



NGRREC Aims to Expand Great Rivers Ecological Observatory Network

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EAST ALTON – National Great Rivers Research and Education Center associates, along with the Illinois Natural Survey, have been conducting research and monitoring of the water quality and fish community in the Upper Mississippi River System for more than 20 years.

Working on cooperative, multi-agency programs, such as the Long Term Resource Monitoring Program, which is a component of the U.S. Army Corps of Engineers Upper Mississippi River Restoration - Environmental Management Program, these researchers have spent many hours collecting water quality samples and transporting them back to the laboratory for traditional, wet-chemistry analysis.

NGRREC is expanding these monitoring and research activities with new automated monitoring platforms capable of collecting real-time data on a wide variety of water quality measures.

“We have been working with the Yellow Springs Instruments Company (YSI) to devise a configuration for these monitoring platforms that will meet some of the challenges we will face placing these monitoring buoys in a great river like the Mississippi,” said John Chick, an Aquatic Ecologist with NGRREC and the INHS.

Ultimately, NGRREC is committed to creating a network of these water quality platforms, starting with the Mississippi River and expanding to other great rivers throughout the United States and then the world, called the Great Rivers Ecological Observatory Network (GREON).

In May 2013, Chick and his research staff placed the first GREON buoy in Ellis Bay, a backwater area off the main channel of the Mississippi River that is part of the U.S. Army Corps of Engineers’ Riverlands Migratory Bird Sanctuary, for initial testing. The buoy collected data on water temperature, oxygen, conductivity, turbidity, chlorophyll-a,

blue-green algae, nitrate and weather information. Scientists at NGRREC are able to download this data from their offices via a cellular modem on the buoy.

“This was an excellent location to test this buoy, because it is adjacent to one of our LTRMP sampling sites, allowing us to compare data from our GREON buoy with are traditional water quality samples,” Chick said. “We have been very pleased with the accuracy of buoy in our initial comparisons.”

GREON gives NGRREC scientists an improved ability to detect trends and evaluate management actions while developing a better ecological understanding of great rivers. Once the network is established, scientists will be able to compare and contrast different rivers and address pressing issues such as nutrient loading, sediment loading and climate change.

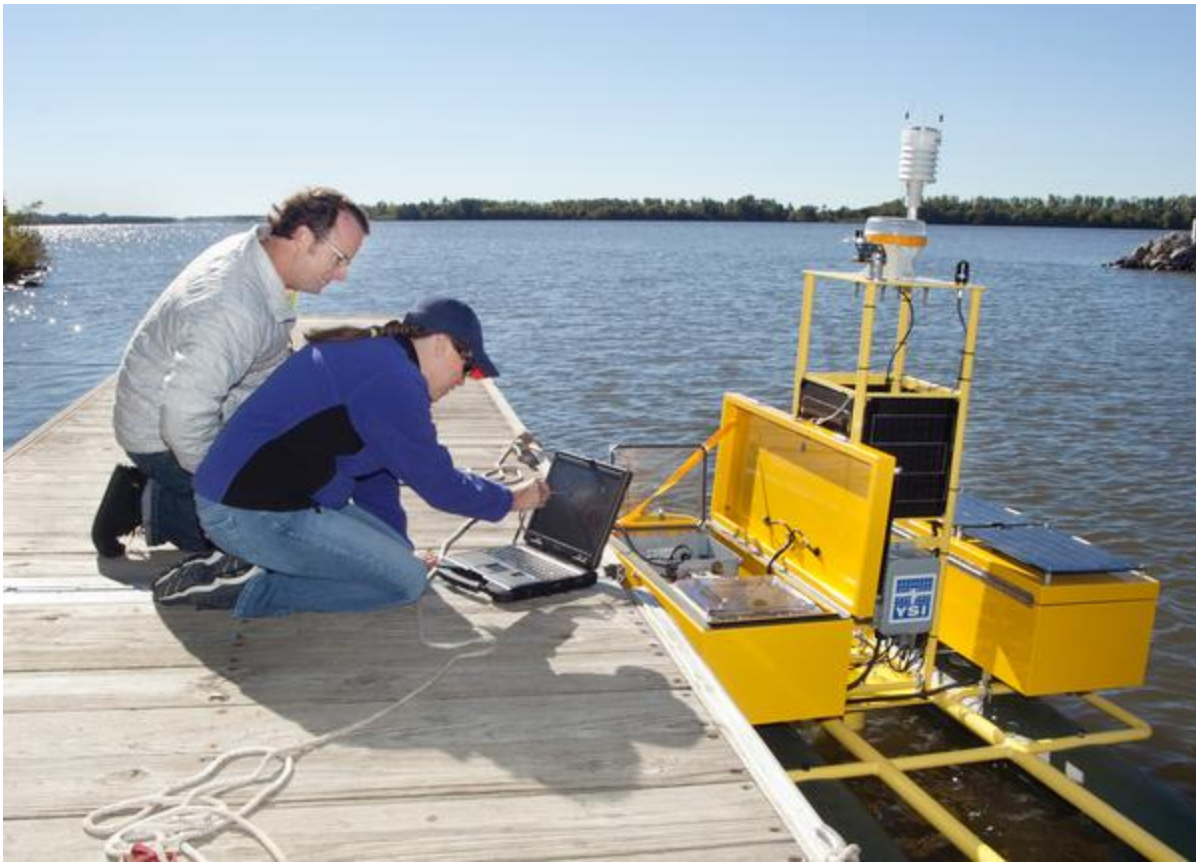
The data captured through GREON will be housed and utilized via the Great Lakes to Gulf Virtual Observatory Initiative, which was launched by NGRREC and its partners to advance data, knowledge and policy connections.

The initiative will help prioritize the reliable knowledge and related data needed to optimize large scale conservation programs, facilitate collaborations and data sharing, and enable automated data extraction interfaces with highly visual decision support tools, like maps and charts.

The focus of the Great Lakes to Gulf Virtual Observatory Initiative is directly relevant to the recent National Research Council considerations of the Mississippi River water quality problems. The NRC report emphasizes the need for more comprehensive river system monitoring, more effective data to knowledge approaches, the development of water quality indicators and standards, and policy development and implementation.

Recently, the Walton Family Foundation approved an NGRREC grant proposal to expand GREON and continue to develop the Great Lakes to Gulf Virtual Observatory Initiative. The main purpose of the grant is to develop high-quality data that will inform future management of the Mississippi River watershed.

The National Great Rivers Research and Education Center is a partnership of Lewis and Clark Community College, the University of Illinois at Urbana-Champaign, and the Prairie Research Institute’s Illinois Natural History Survey.



Lori Gittinger, Illinois Natural History Survey LTRMP Water Quality specialist, works with Kevin Simpson, YSI, Inc. Senior Project Manager for Global Systems and Services, as they launch PISCES (Pontoon for In-situ Characterization of Environmental Systems) into the Mississippi River for the first time in October 2012. Photo by S. Paige Allen, Lewis and Clark Community College photographer.

For more information about NGRREC visit www.ngrrec.org.

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