

CAMP is a collaborative partnership between Manitoba Hydro and the Manitoba government.

# CONNECTIONS

Newsletter | July 2021



Stephens Lake, MB

## WELCOME TO THE FIRST EDITION OF CONNECTIONS!

The Coordinated Aquatic Monitoring Program (CAMP) is embarking on a new journey to better engage Manitobans and inform them of what, why, and how we do it. We are committing to build new bridges and stronger connections with the broader communities in the areas where we work. We want to partner with individuals and groups across the province to expand and leverage the positive impact of our monitoring program for use by scientific researchers and how it can inform better decision making around hydroelectric development and operations.

We hope that the launch of this newsletter will bring you closer to news, information, insights, activities, events, along with opportunities for you to share your perspectives and participate in our research. This includes profiles of the team members who power us, the science and technology that enable our ecosystem monitoring, and stories about all the incredible study regions, communities, and notable people that are interconnected with the operation and outcomes of CAMP's mandate.



Benthic sampling with a petite ponar

## WHO ARE WE?

CAMP was created after listening to and acknowledging, the valid concerns and thoughtful suggestions from Manitobans (especially affected Communities in the north) regarding hydroelectric development in the province.

Consultations related to the Wuskwatim Generating Station identified the need for a coordinated system-wide mechanism to monitor Manitoba's water bodies connected to hydroelectric power generation. Through a collaborative partnership with Manitoba Hydro and the Government of Manitoba, a program was created that could fill important knowledge gaps, while boosting synergies and integrating resources.

CAMP's ecosystem-based approach to data collection means changes within the broad ecosystem can be tracked holistically. By studying and monitoring water flows and levels, water quality, sediment composition, as well as fish, insect and plant populations and their habitats, we can help determine the health of the water bodies (rivers and lakes) connected to Manitoba Hydro's generating system.

The presence of this reliable ecosystem information will help scientists and resource managers to inform decision making toward more sustainable hydroelectric operations.

CAMP also wants to ensure that the traditional knowledge and wisdom of Indigenous peoples, especially those in communities near waterbodies affected by hydroelectric development, is not only heard but woven into the work we do and the planning and reporting surrounding it.

## NEWS YOU CAN USE

### SCIENTIFIC MONITORING CALENDAR

CAMP monitors water conditions from six river basins and covering a land area of 1.3M km<sup>2</sup>!

We have plenty of work ahead of us with the bulk of our monitoring being completed over the summer months. We may just be headed to a waterbody near you! Here is a little overview of the activities we will be conducting:

### SCHEDULE OF ACTIVITIES



#### Fish Gillnetting Program

**When:** July and August

**What we do:** Collect samples of large bodied and small bodied fish, like Walleye and Pike. We record and analyze key elements, like water temperature and local weather conditions.

**Why we do it:** The fish community reflects the condition of the aquatic ecosystem as a whole, since various fish species require different habitat types, are dependent on production from lower trophic levels like invertebrates and algae, and are affected by changes.



#### Water Quality Monitoring

**When:** Year-Round

**What we do:** Collect and analyze samples for more than 50 parameters, like conductivity, turbidity, nutrients, and certain metals.

**Why we do it:** Water quality is fundamentally important to all aquatic life, and is commonly monitored to gauge the health of aquatic ecosystems. Poor water quality may be harmful to aquatic life and may affect the condition, growth, survival and reproduction of freshwater organisms.

#### Benthic Invertebrate Monitoring Program

**When:** August

**What we do:** Locate and identify populations of invertebrates, bottom-dwelling aquatic animals like crayfish.

**Why we do it:** Benthic macroinvertebrates are an important part of the food web in lakes and rivers as they eat primary producers such as algae, and in turn are food for fish and other organisms. Some of these organisms are more sensitive than others so they can be good indicators of environmental changes.



## CAMP IS EXPANDING AND WE WANT TO INCLUDE YOU!

CAMP began as a program to monitor aquatic conditions below the waterline, like fish, water quality and sediment insects. However, we know that hydropower has effects at the waterline and up on to the shoreline. For some time, Manitoba and Manitoba Hydro have been preparing to develop a shoreline health monitoring component for CAMP and we will be starting this initiative soon.

We're still getting organized, but we want you to be involved as this develops and to contribute to this new monitoring component. CAMP has plans to reach out to communities along the waterways and talk with you about the existing shorelines, ideas for monitoring, and ongoing involvement with this component. Some of the questions we have are: What conditions are you seeing along the shorelines? What shoreline concerns do you have? What shoreline components should be monitored? How can they be monitored? How/would you like to be involved in monitoring shoreline health?

The first part of the plan is to reach out to communities, discuss and make plans for shoreline-health monitoring, develop a pilot project, test it, and then consider expanding it to other areas. To build on existing information and successes, we will be starting with the area around Wuskwatim Lake as there are already some existing shoreline monitoring activities ongoing there that we can start with.

