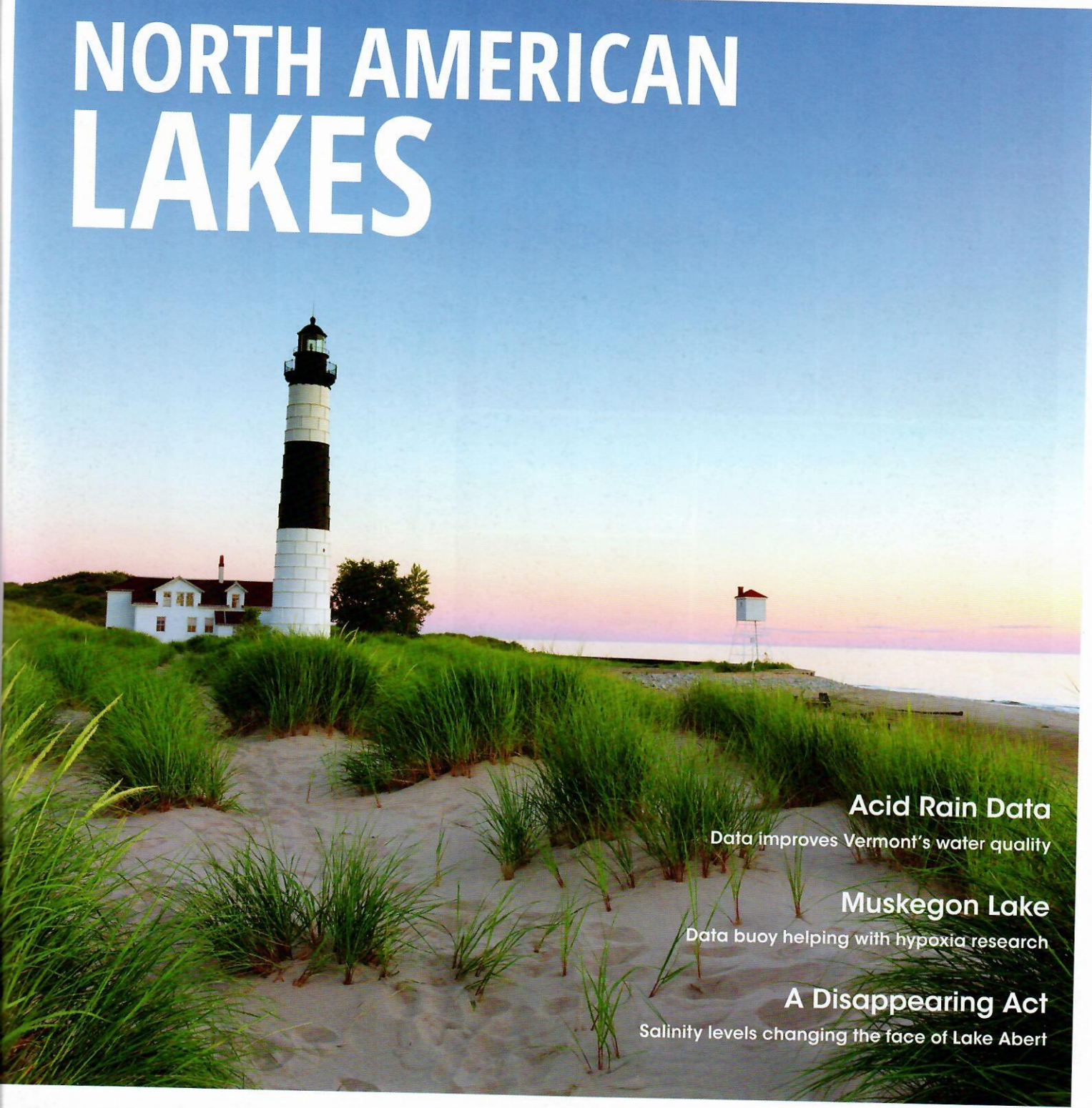


ENVIRONMENTAL monitor

SUMMER 2018

APPLICATION AND TECHNOLOGY NEWS FOR ENVIRONMENTAL PROFESSIONALS

NORTH AMERICAN LAKES



Acid Rain Data

Data improves Vermont's water quality

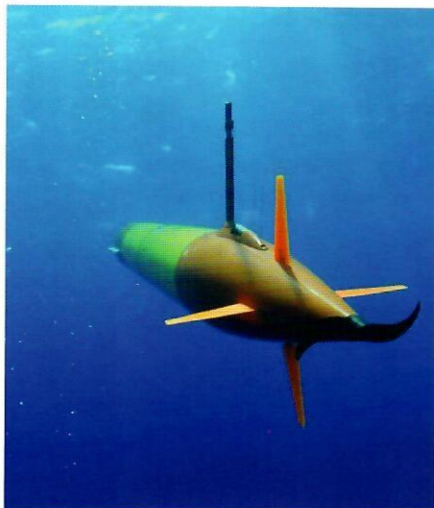
Muskegon Lake

Data buoy helping with hypoxia research

A Disappearing Act

Salinity levels changing the face of Lake Abert

IN THE NEWS



Monitoring and Tracking Ocean Microbes with LRAUVs

Researchers for the University of Hawai'i at Mānoa and Monterey Bay Aquarium Research Institute deployed a small fleet of long-range autonomous underwater vehicles (LRAUVs) in the waters of the Pacific near Hawaii. The LRAUVs automatically collect and archive samples of seawater, enabling scientists to study and track ocean microbes. The team who undertook the expedition was hoping to survey and track Mesoscale eddies within the North Pacific Subtropical Gyre using a suite of oceanographic instruments. Eddies give oceans their swirling, circular motion, as they move against the main water currents of the ecosystem as a whole. The expedition was one-month long, divided into two, two-week long legs.

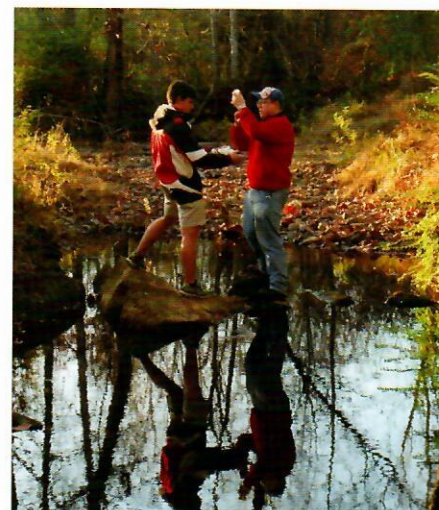
Now that the LRAUVs have all been recovered and are back in the lab, the team can extract DNA from their filters. The DNA can show how long eddies last, how stable they are, and how they influence ocean systems. The team will use this data to improve current ocean models and, by extension, the predictions of ocean health in the future.



Jacques Cousteau NERR Serves Up Vast Research Possibilities

The 116,000 acres of the Jacques Cousteau National Estuarine Research Reserve (JC NERR) on the coast of New Jersey flourishes with both animals and researchers. Gregg Sakowicz, Field Researcher at Rutgers University and System-Wide Monitoring Program (SWMP) Coordinator at JC NERR since 2003. He and other NERR trainers help to educate new field technicians on SWMP protocol and how to use monitoring equipment.

