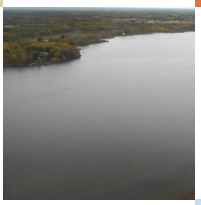
CAMP

Coordinated Aquatic Monitoring Program



Annual Activity Report

2021/2022

Submitted to:
Minister of Environment Climate and Parks
President of Manitoba Hydro

Submitted by:
MOU Working Group

May 2023

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1.0 Executive Summary

The 2021/22 Coordinated Aquatic Monitoring Program (CAMP) marks the fourteenth year of monitoring since implementation in 2008/09. The program was initiated to address comments received from communities and the Clean Environment Commission (CEC) about the need for system-wide monitoring to better understand the effects of hydroelectric operations on the aquatic environment. In 2006, Manitoba and Manitoba Hydro signed a Memorandum of Understanding (MOU) and the CAMP partnership was established. The MOU outlines the objectives of the program and requires an annual summary of activities, which is provided in this report.

CAMP is an ecosystem-based monitoring program that samples key biological/ chemical/ physical parameters at different levels of the food web. These variables, along with hydrometric data are used to describe the ecological condition and status of aquatic ecosystem health in the waterways in which Manitoba Hydro operates. The selected parameters were determined based on the best advice of scientists and regulators that participated in annual CAMP workshops that started in November 2007. Attendees included representatives from Manitoba Conservation and Water Stewardship, Manitoba Hydro, Fisheries and Oceans Canada, University of Manitoba, Environment Canada and North/South Consultants Inc.

The program is assessed annually and adjusted to ensure it maintains scientific credibility and is in scope for meeting the objectives of the Memorandum of Understanding.

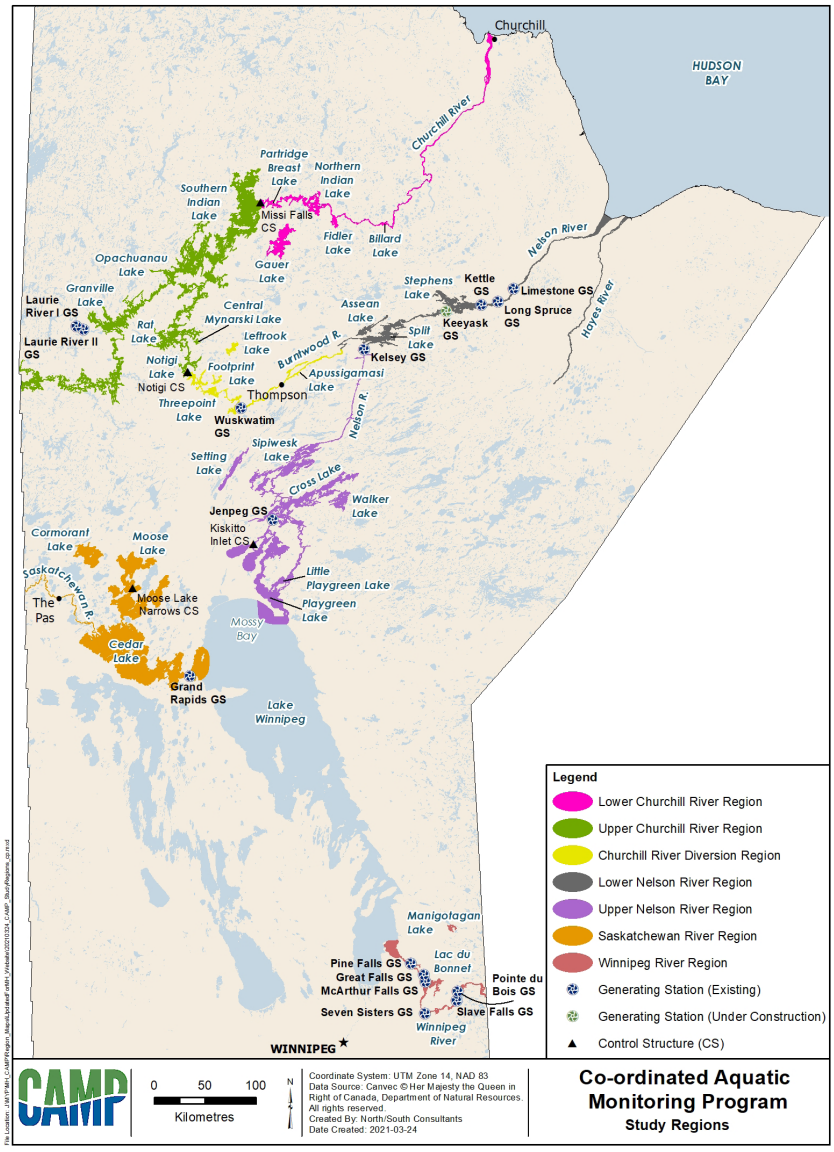
The past year was successful and most of the fieldwork was accomplished, as planned and the program goals were met, overall.

