

Lake Water Quality Program

Environmental Planning Initiatives



2016 Annual Report DRAFT

City Of Lakes

The City of Greater Sudbury is recognised as the ‘City of Lakes’, with a geographic area of 3,627 square kilometres, about two-thirds the size of Prince Edward Island. Greater Sudbury boasts 330 lakes, more lakes than any other municipality in Canada. Our lakes are a valued natural resource to our citizens who have a vested interest in the health and quality of these rich community assets.

Lake Water Quality Program

The Lake Water Quality Program helps to ensure that Greater Sudbury is positively recognised as a City of Lakes. The Lake Water Quality Program advocates for the ecological health of the lakes, provides lake water quality monitoring and education, offers technical support to lake stewardship groups and the community, and provides research into various issues related to lake water quality.

Staffing

The City of Greater Sudbury provides funding for the full-time position of the Program Co-ordinator and a seasonal Lake Water Quality Field Intern. These positions are responsible for the day-to-day program and activities including water quality monitoring, shoreline home visit program, technical assistance to lake stewardship groups and the Lakes Advisory Panel. Additional duties include website content and report writing.

Summary of Activities

In conjunction with its partners, the Lake Water Quality Program carried out the annual Spring Phosphorus Sampling, the Love Your Lake shoreline assessment program, bathymetric mapping of various lakes, the Lake Stewardship Grant Program and co-ordinated the Shoreline Home Visit Program. In summary:

- 40 Lakes sampled for spring phosphorus
- 6 Lakes, with a total of 232 properties, were surveyed through the Love Your Lake shoreline assessment program
- Weekly Blue-green Algae watch done on Lake Ramsey for the summer months
- 6 Lake stewardship grants awarded
- 10 Lakes Advisory Panel meetings
- 1 New lake stewardship group formed
- 29 Active lake stewardship groups total

Lake Water Quality Program Components

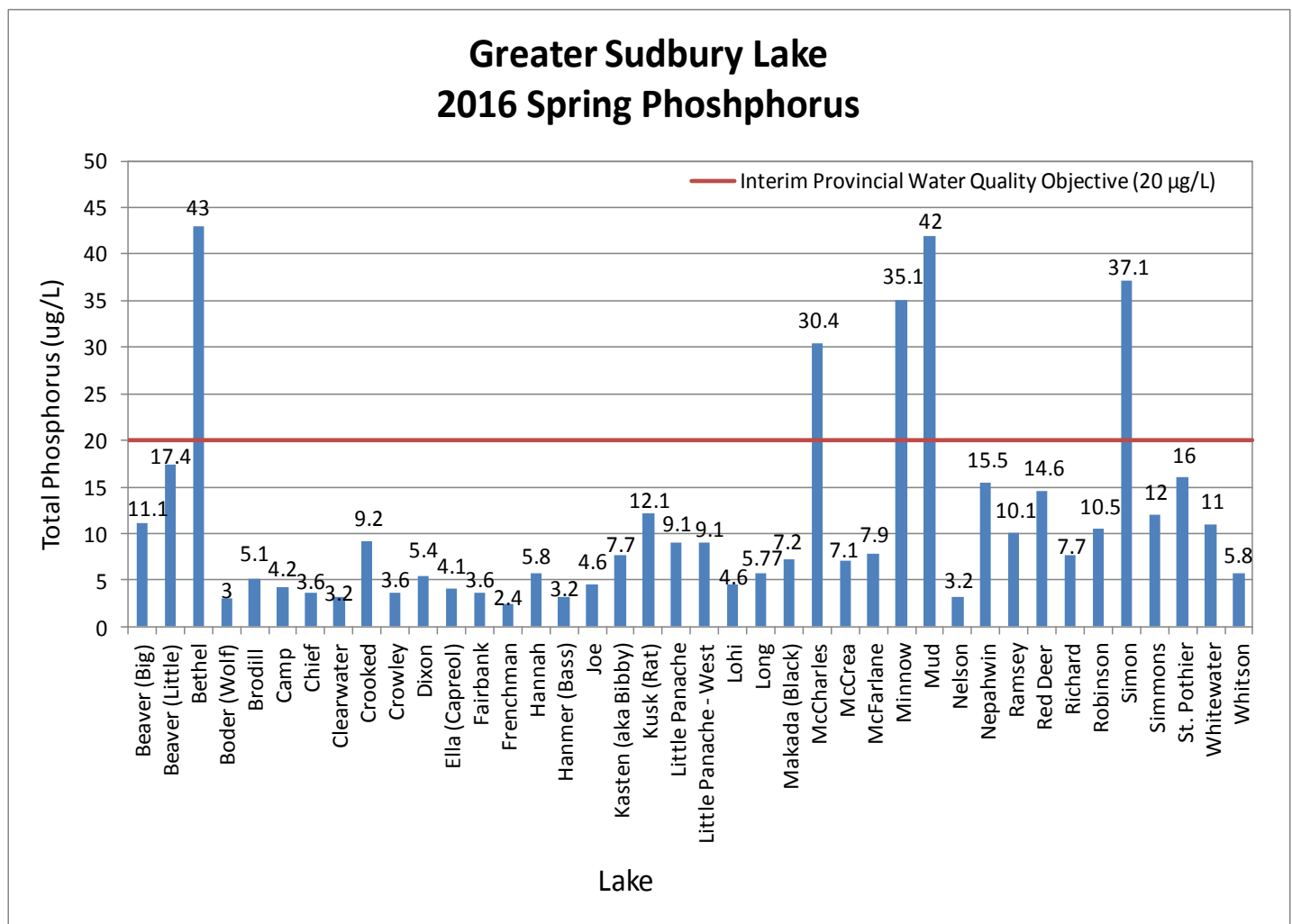
Spring Phosphorus Sampling Program

The City of Greater Sudbury has been sampling a group of local lakes for spring phosphorus for the past 15 years. These lakes were chosen based on their historical phosphorus levels, waterfront development pressures, and requests from lake stewardship groups. Phosphorus is the main contributing nutrient that controls the growth and development of algae. Spring phosphorus samples are taken during a natural phenomenon called “spring turnover”. This event occurs shortly after ice off in the early spring when the water on the surface warms up and becomes less dense than the water at the bottom of the lake. Through wind action the heavier surface water sinks to the bottom of the lake and the less dense water comes to the top. This is the optimal time for phosphorus samples in the Canadian Shield as it allows for the most accurate phosphorus readings for the lake. Phosphorus can enter a lake through a variety of means including many natural sources depending on vegetation cover, soil conditions and bedrock type. One of the main sources of phosphorus into our local lakes is caused by human activity through surface runoff. Surface runoff is a non-point source form of pollution, this type of phosphorus pollution comes from many different places including; failing septic systems, various fertilizers, agricultural practices, detergents and cleaners, as well as municipal and industrial wastewater.

Spring Phosphorus Results

The spring phosphorus sampling was conducted on 40 lakes, 43 sites total, during the month of May 2016. Results for the lakes that were sampled are shown in the graph below. Individual spring phosphorus graphs for lakes sampled this year are found at the end of this report. Of the lakes sampled, five lakes had phosphorus concentrations greater than the Interim Provincial Water Quality Objective of 20 µg/L (micrograms per litre). Phosphorus concentrations that are at or above this level indicate that the lake is eutrophic or nutrient rich.

The bar graph below indicates the
2016 spring phosphorus sampling results for 40 local lakes.



Weekly Blue-green Algae Watch

The City of Greater Sudbury lake water quality staff participated in a weekly blue-green algae watch on Lake Ramsey once a week throughout the summer boating season. The program aims to help provide an early warning system for residents on Lake Ramsey as well as the water treatment plant operators to warn of any Blue-green Algae blooms. The program involved a visual check of the entire lake on a once per week basis which included visual checks of beaches, main basins and small bays by way of motor boat. The 2016 visual check confirmed one (1) small Blue-green Algae bloom on the lake.

Community Outreach

Love Your Lake Program

Love Your Lake is Canada's most comprehensive shoreline assessments and stewardship education program available to lake communities. It provides entire lakes with property-specific shoreline stewardship information, promotes shoreline stewardship and helps property owners protect and restore their shorelines, thereby improving the health of their lake.

In 2016, Dixon Lake, Frenchman Lake, Joe Lake, Hanmer Lake, Minnow Lake and Richard Lake participated in the Love Your Lake program. A total of 232 properties with a total of ~38.7km of shoreline were assessed.

Name of Lake	Number of Shoreline Properties Assessed	Kilometers of Shoreline Assessed
Dixon Lake	6	~2.8km
Frenchman Lake	40	~5.3km
Hanmer Lake	38	~5.9km
Joe Lake	39	~18.7km
Minnow Lake	49	~2.1km
Richard Lake	60	~6.7km

For more information on the details in the Love Your Lake report, contact the City of Greater Sudbury's Lake Water Quality Program.

Shoreline Home Visit Program

New summer cottages and year-round waterfront home development has increased over the past decade. Many people are moving into some of the most sensitive and important ecosystems we have - our shorelines. As a result, there have been many shoreline alterations throughout the City that are impacting the health of our lakes.

The Lake Water Quality Program co-ordinated the Shoreline Home Visit Program. These visits provided waterfront homeowners with advice on healthy shoreline practices including how to best manage their shoreline, protect the lake water quality, and maintain the health of the ecosystem. The visits are free, confidential and non-regulatory. Homeowners received additional information specific to their needs as well as a complementary Nature Clean product and waterfront living information.

Sudbury Children's Water Festival

This was the 11th year that the Lake Water Quality Program participated in the water festival and it was a huge success with over 800 grade 3 students visiting the festival and attending bilingual activity centres. The Lake Water Quality Program staff present taught students the need for diversity in shorelines and the impacts and causes of erosion. Each teacher received posters and handouts for their classrooms. The Children's Water Festival in Greater Sudbury is organized by the Sudbury and District Health Unit with the support of many community organizations.

Natural Shoreline Demonstration Site

The City of Greater Sudbury's Lake Water Quality Program in partnership with Science North and the Nickel District Conservation Authority's Source Water Protection Program established a Natural Shoreline Demonstration site on Ramsey Lake. Funding for this educational project was received from the Ministry of Environment's Source Water Protection Program, the City of Greater Sudbury and Science North. Natural shoreline planting workshops and tours of the demonstration site are available to the community and shoreline homeowners to learn how they can improve the health of shorelines on their property.

Lakes Advisory Panel

The Lakes Advisory Panel is appointed by City Council to provide advice and recommendations to the municipality on matters relating to lake water quality in Greater Sudbury. The current Panel members were appointed in 2015 for a four-year term, ending with the term of Council in 2018. A total of 10 meetings were held in 2016.

Members

The Lakes Advisory Panel is made up of three City Councillors, eight community volunteers, five technical experts and two City staff.

Community Volunteers

Lin Gibson - Chair	Lily Noble
Mary Henderson – Vice Chair	Paul Truskoski
Jeffery Huska	Wendy Wisniewski
Margaret McLaughlin	Sarah Woods

Technical Experts

Burgess Hawkins – Sudbury & District Health Unit	Ed Snucins – Ontario Ministry of Environment
Derrick Luetchford - MNR	Anoop Nail –Conservation Sudbury
Dr. John Gunn – Vale Living With Lakes Centre	Dr. Charles Ramcharan – Laurentian University

City Councillors

Mark Signoretti

Lake Stewardship Grant Assistance Program

Introduction

Established as a pilot project in 2005, Lake Stewardship Grant Program assists lake stewardship groups in carrying out projects that protect and improve the water quality and natural environment of the lakes. The Grant Program is funded by the City of Greater Sudbury through its Lake Water Quality Program. The Lakes Advisory Panel awards individual grants to stewardship groups in Greater Sudbury.

Grant applicants were required to demonstrate how their proposed project would improve or protect the water quality of the lake and/or watershed and increase support from the lake community. In total, 6 applications for funding were received with all applicants receiving the full \$500 grant. The following is a list of the successful applicants.

Funding recipients for 2016

Clearwater Lake Stewardship Group

Project Name: Clearwater Lake Community Building and Clean-up Event

Amount Received: \$500

Fairbank Lake Camp Owners' Association Inc

Project Name: No Wake/Speed Limit Signs

Amount Received: \$500

Four Lakes Community Association

Project Name: Let's Protect Our Lakes Calendar

Amount Received: \$500

Long Lake Stewardship

Project Name: Richard Lake Awareness Booklet

Amount Received: \$500

Lake Wahnapiatae: Home and Campers Association

Project Name: Shoreline Planting, Pilot Invasive Species Cleaning Station & Anti-littering Signs

Amount Received: \$500

Lake Panache Campers Association Inc

Project Name: Association Communication

Amount Received: \$500

Stewardship Groups

Currently, there are 29 lake stewardship groups throughout the Greater Sudbury area, acting as important agents for positive change in shoreline living practices.

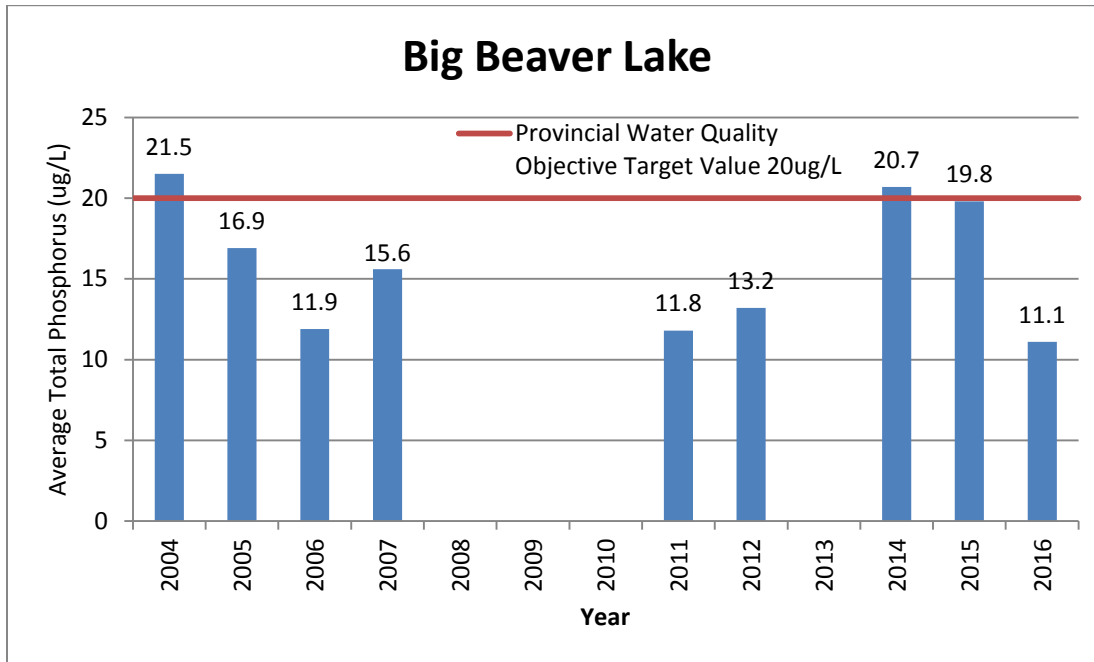
The following is a list of the active lake stewardship groups in Greater Sudbury. Forest Lake Stewardship Committee is a new stewardship group as of 2016.

