003
Red Deer River	Lacombe County/ Red Deer County	Sylvan Lake	1	Videography	-	ACA/SRD	Jul. 2002	ACA 2002
Red Deer River	Lacombe County/ County of Ponoka	Gull Lake	1	Videography	-	ACA/SRD	Jul. 2002	ACA 2002
South Saskatchewan River	-	South Saskatchewan River	2 Reaches	Best Judgment Panel	Moderately Impacted	AENV	2002	Golder Associates Ltd. 2003

#### **4.0 Conclusions**

Overall, the most common and extensively used method of riparian assessment in Alberta was the Cows and Fish riparian health assessment methodologies. Although there are gaps in the information that was collected, including consultant reports and more detailed information regarding some of the government and non-government agency work, it is clear that the Cows and Fish Field Workbooks are being widely used.

Alberta Sustainable Resource Development is the largest user of the riparian health assessment Field Workbooks and the Nature Conservancy of Canada (NCC) and the Alberta Conservation Association (ACA) are similarly making extensive use of the Cows and Fish methods. With increased confidence in ability due to recent training, some AESA RES staff will likely increase the number of riparian health assessments that are being completed in their respective rural municipalities. Many AESA RES staff reported projects planned for 2007. Alberta Environment is exploring alternative methods to survey riparian areas (i.e., videography), however no evaluation of riparian health have been made using these methods to date.

The Cows and Fish riparian health assessment methodology is easily understood and allows a user to conduct timely assessments and gain meaningful and measurable scores that relate to riparian function. The scores can be compared through time to determine if appropriate land management strategies are being used in any given region. Landowners and professionals, alike, trained in the Cows and Fish method, can provide a consistent approach to measuring riparian health. It is likely that the use of the Cows and Fish riparian health assessment methodologies will continue to increase in Alberta.

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