Draft 2017 Lake Huron Lakewide Action and Management Plan
Sierra Club Michigan Chapter Comments
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SUMMARY

The current draft of the 2017 Lake Huron Lakewide Action and Management Plan (LAMP) provides a broad overview of environmental issues impacting the health of Lake Huron and shows an important effort to lay out a path forward for ensuring the sustainability of this vital regional water resource. We are encouraged by the collaborative discussion, information sharing and partnership this document represents between multiple diverse agencies within the United States and Canada. The use of the 2017 plan as an opportunity for the Lake Huron Partnership agencies to provide the "first state of Lake Huron assessment under the 2012 Agreement" and develop ecosystem objectives is a good first step in laying the groundwork to track progress over the next five years.

However, we are very concerned about several areas of weakness in the document in describing and addressing certain key threats to Lake Huron. Of particular concern is the total lack of reference to soluble reactive phosphorus (SRP) in the discussion of nutrient and algae issues that plague Lake Huron. Without acknowledging the role SRP plays in feeding toxic algae and the ineffectiveness of the voluntary best management practices on SRP, the plan is doomed to fall far short of its objective to "be free from nutrients…that promote growth of algae and cyanobacteria…."

In addition, the omission of two significant threats originally listed in the 2016 LAMP draft deeply disturb us. Since last year's draft, the Partnership has removed any mention of the risk that the aging Enbridge Line 5 pipeline poses to Lake Huron, although several paragraphs were devoted to it in 2016. One study indicates that 50 miles of Lake Huron shoreline could be blanketed by a Line 5 spill in the Straits of Mackinac[1]. In addition, the problem of nuclear waste storage near the shore of Lake Huron on the Canadian side, which was identified in 2016 as of "considerable public interest," has been omitted from this version of the plan.

Finally, the introduction to the LAMP document states that member agencies of the Lake Huron Partnership "will assess the effectiveness of actions and adjust future actions to achieve the objectives of this plan, as outcomes and ecosystem processes become better understood." This begs the question: How will members know if actions in the plan are effective? This plan offers no specific targets for reduction amounts or dates by which they should be achieved. In its current form, it reads like a scattershot list of things that will be done with the hope that some good will come out of it, rather than a reasoned, specific approach with clear, measureable actions designed to advance specific targets. What will "effectiveness" look like? A greater level of specificity now is required to know if this plan will have made an impact five years from now.

[1] http://www.mlive.com/news/index.ssf/2016/03/mackinac_straits_oil_spill_wou.html and http://www.oilandwaterdontmix.org/pipeline_spill_danger

What follows are more detailed comments and recommendations on key sections of this draft of the LAMP. Sierra Club offers them to spur productive dialogue and contribute to an improved and more effective Lake Huron Lakewide Action and Management Plan.

NUTRIENTS AND ALGAE

In Chapter 4.6, the plan describes the complex web of inputs and issues that cause the algae problem in Lake Huron, and rightfully identifies livestock manure as a key contributor. Sierra Club Michigan's Less=More Coalition has explored the issue of factory farm runoff in several reports and documentaries available at http://www.sierraclub.org/michigan/lessmore-reports and particularly looked at the agricultural inputs to Lake Erie in the report, Follow the Manure. Saginaw Bay is similarly challenged, and an algae-fueled crisis like that which happened in 2014 to Toledo and southern Michigan's Lake Erie drinking water could certainly happen in Lake Huron. Specific information about Saginaw Bay is contained the most report, A Watershed Moment, which maps out all factory farms in Michigan.

In both the Chapter 4.6 overview of the state of Lake Huron with respect to nutrient pollution and the actions to address the problem listed in Chapter 5.2, the 2017 LAMP identifies excess nitrogen and phosphorus as key culprits in harmful algal blooms, folding them together as threats that can be addressed with landowner incentives and best management practices (BMPs). However, nowhere in this plan is the unresolved issue of soluble reactive phosphorus mentioned, much less addressed.

