

Upper Midwest Environmental Sciences Center March 2011 Activity Report

Aquatic Ecosystem Health

Aquatic Antibiotics

- Mark Gaikowski and Theresa Schreier attended the [Eastern Fish Health Workshop](#) in Charleston, SC, March 29-31. Gaikowski moderated the special session, "Pondering the realities of antibiotic therapies," and presented, "Use of mortality and clinical signs in drug tolerance studies – a review of drug safety studies in fish." Schreier presented, "Assessing the Environmental Effects of Antibiotic Use in Aquaculture."

Climate Change

Terrestrial Wetland Global Change Research Network (TWGCRN)

- Walt Sadinski participated in a meeting and workshop with Canadian partners from the TWGCRN in Ottawa, ON, March 17-18. Sadinski gave two presentations on the UMESC Amphibian Research and Monitoring Initiative (ARMI)-led TWGCRN, one at a meeting with Environment Canada (EC) on March 17 and the other at the Canada Centre for Remote Sensing (CCRS) during the workshop on March 18. Scientists from EC and the CCRS are collaborators in the TWGCRN. The goal of the workshop was to advance understanding of how CCRS's development of new algorithms for processing data from Canada's Radarsat-2 satellite is leading to improved applications for studying changes in North American wetlands associated with global change, including wetlands being studied across the TWGCRN.

Great Lakes Restoration Initiative (GLRI)

Project #73, Avian Botulism in Distressed Great Lakes Environments

- Kevin Kenow and Mike Wellik attended the Great Lakes Wind Collaborative State of the Science Workshop on the Ecological Effects of Wind in Indianapolis, IN, March 9-10. Kenow presented the poster, "Ongoing Efforts to Determine the Distribution and Foraging Patterns of Waterbirds on Lake Michigan," by Kevin Kenow, Steven Houdek, Brian Lubinski, Timothy Fox, and Larry Robinson. During the past year, low-level, systematic waterbird surveys have been conducted in selected areas of Lake Michigan. The survey information has provided important new information on the distribution patterns of loons, scoters, long-tailed ducks, mergansers, grebes, and other waterbirds. Data on waterbird seasonal movement patterns and core use areas will also inform environmental impact assessment of potential wind turbine placement and contribute to the basis for identifying, evaluating, and recommending alternative wind farm sites.
- Kevin Kenow gave the presentation, "Research in Support of Common Loon Conservation," at the National Eagle Center in Wabasha, MN, March 12. The presentation covered the life history, current status of common loons in the Great Lakes region, and current research efforts that are underway to provide information to support the development and implementation of regional common loon conservation strategies.
- A story ("*The Sound of Silence*") was published in Minnesota Monthly magazine (*April hardcopy edition and [on-line](#)*) that focused on the plight of Minnesota's common loons following winter in the gulf after the Deepwater Horizon oil spill. Kevin Kenow was interviewed by assistant editor Ellen Burkhardt in January concerning USGS research on migration and wintering of common loons.

Project #80, Birds as Indicators of Contaminant Exposure

- Thomas Custer and Christine Custer met with representatives from the EPA, U.S. Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration (NOAA), U.S. Fish and Wildlife Service (FWS), and other USGS offices to discuss delisting of Areas of Concern (AOCs) via the Beneficial Use Impairment (BUI) process, March 8, in Chicago, IL. The Custers' GLRI project #80 collects data that can directly inform decisions on two important BUIs, "Bird or animal deformities or reproduction problems" and "Degradation of fish and wildlife populations." The Custers worked at twelve AOCs in 2010 and will add an additional three sites in 2011.
- Thomas Custer and Christine Custer gave a presentation on their wildlife toxicology projects and discussed potential collaboration options within the St. Louis River Area AOC, at the EPA Mid-Continent Ecology Division in Duluth, MN, March 30. While in Duluth the Custers also initiated FY 2011 field work for GLRI Project #80.

Mississippi River

Breeding Birds

- Eileen Kirsch gave the presentation, "Possible effects of an invasive plant, reed canary grass (*Phalaris arundinacea*), on the breeding bird assemblage in Upper Mississippi River floodplain forest," at the [joint meeting](#) of the Cooper Ornithological Society, Wilson Ornithological Society, and American Field Ornithologists Society in Kearny, NE, March 12.

Native Mussels

- Scientists from the Upper Midwest Environmental Sciences Center's Native Mussel Team were invited to give presentations at the annual Upper Mississippi River Basin's Interagency Mussel Coordination Team. This team is comprised of scientists and managers from the MN, WI, IL, and IA natural resource agencies, FWS, USACE, U.S. Coast Guard, National Park Service (NPS), and USGS. The team is responsible for directing and implementing native mussel research on the Upper Mississippi River, especially as it relates to implementing requirements of the biological opinion pertaining to the federally listed Higgins eye pearly mussel. UMESC scientists presented;
 - "A mussel community assessment tool for the Upper Mississippi River," by Teresa Newton, Steve Zigler, and Heidi Dunn.
 - "Response of native mussels to water level manipulation in the Upper Mississippi River," by Teresa Newton, Steve Zigler, Robert Kennedy, Ashley Hunt, Mike Davis and Patty Ries.
 - "Evaluation of host fish size on juvenile production of endangered winged mapleleaf mussels," by Mark Steingraeber and Teresa Newton.
 - "Hydrophysical models and community assemblage structure of native mussels in select reaches of the Upper Mississippi River," by Steve Zigler and Teresa Newton.

