

Gull Lake

Recreational Fisheries Management Objectives

Version Date: October 2017	Prepared by: Owen Watkins	Reviewed by: Jason Cooper	Approved by: John Tchir – Resource Manager
Waterbody ID: 4757	Surface Area: 8443 (Ha)	Hydrologic Unit Code Name (HUC_8): Blindman River	Hydrologic Unit Code (HUC_8): 08010303
Sport Fish Species: Northern Pike, Walleye, Lake Whitefish, Yellow Perch, and Burbot			
Indigenous Fishery: No			
Environment and Parks Region: Red Deer North Saskatchewan Region (RDNSR)	Fisheries Management Zone: Prairie Parkland 2 (PP2)		Fisheries Management Office: Red Deer

Background

Gull Lake is located approximately 35 km northwest of the City of Red Deer, and is situated centrally in the Edmonton-Calgary Corridor, approximately 150 km from each of these two urban centers. The majority of the drainage basin has been cleared for agriculture. Gull Lake has experienced increasing development along the lake and subsequent shoreline modifications including four inland marinas and associated resort developments. Activities associated with these developments, such as dredging and vegetation removal to gain lake access have led to further habitat degradation. Water levels dropped an average of 6 cm per year from 1924 to 1968, and continued to decline totalling approximately 3 m, from levels recorded in 1910. This drop has resulted in no outflow from the lake in over 100 years, resulting in increased pH, alkalinity and other water quality concerns. This lake experiences heavy algal blooms, although no recent blue-green algae warnings have been issued for this waterbody. Summer kills do occur at this lake, where isolated kills of lake whitefish have been reported in the summer months in various years, but these kills have not been on an annual basis. In 1977, infrastructure was created to transfer water from the Blindman River as a means to supplement inflow and overall lake water levels. Pumping has not occurred over the past five years due to higher lake levels, and concerns are now present about the possibility of introducing aquatic invasive species, such as prussian carp from the Blindman River in to Gull Lake. There have been additional concerns of the quality of transferred water due to landscape disturbances and nutrient inputs within the Blindman River watershed.

Despite the recent levels of landscape development there still remain large areas of intact natural littoral areas in Gull Lake. This lake historically supported healthy northern pike and yellow perch fisheries. This lake has a lengthy stocking history where yellow perch were stocked almost annually from 1938-1945, spottail shiners and walleye were stocked in 1945, again during 1986 to 1989. Lake whitefish were also introduced by a small stocking of 52 fish in 1938, which were thought to be unsuccessful. Larger transfers of lake whitefish from Pigeon Lake occurred in 1975, 1976 and again in 1977. The more recent stockings of lake whitefish have proven to be successful. Walleye stockings initially appeared to be marginal, where low numbers were present and recruitment and spawning success was intermittent; however, recent assessments have shown increases in both walleye size structure and overall abundance. More recently, the management focus has been on recovery and establishing sustainable populations through the reduction of harvest possession limits for yellow perch, burbot, and lake whitefish. Gull Lake maintains a popular winter fishery, where anglers primarily target and harvest lake whitefish, although the lake is quickly becoming a very popular summer destination for walleye.

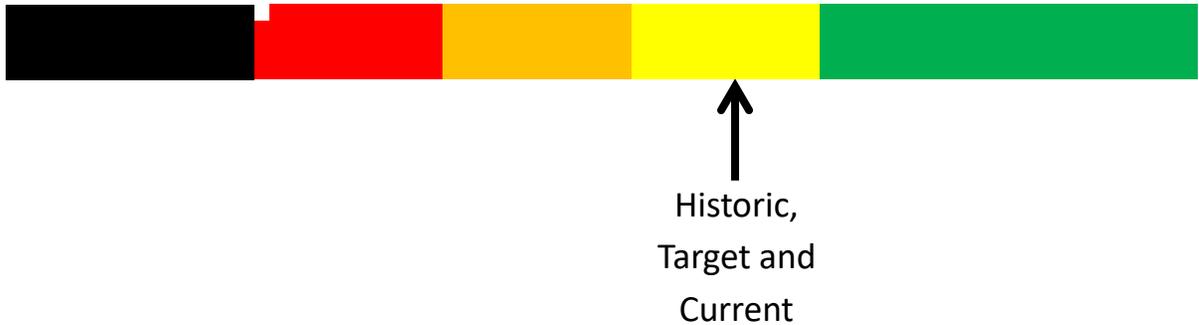
Gull Lake has a recreational fishing closure between April 1st to May 14th, and November 1st to December 10th every year. Gull Lake's diversion canal located in 34,35,36-40-1-W5 is closed all year. This canal is where water can be pumped and diverted from the Blindman River flows into Gull Lake.