Research and data going back as far as 15 years[2] has repeatedly demonstrated that agricultural practices along waterways, including buffer strips, grass strips, constructed wetlands, cover crops, and no-till, are inadequate in removing SRP from surface water, especially in heavily tiled fields. These are among the Michigan Agricultural Environmental Assurance Program (MAEAP) activities the plan references as actions to take to reduce nutrients and bacterial pollution. They are good practices for certain issues, but not if the goal is to achieve significant phosphorus reduction in the Lake Huron, because SRP will continue to enter waterways despite the use of these practices. Because of this, the LAMP needs to include support for research into effective BMPs for dissolved phosphorus as well as the role of tile drainage. At least 50% and perhaps up to 80% of the SRP in the Western Lake Erie Basin enters the surface water through the drain tiles and not from surface runoff at field's edge[3].

In addition, this 2017 draft of the LAMP leaves out two substantive steps that could be taken immediately to reduce SRP. They include:

- **A ban on the application of livestock wastes to frozen or snow-covered ground**. This would virtually eliminate one of the most common sources of substantial agricultural discharges into waterways that feed into our Great Lakes. Concentrated Animal Feeding Operation (CAFO) permits issued by the Michigan Department of Environmental Quality allow this application under certain circumstances, effectively

[2] Environmentally Concerned Citizens of South Central Michigan (ECCSCM), www.nocafos.org , have documented the repeated failure of these practices to prevent pollution from concentrated animal feeding operations (CAFO) from entering surface waters. Additional study references are available on request.
[3] Ibid.

making it a voluntary action to not apply on snow or frozen ground. The Lake Erie water crisis of 2014 points clearly to the failure of the "voluntary" standards that have reigned in the region since the advent of CAFOs, and the 2017 LAMP should underscore the need for enforceable, proven requirements.

- **Change the phosphorus requirements farmers use to guide manure application on farm fields.** Phosphorus soil test requirements need to be set to allow no more than 40 ppm from manure and chemical fertilizer. The current limit of 150 ppm of phosphorus from manure applications is set in order to meet the nitrogen needs of corn-on-corn rotation but often leads to excess phosphorus in the waterways as a result.

We are encouraged by the plan's many references to gathering evidence by conducting edge-of-field monitoring to assess BMP effectiveness, continuous flow and event-based water quality monitoring and building local capacity for monitoring with community involvement. However, it's important that the right type of monitoring takes place. In the case of the issue of tile drainage and SRP, there is a need to do edge-of-tile-pipe testing as well as edge-of-field, because tiles, which are conduits for SRP, run more frequently than surface runoff events[4].

Academic models frequently don't accurately reflect what happens on the ground, as is the case of BMPs and phosphorus. Evidence that they won't achieve the desired result is found in data gathered by ECCSCM through regular and meticulous edge-of-field testing around 41 sites in 19 Michigan townships in the western Lake Erie basin where CAFOS apply manure. In 2013 and 2014, 100% of samples (70 of 70) were above the safe level for aquatic species of .1 mg/L, and 96% (67 of 70) exceeded Michigan's water quality standard for point sources of 1 mg/L.

Finally, the plan devotes scant attention to the threat fish farming poses to Lake Huron, saying simply, "Cage aquaculture operations must be properly sited and managed to minimize enrichment of nearby waters." The Sierra Club Michigan Chapter calls for a ban on any aquaculture facilities that are hydrologically connected to surface waters of the State of Michigan, not just because they contribute to the excess nutrient problem, but because of the impossibility of preventing escapes of farmed fish into wild fish populations and the potential for devastating disease outbreaks**.**

CHEMICAL CONTAMINANTS

There are two serious omissions in the 2017draft of the LAMP. In 2016, both the threat of the Enbridge Line 5 oil pipeline along the Straits of Mackinac between Lakes Huron and Michigan and the proposed nuclear waste storage near the shore of Lake Huron were listed under the heading *Vulnerable Infrastructure and Contaminated Sites* in Chapter 4.4. In the current draft, they are no longer mentioned as issues of concern. This is very concerning because both of these issue pose a serious threat to the health of Lake Huron and local communities.

