

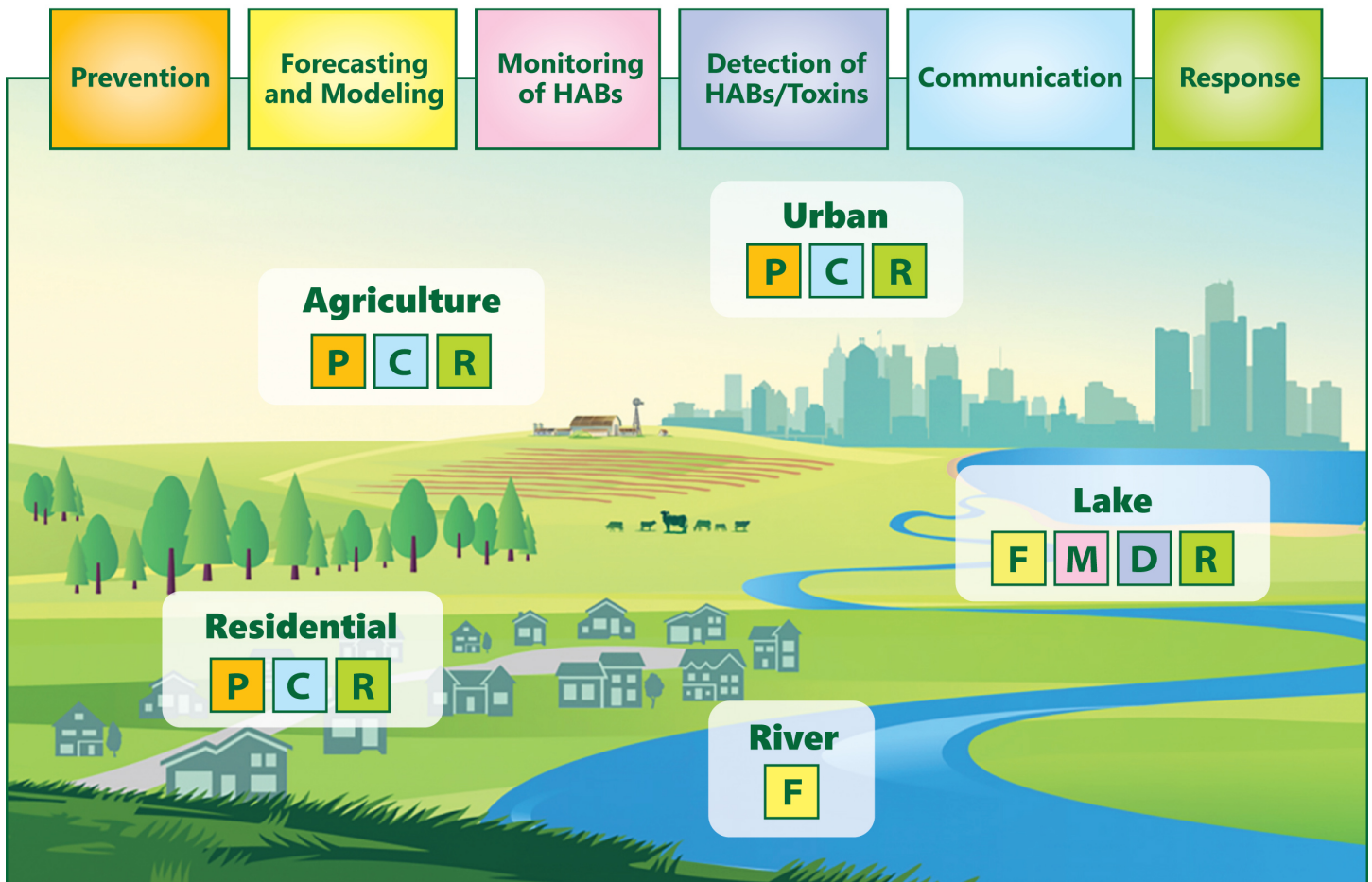


# Great Lakes HABs Collaborative

Linking Science and Management to Reduce Harmful Algal Blooms

## Who Does What? A Guide to Agencies' Roles in HABs

**Harmful algal blooms (HABs)** in the Great Lakes have impaired drinking water, threatened public health, and hurt the regional economy. Management is a complex, regional challenge that cannot be addressed by one jurisdiction or single agency. This factsheet seeks to provide a brief overview of agency roles in a spectrum of activities from HABs prevention to response. The graphic below is intended to depict spatially where activities occur in a landscape, with agencies listed under their primary activities.



