

Great Lakes Summer Survey

by Susan Daniel

Researchers completed another successful Great Lakes summer survey aboard the EPA's *R/V Lake Guardian*. The ship left Milwaukee, Wisconsin on August 1st, and sampled Lakes Michigan, Huron, Erie, Ontario, and Superior during a month long survey. This year marks the fourth consecutive year the Great Lakes Center has participated in this scientific cruise.

Scientific crews from both Cornell University and SUNY Buffalo State, including Susan Daniel and Keith Pawlowski (graduate student), collected benthic macroinvertebrates, zooplankton, and chlorophyll as part of the U.S. EPA-funded grant [Great Lakes Long-Term Biological Monitoring](#). In total, 204 samples from 68 stations were collected using a PONAR grab sampler.

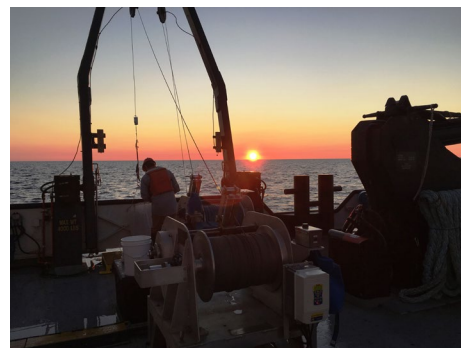
Researchers also collected benthic meiofauna from 37 permanent stations throughout the

lakes, in collaboration with Marissa Hajduk at Texas A&M University Galveston. Marissa Hajduk was an Undergraduate Research and Mentoring Program (URM) student who worked with Lyubov Burlakova and Alexander Karatayev before graduating from Buffalo State in 2010. Other side projects included the collection of multiple sediment cores from six stations to study the effect of *Dreissena* on organic content and the subsequent effect on benthic communities.

All of these data will be added to the U.S. EPA benthic database that contains annual data starting in 1997. These samples, and previous data, will shed light on current environmental status of the Great Lakes and provide a baseline for any future changes in water quality. There is one year left in the current grant cycle, so expect to see our researchers out on this cruise again next year. Overall, employees from GLC enjoyed a month of hard work and wonderful discussions with personnel from eight scientific institutions. •



Susan Daniel collecting sediment cores.



Jim Watkins (Cornell) collecting zooplankton.

GLCS Summer Internships

by Chad Schuster and Mary Pokorski, GLCS M.S. students

This past summer, two GLCS M.S. students completed their required internships with [Buffalo Niagara Riverkeeper](#). Chad Schuster and Mary Pokorski, both second year graduate students, worked on teams collecting field data for Riverkeeper's "Healthy Niagara" project. This project aims to create a comprehensive watershed management plan for the Niagara River watershed. Chad and Mary were part of the Stream Visual Assessment Protocol teams, or SVAP for short.

The Stream Visual Assessment Protocol is a qualitative method of determining the physical, chemical, and biological conditions of a stream using field observations and additional measurements. Chad and Mary went into the field every week with members of Riverkeeper to various tributaries of the Upper and Lower Tonawanda sub-watersheds, where they walked up-stream along designated segments and stopped to record data at every 200-foot long reach. Along these segments, the teams recorded GPS coordinates, width, and depth measurements, and rated a number of stream elements (i.e., canopy cover, in-stream fish cover and aquatic habitat, bank and channel conditions, water appearance, nutrient enrichment, riparian zone, pools, riffles, and manure presence) on

a 0-10 scale. Water quality measurements were also taken using a YSI meter and water samples were taken to measure conductivity, pH, temperature, turbidity, and nitrate and phosphate concentrations. The data collected by Mary, Chad, and their field team members were used to calculate scores for overall health and condition of the observed tributaries. The work conducted during their internship is important to the Healthy Niagara project as it provides baseline data and current conditions within the watershed that Riverkeeper can incorporate into their management plan when determining which tributaries may need remediation or restoration.

Chad and Mary were able to apply skills they learned in courses that Buffalo State offered. In their Business Communications class last semester, they both underwent a mock interview for this internship prior to their actual interviews with Riverkeeper. Both students are taking away valuable field experience in stream ecology, knowledge, and new connections with Buffalo Niagara Riverkeeper that will benefit them when they graduate and begin their search for jobs related to the Great Lakes. They have also been able to apply their knowledge and skills gained from this internship in their current classes. Overall, both students agree that



Mary Pokorski (above) and Chad Schuster (below) conducting SVAP studies in Tonawanda Creek.

Riverkeeper was a great organization to intern for, and appreciate this opportunity through Buffalo State. •