We are open to your ideas, and you can share them anytime. We will record your ideas for future reference and inclusion. You don't have to wait for a meeting. Please drop us a line through email or social media and let us know what you think should be included in the shoreline monitoring and how it should be developed. We are all ears!

We'll keep you posted on progress and our plans for outreach. (On a side note, we had hoped we could meet in person to discuss development of the shoreline monitoring component but with Covid concerns, we may have to meet online or use other methods. We're open to your ideas on how to meet and discuss!)

Stay tuned for more updates on this exciting new addition to CAMP!



Kick sampling for benthos (such as insects, worms and snails living in the sediment)

## CAMP STUDY REGION PROFILE: WINNIPEG RIVER REGION EACH ONE IS DIFFERENT, ALL ARE EQUALLY IMPORTANT.

CAMP monitors six primary study regions in Manitoba. In this and subsequent issues, we will explore each region and discuss some interesting facts and what makes it special and unique.

This time, we will explore the Winnipeg River Region.

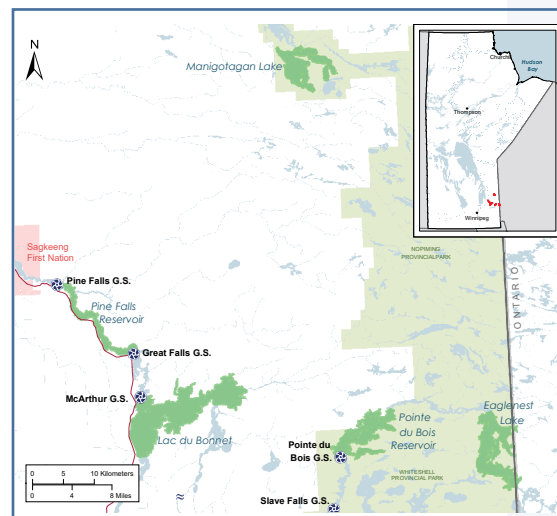
CAMP's Winnipeg River Region consists of the Winnipeg River from the Manitoba-Ontario border downstream to the mouth of the river at Traverse Bay on Lake Winnipeg. Seventy percent of the water in the Winnipeg River comes from northwestern Ontario with another 21% from Minnesota.

It is the most southern CAMP region in the province. Waterbodies monitored in this region include two off-system lakes (Eaglenest and Manigotagan lakes) and three on-system waterbodies (Pointe du Bois reservoir, Lac du Bonnet, and Pine Falls reservoir). There are six generating stations on the Winnipeg

River, which have a relatively small capacity (56 to 165 MW). These are the oldest generating stations in the province, dating back to 1911.

The Winnipeg River region runs through the Boreal Shield Ecozone in Manitoba, which is mostly underlain by bedrock. The dominant land cover of the region is classified as mixed forest; however, it is also developed with houses, cottages, and agriculture. The upstream portion of the region runs through the Whiteshell Provincial Park while the downstream portion flows through agricultural land and through the Sagkeeng First Nation.

Portions of the Winnipeg River that are outside of the reservoirs often include rocky cliffs with bays and mineral soil shorelines. In general, the Canadian Shield bedrock does not contribute much sediment. The hydroelectric generating stations on the Winnipeg River were built in the early 1900s so the shorelines have had time to stabilize, decreasing



erosion, resulting in clearer water than newly formed reservoirs.

The most common large-bodied fish in the region include Sauger, Walleye, White Sucker, Northern Pike, Lake Whitefish, and Yellow Perch. Lake Sturgeon are also present in the Winnipeg River and its lakes. Because it is easily accessible for people and has many desirable fish species, the Winnipeg River region has developed a thriving recreational fishery and is a common tourist destination.

## COOL CAMP SCIENCE: HOW WE GET THE JOB DONE



### The Secchi Disk

Do you recognize this object? It's not fish bait, it's a Secchi disk! A time-tested tool created in 1865 by Italian priest and astronomer Angelo Secchi as an inexpensive and effective method to measure the clarity of water.

The cord attached to the disk has marks at 30 cm intervals and red marks at 15 cm intervals to determine the depth at which the disk can no longer be seen from the surface. This measurement is often used to estimate the depth of the water column where light penetrates. Algae, suspended particles, and water colour reduce the Secchi visibility.

With years of data collection using the disk, CAMP will be able to monitor trends in water quality, build stronger understanding, and enable better decision-making.

## CAMP TEAM PROFILE: JENNIFER VAN DE VOOREN

### THE PEOPLE THAT MAKE IT HAPPEN.

One of the features of this newsletter will be to profile one of the important and interesting roles that CAMP team members play towards achieving the goals and objectives of our mandate. For our first issue we are going to start with **Jennifer Van de Vooren**, who has been the Coordinator of the CAMP program for the past six years.

Here is a short Q&A with Jennifer.

***What is your role?***

My job is to coordinate the various activities and people, (including the Manitoba government, Manitoba Hydro and consultants). This means fieldwork, budgeting, contract management, reporting, responding to data requests, and collaborating with contributors, to meet the program's goals.