2.0 Background

The purpose of this report is to provide the signatories of the “Memorandum of Understanding about the Program of LWR/CRD Monitoring Activities (MOU)” with a summary of the 2021/22 Coordinated Aquatic Monitoring Program. The MOU, signed in 2006 by the Province of Manitoba and Manitoba Hydro (Appendix 1), outlines the need to develop a system-wide aquatic monitoring program to address concerns related to potential effects associated with Manitoba Hydro operations.

The Coordinated Aquatic Monitoring Pilot Program (CAMPP) was developed and implemented in 2008/09 and operated for the first three years to test sampling methodologies. This 2021/22 annual activity report represents the eleventh year of a fully implemented, post-pilot phase, Coordinated Aquatic Monitoring Program (CAMP).

CAMP Study Regions



3.0 Program Management

CAMP is a large program that has a broad geographic and topic scope. It comprises waterways across Manitoba (from the Winnipeg River to the Churchill River) and a multitude (hundreds) of monitoring parameters that are sampled on an annual or rotational basis. To accomplish the goals of the program, many different groups (i.e., Manitoba government, Manitoba Hydro, environmental consultants, technical experts, lab technicians and community members) perform various duties to:

- Plan and direct the work
- Manage and budget effectively
- Acquire resources
- Conduct field sampling
- Ensure legislative compliance
- Process and analyze results
- Report results and progress in various formats
- Manage data
- Ensure safety
- Communicate, share information, and receive feedback
- Collaborate and develop relationships
- Strive for continuous improvement

CAMP supports Water Power Act licensing, and a Working Group composed of individuals from Manitoba Hydro and Manitoba Sustainable Development oversees the program.

Smaller subcommittees, with subject matter experts from Manitoba Hydro, Manitoba Agriculture and Resource Development, Fisheries and Oceans Canada, Environment and Climate Change Canada, environmental consultants, and other research scientists, are also brought together occasionally to address specific topics and issues. Day to day administration, budgeting, and management of the program are conducted by Manitoba Hydro. Monitoring activities (i.e., data collection and fieldwork) are performed by Manitoba Hydro, Manitoba Agriculture and Resource Development, and North/South Consultants Inc. (on behalf of Manitoba Hydro). The Lake Winnipeg Research Consortium performs CAMP water quality sampling in a few locations in the north basin of Lake Winnipeg from their large research vessel, The Namao.

More detailed information about the program, sampling parameters, monitoring sites, and results can be found on the website at www.campmb.com.

3.1 Working Group

On November 25, 2021, the MOU Working Group, which is the oversight committee identified in the MOU, met to discuss the program. Items that were presented and discussed at the meeting include:

- Review of the MOU and Partnership
- Clarification on Water Power Act License items relevant to CAMP
- Review of the 2021 Field Season
- Updates on CAMP data access through ArcGIS Online

No significant concerns or issues were raised by the Working Group members. A summary of CAMP meetings is provided in Appendix 2.

3.2 Subcommittee

The subcommittee is composed of groups of technical experts from Manitoba Hydro, Manitoba, North/South Consultants Inc., and other experts as needed for each of the specific parameters sampled in CAMP. There were no specific technical subcommittee meetings during 2021/22.

3.3 Annual Workshop

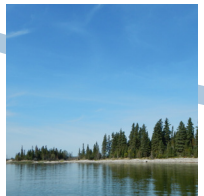
Usually one CAMP workshop is held annually to review the past year's fieldwork, and address any specific topics of relevance. External subject matter experts and others are occasionally invited to participate in the workshop, as appropriate. This year, the Working Group met to discuss Pathways of Effects for each region that are relevant to the CAMP indicators, in support of the development of the 9-year report.

4.0 Ecosystem Monitoring

The following summary documents the major activities undertaken by CAMP in 2021/22 (i.e., April 1, 2021 to March 31, 2022.