Stewardship Group	Lake(s)	Website
Friends of Bennett Lake	Bennett Lake	
Black Lake	Black Lake	
Broder 23	Broder 23 Lake	
Crooked Lake	Crooked Lake	
Fairbank Lake Cottagers Association	Fairbank Lake	
Friends of McFarlane Lake	McFarlane Lake	
Grassy Lake	Grassy Lake	
Forest Lake Stewardship Committee	Forest Lake	
Four Lakes Association	Joe, Hanmer, Frenchman and Dixon Lakes	
Ironside Lake	Ironside Lake	
Kukagami Lake Campers Ass.	Kukagami Lake	
Kusk (Rat) Lake	Kusk (Rat) Lake	
Lake Nepahwin Stewardship Group	Nepahwin Lake	
Lake Panache Campers Association	Panache Lake	Website
Lohi Lake	Lohi Lake	
Long Lake Stewardship	Long Lake	
McCrea Lake Stewardship Group	McCrea Lake	
Minnow Lake Restoration Group	Minnow Lake	Website
Richard Lake Stewardship	Richard Lake	Website
St. Charles Lake	St. Charles Lake	Website
Silver Lake	Silver Lake	
Simon Lake	Simon Lake	Website
Vermilion Lake	Vermilion Lake	
Windy Lake Stewardship	Windy Lake	
Onwatin Lake Stewardship	Onwatin Lake	Website
Ramsey Lake Stewardship Committee	Ramsey Lake	Website
Vermillion River Stewardship	Vermillion River	Website
Whitewater Lake	Whitewater Lake	Website
Lake Wanapitei Lake Stewardship	Wanapitei Lake	

Spring Phosphorus Graphs for Lakes Sampled in 2016

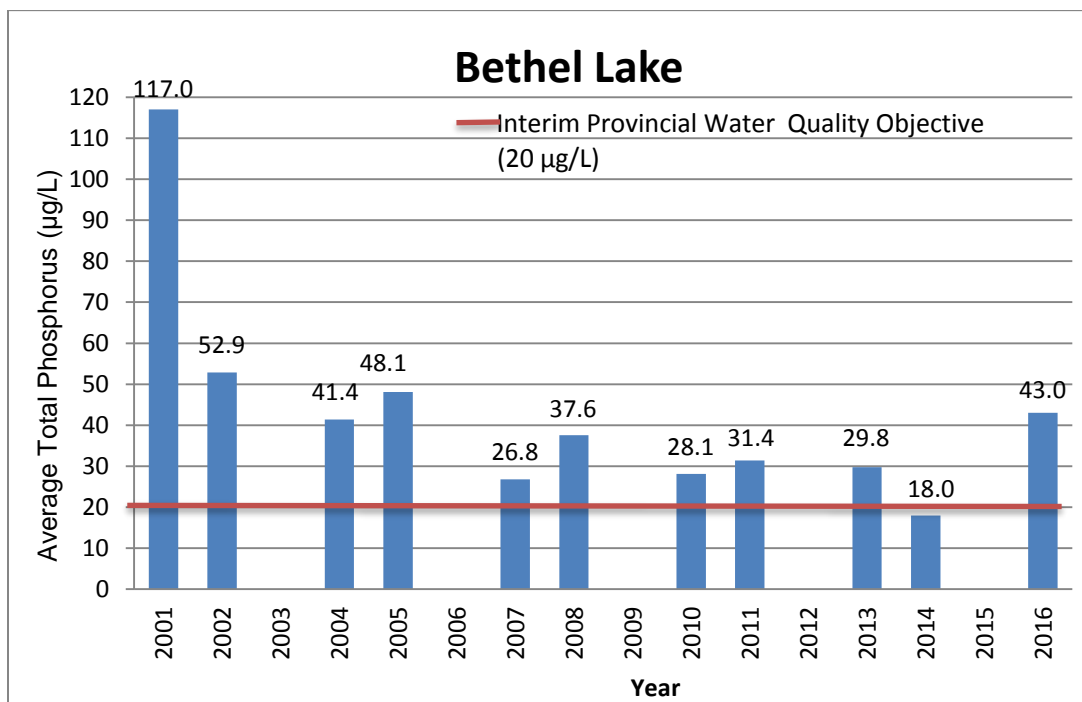
Big Beaver Lake

The bar graph below indicates the spring total phosphorus results for Big Beaver Lake from 2004 to 2016.



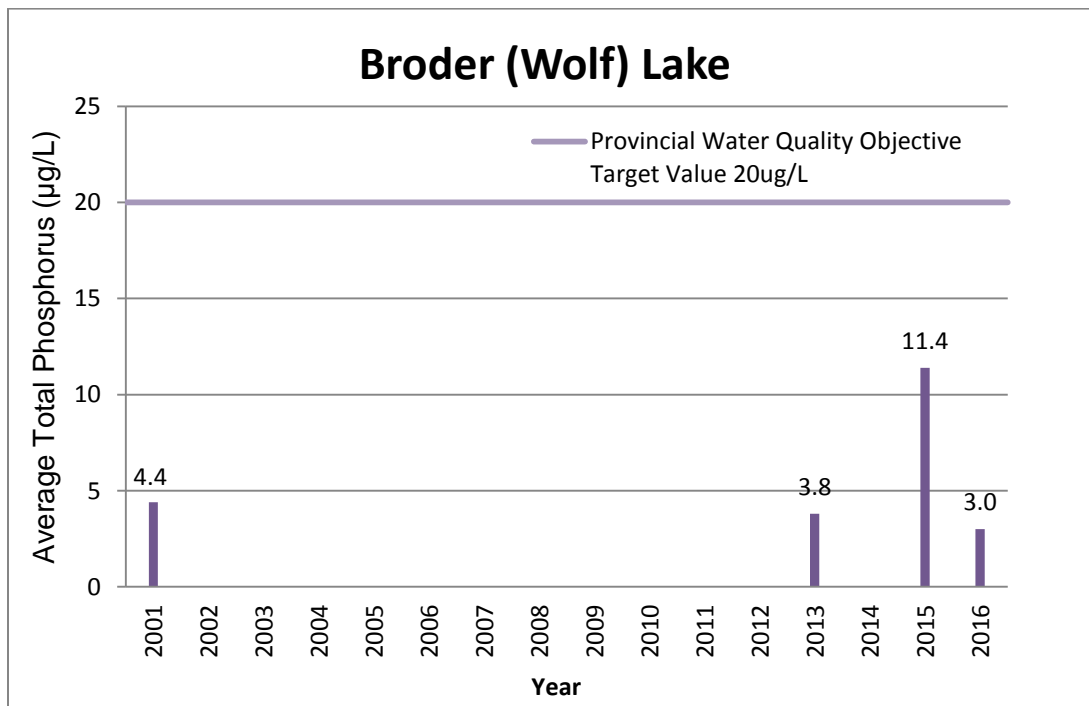
Bethel Lake

The bar graph below indicates the spring total phosphorus results for Bethel Lake from 2001 to 2016.



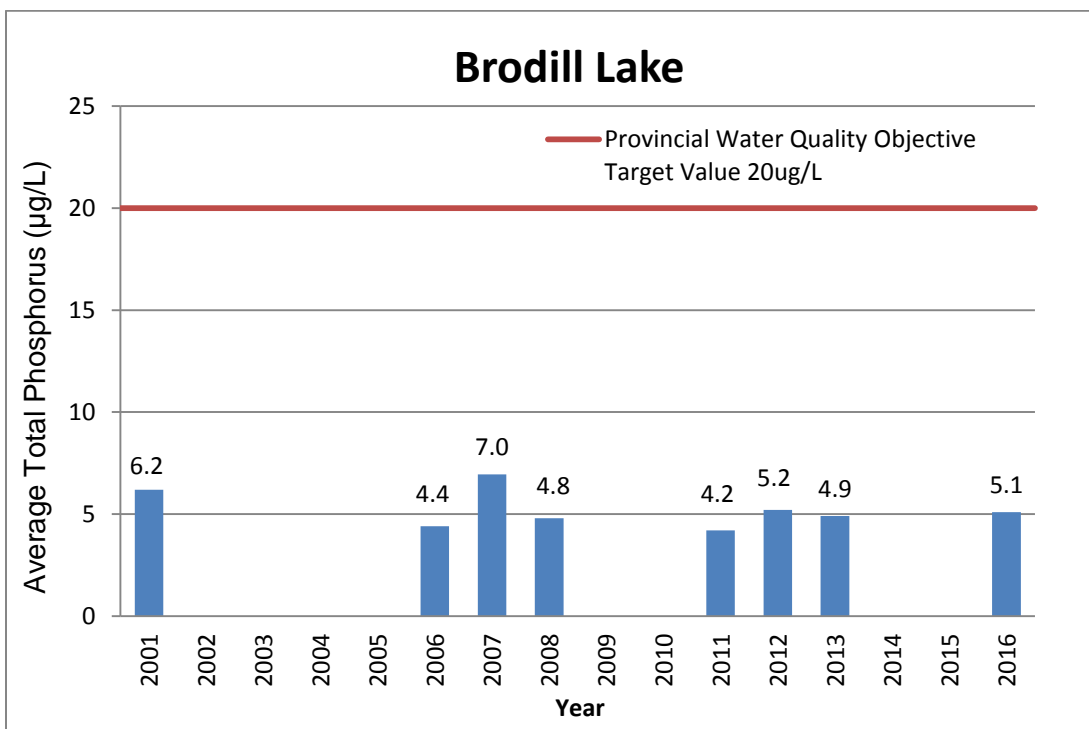
Broder (Wolf) Lake

The bar graph below indicated the spring total phosphorus results for Broder (Wolf) Lake from 2001-2016



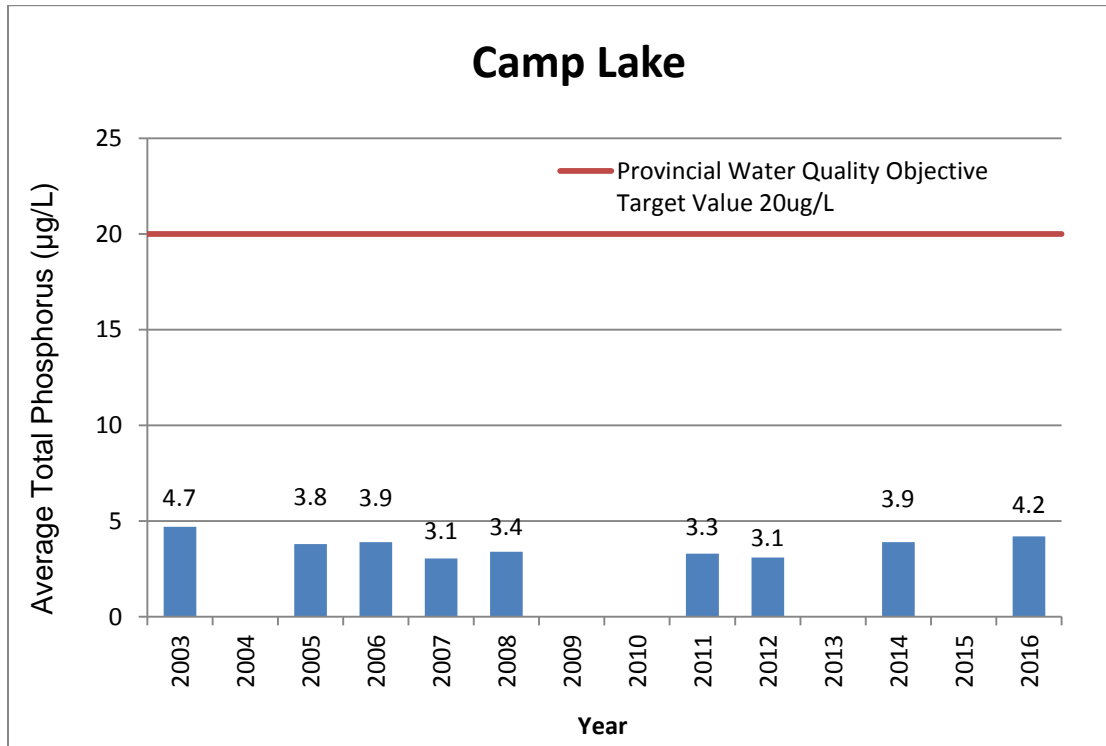
Brodill Lake

The bar graph below indicated the spring total phosphorus results for Brodill Lake from 2001-2016



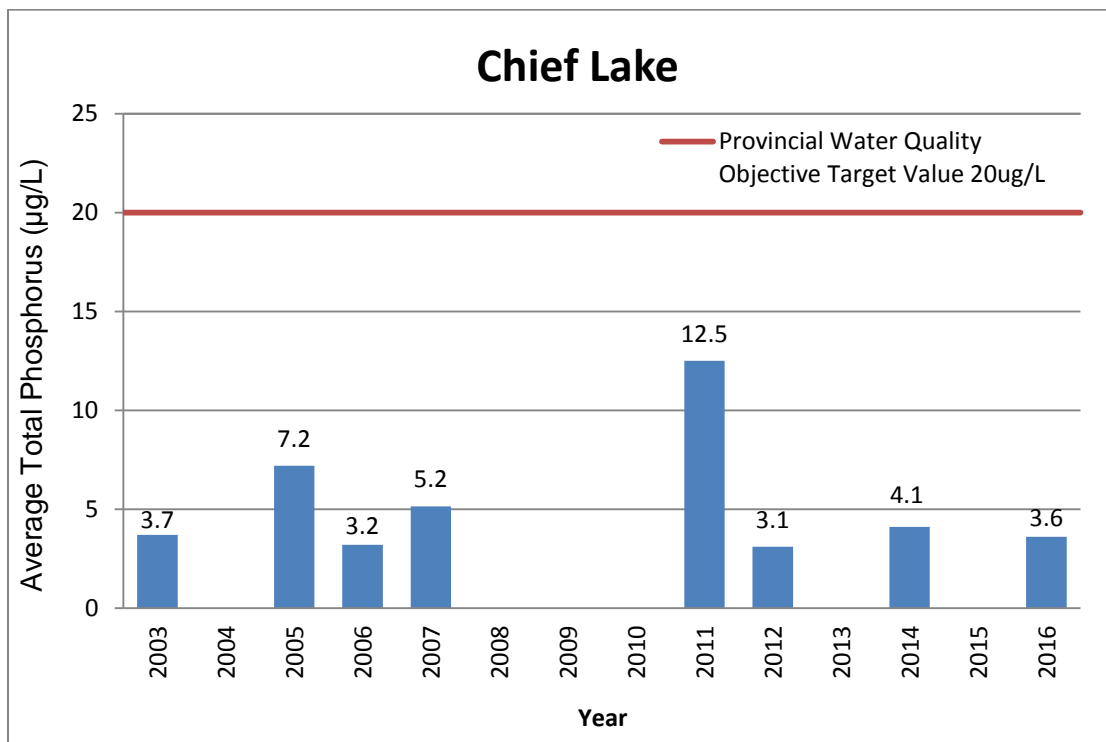
Camp Lake

The bar graph below indicates the spring total phosphorus results for Camp Lake from 2003-2016.



