



# Wabamun Lake

*State of the Watershed 2013*

# Wabamun Lake State of the Watershed Report

Prepared for the Wabamun Watershed Management Council



WABAMUN WATERSHED  
MANAGEMENT COUNCIL

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## Message from the Wabamun Watershed Management Council

The Wabamun Watershed Management Council (WWMC) represents a cross-section of stakeholders in the watershed who are committed and dedicated to developing and implementing a watershed management plan that sustains the natural viability and health of the Wabamun watershed.

The concept of the organization was originally proposed by Dr. David Schindler in a report titled: Lake Wabamun: A Review of Scientific Studies and Environmental Impacts. The Wabamun Watershed Management Council was formed in the fall of 2006.

### Our Vision

Is that the Wabamun watershed is a healthy ecosystem with a community that shares its collective responsibility to be the best stewards of that environment.

### Our Mission

Is to guide the development, management and stewardship of Lake Wabamun through collaborative watershed planning, research, and public education.

### Our Goals

To maintain and enhance the Wabamun watershed;

To build partnerships, work cooperatively and share information, financial, regulatory and human resources;

To provide a forum for citizens, governments and business to promote and recognize environmental stewardship;

To develop an adaptive, integrated watershed management plan with outcomes, indicators and targets based on science and supported by the community;

To coordinate research and monitoring initiatives to measure long term performance of the integrated watershed management plan and guide responses to new and emerging environmental issues; and

To raise awareness and understanding of local environmental issues.

This State of the Watershed Report is the first step in preparing a watershed management plan that will help us all “Keep Lake Wabamun Clean and Clear” for generations to come. We thank Aquality Environmental Consulting Ltd. and all who contributed to producing this report. It is our sincere hope that in reading it you will be inspired to help us achieve our goal of preserving the watershed. You can do so by becoming a member of WWMC, by making a financial donation, by volunteering your time and expertise, and by helping to keep nutrients and invasive species from reaching the lake. We thank you for your past and ongoing support as we move forward.

Sincerely,



Kelly Aldridge, Chair

E-mail: [chair@wwmc.ca](mailto:chair@wwmc.ca)

Website: [www.wwmc.ca](http://www.wwmc.ca)

## Executive Summary

Wabamun Lake, one of Alberta's most popular recreational lakes, is located entirely in Parkland County within the North Saskatchewan River basin. Due to its large size and proximity to the city of Edmonton, Wabamun Lake is popular for a wide range of recreational activities, including swimming, fishing and sailing. The lake is one of the most studied in the province, yet many knowledge gaps still exist in determining the overall health of the watershed.

The Wabamun Watershed Management Council (WWMC) was formed in 2006 in response to recommendations made in a report by Dr. David Schindler et al. (2004). This group represents a wide range of stakeholders who are committed to maintaining and improving the overall health of Wabamun Lake and the surrounding watershed. In 2012, the WWMC commissioned Aquality Environmental Consulting Ltd. to write the Wabamun Lake State of the Watershed Report.

The purpose of the Wabamun Lake State of the Watershed Report is to summarize the existing current and historical knowledge of the watershed. This report outlines how natural features, natural processes, land use and water use influences the watershed. The report will also serve as a point of reference for future management and stewardship activities aimed at improving the management of the watershed. The report also indicates areas that need to be addressed and the knowledge gaps that exist.

In order to assess watershed condition, metrics were chosen for several environmental quality indicators. Environmental indicators are measures of environmental quality that are used to assess the status and trends of the physical condition of a watershed. Their purpose is to show how well a system, or watershed, is functioning. If there is concern, low scoring indicators can focus remediation actions or best management practices. The following metrics were used for each of the four major indicators of environmental quality in the Wabamun Lake watershed:

1. Land Use:
  - Urban, Rural and Recreational Developments;
  - Agricultural and Livestock Operations;
  - Oil and Gas Activity;
  - Linear Development;
  - Wetland Loss; and
  - Riparian Health.
2. Water Quality:
  - Nutrients;
  - Bacteria;
  - Parasites;
  - Pesticides; and
  - Metals.
3. Water Quantity:
  - Lake Levels.
4. Biological Community:
  - Land Cover.

The overall condition of the Wabamun Lake watershed was rated as, "**fair**". Four indicators received a rating of "**good**", three received a rating of "**fair**", one received a rating of "**poor**" and five could not be assessed due to a lack of available data. Due to the lack of data for these five indicators, there is some

uncertainty in the overall ranking of the watershed. Therefore a more conservative rating of “**fair**” was given to the Wabamun Lake watershed.

Because of its size, proximity to Edmonton and recreational opportunities Wabamun Lake is very popular. Publicized events such as the train derailment and fish kills may have shed some negative light on the lake in the past, but evidence suggested that these events have not had a significant impact on the overall health of the aquatic ecosystem. Efforts need to be made to minimize the overall impacts of industrial, agricultural, rural, urban and recreational developments on the lake through the implementation of best management practices and potentially new environment policy and bylaws. The preservation and conservation of aspects of the Wabamun Lake watershed that are currently in “good” condition is critical for maintaining the long-term health of the lake.

Managing and maintaining the overall health of the Wabamun Lake watershed falls upon a wide range of parties including, federal, provincial and local government, industry, residents, recreational users and stewardship groups. Effort should be made by all groups to work together to achieve the common goal of a healthy watershed for generations now and into the future. However, there are specific roles and responsibilities for each of these groups in watershed management. For example, Parkland County is responsible for developing policy and bylaws that restrict shoreline development, establish riparian areas setback distances, and restrict the use of pesticides, fertilizers and herbicides around waterbodies. The Wabamun Watershed Management Council is responsible for helping to educate the public and driving stewardship efforts within the Wabamun Lake watershed. A more detailed explanation of these roles is presented in Appendix B: Outline of Roles and Responsibilities.

We strongly recommend that the Wabamun Watershed Management Council, Alberta Environment and Sustainable Resource Development, and Parkland County partner immediately to begin the watershed management planning process. Long-term management, planning, and forward thinking is critical to the overall success in achieving goals for the watershed. While the responsibility for enforcement of laws, regulations, and plans generally falls to various levels of government, it is critical that residents and other stakeholders maintain their involvement and ensure that issues within the watershed are not ignored. Continued watershed management planning is necessary to ensure the long-term health and preservation of the Wabamun Lake watershed.