



Ontario Soil and Crop Improvement Association

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Launch of Lake Erie Research Program Leverages Agricultural Partnerships to Enhance Understanding of Agricultural Best Management Practices

Guelph, Ontario, Canada — The Ontario Soil and Crop Improvement Association (OSCIA), in collaboration with several key stakeholders, is proud to announce the launch of the Lake Erie Enhanced Analysis of Agricultural Practices (LEEAAP) research program. The goal of this initiative is to improve the recommendations and drive implementation of best management practices (BMPs) aimed at reducing phosphorus loading from agricultural fields into Lake Erie. Funded by the Canada Water Agency's (CWA) Great Lakes Freshwater Ecosystem Initiative's Lake Erie Innovation Substream, LEEAAP will leverage considerable investment by the Ontario Ministry of Agriculture, Food and Agribusiness through the On Farm Applied Research and Monitoring (ONFARM) Program to advance interpretation of years of water quality data.

The four-year research project is expected to deliver significant results for Ontario farmers, conservation initiatives, and local communities by supporting on-the-ground actions targeting phosphorus loss reduction measures in agricultural systems. By enhancing data analysis, creating critical frameworks for contextualizing recommendations, and supporting the adoption of effective BMPs, this initiative will contribute to long-term sustainability for both agriculture and the environment.

OSCIA's collaborative approach involves multiple key partners, including ONFARM collaborators Lower Thames Valley Conservation Authority, Ausable Bayfield Conservation Authority, Upper Thames River Conservation Authority, the Ontario Ministry of Agriculture, Food and Agribusiness (OMAFRA), and the University of Waterloo's Department of Geography and Environmental Management. ONFARM is funded by the governments of Canada and Ontario through the Sustainable Canadian Agricultural Partnership (Sustainable CAP), a 5-year, federal-provincial-territorial initiative. The LEEAAP project represents a significant value-add to the province's ONFARM investment. Key project goals include:

- Support water-sampling, environmental and farm practice data collection, and BMP implementation in farm fields within the priority subwatersheds; overland flow during runoff events as well as tile drainage output at multiple sites will be monitored
- Establish a standardized set of parameters for water quantity and quality, climate, soil health, and farm-field management and production data for evaluation using multivariate statistics and machine learning algorithms
- Enhance the efficacy of agricultural practice recommendations through a combination of real-time implementation and historical data analysis
- Develop and deliver a workshop for water quality specialists and conservationists to share a data-management framework in support of further work on reducing phosphorus losses
- Mobilize results and findings directly to farmers through educational workshops, factsheets, case studies, and demonstration days in the field.

Dr. Angela Straathof, Director of Research and Knowledge Transfer with OSCIA and expert in agricultural soil systems, is thrilled for the opportunity to expand the industry's knowledge bank. "This project is pivotal not only for advancing agricultural best practices but also to safeguarding our water resources and protecting the environment," said Dr. Straathof. "By leveraging historical data and implementing real-time practices, we are able to make data-driven decisions that can have a long-lasting impact on both our farms and our watersheds."

The LEEAAP initiative will focus on analyzing both historical data (from 2015 to present) and real-time data from BMPs implemented over the next four years (2024-2028), including ONFARM's. This data-driven approach will help refine agricultural practices to ensure that they are both effective and sustainable for long-term adoption. The project also represents significant capacity building for the sector: OSCIA is seeking a qualified [Water Quality Specialist](#) to oversee the data analysis, and the significant investments of CWA funds will support monitoring by the Conservation Authorities in the corresponding subwatersheds and development of resources for researchers in the field.

In the September 20, 2024 announcement of the Great Lakes Freshwater Ecosystem Initiative's investment, the Honourable Steven Guilbeault, Minister of Environment and Climate Change, noted that "The importance of protecting and preserving Canada's fresh water, including the Great Lakes, is crucial. Today's investment in the Great Lakes Freshwater Ecosystem Initiative will support partner-led projects that will strengthen our economy, protect freshwater ecosystems in Canada, and advance commitments in the Canada–US Great Lakes Water Quality Agreement."

Phil Oegema, Past President of the OSCIA Board of Directors, emphasized the importance of collaboration for the success of this initiative: "This project represents the best of what we can achieve when government, farmers, and researchers work together towards a common goal. As a farmer in the Lake Erie basin, I look forward to seeing the positive impact it will have on both our environment and agricultural communities, and the knowledge it can get into the hands of farmers, including our OSCIA members."

Sustainable CAP is a 5-year, \$3.5-billion investment by federal, provincial and territorial governments to strengthen competitiveness, innovation, and resiliency of Canada's agriculture, agri-food and agri-based products sector.

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