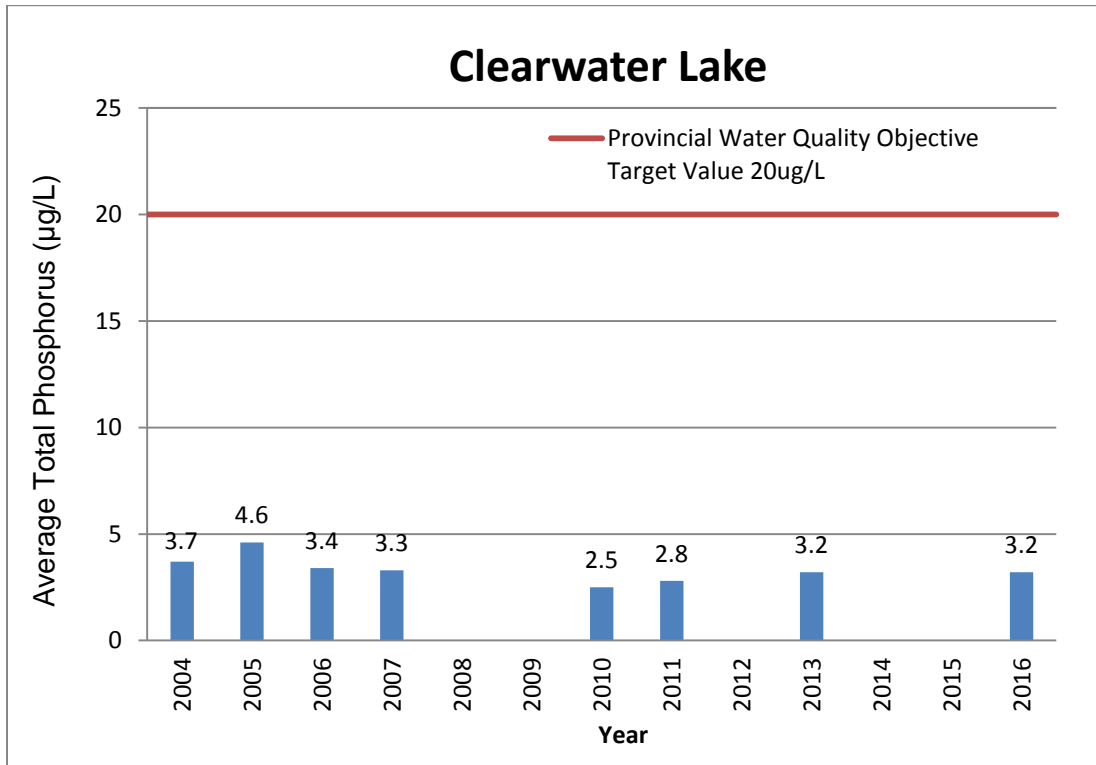
Chief Lake

The bar graph below indicates the spring total phosphorus results for Chief Lake from 2003-2016.



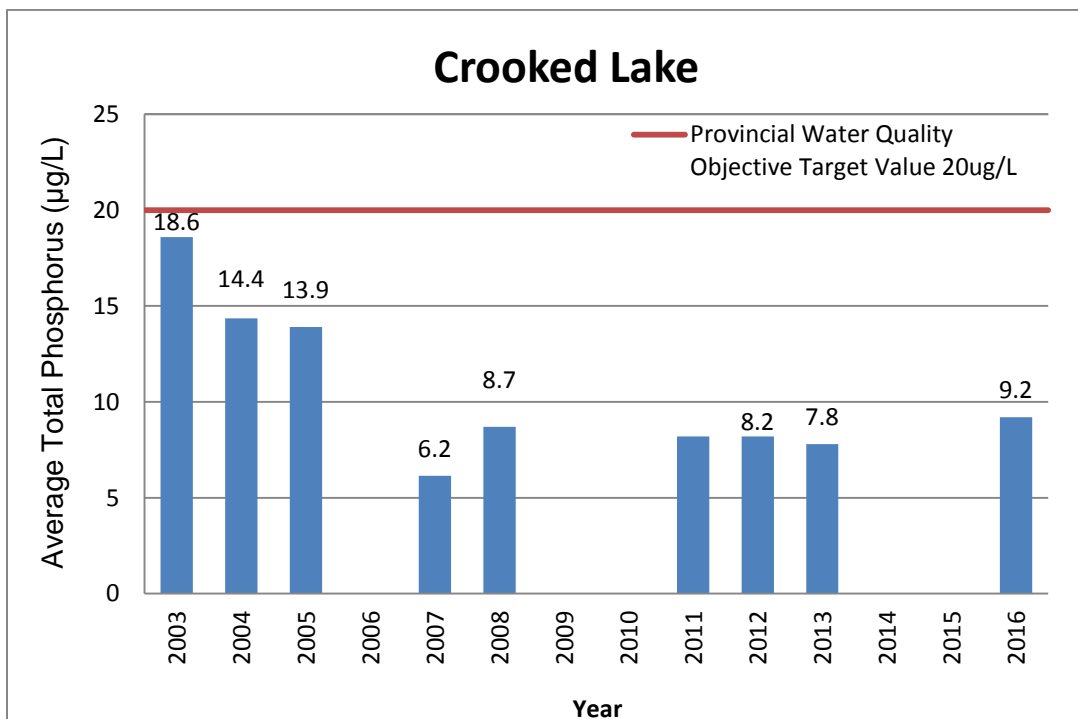
Clearwater Lake

The bar graph below indicates the spring total phosphorus results for Clearwater Lake from 2004-2016.



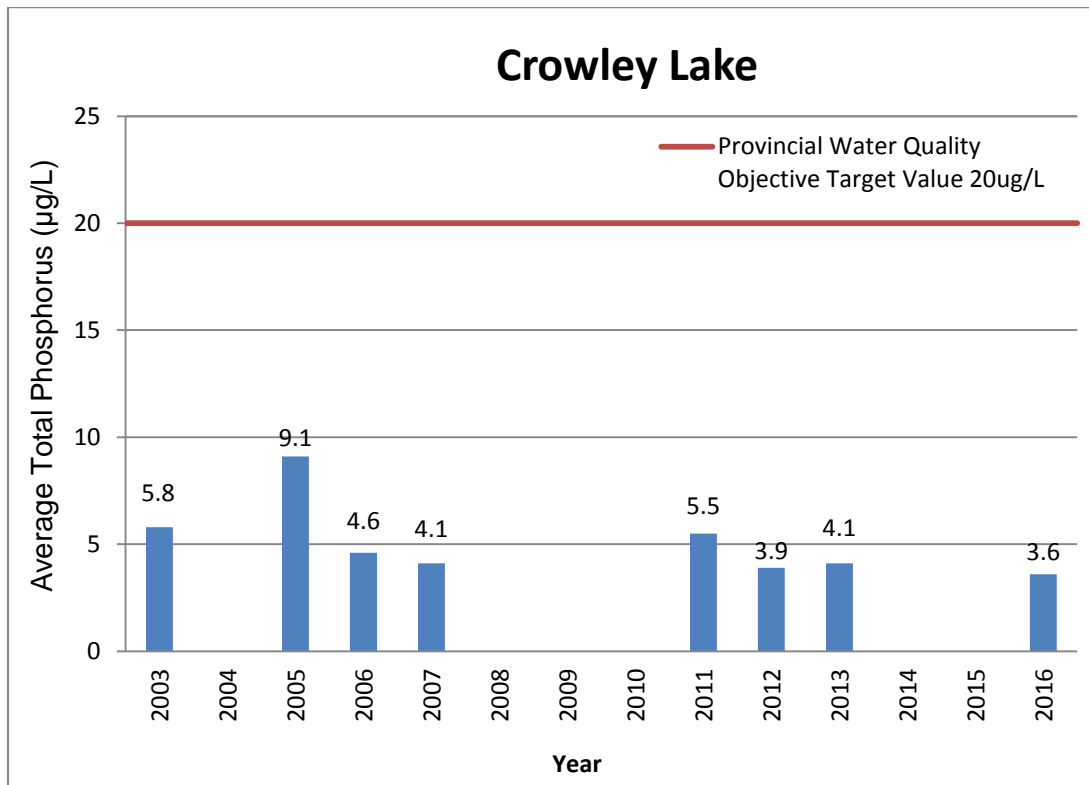
Crooked Lake

The bar graph below indicates the spring total phosphorus results for Crooked Lake from 2003-2016.



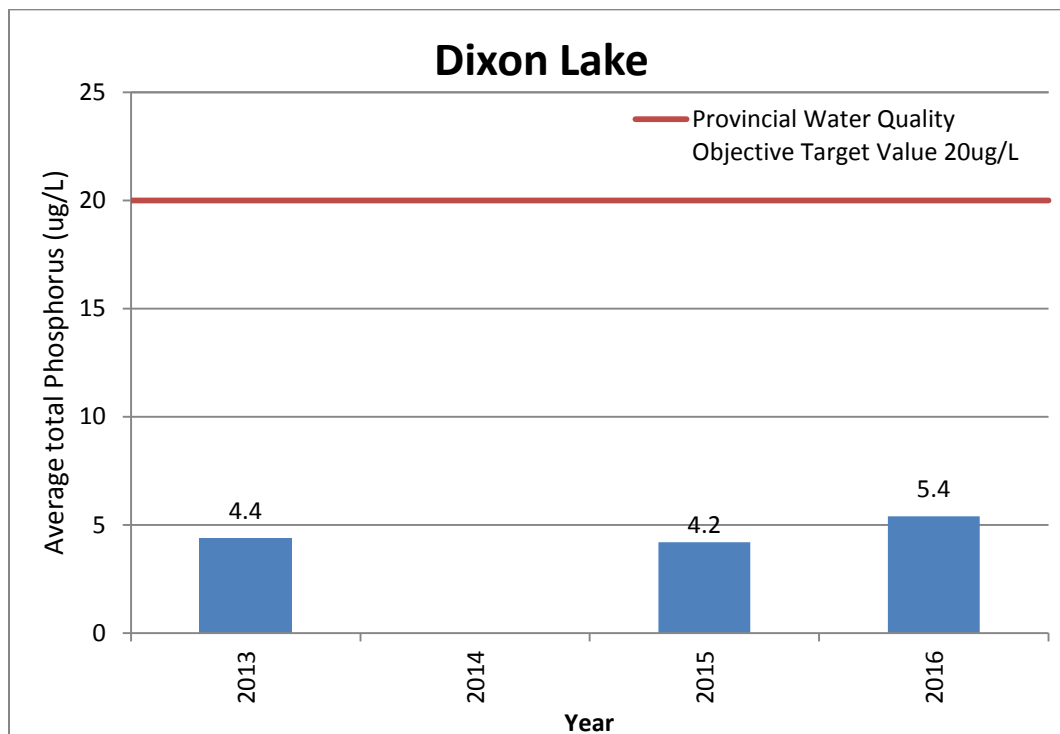
Crowley Lake

The bar graph below indicates the spring total phosphorus results for Crowley Lake from 2003-2016.



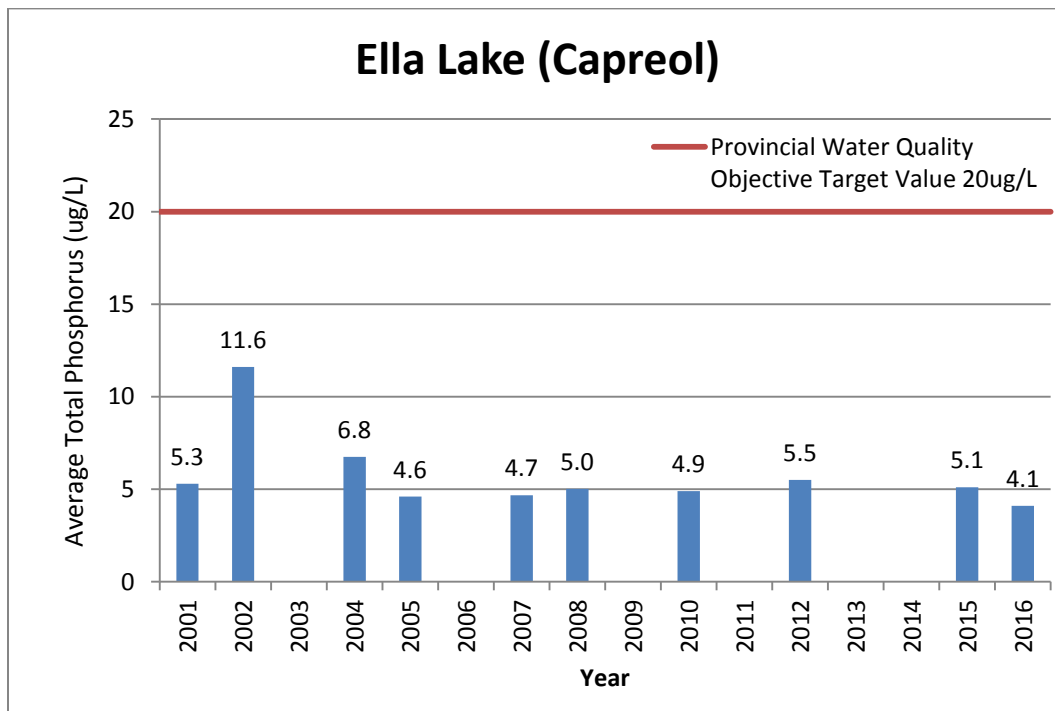
Dixon Lake

The bar graph below indicates the spring total phosphorus results for Dixon Lake from 2013-2016.



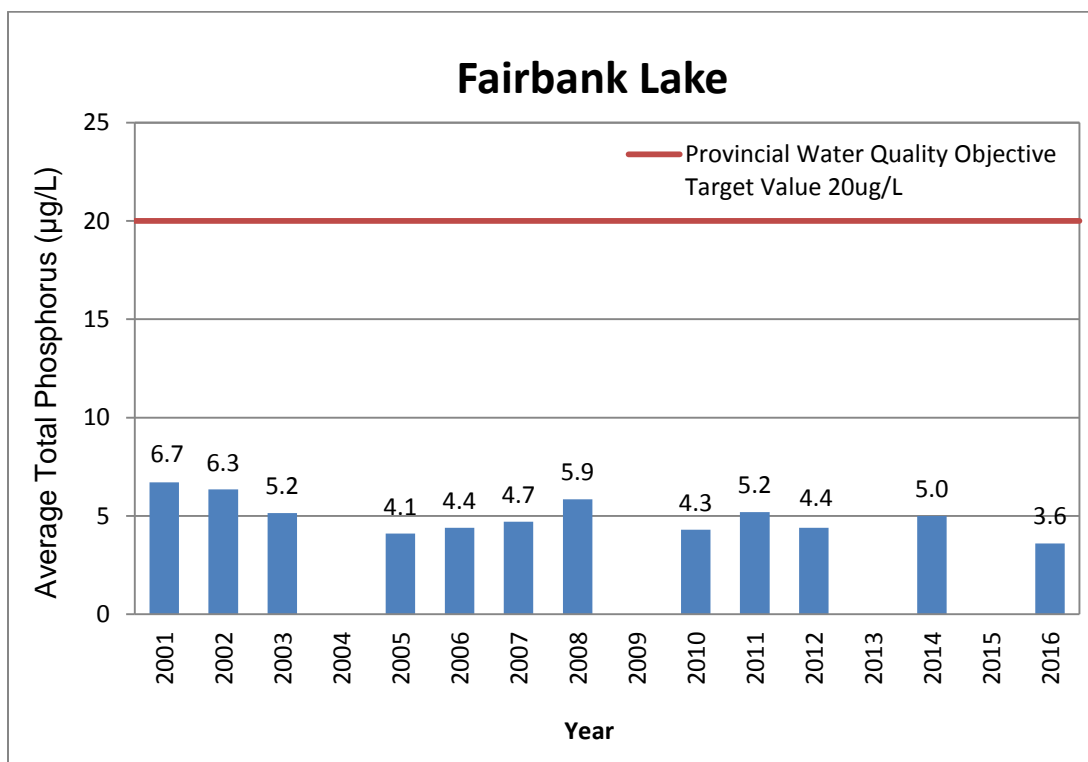
Ella Lake (Capreol)

The bar graph below indicates the spring total phosphorus results for Ella Lake from 2001-2016.



