

# Buffalo Lake

## Integrated Shoreland Management Plan



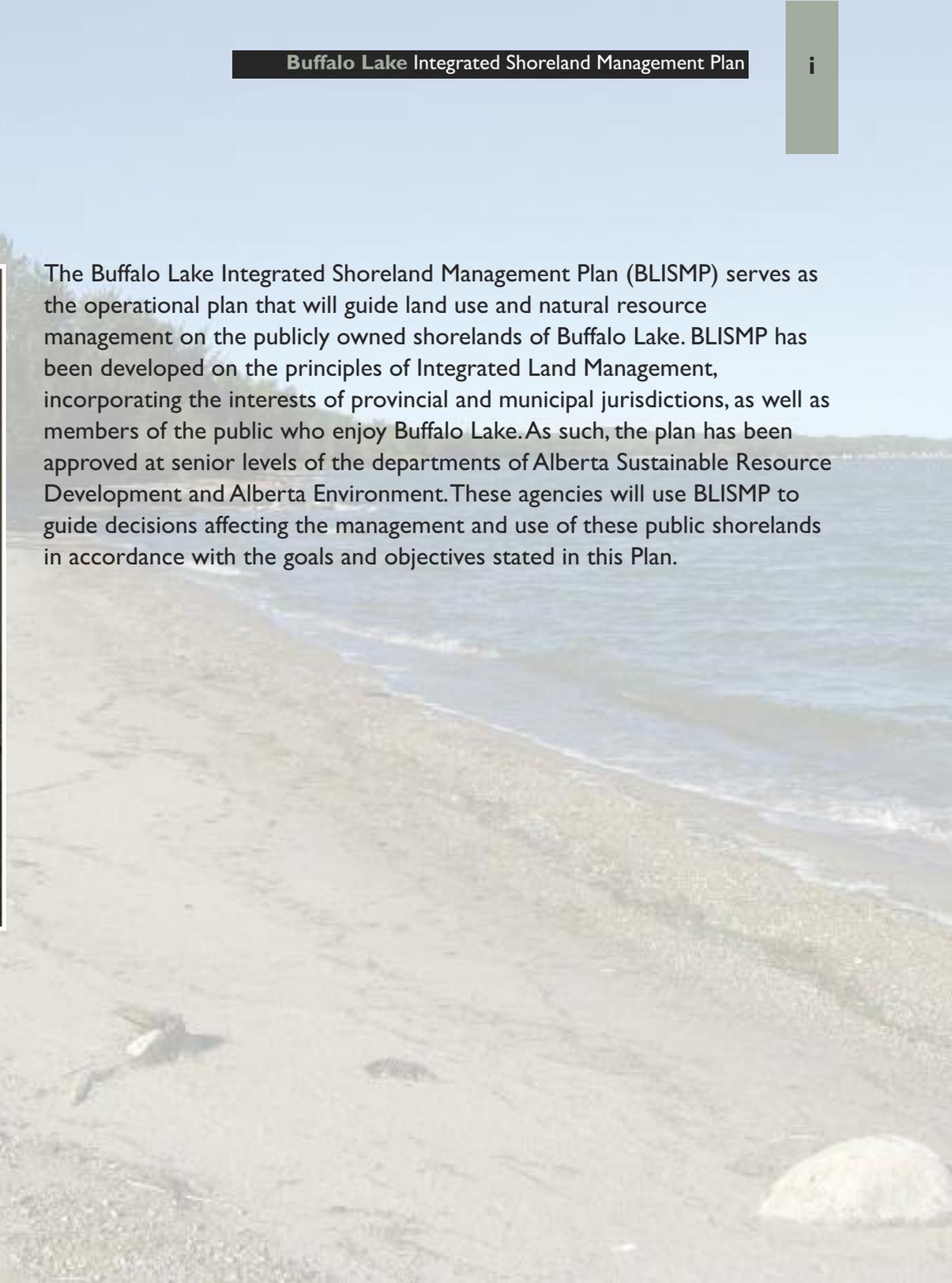
BLISMP

Government  
of Alberta 



## Preface

The Buffalo Lake Integrated Shoreland Management Plan (BLISMP) serves as the operational plan that will guide land use and natural resource management on the publicly owned shorelands of Buffalo Lake. BLISMP has been developed on the principles of Integrated Land Management, incorporating the interests of provincial and municipal jurisdictions, as well as members of the public who enjoy Buffalo Lake. As such, the plan has been approved at senior levels of the departments of Alberta Sustainable Resource Development and Alberta Environment. These agencies will use BLISMP to guide decisions affecting the management and use of these public shorelands in accordance with the goals and objectives stated in this Plan.



Contact Information and Additional Copies:

Alberta Sustainable Resource Development  
Room 211, 4920 - 51 Street  
Red Deer, Alberta  
T4N 6K8  
Phone: 403-340-5451

Alberta Sustainable Resource Development  
Information Centre  
Main Floor, Great West Life Building  
9920 - 108th Street  
Edmonton, Alberta  
T5K 2M4  
Phone: 780-944-0313  
Toll Free: 1-877-944-0313  
Email: [srd.infocent@gov.ab.ca](mailto:srd.infocent@gov.ab.ca)

Photo Credits:

Vance Buchwald - front cover  
Dave Prescott - back cover

ISBN: 978-0-7785-8915-0 (Printed Version)

ISBN: 978-0-7785-9405-5 (Online Version)

Pub No. 1/518

Printed May 2010

# Table of Contents

<b>Executive Summary</b> .....	1
<b>Introduction</b> .....	9
Project Background.....	9
BLISMP Planning Area.....	11
Purpose, Scope and Status of BLISMP .....	12
Planning Process, Participants and Consultation Activities .....	18
Relationship With Other Initiatives.....	22
<b>Land and Resource Management</b> .....	27
Resource Management Direction for the BLISMP Planning Area.....	27
Vision Statement .....	28
Project Mission Statement .....	28
Resource Management Principles.....	29
Resource Management Strategies.....	33
Riparian Management.....	34
Right-Of-Way Management .....	36
Water Quality and Shoreline Protection.....	46
Fisheries Management.....	56
Wildlife Management .....	62
Recreation .....	76
Public Access.....	88
Agriculture.....	98
Mineral Resources.....	103
Surface Materials.....	108
Utility Lines .....	109
Awareness and Stewardship.....	110
Inter-Jurisdictional Cooperation and Municipal Planning Integration.....	116
BLISMP Management Areas .....	125
<b>Plan Administration and Implementation</b> .....	135
Plan Implementation.....	135
Monitoring.....	136
Plan Amendments .....	137



## Table of Contents

Plan Review .....	139
Resolution of Plan Implementation Issues.....	139
Compliance.....	140
Communication.....	141
<b>Glossary</b> .....	145
<b>Abbreviations</b> .....	149
<b>Appendix</b> .....	151
Existing and Proposed Subdivisions on the south shore of Buffalo Lake .....	152
<b>Maps</b>	
Map 1 Planning Area.....	14
Map 2 Fish and Wildlife Theme Map.....	70
Map 3 Existing Lake Access Points.....	96
Map 4 Management Areas .....	132
<b>Special Interest Articles</b>	
Early History: Naming of Buffalo Lake.....	7
Buffalo Lake Management Team .....	16
Buffalo Lake Right-of-Way Map Series .....	17
Metis Settlements at Buffalo Lake .....	24
Water Quality.....	49
Alberta Lake Classification .....	50
Stabilization of Buffalo Lake Water Levels.....	54
What is Fish Habitat?.....	55
What You Can Do To Help Keep Fish In Our Future.....	61
Colonial Nesters .....	72
Buffalo Lake Conservation Site .....	74
Native and Rare Plants .....	75
Early Recreation and Development.....	85
Provincial Parks and Recreation Areas.....	86
Buffalo Lake Shoreland Health Videography Project.....	114
Information for Lakeshore Subdivision Developers .....	123
Buffalo Lake Inter-Municipal Development Plan .....	124
Jurisdictional Responsibilities at Buffalo Lake.....	142

## Executive Summary

The Buffalo Lake Integrated Shoreland Management Plan (BLISMP) provides direction for managing the water management right-of-way (ROW) which surrounds Buffalo Lake and the emergent vegetation found within the lake's littoral zone (up to 100 metres from the bank). The plan outlines how public land and natural resources in the planning area will be managed to achieve provincial government objectives while recognizing the interests and needs of local authorities, residents and lake users. BLISMP addresses a number of existing and anticipated resource management challenges that have been identified within the planning area. It is important to note adjacent private land is not addressed in this plan and BLISMP is not a "lake management plan".

BLISMP will assist the five municipalities which border the lake in updating and implementing the statutory Buffalo Lake Inter-municipal Development Plan (IDP) – which pertains to private lands along the ROW. BLISMP will also provide guidance for the Buffalo Lake Management Team (BLMT), a ministerially appointed body responsible for advising Alberta Environment on lake operational matters and mitigation actions pertaining to the Parlyb Creek-Buffalo Lake Water Management Project. Accountability for implementing BLISMP rests primarily with Alberta Sustainable Resource Development (ASRD) and Alberta Environment (AENV).



## Executive Summary

### **BLISMP Vision**

*“Buffalo Lake, as a locally and regionally important recreational lake, continues to provide Albertans with: a high quality lake environment that supports natural landscape values; healthy and sustainable fish and wildlife populations and supporting habitats; publicly accessible shorelands; a variety of recreational activities, and; residential development opportunities on adjacent private land, today and into the future.”*

## Planning Principles

The following seven principles will guide plan implementation:

- 1) maintain a healthy lake system;
- 2) maintain ecosystem function and integrity;
- 3) pursue adaptive management;
- 4) adopt coordinated resource management;
- 5) foster stewardship and promote education and outreach;
- 6) observe the precautionary principle; and
- 7) promote compliance.

## Resource Management Strategies

Resource management strategies have been developed for 13 themes. These themes focus on the management of public land and natural resources (i.e., the lake’s littoral zone, riparian areas, shorelands, and fish and wildlife resources), the management of human and industrial activities (i.e., public access, recreation, agriculture, utility lines, oil/gas/surface materials exploration and development), and address education/stewardship initiatives and inter-jurisdictional cooperation. Resource management direction has been provided through goal statements, supporting objectives, indicators, targets, guidelines, actions and strategies.

BLISMP addresses the following:

**Riparian health:** maintain riparian areas in a “healthy” condition

**Appropriate shoreland activities:** the water management ROW is to be kept free of obstructions, unauthorized works, unnecessary disturbances, clutter and invasive weeds

**Water quality:** prevent any deterioration in water quality from “in water” and shoreland activities

**Fisheries management:** maintain healthy populations of native fish species and high quality fish habitat

**Wildlife management:** maintain healthy populations of native wildlife species and high quality habitat for aquatic, semi-aquatic and land birds

**Recreational activities:** allow responsible, low impact recreational activities

**Recreational facilities:** facilities located on the public land ROW should serve public rather than private interests

**Public access:** ensure reasonable public access to Buffalo Lake today and in the future, and encourage municipalities to develop a lake access strategy

**Agricultural activity:** phase out livestock use on the ROW and cattle watering in Buffalo Lake

**Minerals and surface materials:** exclude mineral and surface materials extraction within the planning area to minimize land use conflicts and environmental degradation

**Public education and awareness:** foster public awareness and appreciation for resource management efforts and challenges through education and stewardship initiatives

**Inter-jurisdictional integration:** promote inter-jurisdictional cooperation among all 3 levels of government, the BLMT, and the IDP Steering Committee and harmonize public land and private land planning

## Executive Summary



### BLISMP Management Areas

To assist resource managers, lake users, landowners, residents and municipalities in determining what land uses and activities are compatible in the BLISMP planning area, a unique “Management Areas System” has been developed. A number of ROW segments were established around the lake. Each segment was placed into one of the following four management areas:

- existing developed recreational use;
- general use;
- limited use, or
- restricted use.

Each of the four management areas has a defined management intent. Land uses and human activities that are permitted within each Management Area have been identified.

### Plan Administration

Given the rapid changes that are occurring at Buffalo Lake it is proposed that BLISMP be reviewed at approximately 3 year intervals. Implementation of BLISMP will entail the completion of work plans, require that monitoring activities be undertaken, and that plan amendments be considered from time to time.

### Why was an Integrated Shoreland Plan Prepared?

The need for a lakeshore plan at Buffalo Lake emerged when the Government of Alberta established a water management ROW around the lake as part of the *Parlby Creek-Buffalo Lake Water Management Project*. This water management project was undertaken to:

- stabilize water levels in Buffalo Lake – thereby improving its recreational potential;

- provide a reliable water supply for the villages of Mirror and Alix;
- enhance fish and wildlife habitat; and
- provide agricultural flood control.

Completion of this plan satisfies a requirement contained in the Buffalo Lake Management Team's Terms of Reference: *“Establishment of a land use . . . shoreline plan to optimize natural resources, reduce potential conflicts, and ensure adequate public access.”*

Buffalo Lake is unique in Alberta. This shallow lake is a “managed” water body in which water levels are maintained within a specified range to minimize the impacts of water level fluctuations. Furthermore, a water management ROW (i.e., a strip of provincial Crown land) surrounds the entire lake, varying in width from several meters to several hundred meters. ROW lands were surveyed and purchased by Alberta Infrastructure in the mid-1990s. The ROW corresponds to – and is situated within – the lake's 1:100 year flood zone. This strip of public land is under the administrative control of Alberta Environment, however, day-to-day management is provided by Alberta Sustainable Resource Development. Adjacent landowners, lake residents and lake users need to be aware of the existence of the ROW, its location, its status, and of the special management considerations that pertain to this strip of public land.

The ROW includes the lake's riparian areas. To determine the condition of these riparian areas, a lakeshore disturbance assessment was conducted in 2005 and a “coarse” riparian health assessment was completed in 2006. Through these assessments, baseline conditions have been established for the lake's shorelands.

As one of central Alberta's large recreational lakes, Buffalo Lake continues to grow in popularity. The lake is being discovered by increasing numbers of recreational users and is under growing pressure for lakeshore subdivision development. Managing the lake and its shorelands



## Executive Summary



requires a balanced and integrated approach to minimize land use conflicts while maintaining biodiversity values, environmental quality and recreational opportunities in the future.

### Acknowledgements

BLISMP was developed over a four-year period by a Planning Team comprised of provincial agency staff and representatives from Fisheries and Oceans Canada, the Buffalo Lake Management Team, and the IDP Steering Committee. Input was sought from the five municipalities that border the lake, other stakeholders, and the public throughout the planning exercise. Two rounds of public consultation were undertaken: in the summer of 2006, and the summer of 2007. The need for BLISMP was widely recognized and strong support exists for the management direction that is being put forward in the plan.

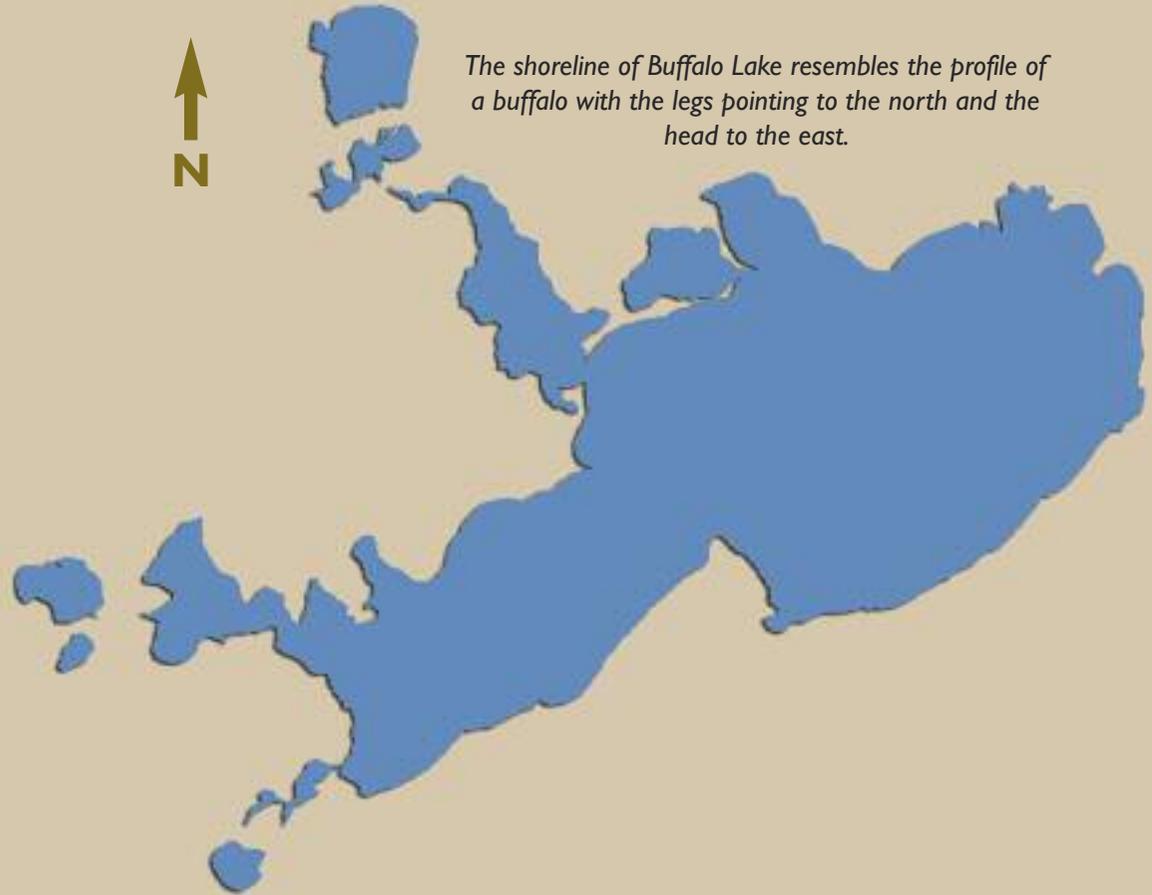
## EARLY HISTORY: NAMING OF BUFFALO LAKE

There are several interesting references on how Buffalo Lake was named. Alberta's indigenous people and early European explorers have both given the lake a name that still stands today.

Early explorers of the Canadian West first identified Buffalo Lake on David Thompson's map of 1814. The shoreline resembles the profile of a buffalo with the legs pointing to the north and the head to the east. John Palliser named this water body Bull Lake on his 1860 map, but Thompson's Buffalo Lake provides today's historical link to this Alberta place name.

Tsuu T'ina and Cree First Nations have stories on how Buffalo Lake got its name. Buffalo Lake is linked to the legends of how the Tsuu T'ina became separated from their Dunne-za relatives further north. The legend says Tsuu T'ina hunters killed a buffalo at the lake one winter and saw its carcass transformed into the shape of a lake. Returning home, hunters

crossing the frozen lake found buffalo horns sticking out of the ice. When someone tried to pull the horns away the ice split open drowning many people. The survivors who had not crossed the lake before this tragedy became Dunne-za and Chipewyan, while those who had already crossed the lake became Tsuu T'ina. The Cree people are also known to have named the lake "mutus" meaning buffalo.<sup>1</sup>



*The shoreline of Buffalo Lake resembles the profile of a buffalo with the legs pointing to the north and the head to the east.*

<sup>1</sup> W.F. Butler in "The Wild North Land" refers to a similar legend describing Buffalo Lake as the source of the buffalo which roamed the prairies (MacGregor, p. 100). Butler doesn't seem to attribute the myth to anyone in particular except the generic "Red Man". [www.albertasource.ca/placenames/programs/tsuutina/names.html](http://www.albertasource.ca/placenames/programs/tsuutina/names.html)

## Lake Living

### **Did You Know?**

*In Alberta, lakes, rivers, streams and wetlands cover approximately 2.5 per cent of the landscape.*

## **Sustainable Resource Development - Shorelands Management**

In Alberta, the province generally owns and is responsible for managing the beds and shores of water bodies. Similarly, the province owns and is responsible for managing riparian areas where the adjoining land is also Crown land such as in the forested regions of Alberta or on leased, public lands in the settled areas.

In much of Alberta however, private lands border provincial water bodies and, in such instances, public land managers in the Lands Division work with landowners, municipalities and other resource management agencies to cooperatively manage sensitive provincial shorelands.

For more information visit: [www.srd.alberta.ca](http://www.srd.alberta.ca)



# Introduction



## Project Background

### Need for a Management Plan

Buffalo Lake is an important provincial water body in central Alberta. This large water body is a dominant landscape feature that benefits many Albertans who visit or live near the lake. The popularity of Buffalo Lake has grown over the years as new recreational users, cottage owners, and subdivision developers have discovered the lake. As Alberta's economy rebounds, it is anticipated that the existing lakeshore communities will expand, new subdivisions will spring up around the lake, and increasing recreational activity will occur. However, if not properly managed, subdivision development and increased visitor use could threaten Buffalo Lake by negatively affecting water quality, riparian areas and the plants and animals that depend on the lake and its shorelands. Clear management direction is needed by government agencies and municipalities to protect the biodiversity associated with Buffalo Lake's shorelands.

The Buffalo Lake Integrated Shoreland Management Plan (BLISMP) identifies how provincial government agencies will manage the lake's littoral zone (i.e., the first 100 meters of the lake from the shore) and the provincially-owned water management right-of-way (ROW) surrounding Buffalo Lake. The completed plan will also be beneficial to the five municipalities that surround Buffalo Lake, which have planning responsibilities and jurisdiction over adjacent private land. Accountability for implementing BLISMP will rest with the Government of Alberta, specifically with Alberta Sustainable Resource Development (ASRD) and Alberta Environment (AENV).

It is the provincial government's intention to maintain Buffalo Lake's shorelands in a natural state as much as possible—while allowing a variety of compatible activities to occur.

## Introduction

Completion of this plan satisfies a requirement contained in the Buffalo Lake Management Team's Terms of Reference: *"Establishment of a land use . . . shoreline plan to optimize natural resources, reduce potential conflicts, and ensure adequate public access."*

### Plan Initiation and Project Terms of Reference

ASRD and AENV jointly initiated the BLISMP planning exercise in 2004 to provide direction on how public lands surrounding Buffalo Lake will be managed, now and in the future. Project Terms of Reference were developed to provide clarity on the nature, purpose and scope of the planning exercise. Final Terms of Reference were endorsed by the BLISMP Steering Committee in January 2005 and are available online at <http://www.blmt.ca/>.

### Water Management Operations at Buffalo Lake

Alberta Environment commenced with the construction of the multi-phase Parlby Creek – Buffalo Lake Water Management project in 1985. Using water from the Red Deer River, this project was undertaken to stabilize water levels in Buffalo Lake; secure water supplies for the villages of Mirror and Alix; enhance fish and wildlife habitat; and provide agricultural flood control. Additional information on this water management project can be obtained online at <http://www.blmt.ca/>.

A full supply level (FSL) target of 780.85 meters was established for Buffalo Lake as part of the Parlby Creek – Buffalo Lake Water Management project. When this water level is achieved, AENV temporarily suspends pumping activities to allow lake water levels to naturally recede to 780.60 meters (a draw down of 25 centimeters or 10 inches). This modest draw down maintains the natural fluctuation of lake water levels which is essential to maintaining shoreline habitat.

In connection with stabilizing water levels in Buffalo Lake, the Government of Alberta purchased a ROW around the entire lake to facilitate water

management operations and to reduce the risk of flooding private land and property during seasonal water level fluctuations (up to a 1:100 year flood event). The ROW contains much of the riparian area surrounding Buffalo Lake. Riparian areas play an important role in the ecology of the lake and are valued by different fish and wildlife species.

## **BLISMP Planning Area**

The BLISMP planning area pertains to the shorelands and emergent vegetation found within the ROW boundary which encircles Buffalo Lake. The ROW strip is comprised of approximately 1585 hectares (3917 acres) of land, but its extent (i.e., its actual surface area) will vary based on lake water levels. These ROW shorelands were purchased by the provincial government up to an established “take line” above the bank, which corresponds with an elevation contour of 781.2 meters. These lands may be subject to seasonal or significant flooding as they occur within Buffalo Lake’s 1:100 year flood zone. The ROW varies in width from several meters to several hundred meters, depending on lake water levels and shoreland topography.

It is important to note that the planning area consists of both a “wet” and a “dry” area. The wet area includes the bed and shore of Buffalo Lake and the initial stretch of water that extends into the lake up to a distance of 100 meters from the bank. The wet area encompasses a sizeable portion of the lake’s littoral zone. The dry area consists of the strip of public land that falls within the water management ROW.

The bed and shore of Buffalo Lake are public land (i.e., provincial Crown land) as defined with Alberta’s *Public Lands Act*. The purchase of shorelands around the lake by the Government of Alberta to establish the water management ROW resulted in the creation of additional (new) public land. This ROW falls under the administrative control of Alberta Environment (AENV), however the ROW is managed on a day-to-day basis by Alberta Sustainable Resource Development (ASRD).

*Buffalo Lake is a “managed” lake providing numerous benefits to local residents, adjacent landowners and lake users. It plays an important role in the ecology of the region, supporting a diversity of plants, fish and wildlife. The lake covers 8288 hectares (20,480 acres), has 146 kilometers of shoreline, and is a shallow water body (water depths at the lake’s deepest point are estimated to be about 7 to 8 meters at Full Supply Level). Evaporation losses can be significant during hot, dry or windy weather conditions. Natural processes such as ice scouring and shoreline erosion occur around the lake.*

## Introduction

The location of the planning area is shown in Map 1 (page 14). This map can also be viewed online at [www.blmt.ca/](http://www.blmt.ca/).

### Purpose, Scope and Status of BLISMP

The purpose is to provide clarity on how Buffalo Lake's immediate littoral zone, the shoreline, and the water management ROW which surrounds the lake will be managed to achieve provincial and federal government policy objectives, while recognizing the interests and needs of local authorities, residents and lake users. More specifically, BLISMP will identify how public land and natural resources will be managed to:

- address (existing and anticipated) resource management challenges that exist within the planning area;
- achieve desired provincial/federal agency outcomes;
- satisfy any statutory or policy requirements that may exist.

### Scope

It is important to note that the entire lake does not fall within the planning area, nor are private lands surrounding the ROW being considered in this planning exercise. The focus of BLISMP is on a ribbon of shoreland and a narrow band of water along the lake shoreline (illustrated in Figure 1 - page 13).

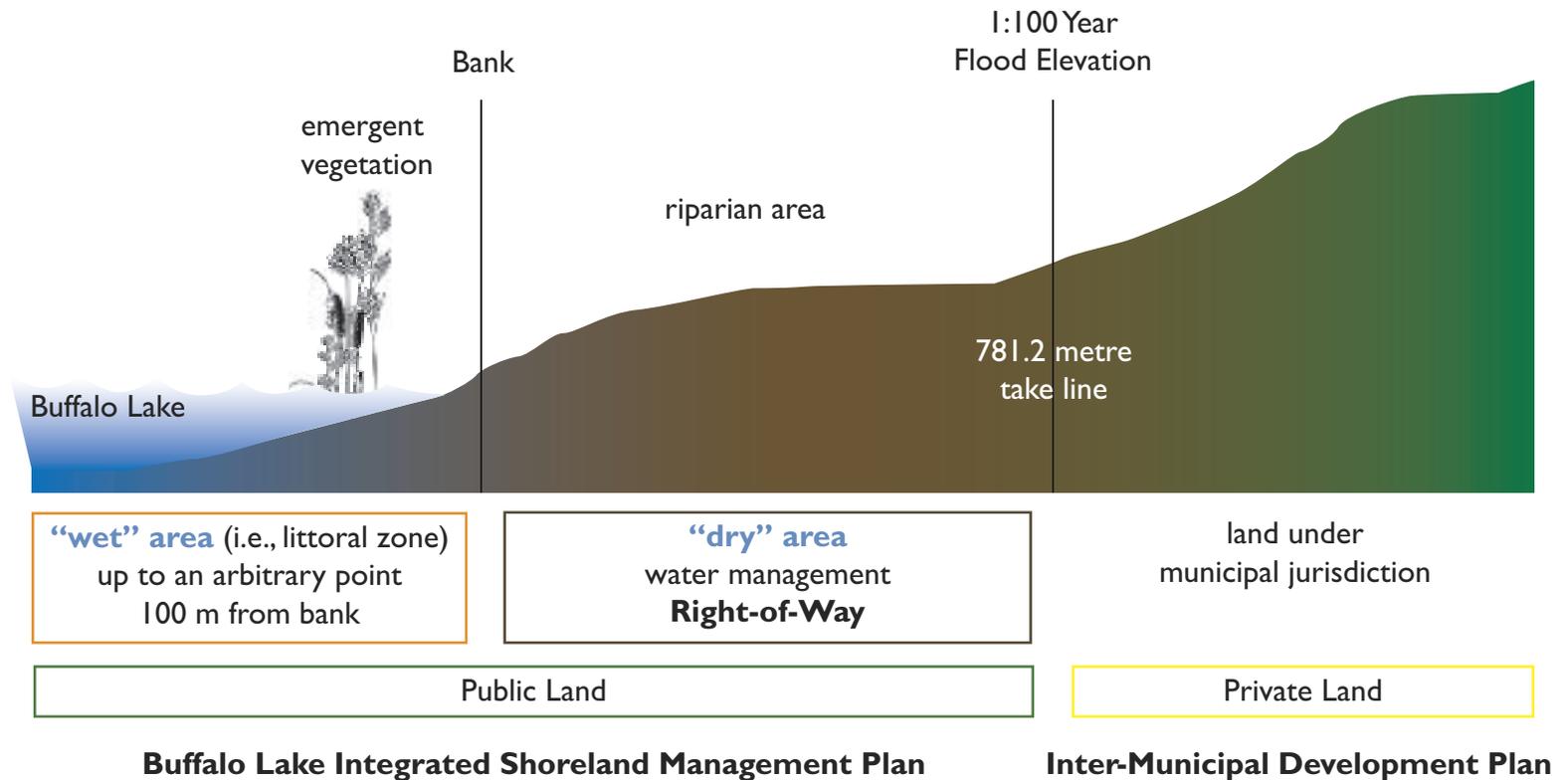
BLISMP is a policy document which elaborates on and applies provincial government policy within the planning area. BLISMP is not a statutory plan.

Municipalities, developers, residents, adjacent landowners, recreational users and other interested parties are encouraged to become familiar with provisions in this plan. It is desirable that adjacent land uses (beyond the BLISMP planning area boundary) complement direction contained in this plan.

