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'The pulse of the watershed'

\$2M grant will allow UVM to study water quality in Vermont, in real time

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Lake Champlain, with Grand Isle in the foreground, is seen in this aerial photo from 2006. The University of Vermont has received a \$2 million grant to study and monitor the Champlain Valley watershed. / Free Press file

Written by
Free Press Staff

A national grant could help answer important questions about water quality in Vermont and beyond.

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The University of Vermont will receive \$2 million from the National Science Foundation to frequently sample and record the chemical composition of water in Potash Brook in Chittenden County, and in the Missisquoi River watershed.

The NSF grant awards a total of \$6 million to Vermont, Rhode Island and Delaware.

In Vermont, new, advanced optical sensors will gather data

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underwater, transmit the information remotely and provide a moment-to-moment, biochemical portrait, according to a statement released Friday by UVM.

Oxygen, dissolved organic matter, suspended sediments, nitrates, biological pigments and more can be monitored using the sensors. Phosphorus and algae, both of which are problematic in Lake Champlain, could be better understood thanks to the research, the release states.

“You can liken it to taking the pulse of the watershed,” UVM assistant professor of geology Andrew Schroth, one of about 20 researchers involved in the project, said in a statement.

The new data might also be used to measure perceptions and behaviors of residents, land-use managers, farmers, business owners, regulators, the statement adds.

The University's Experimental Program to Stimulate Competitive Research (EPSCoR) will take a leadership role in the project, gathering data across the three states and launching a network of lab- and field-based experiments to find how to most effectively present data.

The new sensors draw on designs originally used in oceanography and can measure properties of the water every few seconds, Schroth said. Those include dissolved oxygen and organic matter, suspended sediments, nitrates, biological pigments and other information.

The data will “provide unique and unparalleled insight into the environmental drivers of water quality across the region and how they vary in both time and space,” Schroth said.

In algae-threatened portions of Lake Champlain, the sensors will help scientists better understand the underlying phosphorous problem, says Schroth: “We’ll be able to get a much better estimate of when and why more sediments and nutrients are coming out of the watershed during specific times of the year or specific storm events.”

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