LINKING IT ALL TOGETHER!

The Bay of Quinte is meeting the phosphorus, chlorophyll a and algal biomass targets established for the environmental challenge - eutrophication or undesirable algae. These targets were developed using the scientific knowledge at the time the Remedial Action Plan was created. These targets will be used to change the status of this environmental challenge to restored.

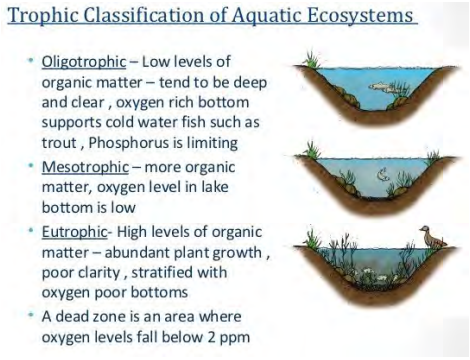
However, recent water quality modelling and research efforts have determined that current ecosystem conditions are not consistent with full recovery. These signs include:

- considerable year-round variations within the system,
- near-shore water quality conditions that are subject to public perception of degraded water quality, and
- persistence of harmful algae blooms in the Bay.

As a result, new long-term phosphorus targets are proposed to address the excess nutrient loads from both urban and rural point and non-point sources throughout the Bay of Quinte. To move forward from the Area of Concern status, a Long-Term **Phosphorus Management Plan** for the Bay of Quinte will establish new targets, and the recommended actions needed to achieve them.

The development of this Phosphorus Management Plan is linked with environmental challenge #8 (Eutrophication or undesirable algae) and #13 (Degradation of phytoplankton and zooplankton populations). These challenges and the management actions to address them are highly interconnected. The new targets will ensure continued improvement to the bay"s ecosystem.

#8 - Eutrophication or undesirable algae



Reducing external phosphorus input to the bay should correspondingly reduce ambient water phosphorus levels from eutrophic to a meso-eutrophic range. This in turn will lead to increased flushing of the legacy phosphorus stored in the sediments of the bay. Reduction of phosphorus levels in the sediment and the resulting decrease in the sediment phosphorus reflux to the bay in late summer/ early fall will: reduce the risk of algal blooms in the bay; shift the late summer/ early fall nutrient limitation from nitrogen to phosphorus which is expected to reduce the risk or limit the harmful (Microcystis based) algal blooms in the bay during this critical period.

LINKING IT ALL TOGETHER!

#13 - Degradation of phytoplankton and zooplankton populations

Reduction in the Bay of Quinte ambient water phosphorus levels is expected to shift the trophic levels of the bay from eutrophic to meso-eutrophic. This is expected to shift the phytoplankton from non-edible (filamentous/colonial morphology) to a smaller edible type. Shift to smaller sized plankton is a natural response to oligotrophication of lakes (smaller planktons have a greater surface area per unit volume to efficiently capture scarcer nutrients).

Reduction of the non-edible phytoplankton combined with the reduction of potentially harmful variety of phytoplankton, is expected to bring the planktons (phytoplankton and zooplankton) into the mainstream of food-web processes that would sustain the upper trophic sports fish in the Bay of Quinte. Currently, there is evidence in Bay of Quinte, that invasive species such as zebra/quagga mussels and round gobies sustain the upper trophic sports fish in a significant way by mediating an alternate pathway for food/energy transfer to the higher trophic level organisms.

BE SEPTIC SAVVY

You are responsible for your septic system - Be Septic Savvy

Most rural homes and cottages use a septic system.

When working properly, septic systems can provide a safe and reliable way to treat your household wastewater. If you do not properly care for your septic system it could add excess phosphorus to nearby waterbodies causing algal blooms, and excess plant growth, and bacteria can cause localized health impacts for homeowners and their neighbours.

You own your septic system and are responsible for its safe operation, maintenance, and repair.

Regular maintenance can add years to the life of your system, saving you costly repairs and protecting the local environment.

Things you need to know

- Know the location of your tank and bed, and protect it from damage. Don't drive over it or construct anything (e.g. pools, driveways, and sheds) on or near any part of it
- Have the tank pumped out every three to five years

- Don't put food, compost, or grease down your drains
- Conserve water and try to spread water use over the course of the week, especially laundry
- Avoid excessive use of anti-bacterial soaps, bleaches, and harsh cleaning products
- Don't put paints, solvents, pesticides, and other toxic chemicals in your system; use recycling and hazardous waste collection programs for these substances
- Keep trees and shrubs away from the leaching bed

Learn how your septic system works - https://www.ontario.ca/page/septic-systems

TEST IT, COVER IT AND BUILD IT

FREE Soil Testing and Cover Crop Grant

Rural Stewardship Program