ASRD and AENV have primary responsibility for managing public land and resources in the BLISMP planning area for the benefit of all Albertans. Staff from these two departments, and from other participating agencies and organizations involved in the development of this plan, will consult this plan on a regular basis when establishing annual work plans, completing referrals, reviewing re-zoning and development applications, reviewing and issuing dispositions, and when clarifying the provincial government’s intentions and expectations for the planning area.

**Figure 1**

Focus of BLISMP planning exercise



Map I - Planning Area





# Buffalo Lake Management Team

The Buffalo Lake Management Team (BLMT) was formed by the Minister of Alberta Environment in 1991 to provide advice on the construction, mitigation and operation of the Parlby Creek - Buffalo Lake Water Management Project. Membership of the BLMT consists of representatives from AENV and ASRD, local citizens and major stakeholders who work in partnership to reflect the multiple use nature of the project. The Management Team benefits from input from special advisory groups for selected critical areas in the project area.

Since completing the construction phase of the project, the BLMT has focused its efforts on completing mitigation measures, ongoing operations, monitoring and land use planning issues surrounding the Parlby Creek - Buffalo Lake Water Management system.



Lake users on the public beach at Rochon Sands Provincial Park  
Photo Credit: Karl Grollmuss

The Management Team is responsible for developing a detailed project management plan to address the following issues:

1. implementation of the construction phase of the project
2. development of an operational plan to reflect the multiple use nature of the project
3. the type and timing of mitigation measures
4. ongoing monitoring
5. planning to respond to unpredicted events
6. establishment of a land use, surface water shoreline plan to optimize the natural resource use, reduce potential conflicts, and ensure adequate public access.

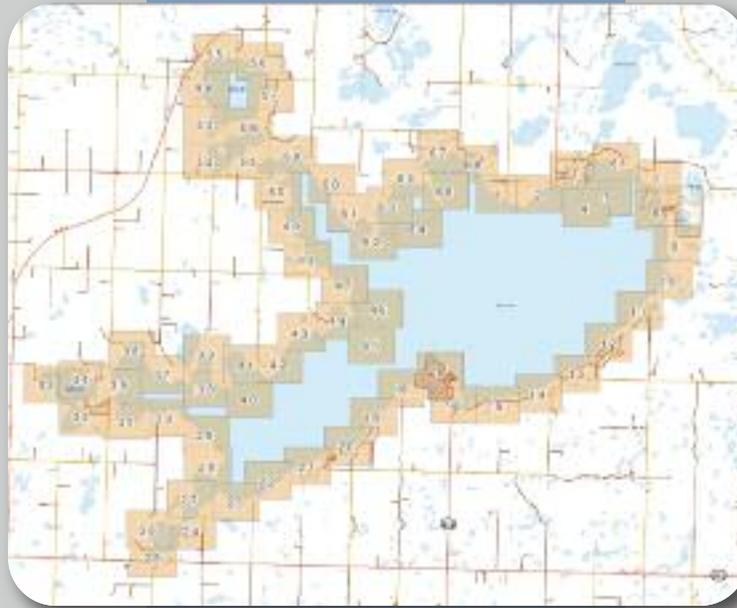
The BLMT continues to be an active committee and meets on a regular basis to provide advice to Alberta Environment. Members of the BLMT have participated in the development of the:

- Buffalo Lake Integrated Shoreland Management Plan (BLISMP)
- Buffalo Lake Inter-municipal Development Plan (IDP)

# Buffalo Lake Right-of-Way Map Series

The public land right-of-way (ROW) surrounding Buffalo Lake was surveyed as part of the Parlby Creek - Buffalo Lake Water Management Project. Once the outer ROW boundary was established, the provincial government proceeded with the acquisition of all shorelands falling within the ROW. These lands may be subject to flooding because they are located within Buffalo Lake's 1:100 year flood zone. The ROW varies in width from several meters to several hundred meters, depending on lake water levels and shoreland topography.

This ROW boundary or "take line" is only apparent in a few places where stakes and fence posts formed part of the ROW surveying project. BLISMP is recommending that provincial government agencies should, in select locations, make the ROW boundary more visible for the benefit of adjacent land owners and lake users.



To assist land and resource management agencies, municipalities and the public in understanding where the ROW is situated, a map series of the entire ROW was prepared. The 68 separate map sheets that make up the ROW map series are shown on an Index Map. Individual ROW maps can be accessed online as PDF files (which can be printed at 11 x 17 inches in size) from the following website: [www.blmt.ca/blismp.htm](http://www.blmt.ca/blismp.htm)

## Introduction

### Planning Process, Participants and Consultation Activities

#### Planning Process

Alberta's public land planning process was adopted in the development of this plan. The following steps and milestones identify major components of the BLISMP planning exercise:

- a. identify the planning area, key project outcomes, and participants
- b. establish a project *Steering Committee* and *Planning Team*
- c. develop and obtain endorsement for a project *Terms of Reference*
- d. compile relevant information; prepare project maps and GIS products
- e. develop a project *Communications Plan* and *Stakeholder/Public Consultation Strategy*
- f. clarify resource management challenges and issues
- g. develop a draft *Land and Resource Management Framework*
- h. conduct initial stakeholder and public consultations; prepare *What we Did* and *What we Heard* documents
- i. reach agreement on the structure, format and content of the draft management plan
- j. develop the first draft of BLISMP
- k. conduct follow-up stakeholder and public consultations; prepare *What we Did* and *What we Heard* documents
- l. revise the draft plan based on public and stakeholder input
- m. seek endorsement and final approval for BLISMP
- n. implement the approved plan
- o. monitor implementation activities and changing environmental conditions
- p. review and amend the plan as necessary

## Participants

In 2004 ASRD and AENV established an inter-departmental, multi-disciplinary planning team to compile and review relevant information and to develop recommendations concerning the future management and use of public land and natural resources within the BLISMP planning area. The planning team included government staff (from provincial and federal government agencies) and representatives from the Buffalo Lake Management Team (BLMT) and the Buffalo Lake Inter-municipal Development Plan Steering Committee (IDP Committee). The planning team met on a regular basis over a three-year period to develop a number of planning documents, including this plan. A project Steering Committee was established to provide oversight in the development of the draft management plan.



## Consultation

Public consultation for the BLISMP project was conducted in two parts – Phase 1 coincided with the release of a draft Framework document and Phase 2 corresponded with the release of the draft management plan.

The objectives for public consultation during Phase 1 were as follows:

- notify local authorities, interest groups, lake residents, lake users and the general public of the BLISMP project
- share initial ideas and proposals developed by the BLISMP Planning Team (i.e., BLISMP “Resource Management Challenges” and the “Framework” document) with local authorities, interest groups, lake residents, lake users and the general public and receive feedback on these

**Phase 1** consultation activities occurred from July through October in 2006 and consisted of:

- a) forwarding project information packages to Lacombe County, Camrose County, County of Stettler, the Summer Village of Rochon Sands, and the Summer Village of White Sands



## Introduction



- b) developing, printing and distributing an eight-page project brochure
- c) distributing Open House posters to a wide local audience
- d) placing Open House advertisements in local newspapers
- e) preparing a newspaper article for local/regional print media use
- f) placing project maps and documentation (including the draft “Framework” and “Resource Management Challenges” documents) on the Buffalo Lake Management Team’s website: [www.blmt.ca/blismp.htm](http://www.blmt.ca/blismp.htm)
- g) holding a public open house at Rochon Sands Community Hall on August 26, 2006. The open house was hosted by the Buffalo Lake Management Team and the Buffalo Lake Inter-municipal Development Plan Steering Committee. Six static displays, several project maps, a video showing shoreline conditions around Buffalo Lake, and a station where the public could indicate their preferences on access to Buffalo Lake were part of the Open House. It was estimated that well over a 100 people attended the Open House. BLISMP Planning Team and Steering Committee members, as well as representatives from the BLMT and IDP Steering Committee, were on hand to interact with Open House attendees, share information about the BLISMP project, answer questions, and hear concerns. Presentations were given by the Chair of the Buffalo Lake Management Team, the Chair of the Buffalo Lake Inter-municipal Development Plan Steering Committee, and provincial government staff. Numerous questions and concerns were raised by attendees during the question and answer period that followed each presentation.
- h) compiling and systematically reviewing all stakeholder and public input collected during Phase I consultation
- i) developing and posting *What We Did* and *What We Heard* documents on the BLISMP web page

**Phase 2** consultation activities occurred from May to October in 2007 and consisted of:

- a) seeking input on recommendations in the draft plan from neighboring municipalities (May 2007 workshop)
- b) developing, printing and distributing a 16-page booklet that contained highlights from the draft plan
- c) notifying the public of the draft plan and the Open House through posters and newspaper advertisements
- d) placing Phase 2 project documentation online for ready access
- e) holding a public Open House at the Erskine IOOF Hall on August 25, 2007. Six static displays, several project maps, a video showing shoreline conditions around Buffalo Lake, and a map from the 2007 Buffalo Lake bird study were part of the Open House. It was estimated that approximately 150 people attended the Open House. BLISMP Planning Team and Steering Committee members interacted with Open House attendees sharing information about the BLISMP project, answering questions, and hearing various concerns. Presentations were offered in the morning (with approximately 70 people in attendance) and afternoon (with approximately 45 people in attendance). Presentations were given by the Chair of the Buffalo Lake Management Team, the Chair of the Buffalo Lake Inter-municipal Development Plan Steering Committee, and government staff. Numerous questions and concerns were raised by Open House attendees during the lengthy question and answer period that followed each presentation. Questions and comments were provided to the BLISMP Planning Team for a response.
- f) compiling and systematically reviewing all stakeholder and public input collected during Phase 2 consultation
- g) developing and posting *What We Did* and *What We Heard* documents on the BLISMP web page



## Introduction

### Relationship With Other Initiatives

BLISMP is one of three initiatives that provides management direction for Buffalo Lake and its shorelands. Key distinctions among these three inter-related initiatives are as follows:

- **Buffalo Lake Management Team (BLMT)**  
The BLMT has been in existence since 1991. Its purpose is to provide advice to Alberta Environment on water management operations at Buffalo Lake and propose and review mitigation actions being undertaken as a result of lake stabilization efforts connected with the Parlyby Creek – Buffalo Lake Water Management project. More information on the BLMT can be found at the following website: [www.blmt.ca/](http://www.blmt.ca/).
- **Buffalo Lake Inter-municipal Development Plan Steering Committee (IDP Steering Committee)**  
The IDP Steering Committee includes representatives from the 3 Counties (i.e., Lacombe, Stettler, Camrose) and 2 Summer Villages (Rochon Sands, White Sands) that border Buffalo Lake. The Committee exists to develop and implement the statutory Buffalo Lake Inter-municipal Development Plan (IDP), 1997, which governs private land surrounding Buffalo Lake. The Committee also ensures inter-municipal dialogue and coordination occurs on land use and development around Buffalo Lake. In May 2008 the IDP Steering Committee initiated a process for reviewing and updating the 1997 plan and for harmonizing the IDP with BLISMP.
- **Buffalo Lake Integrated Shoreland Management Plan (BLISMP)**  
BLISMP is the most recent of the 3 mentioned initiatives. This planning exercise was initiated by Alberta Environment and Alberta Sustainable Resource Development to provide direction on how public land and natural resources at Buffalo Lake will be managed in the future. Further information about BLISMP can be accessed online at: <http://www.blmt.ca/blismp.htm>.

To help ensure mutual goals and objectives for Buffalo Lake and adjacent private lands are achieved, it was recognized at the outset of the BLISMP planning exercise that cooperation, coordination and integration would be required among these three local initiatives. To that end, the Chairs of the BLMT and the IDP Steering Committee were included on the BLISMP planning team.

Existing legislation, policies and plans were considered during the development of BLISMP. In particular, plan development was influenced by information and direction contained in the following key policy documents and initiatives:

- *Water for Life* (Government of Alberta)
- *Buffalo Lake Inter-municipal Development Plan (1997)*
- *Emergent Vegetation Study for Buffalo Lake (2002)*
- *Buffalo Lake Shoreline Videography - Riparian Disturbance Assessment (2005)*
- *Buffalo Lake Shoreline Videography - Riparian Health Assessment (2006)*
- *Buffalo Lake Avian Diversity and Distribution Study (2007)*



## Metis Settlement at Buffalo Lake

Buffalo Lake was a favourite Cree and Blackfoot camping area (Lamerton Hist. Soc. 1974). The wandering Metis also eventually occupied this area as they searched for new buffalo hunting grounds. The Tail Creek Metis Settlement on the southwest side of the lake was one of the earliest settlements in central Alberta and served as a vital link to the early buffalo trade well before the mainstream of settlers arrived between 1891 and 1905 (Lamerton Hist. Soc. 1974). Established as a trading post in 1870, Tail Creek was the centre of the largest Métis settlement in the North West Territories. Metis settlements known as hibernant camps were often the start and end points for great buffalo hunts on the plains. Another Metis settlement was located on the north eastern shore of Buffalo Lake, in the vicinity of Boss Hill.

The buffalo was an important (i.e., often the primary) food source for the Metis. As the buffalo became increasingly scarce in the mid to late 1800's, Metis people had to travel greater distances in their search of remaining small buffalo herds. When not found on the open plains, buffalo could be found at Buffalo Lake and in the



Photo Credit: Glenbow Archives

### Did You Know?

**Gabriel Dumont, was the chief for the Metis communities of Tail Creek and Boss Hill. He was also one of Louis Riel's main allies and fought at the famous battles at Duck Lake and Batouche.**

surrounding area because of good trembling aspen and fescue grassland habitat. As the buffalo disappeared from Buffalo Lake, so did the Metis settlements that were once established there.

The Tail Creek area became a popular staging area among Metis hunters and their families. from as far north as Lac La Biche, Lac Ste Anne, St. Albert, Edmonton, and Batoche. Eventually it became a new Metis village where supplies and provisions were available including: food; hides for harnesses and saddles; tents; clothing and moccasins for hunters and their families; and fresh and frozen meat and hides bound for the Hudson's Bay Company post at Fort Edmonton. Mule trains extending up to two miles in length were used to take furs from Tail Creek des Métis to Fort Benton, Montana.

Winter settlement at Tail Creek by Metis families became a regular event from 1870 onward. Hunters and their families would arrive in late fall from their eastern settlements (in Alberta, Saskatchewan and Manitoba), looking for buffalo as they travelled. When they reached Buffalo Lake, families repaired the previous year's dwelling, or built a new one if necessary. The dwellings were exceptionally tight one-room log buildings, featuring dove-tailed corners, and were plastered and whitewashed inside.

In 1874-75, Col. Sam Steele of the Northwest Mounted Police counted 400 cabins at Tail Creek and estimated the village population to be about 2,000 people at its peak. At that time, it was the largest Metis settlement in the North West Territories (west of Winnipeg) – far surpassing Edmonton. The Hudson Bay trading post, built in 1870, was destroyed by fire in 1878 and was never rebuilt

because the buffalo had disappeared, and along with them the purpose for the Tail Creek trading post. Only a few Metis families remained behind (the

1901 census lists 91 individuals who can be identified as descendents of the Tail Creek buffalo hunters). The Tail Creek Metis Settlement was located near the Tail Creek Cemetery – along the banks of Tail Creek – and at Boss Hill, both sites are protected by provincial legislation as Metis Historic Sites.



### *TODAY – The Buffalo Lake Metis settlement has become an Historic Place*

In October 2000 Alberta Culture and Community Spirit officially designated the Buffalo Lake Metis Settlement located east of Buffalo Lake, at Boss Hill, as an Alberta provincial historic resource.

“The Buffalo Lake Métis Settlement is one of the few known examples remaining of the mid-to late nineteenth-century hibernant (wintering) Métis settlements in Alberta. Situated on approximately 30 acres of land, the site consists of cellar depressions and rock fireplace mounds

representing as many as 89 individual cabins near the northeastern shore of Buffalo Lake. Artifacts excavated from this site are stored at the Royal Alberta Museum. . . . The Settlement was archaeologically investigated between 1970 and 1982”  
(<https://hermis.alberta.ca>)

Further information on this historic place can be found online at: HERMIS – Heritage Resources Information system  
<https://hermis.alberta.ca>

### Did You Know?

The Metis settlements of Buffalo Lake and the surrounding area no longer exist and the buffalo herds have long since disappeared but remnants of the aspen and grassland eco-system can still be found around the lake and provide important habitat for bird and wildlife species. Stewardship of these areas is important to providing us rich linkages to the historical uses of Buffalo Lake and the many activities we enjoy at the lake today.

### References:

Alberta Online Encyclopedia - Metis at Buffalo Lake and Tail Creek  
[www.albertasource.ca/metis/eng/people\\_and\\_communities/historic\\_buffalo\\_lake.htm](http://www.albertasource.ca/metis/eng/people_and_communities/historic_buffalo_lake.htm)

Boomtown Trail - [www.boomtowntrail.com/](http://www.boomtowntrail.com/)

Photo Credit: Glenbow Archives



# Land and Resource Management



## Resource Management Direction for the BLISMP Planning Area

Land and resource management direction for the BLISMP planning area is presented through a series of complementary planning components. These plan components will guide future decision making and action. A brief explanation of each BLISMP component is as follows:

**Vision** – is a broad philosophical description of the long-term state and condition of the BLISMP planning area. The BLISMP vision statement provides a unifying direction for the development and implementation of this plan.

**Mission** – is a statement which identifies the objectives and outcomes that ASRD and AENV are seeking for the BLISMP planning exercise.

**Principles** – are statements that act as powerful forces in shaping and directing human life and conduct. When accepted as social norms, planning principles (values) become decisive and determinative in decision making and in setting future direction.

**Goals** – are broad statements that describe, in general terms, a desired end-state for a particular interest, resource, land use, or activity.

**Objectives** – are concise statements of a desirable future condition that is consistent with and supports the attainment of a corresponding goal.

**Indicators** – are measurable variables used to assess the effectiveness of applied actions/strategies towards achieving set goals and objectives. Indicators are sometimes referred to as “performance measures”.

## Land and Resource Management



**Targets** – are clearly defined outcomes, expressed in concrete quantitative or qualitative terms. Targets are often linked to indicators.

**Guidelines / Actions / Strategies** – are statements that identify a standard, or a preferred or advisable course of action, to achieve stated objectives and targets.

### Vision Statement

Buffalo Lake, as a locally and regionally important recreational lake, continues to provide Albertans with: a high quality lake environment that supports natural landscape values; healthy and sustainable fish and wildlife populations and supporting habitats; publicly accessible shorelands; a variety of recreational activities, and; residential development opportunities on adjacent private land, today and into the future.

### Project Mission Statement

The provincial government departments of Environment and Sustainable Resource Development – through their joint legislative responsibilities, and through the efforts of an inter-departmental planning team – will cooperatively seek to establish provincial resource management objectives and targets for Buffalo Lake and provide direction to staff through this management plan. The plan will guide land use decision making and support municipal planning processes to ensure the ecological integrity (and natural quality) of the planning area's shorelands, and that a high quality lake environment will continue to be maintained for local communities and Albertans.

To achieve this mission, government agencies will work with local stakeholders to develop an integrated resource management plan that directs and supports decision making by provincial agencies and regulators for the management and use of the shoreland right-of-way in such a way that the

ecological integrity (and natural quality) of the shorelands of Buffalo Lake are maintained, now and in the future.

**BLISMP Project Goal** - To manage activities in the planning area in a manner consistent with the BLISMP vision and mission statements, as well as the plan's resource management goals and objectives.

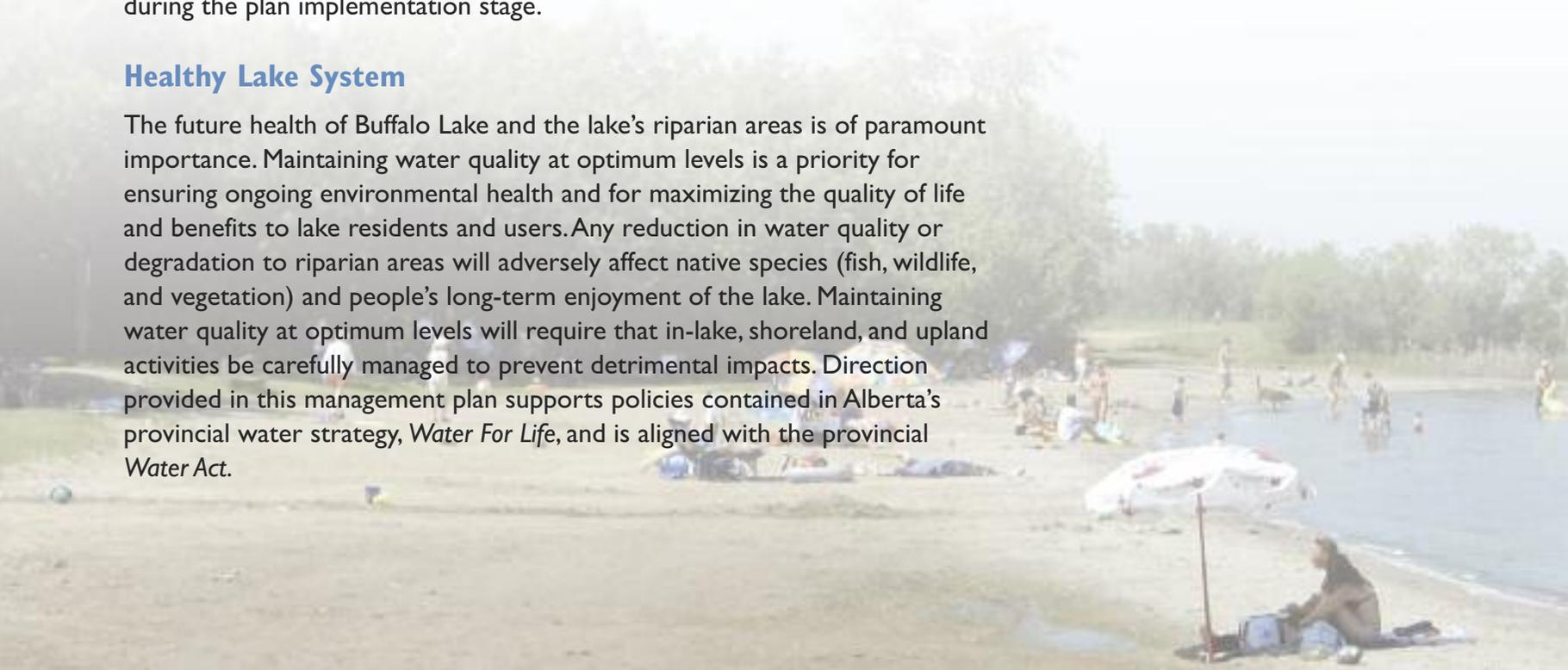
**BLISMP Project Objective** - Establish priority land uses for the wet and dry areas within the BLISMP planning area as well as provide clear resource management direction to provincial government staff, municipalities, residents, landowners and lake users by outlining expectations for the planning area.

## Resource Management Principles

The following seven principles provide a foundation for BLISMP and offer guidance on how land and resource management direction will be applied during the plan implementation stage.

### Healthy Lake System

The future health of Buffalo Lake and the lake's riparian areas is of paramount importance. Maintaining water quality at optimum levels is a priority for ensuring ongoing environmental health and for maximizing the quality of life and benefits to lake residents and users. Any reduction in water quality or degradation to riparian areas will adversely affect native species (fish, wildlife, and vegetation) and people's long-term enjoyment of the lake. Maintaining water quality at optimum levels will require that in-lake, shoreland, and upland activities be carefully managed to prevent detrimental impacts. Direction provided in this management plan supports policies contained in Alberta's provincial water strategy, *Water For Life*, and is aligned with the provincial *Water Act*.



## Land and Resource Management



### Ecosystem Function and Integrity / Ecosystem Sustainability

Ecosystem “function” refers to the many and varied biotic (living) and abiotic (non-living) processes operating within an ecosystem. Ecological “integrity” refers to “the quality of a natural, unmanaged or managed ecosystem in which the natural ecological processes are sustained, with genetic, species and ecosystem diversity assured for the future.” (*Dictionary of Natural Resources Management, 1996, UBC Press, p 101*) Ecosystems operate with a degree of natural resiliency, however, when ecosystem function and integrity are impaired, the self-sustaining and regenerating capacity of ecosystems is compromised and may not be recoverable. Functioning ecosystems cannot perpetuate themselves indefinitely if human activities exceed the ecosystem’s ability to accommodate these activities. Ecosystem decline or collapse is inevitable whenever human activities exceed ecosystem thresholds. The loss of local biodiversity is often an unmistakable sign that human activities are exceeding ecological thresholds.

The planning area’s ecosystem will be managed so as to provide an ongoing stream of human benefits by:

- maintaining ecosystem processes;
- perpetuating natural landscapes in pre-determined areas;
- safeguarding the ongoing productive and renewal capacities, as well as the genetic, species and ecological diversity, of ecosystems; and
- avoiding or mitigating the adverse effects of human activities on the environment.

This principle is consistent with the mandate of provincial and federal government agencies.

## Adaptive Management

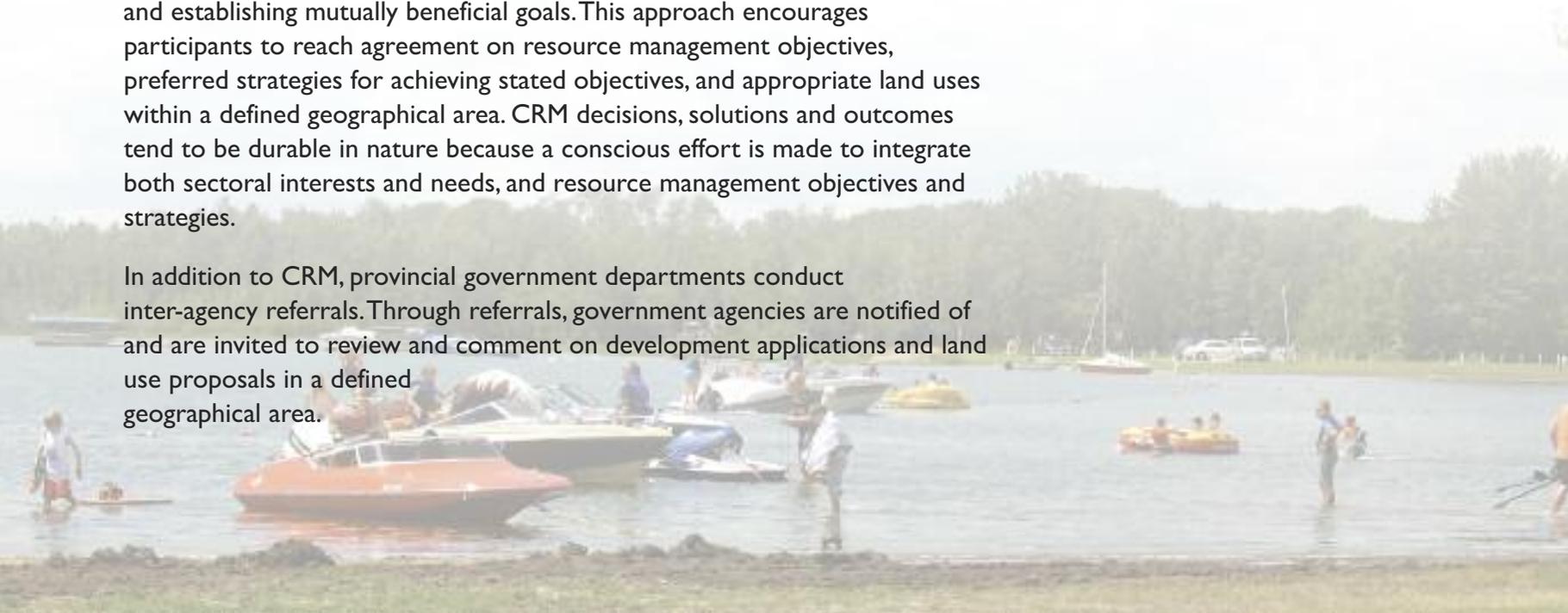
Adaptive Management is “a dynamic planning or modeling process that recognizes the future cannot be predicted perfectly. In response to these imperfect predictions, planning and management strategies are modified frequently as better information becomes available. It applies scientific principles and methods to improve management activities incrementally, as decision-makers learn from experience and new scientific findings, and adapt to changing social expectations and demands.” (*Dictionary of Natural Resources Management, ibid, p 6*)

## Coordinated Resource Management

Coordinated Resource Management (CRM) is a planning and resource management approach whereby participating agencies, organizations and individuals agree to communicate and cooperate with each other when developing and implementing resource management strategies. CRM provides a forum for identifying and resolving issues, exchanging information and ideas, and establishing mutually beneficial goals. This approach encourages participants to reach agreement on resource management objectives, preferred strategies for achieving stated objectives, and appropriate land uses within a defined geographical area. CRM decisions, solutions and outcomes tend to be durable in nature because a conscious effort is made to integrate both sectoral interests and needs, and resource management objectives and strategies.

In addition to CRM, provincial government departments conduct inter-agency referrals. Through referrals, government agencies are notified of and are invited to review and comment on development applications and land use proposals in a defined geographical area.

*Alberta’s Integrated Land Management (ILM) program is the means for achieving coordinated resource management in Alberta. The ILM program focuses on inter-agency cooperation, stewardship, and the improved management and sustainable use of Alberta’s public land and natural resources.*



## Land and Resource Management

### Stewardship

Stewardship has been simply defined as “caring for the land and associated resources so that healthy ecosystems can be passed onto future generations.” (*Dictionary of Natural Resources Management, ibid, 299*) To achieve the widely embraced societal goal of ‘healthy ecosystems,’ this plan must have a stewardship orientation.

Responsible stewardship requires the willingness and commitment of lake residents, landowners, and user groups to modify their activities to reduce and prevent harmful impacts to the environment so that fully functioning ecosystems can be maintained at all levels (from the local site to the larger landscape).

A shared stewardship approach is highly desirable. In such an arrangement local authorities and government agencies work cooperatively with interest groups, landowners, residents, lake users, and public land disposition holders to achieve the goals and objectives contained in this management plan.

