

Niagara River RAP Beneficial Use Impairment (BUI)

Degradation of Phytoplankton and Zooplankton Populations

Requires Further Assessment

Status of BUI assessment:

- Results of samples collected by Department of Fisheries & Oceans (DFO) are expected in 2016.

Current Niagara River RAP Delisting Objective: None (Requires further Assessment)

IJC Listing Guideline: When phytoplankton or zooplankton community structure significantly diverges from unimpacted control sites of comparable physical and chemical characteristics. In addition, this use will be considered impaired when relevant, field-validated, phytoplankton or zooplankton bioassays (e.g. *Ceriodaphnia*; algal fractionation bioassays) with appropriate quality assurance/quality controls confirm toxicity in ambient waters.

Canadian/American AOC Comparisons: In the Niagara River (New York State) RAP, this BUI was designated as "Not Impaired". The RAP also noted that the dominance of filter-feeding organisms in macroinvertebrate samples indicates high levels of planktonic nutriment.

Lead agencies: Environment Canada, Department of Fisheries & Oceans (DFO)

What Was the Problem?

- The RAP Stage 1 report (1993) states that for *Phytoplankton*: "No extensive floating plant community stays in the Area of Concern. The swift flowing nature of the river prevents a buildup of any phytoplankton. If it is present, it is received from Lake Erie and passed rapidly on to Lake Ontario. Little is known about the status of attached algae." The report further states that: "This does not appear to be a factor in the Niagara River but further information may be needed particularly in the Welland River and its tributaries."
- The Stage 1 environmental description for *Zooplankton* populations is similar to that for *Phytoplankton* populations in the AOC.

What Do We Know?

- This BUI is deemed not impaired on the U.S. side of the River and in the other connecting channel AOCs.
- In the Stage 2 Update report (2009), phytoplankton/zooplankton populations are identified as requiring further assessment.
- There is very little information on the impairment status of phytoplankton or zooplankton populations in the Niagara River AOC.
- This BUI was discussed at the Great Lakes AOCs RAP Coordinators' Workshop, Feb.7 – 10, 2012. Senior agency representatives believe the listing of this BUI may have originated from the U.S. Clean Water Act, 1977.
- The Welland River Eutrophication Study indicated no evidence for undesirable algae.
- In 1987 and 1988 the U.S. portion of the AOC, *Cierodaphnia* bioassays were conducted on samples collected at Strawberry Island and at Fort Niagara. No water column toxicity was found.

What Still Needs To Happen?

- Results from DFO samples collected in 2014 expected in 2016.
- To initiate public consultation, a public guidance document will be released to summarize the BUI assessment reports. The guidance document will explain how the assessment for "Requires Further Assessment" BUIs were completed, provide the rationale for the "Not Impaired" re-designation and how to obtain more information. Following consultation with all stakeholders and the public, the RAP Coordinating Committee will complete a final evaluation and recommend whether or not all BUIs have been remediated or restored, resulting in the "delisting" of the AOC. The final decision to delist the Niagara River AOC will then be made by federal, provincial, and local RAP participants, with advice from the International Joint Commission.

When Will The Status Change?

- Goal 2017

May 2016