Water quality, sediment quality, benthic macroinvertebrates (BMI), and fish community were sampled in up to 32 lakes (or areas of lakes) or riverine reaches (23 on-system and 9 off-system) during the 2021/22 CAMP. In addition, water quality was sampled at the outlets of Lake Winnipeg (Two-Mile Channel and the upper Nelson River near Warren Landing). Mercury in fish monitoring was conducted in 2021/22 at five locations. No aquatic habitat (bathymetry and substrate type) surveys were undertaken in 2021/22.

Overall, the program goals were achieved; however, a few sites were missed or changed, mainly due to inclement weather.



4.1 Changes

Due to changes in provincial water quality sampling programs in 2019, CAMP water quality sampling was conducted at all sites by North/South Consultants in spring and fall in 2021, including sites sampled previously by the Province of Manitoba during these periods. Manitoba retained their regular summer sampling program under CAMP.

Fish sampling and associated Benthic Macroinvertebrate (BMI) sampling were not conducted at the lower Churchill River at the Little Churchill River site in 2021 due to a sampling concern expressed by a Tataskewak Cree Nation (TCN) councillor.

The way in which field programs were conducted was again modified in 2021 in some cases in response to COVID-19 (e.g., typical accommodations used for CAMP were altered in some cases to avoid or limit contact with communities; provincial water quality monitoring was conducted by a single field staff).

A new waterbody – Wuskwatim Lake – in the Churchill River Diversion Region was added to CAMP in 2021; water quality, BMI, fish community, and fish mercury monitoring was undertaken in this lake.

No other substantive changes were made to the program.

4.2 Aquatic Habitat

Characterizing the aquatic habitat of a waterbody helps inform our understanding of the ecosystem components, such as fish and invertebrates. CAMP aquatic habitat surveys have been conducted using boat based hydroacoustic equipment to produce lake bathymetry and substrate/ bottom typing. Surveys have been conducted in different waterbodies to build an inventory of maps over time to assist with interpreting monitoring results.

No aquatic habitat surveys were conducted in 2021/22 as efforts were placed on analyzing previously collected habitat data and producing products to communicate the information (e.g. maps and posters).

4.3 Water Quality

CAMP has two programs that contribute to water quality monitoring – one is covered under the Physical Environment umbrella and the other is covered by the Ecosystem

umbrella. Manitoba's Environment, Climate, and Parks, and North/South Consultants on behalf of Manitoba Hydro, collect the Ecosystem water quality data (which includes in situ data and a suite of lab analytes). The Physical Environment water quality data are collected by Manitoba Hydro and include discrete samples for temperature, total suspended solids, conductivity, and pH. In addition to discrete samples, continuous monitoring sensors are used year-round to acquire water quality data every few minutes.

Discrete water quality sampling on the Ecosystem side occurs four times a year in annual and rotational water bodies. Three samples are collected during the open-water season (spring, summer, fall) and one in winter, under ice cover conditions. Samples are collected using a float plane with floats in the open-water season and skis in winter. Over 50 parameters are analyzed in the water quality samples through in -situ (i.e. on site) or lab analysis.

With a few exceptions, water quality sampling was completed at all sites as planned in 2021/22. Sampling site locations were adjusted at some sites over the course of the sampling program due to inclement weather/site conditions, such as high wind or unsafe landing conditions, these sites and times included:

•Spring:
- o Playgreen Lake site adjusted due to pilot concerns with low water and exposed rocks and reefs.

•Summer:
- o Lake Winnipegosis (Site 3) site was relocated (to an established alternate location) due to pilot concerns with smoke (forest fires) and distance from shoreline;
- o Southern Indian Lake – Area 1 site was adjusted due to high wind/waves; and
- o Playgreen Lake site relocated due to pilot concerns with low water levels and high wind/waves).

•Fall:
- o Granville Lake site was adjusted due to pilot concerns with high winds/waves; and
- o Playgreen Lake site relocated (to alternate location established in summer) due to pilot concerns with low water levels and high winds/waves..

•Winter:
- o Southern Indian Lake – Area 1 site was adjusted due to access issues (i.e., frazzil ice); and
- o the Hayes River site was moved closer to shore due to frazzil ice in the middle of the channel.

In addition, several sites were not sampled in winter (2021/22) due to unsafe conditions (slush ice and snow drifts):

- all sites in the Winnipeg River Region (the Pointe du Bois Forebay, Lac du Bonnet, and Manigotagan Lake);
- all sites in the Saskatchewan River Region (Cedar Lake - Southeast, South Moose Lake, and Cormorant Lake); and
- Lake Winnipegosis.