### Precautionary Principle

The precautionary principle will be applied whenever outcomes of specific decisions or human actions are poorly understood. Caution will be exercised by decision makers if uncertainty exists about the consequences of intended management actions or whenever the effects (impacts) of land uses and human activities are not sufficiently understood.

### Compliance

There is a widely held public expectation that the Government of Alberta will commit itself to the provisions contained in this plan. BLISMP expresses the goals, objectives, targets and management strategies of involved government agencies. Ongoing provincial government support will be required during the plan implementation stage if success in achieving BLISMP provisions is to occur.



To that end, provincial agencies will commit themselves to a consistent approach in achieving compliance with BLISMP provisions. This includes both prevention and education, and when necessary, enforcement actions. Provincial staff will be present in the planning area to interact with lake users, monitor human activities and ecosystem health, and inform the public of compatible/incompatible uses and appropriate human activities on public land – as identified in this plan. The need for a greater capacity to undertake enforcement actions, complete patrols in the planning area and raise public awareness needs to be assessed, and if deficiencies are found, these need to be addressed. In addition to the Government of Alberta's role (exercised primarily through ASRD's and AENV's mandates), it is recognized that other government agencies, municipalities, and non-government organizations can assist with:

- informing lake users of relevant laws, regulations, policies, requirements, standards, codes, etc.
- disseminating messages on appropriate actions and behaviors by lake users
- providing an 'on the ground' presence to monitor, educate and inform
- coordinating enforcement actions

## Resource Management Strategies

Resource management strategies are presented for 13 subject categories to allow plan users quick access to topics of interest.

The following 13 tables provide direction for the management of a specific ecosystem component, natural resource, or human activity in the planning area. Each table contains a thematic goal statement, which is followed by supporting objectives, indicators, targets, and guidelines/actions/strategies.

A topical overview and summary of an ecosystem component, natural resource, or human activity precedes each table to provide a context for the preferred management strategies which follow.

*Lake residents and users are encouraged to align their actions with provisions in this plan and adopt / promote a stewardship ethic that maintains environmental health in the planning area.*



## Riparian Management

*Riparian areas are the lands adjacent to streams, rivers, lakes and wetlands where the vegetation and soil are strongly influenced by the presence of water. Riparian areas are physically situated between the shore and adjacent uplands, and occupy the floodplain of water bodies. The ROW around Buffalo Lake is predominantly a riparian area.*

*Healthy shorelines and shorelands contain an abundance of native vegetation that act as “living filters” intercepting, absorbing and storing nutrients, sediments and pollutants that are carried in runoff from adjacent lands. Riparian areas also collect and retain surface runoff, which helps recharge groundwater supplies.*

### Riparian Management

Riparian areas are rich in biodiversity and biological productivity. These biologically dynamic areas provide numerous ecological functions (services) and benefits. They act as buffers during periods when water levels in the lake are high. Riparian vegetation also minimizes the effects of shoreline water erosion.

Riparian areas are particularly valuable for wildlife because of the type and quality of habitat that they provide. They also contribute to maintaining fish habitat by providing spawning, rearing and feeding areas for various fish species. Naturally occurring vegetation along lakes contributes to the aesthetic beauty of shorelines.

It is important to maintain the riparian zone around Buffalo Lake in a “healthy” condition. This means that the ecological integrity and function of the riparian zone is maintained so that it can provide a variety of environmental functions which benefit people, plants and animals. Determining if riparian areas are in a “healthy” state requires several factors be examined, including: the amount of soil covered by native vegetation; the amount and kinds of non-native (invasive) plants present; the amount of woody plants present; the utilization of woody plants as browse; how much human activity (disturbance) is present; the amount and nature of any physical alteration that has occurred; and the effects of changes in water levels.

Riparian areas are known to lose their benefits and effectiveness as habitat if they become fragmented by significant human modifications and disturbances. The science of conservation biology has shown that large contiguous habitat areas provide greater benefits to plant and animal species than an equivalent area comprised of several small isolated habitat patches.

## Goal #1: To maintain riparian areas around Buffalo Lake in a 'healthy' condition.

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>I.1 To improve the condition of riparian areas that are not in a "healthy" condition.</p> <p><i>(See also 2.8 for direction on restoring degraded areas)</i></p>	<p>percentage of Buffalo Lake's riparian areas that are in a "healthy" condition</p>	<p>75% of the lake's riparian areas will be classified as "healthy"</p> <p>NOTE: in 2006, only 34% of riparian areas were classified as "healthy"</p> <p>Alberta Sustainable Resource Development (ASRD) to complete site inspections or riparian assessments of known "trouble" spots within 5 years of their identification</p>	<p>Field riparian assessments will confirm whether riparian areas are: healthy; healthy with problems; or unhealthy.</p> <p>ASRD will use shoreline videography obtained in 2005 and 2006 (and in subsequent years) to monitor changing Right-of-Way (ROW) conditions and to identify ROW sections (thought to be "unhealthy" or "healthy with problems") that warrant on-the-ground riparian assessments. <i>(See 2.4 for further direction on obtaining shoreline videography.)</i></p> <p>Records will be maintained of site inspections and riparian assessments. Remedial actions will be identified by ASRD staff for sites in need of restoration.</p>
<p>I.2 To determine if any rare or threatened plant species (plant communities) occur within the planning area and ensure the protection of these.</p>	<p>continuing existence of rare or threatened plant species (plant communities)</p>	<p>document and protect known rare or threatened plant species (plant communities)</p>	<p>Inventories of the ROW will determine the potential for (and as opportunities arise, the location of any) rare/threatened plant species (plant communities).</p> <p>Using existing information and any new information obtained through inventories, studies, and riparian assessment, ASRD will develop (or update) maps which show the location of "rare", sensitive and significant plant communities in the BLISMP planning area. These maps will be shared with appropriate municipalities and developers to assist with planning and in the review of re-zoning and development applications.</p>

## Right-Of-Way Management



### Right-Of-Way Management

In connection with the 1985 Parlby Creek–Buffalo Lake Water Management project, the Government of Alberta purchased a right-of-way (ROW) around Buffalo Lake in the mid 1990's. This water management ROW is composed entirely of public (provincial Crown) land, which extends from the lakeshore to an upslope 'take line' located at 781.2 m (this take line represents the elevation contour associated with a 1 in 100 year flood event at Buffalo Lake). The ROW varies in width from several meters to several hundred meters at its widest point – depending on lake water levels and shoreland topography. The entire ROW has been surveyed, however markers or fencing – used to visually identify the location of the ROW boundary – have not been installed. There are no immediate plans to provide signage to mark the boundaries of the entire ROW.

The ROW surrounding Buffalo Lake:

- is public land, managed in the best interest of all Albertans;
- coincides with the flood plain of Buffalo Lake (these lands would be inundated during a 1 in 100 year flood event);
- comprises a significant portion of the lake's riparian area, which is highly valued wildlife habitat;
- is needed to allow for unrestricted water management operations and access to the lake by government staff;
- is subject to erosion from wave and ice action; and
- has aesthetic value.

Property owners living adjacent to recreational lakes occasionally treat adjoining shorelands as an extension of their lake-side property. Activities often include landowners modifying, beautifying or building on the near shore to increase the benefits and enjoyment they receive from their property and to enhance their lake experience. To prevent unauthorized encroachment on the ROW, protect private property and ensure public safety, the ROW which

surrounds Buffalo Lake must be kept free of obstructions and unauthorized uses, structures and developments. Authorization (written permission) must be obtained from relevant provincial and federal agencies to alter the ROW, build on the ROW or permanently store property on the ROW.

Although focused on water supply reservoirs, Alberta Environment's *Reservoir Lands Guidelines* (November 2005) provides relevant information pertaining to the management of ROW lands around water bodies.

### ***Did You Know?***

*Authorization (written permission) must be obtained from relevant provincial and federal agencies to alter, build on or store property on the Right-of-Way.*



## Right-Of-Way Management

**Goal #2: To allow permitted/compatible activities to occur (with appropriate conditions) on the right-of-way that surrounds Buffalo Lake while maintaining the ecological function and integrity of riparian areas.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
2.1 To keep the ROW free of obstructions and unauthorized structures and uses so that water management, public safety, public enjoyment, riparian habitats, and environmental mitigation programs are not compromised.	number of cases of unauthorized uses and structures on the Right-of-Way (ROW) that are unresolved	<p>provincial agencies will enforce against unauthorized uses and structures on the ROW</p> <p>resolve all cases of unauthorized uses and structures on the ROW</p>	<p>Provincial staff will monitor the planning area's shoreline and ROW activities as routine duties permit. Unauthorized activities on the ROW will be subject to appropriate actions.</p> <p>The storage of non-permanent structures and personal property (e.g., seasonal docks, boat lifts, ice fishing huts, swimming platforms) will not be permitted on the ROW in accordance with provincial policy. ASRD and AENV will, in consultation with municipalities and subdivision associations, explore options and develop guidelines that address the storage of non-permanent structures off the ROW when not in use</p> <p>Any unauthorized, permanent or abandoned ROW structures, site improvements and works that are in place prior to the approval of this plan will be reviewed by provincial agencies in a holistic manner and a decision will be made on what course of action will be taken.</p> <p>An appropriate course of action will be taken if unauthorized structures or improvements are discovered on the ROW. Either:</p> <ul style="list-style-type: none"> <li>• the works will be approved;</li> <li>• conditional approval will be granted for the works; or</li> <li>• the owner will be notified that the existing works need to be removed within a specified time period and the ROW restored to its former natural state, at the expense of the owner of the works.</li> </ul>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>Appropriate education activities and compliance actions will be taken by provincial and federal agencies to address incompatible activities, unauthorized uses/works, and remedial requirements. ROW markers serve a useful function to prevent encroachment on the ROW by adjacent land users and inform lake users of the geographical extent of the ROW. Therefore, markers (supported by signs where necessary) may be considered to delineate the location of the ROW boundary at specific sites, particularly at the following locations:</p> <ul style="list-style-type: none"> <li>• at existing and new subdivision developments</li> <li>• at all formally established public access points</li> <li>• at sites where specific needs have been identified.</li> </ul> <p>All provincially owned (Crown) islands in Buffalo Lake will be retained in their natural state.</p>
<p>2.2 Right-of-way activities, uses, disturbances, works or improvements require appropriate approvals and must be in compliance with any municipal, provincial and federal requirements that may exist, including this plan.</p>	<p>authorized works and activities on the ROW are in conformity with known requirements</p>	<p>efficient review and processing of all submitted applications for ROW works and activities</p> <p>existing requirements and standards for legitimate ROW works and activities are consistently observed and upheld</p>	<p>All permanent structures (e.g., boat launch, fixed dock) on the ROW will require a public lands disposition from ASRD to authorize the intended use.</p> <p>The provincial government’s existing application and referral processes will be used to review requests for works, disturbances, improvements and activities on the ROW. The Buffalo Lake Management Team (BLMT) and municipalities will be notified of new proposals/applications and will be invited to provide feedback on these (see also 13.1 in this regard). Should new dispositions be issued, they will include terms and conditions which ensure that they comply with provisions outlined in this management plan.</p>

## Right-Of-Way Management

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
2.3 Harmful materials – fuel, chemicals (herbicides), deleterious substances – cannot be stored or applied to the ROW.	pollutants entering Buffalo Lake from the ROW	ROW is kept free of all harmful substances and materials	<p>The use of harmful materials or substances on the ROW may be warranted from time to time by government staff or contractors to carry out management activities.</p> <p>Public educational/awareness materials will inform ROW users that harmful and deleterious substances (which are known to diminish water quality) cannot be used or stored on the ROW.</p> <p>Agency staff will monitor the presence of hazardous materials on the ROW as part of their routine duties while in the planning area. AENV and Environment Canada will respond to any information that is received on hazardous materials found on the ROW.</p>
2.4 Monitor ROW disturbances over time.	up-to-date information exists to make informed management decisions or take management actions	obtain new shoreline videography at (minimally) five year intervals	<p>Provincial government agencies will use the 2005 (fall) and 2006 (summer) Buffalo Lake shoreline videography as a benchmark for assessing future shoreline/ROW conditions and riparian health.</p> <p>Public Lands (ASRD) will acquire new videography for applicable sections of Buffalo Lake's shoreline and ROW at regular intervals to assess change.</p> <p>The lakeshore videography method which is described in Mills, B. and Scrimgeour, G. 2004. <i>The Effectiveness of Aerial Videography to Characterize Lakeshore Condition</i>. Data Report (D-2005-017) produced by Alberta Conservation Association, Location, Alberta, Canada. 55 pp. + App. will be used to complete aerial riparian assessments of Buffalo Lake's shorelands.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>Based on the shoreline videography, undertake on-site inspections and detailed assessments at sites where concerns have been identified, where major change has occurred, or where unauthorized works or uses are present.</p> <p>Develop an educational DVD based on shoreline videography, which includes analysis, educational commentary and key messages brochure, for broad distribution by the BLMT to:</p> <ul style="list-style-type: none"> <li>• municipalities and subdivision associations,</li> <li>• adjacent land owners, interest groups, residents and lake users.</li> </ul> <p>Development of the educational DVD will be coordinated by Land Use Operations, ASRD. Funding for this project will be secured from interested parties/partners.</p>
<p>2.5 To allow public beaches while prohibiting the establishment of recreational areas which are treated as exclusive 'private' beaches.</p>	<p>strategic location of public beaches near subdivisions and where high use levels are expected</p>	<p>future beach development will be restricted to locations that are suitable for public beaches and which are ecologically acceptable</p>	<p>Requests for new beach developments, suitably located and appropriately designed and developed, may be considered using the existing application review and referral process.</p> <p>All areas of the ROW, including community beaches, are considered to be public facilities.</p> <p>Beach developments may be accommodated in accordance with guidelines provided for each ROW Management Area (ROWMA).</p> <p>New public beach developments must comply with the BLISMP Management Areas Matrix and conform with any provisions outlined in the granting lease or authorization (e.g., Recreation Lease, Miscellaneous Lease, Temporary Field Authorization).</p>

## Right-Of-Way Management

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
2.6 To minimize the construction of any works on Public land that address flooding or erosion activity.	limited use of control structures on the ROW	the construction of control structures on the ROW to address flooding or erosion activity will be a “last resort” measure	<p>With the exception of the mitigation works berm at Rochon Sands, future works intended to protect property will not be permitted on the ROW. If protection works are required, they should be located on adjacent private land. AENV and ASRD will not provide compensation for damages or offer remedies to persons who are affected by “flooding”, “wave run-up” or “ice shear”.</p> <p>Erosion and flood control works to protect the ROW, adjacent public land and public facilities may be permitted on the ROW under the following circumstances:</p> <ul style="list-style-type: none"> <li>• hard engineered works, including vertical retaining walls, will only be permitted where it can be demonstrated that no practical alternative exists to protect the site. Non-structural alternatives are preferred;</li> <li>• erosion and flood protection works will not unreasonably affect the public’s right to travel along the shores of the lake;</li> <li>• the protection works are to be designed for the wave environment and erosion potential of the site;</li> <li>• municipal infrastructure or commercial works (infrastructure such as entrances to marinas, boat access channels, breakwaters, etc.), or public boat launch facilities must be protected; and</li> <li>• works must meet all municipal, provincial and federal regulations and approvals.</li> </ul>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>2.7 To encourage adjacent land uses along the ROW that mesh with direction contained in this plan.</p> <p><i>See also 13.3 in this regard</i></p>	<p>adjacent land uses are compatible with direction contained in this plan</p>	<p>BLISMP objectives and guidelines are taken into account before land use change is approved or development decisions are made for adjacent private lands by municipalities</p>	<p>The following considerations will be observed in connection with new land uses and developments:</p> <ul style="list-style-type: none"> <li>• developers will be advised of the regulatory agencies that review and approve development plans in the planning area;</li> <li>• proponents must provide detailed information on their intentions for using the ROW and the lake's "wet" area when submitting proposals and development applications (i.e., a proponent's submission must address both private land development and any intentions developer's may have for using public land);</li> <li>• coordinated reviews of proposed developments will be undertaken (see also <i>Section 13.1 in this regard</i>). It is suggested that staff from municipal, provincial and federal levels of government together determine how coordinated reviews will be undertaken;</li> <li>• compliance with development requirements and standards will be monitored and enforced.</li> </ul> <p>Adjacent land uses have the potential to create impacts that could adversely affect the ROW or Buffalo Lake. Therefore adjacent landowners are encouraged to familiarize themselves with the goals, objectives and management provisions in this plan. Should actions on adjacent lands produce unwanted effects in the planning area, agency staff will duly notify appropriate individuals or organizations and explore ways to address these unwanted effects.</p>

## Right-Of-Way Management

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
2.8 To restore disturbed and degraded areas (resulting from human activity) on the ROW as opportunities arise.	absence of unplanned, severely degraded areas on the ROW	prioritized degraded areas will be reclaimed	<p>Using shoreline videography and site inspections, ASRD will develop a prioritized list of degraded areas that require reclamation.</p> <p>Provincial agencies may undertake reclamation work that has been identified on the ROW.</p> <p>The prioritized list of degraded areas will be provided to Fisheries and Oceans Canada. The list could be made available to proponents who need to provide compensation or undertake fish habitat projects – under the federal <i>Fisheries Act</i> – as a result of development projects or construction activity.</p> <p>Selective fencing may be erected along defined stretches of the ROW to address specific management issues or to achieve specific management objectives.</p> <p>The “<i>Fisheries Habitat Compensation Strategy for the Prairies’ Area</i>” (ASRD, 2007) provides information and guidance on compensation activities.</p>
2.9 To manage and, where possible, eradicate restricted and noxious weeds on the ROW.	absence of restricted and noxious weeds in the planning area	timely application of effective treatments to control weeds and invasive plants	<p>Weed control on the ROW will be carried out in accordance with provisions contained in the Weed Control Act and local bylaws.</p> <p>The highest priority for weed control will be the containment and eradication of “restricted” and “noxious” weeds. Secondly, attempts will be made to control and eradicate “nuisance” weeds and invasive plants.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>ASRD staff will work closely with municipal Agriculture Fieldmen to address weed problems.</p> <p>Weed control treatments (using whatever treatment method is deemed to be most suitable and effective) in the planning area will be carried out in accordance with provisions in existing legislation, regulations, and bylaws.</p> <p>Weed problems can be reported to the appropriate authorities by the public. Government staff will be on the lookout for weed infestations and weed proliferation in the course of normal day-to-day activities.</p>
<p>2.10 To have the Government of Alberta purchase private land parcels that have become isolated through the establishment of the ROW.</p>	<p>Government ownership of isolated parcels resulting in contiguous public land units</p>	<p>acquire isolated private land parcels as opportunities arise to eliminate future management issues and simplify shoreland management</p>	<p>Several isolated private land parcels, entirely surrounded by public land, were created when the ROW was established.</p> <p>Land Use Operations ASRD, will request that the province acquire these private land parcels when the first opportunity to do so arises. Consolidating these lands under single ownership will lead to the improved management of Buffalo Lake's shorelands.</p>

## Water Quality and Shoreline Protection



### Water Quality and Shoreline Protection

Buffalo Lake is an aquatic ecosystem that is linked to other aquatic environments. Aquatic ecosystems include rivers, streams, lakes and wetlands, as well as groundwater systems. Aquatic ecosystems provide important ecological services. They are valued for the cultural and scientific benefits they provide. They support a rich diversity of plant and animal life and a variety of human activities, such as fishing and water-based recreation. The Government of Alberta is committed to maintaining healthy aquatic ecosystems within the province through legislation and policies.

#### Shoreline Protection

Water bodies, including associated shorelines, riparian areas and upland drainage areas, play an important role in providing the following environmental functions:

- absorbing, collecting and storing water to minimize flooding;
- replenishing groundwater to maintain water tables for wells;
- providing a supply of water for household and livestock use;
- conserving species, landscapes and habitats by providing food, homes and nurseries for fish and wildlife;
- acting as carbon sinks by storing carbon from the atmosphere;
- serving as microclimates (i.e., local water cycle);
- helping to filter out sediment, absorb nutrients, remove chemical residues and treat wastewater;
- controlling the spread of salts into croplands;
- providing a source of high quality forage; and
- providing a vital resource for sustaining human life.

Unhealthy shorelines, riparian areas and littoral zones do not perform their normal ecological functions effectively. Maintaining these natural features is

critical to the overall long term health of Buffalo Lake, to ensuring water quality, and providing ongoing benefits to lake users.

The BLISMP planning area consists of a “dry” area and a “wet” area. The “dry” area refers to the strip of public land, i.e., the water management right-of-way, that surrounds Buffalo Lake (and coincides with the lake’s 1:100 year flood zone). The “wet” area includes the shoreline of Buffalo Lake, Bashaw (Jarvis) Bay, and Parlby (Mirror) Bay and the water extending into the lake from the shoreline to a distance of 100 meters from the bank (this represents the initial portion of the lake’s littoral zone).

The “wet” area serves numerous functions, providing important ecological services within the lake’s aquatic environment. It is sought out by recreational users for swimming and other activities, and it accommodates various in-lake facilities. Buffalo Lake’s littoral zone contains emergent vegetation, which is important to various fish and bird species. Emergent vegetation which has been mapped in the lake’s littoral zone has been placed under a protective notation to conserve these aquatic plants. Protective Notations (PNTs) are an administrative tool used by provincial agencies to flag an interest (or raise a management concern) pertaining to a defined species, land feature or geographical area on public land. PNTs are registered in a land management data system to inform provincial agencies of any specific management requirements that need to be observed for the species, landform or geographical area in question.

Much of Buffalo Lake’s shoreline is still in its natural state. Naturally occurring sandy shorelines are located along the eastern and south-eastern shorelines of the lake. At present three modest marinas exist, which are located at Rochon Sands, Pelican Point and Ol’ MacDonald’s Resort. Several boat launches also exist. Various seasonal structures (e.g., docks/piers, boat lifts, shelters, swimming rafts) are placed in Buffalo Lake to facilitate recreational activities. “By policy, Sustainable Resource Development does not currently require an approval for the placement of docks and associated mooring



## Water Quality and Shoreline Protection

### Did You Know?

*All temporary structures (e.g., ice fishing shacks, docks, boat lifts, swimming rafts) must be completely removed from the lake and public land, after their seasonal use, and stored on private land.*

facilities on the bed and shore of a lake or river, provided that their use is reasonable and that they are temporary structures for seasonal use. At the end of the recreational season, all such structures must be completely removed from public land and stored on private property over the winter.” For more information visit [www.srd.alberta.ca](http://www.srd.alberta.ca). Click on Managing Programs> Lands>Shorelands>Approvals & Regulatory Requirements.

### Water Quality

In May 2006 AENV released a water quality report for Buffalo Lake: “*Parlby Creek – Buffalo Lake Water Management Project - Water Quality Update: 1999-2002*”. This report summarizes water quality conditions in Buffalo Lake from 1996-2002, focusing primarily on major ions (an indicator of salinity) and total phosphorus levels, which are of concern to residents around Buffalo Lake. Enhanced seasonal water inflows from Alberta Environment’s diversion project, which create a “flushing effect”, were found to have generally improved water quality conditions in Alix Lake and Parlby Bay, but did not appear to have a significant impact on Buffalo Lake.

The report also notes salinity levels have increased in Buffalo Lake. Increased salinity levels are attributed primarily to ongoing loadings from groundwater and, to a much lesser extent, from water diversions. These factors, combined with ongoing evaporation of lake water and lack of an active outflow, suggest that lake salinity levels will continue to increase over time.

Chlorophyll *a*, an indicator of algal biomass, was also found to respond more to phosphorus concentration than to salinity. While average phosphorus concentration in Secondary and Main Bay were higher in the initial diversion years, subsequent values fell within historical values, as did chlorophyll *a* levels, though mean annual chlorophyll *a* declined in Secondary Bay from 1997 to 2002.

Total phosphorus contributed by the water diversions to the Main Bay of Buffalo Lake accounted for less than 5% of the total load. The major source of phosphorus was attributed to runoff from the surrounding watershed and internal loading from sediments.

The surface water quality and groundwater of Buffalo Lake was monitored from 1980 to 1983 as part of Alberta Environment's investigation of the feasibility of lake level stabilization. The lake's water quality has been monitored jointly since 1984 by Alberta Environment and Alberta Recreation and Parks, and in 1983, 1986 and 1987 by the University of Alberta as part of a program to determine factors controlling algal growth in saline lakes.

Water quality varies within the lake. Parlby Bay is strongly influenced by inflowing Parlby Creek while Main Bay is more similar to the groundwater in the area. Water in Secondary Bay is also similar to the groundwater, but is somewhat diluted by Parlby Creek inflow.

In winter, dissolved oxygen concentrations in Main Bay are high (over 6 mg/L) down to a depth of 4 m. Below this, there is some oxygen depletion but anoxic conditions have



not been found. Anoxic waters are areas of fresh water that are depleted of dissolved oxygen. This condition is generally found in areas that have restricted water exchange.

During the winter at Secondary Bay, dissolved oxygen concentrations are surprisingly high and there is no evidence of oxygen depletion near the bottom. The low oxygen depletion rates occurring within Buffalo are in contrast to the rapid consumption of dissolved oxygen in other shallow but more productive lakes on the prairies.

#### Reference:

Atlas of Alberta Lakes - Buffalo Lake  
<http://sunsite.ualberta.ca/Projects/AlbertaLakes>

Cows and Fish ([www.cowsandfish.org](http://www.cowsandfish.org)) -  
Lakes and Wetlands Fact Sheet  
[www.cowsandfish.org/pdfs/lakes\\_wetlands.pdf](http://www.cowsandfish.org/pdfs/lakes_wetlands.pdf)

## Did You Know?



Buffalo Lake is mesotrophic lake with moderate productivity. The water in Buffalo Lake is moderately saline (its dominant ions are sodium, sulphate and bicarbonate). Generally the lake is quite clear, but algae blooms may occur in late summer, and often affect the western half of the lake. Because Buffalo Lake is shallow and exposed to winds water mixes well vertically and therefore does not have varying temperatures at different depths within the lake. Main Bay, however, may have brief periods of temperature changes at varying depths during prolonged calm weather. Secondary Bay is well-mixed throughout the open-water season.

The salinity of Buffalo Lake is not much different than it was 3,000 years ago! A 1982 study examined a sediment core containing pollen grains deposited during the period from 7,400 years ago to 1983. Pollen deposited within the last 3,000 years indicated that the water has been less saline for the last 3,000 years than it was between 7,400 and 3,000 years.

*In prairie and central Alberta, most lakes fall into the eutrophic or hypereutrophic (very productive) category.*

# Alberta Lake Classification

Lakes are classified by how many nutrients are present in them:

- **Eutrophic Lakes** are high in nutrients and are often geologically older and therefore have had more time to accumulate nutrients, or they are at the end of a watershed, where nutrients have accumulated in the basin, like a bathtub without a drain. Eutrophic lakes are highly productive and subject to algal blooms resulting in poor water quality.
- **Oligotrophic Lakes** are low in nutrients and are often relatively young geologically. Typically found higher up in the watershed, such as headwater lakes in the mountains, these lakes are often deep and cold, which reduces productivity and plant growth. With low algal production, the water remains clear and provides high drinking-water quality.
- **Mesotrophic Lakes** are in between Eutrophic and Oligotrophic lakes and have moderate productivity. Shorelines often have scattered sections of emergent and submerged aquatic plants.

## Water Quality and Shoreline Protection

**Goal #3: To maintain or enhance Buffalo Lake’s water quality. (It is essential that the lake’s littoral zone, the shoreline and riparian areas – and the ecological services they provide – are not significantly impacted if water quality is to be maintained.)**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
3.1 Maintain water quality and natural water circulation patterns in Buffalo Lake’s immediate littoral zone (“wet” area).	changes in lake water quality	no deterioration of water quality in Buffalo Lake as a result of human activity in the planning area	<p>Monitor and report on water quality in Buffalo Lake as identified in annual work plans.</p> <p>Updated water quality data for Buffalo Lake will be provided to the Buffalo Lake Management Team (BLMT) when collected.</p> <p>Known or potential contaminant sources that could enter the Right-of-Way (ROW) or Buffalo Lake, which are brought to the attention of the Government of Alberta and determined to be detrimental, will be monitored and remediated as required.</p> <p>Recommend strategies to minimize nutrient and sediment inputs from adjacent developments and land uses (upslope from the ROW).</p> <p>Inform developers and operators of the reporting procedure for notifying government officials of any incidents involving deleterious substances.</p> <p>Prevent or mitigate any adverse affects on the fishery from soil disturbances or the presence of deleterious substances on the ROW. Mitigation techniques that will be employed by proponents must be identified prior to construction activity or before commencing with a land use that could be harmful to the fishery.</p>

## Water Quality and Shoreline Protection

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
3.2 Lake-based structures and lakebed alterations must comply with existing policies and requirements.	authorized works and activities in the lake are in conformity with all known requirements	<p>efficient review and processing of all submitted applications for lake-based works and activities</p> <p>existing requirements and standards for legitimate lake-based works and activities are consistently observed and upheld</p>	<p>The provincial and federal government's existing application and referral processes will be used to review requests for new in-lake structures and lakebed alterations. The BLMT will be notified of new proposals and applications and will be invited to submit feedback on these. (See also 13.1 in this regard.)</p> <p>All permanent in-lake structures will require a public lands disposition from ASRD. Thereafter, the developer is responsible for obtaining all necessary approvals before commencing with construction or disturbance activities.</p> <p>Temporary, non-commercial structures are permitted in Buffalo Lake as outlined in the <i>Public Lands Act</i> and the <i>Water Act</i>. These structures cannot be stored on the ROW when not in use. Permits may be required from Transport Canada.</p> <p>Aquatic vegetation cutting activities will be managed in accordance with the provincial-federal working agreement: "<i>Guidelines for Controlling Aquatic Vegetation in Alberta Lakes</i>". Approvals are required from Alberta Environment (AENV), Alberta Sustainable Resource Development (ASRD) and Fisheries and Oceans Canada before commencing with aquatic vegetation cutting or removal. The existing process for obtaining authorization to remove aquatic vegetation will be followed.</p> <p>To protect fish spawning areas and habitat, Fish and Wildlife Division (ASRD) will establish time periods during which aquatic vegetation removal is not permitted.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>3.3 New marina<sup>1</sup> developments that are in the public interest may be considered if environmental impacts associated with their construction and design can be minimized.</p>	<p>marina development impacts are deemed acceptable by resource management agencies</p>	<p>efficient review and processing of all submitted applications for new marinas</p> <p>appropriate marina design and mitigation actions during construction will reduce the footprint and impacts of new marinas</p>	<p>New marina developments will be considered in the following order of preference:</p> <ul style="list-style-type: none"> <li>• temporary off-shore marinas;</li> <li>• inland marinas, off the ROW;</li> <li>• permanent off-shore marinas.</li> </ul> <p>An excavated boat channel may be considered across the ROW to service an inland marina. In the event of channel construction, the proponent must ensure continuous un-obstructed public movement along the ROW.</p> <p>Necessary approvals must be obtained before commencing with any disturbance, construction or dredging operation associated with a new marina.</p>

<sup>1</sup> For the purposes of this plan, a marina is an inland basin or offshore facility for mooring watercraft.

