

SUMMARY

Expectations for Domestic Action Plans under the Great Lakes Water Quality Agreement





algal blooms

Lake Erie, Brenda Culler, ODNR Coastal Management

Lake Erie is a global treasure—it sustains millions of people, thousands of communities, a vibrant economy and a truly remarkable ecosystem. Unfortunately, harmful and nuisance algal blooms caused by excess nutrient runoff are threatening the lake, and posing risks to drinking water supplies, quality of life, and economic vitality. Addressing this threat will be critical to sustaining a healthy future for the lake.

The federal, provincial and state governments have recognized the severity of the threat and have taken steps to address the problem, including making a series of commitments to reduce algae-causing phosphorus pollution by 40 per cent. Canada and the U.S. will be releasing draft Domestic Action Plans (DAPs) in 2017 that will outline proposed actions to meet the reduction target.

Our organizations have identified elements that should be included in the DAPs to effectively stem the flow of pollution into Lake Erie. We came together to identify the comprehensive actions we believe need to be taken to meet the 40 per cent phosphorus reduction target. This document highlights key recommendations. We will use the report to evaluate the draft DAPs as they are released, and to communicate with Lake Erie stakeholders about the actions and investments needed to ensure a clean, restored Lake Erie.

MONITORING AND MODELLING

Comprehensive monitoring is critical to understand current conditions, track progress, and guide policy and program investments. Modelling, the ability to mathematically simulate ecological impacts under different conditions, is a useful tool when used with monitoring data to evaluate different nutrient reduction scenarios.

The DAPs should include the following commitments:

- Monitoring networks are capable of collecting the data necessary to identify water quality and ecosystem trends at consistent geographic scales across the Lake Erie basin.
- Each jurisdiction monitors trends at similar frequencies and durations and for the same parameters. A coordinating entity may be needed to establish common protocols and ensure data is readily-comparable, and publicly-accessible.
- Sufficient data is collected to calculate flow weighted mean concentrations, allowing for the comparison of total loads across the rivers flowing into Lake Erie.
- Tributary monitoring at river mouths captures annual and spring loads of total phosphorus, soluble reactive phosphorus, and suspended sediments.

Monitoring and other efforts to improve cross-jurisdictional understanding of the problem must inform local actions, as well as a framework for tracking progress. The binational targets identify phosphorus loading amounts for the mouths of the major tributaries flowing into Lake Erie. These target amounts should be sub-allocated to the smaller watersheds within each of those tributary systems. A sub-allocation of the targets would provide a nested approach so that loading from upstream watersheds aggregate to meet the downstream target. This framework would make it simpler to identify, quantify and prioritize nutrient sources in smaller areas. In addition, a sub-allocation would provide a framework for tracking progress at a smaller scale, allowing for swifter, more focused intervention when needed.

Finally, we recommend lake models that characterize ecosystem changes in the open waters of Lake Erie be run every five years. Lake Erie is a dynamic system susceptible to change, both positive and negative. Just as tributary models are critical to understanding how well interventions are working at a watershed scale we need to know how change is influencing the lake as a whole. The impacts of external factors, such as climate change, also need to be understood with ongoing investments in monitoring and modelling. These models should be enhanced and run regularly.

TRACKING, ADAPTIVE MANAGEMENT AND REPORTING

It is important to track progress on various fronts, including how well we are doing at reducing loads at the end of the river, and how well individual land management practices are working upstream. For the latter, we recommend implementing an independent auditing program that maps the presence and effectiveness of Best Management Practices (BMPs).

The parties committed to an adaptive management approach, which means adjusting their tactics based on new information. To do this well, they will need to monitor changes on the landscape and modify activities based on what works well and what does not. They also need to monitor programs and policies to improve supportive processes. DAPs should include a series of triggers and responses to identify when a review will be initiated, and what the response will be. For instance, the plans could identify a series of policy tools that get ratcheted up if monitoring demonstrates that phosphorus loads are not declining quickly enough. Another critical element of the DAPs are progress reports, which should be done annually, include status of implementation, and the progress being made towards targets.



FUNDING

The parties must be accountable for their commitments, including reaching nutrient reduction targets, and implementing programs, policies and tactics outlined in the DAPs. As such, the plans should be accompanied by detailed and transparent funding requirements for the actions proposed. Ideally funding should be secured for expanded monitoring capacity, and implementing new programs, policies and authority until 2025.

COMPLIANCE AND ENFORCEMENT

One of the biggest challenges in addressing nutrient loading is ensuring compliance and enforcement of the laws and policies that already exist. Therefore, we recommend additional resources be dedicated to supporting compliance and enforcement, and that the programs rely not only on complaints, but also includes random inspections. To ensure that laws are followed by everyone, we need fair, clear, consistently enforced consequences and penalties.

TACTICS TO MEET NUTRIENT REDUCTION TARGETS

DAPs should include specific tactics that focus on addressing the major sources of pollution—the dominant source being farm fields and livestock operations. We need specific programs and policies that include common-sense regulations and voluntary incentives for farming practices, green infrastructure to reduce stormwater, upgrading and fixing failing home septic systems, and curbing phosphorus discharge from wastewater treatment plants. Proposed tactics should be detailed and include which authorities will be responsible for

implementation, and implementation timelines. DAPs should describe how local, provincial/state and federal programs will work together to leverage nutrient reductions.

PUBLIC CONSULTATION

Parties should work alongside the public to develop and implement solutions. This means public consultation needs to happen early and throughout the process of developing the plans through to implementation. The process should be designed to elicit valuable input, which includes the public being given adequate time to provide comments and sufficient data and information (including gaps in knowledge) to inform their response. Consultation should be ongoing even after the plans are complete, perhaps with webinars when annual reports are released.

Overall, the DAPs must include adequate details explaining what actions will be taken in each jurisdiction and how they will be implemented. As the primary mechanism for defining how the parties will meet their phosphorus reduction commitments, these plans will be foundational for ensuring that real progress is made towards restoring the health of Lake Erie: a Great Lake that is critical to the livelihood and health of millions of Canadians and Americans.