Manitoba Agriculture and Resource Development expierenced some sampling interuptions resulting from public health restrictions and/or variable water level conditions preventing access to Lake Wnnipeg outlet site locations. As a result, 2020 spring and summer water quality monitoring was not conduced at Warren's Landing, Two Mile Channel inlet, Two Mile Channel outlet, Site 22, or Big Mossy Point. Fall sampling of Warren's Landing, Two Mile Channel inlet, Two Mile Channel outlet, Site 22, and Big Mossy Point was resumed and completed in September 2021.

4.4 Sediment Quality

Sediment quality is monitored on a rotational basis every six years. 2021/22 was not a sampling year so no sediment quality data were collected. The next round of sediment quality monitoring will occur in 2023/2024.

4.5 Benthic Macroinvertebrates

Benthic macroinvertebrate (BMI) (i.e., bugs in the sediment) monitoring is conducted once per year at annual and rotational sites. BMI are often used as indicators of

ecosystem health as they are a food source (i.e., lower trophic level) for higher-level consumers, such as fish. Some BMI are susceptible to environmental changes and can reveal trends that may be occurring in areas of a waterbody over time.

BMI sampling was not conducted at the lower Churchill River at the Little Churchill River site in 2021 due to a concern expressed by a Tataskewak Cree Nation (TCN) councillor. The concern was related to Lake Sturgeon so fish sampling was cancelled at the site; BMI sampling is usually conducted at the same time as the fish monitoring so it consequently did not occur.

Additionally, the field crew were only able to collect three offshore benthic samples because the substrate within the sampling polygon was too hard and compact to grab. This is different than previous sampling years where five samples were collected from this offshore polygon (2012, 2015, and 2018).

BMI sampling was completed at all other sites as planned. Field crews also conducted zebra mussel veliger sampling at all sites for Manitoba Water Stewardship. Additional time and effort were required during sampling to comply with Aquatic Invasive Species regulations that require thorough decontamination of gear that is moved between waterbodies.

BMI samples were sorted, identified, and enumerated in the laboratory over the winter. To date, spiny waterfleas (an AIS) have been identified from nearshore samples in the Winnipeg River (Eaglenest Lake, Pointe du Bois forebay, and Lac du Bonnet), Lake Winnipeg (Mossy Bay), and Playgreen Lake; and from offshore samples in the Winnipeg River (Pointe du Bois forebay, and Lac du Bonnet), Lake Winnipeg (Grand Rapids and Mossy Bay), and Playgreen Lake.

4.6 Phytoplankton

Phytoplankton are small often microscopic, plant-like organisms in the water column that make up the base of the food web (i.e., they are primary producers). They are an important food source and provide oxygen in the aquatic environment. An over-abundance of phytoplankton (called blooms, which occur when nutrients are plentiful) can be a detriment to the environment; oxygen can be depleted from decomposition after they die, they can prevent sunlight from penetrating into the water column, or some (e.g., blue-green algae) contain toxins. Sampling for phytoplankton helps us understand how the primary producers are contributing to the health of the ecosystem, as well as how biota are responding to the nutrient levels in the water.

Samples for phytoplankton analysis (i.e., community composition and biomass) were collected from all sites during the open-water and ice-cover seasons; samples from the four routine annual monitoring sites (Cross, Setting, Split and Assean lakes) were submitted for analysis as planned. Over the open-water season, 7 samples were submitted for algal bloom monitoring, as chlorophyll a concentrations exceeded the threshold level of 10 µg/L. These samples included:

•Spring:

- o The off-system lake (Manigotagan Lake) in the Winnipeg River Region.

•Summer:

- o One on-system site (Cedar Lake – Southeast) in the Saskatchewan River Region; and
- o One on-system site (Playgreen Lake) in the Upper Nelson River Region..

•Fall:

- o One on-system site (Cedar Lake – Southeast) in the Saskatchewan River Region; and
- o Three off-system lakes (Manigotagan, Gauer, and Leftrook lakes.