## Stabilization of Buffalo Lake Water Levels

Buffalo Lake is a “managed lake” which means its water levels and shorelands are controlled by provincial government policies that guide the operation of the Parlby Creek – Buffalo Lake Water Management System. These policies and plans have been created to ensure numerous benefits to local residents, adjacent landowners and lake users as well as to maintain the important role the lake plays in the ecology of the region, now and in the future.

Water from the Red Deer River is diverted to Buffalo Lake to restore historical water levels which are beneficial to shoreland and fish habitat and to support different recreational activities. Water diversions occur annually between May 1st and October 31st. Operations continue until the water level in Buffalo Lake reaches the Full Supply Level (FSL) or a shoreland contour elevation of 780.85 metres. Once this maximum elevation has been reached, pumping stops until lake levels drop to 780.60 metres. This fluctuation of 25 centimetres (or 10 inches) is intended to encourage a diversity of aquatic plant growth along the shoreline of Buffalo Lake that enhances fish and wildlife



habitat and helps maintain the water quality of the lake. The pumping program is resumed if the lake level drops lower than the established shoreland contour elevation (780.60 metres). Water diversion from the Red Deer River may also occur when the lake is at Full Supply Level (780.85 metres) in order to meet needs for community water supply, back flooding, or fish and wildlife benefits along the Parlby Creek component of the water management system.

*“Since 1997, annual diversion volumes have ranged from 6.8 million m<sup>3</sup> (2001) to 15.4 million m<sup>3</sup> (2000). The annual natural surface inflow (March - October) was more than twice the diversion volume in 1997 and 1999, but less than or near diversion volume in 1998, 2000, and 2001, because runoff volumes were lower in these years.”* Source: Parlby Creek - Buffalo Lake Water Management Project - Water Quality Update: 1999-2002 (AENV, September 2004)

# What is Fish Habitat?

Fish Habitat is defined as: "spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes."

Aquatic vegetation along lake shorelines is important for maintaining healthy lake ecosystems. This "littoral zone" vegetation includes submerged plants (plants that are primarily underwater although some leaves may float on the surface), and emergent plants (plant roots are beneath the water, but most of their foliage is on or above the water surface). Aquatic vegetation provides habitat for fish spawning, nesting habitat for birds, rearing sites for young fish and wildlife, and protects shorelines from wave and wind erosion. It enhances the aesthetic value of the lake and performs many important biological functions that benefit water and land areas, including filtering runoff water before it enters the lake.



Many of the ways we use shorelands around Buffalo Lake can damage important habitat by reducing the amount and quality of fish spawning and rearing sites. Altering shorelines by removing vegetation and creating sand beaches and swimming areas can also contribute to declining water quality. Water contamination from fertilizers, runoff and seepage from septic fields, stormwater runoff, road contaminants and salts impact water quality and can cause fish kills. For example, excess nutrients from fertilizers and septic fields can contribute to algal blooms in the lake. When the algae die, microorganisms break down their organic material – a process that requires oxygen. The reduced amount of oxygen in the lake can result in insufficient oxygen being available for aquatic organisms, including fish. This lack of oxygen in the water is what causes suffocation or the "summer kill" of fish.

## Fisheries Management



### Fisheries Management

Buffalo Lake provides a regionally important sport fishery for Northern Pike. The high alkalinity of the main basin of the lake prevents Pike and White Sucker (an important food item for the Pike) from spawning in the main basin. Spawning occurs within the areas influenced by fresher inflows (i.e., Secondary Bay and Parlby Bay) and in Spotted Lake. Buffalo Lake contains Burbot and several species of small non-sport fish that rely on shoreline habitat areas. These small non-sport fish provide an important food source for other fish, mammals and birds.

## Goal #4: To return native fish populations in Buffalo Lake to their former productive capacity.

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
4.1 Maintain aquatic vegetation and natural shoreline conditions in Parlyby Bay, the Narrows, and Secondary Bay for Northern Pike spawning.	<p>quantity and quality of aquatic vegetation and shorelines for Northern Pike spawning</p> <p>avoidance of high quality fish habitat if new access points or shoreline developments are established</p>	<p>no decline in the quantity and quality of aquatic vegetation and shorelines for northern pike spawning</p> <p>new access or beach development will occur in areas of low fish habitat quality and will have a small footprint</p> <p>restore disturbed fish habitat areas as opportunities arise</p>	<p>No new disturbances (access development or beach development) will be permitted in areas having high quality habitat for Northern Pike.</p> <p>Private beaches, boat launches and access points are prohibited in the planning area. Only new access points, boat launches and beaches that are intended for wide public use will be considered.</p> <p>Educate adjacent landowners and lake users on the importance of aquatic vegetation for fish, wildlife, biodiversity and water quality.</p> <p>Alberta Sustainable Resource Development (ASRD) will develop a monitoring and compliance program to ensure that relevant provincial legislation (<i>Water Act</i>, <i>Public Lands Act</i>) and the <i>Fisheries Act</i> (Canada) are complied with.</p> <p>When possible and as opportunities arise, developers are to offset any disturbance resulting from new access and beach development by rehabilitating previously disturbed areas. The restoration of disturbed habitat could occur in connection with compensation required under the <i>Fisheries Act</i> (Canada).</p>

## Fisheries Management

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
4.2 Maintain aquatic vegetation in Buffalo Lake for the rearing and feeding of all fish species.	<p>the quantity and quality of aquatic vegetation and shorelines for fish rearing and feeding</p> <p>avoidance of high quality fish habitat if new access points or shoreline developments are established</p>	<p>no decline in the quantity and quality of fish habitat and natural shorelines to optimize fish production</p> <p>new access or beach development will occur in areas of low fish habitat quality and have a small footprint</p>	<p>Access or beach development will not be permitted in areas having high quality fish habitat.</p> <p>“Private” beaches, boat launches and access points are prohibited in the planning area. New access points, boat launches and beaches that are intended for public use will be considered.</p> <p>Educate adjacent landowners and lake users on the importance of aquatic vegetation for fish, wildlife, biodiversity and water quality.</p> <p>ASRD will develop a monitoring and compliance program to ensure that relevant provincial legislation (<i>Water Act, Public Lands Act</i>) and the <i>Fisheries Act</i> (Canada) are complied with.</p> <p>When possible and as opportunities arise, developers are to offset any disturbance resulting from new access and beach development by rehabilitating previously disturbed areas. The restoration of disturbed habitat could occur in connection with compensation required under the <i>Fisheries Act</i> (Canada).</p>
4.3 Maintain the riparian area around Buffalo Lake to protect the lake’s aquatic environment	amount of shoreline/riparian areas that are in a “healthy” condition	75 per cent of the lake’s riparian areas will be classified as “healthy” NOTE: in 2006, only 34 per cent of riparian areas were classified as “healthy”	The riparian assessment methodology and scoring/rating system developed by Alberta’s Cows and Fish program – as described in the “ <i>Riparian Health Assessments for Lakes, Sloughs and Wetlands</i> ” (2004) – will be followed to determine whether riparian areas are healthy, healthy with problems, or unhealthy.

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
		<p>restore riparian areas classified as “moderately” or “highly” impaired to a “healthy” condition unless the cause of the disturbance (e.g., access point, beach) has been approved</p>	<p>The impacts of livestock grazing within the ROW will need to be reduced if targets in 4.3 are to be achieved.</p> <p>Restrict vehicle and off-highway vehicle (OHV) access in the planning area except:</p> <ul style="list-style-type: none"> <li>• at designated lake access points, and</li> <li>• where OHV use is permitted in Right-of-Way Management Areas (ROWMAs).</li> </ul> <p>Use the videography technique adopted in 2006 to monitor riparian health around Buffalo Lake in the future. New videography should be obtained at least every five years. (See also 2.4 in this regard).</p>
<p>4.4 Provide ongoing opportunities for recreational fishing at Buffalo Lake.</p>	<p>sustainable native fish populations</p>	<p>fish regulations that ensure ongoing viable populations of all native fish species will be adopted</p>	<p>Monitor fish populations in Buffalo Lake at least every five years.</p> <p>Restore the lake’s Northern Pike population to the ‘stable’ classification (as defined in <i>Alberta’s Northern Pike Management and Recovery Plan</i>, Barry, 1999) by 2015.</p>
<p>4.5 Beds of aquatic vegetation that provide high quality fish habitat will be identified and mapped.</p>	<p>availability of aquatic fish vegetation maps showing the location of high quality habitat</p>	<p>aquatic vegetation maps showing the location of high quality fish habitat will be completed by 2008</p>	<p>Review maps every 5-10 years to monitor changes. Revisions will be completed on an as-needed basis.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>4.6 Ensure that fish species and habitat issues are addressed at the earliest stage when rezoning and development proposals/ applications are submitted for review.</p>	<p>timely notification and review of rezoning and development applications by the Buffalo Lake Management Team (BLMT) and appropriate provincial and federal government agencies</p>	<p>the BLMT and government agencies responsible for bed and shore, public lands, fish and wildlife, water resources, parks and recreation, . . . are notified of any rezoning or development applications that may affect the Right-of-Way (ROW) and natural resources well before approvals are issued and development commences</p> <p>developers are made aware of the issues and concerns raised by municipal, provincial and federal government agencies and of the policies, legislation and other requirements that will need to be observed before proceeding with any development</p>	<p>Developers must submit project design concepts, rezoning requests, and development applications at the earliest possible stage in the application review process (<i>see also 13.1 and 13.2 in this regard</i>).</p> <p>Developers should contact government agencies to discuss their development proposals and any interests they have in using the lake or ROW before submitting a formal development application to the municipality.</p> <p>It is recommended that municipalities promptly forward subdivision design concepts, rezoning requests and development applications to the BLMT, Land Use Operations – ASRD, and Water Management Operations – AENV.</p> <p>The “lead” provincial agency will promptly circulate development proposals and applications to other interested and affected (provincial and federal) agencies so that timely comments can be provided (<i>see also 13.1 and 13.2 in this regard</i>).</p> <p>The existing provincial referral system will be followed when reviewing new proposals and applications.</p>

Taking care of fish habitat is about keeping fish populations healthy for our use and enjoyment for current and future generations. Fisheries stewardship includes taking actions to:

- Prevent habitat damage by avoiding activities that cause negative impacts to shorelands, riparian areas and lake environments; and,
- Enhancing and restoring fish habitat by improving shoreland stewardship actions.

Lake residents and users are encouraged to learn more about:

- local fish habitat management;
- taking action to improve or protect fish habitat;
- safely landing, handling and releasing fish;
- participating in local presentations and education opportunities; and
- continuing to be involved in fish habitat management, policy development, and other shoreland initiatives at Buffalo Lake.

## What You Can Do To Help Keep Fish In Our Future



### Did you Know?

Early reports of northern pike in Buffalo Lake date back to 1793.

Northern Pike provide a locally important sport fishery. The Narrows is the most popular area for angling.

Buffalo Lake supports only four species of fish: Northern Pike, Burbot, White Sucker and Brook Stickleback. All of these species are native to the lake and are tolerant of high salinity and alkalinity. Fish and Wildlife Division stocked the lake with yellow perch in the 1950s and with walleye as eyed-eggs in 1960; neither species survived.

Buffalo Lake Fisheries Resource Map and Bathymetry Map are available at: [www.srd.alberta.ca](http://www.srd.alberta.ca/Managing%20Programs/Fish%20&%20Wildlife%20Management/Fisheries%20Management/Prairies%20Area%20Fisheries%20Management)> Managing Programs>Fish & Wildlife Management> Fisheries Management>Prairies Area Fisheries Management

[www.srd.alberta.ca](http://www.srd.alberta.ca/Maps,%20Forms%20&%20Publications/Maps/Prairies%20Area%20Bathymetry%20(Depth)%20Maps)>Maps, Forms & Publications>Maps>Prairies Area Bathymetry (Depth) Maps

Reference:

Atlas of Alberta Lakes

<http://sunsite.ualberta.ca/Projects/AlbertaLakes/view/?region=South%20Saskatchewan%20Region&basin=Red%20Deer%20River%20Basin&lake=Buffalo%20Lake&number=99&page=Biological>

## Wildlife Management



### Wildlife Management

Buffalo Lake is situated within the Central Flyway for waterfowl. Numerous species of waterfowl and shorebirds stage on the lake during the spring and fall migrations. Wildlife and bird viewing tends to be quite limited from the shore of Buffalo Lake. The best way to view many wildlife species is from quiet watercraft on the lake. To provide sanctuary during the fall migration, waterfowl hunting is not permitted on the lake or within 0.8 km of the lake until November 1st (one month after the start of the regular hunting season).

Buffalo Lake is the most important lake in Central Alberta for colonial nesting birds. Over a dozen species of colonial nesting birds including: American white pelicans, double-crested cormorants, black-crowned night herons, Forster's terns, black terns, common terns, great blue herons, California gulls, ring-billed gulls, Franklin's gulls, eared grebes, western grebe and black-crowned night heron. Numerous duck, shorebird, rail, loon, grebe and songbird species are also found on the lake. The now endangered piping plover once nested on rocky shoreline habitats at Buffalo Lake when the lake had naturally fluctuating water levels.

At one time or another virtually all of the mentioned bird species use emergent vegetation – found in shallow water along shorelines – for nesting, rearing, feeding, loafing, escape or thermal cover. A large number of other wildlife species such as aquatic and terrestrial invertebrates, amphibians and small and large mammals also depend on emergent vegetation at some point in their life cycle.

To offset impacts and losses to fish and wildlife habitat associated with the Parly Creek – Buffalo Lake Water Management project, a number of mitigation actions and projects have been undertaken around the lake. Several environmentally significant areas (ESAs) have been established through the 1997 *Buffalo Lake Inter-municipal Development Plan* (page 25) to achieve the following stated objectives:

- *“To preserve and enhance the natural environment, wildlife and fish habitat through the management of any activities which contribute to environmental degradation and watershed and lake contamination;*
- *To designate key fish and wildlife habitat areas for protection.*
- *To restrict recreational activities which could disturb natural areas, particularly during critical periods;*
- *To ensure future development or recreational activity is environmentally responsible;*
- *To promote the control of activities which contribute to environmental degradation; and*
- *To increase public awareness, education, and appreciation for the environment.”*

High priority fish and wildlife habitat will again be identified in the revised *Buffalo Lake Inter-municipal Development Plan*, which is currently under development.

General information on fish and wildlife resources in the planning area is shown on Map 2 – Fish and Wildlife Theme Map (page 70).

### **Did You Know?**

*To provide sanctuary during the fall migration, waterfowl hunting is not permitted on Buffalo Lake, or within 0.8 km of the lake, until November 1st.*

*The now endangered piping plover once nested on shoreline habitats at Buffalo Lake when the lake had naturally fluctuating water levels.*

## Wildlife Management

**Goal #5: To maintain a diversity of native wildlife species which depend on Buffalo Lake, Bashaw Bay and Parlby Bay – and their associated shorelands – at sustainable population levels.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
5.1 Protect and where necessary restore the full range of natural habitat types utilized by wildlife (for breeding, nesting, foraging, shelter and hiding) that are associated with the islands, riparian areas and the littoral zone of the planning area.	<p>the full range of natural habitats in the planning area are not lost or substantially compromised through human activity</p> <p>establishment of seasonal wildlife sanctuaries</p>	<p>maintain the health and integrity of the full range of wildlife habitat types (present in 2007) while allowing human activities and development to proceed in accordance with provisions identified in this plan.</p> <p>75 per cent of the lake's riparian areas will be classified as "healthy" NOTE: In 2006, only 34 per cent of riparian areas were classified as "healthy"</p> <p>commence with the establishment of seasonal wildlife sanctuaries as directed by ASRD</p>	<p>Through education and legislation, ensure that the indiscriminate removal of emergent vegetation is halted. Vegetation removal (in both the "wet" and "dry" area) can only occur with proper authorization from Public Lands, Alberta Sustainable Resource Development (ASRD).</p> <p>"Private" beaches, boat launches and access points are prohibited in the planning area. Only new access points, boat launches and beaches that are intended for public use will be considered.</p> <p>The watering of cattle in the lake will be phased out. Stock producers will be encouraged to water their cattle using "off lake" watering systems.</p> <p>Through education, legislation and enforcement, recreational off-highway vehicle (OHV) activity will be managed in each Right-of-Way Management Area (ROWMA) in accordance with the "Matrix of Compatible Uses/Activities".</p> <p>ASRD's seasonal Lake Guardian will educate recreational users and cottagers about BLISMP goals and objectives within the planning area. The Guardian will also monitor activities and disturbances in the "wet" and "dry" areas.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>New aerial videography will be acquired to record changes in riparian areas and the immediate littoral area of the lake. (see also 2.4 in this regard).</p> <p>Based on the findings of surveys, studies and monitoring activities, SRD will establish seasonal wildlife sanctuaries on public land around the shoreline of Buffalo Lake to protect high value habitat areas that are repeatedly used by bird species of special interest or concern. Public use of wildlife sanctuaries will be controlled through access restrictions to minimize impacts and disturbances to wildlife and habitats.</p>
<p>5.2 Protect and conserve regionally significant bird species such as Forster's tern, western grebe, black-crowned night heron, great blue heron and any species that are considered at risk.</p>	<p>all species that presently use the lake for breeding, nesting, feeding, loafing, shelter and predator avoidance will not be displaced or lost through human activity</p>	<p>maintain all regionally significant bird species that presently utilize the lake as identified in Prescott, D.R.C., and Stevens. 2007. Bird Populations on the Shoreline of Buffalo Lake: Identification of Priority Area for Conservation. Alberta Sustainable Resource Development, Fish and Wildlife Division, Alberta Species At Risk Report No 115, Edmonton, AB. 27 pp.</p>	<p>Fish and Wildlife Division, ASRD will map and designate important colonial nesting areas as "seasonal sanctuaries" under the <i>Wildlife Act</i>. Timing restrictions for human activity will be imposed and posted for seasonal sanctuaries. NOTE: fluctuating water levels will, in any given year, influence which areas become seasonal sanctuaries.</p> <p>Limit the distances that motorized watercraft can approach emergent vegetation and islands in accordance with the <i>Wildlife Act</i> to minimize disturbance to nesting birds. Relevant provisions in the Act will be enforced as appropriate.</p> <p>Through the establishment of "Protective Notations" and the enforcement of appropriate provincial and federal legislation (i.e., <i>Public Lands Act</i>, <i>Water Act</i>, <i>Fisheries Act</i> – Canada), the amount of emergent vegetation that is removed from the lake will be limited.</p>

## Wildlife Management

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>Inventories (new and updated) will be carried out to evaluate bird population levels and species diversity.</p> <p>Raise public awareness of the bird species that frequent Buffalo Lake and the unique management challenges associated with each species.</p>
<p>5.3 If future lake levels allow, protect and conserve historic piping plover habitat in anticipation of the plover's return to nest along Buffalo Lake.</p>	<p>piping plovers are able to nest and raise their young in the absence of intrusive human activity</p>	<p>protect historic piping plover habitat (NOTE: should future lake levels change, historic plover habitat may again be used by piping plovers)</p>	<p>Apply "Protective Notations" to historic piping plover nesting areas.</p> <p>Use fencing and other management tools to minimize human and cattle use of historic piping plover habitat.</p> <p>Sign historic piping plover nesting areas to make the public aware of:</p> <ul style="list-style-type: none"> <li>• the plover's potential return in the future;</li> <li>• the sensitivity of the species to disturbance;</li> <li>• the endangered status of the species; and</li> <li>• specific habitat conditions required by the species.</li> </ul> <p>If conditions allow, enhance the nesting habitat of piping plovers by depositing gravels, through vegetation manipulation, etc.</p>
<p>5.4 Ensure that wildlife species and habitat issues are addressed at the earliest stage when rezoning and development proposals/ applications are submitted for review.</p>	<p>timely notification and review of rezoning and development applications by the Buffalo Lake Management Team (BLMT) and appropriate provincial and federal government agencies</p>	<p>the BLMT and government agencies responsible for bed and shore, public lands, fish and wildlife, water resources, parks and recreation are notified of any rezoning or development applications that may affect the ROW and natural resources well before approvals are issued and any development commences Developers are made aware</p>	<p>Developers must submit project design concepts, rezoning requests, and development applications at the earliest possible stage in the application review process (<i>see also 13.1 and 13.2 in this regard</i>).</p> <p>Developers should contact government agencies to discuss their development proposals and any interests they have in using the lake or ROW before submitting a formal development application to the municipality.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
		<p>of any concerns raised by municipal, provincial and federal government agencies and of the policies, legislation and other requirements that will need to be observed before proceeding with any development</p>	<p>It is recommended that municipalities promptly forward subdivision design concepts, rezoning requests and development applications to the BLMT, Land Use Operations – ASRD, and Water Management Operations – AENV.</p> <p>The ‘lead’ provincial agency will promptly circulate development proposals and applications to other interested and affected (provincial and federal) agencies so that timely comments can be provided (see also 13.1 and 13.2 in this regard).</p> <p>The existing provincial referral system will be followed when reviewing new proposals and applications.</p>
<p>5.5 Promote an appreciation for and educate the public about the wildlife that frequents Buffalo Lake and its environs.</p>	<p>existence of public awareness of the rich and diverse wildlife that use the lake and the importance of maintaining healthy habitat to support wildlife</p> <p>presence of community-based stewardship groups that promote biodiversity</p>	<p>changed behaviors and attitudes are detected among residents and lake users in response to awareness initiatives</p> <p>an active lake stewardship group that is well known to residents and lake users</p>	<p>Employ various media (Internet, literature, presentations, nature walks, etc) to raise public awareness. Communications should be focused at strategic locations that are frequented by a large percentage of lake users such as summer villages, subdivisions, beaches, large docks, campgrounds and picnic areas.</p> <p>Information regarding wildlife appreciation/education can be disseminated by the seasonal Lake Guardian through interactions with lake residents and recreational users.</p> <p>Wildlife viewing initiatives may be undertaken by local interest groups/clubs.</p>

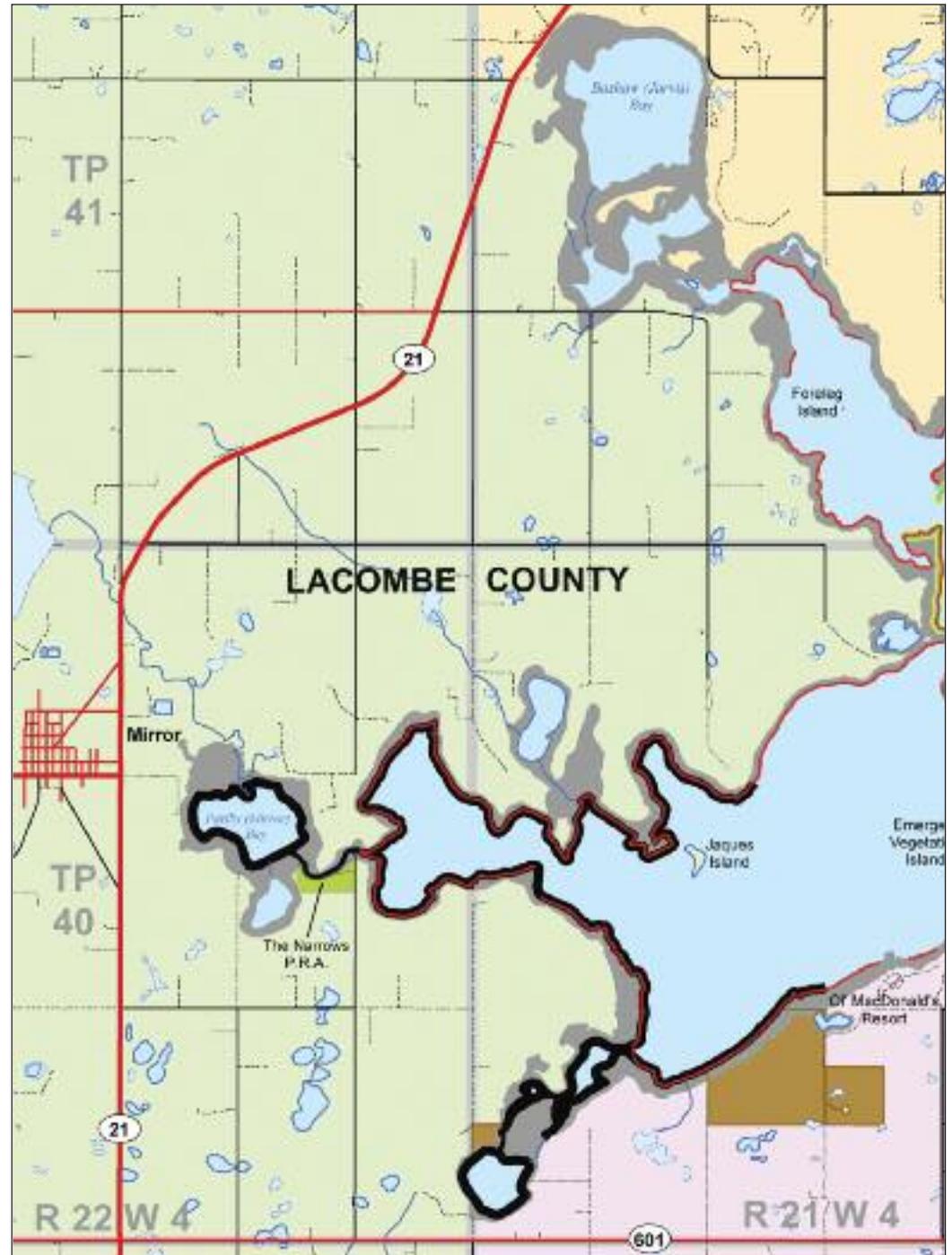
## Wildlife Management

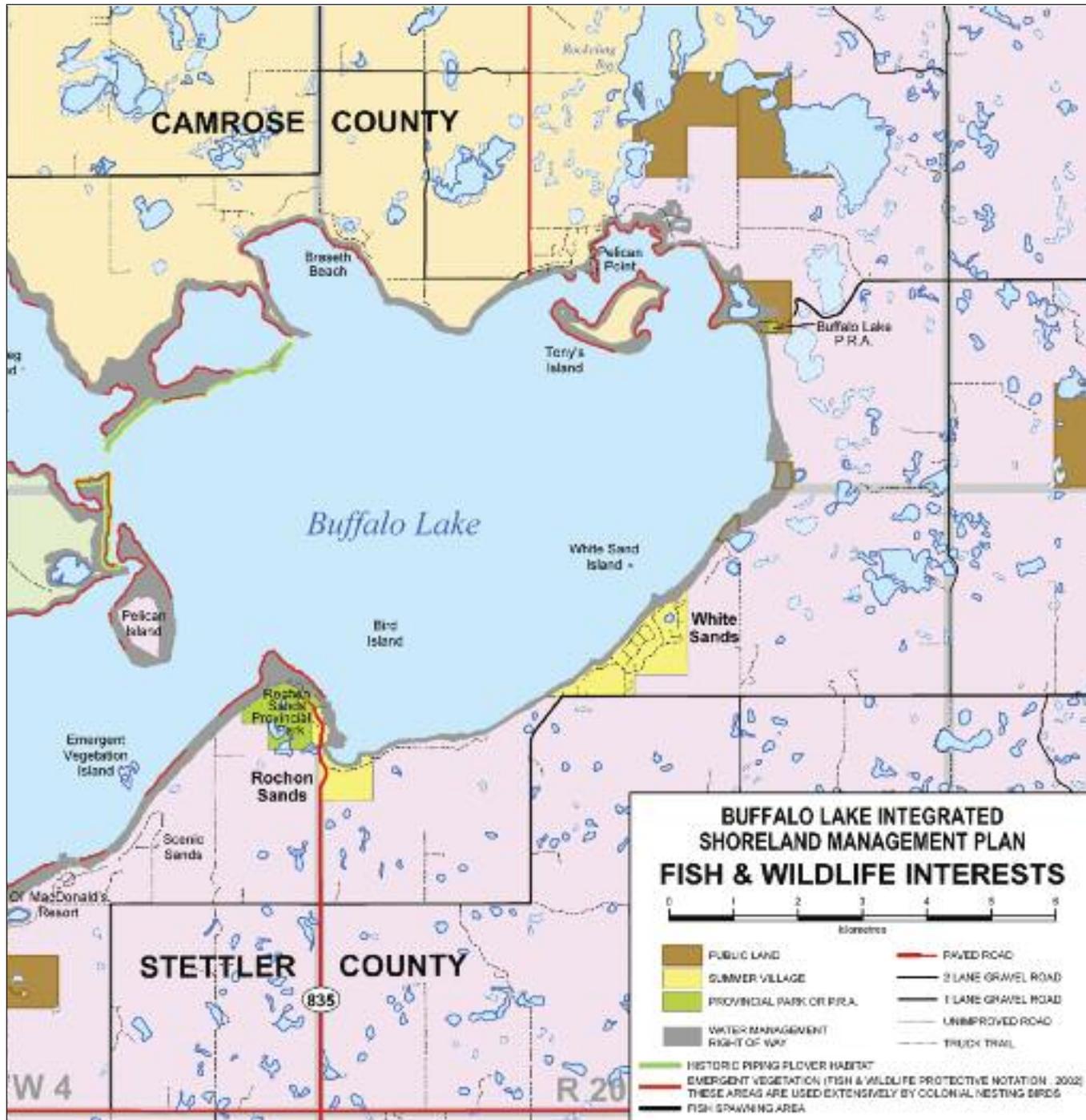
Objectives	Indicators	Targets	Guidelines / Actions / Strategies
5.6 Fill information gaps pertaining to wildlife species and their habitats at Buffalo Lake through studies and inventories.	wildlife managers have up-to-date and relevant information on the wildlife that use the lake (and associated bays), spring through fall, and the habitat they frequent protection of	good information exists on wildlife species and their habitats within the riparian and littoral areas of the lake and associated bays	<p>Fish and Wildlife, ASRD will oversee and coordinate the acquisition of new data on species and their habitats.</p> <p>Fish and Wildlife,ASRD will seek to continually update inventories of the various wildlife species that frequent the planning area, their estimated numbers, and their preferred breeding, nesting, feeding, loafing and escape habitats.</p> <p>Conduct inventories in the spring and fall to document use of the planning area by migrating birds: shorebirds, waterfowl, raptors, etc.</p> <p>Augment wildlife habitat information by regularly obtaining new aerial videography of the lake shoreline.</p> <p>As time permits, Government wildlife biologists will visit the planning area to become familiar with changes that are occurring in the planning area, to observe species, examine habitats, and to interact with lake users.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
5.7 Identify and protect emergent vegetation in Bashaw and Parlby Bays.	emergent vegetation in Bashaw and Parlby bays	protective notations are in place for emergent vegetation in Bashaw and Parlby bays by the summer and fall of 2008	<p>Using shallow water watercraft, Government biologists will examine the shoreline of Bashaw and Parlby bays and document the presence of emergent vegetation. Locations will be recorded using a GPS unit and Public Lands Division (ASRD) staff will be notified of sites where future Protective Notations should be established.</p> <p>BLISMP project maps will be updated to show the location of emergent vegetation in Bashaw and Parlby Bays.</p> <p>Inform residents and lake users about emergent vegetation, its ecological function, and of the use of Protective Notations to achieve conservation objectives.</p>

## Wildlife Management

Map 2 - Fish and Wildlife  
Theme Map





## Colonial Nesters

In 2007, the Fish and Wildlife Division of Alberta Sustainable Resource Development (ASRD), with support from local partners, conducted a comprehensive survey of bird species around Buffalo Lake. The goal was to prioritize the lake's shoreland, based on the number and types of bird species observed, and areas identified as having high conservation importance for birds. This survey, along with additional monitoring and bird studies, will be used by ASRD to identify areas where seasonal wildlife sanctuaries will be established on the public land ROW to protect bird species of special concern.