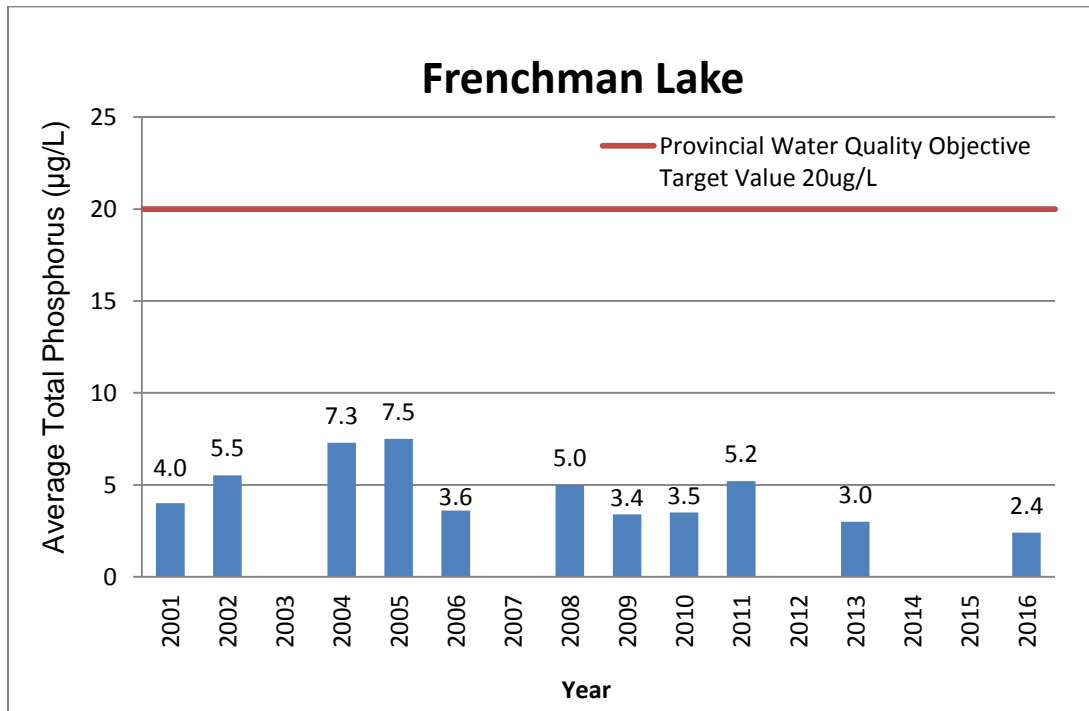
Fairbank Lake

The bar graph below indicates the spring total phosphorus results for Fairbank Lake from 2001-2016.



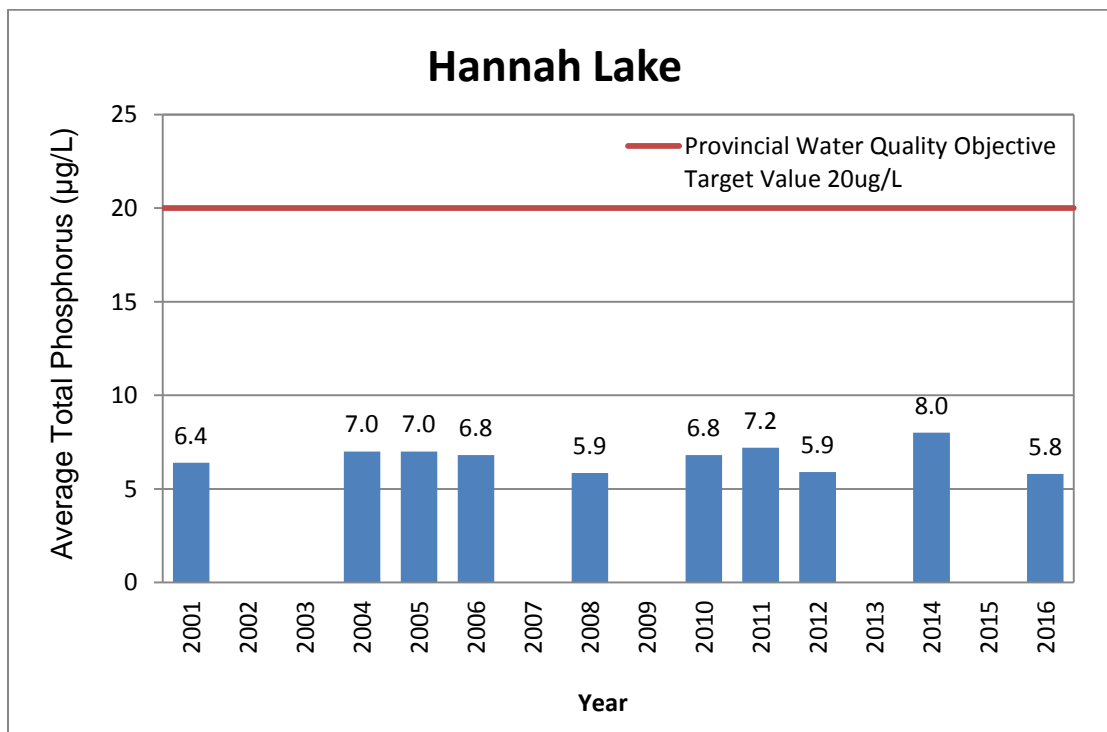
Frenchman Lake

The bar graph below indicates the spring total phosphorus results for Frenchman Lake from 2001-2016.



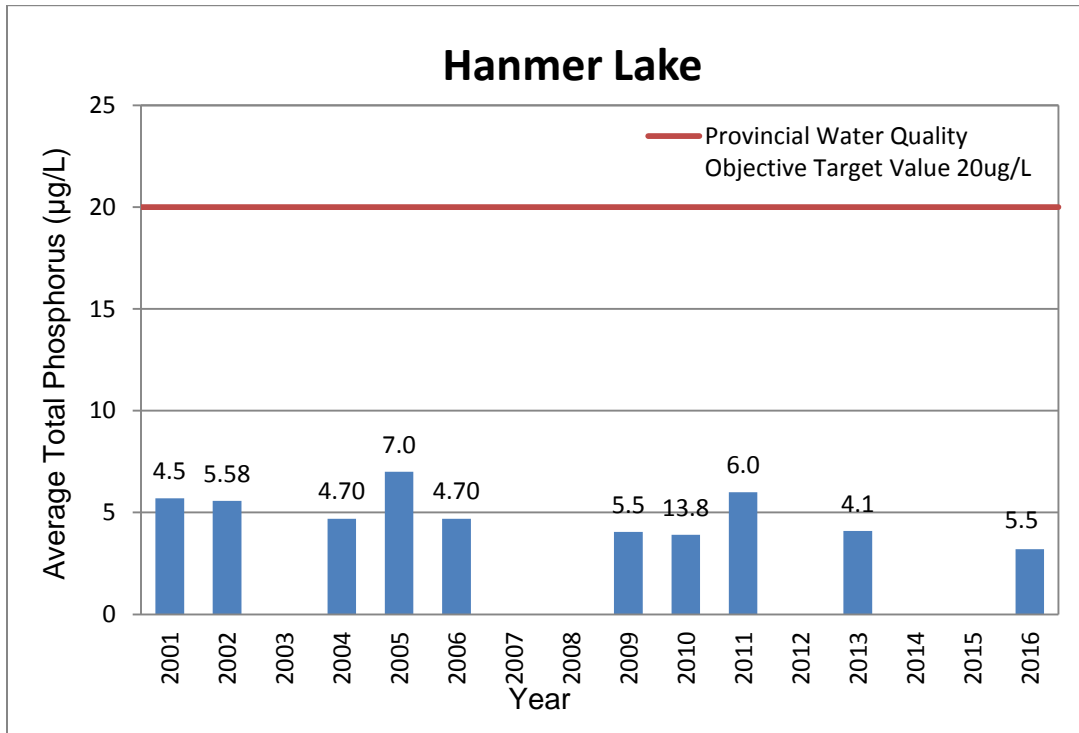
Hannah Lake

The bar graph below indicates the spring total phosphorus results for Hannah Lake from 2001-2016.



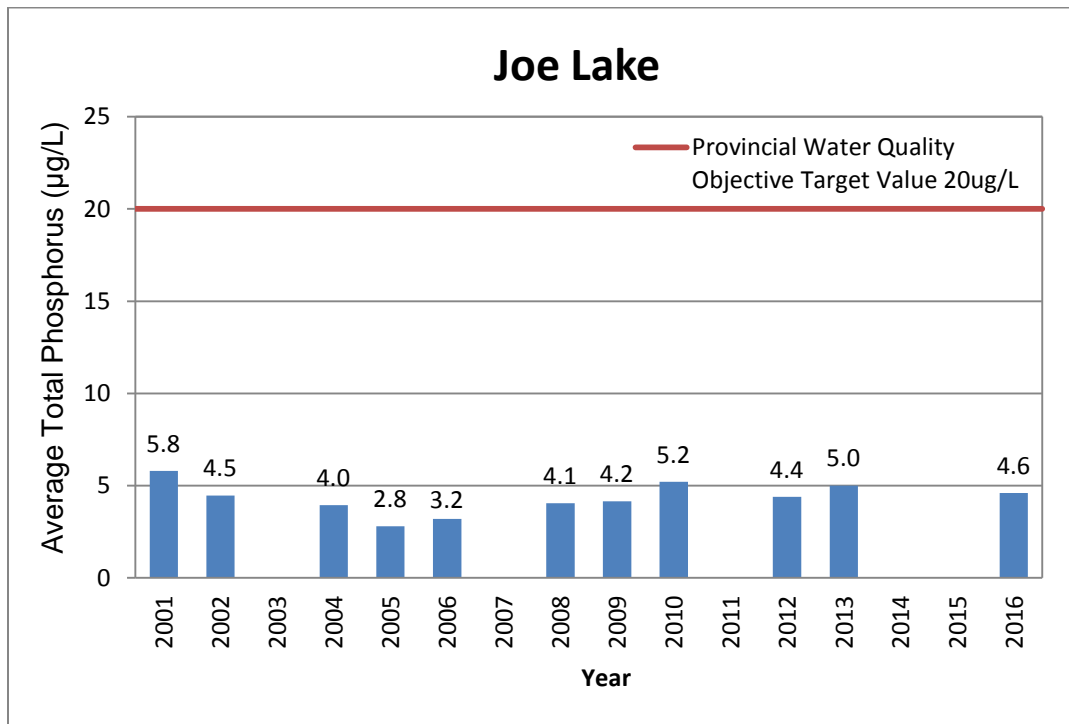
Hanmer Lake

The bar graph below indicates the spring total phosphorus results for Hanmer Lake from 2001-2016.



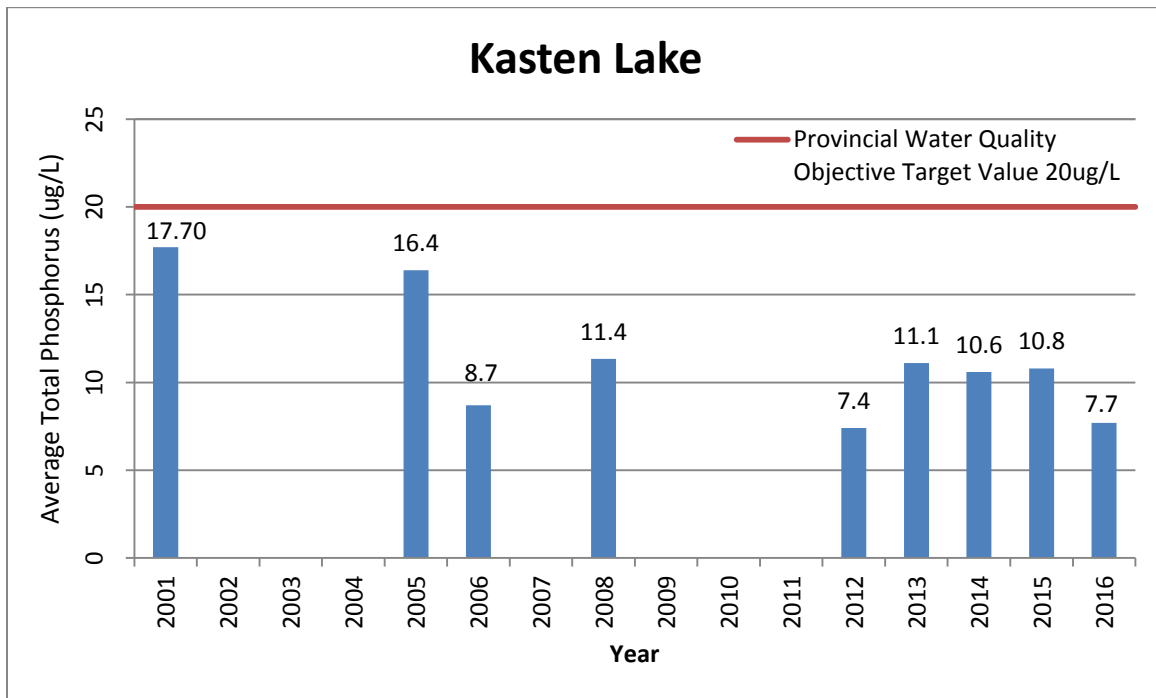
Joe Lake

The bar graph below indicates the spring total phosphorus results for Joe Lake from 2001-2016.