In addition to the SWMP protocols followed, Sakowicz and others at JC NERR also develop new protocols within the ones provided by the area's NERR. The intent is to expand upon the successful, existing SWMP protocols in place. "We use sondes to gather data on dissolved oxygen, temperature, conductivity, pH, and turbidity. We also conduct a complimentary sampling program that tracks nutrients like nitrogen, phosphorus, and ammonium. We were using YSI 6 series sondes in the early years, but we were able to upgrade following Hurricane Sandy in 2012, and now we've graduated to the newer EXO2 sondes. We would also like to add the total algal probe" said Sakowicz.



Riverkeeper Initiative Tackles Water Monitoring, Activism And Education

Coosa River is a vital part of the communities surrounding it. The river provides drinking water to several municipalities as well as recreation to the citizens. The river is also home to close to 30 endemic species that can't be found anywhere else, the highest percentage in North America. The Coosa River Basin Initiative (CRBI) ensures that surrounding facilities adhere to the standards of the U.S. Environmental Protection Agency's Clean Water Act.

A grassroots environmental protection organization, the CRBI volunteers to protect the Coosa River in Georgia, and is forming a water monitoring partnership with the Berry College Environmental Science program.

The CBRI trains volunteers how to collect monthly water samples from select data points along the river using Lamotte monitoring kits. Now, due to the partnership with Berry College, CBRI will have access to more water monitoring equipment. The tentative plan includes college staff training CBRI volunteers to use equipment including GPS-enabled data loggers. Students of Berry College will also use data collected from the river for their research.