A total of 125 species of birds were identified around the lake during the survey and an additional 20 species of birds were encountered during other activities on the lake. Thirty species were classified as being of "Sensitive" status in Alberta; no species of high risk status were present in 2007 (species "At Risk" or "May be at Risk").

The resulting conservation values of important bird habitat areas identified as "high or very high" were based on the distribution of "Sensitive" species and the concentration of sensitive species in particular shoreland areas. Areas of significant "Sensitive" species concentrations included the western parts of Secondary Bay, areas around Parlby Bay and the Narrows, emergent vegetation offshore from Scenic Sands, Bird Island, areas around the entrance of Foreleg Bay, portions of Bashaw Bay, and the basin between Bashaw Bay and Foreleg Bay. These areas included



The eared grebe is a common waterbird on Buffalo Lake in most years.

significant colonies of several "Sensitive" bird species including; horned grebes, western grebes, American white pelicans, great blue herons, Black-crowned night herons, Forster's terns and black terns, as well as significant aggregations of "Secure" species such as California Gulls, Franklin's Gulls, ring-billed gulls, eared grebes, doubled-crested cormorants, and marsh wrens.

Water levels were unusually high in 2007, but comparisons with historical records suggest many of the high priority habitat areas are consistent across years. However, some species shift their distribution around the lake from year to year, and continued study of Buffalo Lake as well as data collected during different times of the year is needed to fully assess the value of shoreline habitats to birds.

Areas identified as having a high priority for the conservation of birds are generally areas with extensive emergent vegetation and sites that are relatively undisturbed by human activity. It is recommended that land-use planning at Buffalo Lake include protective measures for these areas of significant bird habitat. Such measures could include zoning areas for no development or restricted development, establishing speed limits for water craft, establishing restricted areas and no wake zones for boaters, restricting access for OHVs, increasing awareness of residents and other lake users about sensitive areas; and the establishment of seasonal sanctuaries to prevent human disturbances (like the existing Bird Island Sanctuary for the American White Pelican).

## Did You Know?

Buffalo Lake is surrounded by rolling hills, part of the "knob and kettle" landscape left by retreating glaciers. The lakes many shallow bays provide nesting sites for great blue herons, Black-crowned night herons, plenty of Canada geese and ducks as well as common terns, American avocets and ring-billed gulls. Ross' geese, American white pelicans and piping plovers have also been seen.



The parkland woods provide habitat for white-tailed deer, mule deer, coyotes and ruffed grouse. Colourful northern orioles nest in the tops of the tall trembling aspens, and the descending call of the western wood-pewee is commonly heard. Raptors include great horned owls, short-eared owls, and bald eagles as well as many of the hawk species found in Alberta.

For detailed information about colonial nesters on Buffalo Lake see: Prescott, D. R .C., and S. D. Stevens. 2007. Bird Populations on the Shoreline of Buffalo Lake; Identification of Priority Area for Conservation. Alberta Sustainable Resource Development. Fish and Wildlife Division. Alberta Species at Risk Report No.115. Edmonton, Alberta. 27 pp.

#### Reference:

Sustainable Resource Development - Buffalo Lake [www.srd.alberta.ca](http://www.srd.alberta.ca)

Click on: Recreation Public Use>Alberta Wildlife Viewing Guide>Red Deer Parkland Prairie>Buffalo Lake

# Buffalo Lake Conservation Site

Located along the southwest shore of the lake is the Buffalo Lake Conservation Site. Located in the Buffalo Lake Moraine, it covers an area of approximately 228 hectares (564 acres) of provincial Crown land. Originally purchased in 1973, through the Buck for Wildlife program the conservation site is managed to enhance and conserve wildlife and fisheries habitat for the benefit of all Albertans. The site is now administered by the Alberta Conservation Association with partnership support from Alberta Sustainable Resource Development and Volunteer Stewards from the Buffalo Lake Naturalists.

Three decades of shelterbelt planting and habitat maintenance activity has transformed the site into excellent wildlife habitat. Also a designated Pheasant Release site, the property provides good grouse and waterfowl habitat. Hunting for other wildlife species is allowed on the property; consult the *Alberta Guide to Hunting Regulations* for more information. A lease for haying is also issued to a local farmer.

The property can be accessed by two dirt roads from the south which provide access to the east and west sides of the property. The property is fenced and gated; and is restricted to day use and foot access. No open fires are permitted.



For More Information Visit:  
 Alberta Conservation Association  
[www.ab-conservation.com/](http://www.ab-conservation.com/)

# Native and Rare Plants

The Yellow Lady Slipper Orchid (*Cypripedium pariflorum*) can be found at the Narrows Provincial Recreation Area (PRA). Temporary closures of specific areas within the PRA from May to June allows this “sensitive plant” to recover.



## Did You Know?

A special fungus in the soil where the Yellow Lady Slipper grows helps in absorbing valuable nutrients? People removing this plant from its native habitat has caused its decline. You can help the Yellow Lady Slipper

Orchid to recover by leaving them in their native habitat and purchasing plants from a nursery.

## Recreation



### Recreation

Buffalo Lake is perceived to have tremendous potential for recreational use. The lake's geographical location, its large size, the presence of sandy shorelines in some locations, a variety of natural landscape features, along with other attributes make it highly attractive for recreational users, both for local residents and for people who live in urban centers in southern and central Alberta. Because the lake is shallow, water temperatures during the summer months make the lake suitable for swimming, wading, water-skiing, windsurfing, boating/sailing, fishing, etc. The lake contains two sizeable islands that are privately owned, and thus are not available for general public recreational use.

Historically, fluctuations in water levels at Buffalo Lake and the presence of moderately saline conditions have affected the recreational potential of the lake and the orderly development of the lake's shoreline. In response to requests by local residents and recreational users of the lake, Alberta Environment initiated a study in 1978 to assess the feasibility of stabilizing lake water levels; this study was completed in 1984. It concluded that stabilizing lake water levels would be feasible through water diversions from the Red Deer River via Parlby Creek. A public consultation process also established desirable lake water levels. However, other water management commitments and priorities at the time prevented stabilization of lake water levels from proceeding immediately.

Renewed public interest in stabilizing lake water levels prompted Alberta Environment to re-examine its earlier feasibility study along with additional information that was collected since 1984. In the fall of 1989 Alberta Environment commissioned an independent Environmental Impact Assessment to identify the anticipated effects of stabilizing lake water levels. Following the completion and review of this assessment, the Buffalo Lake stabilization project was initiated.

Over the years, a number of recreational and residential areas were established around Buffalo Lake including:

- two Provincial Recreation Areas (Buffalo Lake - Boss Hill, The Narrows);
- one Provincial Park (Rochon Sands);
- two Summer Villages (Rochon Sands, White Sands); and
- a number of private developments (Pelican Point, Braseth Beach, O'McDonalds Resort, and Scenic Sands) and other cottage developments within the Counties of Camrose and Stettler.

Day use areas, RV campgrounds, public beaches, boat launches, marinas, golf courses, and playgrounds have been developed in the planning area. The two Provincial Recreation Areas and the Provincial Park are typically used for camping and outdoor recreation and have minimal facility development. Typical activities, particularly at the Narrows Provincial Recreation Area, include those associated with family camping: nature walks, swimming/wading, socializing, boating and fishing.

Residential growth and land development around Buffalo Lake are anticipated to grow and intensify in the future. As a result there will be additional public pressure to expand recreation services and facilities around the lake to accommodate increased public demand for recreational opportunities.

The following points require attention if new recreation facilities and developments are being considered in the planning area:

- a. Of principal concern to BLISMP is the protection of the riparian zone's "normal" ecological function and the provision of ecological services that are universally acknowledged to be critical for sustaining overall landscape health (see *Water For Life* and the provincial *Wetland Policy*).



## Recreation



- b. The ROW is dominated by riparian habitat which has a low threshold for impacts from various activities. Therefore a multiple-use resource management approach is not appropriate on this sensitive and special landscape feature. Riparian areas comprise a very small portion of the greater landscape and can only withstand a narrow range of specialized land uses before their essential character and function are compromised
- c. If deemed essential and in the public interest, new recreation access points may be developed (see objectives #7.1 and 7.2 in Public Access section that follows). Access points must be carefully selected to minimize wildlife disturbance and habitat impacts/fragmentation. The number of new developments or access points should be minimized to avoid excessive shoreline fragmentation and cumulative disturbance.
- d. Lakeshore habitat values will be used to determine appropriate recreation management on the ROW and should also be used to help guide municipal land use planning. Appropriate and coordinated land use between jurisdictions will be essential for protecting the health and integrity of Buffalo Lake.
- e. The responsible use of watercraft in the wet zone is required to protect emergent vegetation/habitat and associated wildlife species (e.g., spawning fish, colonial nesting birds, etc.). Direct regulation of recreational behaviour is not possible at this time (regulations pertaining to watercraft on water bodies fall under federal jurisdiction) Habitat values can only be protected through voluntary user compliance with responsible boating practices<sup>2</sup>.

<sup>2</sup> Regulatory restrictions protecting wildlife from boating/recreation impacts are limited to the seasonal sanctuary on “Pelican Island” and the *Wildlife Act’s* general provision against wildlife harassment.

**Goal #6: To provide and manage recreation opportunities and activities at Buffalo Lake which support the protection and maintenance of the ecological integrity (and natural quality) of the shorelands and a high quality lake environment.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>6.1 Recreation access points should be limited to existing access development nodes where natural habitat values are already altered or compromised. Opportunities for new recreation access points in the future will be considered as new subdivision developments come on stream and based on public demand.</p>	<p>established public recreation access site capacity matches demand while avoiding a proliferation of new access</p> <p>riparian areas identified to have sensitive or productive fish or wildlife habitat are not developed for new access (e.g. colonial bird nesting habit is not impacted by new access development) recreation demands continue to be met in existing locations access development does not exceed habitat conversion targets (expressed as a per cent of shoreline area) in Right-of-Way Management Areas (ROWMAs)</p>	<p>the number and location of access points to the ROW and Buffalo Lake will be determined in a coordinated access strategy based on public need and demand</p> <p>new access developments occur in shoreline areas identified with lower habitat productivity / sensitivity</p> <p>the need for, and opportunities for, the establishment of new access points linked to future subdivisions will be addressed during the subdivision</p>	<p>Before developing new access, examine the viability and merit of upgrading existing sites to meet demand.</p> <p>Strategically locate any new access points to provide public benefits while avoiding/minimizing impact to habitat and wildlife. (see also 7.1 and 13.4 in this regard).</p> <p>Develop access sites to service multiple subdivisions (i.e., avoid developing access for each subdivision).</p> <p>Where reasonable, direct new subdivision lake access to existing access facilities.</p> <p>If development is approved adjacent to prime habitat, lake access development will not be permitted.</p> <p>Favor subdivision developments in which new subdivision access points to the ROW and lake are open to the public at large (as opposed to serving</p>

## Recreation

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>6.2 Promote outdoor recreation activities that are suitable for sensitive environments where the protection of ecosystem form and function is the principal land management goal.</p>	<p>through monitoring, evidence of recreational impacts on habitat should be within acceptable limits set by habitat and wildlife protection goals.</p> <p>wildlife species (e.g., colonial nesting bird populations) do not show evidence of decline or stress due to recreational activity</p> <p>communities and agencies involved in the management and use of Buffalo Lake actively promote recreational activities, locations and behaviours that support the plan's vision and goals for environmental sustainability, biodiversity and human use and enjoyment</p>	<p>development review process Based on habitat protection data and targets:</p> <ul style="list-style-type: none"> <li>motorized activity is limited to portions of the Right-of-Way (ROW) where compatible (as identified in ROWMAs) and impacts are kept to a single trail (i.e., avoid trail braiding, random bogging areas and large areas of top soil/vegetation disturbance)</li> <li>prevent wildlife species and populations from declining as a direct result of recreational activity and behaviour</li> <li>municipalities and government agencies will take a coordinated approach to educate and promote responsible recreation practices for riparian environments</li> </ul>	<p>only subdivision residents).</p> <p>Appropriate recreation activities that are compatible with the vision and goals for the planning area are limited to low impact nature-appreciation activities that are characterized by one or more of the following attributes:</p> <ul style="list-style-type: none"> <li>low physical impacts with minimal to no alteration of natural habitat;</li> <li>minimal disturbance to wildlife species using the shoreline and adjacent habitats;</li> <li>low density and intensity of use (i.e., low-key activities that do not infringe on one's appreciation of the natural environment or detrimentally affect wildlife activity);</li> <li>activities that exhibit a respect for the lake's ecological health and function;</li> <li>a focus on the enjoyment and appreciation of the lake's natural attributes, aesthetics and wildlife;</li> <li>environmental education through personal discovery and exploration of the natural environment (particularly riparian ecology);</li> <li>promote recreation uses and practices that are compatible with habitat protection and sound riparian management (e.g. promote a watercraft and off-highway vehicle Code of Conduct that respects sensitive habitat and species); and</li> <li>avoid activities and uses that destroy riparian vegetation, bird nests/colonies, or disturb wildlife.</li> </ul> <p>Shoreline videography will be used to determine recreation impacts in the planning area. "Hot spots" will be monitored and necessary corrective action will be taken.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>6.3 Coordinate ROW recreation planning and management with adjacent land uses (i.e. work with the Counties, Summer Villages, land owners / producers and developers) to ensure compatibility between jurisdictions.</p>	<p>recreational impacts on the planning area's environment and adjacent land are less than what is found in other similar jurisdictions (i.e., comparable Central Alberta recreation lake environments)</p> <p>agricultural operations (that are in keeping with best practices) and landowner rights should not be negatively impacted by recreational activity in the planning area (measured by number and nature of conflicts or impacts)</p> <p>absence of conflicts between permitted recreational activities (that are facilitated and deemed appropriate for the planning area) and other land uses.</p>	<p>recreation activities are managed and defined through a collaborative process that upholds the goals and objectives of this plan.</p>	<p>Manage and zone diverse land uses to meet environmental goals of this plan while minimizing conflicts between sectors and interests (i.e., identify incompatibilities and aim to reduce these):</p> <ul style="list-style-type: none"> <li>• recreational activities are managed to avoid / minimize conflicts with the environment and agricultural producers;</li> <li>• agricultural best practices are employed on adjacent private land to minimize impacts on the lake environment and recreational users; and</li> <li>• residential subdivisions on adjacent private land are designed according to best practices for riparian / sensitive environments and not just standard urban principles.</li> </ul> <p>Future recreation goals and guidelines are established in consideration of other lake users and residents.</p>

## Recreation

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
6.4 Recreation facilities (beaches and boat launches) on the ROW must be authorized by ASRD and be available for public recreational use (not for exclusive or private use).	ROW recreation facilities must be authorized by ASRD	all new and existing recreation facilities meet the legal requirements for dispositions under the <i>Public Lands Act</i>  absence of illegal recreation facilities on the ROW	Enforcement of unauthorized recreation facilities must be consistently applied to establish standards and expectations that support plan goals and objectives. (See 2.1 in this regard.)  Developers should contact government agencies to discuss their development proposals and any interests they have in using the lake or ROW before submitting a formal development application to the municipality.  Developers must submit project design concepts, rezoning requests, and development applications at the earliest possible stage in the subdivision review process (see also 13.1 and 13.2 in this regard).
6.5 Some portions of productive or particularly sensitive shoreline habitat (identified in Management Areas 3 and 4) will be either off limits to recreation activity or limited to infrequent and low-impact human use (i.e., minimal pedestrian traffic).	important habitat areas identified in the BLISMP zoning system are not infringed upon and negatively impacted by recreation activity  known native species do not face population declines  habitat functions are not compromised by recreation activities	ROWMA criteria, standards and guidelines are consistently met and maintained	Protection of important habitat areas and functions will require a combination of education, inter-jurisdictional cooperation and enforcement.  Multiple agencies will be required to collaborate in the execution of their respective mandates and obligations under this plan.  Community-based initiatives that align with ASRD's stewardship goals should be encouraged.  Residential or recreation development should not occur adjacent to sensitive habitat areas to avoid creating circumstances that will knowingly generate intensive and incompatible uses.

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
	<p>recreation activities occurring in these areas are focused on low impact nature appreciation activities that are well suited to sensitive habitats and based on sound stewardship</p>		
<p>6.6 If formal public recreation trail development is deemed to be appropriate and environmentally compatible in any lakeshore location, it should be situated off the ROW (where possible) and constructed/ managed through cooperation between developers and the local municipality (i.e., built on Environmental Reserve, Municipal Reserve or private lands).</p>	<p>formal (designated) trail development meets the needs of lakeshore communities while applying design and siting standards that minimize environmental impacts and wildlife disturbances</p> <p>formal trail development is typically located off the ROW and is under disposition if it does occur anywhere on the</p>	<p>formal (designated) trail development on the ROW is avoided if possible and minimized if deemed necessary</p> <p>formal trails are not developed through sensitive and highly productive wildlife habitat</p>	<p>Trail development on the ROW may be considered in high traffic developed areas if all of the following conditions are met:</p> <ul style="list-style-type: none"> <li>• the trail is located on the upslope side of the ROW and in an area where sensitive habitats or species are not impacted;</li> <li>• the trail is developed and authorized by ASRD through the issuance of public lands disposition;</li> <li>• the trail has a natural material surface (paved surfaces will not be permitted); and</li> <li>• the trail is limited to pedestrian and bicycle traffic (i.e., motorized vehicles are not permitted on designated trails).</li> </ul> <p>ASRD will establish specifications for trails if they are to be situated on the ROW.</p>

## Recreation

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
	ROW formal trails effectively link communities and public facilities meeting social and community needs without significantly impacting the riparian environment or private land owners		
6.7 Responsible use of recreational watercraft in the planning area is essential for protecting shoreline habitat and will be promoted through public education and awareness programs.	shoreline habitat, emergent vegetation communities and associated wildlife species are not detrimentally impacted by recreational watercraft	recreational watercraft activity will not damage aquatic habitat or result in the decline of species that are dependent on that habitat.  nesting birds are not disturbed or driven away as the result of watercraft use	The safe and responsible use of watercraft is promoted through public education efforts and through information provided in local communities and at recreation facility sites.  Federal recreational boating regulations will apply at Buffalo Lake.  Fish and Wildlife Division (ASRD) will enforce regulations that pertain to seasonal wildlife sanctuaries in the planning area.
6.8 Commercial recreation facility development will not be supported on the ROW except as noted in Management Areas.	ROW lands will remain in as natural a state as possible except where developed public beaches exist  general absence of commercial facilities on the ROW	no commercial development will occur on the ROW with few exceptions (see Management Areas)	Recreation activities and facilities at The Narrows PRA, Buffalo Lake PRA, and Rochon Sands Provincial Park will continue to provide very basic amenities to support low-key, nature-oriented user experiences that are in keeping with the mandate and policies of Alberta Tourism, Parks and Recreation.  An exception to Target 6.8 will be the accommodation of boat access across the ROW to an established inland marina. (See also 3.3 in this regard.)

## EARLY RECREATION AND DEVELOPMENT

The beach at Rochon Sands Provincial Park was a popular picnic spot for the early settlers, who called it "Hannah's Beach". The name of the area was later changed to Rochon Sands, when land owned by Mr. Rochon was subdivided (Finlay and Finlay 1987). The land for the provincial park was set aside in 1933 and 1934, and the park was officially established in 1957 (Alta. Rec. Parks n.d.).

By 1923, 23 cottages had been built on the lake at New Switzerland; this remained unchanged until 1951 (Red Deer Reg. Plan. Commis. 1977). By 1982, there were 650 cottages in 3 subdivisions at Pelican Point, Rochon Sands and White Sands all located on Main Bay.

Today a number of recreational and residential areas occupy the shores around Buffalo Lake including:

- 2 Provincial Recreation Areas (Buffalo Lake - Boss Hill, The Narrows);
- 1 Provincial Park (Rochon Sands);



Excursioin boats at opening of Mirror Beach, Buffalo Lake, Alberta

Date: 1913

- 2 Summer Villages (Rochon Sands, White Sands);
- a number of private developments including: Pelican Point, Braseth Beach, Ol'McDonalds Resort, Scenic Sands, MacDonald Sands, Abbey Road subdivision, Buffalo Sands, Scenic Estates, Buffalo Lake Meadows, Rochon Sands Estates, Rochon Sands subdivision, Bolin subdivision, Buffalo View Estates) and other

cottage developments within the Counties of Camrose and Stettler; and

- day use areas, RV campgrounds, public beaches, boat launches, marinas, golf courses, and playgrounds.

## Provincial Parks and Recreation Areas

Rochon Sands Provincial Park is located on the southern shore of Buffalo Lake, immediately west of the Summer Village of Rochon Sands. Established in 1957, this 295 acre (119 hectare) park is open year round, however camping in the 69 unit camp sites is only allowed from mid-May to mid-September. The park also has a 20 unit Group Use Area which is made available for day use or overnight use. Other facilities and services offered by the park include: playground, boat launch, beach swimming area, and wildlife observation lookout.



On the eastern shore of Buffalo Lake visitors will find Buffalo Lake Provincial Recreation Area. This small 5.8 acre site, set back from the shoreline of Buffalo Lake, was established to provide a limited number of camping sites for Albertans. The 30 rustic camp sites are available for use from the beginning of May to the end of September. A restricted swimming area has been established for the benefit of campers and day use visitors.

The Narrows Provincial Recreation Area is situated on the south shore of The Narrows (a water channel which connects Parlyby (Mirror) Bay to Buffalo Lake). Given the improved water conditions and aquatic habitat found at this location, shoreline fishing is rated as excellent. Fish species found in The Narrows include: Burbot, Northern Pike, and White Sucker. This 59 acre campground features 61 campsites, available for use from mid-May to mid-September. A boat launch and five fishing nodes are located along the shoreline of The Narrows water channel.

Further information on Alberta's parks and protected areas can be accessed at: <http://gateway.cd.gov.ab.ca/>. Visitors needing specific information can contact a Parks Conservation Officer at the Stettler office of Alberta Tourism, Parks and Recreation: (403) 742-7512.



## Public Access



### Public Access

The recreational potential of Buffalo Lake is increasingly being discovered by Albertans. It is anticipated that day-use and multi-day visits to Buffalo will experience substantial growth in the future. Furthermore, the number of subdivisions around Buffalo Lake will also undoubtedly increase in the coming years. These trends are highly probable for the following reasons:

- an affluent society places a higher priority on leisure time and recreational activities;
- a growing regional population;
- the planning area's proximity to Highway No. 2 and the cities of Red Deer, Calgary and Edmonton;
- more Albertans are purchasing recreational properties and 4-season homes in Central Alberta (and at Buffalo Lake in particular);
- other recreation lakes in Central Alberta are experiencing similar activity patterns (e.g., Sylvan Lake, Pigeon Lake); and
- there are a limited number of recreation lakes in Central Alberta.

Further planning is needed to identify appropriate lake access for residents and visitors at Buffalo Lake. Currently, an overall municipal access strategy does not exist. Suitable access needs to be provided for an increasing number of lake users while maintaining the aesthetic, environmental, and biodiversity values that are associated with the lake, its shorelands, and the ROW.

Municipalities are responsible for providing access across private land to defined access points on the ROW boundary (an "access point" is a location where people can gain entrance to the ROW). Once on the ROW, passage along the public land ROW and to the lake's shoreline is allowed as a universal right – unless access has been prohibited or restricted by provisions in this plan.

Over time, multiple foot and motorized access points have been created on Buffalo Lake's shorelands. In some locations access points have been formally approved and developed. In other instances traditional access points have been established through repeated use but remain unofficial, not having been sanctioned by the municipality in which they occur. Existing access to the ROW includes both public and private access, and summer and winter access. Several boat launches also exist around the lake.

The public can access Buffalo Lake by using existing public roads or by using road allowances where access is permitted.

When crossing over private land or provincial Crown land adjacent to or within the Right-of-Way, permission should be obtained from the property owner or lessee before entering.



## Public Access



### ***Did You Know?***

*Residents, adjacent landowners and lake users are not permitted to construct private walkways across ROW lands, place permanent structures in the lake or alter the ROW or its vegetation without prior approval from appropriate government agencies.*

The need to limit public access to approved and predetermined locations around Buffalo Lake will become increasingly necessary as public demand for access to Buffalo Lake intensifies. By concentrating public access at specific (preferred) sites, impacts to the ROW and shorelands will be minimized.

Residents and adjacent landowners need to be made aware of the provincial government's ownership of the lake bed and shore and of the kinds of activities that are permitted and are not permitted on the ROW. For example, the construction of private walkways across ROW lands, placement of permanent structures in the lake, or modifying / altering the ROW and its vegetation will not be permitted without prior approval from appropriate government agencies. New public access corridors to the ROW and additional boat launches will need to be established in the future to meet the growing needs of residents and lake users. When required, access restrictions will be put in place to maintain the integrity of Buffalo Lake and its shorelands.

There are a number of factors that influence where access sites, infrastructure and facilities can be accommodated on the ROW. The narrow width and location of ROW lands within a flood zone, the ecological importance of riparian areas, as well as the sensitivity of ROW lands to erosion all necessitate careful access planning. Given these concerns, ASRD has decided that most motorized access facilities, including hardened vehicle/trailer parking areas, garbage receptacles and fish cleaning stations, will be located off the ROW and developed on adjacent private land.