Section 1. Fish Population Status

Walleye – Adult Abundance

Fish Sustainable Index Adult Density Score

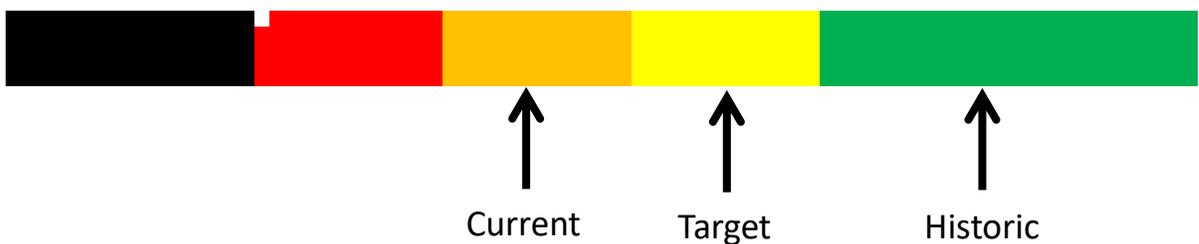
Functionally Extirpated (0)	Very High Risk (1)	High Risk (2)	Moderate Risk (3)	Low Risk (4 and 5)
-----------------------------------	--------------------------	---------------------	-------------------------	-----------------------



Northern Pike – Adult Abundance

Fish Sustainable Index Adult Density Score

Functionally Extirpated (0)	Very High Risk (1)	High Risk (2)	Moderate Risk (3)	Low Risk (4 and 5)
-----------------------------------	--------------------------	---------------------	-------------------------	-----------------------



Lake Whitefish – Adult Abundance – Undetermined

Yellow Perch – Adult Abundance – Undetermined

Burbot – Adult Abundance – Undetermined

Section 2. Recreational Fishery Management Objectives and Management Summary

The **focal species** for recreational management is Walleye. The secondary species managed for recreational objectives are Lake Whitefish, Northern Pike, Yellow Perch, and Burbot. These sport-fisheries are directly assessed at intervals, and therefore are actively managed. The **Overharvest Protection Need** is assessed as **Very High Risk**.

Walleye – The recreational management fishery objective for Walleye is **Sustainable Harvest**. The corresponding Fish Sustainability Index Score (FSI) score for the current mature density of walleye was most recently assessed in 2017 at (FSI 3), **Moderate Risk** to the sustainability of the fishery. The walleye population is meeting the status and criteria for the objective of a **Sustainable Harvest** Fishery. The management action to maintain this objective is a **Special Harvest Licence** regulation of annual walleye tag allocations.

Northern Pike – The recreational fishery management objective for Northern Pike is **Sustainable Harvest**. The corresponding FSI score for the current mature density of northern pike was assessed at (FSI 2), **High Risk** to the sustainability of the fishery. The northern pike population is currently not meeting the status and criteria for the objective of a **Sustainable Harvest** fishery. Therefore, the required management action is a **Recovery** regulation of **Catch and Release**. This is a change from the current regulation of 3 pike over 63cm.

Lake Whitefish* – The recreational fishery management objective for Lake Whitefish is the provincial default **Sustainable Harvest**. The population is supported by a broad range of age classes and a high relative catch rate of adult fish, which is indicative of a lower risk threshold value. Provincially, the default sustainable harvest fishery maintenance regulation is 10 fish, however due to the known high winter angling effort and harvest in winter of lake whitefish on this lake and other central Alberta lakes, the current harvest limit of 3 fish will be maintained and appears to be maintaining the population.

Yellow Perch* – The recreational fishery management objective for Yellow Perch is the provincial default **Sustainable Harvest**. The population appears to be healthy with a wide length frequency distribution and adults up to 30 cm in size, which is indicative of a lower risk threshold value. The catch rate of yellow perch did show signs of improvement by increasing between 2009 and 2014 survey, although a significant decline was noted in 2017. Provincially, the default Sustainable Harvest fishery maintenance regulation is 15 fish, however due to the level of winter angling effort, previous management actions had focused on addressing the overharvest risk, the current harvest limit of 5 fish will be maintained.

Burbot* – The recreational fishery management objective for Burbot is the provincial default **Sustainable Harvest**. The status of the Burbot population has not been assessed. The current management action is a regulation of 2 Burbot, any size (Burbot Limit 0 from Feb. 1 to Mar. 31).