

UNIVERSITY OF IDAHO EXTENSION UPDATE

WaterWatch

University of Idaho, U.S. Department of Agriculture, and Idaho counties cooperating.

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MWS Annual Meeting

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story by Ashley McFarland

The new year brings many exciting opportunities within the IDAH₂O program. My position recently changed from serving as the Benewah County Extension Educator to the newly created Area Extension Educator for Water Quality. This allows me to focus on water quality education and outreach for the northern ten counties in Idaho—including the Master Water Steward program.

I am very excited about this opportunity and want to thank Extension and the Coeur d'Alene Center for all of their support through this transition. I will now be permanently housed at the UI Coeur d'Alene Center which provides better access to many more of my volunteers. I would also like to thank everyone that voiced support for this position!

The other new exciting change is the addition of a Program Assistant which will be funded half-time for two years through the EPA Environmental Education grant we received this past year. I was fortunate

enough to bring CharLene Gibson on board who already serves as the Lab Manager at the Coeur d'Alene Center. Her expertise and skills are a tremendous addition to the team. Please check out her bio on page 2. You will begin to see correspondence from her very soon.

A big thanks to everyone that participated in the water quality snapshot this Fall! I feel we gained some very valuable information and I have summarized those results on page 3. Hopefully the weather cooperates in the Spring to host another event.

Finally, I would like to wish everyone a safe and happy holiday season.

Happy Monitoring,



Ashley McFarland
IDAH₂O Program Coordinator
UI Area Extension Educator



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Program assistant now on staff

story by Ashley McFarland

Hello, my name is Charlene Gibson and I am so excited to be part of the IDAH₂O team. I wanted to share a little about myself. My family is all from the Silver Valley, although as a child we moved around a lot while my dad was in the military. We came back to live in the Coeur d'Alene area in 1992, where I started high school. After finishing high school early, I attended North Idaho College where I received my Associates of Science Degree. I then decided I needed to spread my wings and moved to California to attend the University of California, Santa Cruz. I complete my bachelor's degree in molecular, cellular and developmental biology and started working for a small biotech company where I was working on gene therapy applications and cancer drug discovery projects. While I was in California I meet my husband and after a few years of marriage

we decided to start a family, and naturally I found myself needing to come home.

After taking a couple years off with my two beautiful daughters, I found a job listing for a scientific aide with the University of Idaho here in Coeur d'Alene. I have continued to work as a scientific aide and lab manager at the University of Idaho since the summer of 2008. In this position I carry out research projects involving nanoparticles and



detection of *E. coli*, as well as helping IMBRE interns from NIC carry out summer research projects. In my position in the lab I have had the privilege of sitting on the advisory board of IDAH₂O, as well as carrying out the lab test involved in the snapshot events. When I heard Ashley was looking for a program assistant I jumped at the chance to get more involved with this great program.

I understand, both from a scientific and personal level the importance of monitoring our waterways. I feel strongly that each of us can make a splash in the world around us, but in order to create the biggest splash we need to work together as a team with consistency and determination. I think this program is going to have an impact on all the communities and their waterways and thankful I get to continue to be part of it.

Fall 2011 Snapshot Results

story and map by Ashley McFarland

On Thursday, October 6th, 11 different MWS volunteers collected water samples at 15 sites throughout north Idaho. Thank you to everyone that participated in this event and for getting your samples to the Center in a timely manner. Things went very smoothly for our first Snapshot Event which makes me very excited for more events in the future!

Charlene Gibson, lab manager and now program assistant led the lab analysis and Janet Conlin, MWS volunteer from Lake Cocolalla and I assisted. Thanks Janet for all of you help that evening! In the lab we tested for Nitrate, Total Phosphorus, Total Coliform and *E. coli*.

Testing ranges for Nitrate were between 0.23—13.50 mg/L. To put this into perspective, EPA drinking water standards requires levels below 10 mg/L. All sites but two—one stream feeding Lake Cocolalla and one feeding Hauser Lake even had detectable levels, however both stayed under 1.0 mg/L.

Phosphorus levels were very similar. Testing ranges for Total Phosphorus were between 0.05—1.5 mg/L. The same two sites that had detectable levels of Nitrate also had Phosphorus, which we would expect to see. One other site—along Cougar Creek also had very low levels of Total Phosphorus detected.

Bacteria levels tested told another story. Lab analysis looked at both Total Coliform—all bacteria present in the system, and *E. coli*—a very well-known specific bacteria found in all warm-blooded organisms. Total Coliform and *E. coli* values are expressed in MPN/100 mL or Most Probable Number/100 mL of sample water. The lab analysis used can only detect *E. coli* bacteria up to 2419.6 MPN/100 mL. In order to get a count above that, we would have had to dilute the sample and run it again. However, since the 2419.6 MPN/100 mL far exceeds water quality standards, we did not feel dilution was necessary.

Snapshot results continued...