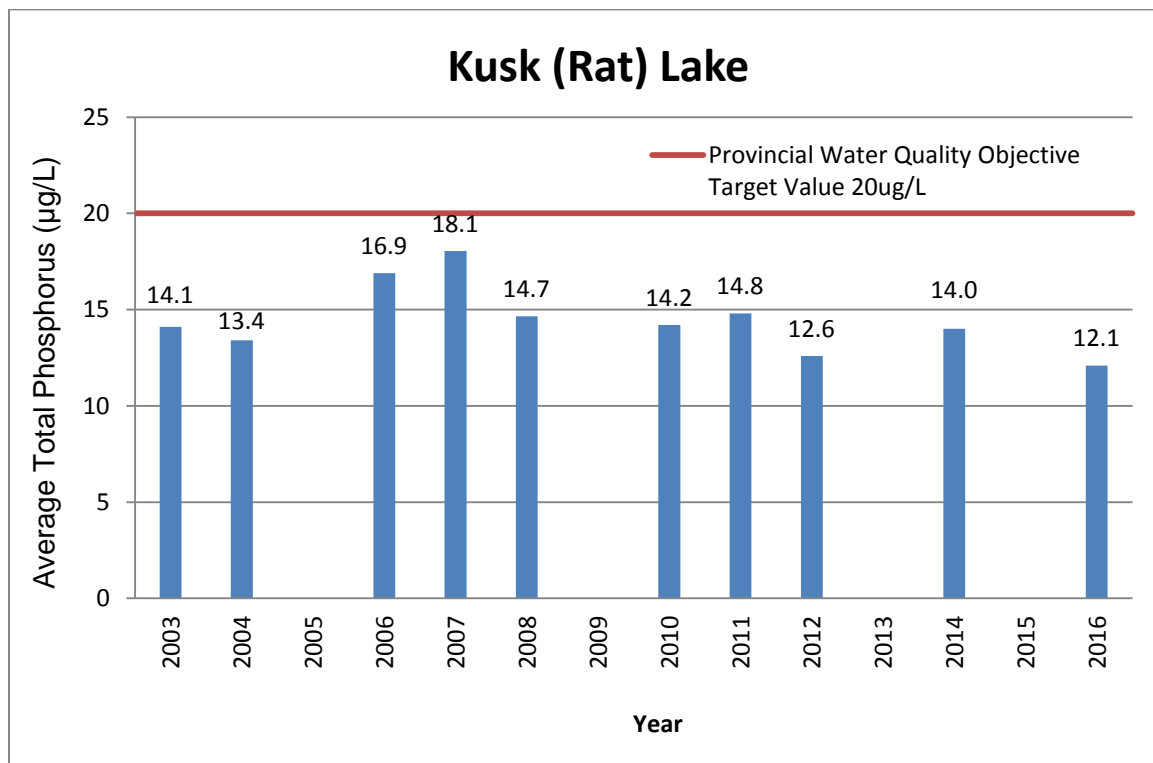
Kasten (Bibby) Lake

The bar graph below indicates the spring total phosphorus results for Kasten (Bibby) Lake from 2001-2016.



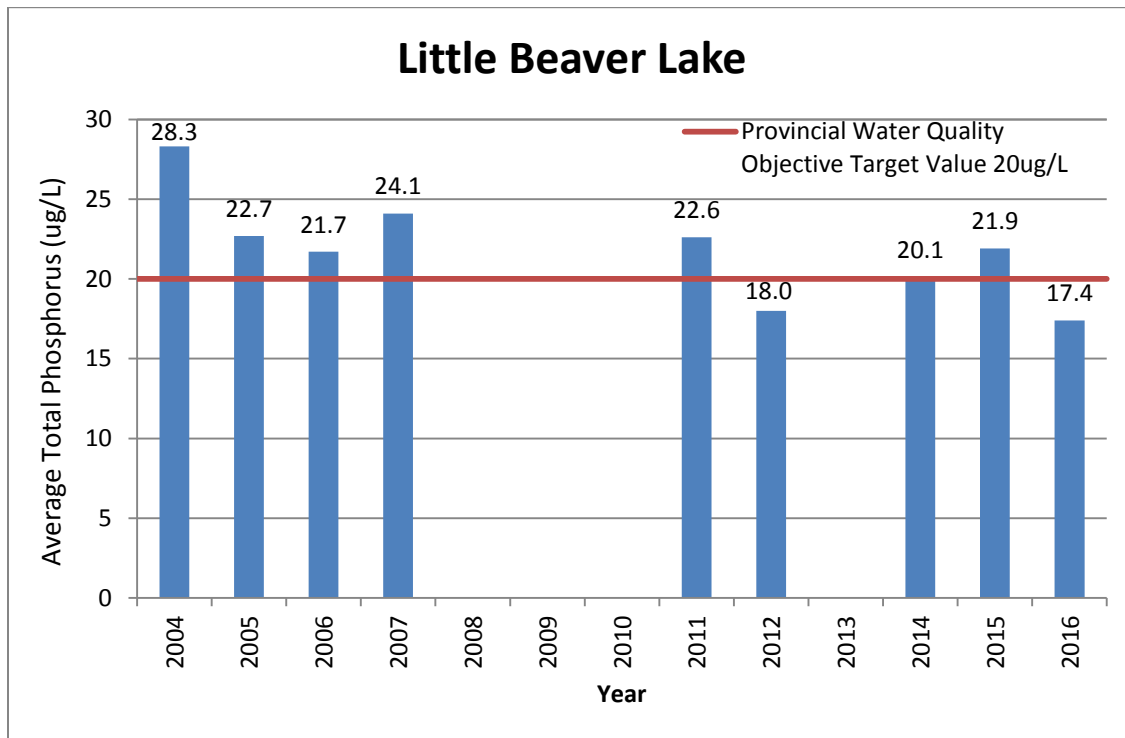
Kusk (Rat) Lake

The bar graph below indicates the spring total phosphorus results for Kusk (Rat) Lake from 2003-2016.



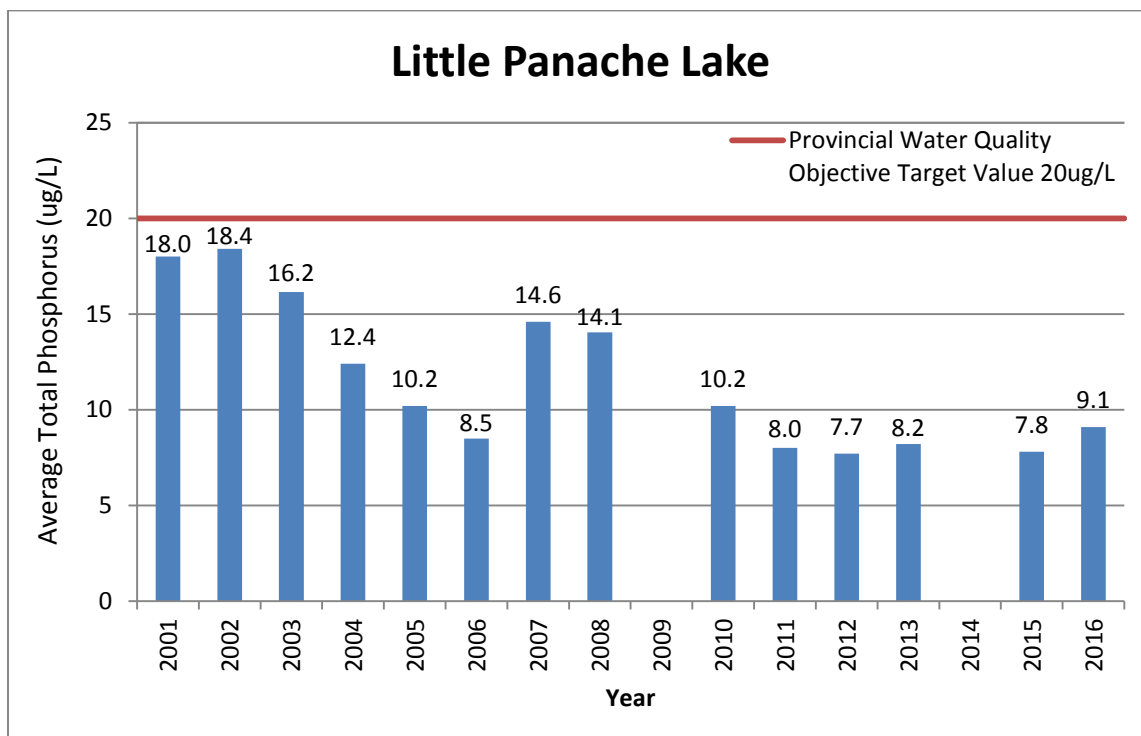
Little Beaver Lake

The bar graph below indicates the spring total phosphorus results for Little Beaver Lake from 2004-2016.



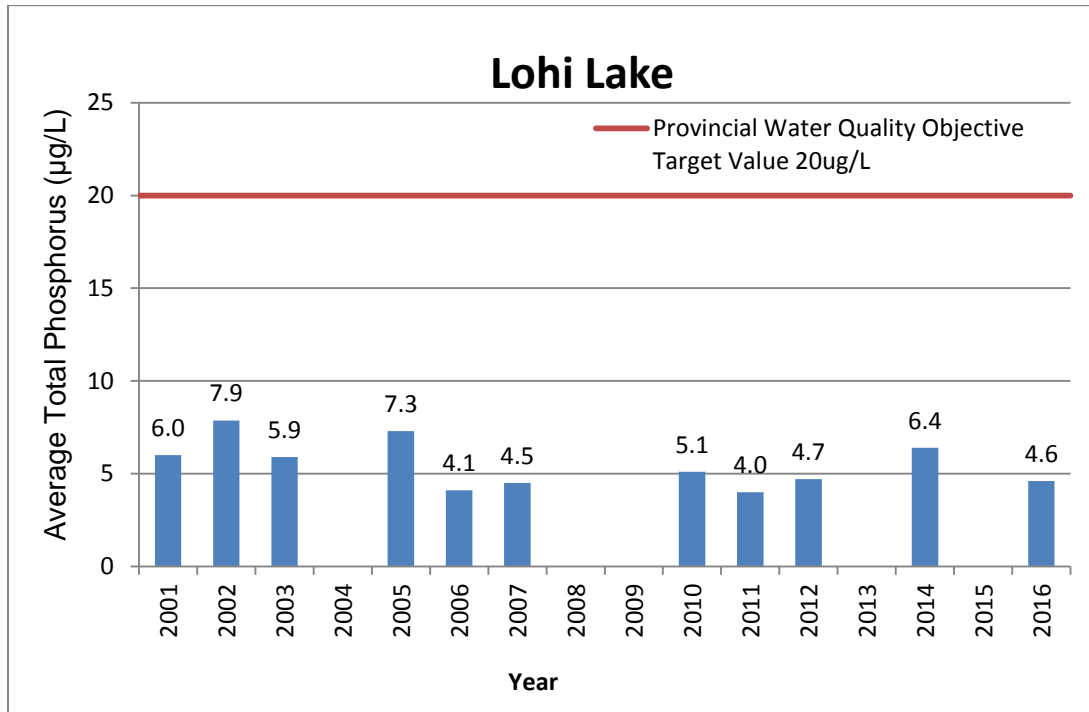
Little Panache

The bar graph below indicates the spring total phosphorus results for Little Panache Lake from 2001-2016.



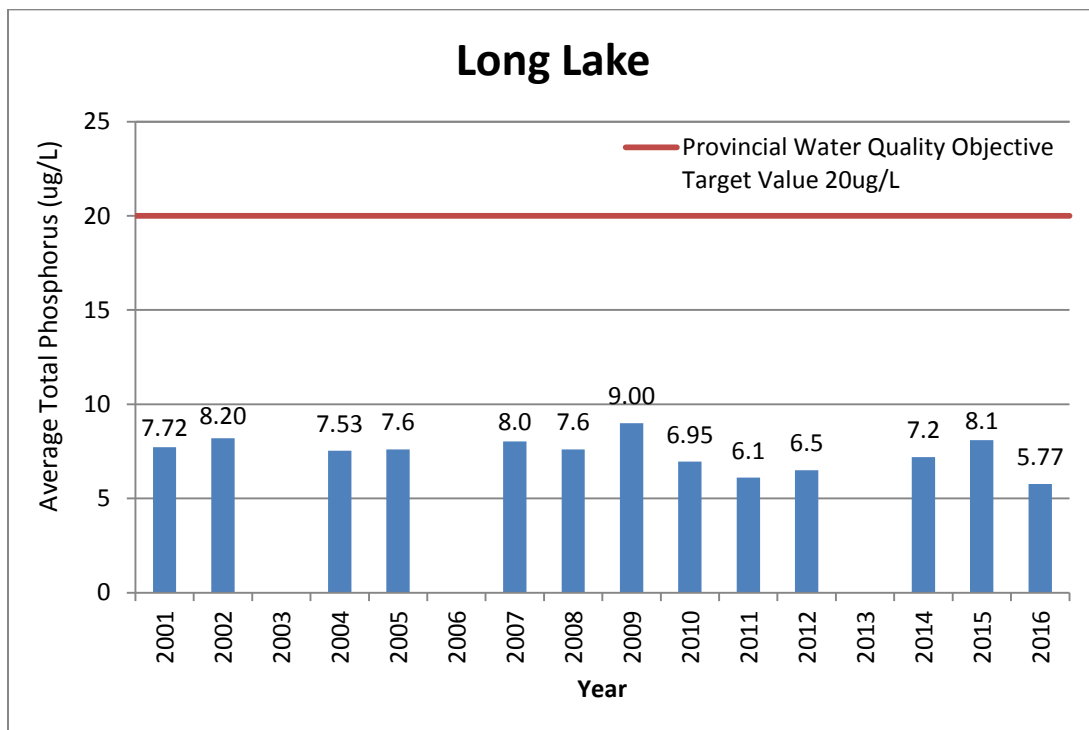
Lohi Lake

The bar graph below indicates the spring total phosphorus results for Lohi Lake from 2001-2016.



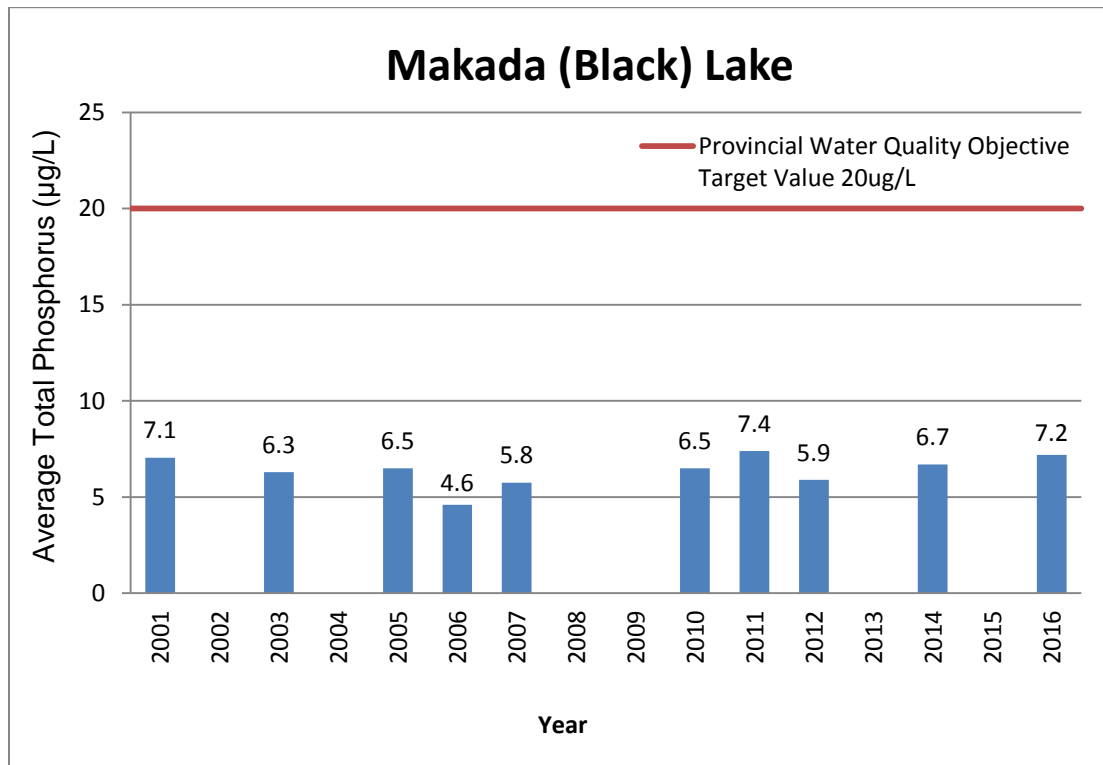
Long Lake

The bar graph below indicates the spring total phosphorus results for Long Lake from 2001-2016.