4.7 Fish Community

Fish community sampling is conducted once per year at annual and rotational sites. The intent of the sampling is to estimate fish abundance and diversity, and to collect information on fish condition (e.g., length, weight, condition factor, etc.). Ageing structures are also collected from target species (i.e., Walleye, Northern Pike, Lake Whitefish, Sauger and any incidental Lake Sturgeon mortalities). Otoliths (ear bones) or cleithra (jaw bones) are collected and analyzed for age in a way similar to counting tree rings. Knowing the age of a fish and the abundance of that age-class within a particular species provides information on fish growth and the relative strength of a particular year-class.

Fish community sampling was not conducted at the lower Churchill River at the Little Churchill River site in 2021 due to a Lake Sturgeon concern expressed by a Tataskweyak Cree Nation councillor. Only four of nine gillnet sites in the lower Nelson River were sampled due to extremely low and fluctuating water levels. As per usual, fish ageing structures were collected during fish community sampling; those ageing structures were analyzed in the laboratory over the winter.

4.8 Mercury in Fish

Mercury in fish is monitored in CAMP waterbodies every three years, except for two sites that are monitored annually (Threepoint and Leftrook lakes). The fish mercury sampling program conducted in 2021 included sampling at the two annual waterbodies and at three additional waterbodies: Wuskwatim Lake; Playgreen Lake, and Stephens Lake – South. Fish community sampling was not conducted at the lower Churchill River at the Little Churchill River site in 2021 due to a concern expressed by a TCN councillor. In addition, mercury was analyzed in tissue samples from eight Lake Sturgeon mortalities

from the Hayes River and lower Nelson River downstream of the Limestone GS collected under CAMP. An additional seven mortalities from other Manitoba Hydro monitoring programs (LSSEP) were also analysed for mercury under CAMP. After collection, mercury samples were submitted to a laboratory for analysis and laboratory analyses have been completed.

4.9 Physical Environment

4.91. Continuous Water Quality and Sedimentation Monitoring

In 2021, six year-round continuous monitoring sites and three summer season sites were operated. The year-round sites included Pointe du Bois GS, Grand Rapids GS, Jenpeg GS, Wuskwatim GS, Limestone GS and at the Missi Falls control structure. The summer season sites included the Saskatchewan River at The Pas, upper Churchill River near Leaf Rapids, and at the Notigi Control Structure.

The sites monitor turbidity, water temperature, dissolved oxygen and conductivity at regular time intervals and monthly site visits are done to maintain the equipment and collect water samples to measure the total suspended solids (TSS) in the water.

5.0 Communications

Increasing awareness of CAMP and sharing information and results have become priorities for the program. The program has evolved from establishing the technical parameters of the program into now focusing more on communicating what we are learning from the data. CAMP data and information have been shared in several venues and formats and we are continuing to work to provide plain language documents and materials that are accessible to wider audiences.

5.1 Data Sharing

Requests for CAMP data continue to be received from the public. Nine requests for data were received in 2021/22, and included universities, Indigenous communities, students, and consultants. Currently, data must be manually extracted from the database and forwarded to the requester. To streamline this process and make all the data available to the public on a self-serve basis, we are working on implementing a map-based interface on the website (i.e., ArcGIS Online).

6.0 Conclusion

CAMP is a successful ecosystem monitoring program. It continues to grow and evolve and currently has a focus on increasing communications. Plain language documents, website updates, public meetings and easier data sharing are a few of the ways that CAMP information is becoming more accessible. The value of the program continues to increase as data are acquired; however, the true benefit lies in usage of the data and not just its collection.

The next monitoring milestone for CAMP is to establish a new component focusing on the shoreline. This will be a collaborative endeavour and will be developed with the inclusion of Indigenous communities, subject matter experts, regulators, Manitoba, and Manitoba Hydro.

CAMP will continue to provide information to support decision-making processes at various levels. Regulators use the information to contribute to licence conditions and recommendations, and CAMP data can be used to support provincial broad-area planning in the future (as recommended in the Clean Environment Commission's "A Review of the Regional Cumulative Effects Assessment" (2018).

Overall, CAMP is a positive, high-profile environmental monitoring project that is expected to continue to grow in usefulness and support decision making in the coming years.

7.0 Appendices

Appendix 1: Memorandum of Understanding

Memorandum of Understanding about Program of LWR/CRD Monitoring Activities, dated October 16 , 2006.

The Government of Manitoba and Manitoba Hydro are committed to work together on matters relating to monitoring of hydrometric (water level and stream flow) and environmental data in certain areas in the Lake Winnipeg Regulation and Churchill River Diversion system.

