



A Summer of Science on the Bay

For the BQRAP to meet its goal of removing the Bay of Quinte from the bi-national Areas of Concern list, it must meet all the criteria outlined for the 11 environmental challenges identified for the Bay.

To accomplish this, numerous BQRAP partner agencies are on the water monitoring and collecting data for a variety of water quality indicators like: fish populations, wetland habitat, phosphorus levels, algae species, and a host of other indicators.



Environment and Climate Change Canada installing water quality samplers on the Napanee River

This is the second article in the Summer of Science on the Bay series. In June a team from Environment and Climate Change Canada came to the Bay of Quinte to install water quality samplers on the Napanee River and Wilton Creek.

A preliminary study showed that nutrient (phosphorus) levels significantly increased on the Napanee River after large rain events. Phosphorus has been one of the main environmental challenges identified for the Bay of Quinte. It was determined additional investigation of the effects of extreme rain events vs regular flow conditions on phosphorus levels in these tributaries of the Bay of Quinte was required.

Water quality monitoring samplers were installed at 3 locations on the Napanee River – Camden East, Newburgh, and the town of Napanee. As well as, one sampler was installed on Wilton Creek due to high phosphorus levels in Hay Bay.

Water sampling unit

The sampling units are equipped with 24 one litre bottles and each sampling unit is programmed to take water samples at specific time increments. For example, every hour or two over a twenty-four hour period. The sampling frequency is determined by conditions specific to each site. The water samples will be taken after significant rain events to measure the level of nutrients coming off the landscape and entering the local waterways. Regular flow conditions will be captured by manually taking water samples during regular site visits.

Once a water level increase is detected by the sampling unit, it will begin taking water samples. Once the cycle is complete, the samples are collected and sent to the lab for analysis. They will be analysed for phosphorus, nitrogen, and chlorophyll a.



The town of Napanee sampler unit has 24 one litre bottles in the sampler and it's programmed to take one sample every hour for 24 hours.



Additional water quality monitoring

As well, additional monitoring equipment was placed in the water at all the sites to collect data on a suite of water quality indicators like: temperature, conductivity, turbidity, PH, and dissolved oxygen. These monitoring units will be retrieved at the end of the season and the data downloaded for analysis.

All the water quality data, coupled with GIS analysis to identify high erosion areas will help us to determine the where and why of excess phosphorus loading to these tributaries and the Bay of Quinte. Thereby helping to identify areas where stewardship projects like: shoreline rehabilitation, buffer planting, planting of cover crops, and livestock fencing could be implemented to reduce excess phosphorus run-off from the landscape.



This monitoring unit measures multiple water quality indicators.



Deploying the monitoring unit

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