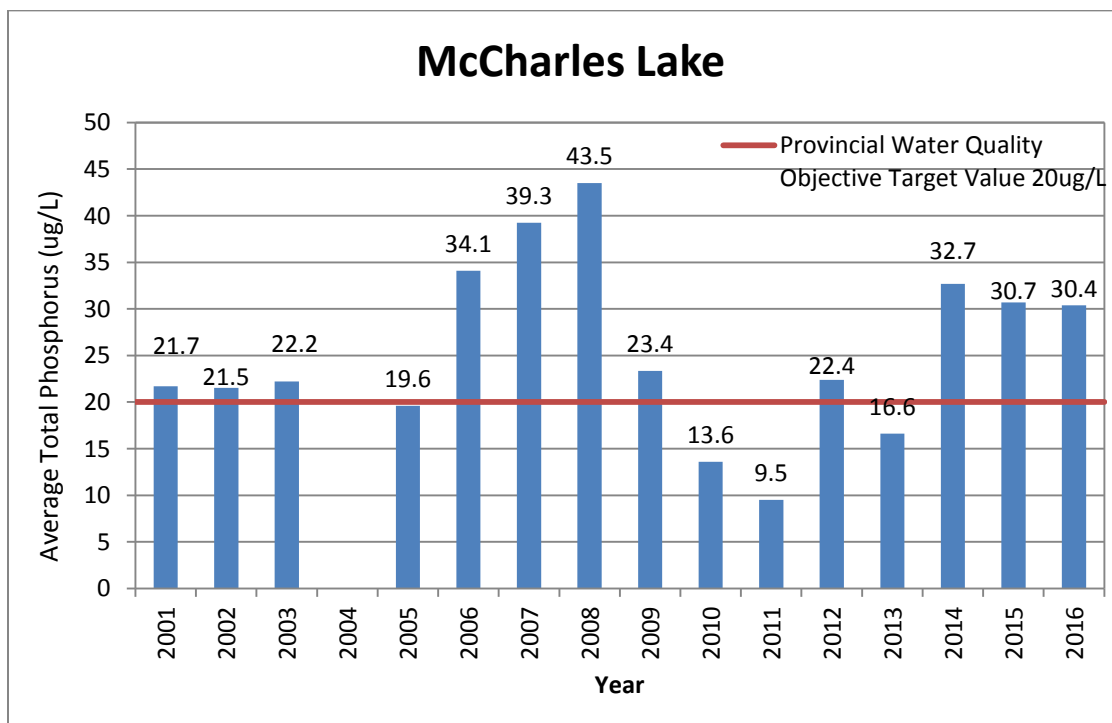
Makada (Black) Lake

The bar graph below indicates the spring total phosphorus results for Makada (Black) Lake from 2001-2016.



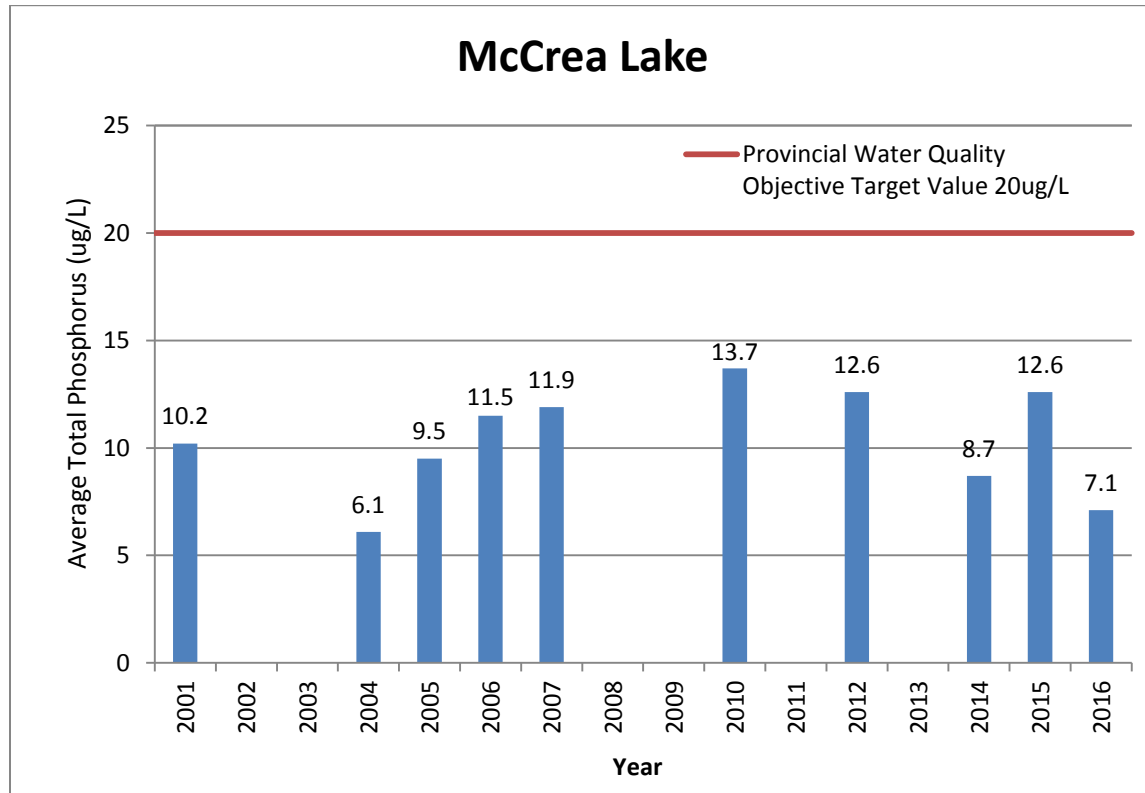
McCharles Lake

The bar graph below indicates the spring total phosphorus results for McCharles Lake from 2001-2016.



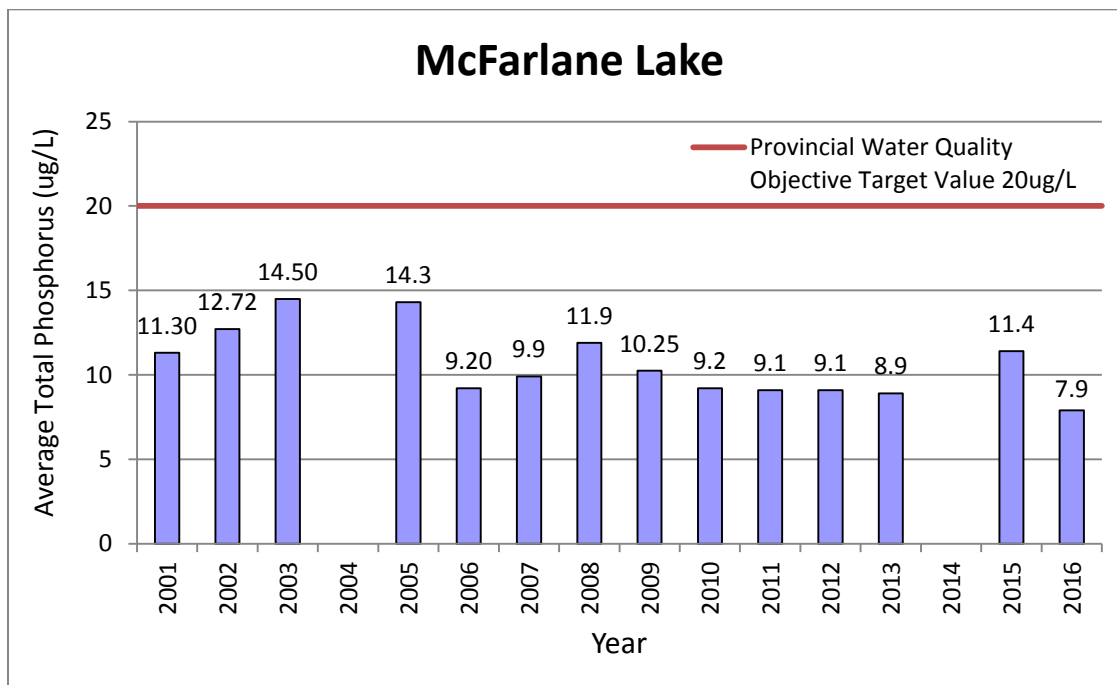
McCrea Lake

The bar graph below indicates the spring total phosphorus results for McCrea Lake from 2001-2016.



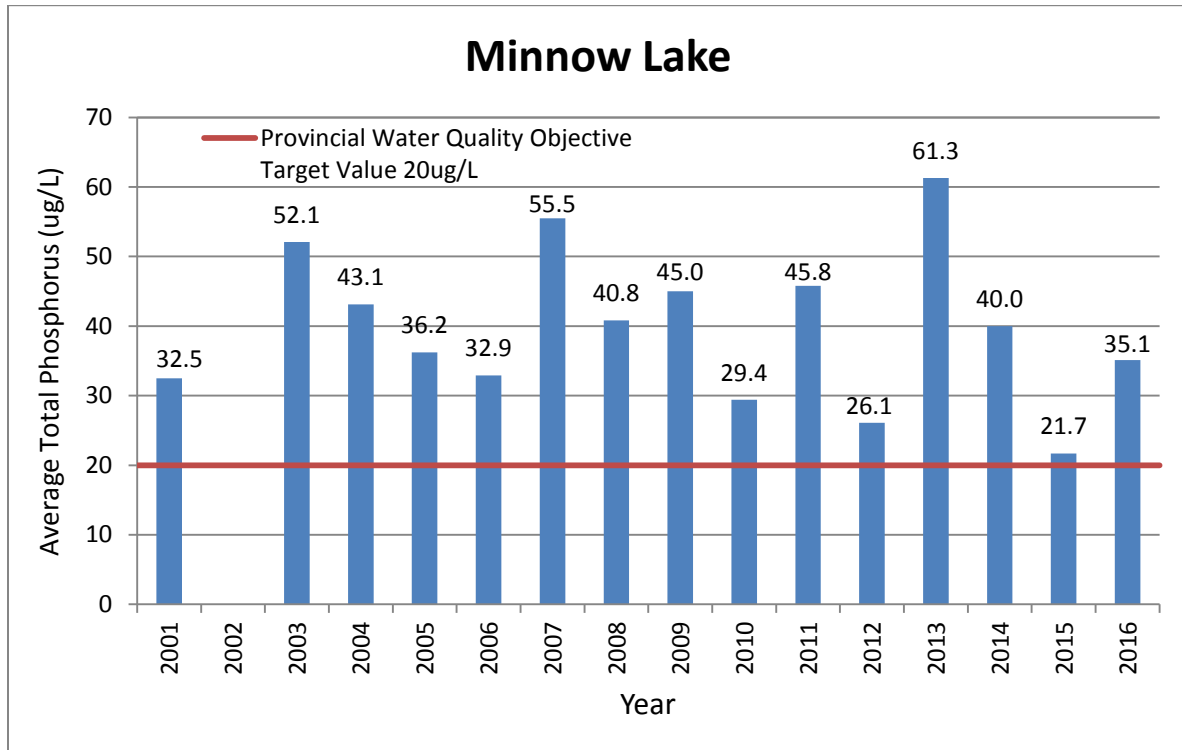
McFarlane Lake

The bar graph below indicates the spring total phosphorus results for McFarlane Lake from 2001-2016.



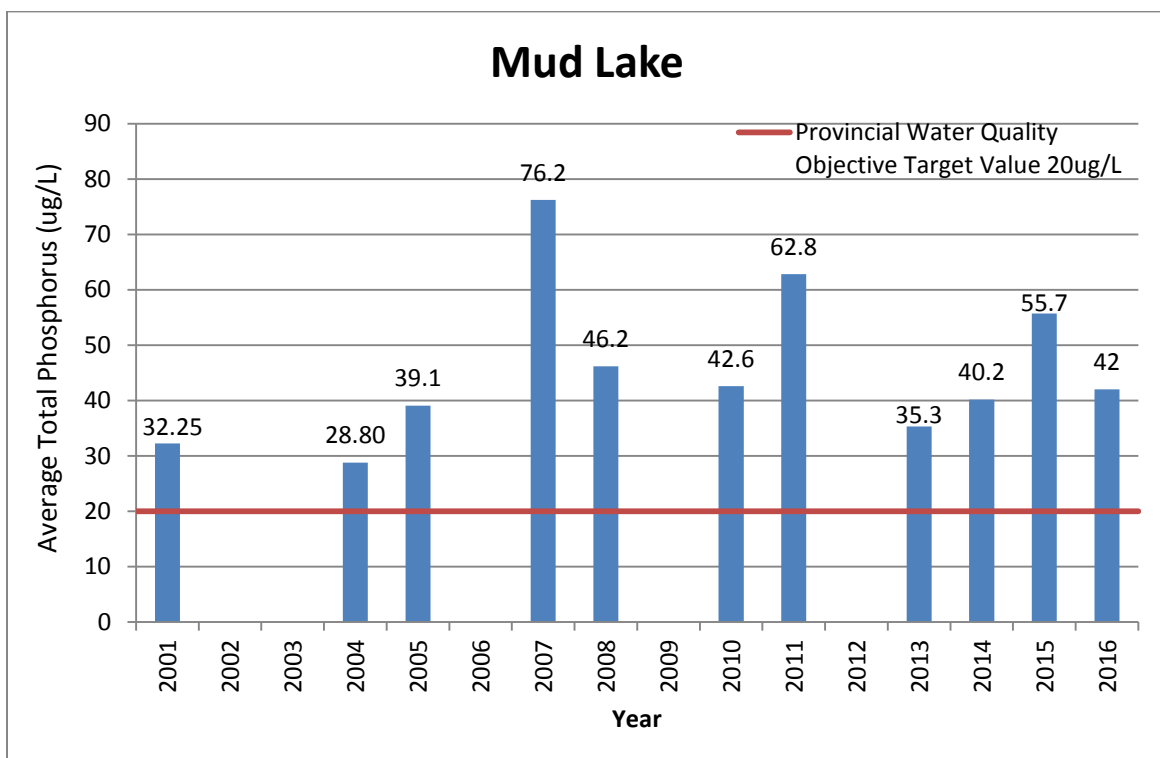
Minnow Lake

The bar graph below indicates the spring total phosphorus results for Minnow Lake from 2001-2016.