Vegetation Mapping

- Larry Robinson provided the USACE (*St. Paul District*) with an updated vegetation map of the Harpers Slough Habitat Restoration and Enhancement Project (HREP), located in lower Mississippi River navigation Pool 9. The vegetation map was created from 2010 color infrared aerial photography collected by UMESC for the Long Term Resource Monitoring Program (LTRMP), in conjunction with the 2010/2011 project to photograph and create vegetation maps of the Upper Mississippi River System. The Harpers Slough area is heavily used by tundra swans, Canada geese, puddle and diving ducks, black terns, nesting eagles, bitterns, and cormorants, and is a significant fish nursery area. Many of the islands have been eroded or lost due to wind generated waves and ice movement. The Harpers Slough HREP will reduce the flow of sediment-laden water into backwaters, promote plant growth, increase the diversity

of land and shoreline habitats, and provide waterfowl with protection from inclement weather. Harpers Slough is one of the few remaining areas in lower Pool 9 where high quality habitat can be maintained.

Wildlife Toxicology

- Thomas Custer presented the results of recent research on perfluorinated chemical (PFC) contamination in great blue heron eggs from the upper Mississippi River, at the [Waterbird Society conference](#) in Grand Island, NE, March 13-16.

National Fish Habitat

Workshops

- Ken Lubinski was invited to participate in a workshop of the American Farmland Trust, March 18 in Sycamore, IL. The workshop allowed twenty five farmers from the area to comment and discuss conservation opportunities relative to the upcoming Farm Bill. Lubinski used the opportunity to evaluate farmer reaction to the vision and priorities of the Fishers and Farmers Partnership, one of the National Fish Habitat Action Plan Partnerships. Lubinski serves as the Science Team Lead for this partnership.

National Park Mapping

Appalachian National Scenic Trail (APPA)

- Andrew Strassman and Jennifer Dieck attended the biennial [George Wright Society Conference](#) in New Orleans, LA, March 14-17, and presented the poster, "Vegetation Classification Tree of the Appalachian National Scenic Trail's Southern Blue Ridge Ecoregion." The poster showcased the community mapping process associated with the APPA Vegetation Mapping Project to the various federal agencies and partners associated with managing and maintaining the National Park System.

International Exchanges

Cooperative Agreements

- A contractual agreement between The Nature Conservancy's (TNC) Great Rivers Partnership (GRP) and the USGS UMESC was finalized to support Brian Ickes's service as a GRP Yangtze Fellow. Ickes will provide technical assistance and scientific guidance to the GRP and its Chinese partners, as they initiate official data collection on the Yangtze River using sampling methods also used on the Upper Mississippi River System for the USACE's Environmental Management Program (EMP). UMESC provides scientific research, analysis, and monitoring coordination and oversight for the EMP's LTRMP, authorized by Congress under the 1986 Water Resources Development Act. Ickes oversees LTRMP fishery monitoring and research activities. Ickes plans to travel to China in May, and will host a reciprocal visit from Chinese colleagues during the summer and fall. Contact: Yao Yin, yyin@usgs.gov.

Upcoming Meetings

- Yao Yin (*UMESC*) and Stephen Waste (*WFRC*) are two of four American scientists invited to the [Fourth Yangtze Forum](#), April 18-19 in Nanjing, China. Yin will co-chair the session, "Aquatic Ecosystem Protection and Restoration," and Waste will give the presentation, "Long-term Monitoring Strategies for Large River Systems: Developing the Basis for the Adaptive Fisheries Management in Response to Climate Change and Aquatic Invasive Species." After the Forum Yin and Waste will accompany the American delegation as they continue in a science exchange tour to Wuhan, Jianli, Yichang, and Beijing, China before returning to the U.S. April 26. TNC's GRP is leading the initiative of these cross-basin river science exchanges and Yin acts as its Director of International Strategies. USGS, in conjunction with the

USACE's EMP and LTRMP, is the primary science partner of the GRP. Contact: Yao Yin yyin@usgs.gov.

Other

Personnel

- Wayne Thogmartin was awarded the FWS Region 3 Award for Strategic Conservation in the category of notable project or team achievement, for his role in Golden-winged Warbler Conservation in the Upper Midwest, March 10. The Region 3 Award for Strategic Conservation is a means of recognizing the principles of Strategic Habitat Conservation (SHC) in action, recognizing individuals and teams who apply this approach in an exemplary manner to their conservation activities.

Acronyms

AOC – Areas of Concern
APPA – Appalachian National Scenic Trail
ARMI – Amphibian Research and Monitoring Initiative
BUFF – Buffalo National River
BUI – Beneficial Use Impairment
CCRS – Canada Centre for Remote Sensing
EC – Environment Canada
EMP – Environmental Management Program
EPA – Environmental Protection Agency
EUP – Experimental Use Permit
FWS – U.S. Fish and Wildlife Service
GLFC – Great Lakes Fishery Commission
GLRI – Great Lakes Restoration Initiative
GRP – Great River Partnership
HREP – Habitat Restoration and Enhancement Project
LiDAR – Light Detection And Ranging
LTRMP – Long Term Resource Monitoring Program
NOAA – National Oceanic and Atmospheric Administration
NPS – National Park Service
PFC – Perfluorinated Chemical
SHC – Strategic Habitat Conservation
TFM – a type of lampricide
TNC – The Nature Conservancy
TWGCRN - Terrestrial Wetland Global Change Research Network
UMESC – Upper Midwest Environmental Sciences Center
USACE – U.S. Army Corps of Engineers
USGS – U.S. Geological Survey
WFRC – Western Fisheries Research Center