Manitoba and Manitoba Hydro have the common objective of developing a program of activities ("the activities"), building on the existing monitoring program of Manitoba Hydro, that would provide objective information about hydrometric and environmental effects of hydro-electric development on agreed rivers and lakes comprising the Lake Winnipeg Regulation and Churchill River Diversion systems ("the system"). The information from the activities could be of benefit to Manitoba, Manitoba Hydro and other interested parties, including communities in the area of the Lake Winnipeg Regulation/Churchill River Diversion project. Objectives of the program of activities would include:

(a) assisting in evaluating whether and to what extent the water regime in areas of the system is or will be affected by the addition of additional hydro-electric facilities;

(b) assisting in identifying adverse effects and positive effects resulting from effects on the water regime; and

(c) assisting in considering measures that may be undertaken to address any identified adverse effects.

Manitoba and Manitoba Hydro may establish additional objectives of the activities.

Manitoba and Manitoba Hydro recognize that Manitoba Hydro has made commitments to monitoring and follow up programs as part of the environmental licensing process for the Wuskwatim Generating Station. These commitments will be considered in developing the activities.

The program of activities will be reviewed each year and annual workplans will developed by Manitoba and Manitoba Hydro to assist in achieving the program of activities. The agreed workplan for the fiscal year ending March 31, 2007 is attached as Appendix A to this Memorandum.

Manitoba and Manitoba Hydro will consider methods of making information from the activities available to interested parties.

It is intended that the nature and scope of activities will be developed starting in Fiscal Year 2006-07 (starting April 1, 2006) and will continue until Manitoba and Manitoba Hydro agree to no longer proceed with a program of activities.

As part of the development of the annual program of activities, Manitoba and Manitoba Hydro will consider the resources each will provide in order to carry out the activities

It is intended that Manitoba and Manitoba Hydro personnel will prepare an Annual Report to be delivered to the Minister of Water Stewardship and the Minister of Conservation, on behalf of Manitoba and to the President and CEO of Manitoba Hydro. Additional reports may be prepared as Manitoba and Manitoba Hydro determine to be appropriate. The Annual Report may include:

- a description of the activities for that year;
- a description of any information determined as a result of the activities;
- information about any circumstances where water levels or flows were outside of ranges provided for in licences;
- methods of making the information available to interested parties and to the public;
- any other matters that are considered appropriate. It is expected that Manitoba and Manitoba Hydro will make the Annual Reports available to the public.

Manitoba and Manitoba Hydro may amend this Memorandum from time to time by further Memorandum.

for Manitoba

Oct. 16, 2006
Date

for Manitoba Hydro

06 09 06
Date

Appendix 2: Summary of 2020/21 CAMP Meetings

Various meetings and workshops occur throughout the year to share CAMP information with different audiences. Regular administrative monthly meetings are held with CAMP participants from Manitoba Fisheries, Manitoba Water Stewardship, Manitoba Hydro, and consultants. The purpose of these meetings is to discuss day-to-day progress, planning, budget, and to address any issues that arise. In addition to the internal monthly meetings, Working Group meetings and workshops are held for specific purposes, as needed. Those meetings that occurred over the past year are described below.

Purpose: Introductions, Updates & Clarification on Shoreline Monitoring
Attendees: CAMP Working Group

FALL MOU Working Group Meeting Agenda - November 25, 2021

9:00 Welcome & Introductions

9:30 Review of MOU* and Partnership (Proposal to update Terms of Reference)

10:00 Request for clarification on Water Power Act License items relevant to CAMP

10:30 Request for clarification on expected engagement level with communities for development of shoreline monitoring

11:15 Review of 2021 Field Season

11:30 Request for confirmation to go public with ArcGIS Online & data

11:45 Round table

12:00 Adjourn

Appendix 3: 2019/20 CAMP Sampling Schedule

Manitoba Hydro
MSD - Water Quality Section
MSD - Fisheries Branch
Consultant | Consultant & MSD