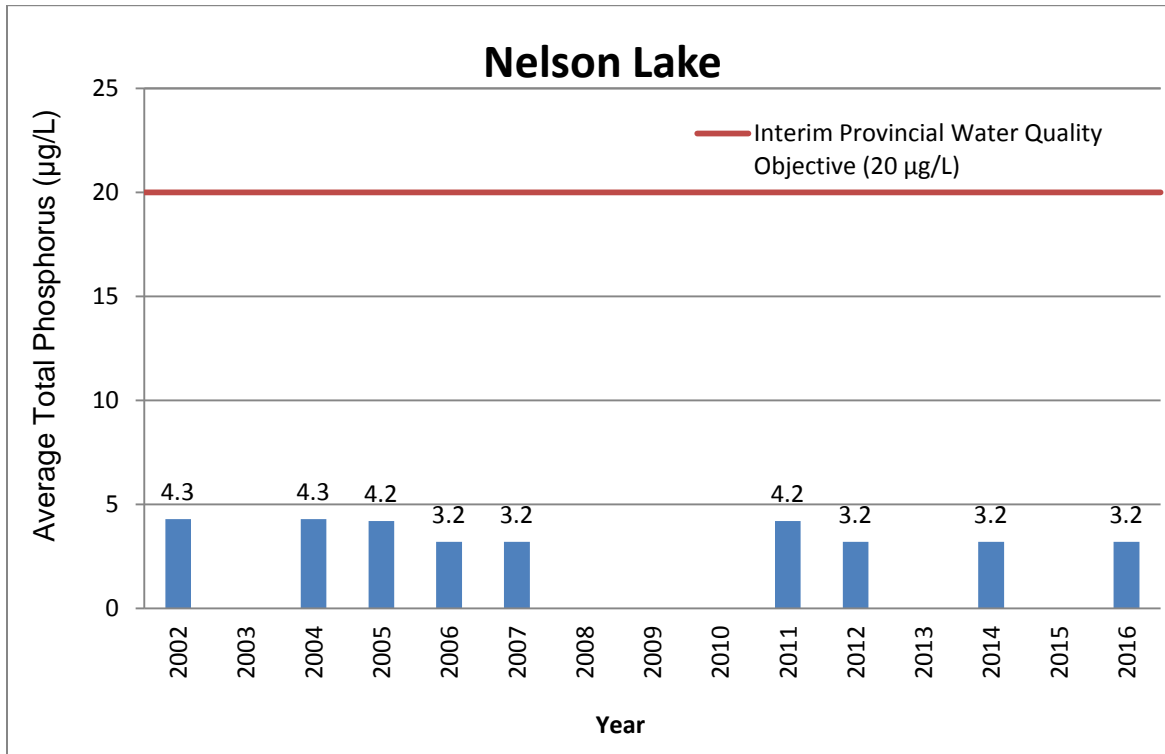
Mud Lake

The bar graph below indicates the spring total phosphorus results for Mud Lake from 2001-2016.



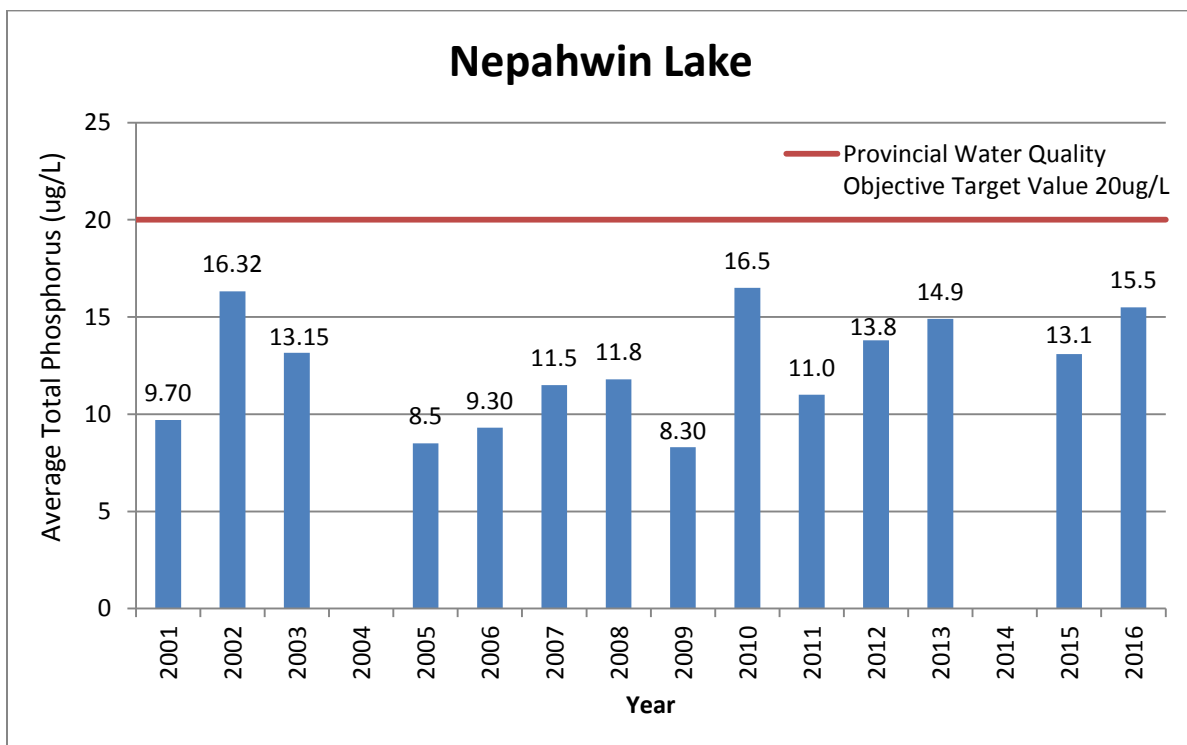
Nelson Lake

The bar graph below indicates the spring total phosphorus results for Nelson Lake from 2002-2016.



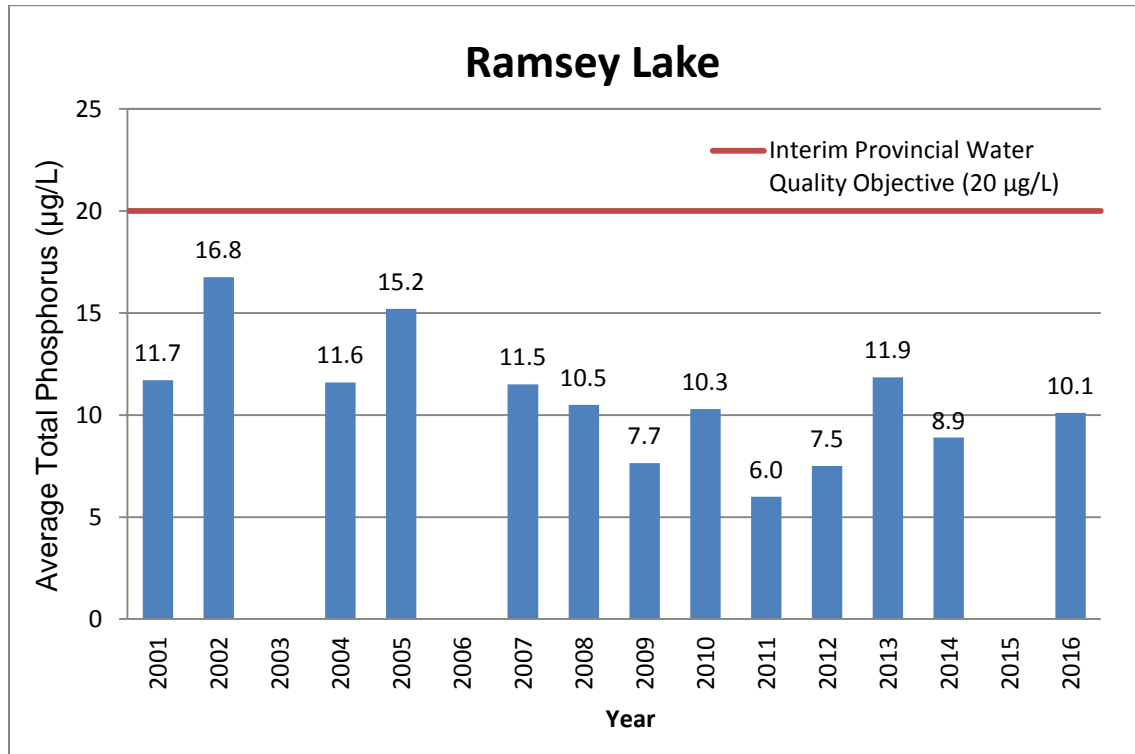
Lake Nepahwin

The bar graph below indicates the spring total phosphorus results for Lake Nepahwin from 2001-2016.



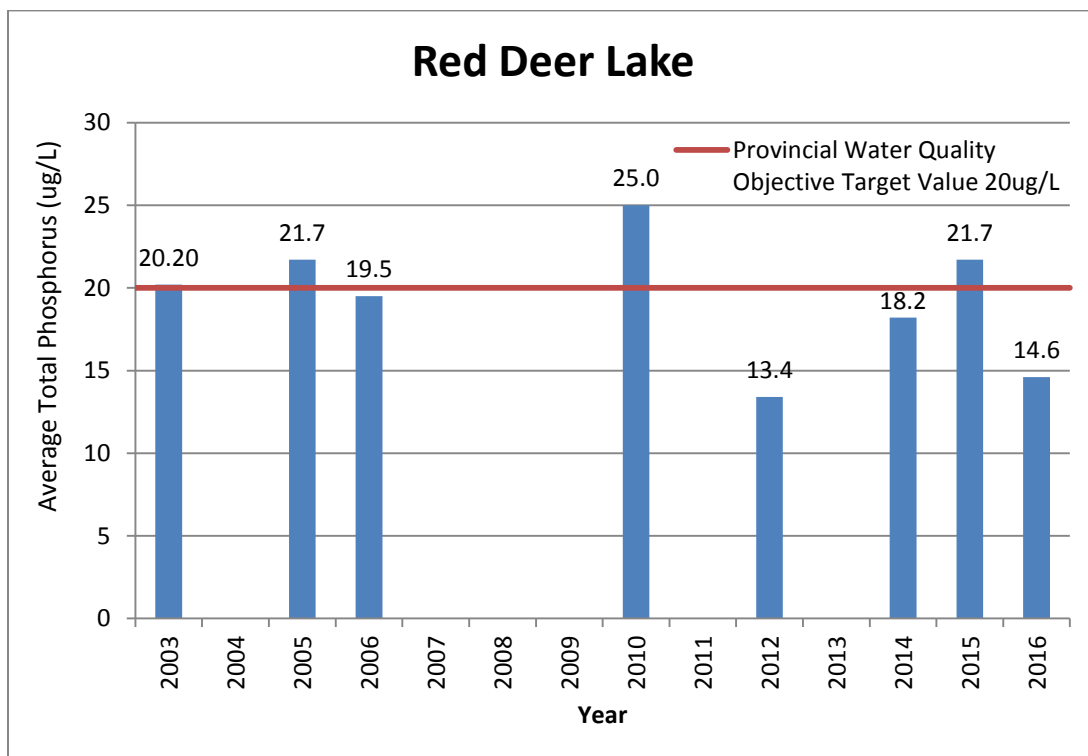
Ramsey Lake

The bar graph below indicates the spring total phosphorus results for Ramsey Lake from 2001-2016.



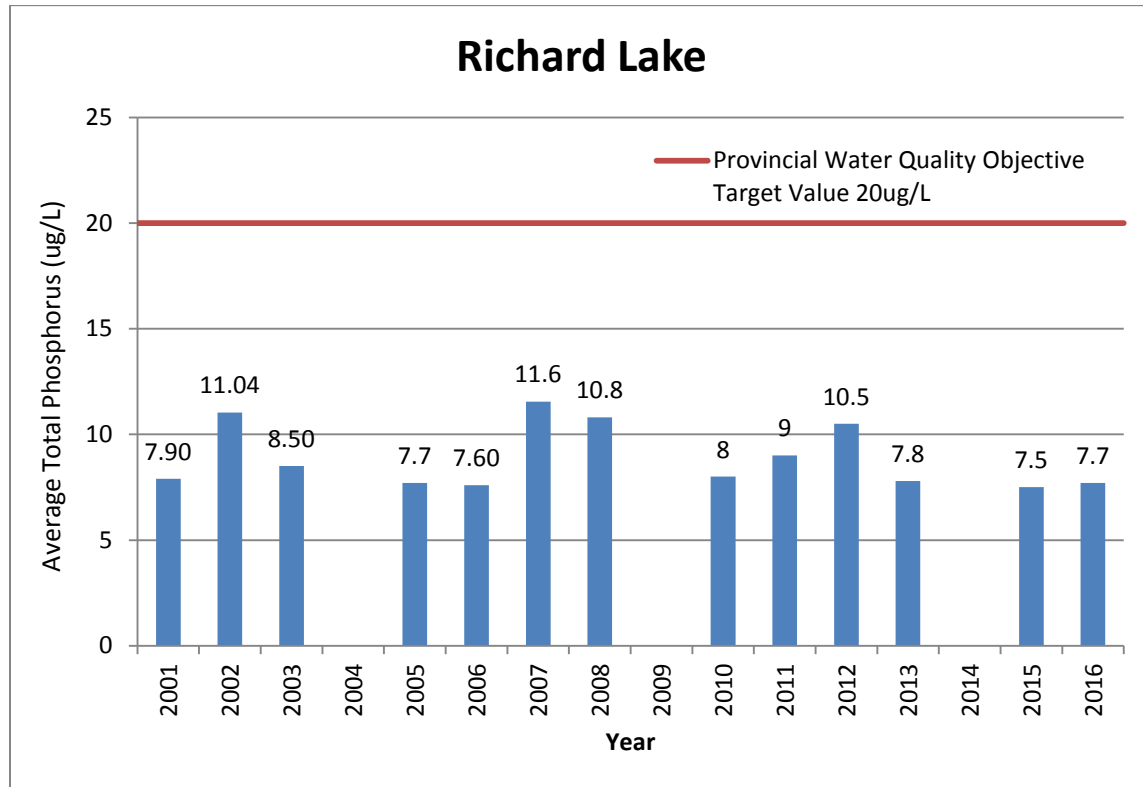
Red Deer Lake

The bar graph below indicates the spring total phosphorus results for Red Deer Lake from 2003-2016.



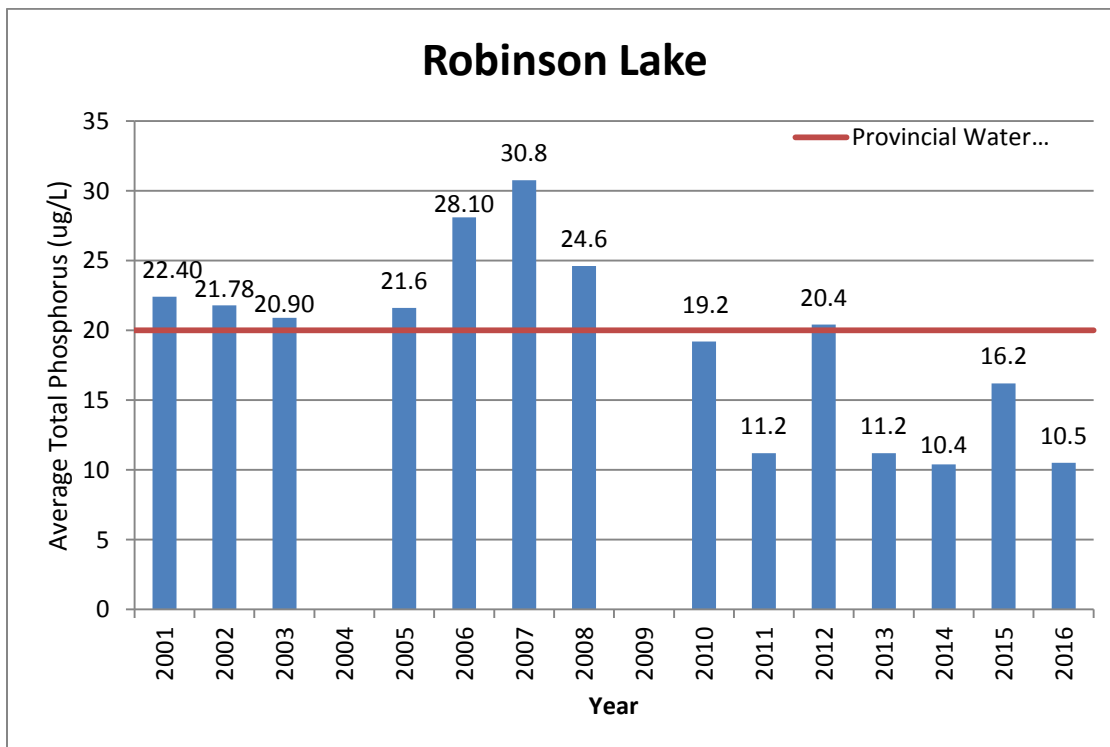
Richardson Lake

The bar graph below indicates the spring total phosphorus results for Richardson Lake from 2001-2016.