<u>Line 5</u>

Line 5 transports 23 million gallons of oil daily through the Straits of Mackinac and is identified as a high-risk area. Strong currents could quickly carry petroleum in the event of a pipeline

[4] Based on ECCSCM research in Lenawee and Hillsdale counties in Michigan.

rupture, impacting up to 700 miles of Lake Huron and Lake Michigan coastline and the freshwater basin. [5] Concerns about Line 5 resulted in a U.S. District Court consent decree requiring additional studies of the pipeline and installation of anchor supports along the 4.05 mile stretch of the dual 20-inch diameter pipelines in the Straits.

A July 2015 State of Michigan Petroleum Pipeline Task Force report pointed to concerns raised about the age of the 64-year-old pipeline, Enbridge's failures and the threat Line 5 poses to the Great Lakes, including Lake Huron. The Report states, in part: "In light of the massive 2010 oil releases from Enbridge's Line 6B near Marshall, Michigan, the well- documented systemic failures there, the age of the Straits Pipelines, and location of those pipelines literally *in* the Great Lakes, there has been growing public and governmental concern about the Straits Pipelines. Their location makes them especially critical. Releases of oil from the Straits Pipelines could have a devastating ecological and economic impact. Water quality, fisheries, beaches, and the iconic center of Michigan's tourist economy would likely all be gravely damaged."

Moreover, Line 5 threatens an especially productive and sensitive area for fishing under the Treaty of 1836, prompting five Native American tribes in Michigan to call for its decommissioning. Over a 30-day period from July to August more than 23,000 people submitted comment to the State of Michigan calling for an end to the threat of Line 5 oil in the Great Lakes.

Nuclear

Radionuclides, extremely poisonous by-products of nuclear fission, should be considered a Chemical of Concern, under the Great Lakes Water Quality Agreement. Sierra Club in the United States and the Sierra Club Canada Foundation as well as the Sierra Club Bi-National Great Lakes Commission have all called upon their respective federal environmental regulators to recognize the danger posed by radionuclides, especially the danger of release of radionuclides into Lake Huron and the Great Lakes.[6]

Ontario Power Generation which operates the Bruce Nuclear Generating Station on the Bruce Peninsula on Lake Huron seeks to bury low and "medium" nuclear wastes in a proposed Deep Geological Repository (DGR) 600 meters below Lake Huron. Ontario Power Generation's DGR would pose substantial unnecessary threat to the drinking water of 24 million Canadian and U.S. citizens. Our concerns include the fact that:

- OPG has not researched alternative sites in Ontario for the storage of its radiological wastes.
- Many of the critical design decisions about the DGR have not been made.
- OPG has not characterized the potential inventory of radiological wastes to be stored at the DGR.
- OPG has not demonstrated in its Environmental Impact Statement adequate concern or planning for a radiological accident or malevolent attack.

[5] http://www.oilandwaterdontmix.org/pipeline_spill_danger

[6] http://www.cela.ca/sites/cela.ca/files/NGO-Letter-radionuclides-nomination.pdf

Because of the gravity of the situation, over 180 elected governmental bodies, representing more than 20 million residents have passed resolution opposing the Ontario DGR. In the United States, 32 members of Congress sent a letter to Secretary of State Rex Tillerson asking him to get involved in efforts to stop a nuclear waste storage site.[7] The Ontario DGR is opposed by many First Nations tribes in Michigan and in Ontario, including the Saugeen Ojibway whose consent for the DGR is required by treaty.

In addition, a new threat has emerged in the form of the shipment of high level radiological wastes across Lake Huron into Michigan enroute to South Carolina via the Blue Water Bridge in an unprecedented and dangerous program to repatriate high level nuclear wastes from Chalk River Ontario to South Carolina. As no safe or effective method of cleaning up or retrieving liquified highly radioactive wastes has ever been demonstrated, the shipments of high level nuclear wastes on truck via public highways and thoroughfares should not be permitted.[8]

[7] http://michiganradio.org/post/dear-rex-tillerson-please-help-stop-nuclear-waste-storage-near-lake-huron

[8] http://www.sierraclub.org/sierra/green-life/radioactive-waste-rolling-through-your-town