**Prevention:** Efforts to minimize the export of nutrients from watershed sources to waterways

**Forecasting and Modeling:** Efforts to understand nutrient delivery from the land to rivers and implications for HABs occurrence (or non-occurrence)

**Monitoring of HABs:** Monitoring & Tracking of blooms

**Detection of HABs/Toxins:** Efforts to understand the toxicity of a HAB

**Communication:** Messaging of HABs occurrences and associated risks to the public

**Response:** Management of HABs and associated impacts

## Government Actor and General Description of HAB-Related Efforts

	Prevention	Forecasting and Modeling	Monitoring of HABs	Detection of HABs/Toxins	Communication	Response
<b>State/provincial/tribal environment, natural resource and health</b> These agencies work across the entire spectrum of HABs to help coordinate a response. Major work includes planning to reduce nutrients, limiting point sources, monitoring water quality, and relaying advisories to the public.	✓	✓	✓	✓	✓	✓
<b>State/provincial agricultural departments and ministries</b> These agencies raise awareness and increase the adoption of environmental farm planning and beneficial management practices by providing tools, educational and demonstration opportunities, technical advice, and funding.	✓	✓				
<b>U.S. Environmental Protection Agency</b> Great Lakes programs provide funding to reduce nutrient losses to waterways and improve nearshore health in the lakes and support binational cooperation enabled by the Great Lakes Water Quality Agreement (GLWQA).	✓		✓	✓	✓	✓
<b>Environment and Climate Change Canada</b> ECCC collaborates with the province, through the Canada-Ontario Agreement, to prevent nutrient losses to waterways from wastewater treatment plants and other sources.	✓	✓	✓			
<b>U.S. Department of Agriculture</b> USDA administers U.S. Farm Bill programs to accelerate adoption of nutrient reducing practices on agricultural land and assesses the effects of conservation in watersheds to document outcomes and evaluate additional conservation needs.	✓	✓				
<b>Agriculture and Agri-Food Canada</b> AAFC researches innovative approaches to understand and improve nutrient, soil and water management on agricultural land and funds programs to accelerate the adoption of practices to reduce nutrient losses.	✓					
<b>U.S. Geological Survey</b> USGS conducts a variety of water quality monitoring and research on beaches, agricultural land, watersheds, streams, and lakes.	✓	✓	✓	✓		
<b>National Oceanic and Atmospheric Administration</b> NOAA conducts water quality sampling and forecasting in Western Basin of Lake Erie and Saginaw Bay (Lake Huron) during bloom season using tools such as buoys, sensors and remote sensing (satellite and hyperspectral imaging).		✓	✓	✓	✓	
<b>Municipal government</b> Municipal governments or local government-created utilities are a common provider of drinking water to Great Lakes basin residents and are responsible for monitoring raw water to detect algal toxins and taking response actions should a HAB effect drinking water quality. Local governments also often operate and manage waste and stormwater systems as well as other infrastructure that can be a source of nutrients.	✓			✓	✓	✓
<b>Local Health Departments</b> Local Health Departments work with state agencies to conduct beach monitoring, investigate complaints received by members of the public, and communicate risk to the public.			✓		✓	✓
<b>County Soil &amp; Water Conservation Districts/Departments (U.S.)</b> These groups facilitate the installation of best management practices (BMPs) by educating producers, providing technical assistance, and managing funding (from USDA, EPA, or other agencies) to reduce the cost of installing BMPs.	✓					
<b>Conservation Authorities (Ontario)</b> These groups promote the delivery of stewardship programs including education and outreach and cost share for BMPs (e.g. cover crops, crop nutrient plans, erosion control, wetland restoration, riparian planting).	✓		✓		✓	✓
<b>Regional Commissions</b> Three regional commissions (Great Lakes Commission, International Joint Commission, and Great Lakes Fishery Commission) work together to communicate science and policy among Great Lakes jurisdictions, including science and policy in relation to HABs. The Great Lakes Commission hosts the Great Lakes HABs Collaborative.					✓	

Contact us at [www.glc.org/work/habs](http://www.glc.org/work/habs)

The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Geological Survey. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Geological Survey.

February 2021