



Coordinated Aquatic Monitoring Program

Annual Activity Report

2011/2012



Submitted to:  
Minister of Conservation and Water Stewardship

President/CEO Manitoba Hydro

Submitted by:  
MOU Working Group

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## **1.0 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 2011/12 Coordinated Aquatic Monitoring Program. The MOU, signed in 2006 by the Province of Manitoba and Manitoba Hydro (Attachment 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 2011/12 annual activity report represents the first year of a fully implemented, post-pilot phase Coordinated Aquatic Monitoring Program (CAMP).

## **2.0 Meetings**

### **2.1 Working Group**

On February 14, 2011, a draft workplan for 2011/12 program was presented to the MOU Working Group which is the oversight committee identified in the MOU (see Attachment 2). Additional items that were presented and discussed included: 1) a CAMP reporting framework (website and pilot program summary report); 2) introduction to the HydroNet research program; 3) community dialogue efforts; and 4) a process for developing CAMP data management strategy (see Attachment 3). No significant concerns or issues were raised by the Working Group members during the meeting or the two week review period and the 2011/12 workplan was subsequently accepted as presented.

### **2.2 Subcommittee**

The Subcommittee met on November 16, 2011 to review the status of the 2011/12 open water sampling program and develop agenda items for the 2011/12 CAMP Workshop. Additional items that were discussed included development of the CAMP website and status of the pilot program summary report being prepared by North/South Consultants (see Attachment 2).

### **2.3 Annual Workshop**

The annual CAMP Workshop is held after the open water field season each year (i.e., January) to review the status of the program and discuss/advise on the development of the next year's (i.e., 2012/13) workplan (see Attachment 2). A portion of the workshop was used to present and discuss the preparation of the pilot program summary report. The purpose of this report is to describe the outcomes of the first three years of CAMPP and document the final CAMP.

Updates on the status of the CAMP website and Data Management Strategy were also presented by Push Designs and Golder & Associates, respectively. Approximately 30 attendees representing various provincial/federal agencies, external consultants and Manitoba Hydro participated in the event.

Numerous smaller, issue-specific technical meetings and conversations between Manitoba Hydro, Manitoba Conservation and Water Stewardship, North/South Consultants Inc. and Golder & Associates Ltd. also occurred throughout 2011/12 to ensure a coordinated and consistent program was delivered.

### **3.0 Summary of Activities**

The following summary documents the major activities undertaken by CAMP in 2011/12.

#### **3.1 Field Program**

A total of 29 sites (20 on-system and 9 off-system) were sampled for a variety of parameters during the 2011/12 CAMP. A list of sample sites and associated field parameters is included in Attachment 4 and a map showing the waterbodies sampled is included in Attachment 5.

##### *3.1.1 Hydrometrics*

Hydrometric information associated with hydro developments on Manitoba's waterways is captured in an annual report prepared by Manitoba Hydro, entitled: "*Water Power Act Licences Annual Water Levels and Flows Report 2011 Calendar Year*", (In Prep). Copies of this report will be forwarded to the Minister of Conservation and Water Stewardship once completed.

##### *3.1.2 Aquatic Habitat*

Aquatic habitat (bathymetry and substrate) surveys were completed at South Moose Lake (West Basin) and Cross Lake (West Basin) according to the workplan, in summer 2011.

##### *3.1.3 Water Quality*

Water quality sampling was completed at all sites as planned with the exception of the Lower Churchill River near Red Head Rapids, where conditions were unsafe for landing in spring. Low water levels and high winds prevented site access at this time; sampling was completed during other sampling periods.

##### *3.1.4 Sediment Quality*

Sediment quality sampling was conducted for the first time in 2011. All sampling was completed as planned, and was conducted in conjunction with the benthic

invertebrate sampling program, with the exception of large river sites (Lower Churchill River at the Little Churchill River, Hayes River, and Lower Nelson River) where suitable substrate (i.e., fines) could not be located in the sampling areas. This was anticipated and will likely be an issue for CAMP at the large river sites.

### *3.1.5 Benthic Invertebrates*

Benthic invertebrate sampling was completed and samples were collected at all sites except at the following locations due to hard substrate in the offshore habitat: Hayes River, Lower Nelson River (downstream of Limestone GS), Churchill River (at Red Head Rapids), and only four out of five offshore samples were collected at Churchill River (at Little Churchill River). Samples were not collected at the west Cedar Lake site due to concerns raised by Chemawawin Cree Nation.

### *3.1.6 Phytoplankton*

All scheduled phytoplankton sampling was completed in 2011/12, with the exception of the water quality site on the Lower Churchill River near Red Head Rapids which could not be accessed in spring due to low water levels and high winds.

### *3.1.7 Fish Community*

All scheduled fish community sampling was completed.

