IMPACT

University of Idaho Extension

Water Quality Extension Program
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Citizen scientists engage in watershed inquiry

The Situation

Maintaining water quality integrity in the state of Idaho is necessary to ensure a safe water source for drinking, recreating and to support fisheries and wildlife. A wide range of pollutants are loaded into water bodies each day which have the potential of threatening these beneficial uses. Monitoring water quality is our best defense against these impairments affecting our ability to use and enjoy these waters, however shrinking budgets within land management agencies has made this task difficult.

Water is a top concern of not only the residents of Idaho, but also to the local governments that must ensure an available supply of safe, clean water while supporting industries such as agriculture, timber and mining. In order for these two worlds to co-exist, the public must become educated on the issues and have a better understanding of how their role in the eco-system affects that balance. Citizen science is one way to engage individuals, by immersing them into the process—they too can become part of the solution.

Our Response

The IDAH$_2$O Master Water Steward program was created by University of Idaho Extension initially in northern Idaho to engage the public in water quality management through volunteer monitoring. It has since spread throughout the state, but the three founding goals still apply:

1. Increase citizen knowledge on water quality issues;
2. Promote volunteer water quality monitoring on Idaho streams; and
3. Enhance watershed stewardship.

Paul Buckland, with his son and Jessica Erickson assess the pH of Sand Creek in Bonner County, Idaho.

The IDAH$_2$O program has taken advantage of the very successful "Master" Extension model through the certification of their volunteers as Master Water Stewards. Upon completion of an 8-hour workshop (4 hours in the classroom and 4 hours in the field), the Stewards are prepared to develop monitoring plans and conduct various water quality assessments on waterbodies of their choice. By giving volunteers the opportunity to "adopt" a portion of a stream, river or lake, it enhances the sense of ownership within the program.

Sites are monitored throughout the year with three different assessments. The habitat assessment makes observations on the stream channel and substrate, the riparian community, streambanks and the surrounding landuse. The physical and chemical assessment measures water clarity, temperature, pH, dissolved oxygen, depth and flow. Finally, biological assessments encourage volunteers to conduct benthic

macroinvertebrate (aquatic insect) sampling to link particular species to the water quality conditions. Users upload the data they collect to a publicly accessible database. Since the fall of 2010, over 100 volunteers have been trained.

Program Outcomes

Program evaluations show that 75% of certified volunteers plan to register and conduct monitoring. Over half of certified volunteers stated they would become more involved in watershed activities and restoration. Responses were very similar when asked whether or not they would educate others on topics they learned in class. Other successes include:

- Over 20 subwatersheds monitored
- Nearly 50 additional youth trained
- Traditional and non-traditional classroom incorporation
- Quality Assurance Project Plan (QAPP) approved by the EPA
- Nearly $100,000 in external funding secured

The success of IDAH$_2$O will lead to better coordination between citizens and agencies on water resource matters, and in turn, promote stewardship within Idaho watersheds which will ultimately lead to improved water quality.

Additional monitoring opportunities

Twice a year, IDAH$_2$O supports snapshot sampling events where volunteers collect grab samples from their site to be analyzed for nutrients and bacteria in the laboratory, parameters not easily tested in the field. At each event, over fifteen sites were tested for Nitrate-N, total Phosphorus, total Coliform and *E. coli*. Our program has allowed for some of these sites, which had never been tested before, to be analyzed for some of the most common impairments in Idaho's waters. Results have allowed for more targeted and efficient monitoring by management agencies such as Idaho Department of Environmental Quality.

Cooperators and Co-Sponsors
University of Idaho Extension
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Idaho Department of Environmental Quality
Coeur d'Alene Tribe
City of Coeur d'Alene
US Environmental Protection Agency
US Fish and Wildlife Service
Boise Environmental Education Center
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Idaho Master Naturalists

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