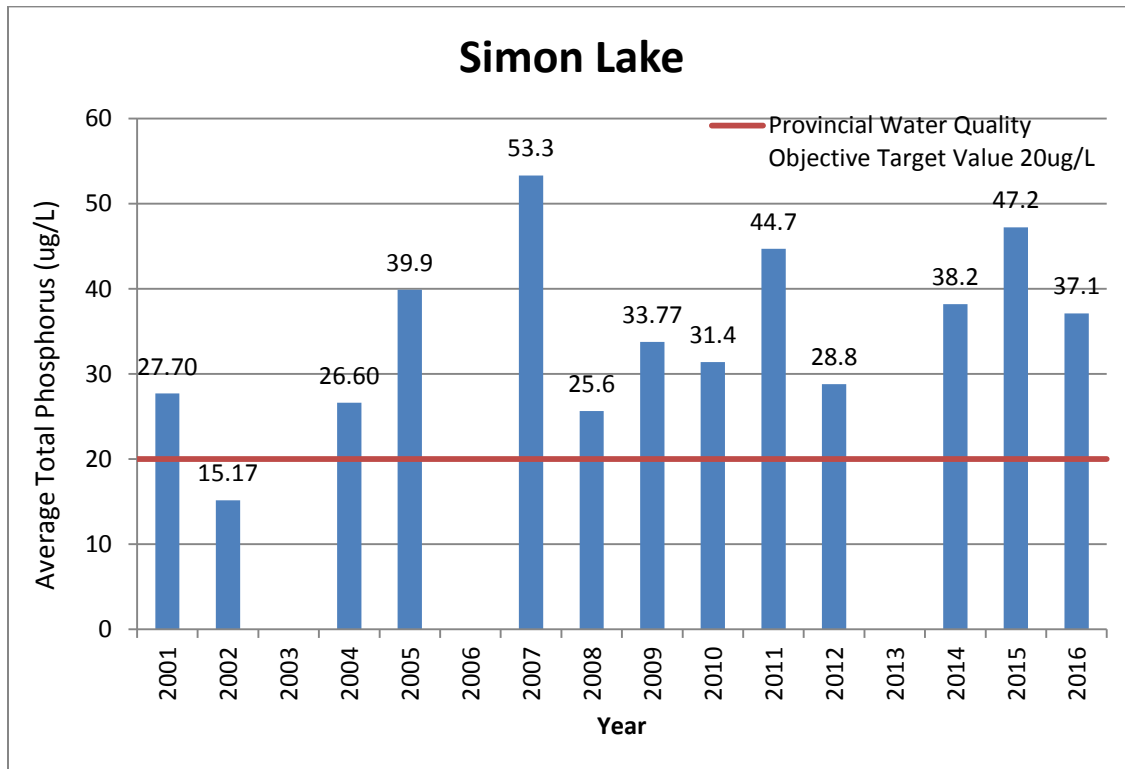
Robinson Lake

The bar graph below indicates the spring total phosphorus results for Robinson Lake from 2001-2016.



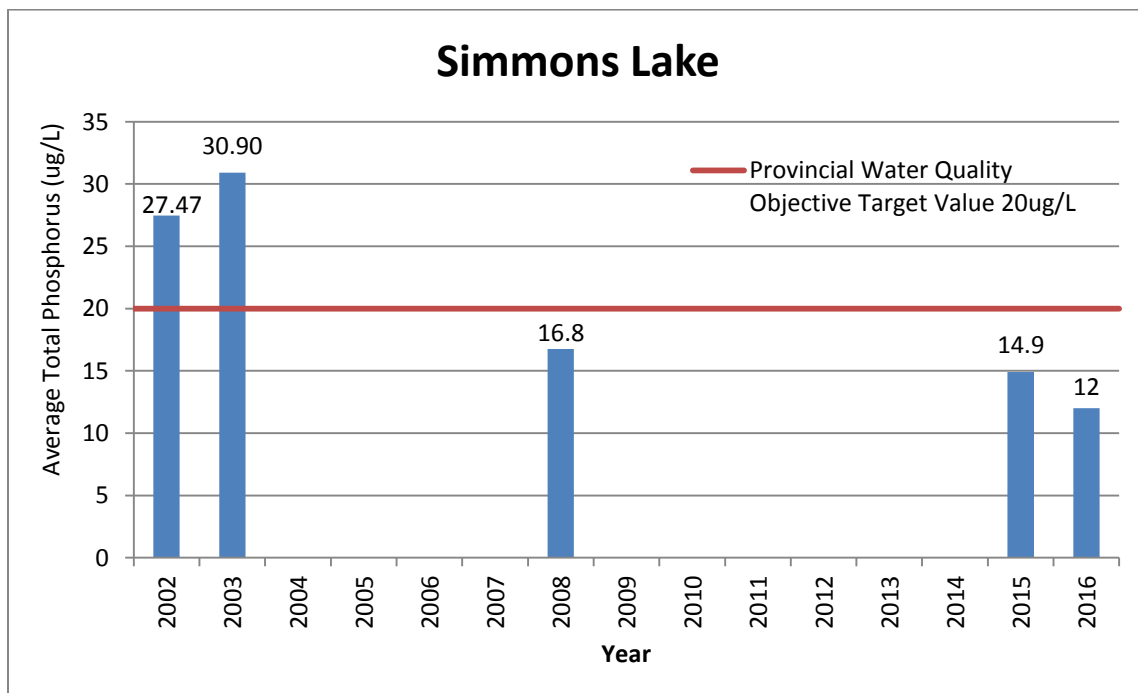
Simon Lake

The bar graph below indicates the spring total phosphorus results for Simon Lake from 2001-2016.



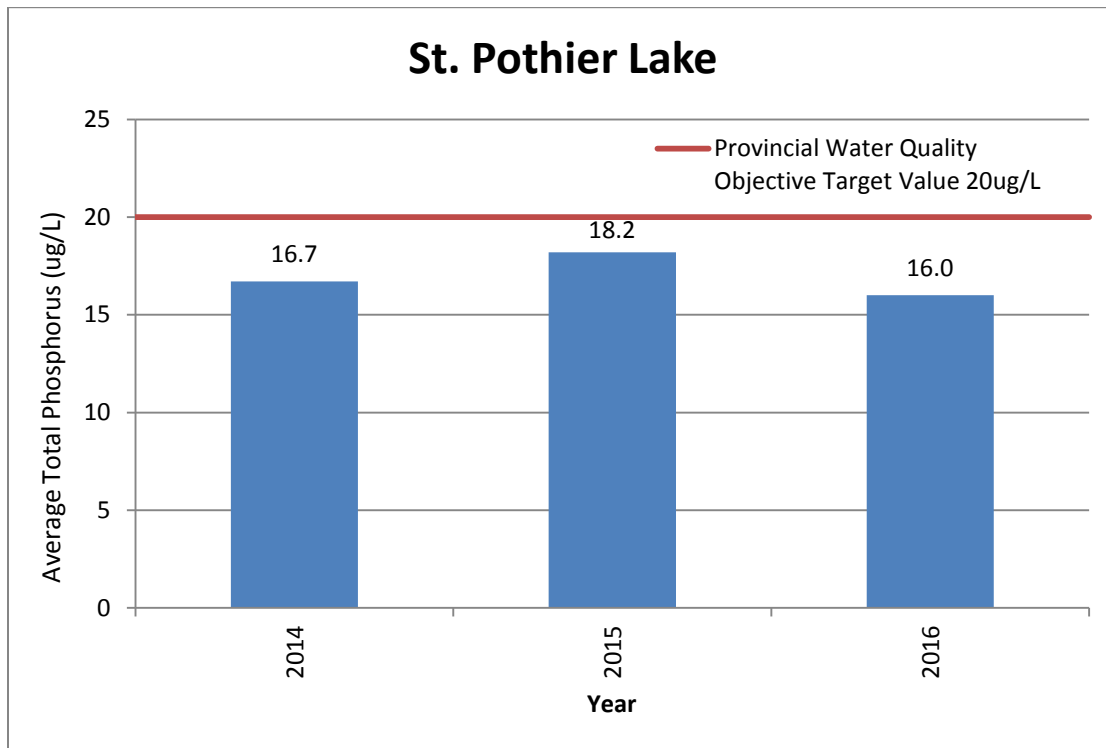
Simmons Lake

The bar graph below indicates the spring total phosphorus results for Simmons Lake from 2002-2016.



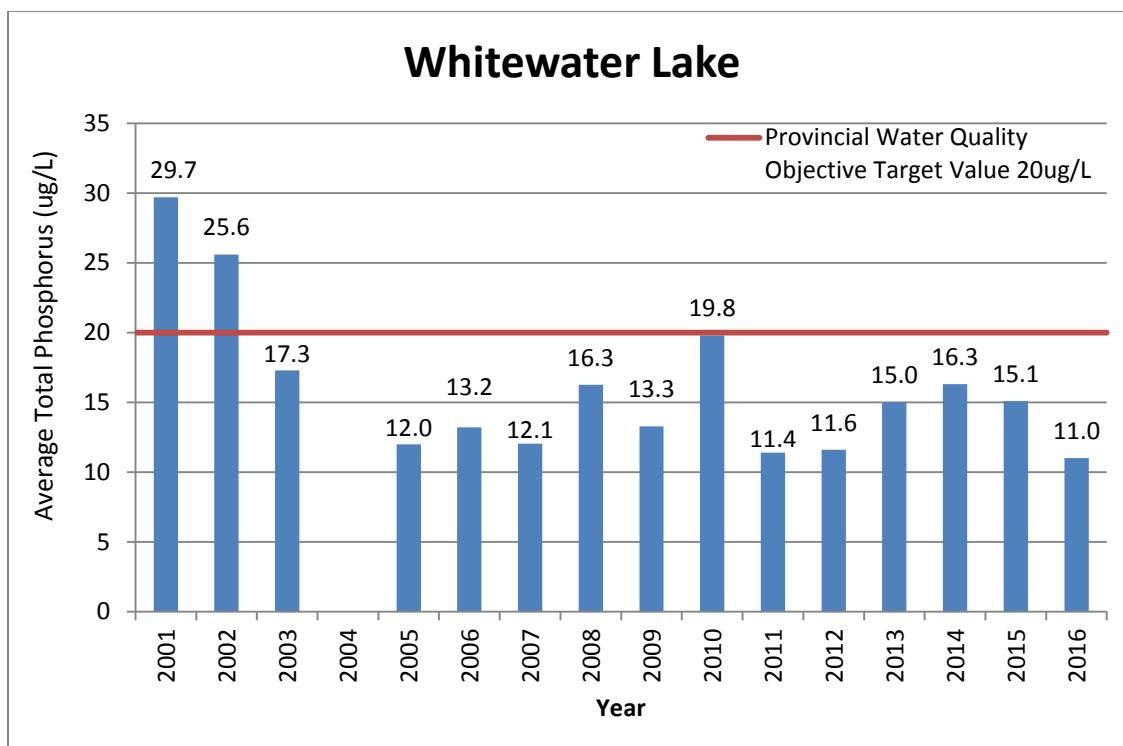
St. Pothier Lake

The bar graph below indicates the spring total phosphorus results for St. Pothier Lake from 2014-2016.



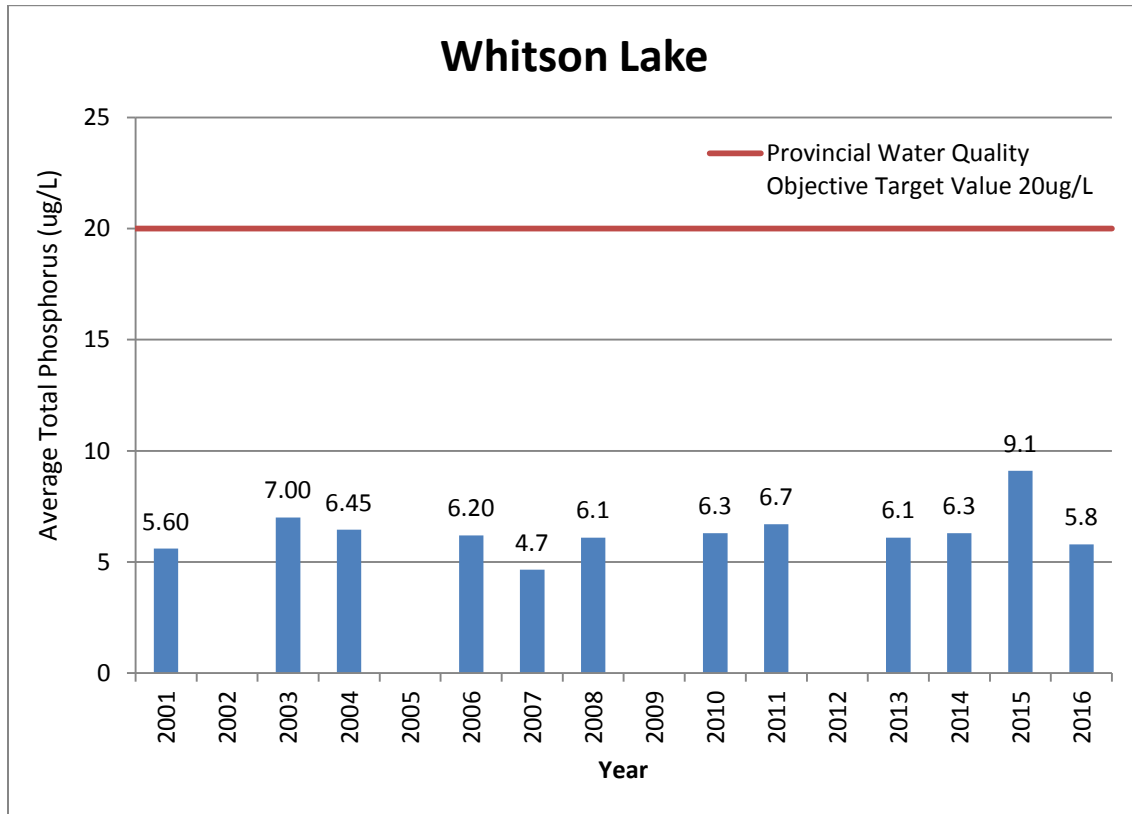
Whitewater Lake

The bar graph below indicates the spring total phosphorus results for Whitewater Lake from 2001-2016.



Whitson Lake

The bar graph below indicates the spring total phosphorus results for Whitson Lake from 2001-2016.



For further information, contact

Lake Water Quality Program
Environmental Planning Initiatives
City of Greater Sudbury
200 Brady Street, Sudbury, ON P3A 5P3
705-674-4455, Ext. 4604
Email: lakewaterquality@greatersudbury.ca
Website: www.greatersudbury.ca/lakes

Accessible version available upon request.