



**University at Buffalo**  
*The State University of New York*

Department of Biological Sciences  
College of Arts and Sciences

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Panel on the Future of the Trent-Severn Waterway

185 King Street, Suite 100  
Peterborough, Ontario  
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Dear Panel Members,

Prof. Gregory L. Boyer (Director, Great Lakes Research Consortium, State University of New York, College of Environ. Sci. & Forestry, Syracuse, NY 13210) kindly sent out an earlier notice, to many aquatic researchers in New York State, inquiring whether any of us had comments concerning the future of the Trent-Severn Waterway in Ontario. I apologize for my late comments but a serious extended illness and subsequent death of a family member altered my priorities.

Over a period of several years, I carried out some research on that portion of **Erie Canal (EC)** which extends, from the westerly end at Buffalo, easterly toward Syracuse, NY. That Buffalo-Syracuse stretch constitutes about half the length of the **EC**. There is another stretch of the **EC** from Syracuse easterly to Albany, NY, that I did not investigate. As a limnologist, I was primarily interested in the SCIENCE of the Erie Canal. Part of my research concerned sampling for physical and chemical variables *at 22 sites along the Buffalo-Syracuse stretch*. I wanted to see whether there were any gradients along the canal and, if so, whether those gradients persisted over the years. I tried to check for influences of contributing rivers. I also collected zebra mussels, over various years at the same sites, so that I could try and assess the changing population dynamics of both invasive species (*Dreissena polymorpha* and *D. bugensis*) of zebra mussels. Occasionally, I had some students accompany me but the majority of the sampling and analyses were done by me alone.... and without any financial support. I did some sampling in the open waters of summer, and some sampling through the ice in winter. Many academics have multiple research projects going at the same time... just to satisfy curiosity.

At times when I was sampling the Erie Canal, I wondered whether Canadian scientists from the Ministry of the Environment, or from colleges and universities in Ontario or elsewhere, were carrying out similar or other scientific studies on the Trent-Severn Waterway. I did not pursue this further, or attempt to develop some possible collaboration, as I was already over-extended in my own teaching and research.

The reason I tell you this is because I want to encourage you to think of the Trent-Severn Waterway in Ontario not just as the historic, cultural, and recreational waterway that it is. Of course it is all those things, as is the famous Erie Canal in New York State. Both the Trent-Severn and Erie Canal waterways played major roles in the earlier development and settlement of portions of the Province of Ontario and State of New York. These waterways were primarily man-made "aquatic conveyer belts" that were used more extensively in earlier decades than they are today. Nevertheless, as a scientist, I wondered how much hard science was known about the physics, chemistry, biology,

and geology of the Trent-Severn Waterway. Considering that portions of the western part of the Trent-Severn Waterway are underlain by crystalline rock and portions of the eastern Trent-Severn Waterway are fairly calcareous, I would expect to see significant chemical gradients along your Waterway that may influence the distribution of some plant and animal species. I suspect that invasive species of plants and animals are already having an impact on other biota of the T-S Waterway. Perhaps sustained monitoring of many variables is already the case for the T-S Waterway but, if not, does anyone know whether there are gradients in natural (and other?) isotopes from the westerly end (Port Severn near Lake Huron) to the easterly end (Trenton near Lake Ontario).

Obviously history is important for all of us and we learn from it. However, as you can sense, I feel that ongoing information about the science of the Trent-Severn Waterway will be the main driver of good management considerations for the Waterway itself, and the Province of Ontario.

Sincerely,



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cc. Prof. Gregory L. Boyer at Syracuse University