

Impacts of Climate Change on the Great Lakes Basin

Primary Investigator: Frank H. Quinn

This project ended in 1998

The potential impacts of climate change and variability on the Great Lakes environment are serious and complex. The Great Lakes - St. Lawrence Basin is home to 42.5 million US and Canadian citizens and is the industrial and commercial heartland of both nations. The region is rich in human and natural resources, with diverse economic activities and substantial infrastructure which would be affected by major shifts in climate. For example, water level changes could affect wetland distribution and functioning; reductions in streamflow would alter assimilative capacities while warmer water temperatures would influence spring and fall turnover and incidence of anoxia. A binational program has been initiated to conduct interdisciplinary, integrated impact assessments for the Great Lakes - St. Lawrence River Basin. The goal of the GLSLB Project is to improve our understanding of the complex interactions between climate variability and change, the environment, and social and economic systems so that informed regional adaptation responses can be developed for the sustainable management of the Basin

1998 Accomplishments

GLERL is participating in two climate impacts studies in the Great Lakes Basin. The initial phase of the Binational Great Lakes-St. Lawrence River Basin Climate Change and Variability Project was completed with the publishing of the Proceedings of the Binational Symposium held in Toronto in May 1997. This publication represents the state-of-the-art in climate impacts and potential adaptation strategies for the Great Lakes Basin. GLERL is currently participating in the U.S. National Climate Impacts Study by serving on the steering committee for the Great Lakes region and leading the Great Lakes region's Water Resources Sector. An Upper Great Lakes Regional Workshop, sponsored by the University of Michigan was held in Ann Arbor on May 4-6, 1998. We are currently in the process of assessing the impacts of climate change and variability on Great lakes water resources using the Hadley Center's and Canadian Climate Center's General Circulation Models transient runs with aerosols.

Products

Quinn, F.H. 1998. Potential Effects of Climate Change on the Great Lakes Basin. State of the Great Lakes, *1997 Annual Report. Michigan Department of Environmental Quality*, Lansing, MI. pp 23-24.

Mortsch, L.D., S. Quon, L. Craig, B. Mills, and B. Wrenn. 1997. Editors. Adapting to Climate Change and variability in the Great Lakes-St. Lawrence Basin. *Proceedings of a Binational Symposium*. Toronto, Ontario. May 13-15 1997.