Although levels at a many of the sites were very high, caution needs to be taken when interpreting the results. Bacteria is a pollutant that can often times be very flashy in a system. Idaho DEQ has established a set of testing criterion to determine whether or not a waterway is adversely being affected by bacteria. This guidance is explained below:

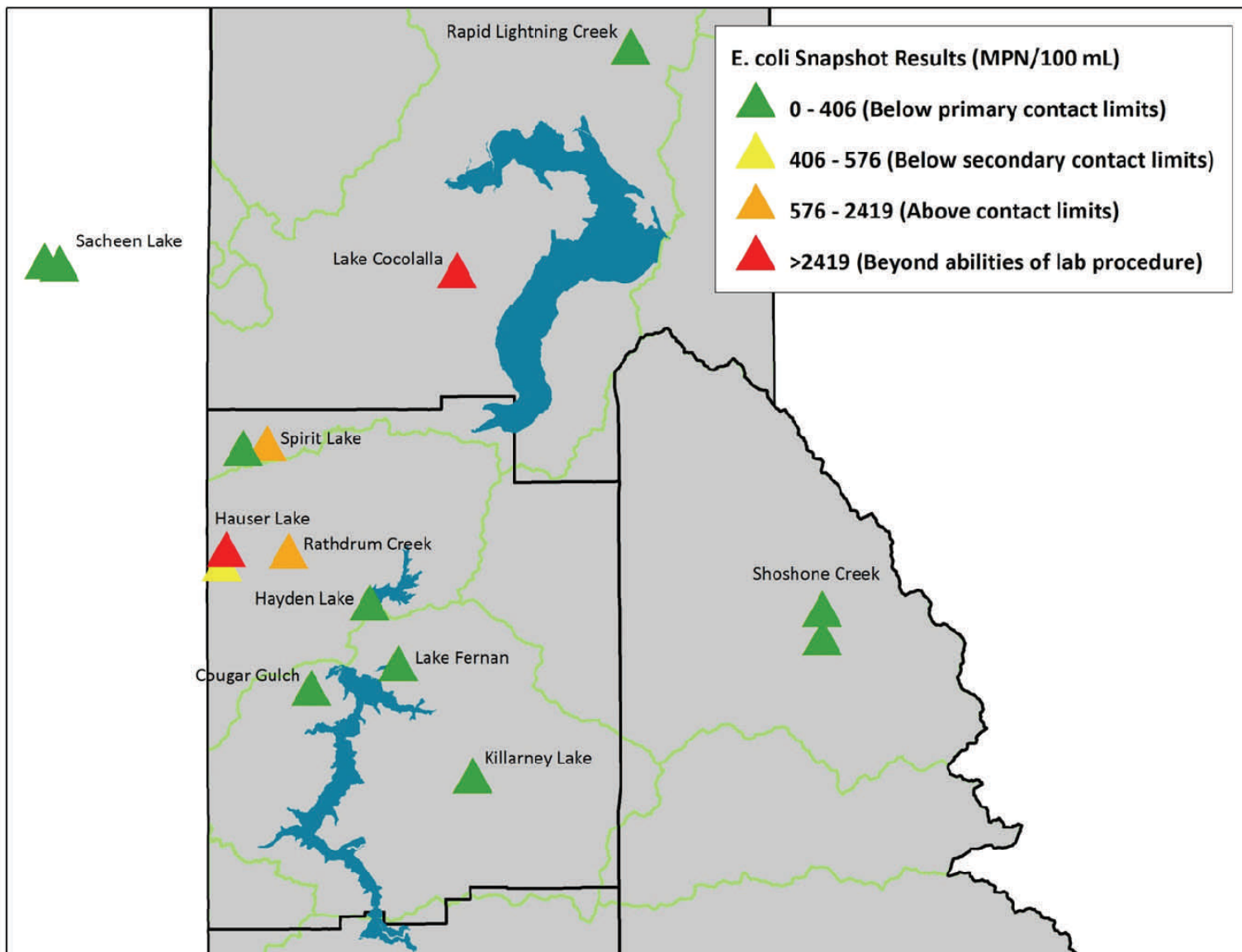
- **Geometric Mean Criterion.** Waters designated for primary or secondary contact recreation are not to contain *E. coli* bacteria in concentrations exceeding a geometric mean of

126 *E. coli* organisms per 100 mL based on a *minimum of five samples collected every three to seven days over a 30-day period.*

- **Use of Single Sample Values.** A water sample exceeding the *E. coli* single sample maxima specified below indicates a likely exceedance of the geometric mean criterion, but is not alone a violation of water quality standards. If a single sample exceeds those maximum values, then additional samples must be collected as specified below for additional sampling. For

waters designated as secondary contact recreation, the single sample maximum is 576 *E. coli* organisms/100 mL. For waters designated as primary contact recreation, the single sample maximum is 406 *E. coli* organisms/100 mL. For areas within waters designated for primary contact recreation that are additionally specified as public swimming beaches, the single sample maximum is 235 *E. coli* organisms/100 mL.

I have developed a map that I feel best represents the *E. coli* bacteria Snapshot results.



WaterWatch

First Annual Meeting a great success

story by Ashley McFarland

The First Annual Meeting of the IDAH₂O program was a huge success! Thank you to everyone that came out that evening to enjoy some great food and very informative educational presentations.

I was also very excited to see all of the networking that was going on—between the MWS volunteers and those that serve on my Advisory Board. I think it is very important to have information exchange between these two groups so that we can grow this program in a way that is beneficial for both the volunteers and agencies and institutions.

Nearly 30 individuals shared in some great fare at Daanen’s Deli on November 8th before hearing about program updates. Grant achievements and personnel changes were announced. Tom Herron, Surface Water Program Manager with DEQ in Coeur d’Alene shared some reflections on the recent bacteria results gained from the Fall Snapshot event.

Finally, Chet Hagen, someone who was contracted through the program to migrate our water quality data into a Hydrologic Information System (HIS), showed us new tools

and ways to access the data you are collecting. We’re hoping to launch many of those ideas presented this Winter—stay tuned for updates!

Thanks again for those of you that participated, and for those of you that did not, I sure hope to see you next year! If you have any suggestions or comments regarding this year’s event, please feel free to share those with us at idah2o@uidaho.ed so that we can keep improving!

Happy Holidays

*to all my Master Water Steward Volunteers,
Program Partners and Supporters! - Ashley*