**Goal #7: To provide reasonable opportunities for public access to Buffalo Lake and use of the ROW while maintaining the ecological integrity of the lake and surrounding public land.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>7.1 Maintain existing access points that meet BLISMP guidelines and which are supported by municipalities, and establish a sufficient number of new access points to accommodate future public need.</p>	<p>presence of adequate and environmentally appropriate access points to the ROW and Buffalo Lake</p>	<p>the number and location of access points to the ROW and Buffalo Lake will be determined in a coordinated access strategy based on public need and demand</p>	<p>It is recommended that municipalities, in consultation with provincial and federal government agencies, develop an access strategy that ensures reasonable public access to the public land ROW (i.e., to the “take line”) around Buffalo Lake. Among other things, the strategy should:</p> <ul style="list-style-type: none"> <li>• confirm all existing known access points and formalize those that will be retained (see <i>Map #3 Existing Lake Access Points on page 96</i>);</li> <li>• identify the location of new access points using an evaluative process</li> <li>• prevent the proliferation of new access points and discourage the establishment of ad hoc access points;</li> <li>• confine access to locations where minimal impacts will occur to species, habitats, riparian areas and the lake’s littoral zone (consult the <i>Right-of-Way Management Areas, or ROWMAs, in this plan to ascertain habitat values</i>);</li> <li>• establish design requirements, set vehicle capacities, and identify suitable improvements at access sites/facilities located off the ROW; and</li> <li>• identify conditions and requirements for new subdivision access points (e.g., access standards, shared access; access facilities).</li> </ul> <p>The access strategy will be periodically reviewed in response to any significant changes in recreational use levels and subdivision growth. (See also 13.4 in this regard).</p>

## Public Access

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>Winter only access sites (which are unavailable for public use outside the winter season) will be established to accommodate seasonal recreational activities (e.g., ice fishing, snowmobiling) on the ROW. ASRD will establish and install a sign at each winter access site – along the ROW boundary – which indicates that these sites are for seasonal (winter) use only.</p> <p>All formally designated access points must benefit the public at large, i.e., the general public should be able to freely use all designated access sites, including those access points that primarily serve subdivisions.</p> <p>The following (and other) criteria are proposed to assess the suitability of access points:</p> <ul style="list-style-type: none"> <li>• minimal environmental impacts (or impacts can be addressed through mitigation);</li> <li>• low potential for conflicts with existing or anticipated future ROW activities and adjacent land uses;</li> <li>• strategically located based on public demand, location of subdivisions, location of existing roads/trails, adjacent land uses, and convenience;</li> <li>• favorable ground conditions allow continuous year round use and expected traffic levels; and</li> <li>• effective mitigation to overcome anticipated impacts.</li> </ul> <p>All road allowances situated on the ROW (which fall under the jurisdiction of provincial agencies) will remain undeveloped and closed to vehicular use unless designated as an access point, boat launch or as a turn-around cul-de-sac.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
7.2 To minimize environmental impacts at all designated public access sites.	environmental impacts at designated access sites are within acceptable levels	<p>appropriate access designs and technologies are adopted to minimize or mitigate environmental impacts</p> <p>minimize the footprint at access points</p>	<p>Although designated access sites will concentrate human activity in a specified location, efforts must be made to maintain wildlife habitats, biodiversity and environmental quality at all designated access points.</p> <p>Occasional monitoring of designated access points will need to occur to confirm that environmental degradation is kept to a minimum.</p>
7.3 Established guidelines and standards must be observed when constructing a new or improving an existing access site or access facility.	standards and guidelines are in place to develop access sites and facilities	adopted standards and guidelines are consistently observed and applied at all designated access sites	<p>Suitable standards and guidelines for new and existing access sites will be identified in a strategic access plan (see 7.1 in this regard). The following are offered for consideration in this regard:</p> <ul style="list-style-type: none"> <li>• When so designated, an access site or facility must withstand year round use.</li> <li>• Access facilities, except for boat launch ramps, must be kept off the ROW.</li> <li>• With few exceptions, vehicles are not permitted on the ROW. Exceptions in some instances may include: dropping off and retrieving water craft; and, allowing vehicles to turn around at an established cul-de-sac on the ROW where ROW ground conditions are suitable.</li> <li>• Provisions for vehicle and trailer parking must be made in the vicinity of designated access points; parking areas must be off the ROW, above the 1:100 year flood elevation level.</li> <li>• Development of hardened boat launch facilities will be supported in areas where: <ul style="list-style-type: none"> <li>- high public access to the lake occurs;</li> <li>- the launch is associated with a multi-user, commercial, or municipal mooring facility; and</li> <li>- where a solid case can be made for the establishment of a boat launch and where the boat launch has been incorporated within the design of a proposed lake subdivision development.</li> </ul> </li> </ul>

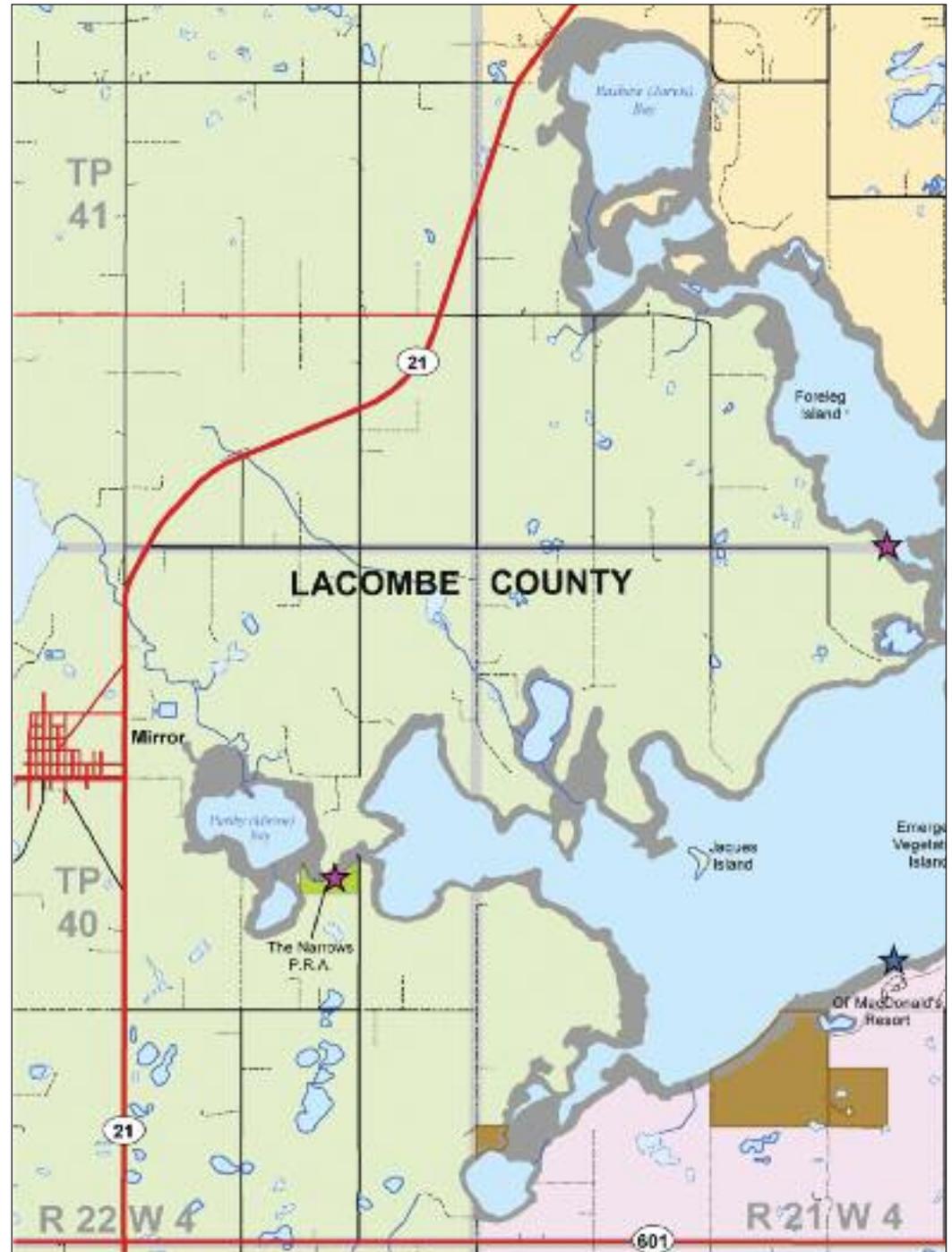
## Public Access

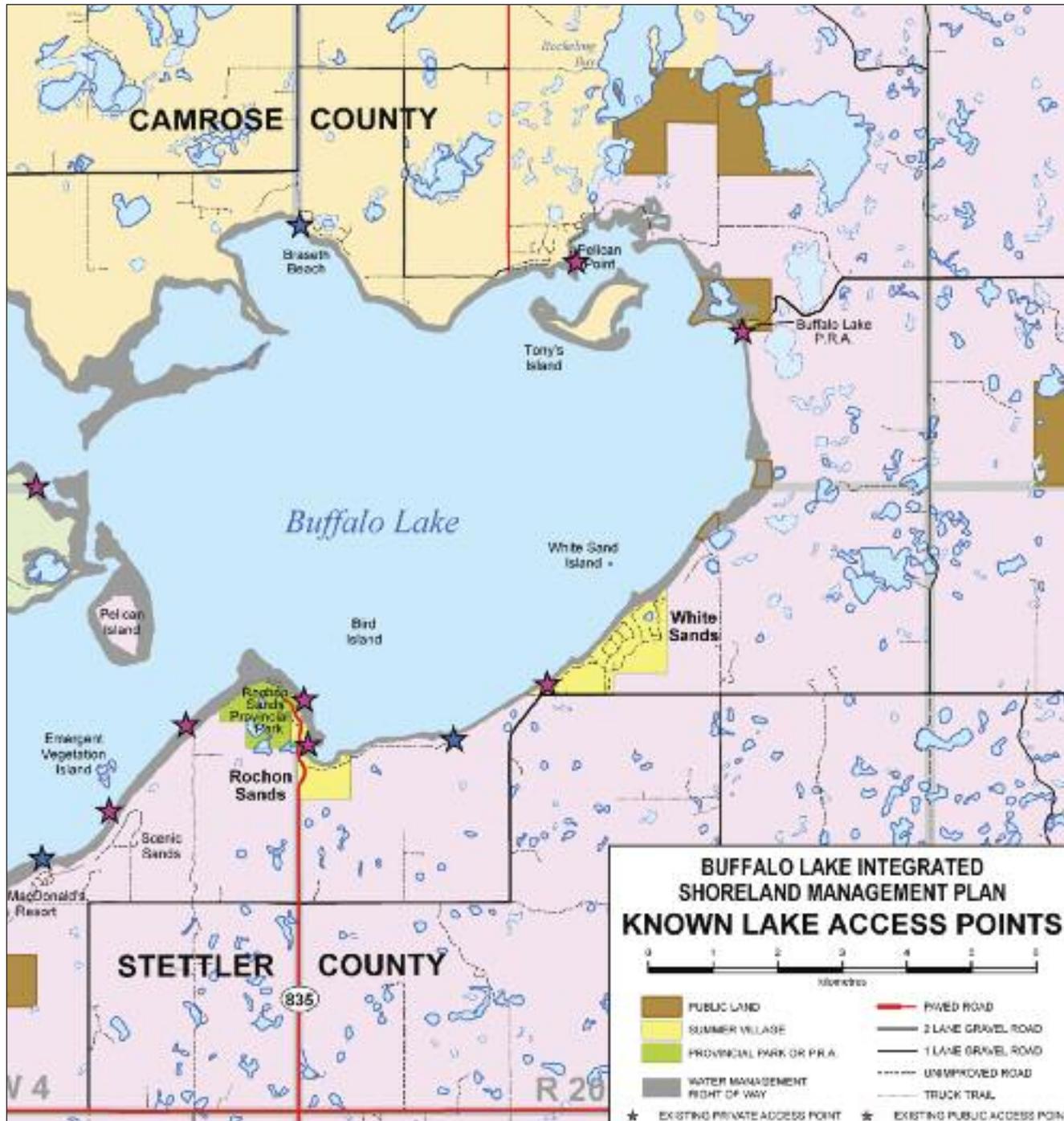
Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<ul style="list-style-type: none"> <li>• Access points should generally be associated with open road allowances outside the ROW, or be formally established as an integral part of a subdivision development in which the chosen access site creates few if any impacts.</li> <li>• Development at designated access points is limited to what is required for a boat or canoe launch during the summer, or for winter lake access onto the ice.</li> <li>• Agreements (dispositions) negotiated between provincial agencies with local authorities and developers for the establishment of new access points or the construction of new access facilities.</li> <li>• Authorization is required from appropriate government agencies before commencing with ground disturbance and construction activities.</li> </ul>
7.4 Provide opportunities for public use and enjoyment of the ROW.	public activities on the ROW are relatively low impact and are aligned with this plan's vision and broad goals	<p>public activities are managed within each ROWMA to minimize conflicts and impacts (see ROWMA Matrix of Compatible Uses/Activities)</p> <p>responsible use of off highway vehicles (OHVs) in the planning area to protect the lake shoreline and riparian areas</p>	<p>In accordance with provincial policy, the public has a right to expect reasonable access around the shoreline of Buffalo Lake, which is a provincial water body. Passage along the shores of Buffalo Lake will not be unreasonably restricted. The public may however be excluded from (or use may be restricted on) certain sections of the ROW should public use be detrimental to natural features, habitats and species, or should public use conflict with the achievement of specific resource management objectives (see further details in ROWMAs).</p> <p>The following provisions should be adopted to ensure public safety, protect private property, protect the rights of disposition holders, and safeguard the environment:</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<ul style="list-style-type: none"> <li>• use of signs (direction, information, and warning signs) that among other things direct people to designated access points and inform users of acceptable and unacceptable behaviors at access points;</li> <li>• individuals occupying the ROW must respect any public land dispositions or protective notations that are in place;</li> <li>• should off-highway vehicle (OHV) use be allowed in a particular ROWMA, OHV riders will be encouraged to follow a Code of Conduct (to be developed) that applies to the planning area; and</li> <li>• ROW exclusion fencing (or other means) may be selectively used to limit public access along certain sections of the ROW to prevent impacts, protect features, or address conflicts.</li> </ul> <p>Alberta Sustainable Resource Development (ASRD) will explore the suitability and feasibility of developing an access management strategy to control (restrict) OHV use in the planning area within 3 years of BLISMP approval. In conjunction with the potential development of an access management strategy, ASRD will investigate the need for establishing a mechanism in the “White Area” to regulate OHV use on vacant public land (comparable to Forest Land Use Zones in the “Green Area”).</p>

## Public Access

Map 3 - Existing Lake Access Points





## Agriculture



### Agriculture

Agricultural activity has historically been a dominant land use around Buffalo Lake. Agricultural use of Buffalo Lake's shorelands and private lands immediately adjacent to the lake began when people of European ancestry settled in the area in the 1800s. Land which surrounded the lake was found to be suitable for livestock grazing. Land further removed from the lake, which had potential for growing crops, was cleared and broken in different stages to permit cultivation.

Livestock grazing on Buffalo Lake's shorelands has been a traditional land use that has continued up to the present but is now declining. Generally, livestock was free to roam around the lake and could enter the lake for watering purposes. Grazing in the BLISMP planning area (i.e., on the public land right-of-way) occurs for the most part without grazing dispositions (as of 2006 there was only one grazing lease in the planning area). As part of the Buffalo Lake water stabilization project, right-of-way (ROW) purchase agreements were negotiated with landowners around the lake to allow cattle to cross the ROW to obtain water from the lake. These agreements stipulated if the Government of Alberta erected a fence along the ROW 'take line', the government would provide an alternate off-lake water source for livestock use.

Cattle grazing around Buffalo Lake has been declining in recent years for several reasons:

- the impacts of BSE and falling cattle prices;
- forage availability on the lake's shorelands and the ROW is generally no longer significant in most areas; and
- the demand for recreational property around the lake has increased land values substantially (a growing trend now exists for farmers to sell their landholdings along the lake to developers for future cottage and residential development).

The character of the landscape surrounding Buffalo Lake is changing with each new subdivision development. Cottage and home-owners, and a growing number of recreational users who visit the lake, have new expectations on how the lake and its shorelands should be managed. As a result, public support for livestock use of the lake and the adjoining ROW is expected to continue to decline as a shift towards increased residential and recreational use continues in the future.

Livestock watering in water bodies with high potential for recreational use is generally not supported by the public as an acceptable use of Alberta's water resources. Cattle entering Buffalo Lake inevitably contaminate the water, posing human health and safety issues. With increasing human activity at Buffalo Lake, the public will likely view maintaining water quality as one of their highest priorities (which is consistent with Alberta's *Water for Life Strategy*). Furthermore, cattle impacts on shorelands and the riparian zone around the lake will meet with increasing public resistance given the aesthetic value, ecological benefits, and human use potential of these shorelands and riparian areas. There are successful alternatives to livestock watering. To address similar concerns, Lacombe County initiated a pilot project at Gull Lake in 2005 in which cattle producers were encouraged to adopt off-lake watering systems. By moving cattle out of riparian areas, shoreline vegetation was no longer impacted by livestock activity. The pilot proved successful as a number of producers willingly adopted off-lake watering systems.



## Agriculture



Various programs exist to help livestock producers adopt beneficial management practices which promote livestock production while protecting the environment. Two programs that have proven particularly effective are:

- The provincial “Cows and Fish” program which demonstrates how improvements in grazing management on riparian areas can enhance landscape health and productivity for the benefit of cattle producers and others who use and value riparian areas.
- Environmental Farm Plans which focus on developing farm management plans that promote healthy landscapes and identify solutions to environment issues.

**Goal #8: To allow temporary agricultural activities in the planning area in a manner that minimizes impacts to the wet and dry areas, while having regard for other land uses and activities that are associated with this recreation water body.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>8.1 Implement a strategy to provide off-lake livestock watering systems to reduce cattle impacts on Buffalo Lake.</p>	<p>lake water contamination by cattle</p>	<p>progressively minimize (exclude) cattle from Buffalo Lake to maintain water quality</p>	<p>Cattle watering provisions that have been outlined in “Offer to Sell” agreements (as part of the Buffalo Lake water stabilization project) will be honoured.</p> <p>Direct cattle access to Buffalo Lake will be phased out as the following measures are put into effect:</p> <ul style="list-style-type: none"> <li>• increase public education and awareness about livestock impacts on lakes and shorelands;</li> <li>• promote and provide off-lake watering systems on a voluntary basis using programs that provide assistance in the development of such watering systems;</li> <li>• the Government of Alberta will support programs and partnerships that fund and support off-lake watering systems (e.g., Canada-Alberta Farm Water Program – eligible farmers were reimbursed for on-farm water supply project costs for up to \$5000.00 up to Dec. 31, 2007); and</li> <li>• encourage the preparation of Environmental Farm Plans (EFPs) on private and public land to manage livestock use around Buffalo Lake. Completed EFPs are a requirement to obtain funding for on-farm stock watering facilities.</li> </ul> <p>Under the auspices and oversight of the Buffalo Lake Management Team (BLMT), actions will be taken to develop off-lake cattle watering systems that benefit stock producers adjacent to the Right-of-Way (ROW). The following actions are proposed:</p>

## Agriculture

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<ul style="list-style-type: none"> <li>• identify producers around Buffalo Lake that will benefit from this initiative;</li> <li>• confirm and build community interest and support for this initiative;</li> <li>• identify local actions, programs and organizations that have a similar orientation;</li> <li>• identify needs and resources to mount this initiative;</li> <li>• secure appropriate funding to undertake this initiative; and</li> <li>• with the involvement of interested partners and municipalities, commence with the planning and installation of watering systems that meet the needs of stock producers, which are based on proven technologies, and which reflect environmental best practices</li> </ul> <p>These and other actions may be outlined in a strategic plan to allow the BLMT to effectively coordinate delivery of this initiative.</p> <p>Until cattle are phased out from the planning area, fencing may be required across the ROW to contain cattle movement. Whenever possible, temporary fencing (e.g., electric fencing) should be used.</p>
8.2 New agricultural dispositions will not be issued for ROW lands.	absence of agricultural activity in the planning area	no agricultural dispositions will be issued (i.e., agricultural production will be excluded from the planning area)	<p>ASRD will not issue any new grazing dispositions for ROW lands.</p> <p>Cereal, specialty crop and hay production will not be permitted on the ROW.</p> <p>Agricultural cultivation will not be permitted on the ROW.</p>

## Mineral Resources

Mineral resources refer to all naturally occurring minerals as outlined in the *Mines and Minerals Act*, including natural gas, oil, coal-bed methane, and metallic and industrial minerals. Mineral sales and dispositions are administered by Alberta Energy. Surface access agreements for the exploration and development of minerals on public land or under provincial water bodies in the planning area are issued by Alberta Sustainable Resource Development (ASRD) and Alberta Environment (AENV).

Sub-surface minerals within the planning area are pre-dominantly Crown-owned minerals. Some privately owned (i.e., freehold) mineral parcels are also found in the planning area, primarily on two islands within Buffalo Lake. Seismic exploration, to confirm the presence of sub-surface minerals, has occurred in the past. Oil and natural gas development has occurred in the vicinity of the planning area, but these activities have not been directly pursued on the ROW. Directional drilling has taken place outside the planning area for targets located under Buffalo Lake.



## Mineral Resources



The following observations can be made about mineral potential in the planning area and adjacent lands:

- shallow natural gas and coal-bed methane potential in the area are thought to be high;
- gas development is occurring predominantly in the northwest and northeast quadrants of Buffalo Lake;
- applications received for natural gas drilling in the surrounding area are growing and will likely increase in future;
- the development of oil resources has been limited in the vicinity of the planning area; and
- several coal seams underlie the area (it is thought that commercially mineable coal is found at a substantial depth below the surface).

To help minimize environmental impacts and land use conflicts that may be associated with mineral exploration and development, various provincial guidelines and regulatory requirements have been adopted within Alberta. As well, best management practices have been identified for the oil and gas sector in various publications including Sinton, H.M. 200. *Prairie Oil and Gas: A Lighter Footprint*. Alberta Environment.

As a result of the increasing popularity and public use of Buffalo Lake, industrial facilities associated with oil and gas recovery and distribution are incompatible with other land uses and activities (i.e., subdivision and recreational use) within the planning area and thus will not be permitted.

**Goal #9: To ensure that the natural gas, oil, and minerals sectors do not introduce or leave an industrial footprint in the wet and dry areas of the planning area so as to maintain the integrity and aesthetics of Buffalo Lake, the shoreline, and the right-of-way.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>9.1 To allow minimal seismic exploration in the planning area.</p>	<p>minimal intrusion of seismic exploration in the planning area</p>	<p>only seismic exploration that leaves no lasting footprint will be allowed</p>	<p>The use of an explosive energy source (shot holes) will not be allowed in the “wet” area or on the ROW. The use of aerial charges, air guns and vibration systems are allowed in the “wet” area and on the Right-of-Way (ROW). Vibration systems can only be used during frozen ground conditions.</p> <p>Seismic exploration must occur using low ground pressure vehicles and equipment.</p> <p>The timing restriction for seismic exploration in the “wet” area is April 1 – June 30 (to protect fish spawning grounds).</p> <p>The timing restriction for seismic activity on the ROW is April 1 - July 15 (to protect nesting birds during courtship, nesting, hatching and brood rearing periods). This timing restriction may be extended in some years, and at some locations, beyond July 15 if warranted by delayed nesting activity.</p> <p>The maximum width of seismic hand-lines is 1.75 m.</p>

## Mineral Resources

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>9.2 To exclude exploratory drilling and any excavation for coal and minerals within the “wet” and “dry” areas due to the environmental disturbance and potential ecological risks resulting from these activities.</p>	<p>absence of surface disturbances resulting from drilling operations and excavations</p>	<p>applications for coal and mineral drilling programs and excavations will be rejected</p>	<p>Coal and mineral exploration and development are prohibited in the “wet” and “dry” area.</p>
<p>9.3 To exclude oil and natural gas development operations, structures and facilities in the wet and dry areas of the planning area.</p>	<p>absence of surface disturbances from oil and gas development</p>	<p>applications for oil and gas development will be rejected</p>	<p>Drilling activity or drilling pads will not be allowed in the “wet” area and “dry” area.</p> <p>Pipeline construction and installation, either by bore or conventional (open cut) approaches, will not be allowed within the defined ROW or under Buffalo Lake due to potential environmental risks and human safety considerations.</p> <p>Energy related facilities must be located outside the “wet” area and “dry” area.</p> <p>Drilling fluids, mud, effluent and other substances must be kept off (prevented from entering) the ROW to minimize the potential for land and water contamination.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>While it is recognized that current regulations for conventional wells generally require a set back of 100 m from the high water mark of a water body, oil and gas operators are encouraged to observe a 300 m setback from the ROW boundary (i.e., the surveyed take line) to:</p> <ul style="list-style-type: none"> <li>• prevent ground disturbance and preserve lakeshore aesthetics</li> <li>• minimize pollution and environmental impacts</li> <li>• keep development and infrastructure out of the lake's flood plain</li> <li>• prevent the sterilization of lands that may be desirable for future recreational or subdivision development (i.e., ensure that an industrial infrastructure and facilities do not encumber future land use options which are compatible with a highly valued recreational lake)</li> </ul> <p>An "Addendum" will be placed on all land sale postings that come up for sale within the planning area. The Addendum will encourage the energy industry to observe BLISMP guidelines.</p>

## Surface Materials

### Surface Materials

Surface materials are different from subsurface minerals and are managed under provisions of the *Public Lands Act* (rather than the *Mines and Minerals Act*) when located on public land. Surface materials are generally found on the ground surface or close to the surface and include: gravel, topsoil, marl, peat moss, sand and clay.

Sand and gravel resources are present in the planning area but not in quantities suitable for commercial use. Naturally occurring sandy shorelines are found on the eastern and southeastern shoreline of Buffalo Lake.

**Goal #10: To exclude the exploration and development of all surface materials in the planning area to maintain the integrity and aesthetics of Buffalo Lake, the shoreline and the right-of-way.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
10.1 Exclude surface materials exploration and development in the planning area.	absence of surface disturbances resulting from the removal of surface materials	applications for the excavation of surface materials will be rejected	<p>Open cuts, exploratory drilling for surface materials, and the excavation of surface materials are prohibited in the “wet” area and on the Right-of-Way (ROW).</p> <p>Sand and other lake bottom materials found on the bed of Buffalo Lake (i.e., in the “wet” area) cannot be pulled onto the ROW in “restricted development” management areas (i.e., ROW Management Area #4). This activity, where it serves the purpose of improving a “permitted” beach, is however allowed in other management areas (i.e., ROW Management Areas #1, 2, and 3).</p>

## Utility Lines

Buffalo Lake is becoming more popular with recreational users and homebuyers because of its geographic location and desirable site characteristics. To maintain natural landscape aesthetics, as well as the integrity of the lake, shorelands and the right-of-way, utility lines and corridors – whether above or below ground – will be discouraged in the planning area. Utility corridors (e.g., water, sewer, oil, natural gas, power, communications) required to service a development will be located some distance from the ROW.

### Goal #1 I: To route new utility corridors around the planning area to minimize surface disturbances.

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
11.1 New, above-ground utility lines and corridors must avoid the planning area.	absence of surface disturbances resulting from utility lines	applications for utility lines that cross the planning area will be refused	<p>New utility lines (pipelines, electrical, gas and other transmission lines) will not be allowed in the planning area. These should be routed around the planning area.</p> <p>Pipeline construction and installation, either by bore or conventional (open cut) approaches, will not be allowed within the defined ROW or under Buffalo Lake due to potential environmental risks and human safety considerations.</p>
11.2 Proposals for local works that are associated with a legitimate activity in the planning area and require utility services will be considered.	consider local infrastructure where a demonstrated need exists	only justified infrastructure will be allowed	<p>Any proposed local works that is associated with a legitimate activity in the planning area and for which utility services are required will be subject to the existing review and approvals processes.</p> <p>Efforts must be made to locate and install local utility lines so as to minimize impacts and address aesthetics.</p>

## Awareness and Stewardship



### Awareness and Stewardship

Public education and awareness initiatives are vital to informing people of new resource management direction for public land in the Buffalo Lake area and to influence a change in behavior. Education and awareness initiatives must be at the forefront of the work that government agencies, organizations and interest groups undertake in the planning area. Pursuing coordination and integration in future education and stewardship efforts will help ensure common aims are achieved and that municipalities, landowners, residents, lake users and developers receive messaging that focuses on mutual goals and objectives.

Getting the word out is, however, not enough. On-the-ground action is needed to help influence attitude and behavioural changes. Stewardship activities involving lake residents, lake users and adjacent landowners will be encouraged. Existing stewardship societies and organizations could assist in this regard and provide needed grass roots leadership. The establishment of a local stewardship society that focuses solely on Buffalo Lake and its shorelands may be the catalyst for a range of community-based stewardship activities.

**Goal #12: To use education, outreach and communications tools to raise awareness among lake users, residents, adjacent landowners, developers and decision makers informing them of resource management challenges in the planning area and actions they can take to achieve desired plan outcomes. To encourage and support local stewardship initiatives and promote positive behavioral changes which advance the aims of this plan.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
12.1 To deliver key messages to target audiences in the planning area.	<p>general awareness of resource management challenges exists (e.g., the impact of human activities on native vegetation)</p> <p>general awareness of BLISMP exists</p>	<p>changed attitudes and behaviors are evident once awareness is raised</p> <p>high levels of familiarity exists with BLISMP and key provisions found in this plan</p> <p>high levels of public awareness of the importance of native vegetation and riparian areas, and the threats to these from human activities</p>	<p>Government agencies, local municipalities, the Buffalo Lake Management Team (BLMT) and other partners will identify key messages that will be used in future public awareness campaigns.</p> <p>Various media (e.g., Internet, educational DVDs, literature, bulletin boards, signs, information kiosks) and special events (e.g., presentations, lake days) will be considered and utilized to deliver key messages to target audiences.</p> <p>Important information about the planning area and updates on BLISMP will be publicly accessible on the BLMT's website. This management plan will be made available online at the BLMT's website.</p> <p>A BLISMP brochure will be prepared and initially made available in the planning area, municipal offices, and online at the BLMT's website. Land Use Operations (ASRD) and the BLMT will develop a distribution strategy and oversee brochure placement.</p> <p>Existing initiatives that have a meaningful public involvement component in lakeshore management will be considered. As opportunities arise, ideas and programs that have proven effective elsewhere may be adapted in the planning area.</p>

## Awareness and Stewardship

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>As required, Land Use Operations (ASRD) will schedule Open Houses to inform the public of progress being made in putting BLISMP into effect. Municipalities, subdivision associations and other partners may be consulted on new initiatives that are being considered at Buffalo Lake.</p> <p>ASRD's seasonal Lake Guardians will assist with distributing information, promoting key messages, making presentations and participating in special events with lake residents and users.</p> <p>As part of their routine duties, ASRD staff will take advantage of opportunities to raise awareness among agricultural producers of how they can improve the health of rangelands and riparian areas.</p>
<p>12.2 Encourage local stewardship initiatives and partnerships that foster progressive management actions.</p>	<p>residents and local groups become engaged and actively seek to promote the health of Buffalo Lake and the wise use of shorelands</p> <p>improvements to range and riparian health through Environmental Farm Plans and through the Cows and Fish program</p>	<p>local empowerment mobilizes people to take actions that improve conditions in the planning area</p> <p>producers, residents and lake users are adopting best practices promoted by the Cows and Fish program</p> <p>completion of Environmental Farm Plans</p>	<p>Government agencies will support local, grass roots initiatives (e.g., a lake stewardship group at Buffalo Lake) that serve as a catalyst for social action, leading to responsible use of the planning area. Community based (and led) stewardship initiatives are seen to be highly desirable.</p> <p>Partnerships among stakeholders and interest groups wishing to promote and implement best practices within the planning area will be supported.</p> <p>Encourage local municipalities and interest groups to invite Cows and Fish representatives to meet with local landowners, residents and interested parties to raise awareness of and promote best practices in lake riparian areas and build community capacity for taking action to effectively manage riparian areas.</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>ASRD and Alberta Agriculture and Rural Development staff will inform farmers and stock producers of the benefits of Environmental Farm Plans and encourage producers to contact the Alberta Environmental Farm Plan Company to voluntarily initiate the development of such plans on their land holdings.</p> <p>Provincial agencies will work with counties, summer villages and subdivision associations that border the planning area to reduce the impact of human activities on native vegetation in “wet” and “dry” areas. Collaboration among communities, agencies and interest groups is seen to be vital to achieving common aims and outcomes at Buffalo Lake.</p>



## Buffalo Lake Shoreland Health Videography Project

To assist with the development of Buffalo Lake Integrated Shoreland Management Plan, aerial videography was used to help assess the health of Buffalo Lake's shoreline. This information is helpful towards establishing benchmarks of shoreline conditions (riparian areas) and monitoring activities around the lake. The first shoreland video assessment was completed in 2005. Results showed livestock grazing was the primary activity on 59% of the shoreline; 29% of the shoreline was in a natural state; 7% of the shoreline has been developed for beaches, and all terrain vehicle use was evident on 43% of the lake's shoreline.

