

# HEALING TROUBLED WATERS

**W**hen Jared Randall started college he thought academic scholarships and undergraduate research would be out of his reach.

“I never imagined I’d be participating in the caliber of research I’m now doing,” says Randall, who is completing a bachelor’s degree in fisheries and aquatic science at Utah State University. “I didn’t think my academic skills were strong enough. But now that I’ve had the opportunity to pursue research, it’s given me a lot of confidence. Perhaps my work can contribute to repairing a part of the world that’s been overused by humans. To me, that’s really fulfilling.”

Randall was awarded a spring 2008 USU Undergraduate Research and Creative Opportunities grant to pursue his project *“How the Piscicide Rotenone Affects Aquatic Invertebrates in Timber Creek, Utah.”*

“Piscicides are substances used to kill fish,” he says. “One of these – Rotenone – is widely used



URCO grant recipient Jared Randall, an undergrad researcher in the Department of Watershed Sciences, is studying the impact of chemicals used to eradicate nuisance fish on Utah’s streams.

to control nuisance fish in waterways throughout the world. But not much is known about its long-term impact on the broader aquatic community.”

The process of designing and conducting the research project, he says, has allowed him to follow his ideas and think of ways to make a difference.

“To undertake this kind of project you have to believe in yourself and be persistent,” he says. “At USU, I’ve found professors who encourage students with these kinds of projects.

With guidance from Department of Watershed Sciences faculty mentors Mark Vinson, Brett Roper and Chris Luecke, Randall spent the summer collecting samples from various streams in Logan Canyon including waterways treated with rotenone.

“Rotenone and another piscicide, antimycin A, have been used for more than 70 years to eliminate undesirable fish species,” Vinson says. “While piscicides are intended to eradicate fish, they are also toxic to non-target aquatic biota, such as invertebrates and amphibians. Jared’s work will evaluate how to reduce impacts to these important native species so that native fish can be restored and non-targeted organisms remain unharmed.”

Randall says the effects of rotenone have been studied before but not in an extensive manner. “We need more data to determine the full extent of the chemical’s impact.”

His research project is designed to improve techniques for restoring imperiled native trout to streams throughout the western United States.

Prior to enrolling at USU, the Tempe, Ariz., native studied at various campuses without finding his niche.

“I had good experiences at other schools but the emphasis seemed to be more on grades than learning,” he says.

A summer job with the U.S. Forest Service in Utah’s Ashley National Forest introduced him to the many facets of fisheries biology.

“I enjoyed being out in the back country and the work was very interesting,” Randall says. “I had good mentors and noticed that all of them were graduates of Utah State. I decided to look into USU’s watershed sciences program.”

Upon enrolling at Utah State, Randall discovered a unique, collegial atmosphere in the College of Natural Resources.

“I’ve enjoyed every minute of my classes,” he says. “The professors obviously love what they do, and their enthusiasm puts you on fire.”

In addition to his URCO grant, Randall earned scholarships through the college including the William F. Sigler Scholarship, the American Fisheries Society Future Fisheries Scholarship and the TAC Environmental Consulting Watershed Science Scholarship.

“With these scholarships, I’ve been able to pursue research and school without an outside job,” he says. “I feel a real sense of purpose about my work.”

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August 2008*