

# 2014 WATER SUCCESS STORY

## Bureau of Water Quality



### Monitoring team collects samples for national/ statewide rivers study

By Camille Bruhn and Julia Riley, Wisconsin DNR

#### Monitoring Crew Sampled Difficult Locations

Using a 14-ft electrofishing mini-boom and an inflatable boat, a four-person crew from the Bureau of Water Quality completed sampling on 41 river sites across Wisconsin during the summer and fall of 2014. The 2014 rivers sampling season wrapped up the 2013-2014 National Rivers and Streams Assessment (NRSA) — a U.S. EPA-funded study to characterize the condition of the nation's river and stream population.

The NRSA study identified 27 required river sampling sites in Wisconsin for monitoring during 2014. The DNR crew sampled 14 additional sites to provide a more in-depth statewide characterization of river conditions.

Because the monitoring project randomly selected locations to sample, sites ranged from small muddy-bottomed rivers with unimproved launches and barely enough room to maneuver the boats, to multiple sites on the Mississippi River. The crew gained valuable monitoring experience, and the season was a success despite minor setbacks while sampling at some of the more challenging locations.



NRSA field crew members Camille Bruhn and Danielle Lenz braved the cold, rainy, windy weather in their inflatable boat on Pool 8 on the Mississippi River. DNR photo.



Upper Photo: Donn Edwards weighs a small mouth bass from the electrofishing mini-boom while on the Mississippi River. DNR photo.

Side Photo: Danielle Lenz observes the macroinvertebrates she caught in the D-Frame Kick Net. DNR photo.

# NRSA Monitoring Team (continued)

## EPA Sampling Protocols Were Followed

All sampling was done according to strict EPA protocols for the following physical, chemical, and biological parameters:

- Physical habitat, including:
  - ◊ Substrate information
  - ◊ Bank characteristics
  - ◊ Visual riparian estimates
  - ◊ Fish cover
  - ◊ Canopy density
  - ◊ Channel constraint
  - ◊ Thalweg depths, substrates, and channel habitats
- Water chemistry, including:
  - ◊ *In situ* measurements
  - ◊ Grabs for later lab analysis
  - ◊ Microcystin
- Periphyton
- Benthic macroinvertebrates
- Fish assemblage
  - ◊ Fish tissue plugs
  - ◊ Whole fish tissue
- Enterococci fecal indicator
- Sediment

The crew took the mean wetted width and multiplied it by 40 (with a maximum of 4000m) to calculate the reach length. This length of 40 times the channel width is necessary to characterize the habitat and several biotic assemblages within the reach. The reach length was then divided by 10, which gave 11 even-spaced transects where data was collected. Water chemistry and enterococci samples were only taken once throughout the reach. All other data was collected at each of the 11 transects within the reach. The data sheets were very detailed and organization was key to achieving both accuracy and success with this project.

Members of the NRSA sampling crew included Camille Bruhn, Danielle Lenz, Donn Edwards and



*Dragonfly nymphs, a benthic macroinvertebrate, from the Menominee River in Marinette County. DNR photo.*



*Kevin Olson weighs a lake sturgeon on the Wolf River in Waupaca County. DNR photo.*

Kevin Olson. There were many regional DNR biologists who helped the crew by sharing their knowledge of specific rivers and boat launches. Their knowledge made the sampling easier and quicker. Scott Harpold and Mike Sorge from DNR South Central Region Headquarters were instrumental in helping with field equipment and field training. This project could not have been completed without the assistance of other staff including Tim Asplund, Ryan Raab and Mike Miller. They all helped with project logistics, budget and EPA communications. Ron Arneson helped with the State Lab of Hygiene processes and Julia Riley helped with necessary trainings for the crew.

Ultimately, the data collected in the NRSA survey will be used to evaluate the condition of rivers and streams across the Nation. The survey data will be used to create statistically valid reports on the condition of water resources and help identify stressors to water resources. In total, 900 sites were sampled in the United States as streams classified by a Strahler order 1-4; and 900 sites were sampled as rivers classified by a Strahler order of 5 or higher. The survey also included revisiting sites from the 2008-2009 NRSA study in order to identify changes in river and stream conditions.

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