### *3.1.8 Mercury Content in Fish*

All three waterbodies (Sipiwesk, Threepoint, and Leftrook lakes) scheduled for collection of fish muscle for analysis of mercury in 2011 were sampled. The full target sample size of fish for some species was not obtained at all lakes (no or few Lake Whitefish and one-year old Yellow Perch were captured in Sipiwesk and Threepoint lakes). In addition to the sampling scheduled for 2011, fish were collected from six waterbodies (out of 13 attempted) for species where the full target sample size was not obtained in 2010.

## **3.2 Community Meetings**

Manitoba Conservation and Water Stewardship presented and discussed CAMP at a variety community meetings in 2011/12. A list of these community meetings is provided in Attachment 6.

### **3.3 Reporting Framework**

A CAMP program information website was completed and launched in late February 2012 (<http://campmb.com/>). This preliminary site currently provides users with summary information about the program including components and waterbodies sampled. A data presentation section is currently being constructed and will be added to the website when completed sometime later in 2012.

## **4.0 Emerging Issues**

### **4.1 Data Management Strategy**

Golder Associates Ltd. was selected through a competitive bidding process to work with CAMP partners to develop a data management strategy for CAMP. Once completed, this document will provide recommendations on how to more efficiently access CAMP data being collected and stored by the various organizations.

## Attachment 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 be 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



## **Attachment 2**

### **Summary of 2011/12 CAMP Meetings**

MOU Working Group Meeting – February 14, 2011

**AGENDA**

- Present and seek endorsement for the 2011/12 CAMP workplan.
- Provide an update on system-wide community dialogue efforts.
- Present update and discuss status of CAMPP reporting framework.
- Provide an update on CAMPP data management efforts.

Subcommittee Meeting – November 16, 2011

**AGENDA**

- Review of 2011/12 open water sampling.
- Update on pilot program summary report.
- Discussion on status of website and data management strategy.
- Discuss agenda items for 2011/12 CAMP Workshop.

Workshop – January 25, 2012

**AGENDA**

- Review outcomes of 2011/12 open water program.
- Present and discuss fish ageing QA/QC.
- Update on the website and status of pilot program summary report.
- Presentation on CAMP related research topics
- Update on data management strategy.

### **Attachment 3**

## **Manitoba Water Stewardship (MWS) / Manitoba Hydro (MH) MOU Working Group Meeting**

***Date: February 14, 2011***

***Time: 9:00 to 12:00***

***Location: Dauphin Room, Holiday Inn Airport West, 2520 Portage Avenue***

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### **Agenda –**

- 9:00 Welcome and review of 2010 Working Group meeting summary (Bill Brown – MB Hydro)
- 9:15 Review the 2010/11 Coordinated Aquatic Monitoring Pilot Program (CAMPP) that was implemented this past year (Don Macdonald – MB Water Stewardship)
  - a. including summary of the CAMP workshop held in December 2010 with MB Water Stewardship, MB Hydro, Environment Canada, Department of Fisheries & Oceans.
- 9:45 Reporting Framework Update (Warren Coughlin – MB Hydro)
  - a. Annual Reporting via CAMP Website (presentation by Scott Gillam – Push Designs)
  - b. Pilot Program Synthesis Report (Warren Coughlin – MB Hydro)
- 10:15 Break
- 10:30 Presentation and discussion of proposed 2011/12 CAMP workplan (Warren Coughlin – MB Hydro)
- 11:00 Introduction and discussion on HydroNet (Gary Swanson – MB Hydro)
- 11:15 Update on the system-wide community dialogue (Don Macdonald – MB Water Stewardship)
- 11:30 Data Management Update (Gary Swanson – MB Hydro)
- 11:45 Working Group Business