In June 2006, a helicopter was used to obtain additional video footage of Buffalo Lake's entire shoreline. The helicopter's location and the time of image capture were embedded within the video. This gives researchers the necessary information to undertake image analysis and interpretation. Using this information it was possible to produce a map showing each of the shoreline segments around the lake representing the "dry" areas (above the shoreline) and "wet" marshy areas below the shore - referred to as "riparian zones".



A score card was used to determine the riparian health around the entire lake. The score card included the following criteria:

- Proportion of area covered by natural vegetation
- Presence of cattails and bulrushes
- Abundance of trees and shrubs
- Amount of human caused disturbance or vegetation removal
- Amount of human caused physical alteration (adding or removing sand or rock, retaining walls, boat houses, OHV trails, livestock impacts, etc.)

These criteria were used to classify the various riparian zone video segments along the shoreline as either:

- Healthy
- Moderately impaired, or
- Highly impaired

To obtain a copy of the 2006 Buffalo Lake Shoreland Video contact (DVD format):

Sustainable Resource Development  
#404, 4911 - 51 Street  
Red Deer, Alberta T4N 6V4  
Phone: 403-340-5451



## What Did We Find Out?

The 2006 shoreline health assessment of Buffalo Lake found only 34% of the riparian area to be in a healthy state while 37% was highly impaired and the remaining 29% was moderately impaired.

The most common cause of lower scores in “moderately” or “highly” impaired areas were:

encroachment by adjacent development (removing vegetation, establishing private beaches, shoreland beautification, construction of boat houses and marinas) and livestock grazing.

## Where Do We Go From Here?

The 2006 shoreline video footage is a permanent record of shoreline conditions that can be used to help gauge improvements to Buffalo Lake’s riparian habitats. This information can be used to help manage the lake’s shorelines by identifying “hot spots” needing restoration and additional monitoring in the future. Alberta Sustainable Resource Development will conduct aerial shoreline assessments of Buffalo Lake at approximately 5 year intervals to maintain a current database of conditions and information to determine improvements in riparian health or evaluate potential areas that have or continue to deteriorate.

## What are riparian areas?

Riparian is a term scientists use to refer to the biologically rich and productive areas at the edge of lakes, wetlands and rivers. The strip of public (provincial Crown) land surrounding Buffalo Lake contains the lake’s riparian area.

Plants that grow in riparian areas are called riparian vegetation. Plants growing naturally around Buffalo Lake include aspen, balsam poplar, dogwood, willow, chokecherry, sedges, bulrushes and cattails.

## Now It’s Your Turn!

The goal of maintaining healthy riparian areas around Buffalo Lake to ensure the lake’s beauty, water quality, recreation opportunities, and fish and wildlife are maintained now and in the future. A healthy lake environment is a shared responsibility among government resource managers, lake residents, visitors, adjacent land users and municipalities.

You can help maintain and restore riparian areas by:

- Avoiding or minimizing damage to natural vegetation along the lake shore.
- Learning about the important ecological role of riparian areas, and sharing this knowledge with neighbours, family and friends.
- Encouraging native plants (not introduced species) to grow in riparian areas.
- Participating in activities that promote the well-being of Buffalo Lake’s shorelands.

## Inter-Jurisdictional Cooperation and Municipal Planning Integration

*It should be noted that pressures and impacts to the BLISMP planning area will largely be determined by activities that occur on adjacent uplands (i.e., private land) where land re-zoning and development is administered by municipalities. The success of BLISMP depends on positive collaboration and cooperation between all levels of government, with the lake's health and integrity at the centre of all decisions.*

### Inter-Jurisdictional Cooperation and Municipal Planning Integration

Two bodies influence land use, human activities and development at and around Buffalo Lake:

- Buffalo Lake Management Team (BLMT) – has a mandate that pertains to the water management of Buffalo Lake, and
- Buffalo Lake Inter-municipal Development Plan Steering Committee (IDP Committee) – has a mandate that pertains to the use and development of surrounding private land.

While these two bodies have a unique role, separate and distinct from BLISMP, it is recognized that this management plan is closely inter-related with the areas of interest and concern to the BLMT and IDP Committee. For this reason, strong working relations should exist among these three initiatives and complementary activities should be pursued wherever possible.

The aims and intents outlined in this plan cannot be achieved without the support and goodwill of local authorities, residents and lake users. In particular, cooperation between provincial and federal agencies and the five adjacent municipalities is necessary to achieve common aims and objectives.

Although municipal and provincial government land development application processes are administratively distinct and independent of each other, sustainable shoreland management will not be possible until these two land management systems are integrated and the two levels of government coordinate their activities and commit to a shared vision. Synchronizing and streamlining existing processes at the municipal and provincial level, with the involvement of federal agencies as necessary, is intended to more fully integrate the decision-making and approval process.

**Goal #13: To promote ongoing inter-jurisdictional cooperation among BLMT, IDP Steering Committee, local municipalities, and the BLISMP initiative to achieve mutual aims and to further the health of Buffalo Lake and surrounding public land.**

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
<p>13.1 Wherever possible, involved jurisdictions should seek to integrate, simplify and streamline their respective administrative processes and structures, leading to improved cooperation in decision-making regarding land use and development around Buffalo Lake.</p>	<p>improved referral and development review process</p>	<p>surrounding municipalities are urged to adopt an improved referral and development review process</p>	<p>Provincial government agencies and Fisheries and Oceans Canada will participate in an improved referral system in which timely agency input will be provided to municipalities at the earliest stage of the rezoning and subdivision proposal / applications process. To facilitate constructive agency involvement, proponents must submit detailed information on their intentions for using the public land right-of-way (ROW) and “wet” area adjacent to proposed development areas on adjacent private lands.</p> <p>A letter to 5 local municipalities (dated November 28, 2006), from Land Use Operations (ASRD), will, in part, provide a basis for developing an improved referral system to review development proposals / applications. Key features of an improved referral system include:</p> <ul style="list-style-type: none"> <li>• prospective developers, after becoming familiar with BLISMP, relevant statutory plans, and appropriate government policies, will be required to disclose their interest and intentions (in a detailed plan) for accessing Buffalo Lake and using the ROW and “wet” area (i.e., public land) in connection with each subdivision proposal / application;</li> <li>• the early (timely) involvement of provincial agencies and Fisheries and Oceans Canada in reviewing and commenting on land use and development submissions brought before local municipalities including: participation in “pre-</li> </ul>

## Inter-Jurisdictional Cooperation and Municipal Planning Integration

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>application” meetings; review of rezoning applications; review of subdivision designs / proposals; and review of subdivision applications;</p> <ul style="list-style-type: none"> <li>• government agencies will provide information and recommendations to allow local municipalities to undertake a comprehensive evaluation of land use and development proposals / applications, leading to an informed decision, before issuing any approvals. Local municipalities are urged to notify provincial and federal agencies of the kind of information and inputs that would be most helpful to them when undertaking rezoning assessments and reviewing subdivision proposals / applications.</li> </ul> <p>It is recommended that municipalities refer subdivision proposals/applications to IDP Committee members – when there is an issue of conformity with the IDP plan – and to government agencies for review and recommendations. This will enable local authorities to further coordinate their development processes with government agencies.</p>
<p>13.2 Encourage local municipalities to make existing and prospective developers aware of BLISMP at the earliest possible stage in discussions or in the approvals process.</p>	<p>awareness of BLISMP among developers all plans that</p>	<p>BLISMP is consulted before any land use change requests or subdivision proposals / applications are submitted for review</p>	<p>Local municipalities are encouraged to inform developers and other interested parties of:</p> <ul style="list-style-type: none"> <li>• BLISMP and where the plan can be accessed;</li> <li>• their responsibility to consult BLISMP before proceeding with any land use change or new development adjacent to the ROW; and</li> <li>• provincial government contacts for BLISMP</li> </ul> <p>Provincial agencies will adopt a one window approach in disseminating information and responding to inquiries on BLISMP. The lead agency in this regard will be Land Use Operations (ASRD). Where opportunity exists to do so, potential</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>developers should be made aware of BLISMP provisions when developing land adjacent to the ROW. Developers are required to identify how BLISMP provisions are being addressed in their proposed subdivision designs and rezoning applications. Developers must submit detailed plans for any proposed activities and developments on the ROW for review by appropriate provincial and federal agencies and local municipalities.</p> <p>Twenty-five printed copies of BLISMP will be provided to each local municipality to be placed in municipal office libraries, put on display, and made available to individuals wishing to review a printed copy.</p> <p>BLISMP will be made accessible on the lead provincial agency's (ASRD) website as well as the Buffalo Lake Management Team's (BLMT's) website.</p> <p>Land Use Operations (ASRD) will inform the associations/boards of all non-incorporated subdivisions around Buffalo Lake (e.g., Pelican Point, Scenic Sands, Braseth's Beach, etc.) of BLISMP and of relevant provisions in the plan.</p> <p>Local municipalities and government agencies will together develop a checklist / template that informs developers of the information that must be submitted with development proposals/applications.</p>

## Inter-Jurisdictional Cooperation and Municipal Planning Integration

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
13.3 Encourage local municipalities to become familiar with BLISMP and the Management Areas system employed in this plan to promote the integration of private and public land uses	pertain to Buffalo Lake are in agreement with each other	BLISMP and municipal statutory plans will be consistent with each other within 2 years of BLISMP approval	<p>Following plan approval, provincial government staff will offer presentations on BLISMP implementation to each local municipal council (i.e., County of Stettler, Lacombe County, County of Camrose; Summer Villages of Rochon Sands and White Sands) and supply each councilor with a copy of the approved management plan. The relationship between BLISMP and existing municipal statutory plans around Buffalo Lake will be clarified at this time.</p> <p>It is recommended that BLISMP and relevant statutory plans are aligned and supportive of each other. This may necessitate plan revisions or amendments.</p> <p>ASRD and AENV will participate in the review and update of the 1997 Buffalo Lake Inter-municipal Development Plan.</p>
13.4 Encourage discussions among local municipalities and provincial / federal agencies before making any decisions on motorized or non-motorized access to Buffalo Lake in the future.	future planned access points support BLISMP objectives	<p>agreement exists between local municipalities, developers and government agencies on the preferred and most suitable locations for future access points to Buffalo Lake</p> <p>municipalities to adopt a strategic plan which identifies future access needs and access points</p>	<p>Municipalities have a responsibility for planning and providing future public access to Buffalo Lake's ROW. Therefore, municipalities must become informed of public needs and demands for alternative access sites. Municipalities are encouraged to evaluate proposed future access locations against BLISMP and in consultation with provincial and federal agency staff. (See also 7.1, 7.2 and 7.3 in this regard.)</p> <p>The benefits and possibilities of establishing a pedestrian walkway (or designated motorized trail network) around Buffalo Lake on adjacent private land should be explored by local municipalities in consultation with provincial and federal agencies, and the public. Consideration should be given to situating</p>

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>public walkways / trails on private land upslope from the ROW within any established Environmental or Municipal Reserves.</p> <p>Municipalities are encouraged to standardize requirements and guidelines for public trails/walkways that are situated on private land.</p> <p>It is recommended that local municipalities and developers make provision for suitable access facilities (minimally a vehicle turn-around area and a suitable vehicle parking area of sufficient size) at designated access points and on all open road allowances that coincide with formally established public access points to the ROW. This can be achieved through the dedication of reserve lands in the vicinity of access points</p>
<p>13.5 Municipalities are encouraged to use appropriate tools and instruments which have the effect of creating a buffer between the ROW boundary and immediately adjacent subdivisions and developments.</p>	<p>the lake ROW is buffered from immediately adjacent subdivisions or other intensive land uses</p>	<p>it is recommended that municipalities require that building development setbacks, ERs or other land use mechanisms be used to separate new subdivisions from the ROW</p>	<p>Encourage subdivision developers to coordinate future access needs and consider shared access arrangements.</p> <p>To maintain environmental quality and lakeshore aesthetics, municipalities are encouraged to adopt policies that require the adoption of compatible land use mechanisms/instruments (e.g., building development setbacks, Environmental Reserves, Municipal Reserves) along the ROW for new subdivision developments. To ensure the viability of ER buffers, a standardized buffer width (i.e., the Inter-Municipal Development Plan (IDP) Steering Committee has adopted a 20m minimum width buffer) should be uniformly adopted by involved municipalities – which could be increased or</p>

## Inter-Jurisdictional Cooperation and Municipal Planning Integration

Objectives	Indicators	Targets	Guidelines / Actions / Strategies
			<p>decreased if warranted by site conditions. NOTE: Provincial legislation currently provides for a minimum ER width of 6 m along the bed and shore of a lake.</p> <p>Developers should be informed of the benefits of using building development setbacks, ERs and MRs along the Buffalo Lake ROW.</p> <p>The adequacy of existing compliance policies, monitoring activities, and enforcement actions to curb infringements on building development setbacks, ERs and MRs will need to be assessed by municipalities.</p>
<p>13.6 To confirm if established human use and development threshold levels for Buffalo Lake are acceptable given current levels of growth and development.</p>	<p>human use and development thresholds are established for Buffalo Lake</p>	<p>updated human use and development thresholds for Buffalo Lake are established and not exceeded</p> <p>if deemed necessary, a cumulative effects study for Buffalo Lake should be initiated within 3 years of BLISMP approval</p>	<p>Increasing use levels and ongoing development are placing increasing pressure on Buffalo Lake and the surrounding ROW. If left unchecked, the lake's natural carrying capacity and assimilative capacity will be exceeded. Therefore, it is recommended that involved municipalities (or the IDP Steering Committee), with the involvement of provincial and federal agencies, review, and if necessary, update the existing limiting factors and carrying capacity thresholds (pertaining to human activity at Buffalo Lake) in the 1997 Buffalo Lake Inter-Municipal Development Plan. This may entail the completion of a cumulative effects study for Buffalo Lake and adjacent lands to provide a basis for assessing current IDP thresholds.</p> <p>Municipalities (or the IDP Steering Committee) will need to, on a periodic basis, investigate whether human use, growth and development thresholds are being approached (or exceeded).</p>

## Information for Lakeshore Subdivision Developers

Buffalo Lake is unique in Alberta because the lake's shorelands consist of public (i.e., provincial Crown) land – which is referred to as the water management Right-of-Way (ROW). The ROW encompasses the lake's 1 in 100 year flood plain. Because these lands are subject to flooding, residential development is not allowed within the ROW. Developers wishing to submit a subdivision development proposal for uplands (private land) adjacent to the ROW should consult the:

- Buffalo Lake Inter-municipal Development Plan (IDP),
- appropriate municipal statutory plans (i.e., Area Structure Plans),
- municipal land use bylaws, and
- contact the relevant municipality to receive clarification on the land re-zoning and subdivision development approval process



The section Inter-jurisdictional Cooperation and Municipal Planning Integration in this plan indicates provincial agencies will be cooperating closely with municipalities to review land re-zoning and development applications for adjacent private lands to assess potential impacts of subdivision proposals on Buffalo Lake, the lake's riparian areas, and the public land ROW. Lake access points will be identified and formalized within municipal Area Structure Plans, and potentially within a future overall lake access strategy, to be prepared under the direction of the Buffalo Lake IDP Committee.

For further information on land uses and activities that can occur on the public land water management ROW of Buffalo Lake, contact Land Use Operations, Alberta Sustainable Resource Development in Red Deer 403-340-5451.

Commercial ventures benefiting the public at large, and which may be compatible with the lake ROW, will need to be reviewed by appropriate provincial agencies and the relevant municipality. Section 2.6 of this plan (i.e., BLISMP Management Areas) should be reviewed and used in subdivision design planning as it clarifies what land uses and activities are – or may be – compatible with the public land ROW and the lake's shoreline / littoral zone.

Alberta Sustainable Resource Development (ASRD) has prepared a policy identifying activities and land uses which can occur and are permitted on lake shorelands in Alberta (the following website provides detailed information in this regard: [www.srd.alberta.ca](http://www.srd.alberta.ca). Click on: Managing Programs> Lands>Shorelands>Approvals & Regulatory Requirements.

Approvals are required under provincial and federal legislation for activities that alter the littoral zone, the lake shoreline or adjacent shorelands or which require the installation of permanent structures or the construction of permanent works.

Seasonal or temporary uses (as defined in ASRD's policy) that do not unduly impact the natural environment do not require an approval. Some land uses or management actions can be accommodated on the ROW but will require the proponent to obtain a disposition (an agreement) under the *Public Lands Act*.

# Buffalo Lake Inter-municipal Development Plan

Five municipalities border Buffalo Lake: Lacombe County, County of Stettler, Camrose County, Summer Village of Rochon Sands, and Summer Village of White Sands (see Map 1 – Planning Area). Based on the desire to adopt a common approach to land use planning and development around Buffalo Lake, the 5 municipalities agreed to jointly develop a statutory plan for the private (deeded) lands which surround the lake. The Buffalo Lake Inter-municipal Development Plan (IDP) was adopted by the Councils of each municipality in 1997. The Buffalo Lake IDP Steering Committee (which contains representatives from each of the 5 municipalities) was established to guide the plan development process, to provide oversight during the plan implementation phase, and to provide an ongoing forum to discuss land use, rezoning and subdivision proposals and issues within the IDP planning area.

In response to increasing subdivision development pressures occurring around Buffalo Lake (particularly within the County of Stettler), and following the completion of the provincial government's Buffalo Lake Integrated Shoreland Management Plan (BLISMP), the IDP Committee decided that it was time to review and update the 1997 plan. The



Committee invited Alberta Sustainable Resource Development, Alberta Environment, and the Buffalo Lake Management Team to participate in the plan review process. A consultant (Stantec) was retained in the spring of 2008 to assist the Committee in reviewing the 1997 Inter-municipal Development Plan and to identify new directions for a revised IDP plan. Lake residents, users and other stakeholders were consulted during the development of the new IDP. It is expected that the revised IDP will be adopted by member municipalities in 2010. Among other things, the revised IDP:

- proposes new boundaries for the IDP planning area
- proposes the creation of 5 development growth nodes for future residential development
- sets development limits for residential and recreational units at Buffalo Lake

Efforts were made to harmonize the revised IDP with BLISMP to ensure the new municipal statutory plan and the Government of Alberta's shoreland policy plan are mutually supportive of each other. Area residents and readers who are interested to know how land use and development will occur on private lands surrounding Buffalo Lake are encouraged to become familiar with the new IDP which can be viewed or obtained at Lacombe, Stettler or Camrose County offices.

## BLISMP Management Areas

To provide greater clarity on where certain resource management objectives will be achieved and where particular land uses and human activities can occur, the planning area has been divided into 4 management areas (MAs). This approach is useful and necessary to address (or prevent) resource management issues and land use conflicts from occurring. This approach also recognizes that the planning area is not a homogenous entity. As a result, management actions can be tailored to particular sites and are responsive to the resource values which are found there. Management actions also reflect a site's potential or capability for particular uses.

Direction which is provided in this section should be considered with direction that is contained in the preceding section (i.e., Resource Management Strategies) of this plan.



## BLISMP Management Areas

### BLISMP Management Areas System

	Existing Developed Recreational Use	General Use	Limited Use	Restricted Use
<b>Management Intent</b>	<p>accommodate existing recreational facilities and development</p> <p>disturbances that comply with provisions in this plan and which meet existing regulatory requirements are allowed for the purpose of providing additional recreational opportunities</p>	<p>“small footprint”<sup>A</sup> disturbances are allowed to accommodate “permitted” and “compatible” activities</p> <p>approved disturbances will be accommodated in less sensitive areas</p> <p>some habitat loss may be accommodated in accordance with Fisheries and Oceans Canada <i>Policy for the Management of Fish Habitat</i><sup>B</sup></p> <p>maintain, and where necessary, restore riparian areas to a “healthy” condition, except for sites where ROW disturbance is allowed</p>	<p>disturbances must be minimized</p> <p>approved disturbances will be accommodated in less sensitive areas</p> <p>important natural habitat for fish, wildlife, and plant species will be maintained</p> <p>habitat fragmentation must be minimized</p> <p>maintain, and where necessary, restore riparian areas to a “healthy” condition</p>	<p>no disturbances will be allowed except those which promote or enhance native vegetation communities</p> <p>ecological integrity and function will be maintained</p> <p>critical habitats, sensitive or unique physical features, and historical resources will be protected</p> <p>habitat fragmentation will not occur</p> <p>maintain, and where necessary, restore riparian areas to a “healthy” condition</p> <p>maintain water quality</p> <p>prevent erosion and sediment transport</p>

<sup>A</sup> **small footprint:** a small-scale development or disturbance whose design and use has acceptable impacts.

<sup>B</sup> *The Department of Fisheries and Oceans Policy for the Management of Fish Habitat* (October 7, 1986) see particularly **Guiding Principle 2.2.1: No Net Loss of the Productive Capacity of Habitats**

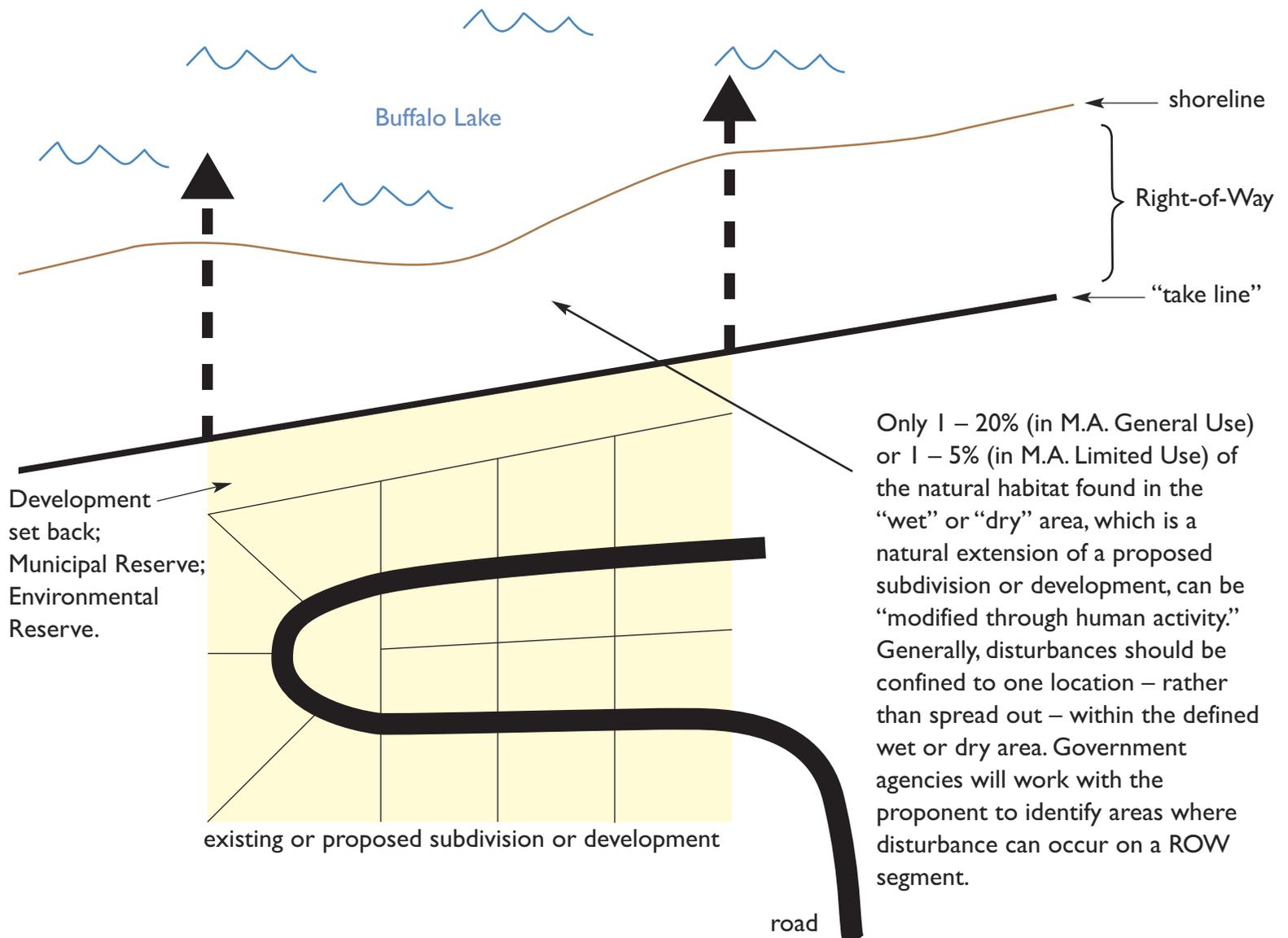
NOTE – Should the harmful alteration, disruption or destruction of fish habitat be unavoidable for any approved activity or development, the proponent will need to comply with the *Fisheries Act* (Canada) and *Fisheries and Oceans Canada Policy for the Management of Fish Habitat*. The Policy has as its aim the net gain of fish habitat, fish habitat conservation, fish habitat restoration, and fish habitat development.

	Existing Developed Recreational Use	General Use	Limited Use	Restricted Use
<b>General Description</b>	Management Area has been highly modified from its natural state. Natural features may have been degraded or may have disappeared. Human activity is intensive or concentrated. Public access is well established.	The presence of human impacts are currently (or could be) apparent. Human activity may be extensive or confined to specific sites. Natural features and native vegetation will be retained wherever possible. Some level of public access may exist.	Management Area is minimally impacted by human activity. Management Area has environmental (natural resource) values that <u>will be maintained</u> . Specific sites may require rehabilitation work. Public access may be permitted if site conditions are suitable.	Human activity will be restricted. Management Area has environmental (natural resource) values that <u>require protection</u> . Specific sites may require rehabilitation. No obvious, permanent human “footprint” will be visible.
<b>Extent or degree of “dry” and “wet” area modification allowed</b>	Natural habitat has been extensively modified or entirely lost through human activity.	Natural habitat modification may occur in <b>1-20%</b> of the “wet” and ‘dry’ area segments that logically correspond with a subdivision or other development (see Figure 2 - page 128).  This percentage is the maximum allowed for a ROW segment. Local habitat sensitivity and cumulative impacts will be considered when determining what level of modification is appropriate for a ROW segment.	Natural habitat modification may occur in <b>1-5%</b> of the “wet” and “dry” area segments that logically correspond with a subdivision or other development (see Figure 2 - page 128).  This percentage is the maximum allowed for a ROW segment. Local habitat sensitivity and cumulative impacts will be considered when determining what level of modification is appropriate for a ROW segment.	Natural habitat will not be modified or lost through human activity. Habitat enhancement projects may occur.

## BLISMP Management Areas

**Figure 2**

Extent/Degree of Right-of-Way Modification for **General Use** and **Limited Use** Management Areas



**MATRIX of Compatible Uses/Activities for BLISMP Management Areas**

Use/Activity	B L I S M P M a n a g e m e n t A r e a s			
	Existing Developed Recreational Use	General Use	Limited Use	Restricted Use
1. Non-motorized recreation (e.g., wildlife viewing)	P	P	P	C
2. Serviced camping	NP	NP	NP	NP
3. Developed beach (mechanical beach maintenance / improvements allowed)	P	C	C	NP
4. Boat launch (permanent)	P	P	C	NP
5. Natural un-maintained trails – foot access only	P	P	P	P
6. Established, maintained trails – non-motorized (walking, bicycle)	P	P	C	C
7. Summer - Off-highway vehicle use (random) “wet area”	NP	NP	NP	NP
8. Summer - Off-highway vehicle use (random) “dry area”	C <sup>3</sup>	C <sup>3</sup>	C <sup>3</sup>	NP
9. Winter - Off-highway vehicle use (random) “wet area”	P	P	P	P
10. Winter - Off-highway vehicle use (random) “dry area”	C	C	C	NP
11. Scientific study (necessitating some level of impact)	C	C <sup>4</sup>	C <sup>4</sup>	C <sup>4</sup>
12. Domestic livestock grazing on the ROW	APO	APO	APO	APO
13. Livestock watering in Buffalo Lake	APO	APO	APO	APO
14. Agricultural cultivation / gardening	NP	NP	NP	NP
15. Utility corridors (pipelines, electrical, gas and other transmission lines)	NP	NP	NP	NP
16. Oil/natural gas/CBM “low impact” exploration (seismic activity)	C	C	C	C
17. Oil/natural gas/CBM development and facilities (e.g., pipelines)	NP	NP	NP	NP
18. Coal exploration and development	NP	NP	NP	NP
19. Mineral exploration and development excluding oil/gas/coal (e.g., minerals, clay, marl)	NP	NP	NP	NP
20. Surface materials exploration and extraction (e.g., sand, gravel)	NP	NP	NP	NP

## BLISMP Management Areas

Use/Activity	B L I M S P Management Areas			
	Existing Developed Recreational Use	General Use	Limited Use	Restricted Use
21. Commercial use (marina, boat rental)	C	C	C	NP
22. New commercial buildings – temporary or permanent	NP	NP	NP	NP
23. Temporary structures on the ROW/shoreline (e.g., docks, boat lifts, diving rafts)	C	C	C	NP
24. Permanent structures on the ROW/shoreline	NP <sup>5</sup>	NP <sup>5</sup>	NP <sup>5</sup>	NP <sup>5</sup>
25. Golf course, miniature golf course	C	NP	NP	NP
26. Aquatic vegetation management - removal or alteration of plants	C <sup>6</sup>	C <sup>6</sup>	C <sup>6</sup>	NP
27. Terrestrial vegetation management - removal or alteration of plants	C <sup>7</sup>	C <sup>7</sup>	C <sup>7</sup>	C <sup>8</sup>
28. Shoreline/ROW modification (e.g., shoreland tilling, bank stabilization, dredging)	C	C	C	NP
29. Parking of vehicles on the ROW	NP <sup>9</sup>	NP <sup>9</sup>	NP <sup>9</sup>	NP
30. Storage of personal property on the ROW	NP	NP	NP	NP

P **Permitted Use/Activity** - Uses that are considered to be compatible with the intent of a Management Area following existing provincial guidelines, policies and regulations and direction contained in this plan

C **Compatible Use/Activity** - Uses that may be compatible with the intent of a Management Area under certain circumstances or when special conditions and controls are observed

NP **Not Permitted Use/Activity** - Uses that are not compatible with the intent or capabilities of a Management Area

APO **Activity to be Phased Out** - The use is currently permitted but it is proposed that it be discontinued in the future to achieve water quality or other environmental objectives.