CAMP Sampling Schedule 2021/2022

Region	Site	On-system	Off-system	Fish Community	Water Quality	Benthic Invertebrate	Hg in Fish (3-year)	Sediment Quality (6-year)	Phytoplankton Community	Sedimentation
Winnipeg River	Upstream of Pointe du Bois	X		Annual	Annual	Annual	19/20 & 22/23	23/24		Continuous (Pointe)
	Lac du Bonnet	X		Annual	Annual	Annual		23/24		
	Manigotagan Lake		X	Annual	Annual	Annual	19/20 & 22/23	23/24		
	Eaglenest Lake		X	19/20 & 22/23	19/20 & 22/23	19/20 & 22/23				
	Pine Falls Reservoir	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24				
Saskatchewan River	Cedar Lake - southeast	X		Annual	Annual	Annual	19/20 & 22/23	23/24		Continuous (Grand Rapids)
	Cormorant Lake		X	Annual	Annual	Annual	19/20 & 22/23	23/24		
	Moose Lake	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22				
	Cedar Lake - west	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24				
	Saskatchewan River	X		19/20 & 22/23	19/20 & 22/23	19/20 & 22/23				
	Lake Winnipeg - Site 22	X			Annual					
	Lake Winnipeg - Grand Rapids	X		Annual	Annual	Annual		23/24		
	Lake Winnipeg - Sturgeon Bay	X		Annual						
Upper Churchill River	Southern Indian Lake (Area 4)	X		Annual	Annual	Annual	19/20 & 22/23	23/24		Continuous (Missi)
	Granville Lake		X	Annual	Annual	Annual	19/20 & 22/23	23/24		
	Southern Indian Lake (Area 1)	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22				
	Southern Indian Lake (Area 6)	X		19/20 & 22/23	19/20 & 22/23	19/20 & 22/23	19/20 & 22/23			
	Opachuanau Lake	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24				
Lower Churchill River	Northern Indian Lake	X		Annual	Annual	Annual	19/20 & 22/23	23/24		
	Churchill R. at Little Churchill R.	X		on hold	Annual	on hold	on hold	23/24		
	Gauer Lake		X	Annual	Annual	Annual	19/20 & 22/23	23/24		
	Partridge Breast Lake	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22				
	Billard Lake	X		19/20 & 22/23	19/20 & 22/23	19/20 & 22/23				
	Fidler Lake	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24				
	Churchill R. at Churchill Weir	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24	20/21 & 23/24			
Churchill River Diversion	Threepoint Lake	X		Annual	Annual	Annual	Annual	23/24		
	Leftrook Lake		X	Annual	Annual	Annual	Annual	23/24		
	Notigi Lake	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22				
	Rat Lake	X		19/20 & 22/23	19/20 & 22/23	19/20 & 22/23	19/20 & 22/23			
	West/Central Mynarski Lake	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24				
	Apussigamasi Lake	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22				
	Wuskwatim	X								Continuous (Wuskwatim)
	Footprint Lake	X		19/20 & 22/23	19/20 & 22/23	19/20 & 22/23				
Upper Nelson River	Cross Lake - West basin	X		Annual	Annual	Annual	19/20 & 22/23	23/24	Annual	
	Lake Winnipeg - Mossy Bay	X		Annual	Annual	Annual	19/20 & 22/23	23/24		
	Setting Lake		X	Annual	Annual	Annual	19/20 & 22/23	23/24	Annual	
	Playgreen Lake	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22	18/19 & 21/22			
	Little Playgreen	X		19/20 & 22/23	19/20 & 22/23	19/20 & 22/23	19/20 & 22/23			Continuous (Jenpeg)
	Walker Lake		X	19/20 & 22/23	19/20 & 22/23	19/20 & 22/23				
	Sipiwesk Lake	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24	20/21 & 23/24			
	Nelson R: d/s Sipiwesk Lake to Kelsey GS	X		20/21 & 23/24	20/21 & 23/24	20/21 & 23/24				
	2-Mile Channel	X			Annual					
	Warren Landing	X			Annual					
Lower Nelson River	Split Lake	X		Annual	Annual	Annual	19/20 & 22/23	23/24	Annual	
	Assean Lake		X	Annual	Annual	Annual	19/20 & 22/23	23/24	Annual	
	Nelson R. Mainstem - d/s Limestone GS	X		Annual	Annual	Annual	19/20 & 22/23	23/24		
	Hayes River		X	Annual	Annual	Annual	19/20 & 22/23	23/24		
	Stephens Lake - north arm	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22				
	Stephens Lake - south	X		18/19 & 21/22	18/19 & 21/22	18/19 & 21/22	18/19 & 21/22			
	Limestone Forebay	X		19/20 & 22/23	19/20 & 22/23	19/20 & 22/23	19/20 & 22/23			Continuous (Limestone)
	Burntwood R. - First Rapids to Split Lake	X		20/21 & 23/24	Annual	20/21 & 23/24				

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