

NGRREC installs Water Quality Buoy on Clark Bridge

March 31 2015 9:53 PM



EAST ALTON – Boaters on the Upper Mississippi River (UMR) near Alton, Illinois, may notice a new buoy in the river attached to the Clark Bridge.

The device is a water quality monitoring buoy that researchers with the National Great Rivers Research and Education Center (NGRREC?) and the Illinois Natural History

Survey (INHS) – University of Illinois Urbana-Champaign, have recently tethered to the bridge.

The buoy is one of several identical water quality monitoring platforms that will be collecting data from the river for the Great Rivers Ecological Observatory Network (GREON?).

The mission of GREON? is to advance the understanding of large-floodplain river ecology by collecting and sharing high-resolution data on key water quality parameters with scientist, managers, and the general public.

“These water quality parameters are some of the basic information needed to track the health of river-floodplain ecosystems like the Upper Mississippi River,” said NGRREC? and INHS Aquatic Ecologist John Chick. “They are in many ways, analogous to the measures like blood pressure, heart rate, and temperature that your doctor uses to assess the health of patients.”

The strategy NGRREC? is employing to develop GREON? is to work with partners from academic institutions, government agencies, and other non-governmental organizations to create a global network of identical water quality monitoring platforms that will be deployed both in fixed monitoring locations and in mobile/short term research deployments.

Researchers with the INHS are part of a larger partnership that monitors fish communities, water quality and aquatic vegetation in the Mississippi River for the U.S. Army Corps of Engineer’s Upper Mississippi River Restoration (UMRR) program. Through these connections, five water quality platforms will be placed in the river this year, including two buoys near La Crosse, Wisconsin, two buoys in the Alton area, and one buoy near Cape Girardeau, Missouri.

The GREON? buoys deployed in all of these locations will collect data on water temperature, oxygen, conductivity, turbidity, chlorophyll-a, blue-green algae, nitrate and weather information.

A big advantage of the GREON? buoys is that data is collected once per hour, 24 hours per day, and much more data is able to be collected, as compared to traditional water quality monitoring that relies on spot sampling from boats.

“This near-real-time data collection provides more information on short term changes in these water quality parameters that were never available previously,” Chick said. “The information will greatly advance our ability to accurately track changes through time.”

The Clark Bridge deployment is the first deployment of a GREON? buoy on the main channel of the Upper Mississippi River. During the past two years, GREON? buoys have been deployed for testing and evaluation in backwater areas, including Ellis Bay, which is part of the U.S. Army Corps of Engineers’ Riverlands Migratory Bird Sanctuary and in a backwater lake near La Crosse, Wisconsin.

Deploying a GREON? buoy on the Clark Bridge required the permission and cooperation of the Illinois Department of Transportation, the U.S. Coast Guard, and the U.S. Army Corps of Engineers. Researchers with NGRREC? worked diligently with these agencies to insure that the buoy would be highly visible to boaters and would not damage the Clark Bridge.

The buoy is tethered to a float line that surrounds one of the Clark Bridge pillars. This float-line is designed to move up and down the pillar as river levels change. The GREON? buoy itself is equipped with a flashing beacon, making the buoy highly visible to boaters and commercial traffic at night.

The National Great Rivers Research and Education Center is a partnership of Lewis and Clark Community College and the University of Illinois at Urbana-Champaign. For more information, visit www.ngrrec.org.