Johnston, John W., Thompson, Todd A., Baedke, Steve J., Booth, Robert K., Argyilan, Erin P., Jackson, Steve T., Forman, Steven L., and Wilcox, Douglas A., 2004, Lake-Level, Post-Glacial Rebound, and Climate in the Lake Superior Basin During the Last 5,000 Years, *International Association of Great Lakes Research*, 47th Annual Conference.

Details about lake level, post-glacial rebound, and climate in the Lake Superior basin are derived from short-term historical records and long-term geologic records that widely differ in resolution and length. It is difficult to compare the two data sets because few long, continuous geologic records exist that overlap historical records at a comparable resolution. For the past six years, more than 300 beach ridges were studied and more than 150 age dates were obtained in five strandplains along the Lake Superior coastline to build a framework of decadal to millennial lake-level change and climate variability for the past 5,000 years.

Four millennial-scale lake-level fluctuations occurred in Lake Superior over the past 5,000 years; the older two are correlated to the Nipissing II and Algoma phases of the upper Great Lakes. At the beginning of the most recent millennial event, confluence in three basins (Superior, Michigan, and Huron) ended and isostatic rebound and possibly tectonism helped create modern outlet conditions. The pattern of isostatic rebound relative to the modern outlet in Lake Superior indicates that increases in water levels outpaced rebound on the southern and western shore during the past millennium, causing erosion or flooding depending on local conditions.