***What is your educational and professional background?***

I have a Bachelor of Science in Biology & Environmental Studies (University of Winnipeg) and a Masters of Natural Resources Management (Natural

Resources Institute at the University of Manitoba). My professional experience includes environmental consulting and work as a biologist and environmental scientist for various government departments.

***What is your favourite part of the job?***

If I had to pick one thing, the diversity of my role is what I enjoy most. I get to coordinate an amazing program that helps improve our understanding of ecosystem health and contribute to better decision making. I can be creative with things such as the development of the CAMP newsletter, website, or social media posts. I also get to visit remote parts of this province that most people have never seen and share all the interesting things CAMP does with audiences far and wide.

***What activities do you enjoy in your free time?***

I enjoy many artistic endeavours such as making pottery and abstract



paintings, photography, and teaching creative classes as well as spending time in nature and camping with my family.

***If there's one thing you would like people to know more about the important work that CAMP does, what would that be?***

CAMP has made a lot of progress, but we have plenty of work yet to do. We continue to strengthen our capacity by adding monitoring activities, refining processes, increasing communication and outreach, and partnering with local communities. CAMP doesn't have all the answers yet, but we're committed to enabling better outcomes for Manitoba's waterbodies one step at a time

## FUN FACTS!

### WHAT DO YOU KNOW ABOUT LAKE STURGEON?

The Lake Sturgeon is a prehistoric freshwater fish (sometimes called a "living fossil"), and unlike any other. They can grow up to 400 lbs, can live up to 150 years, and don't mature until they are 20-25 years old!

They are a key component of Manitoba's aquatic ecosystems and a particularly vulnerable one.

Because it matures so slowly and does not reproduce every year the fish is easily susceptible to population declines.

A Sturgeon's diet is composed of a variety of shellfish, crustaceans, and small fish. The sturgeon is a bottom feeder and sensory organs dangling near its mouth help it locate prey. It has no teeth.

When CAMP encounters a specimen during our fish monitoring activities, we collect and analyze scientific data to help determine the abundance, diversity, and condition of the province's Lake Sturgeon population.



## THE LAST WORD:

### RECOGNIZING A CAMP LEGEND – THE RETIREMENT OF DON MACDONALD

CAMP's inaugural newsletter wouldn't be complete without recognizing Don Macdonald's exceptional dedication and contributions to the Program. Don was instrumental in the evolution of CAMP and was an enthusiastic contributor right from the beginning. Although Don retired from his position as the Regional Fisheries Manager in Thompson in 2019, and from the CAMP Working Group, he continues to participate and provide advice for the Program.

Don had a clear vision from the beginning and always saw the great potential of a system-wide, long-term monitoring program to help understand how aquatic ecosystems change over time and respond to different events; this data and knowledge would contribute to better decision-making for managing resources. His knowledge of the fishery and waterways of northern Manitoba included an awareness and understanding of the various developments, uses, and impacts. That keen sense was critical for Manitoba's management and protection of the fisheries and waterways in the north during his career of more than 30 years.

Don has a curious mind and is a voracious learner. Because of these traits he was always trying to gain more knowledge of the

environmental processes occurring (including hydrology, sedimentation, erosion, etc.) and actively sought to learn how the various components were affecting the fishery and ecosystem. He has a particular affinity for the north end of Southern Indian Lake because "it is one of the larger lakes in the region and is right on the transitions from boreal to taiga ecozone."

Although Don's technical knowledge of the northern waterways and fisheries are impressive, his greatest strength might be his ability to build relationships. Because of his friendly, truthful, and entertaining demeanor, he's able to connect with people very easily and have honest conversations (which always includes a story... he comes by it honestly as a fish guy). Don invests time with people, speaks the truth, and respects different viewpoints. When asked about his favourite part of his job he said, "Working with people with so many diverse interests and skills. It gave me opportunities to understand things from a different perspective than the one I was trained for. This proved true whether it was a water quality specialist or a commercial fisher who had spent their life on the system."

Other people may know the technical and environmental information of northern Manitoba, but no one will



be able to replace Don's wisdom, honesty, and ability to connect with people. His enthusiasm for his job was obvious and he made all of us who worked alongside him on CAMP want to do better. We thank you Don, for all your irreplaceable contributions to CAMP since the beginning. You were a pleasure to have on the team and we welcome you back to help any time. All the best to you in your retirement.

*-From, the CAMP Team.*



Southern Indian Lake, MB

### WE WANT TO HEAR FROM YOU!

Do you have a question for us? Don't hesitate to ask!

Do you have a concern? We want to hear about it.

Did you snap a cool photo recently? We want to see it!

We will be publishing a Q&A section and reader contributions in future editions so please send them along.

CAMP's coordinator Jennifer Van de Vooren can be reached at this email: [CAMP@hydro.mb.ca](mailto:CAMP@hydro.mb.ca)

### STAY CONNECTED:

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