Johnston, John W., Thompson, Todd A., and Baedke, Steve, J., 1999, **Strandplain evidence for lake level in central Lake Superior**, Geological *Society of America 33rd Annual Meeting, North-Central Section,* April 22-23, Champaign, Illinois, Abstracts with Programs, v. 31, no. 5, p. A-25.

Previous studies in Lake Michigan used the internal architecture and timing of beach-ridge development in five strandplains to construct detailed relative lake-level curves. The removal of the effects of differential isostatic rebound from the curves for these sites collapses them into an actual, or "eustatic," curve for Lakes Michigan/Huron. The curve shows two short-term quasi-periodic fluctuations, as well as a long-term lake-level change throughout the late Holocene. A similar curve does not exist for Lake Superior. Our investigations during the summer of 1998 used the same techniques employed in the Lake Michigan studies, allowing comparison between both lakes.

One of the best-developed and preserved beach-ridge strandplains along the Lake Superior shoreline occurs at Grand Traverse Bay. This eastward-opening embayment is located 26 km northeast of Houghton, Michigan on the eastern side of the Keweenaw Peninsula. The 4-km-long and 2.4-km-wide standplain contains about 70 beach ridges arcing between bedrock and till headlands. Sixty beach ridges were cored along 3 shore-perpendicular transects, and 17 samples of basal wetland sediments were retrieved from swales between beach ridges. Foreshore sediments were identified in core and their elevations were used to construct a relative lake-level curve. The curve shows lake-level lowering in the 47 most landward ridges in the embayment and a rise in 13 ridges adjacent to the modern shoreline. Changes in elevation and spacing between beach ridges define groups of beach ridges with four to six (commonly, five) beach ridges in each group. These groupings show a rise and fall in foreshore and topographic elevation within a group. Similar groupings of beach ridges were identified in Lake Michigan embayments and have been interpreted as 150-year quasi-periodic fluctuations.