



## International Upper Great Lakes Study



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### International Upper Great Lakes Study Releases Progress Report Work on St. Clair River Well Under Way

[Toronto-Canada] - The International Upper Great Lakes Study today released its semiannual Progress Report highlighting the many research projects and other initiatives already under way. Over the past six months, a binational team of researchers have been engaged in this critical study that is trying to understand why levels in the Upper Great Lakes are so low and whether possible physical changes in the St. Clair River might be responsible. Ultimately the \$17.5M (US \$14.7 M) study will determine whether regulation of outflows from Lake Superior might be improved to take into account changing interests and changing climate.

"The urgency of low water levels has put the study on the fast track," said Dr. Gene Stakhiv, U.S. Co-chair of IUGLS. "However, it is critical that the study complete a comprehensive scientific analysis of all the key factors before discussing possible remedial actions in the St. Clair River." added Ted Yuzyk, Canadian IUGLS Co-chair.

The Progress Report was released just two weeks after the International Joint Commission approved plans to expedite the study to provide a report and recommendations a full year ahead of schedule. The report reveals that:

- Seven research projects are underway regarding the St. Clair River.
- Seven scoping or strategic papers were completed, including the development of an information management strategy.
- Six meetings or workshops were convened, including a modelers forum that focused on issues regarding Lake Huron outflow and St. Clair River hydraulics and sediment processes.
- 26 of 30 Task Team or Technical Working Group (TWG) leads were appointed and terms of reference for 12 TWGs were developed.
- 19 of 20 members of the Public Interest Advisory Group (PIAG) came on board.
- The IUGLS Study Board recommended installation of three hydrometric gauges to measure water level and velocities and to estimate discharge rates at three key locations in the connecting channels and asked the IJC to write to the governments, urging them to facilitate installation of the gauges and provide assurance that operation of the gauges will continue after the completion of the study.
- The Study Board also recommended a model for an independent peer review process.

Included in the report were initial results from work currently underway in the St. Clair River that has already captured more than 50 kilometers (30 miles) of the river bed on videotape. While the analysis is still preliminary, Dr. Bommanna Krishnappan, Research Scientist with the National Water Research Institute (Environment Canada) noted that:

*All these video images show that the river bed in the upper reach of the river is fully armoured and that the armour layer is made up of coarse gravels, pebbles and cobbles, with size of the sediment ranging from about 4 mm to 250 mm (1/6 inch to nearly 10 inches). An armour layer in a river forms when the flow erodes the finer fractions of the sediment and leaves behind the coarse material. Based on the capacity of the flow to transport sediment, the armour layer in the upper part of the St. Clair River is considered to be stable. Therefore, the bed cannot be eroding. Deposition of fine material was observed along the edges of the river, where the bed shear stress is lower than the critical shear stress for erosion of fine sediment.*

Dr. Krishnappan also reviewed previous sediment studies of the St. Clair River and evaluated the findings of those studies in light of the new videography:

*These sediment studies along with the video images indicate that the river bed at the outlet of the Lake Huron is stable and that there is no evidence of active bed erosion. These are preliminary findings; more work involving sediment transport measurements and sediment models are planned to test this hypothesis. Additional video observations in the river are planned.*

In addition to the videography, other research projects or data collection and evaluation work in the St. Clair River include:

- Collection of new bathymetric data;
- Computing flows and inferring conveyance changes through modeling of both the St. Clair and Detroit Rivers;
- Geographic Information System (GIS) analysis of the fluvial geomorphic change in the St. Clair River and Lake St. Clair over the past 130 years using historic data; and,
- Determination of glacial isostatic adjustment as a factor affecting water levels.

The next semiannual IUGLS Progress Report is scheduled to be released in April of 2008, however additional information and findings may be released as research projects are completed. In addition, the PIAG expects to hold public meetings in both countries prior to release of the next report. Made up of ten members from each country, the role of the PIAG is to provide an avenue for information to flow between the Study and the public. Membership on PIAG includes individuals from coastal, ecosystem, hydropower, navigation, municipal and industrial, and recreational boating and tourism interests