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Biodiversity helps students get a feel for water quality

Students Megan Ferguson, left, and Sarra Moller, above, and stream biologist and teacher Robert Miron talk over the prospects of what kind of bugs they'll find in City Creek on a New Horizons field trip. Journal photo by D. Lindley.

POCATELLO - Ten New Horizon High School students sat in a groups of three and four on the bank of tiny City Creek Tuesday, picking insects out of a plastic tray full of sediment - leaves, water and mud kicked up from the creek bed and scooped in nets.

“Look at this one,” junior Megan Ferguson said, pointing to a caddis fly larvae curled up in the petri dish. “It's got a furry tail.” They used tweezers to pluck the insects from the muck, put them in a petri dish to count them before bagging the bugs to view later under a microscope.

“This is cool because we get to see the (insects') different sizes, how they grow, how they change and you can tell the ones that are the same from when they are little to when they get bigger, and how they move differently,” said junior Candice Bishop. “In a little amount of this stuff, there are a lot of them.” New Horizons biology teacher Robert Miron said these Field Biology and Biology B students are not just learning about the insects that live in streams, they are studying how biodiversity is an indicator of water quality.

The project was the collaborative brainchild of Miron and GK-12 fellow Jason Jones, an Idaho State University graduate student studying the ecology of stream dwelling amphibians. Jones is one of 16 ISU graduate and undergraduate students funded by a $1.9 million GK-12 National Science Foundation grant to serve as visiting scientists to southeast Idaho classrooms.

“(The students) are learning about the relationships between the stream and how certain animals exchange nutrients,” Jones said. “We are sampling this to look at how the insect community changes over time, especially in the face of development and other changes facing City Creek.” The field trip Tuesday was the first of a multi-year class project to establish a baseline for water

quality in City Creek. Miron's students will monitor the same places in the stream at least once a year to see if environmental changes will impact the stream's biodiversity over time and use that data to determine its water quality.

“One of the points we are stressing are ecosystems that have a lot of biodiversity tend to be healthier, and we will be using this data to see if there is any change in biodiversity (in City Creek) over the next few years,” Miron said. “What I am really excited about is motivating students by having them get involved in real life applications of science in general.” The strategy seemed to work.

“I think it's cool. I'm glad we're out here rather than looking at books,” Ferguson said, standing in the stream holding a kick net to collect more sediment samples for her group to examine. Her sentiments were echoed over and over.

“This gives us a hands-on grasp of what we are doing. It's better than learning from a textbook,” Bishop said. “It is better because we can touch it, we can remember it better, too.” For many students, it was their first look at what biologists do in the field.

“I think this is interesting. I've never done anything like this before,” freshman Jacob Yoo said, with tweezer in hand, picking through the leaves and mud, looking for more insects.
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