NOTE: Activities listed in this table are representative of the range of activities that occur at Buffalo Lake. Whether specified or un-specified in this table, human activities and land uses that are being considered must always be evaluated against the intent of each individual Management Area and other provisions in this management plan.

The application of the 4 Management Areas to the BLISMP planning area is shown in Map 4 – Management Areas.

<sup>3</sup> OHVs can **cross** the right-of-way for legitimate reasons but cannot be used to travel **along** the right-of-way to minimize impacts to riparian areas

<sup>4</sup> scientific study proposals will be reviewed to assess potential impacts

<sup>5</sup> all permanent structures require authorization

<sup>6</sup> this activity requires an approval under the *Public Lands Act, Water Act and Fisheries Act (Canada)*

<sup>7</sup> an authorization is required under the *Public Lands Act* to remove vegetation on the right-of-way

<sup>8</sup> is compatible if the goal is vegetation rehabilitation, the planting of desirable native species, or the eradication of weeds and invasive plants

<sup>9</sup> vehicles are only permitted on the right-of-way to drop off watercraft at designated access points and to access the lake during the winter months

### Rationale for including ROW segments in BLISMP Management Areas 3 and 4 (see also page 134).

These tables should be used in conjunction with “Buffalo Lake Habitat and Wildlife Assessment (2002, ASRD file document) and the BLISMP Fish and Wildlife Theme Map in this plan.

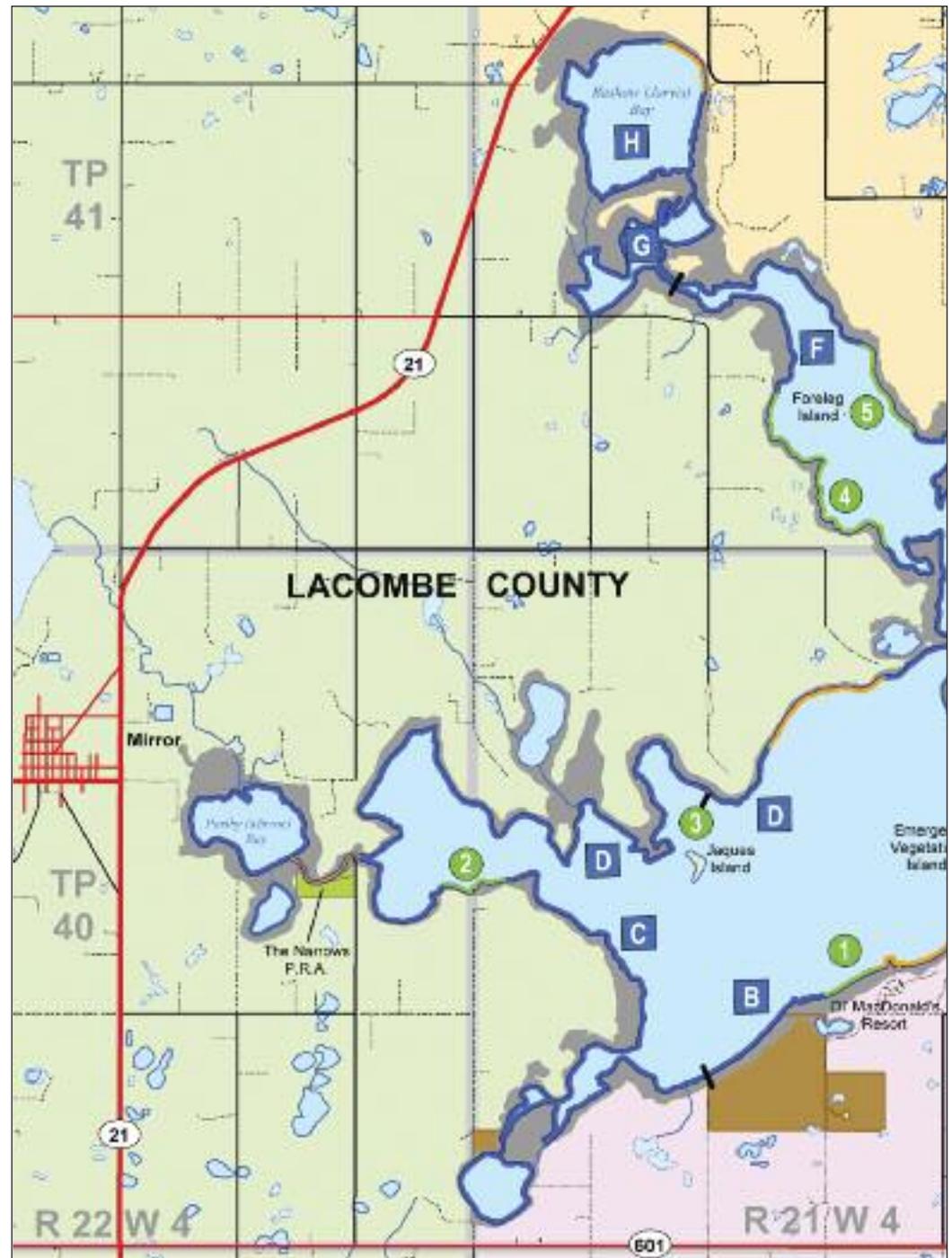
#### Management Area 3 (Limited Use)

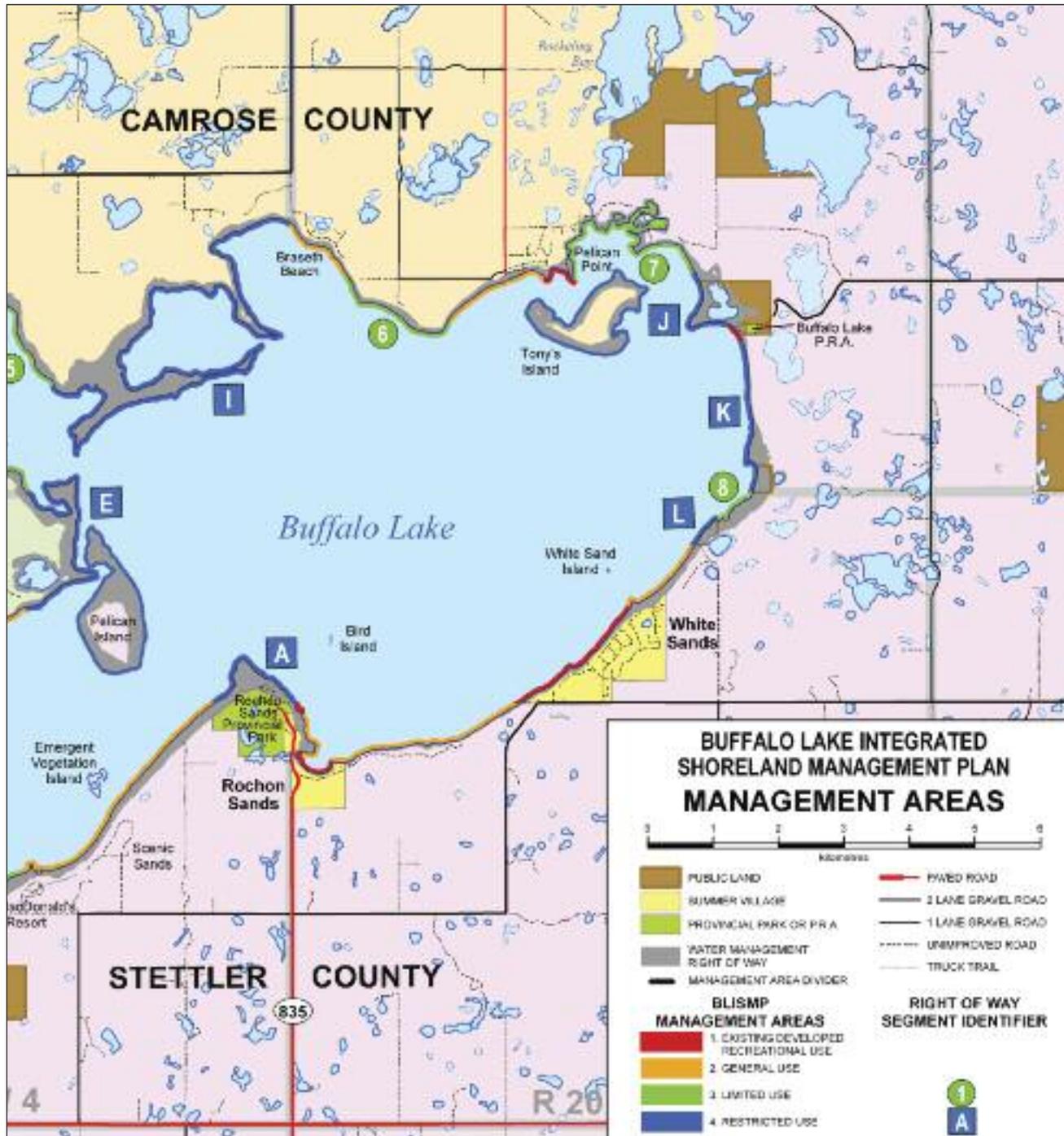
Row Segment	Considerations
1	ROW segment is fairly intact/healthy. Emergent vegetation is present. Segment has fish spawning/rearing potential. Used by various bird species. Segment provides a buffer to MA 4 to the West. Segment has potential as MA 4 but Planning Team is willing to provide an opportunity for some (1-5%) future development – hence downgraded to MA 3.
2	Emergent vegetation is present. Segment has fish spawning/rearing potential. Segment has potential as MA 4 but Team is willing to provide an opportunity for some (1-5%) future development – hence downgraded to MA 3.
3	Segment is ideally suited as MA 4, however, this narrow ROW segment (the width of a road allowance) has been created to accommodate a potential winter access point to the lake in the future. Grebes use this section of lakeshore. Emergent vegetation is present.
4	Emergent vegetation exists but is not well established. Segment is adjacent to important upland wildlife habitat. Lake has muddy bottom here (not suited to development).
5	Segment is adjacent to important upland wildlife habitat. Downgraded to MA 3 to allow some (1-5%) future development and winter lake access.
6	Some emergent vegetation exists in the vicinity. Reasonably good sandy beach is present. Zoned as MA 3 to maintain a lakeshore natural environment between MA 2 segments that are located to the east and west.
7	Segment receives high use by birds. Emergent vegetation is present. Has good fish rearing potential. Colony of black terns and grebes use this area. Has potential as MA 4 but human encroachment and disturbance are already well established in this ROW segment.
8	ROW segment has limited potential for development; muddy shoreline. This ROW segment is MA 3 to help maintain the environmental integrity of MA 4's to the north and south.

## BLISMP Management Areas

### Map 4 - Management Areas

Numbers (1-8, in green) are used to identify ROW segments that fall within the Limited Use management area (see page 131 for an explanation) and letters (A-L, in blue) are used to identify segments that fall with the Restricted Use management area (see page 134 for an explanation).





## BLISMP Management Areas

### Management Area 4 (Restricted Use)

Row Segment	Considerations
A	ROW segment is in Rochon Sands Provincial Park. Provincial Park ROW is managed for its natural heritage values. No future development is being contemplated here.
B	ROW segment falls in a “healthy” riparian area. Emergent vegetation is present. Has fish spawning and rearing potential. Located adjacent to Buck for Wildlife parcel (Public land) – ROW of managed as an extension of the Buck for Wildlife property.
C	Emergent vegetation is present. Has fish spawning and rearing potential. Much of the existing fish and wildlife habitat is intact.
D	ROW segment contains important habitat in both wet and dry areas. Critical habitat for western grebes. Emergent vegetation is present. Has fish spawning and rearing potential.
E	ROW segment once contained historic piping plover habitat. Some emergent vegetation is present. ROW is relatively wide and isolated from adjacent uplands.
F	Segment contains emergent vegetation. Offers good wildlife habitat.
G	Segment contains high density of emergent vegetation. Very shallow water.
H	Segment contains emergent vegetation.
I	ROW segment once contained historic piping plover habitat. Large contiguous ROW section provides good wildlife habitat.
J	ROW segment consists of vacant provincial Crown land. High wildlife values exist in wet and dry areas. ROW is adjacent to an historical area – former Metis Settlement.
K	Historical values are present (trading post was once situated in the area). High, steep escarpment exists. Landscape not well suited to development.
L	ROW segment is located adjacent to provincial Crown Land – which will not be developed. Keep ROW and Crown land intact as one environmental management unit.
Pelican Island	Also called Ryder Island. Contains excellent habitat for shorebirds; colonial nesting site. Great blue heron colony uses this island. Shoreline tends to be quite muddy.
Tony’s Island	Colonial nesting site. Island is heavily used by deer and other wildlife species.
Parlby Bay	Sometimes referred to as: Mirror Bay. Also includes the water body immediately to the south of Parlby Bay. Fisheries and/or wildlife values are present.
Bashaw Bay	Sometimes referred to as: Jarvis Bay. Fisheries and/or wildlife values are present.
Stephenson’s Lagoon	Connected to Buffalo Lake by a water channel constructed by Alberta Environment in 1997-98. Fisheries and/or wildlife values are present.

# Plan Administration and Implementation



## Plan Implementation

Primary responsibility for implementing BLISMP lies with the initiating provincial government departments: Alberta Sustainable Resource Development, and Alberta Environment. Plan implementation will occur over a period of time and will be influenced by a number of factors, including the following:

- availability of staff and resources
- securing dedicated budgets for certain implementation activities
- establishing partnerships and cooperative agreements
- setting priorities for implementation
- gauging stakeholder/public support (buy-in) for particular plan recommendations and new initiatives
- integrating or reconciling BLISMP actions with provincial government policies, programs and work plans

Given the scope and range of action recommendations contained in BLISMP, plan implementation will be phased-in over a period of time. An inter-agency Implementation Team will guide the process of putting the plan into effect. The Implementation Team will be required to consider the above list of factors and any other relevant issues and information that may exist.

While primary responsibility for plan implementation rests with provincial government agencies responsible for the administration, protection, and management of public land and natural resources in the planning area, the involvement of other agencies and bodies will be important to obtaining desired plan outcomes. These agencies and bodies include: Fisheries and Oceans Canada, the Buffalo Lake Management Team (BLMT), the Buffalo Lake Inter-Municipal Development Plan (IDP) Steering Committee, and the five municipalities which border Buffalo Lake.

## Plan Administration and Implementation



The Planning Team and Steering Committee involved in developing BLISMP will be dissolved and replaced by a new Implementation Team. This Team will set priorities for plan implementation within future BLISMP work plans, identifying how and when specific plan recommendations will be acted upon. The Implementation Team will assess progress being made in implementing BLISMP and identify any obstacles that may be frustrating the attainment of plan goals and objectives. The project proponents may wish to periodically prepare reports summarizing noteworthy accomplishments, solutions which have been adopted to address resource management challenges, and progress being made in putting BLISMP provisions into effect.

It has been suggested that the BLMT could assume a significant role in the implementation of various provisions in this plan given the Committee's current mandate and ongoing activities in the planning area. To facilitate such a role, Alberta Environment staff will review the BLMT's existing Terms of Reference and propose an expanded mandate for the BLMT. This would afford opportunities for the Committee to provide leadership and oversight, offer advice, and undertake specific actions which support the attainment of BLISMP goals and objectives. The Minister of Alberta Environment will need to ratify the expanded mandate of the BLMT.

### Monitoring

Monitoring is an important and integral part of planning and resource management. Monitoring (tracking) will occur to:

- assess changes to ecosystem / environmental conditions resulting from management actions;
- assess the extent and magnitude of human activity (i.e., the human footprint) in the planning area; and
- assess the nature of new or lingering land and resource management challenges/issues.

Monitoring will occur at various temporal and spatial scales. Monitoring will occur, minimally, every 3 years as a result of rapidly changing conditions linked to human activity at Buffalo Lake. Appropriate monitoring methods, schedules, assignments and protocols will be established by participating agencies. Monitoring may require that baseline conditions be established for specific ecological / environmental variables and for select indicators that have been identified in this plan. Monitoring responsibilities will be shared among provincial agencies and other project participants in accordance with their respective mandates. As opportunities arise, and in the spirit of cooperation, landowners, interest groups, and users of the planning area will be encouraged to participate in monitoring activities. The findings of monitoring activities will be summarized in reports to provide a basis for evaluating BLISMP provisions, for determining progress made towards achieving BLISMP goals and objectives, and for proceeding with adaptive management where required.

The provincial lead agency or project participants may wish to prepare public documents that summarize key findings obtained through monitoring efforts.

## Plan Amendments

Resource managers recognize the need to modify management direction in response to:

- ineffectual management prescriptions or strategies;
- new knowledge;
- insights gained from observation, monitoring, research;
- the emergence of new or proven management systems and technologies;
- changing societal values and preferences;
- significant ecosystem change; and
- a significant human presence.



## Plan Administration and Implementation

These and other factors suggest resource management is a dynamic enterprise, and uncertainty and change must be addressed. To remain effective this management plan must remain flexible and responsive to change. Instituting adaptive management will provide a mechanism for ensuring this plan has the ability to respond to a changing world, to incorporate the findings obtained through monitoring programs, to use new (improved, innovative) management systems and techniques, and to respond to new information. The BLISMP Implementation Team will meet on a periodic basis to assess results and outcomes achieved by the plan as well as respond to any emerging issues that occur as a result of implementation.

Generally accepted administrative (housekeeping) changes and updates to BLISMP may be introduced by participating agencies or the Implementation Team at any time. “Substantive” changes will however require that a formal plan amendment process be followed which includes:

- identifying requested changes;
- clarifying the rationale for, and implications of, requested changes;
- identifying any objections that might be raised by the BLMT, IDP Steering Committee or the 5 municipalities; and
- considering whether the public should be notified of “substantive” changes.

A substantive change to this plan may be proposed by any participating agency/organizations directly involved in the development of this plan (i.e., ASRD, AENV, ATPR, DFO, BLMT and IDP Steering Committee). Substantive changes requiring a plan amendment should be of an urgent or compelling nature otherwise plan changes should be deferred until formal plan reviews are carried out (see below) in the future. Proposed plan amendments must be fully supported by the project proponents before they are endorsed and adopted.

## Plan Review

BLISMP will undergo a formal review at approximately three year intervals to ensure the plan remains current, effective, achievable and responsive to change. Provisions in the plan that are no longer relevant or attainable will be either modified or removed. New provisions may be added in response to new land and resource management needs or challenges.

Formal plan reviews will be initiated by the Implementation Team. Reviews will involve a systematic evaluation of the principles, goals, objectives, targets, guidelines, actions, strategies, and the Management Areas system contained in BLISMP. Any proposed changes to the plan will be documented and will follow the process described in “Plan Amendments.”

Depending on the nature and the number of substantive changes that may be introduced in the plan, consideration should be given to notifying the public of significant changes that are made to BLISMP.

## Resolution of Plan Implementation Issues

The Implementation Team will resolve any interpretive ambiguity that may occur as provisions in this plan are being implemented. The Implementation Team will also provide oversight during the resolution of any disputes that may arise among participants and stakeholders, assign roles and responsibilities where these are unclear in plan delivery, and determine implementation and monitoring priorities should this need arise during the plan implementation phase. The resolution of disputes will require that participants be clear-minded about the following: who has jurisdiction over a given matter; the recognition of legislated mandates; conformity with existing policies, legislation, regulations and agreements; the observance of established administrative procedures; and any legal considerations relevant to the matter in question.



## Plan Administration and Implementation

### Compliance

As a policy document, this plan does not have binding (statutory) authority. Nonetheless, provisions in BLISMP clearly outline the direction participating agencies will follow when implementing this plan. Plan goals, objectives, targets, actions, strategies and guidelines have been put forward as realistic, meaningful and worthwhile pursuits government agencies will strive to achieve. Users are strongly encouraged to support and follow direction provided in this plan to achieve the broad societal goals that have been established for the planning area. As indicated in the plan, participating agencies will investigate whether regulatory approaches are needed to more effectively implement plan provisions and achieve desired outcomes. Existing government compliance and enforcement tools will be exercised in the planning area as required.

The plans, bylaws, decisions and actions of municipalities will influence human activities on and around Buffalo Lake, including the water management ROW. To ensure the aims of municipalities (individually and collectively) and the goals of government agencies (as expressed in this plan) are achieved at Buffalo Lake, cooperation between these two levels of government is needed – particularly when compliance actions are required or pursued. This will ensure the compliance and enforcement activities of each level of government are mutually supportive of each other, and that all levels of government are working towards achieving a common vision for Buffalo Lake. A cooperative and coordinated approach to compliance and enforcement must also involve appropriate federal agencies and policing bodies.

Education and awareness are recognized to be integral components of any compliance activities to be undertaken.

## Communication

Given the common interest and shared involvement that exists in managing Buffalo Lake and lake shorelands, ongoing effort is required to achieve high levels of communication between the provincial agencies implementing BLISMP and the following: BLMT, IDP Steering Committee, and the 5 municipalities bordering Buffalo Lake (the counties of Lacombe, Stettler, and Camrose, and the summer villages of Rochon Sands and White Sands).

By keeping each other informed through the exchange of relevant and timely information, involved participants will be able to channel their efforts and energy to realize common goals and objectives for Buffalo Lake, the ROW, and adjacent private lands.



# Jurisdictional Responsibilities at Buffalo Lake

The laws of Canada and Alberta assign specific mandates to the three levels of government (federal, provincial, and municipal) for administering the planning and development of public land and private land and for providing protection services to communities surrounding Buffalo Lake. The mandates of key agencies include the following:

## Sustainable Resource Development

- Ensure Alberta's public (provincial Crown) lands, including rangelands & shorelands, are healthy, productive & sustainable.
- Maintain healthy ecosystems and biodiversity.
- Ensure Alberta's fish and wildlife resources and their habitats are healthy, productive and sustainable.
- Ensure compliance with Departmental regulations and policies.

## Environment

- Safeguards public and environmental (air, water, soil) health.
- Manages Alberta's water quality and quantity.
- Addresses cumulative environmental effects.



- Supports and maintains stringent environmental rules.
- Ensures compliance with Departmental regulations and policies.

## Tourism, Parks and Recreation

- Manages provincial parks and protected areas (i.e., Rochon Sands Provincial Park, The Narrows Provincial Recreation Area; Buffalo Lake Provincial Recreation Area).
  - Ensures compliance with Departmental regulations and policies.

## Agriculture and Rural Development

- Facilitates rural and environmental sustainability through maintaining or improving Alberta's air, water and soil through essential policy, legislation, information and services related to soil conservation, water quality, range management, climate change, and biodiversity.

## Fisheries and Oceans Canada

- Studies, conserves and protects aquatic ecosystems.
- Maintains sustainable fisheries.
- Provides safe, secure and accessible waterways and ensures safe water travel.
- Ensures compliance with Departmental regulations and policies.

## Transport Canada

- Maintains and enhances the safety and the protection of life, health, property and the marine environment through:
  - the development, maintenance and implementation of an effective regulatory regime
  - pleasure craft licensing
  - education and awareness of boating safety
  - monitoring and enforcement



## RCMP

- Provides federal policing service to all Canadians and policing services under contract to the Government of Alberta
- Preserves the peace and upholds the law.
- Promotes safe communities.

## Municipalities

- Responsible for the orderly and planned development of communities and private land.
- Prepare municipal bylaws and statutory plans.
- Review and approve land rezoning, subdivisions, and other proposed land developments.
- Ensure compliance with municipal bylaws and statutory plans.



## Glossary



### Abiotic

“The nonliving components of the planet, not currently part of living organisms, such as soils, rocks, water, air, light and nutrients.” (*Dictionary of Natural Resources Management, 1996, UBC Press, p 3*)

### Bank

The bank of a water body “is a line along the upper limit of the bed and shore. It's formed by the normal, continuous action or presence of surface water on the land, that forms a natural boundary between the Crown-owned bed and shore, and privately owned land. The location of the bank isn't affected by occasional periods of drought or flooding. The bed is the land on which the water sits, and the shore is that part of the bed which is exposed when water levels aren't at their normal fullest level.” (*About Public Lands fact sheet: Water Bodies and the Management of Bed and Shores. October 1997, Alberta Sustainable Resource Development*).

### Biotic

“Any living aspect of the planet, especially population or community characteristics.” (*Dictionary of Natural Resources Management, 1996, UBC Press, p 39*)

### Disposition

“A disposition is a land use contract that gives specific rights to a land or resource user (e.g., lease, license, or permit). Authority to use public land is granted through dispositions issued under the provisions of the *Public Lands Act*.” [www.srd.gov.ab.ca/lands/formspublications/aboutpublicland/dispositionsunderthepubliclandsact.aspx](http://www.srd.gov.ab.ca/lands/formspublications/aboutpublicland/dispositionsunderthepubliclandsact.aspx)

### Emergent Vegetation

Aquatic plant species that are rooted in water bodies and which extend above the water's surface. Typically, emergent vegetation is found in shallow water along shorelines.

## Glossary

### Environmental Reserve (ER)

Provision exists under Alberta's *Municipal Government Act* [Section 664(1)] for municipalities to require developers to set aside a parcel of land as Environmental Reserve in a proposed subdivision. Land suited for Environmental Reserve consists of:

- (a) a swamp, gully, ravine, coulee or natural drainage course,
- (b) land that is subject to flooding or is, in the opinion of the subdivision authority, unstable, or
- (c) a strip of land, not less than 6 metres in width, abutting the bed and shore of any lake, river, stream or other body of water for the purpose of
  - (i) preventing pollution, or
  - (ii) providing public access to and beside the bed and shore.

### Full Supply Level (FSL)

Refers to level of the water surface (i.e., lake elevation) when water storage in Buffalo Lake is at its maximum operating level (and is not affected by natural flooding). The FSL target for Buffalo Lake is 780.85 meters.

### Green Area

That portion of the province which consists of forested lands (established by the Government of Alberta in 1948). The remainder of the province, excluding lands under federal jurisdiction, falls within the 'White Area'.

### Littoral Zone

The portion of a body of fresh water extending from the shoreline lakeward to the limit of occupancy of rooted plants (i.e., often to a depth of several meters).

### Marina

For the purposes of BLISMP, a marina is an inland basin or offshore facility for mooring watercraft.

### Municipal Reserve (MR)

Section 665(1) of the *Municipal Government Act*, Alberta states that: “A council may by bylaw require that a parcel of land or a part of a parcel of land that it owns or that it is in the process of acquiring be designated as municipal reserve . . .” In addition Section 670(1) states that: “When reserve land is required to be provided, the subdivision authority must specify the amount, type and location of reserve land that is to be provided . . .” Generally, MR lands are intended to provide a land base for municipal facilities (e.g., recreational facilities), green spaces and access links that benefit the general public.

### No Net Loss

“A working principle by which the department [Fisheries and Oceans Canada] strives to balance unavoidable habitat losses with habitat replacement on a project-by-project basis so that further reductions to Canada's fisheries resources due to habitat loss or damage may be prevented.” [www.dfo-mpo.gc.ca/oceans-habitat/habitat/policies-politique/operating-operation/fhm-policy/page08\\_e.asp](http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/policies-politique/operating-operation/fhm-policy/page08_e.asp)

### Protective Notations (PNT)

“Usually called reservations, [PNTs] are placed by public agencies in consultation with the public land manager. They identify land and resources that are managed to achieve particular land use or conservation objectives. Protective notations identify the agency that has placed the reservation, show allowable land uses and may give management guidelines for integrating different uses on the land. Restrictions on land use are based on the characteristics of the land itself. These include soil, vegetation and surface materials and drainage. Local and regional factors such as fish and wildlife requirements or timber regeneration and access, also receive consideration.” [www.srd.gov.ab.ca/lands/formspublications/aboutpublicland/reservationnotationprogram.aspx](http://www.srd.gov.ab.ca/lands/formspublications/aboutpublicland/reservationnotationprogram.aspx)



## Glossary

### Right-of-Way (ROW)

For the purposes of BLISMP, “right-of-way” refers to the strip of land around Buffalo Lake, extending from the lake’s shoreline to a pre-determined “take line”, that was purchased by the Government of Alberta to: a) facilitate lake management and water operations, and b) ensure that private land and infrastructure does not exist within the lake’s 1:100 year flood zone.

### Riparian Areas

“Riparian areas are the lands adjacent to streams, rivers, lakes and wetlands, where the vegetation and soils are strongly influenced by the presence of water. Although they make up only a small fraction of the land, they are among the most productive and valuable of all landscape types and have been the focus of conflicts between resource users.”

*Alberta Riparian Habitat Management Society*

[www.cowsandfish.org/riparian.html](http://www.cowsandfish.org/riparian.html)

### Take line

Established through a legal survey, the “take line” for Buffalo Lake represents the outer boundary of the public land water management right-of-way, which coincides with the 1:100 year flood contour line of Buffalo Lake.

### White Area

That portion of the province which is suitable for human settlement and agricultural use (established by the Government of Alberta in 1948). The remainder of the province, excluding lands under federal jurisdiction, falls within the Green Area.

# Abbreviations



AENV - Alberta Environment

ASRD - Alberta Sustainable Resource Development

ATPRC - Alberta Tourism, Parks, Recreation and Culture

BLISMP - Buffalo Lake Integrated Shoreland Management Plan

BLMT - Buffalo Lake Management Team

BSE - Bovine spongiform encephalopathy

CBM - Coal Bed Methane

CE - Cumulative Effects

CRM - Coordinated Resource Management

DFO - Department of Fisheries and Oceans, Canada

EFP - Environmental Farm Plan

ER - Environmental Reserve

ESA - Environmentally Significant Area

FSL - Full Supply Level

IDP - Inter-Municipal Development Plan

MA - Management Area

MR - Municipal Reserve

OHV - Off-highway vehicle

PRA - Provincial Recreation Area

ROW - Right-of-Way

ROWMA - Right-of-Way Management Area



Outlet from underground pipeline from the pump house on the Red Deer River.

# Appendix



## Appendix

### Appendix

This map, prepared by the County of Stettler (2010), gives the reader an impression of the subdivisions that are located (or proposed) on the south shore of Buffalo Lake.









