



LAKE  
WINNIPEG  
FOUNDATION



REALIZING  
THE FULL  
POTENTIAL OF  
COMMUNITY-  
BASED  
MONITORING

Assiniboine River near Virden, Photo: Paul Mutch

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# COMMUNITY-BASED MONITORING (CBM)

is a source of credible and valuable water data, recognized by community practitioners, academic researchers, government scientists and policy-makers alike. However, CBM data are not yet effectively integrated into government programs, policy or decision-making. The full potential of CBM will best be realized through Environment and Climate Change Canada's (ECCC) existing regional water programs, rather than through the newly proposed Canada Water Agency.

## CBM is responsive to community concerns and supports better regional decision-making

CBM networks are developed by local communities in response to specific water concerns – challenges that are often experienced first-hand by monitoring participants. The guiding questions, chosen parameters, analysis and interpreted results of effective CBM are carefully designed to generate the evidence needed by regional decision-makers to address these challenges.



**CBM IN PRACTICE:** Harmful blue-green algal blooms on Lake Winnipeg are caused by excess phosphorus loading from the lake's watershed, negatively impacting water quality and drinking water, recreation and tourism, subsistence and commercial fisheries, lakeshore economies and ecosystem integrity. The Lake Winnipeg Community-Based Monitoring Network (LWCBMN) is a collaborative, long-term monitoring program designed to identify localized phosphorus hotspots where action is required to improve Lake Winnipeg water quality.



## CBM is necessary to fulfill the objectives of ECCC's regional water programs

The community concerns that drive CBM are almost always aligned with ECCC's regional water programs and policy objectives. In many cases, this alignment has resulted in successful long-term and large-scale CBM initiatives currently supported by existing federal programs; in turn, CBM-generated data support ECCC's regional water priorities, often filling data gaps not addressed by government monitoring programs.




**CBM IN PRACTICE:** LWCBMN's phosphorus data directly inform the science priorities of ECCC's Lake Winnipeg Basin Program by generating the high-resolution phosphorus data needed to target remedial action to phosphorus sources. The CBM methodology has been deliberately selected to enable frequent and responsive phosphorus monitoring. LWCBMN phosphorus data are interoperable with data generated by ECCC's Freshwater Quality Monitoring and Surveillance program, strengthening the evidence base available to support federal policy-making and funding programs.


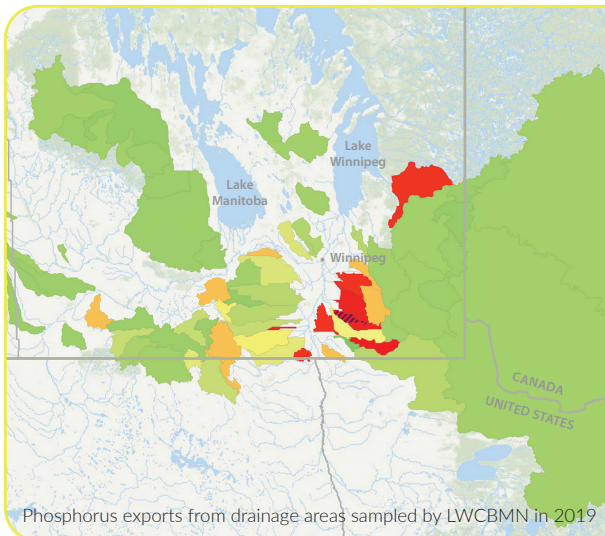


## CBM must generate useful information, not just more raw data

The value of CBM is realized through data use, not solely through data collection. More data are not always better. Data must also be distilled into useful information to address community concerns and regional policy objectives. Focusing resources to ensure CBM networks have the capacity to analyze, interpret and disseminate information will ensure that CBM data get used to answer the questions that prompted their collection in the first place.



**CBM IN PRACTICE:** LWCBMN phosphorus concentration data are analyzed with water flow data (Water Survey of Canada) and drainage area data (Agriculture and Agri-Food Canada) to determine phosphorus exports – the amount of phosphorus exported from each hectare of land in a year. Phosphorus exports are then mapped to identify phosphorus hotspots – localized areas contributing more phosphorus to waterways than other areas. LWCBMN results are shared publicly, enabling targeted, impact-driven project planning by land managers, local governments, funders and researchers.



**CBM IN PRACTICE:** Support for LWCBMN through ECCC's Lake Winnipeg Basin Program has generated the high-resolution phosphorus data necessary for modern water management in the Lake Winnipeg basin. In 2022, the renewed Lake Winnipeg Basin Program must explicitly recognize the value of LWCBMN data, and use the information generated by this network to target phosphorus-reduction funding to known phosphorus hotspots, in order to improve Lake Winnipeg's water quality.

ECCC's existing regional water programs can immediately leverage CBM data to deliver results, by effectively completing the data-to-impact cycle (Figure 1). These programs (e.g. Lake Winnipeg Basin Program, Great Lakes Protection Initiative, Atlantic Ecosystems Initiative, St. Lawrence Community Interaction Program) have been continuously and collaboratively refined, adjusted and improved over decades, effectively linking community concerns and federal policy priorities.

There is a risk of disrupting these important regional connections, undermining past investments, and compromising anticipated results if federal support for CBM is transferred away from existing ECCC regional water programs, or if renewal of these programs is delayed by competing priorities. The as-yet-undeveloped Canada Water Agency may already be drawing energy and funding away from ECCC's very real efforts, on the ground, across the country, to protect Canada's fresh water.



FIGURE 1. To effectively complete the data-to-impact cycle, ECCC must strengthen collaboration and support for CBM through its existing regional water programs. Phosphorus data from the Lake Winnipeg Community-Based Monitoring Network support Lake Winnipeg Basin Program (LWBP) funding allocation for improved water quality.

[lakewinnipegfoundation.org](http://lakewinnipegfoundation.org)

The Lake Winnipeg Foundation (LWF) advocates for change and coordinates action to improve the health of Lake Winnipeg, now and for future generations. Combining the expertise of our Science Advisory Council and the commitment of our members, LWF is nationally recognized for our unique capacity to link science and action. Our goal is to ensure policy and practices informed by evidence are implemented and enforced.