**Attachment 4**

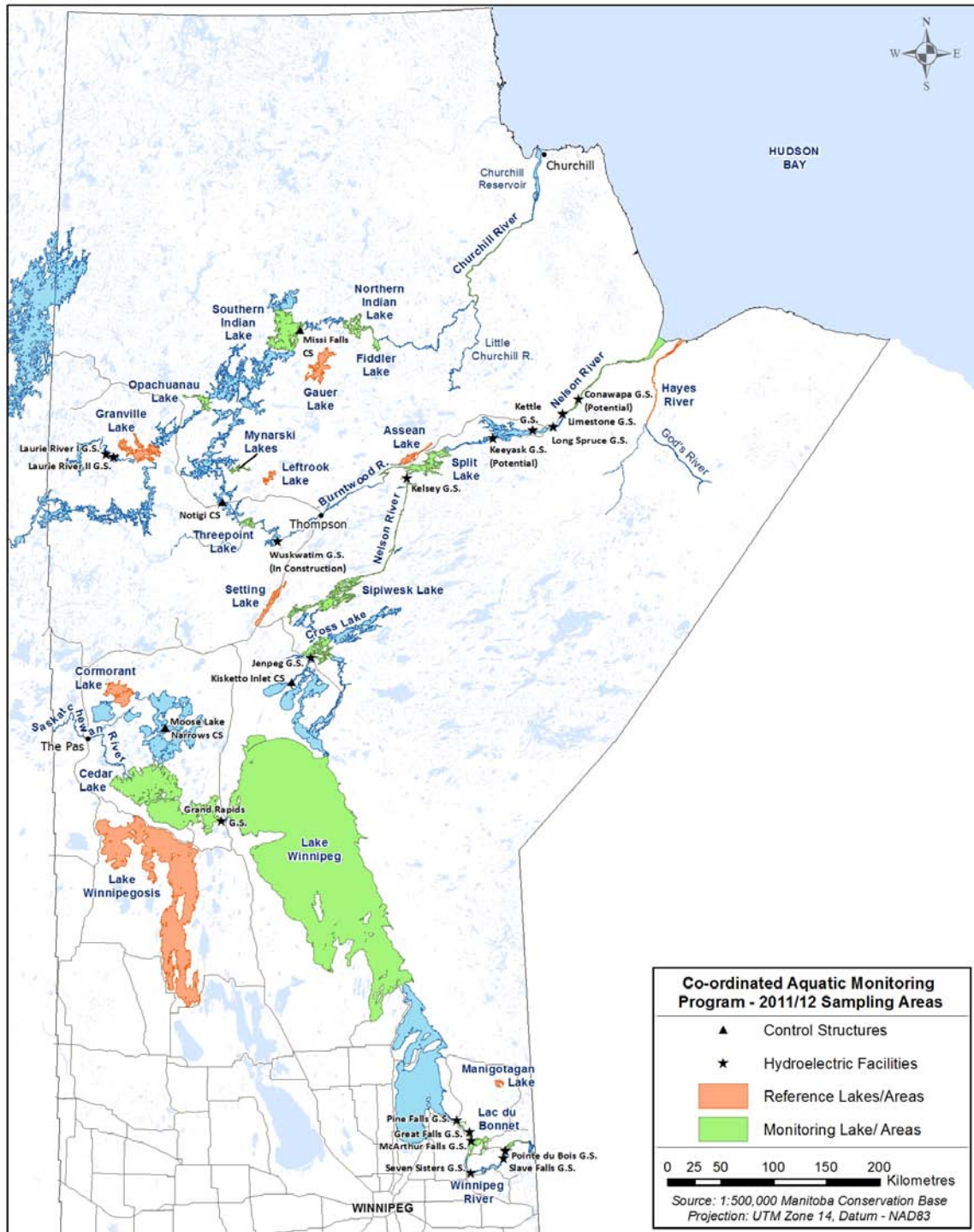
**2011/12 Sampling Parameters and Waterbodies**

MWS - Water Quality Section  
 MWS - Fisheries Branch  
 Consultants  
 Blank = not sampled

Region	Site	On-system	Off-system	Fish Sampling	WQ Sampling	Benthic Invert Sampling	Hg in Fish Sampling	Sediment Quality Sampling	Phytoplankton Sampling
Upper Churchill River	Southern Indian Lake (Area 4)	X							
	Granville Lake		X						
	Opachuanau Lake	X							
Churchill River Diversion	Threepoint Lake	X							
	Leftrook Lake		X						
	West/Central Mynarski Lake	X							
Lower Churchill River	Northern Indian Lake	X							
	Churchill R. at Little Churchill R.	X							
	Gauer Lake		X						
	Fiddler Lake	X							
Winnipeg River	Churchill R. at Red Head Rapids	X							
	Upstream of Pointe du Bois	X							
	Lac du Bonnet	X							
	Manigotagan Lake		X						
Saskatchewan River	Pine Falls Reservoir	X							
	Cedar Lake	X							
	Cormorant Lake		X						
Upper Nelson River	Cedar Lake - west basin	X							
	Cross Lake - West basin	X							
	Setting Lake		X						
	Sipiwesk Lake	X							
Lower Nelson River	Nelson R: d/s Sipiwesk Lake to Kelsey GS	X							
	Split Lake	X							
	Assean Lake		X						
	Nelson R. Mainstem - d/s Limestone GS	X							
Lake Winnipeg	Hayes River		X						
	Burntwood R. - First Rapids to Split Lake	X							
	Lake Winnipegosis	X							

### Attachment 5

### Map of Waterbodies Sampled in 2011/12



## Attachment 6

### **Listing of CAMP Community Discussions/Presentations 2011**

Community/Resource Management Board (RMB) meetings where CAMP was discussed attended by Don Macdonald (Regional Fisheries Manager, Manitoba Fisheries Branch):

- |                   |   |
|-------------------|---|
| February 23, 2011 | Southern Indian Lake Technical Committee. |
| April 4, 2011     | Norway House Resource Management Board.   |
| April 27, 2011    | Southern Indian Lake Technical Committee. |
| July 5, 2011      | Southern Indian Lake Steering Committee.  |
| July 28, 2011     | Southern Indian Lake Steering Committee.  |
| December 5, 2011  | Norway House Resource Management Board.   |