

BYU students, community participate in citizen science project to improve Utah Lake

By **Auburn Remington** - March 7, 2018



Gabriella Loosle receives help sampling water at the last sampling field trip. This field trip marked the start of many sampling trips that will occur during this project. (BYU Photo: Nate Edwards)

A BYU professor and students are working on a water sampling project to improve Utah Lake. This project aims to identify the source of pollutants and where they can be best minimized.

Utah Lake is plagued by eutrophication, which is when excess nutrients like nitrogen and phosphorus enter the water systems.

According to project member and BYU student Rhetta Shoemaker, the extra nutrients cause plant and algae to grow very rapidly and accumulate at the surface, which can block the light from shining on other plants below the surface.

"Bacteria decompose the algae in a process that uses much of the dissolved oxygen available in the water and often leaves fish and other aquatic wildlife in 'dead zones,' where there is too little oxygen for them to live," Shoemaker said.

Project members are trying to sample as many sites as possible.

"We plan to find the places where these nutrients and pollutants are leaching from soils into the streams and rivers the most," said Jansen Howe, a BYU student involved in the project.

BYU professor Ben Abbott, an ecosystem ecologist and the project director, said the project is focused on sampling by rivers and streams that lead into Utah Lake because they are “sensors of ecosystem health.”

“Sampling many places in the river network gives you a high-resolution image, like a computer or a phone screen. If you have more points, you can see more clearly what is going on in a system,” Abbott said. “What’s neat about a river is that it’s a natural organization, and the river has created this tree-like form that extends out into the landscape, and then if we listen to the river or analyze the chemistry of the river, it can tell us what’s happening.”

Abbott said the goal of the project is to identify the non-point sources of nutrients to Utah Lake, or in other words, the nutrients flowing into the lake from things other than pipes. Non-point nutrients include things that flow through the soil, such as fertilizer or contaminated storm water.

“The other purpose of the study is to get people connected to their watershed, so we appreciate and value what we understand and know,” Abbott said. “If people spend time around Utah Lake and in the rivers flowing to Utah Lake, they’ll realize that this isn’t a trashed or destroyed ecosystem, it’s a beautiful and vibrant environment.”

According to Abbott, there are many multi-million dollar proposals on the table to try to fix the “Utah Lake problem,” but this sampling and study aims to find a simpler and relatively inexpensive fix.

“Our hypothesis of this study is that some minor but fundamental changes could improve water quality while maintaining a more natural ecosystem, which is good for things living in the lake and good for the people living in the valley,” Abbott said.

The research team hosted a water sampling event on Saturday, March 10 and invited citizens to help.

Many organizations from the area, including the Division of Natural Resources, UVU clubs, BYU clubs, high school students and others participated.

“We want to give everyone the chance to be a citizen scientist,” Howe said.

To find out more information visit the group’s [website](#).

Auburn Remington

Auburn is a News Media major at BYU covering the campus desk. She is originally from Canada, and love