Partnership for the Umpqua Rivers March 2014

Fish Tales

Maintaining water quality and fish populations from source to sea in the streams of the Umpqua

8th Issue

Dan Jenkins and Eric Riley in WFSR.

Upcoming Events

March 18th Tuesday 9:00 am	**PUR General Meeting** ODFW Offices Roseburg, OR
April 4th Saturday 10:00 am	**Earth Day Fair** DC Fairgrounds
April 21st Monday	**OWEB Grants Due** Office will be busy!
Mid-May	**Derby Grants Due** Start planning your projects!

Truck-mounted cable yarder used to pull logs into place in Scholfeild Creek.

West Fork Smith River

A dominating force in 2013

By Matt Ruwaldt

For restoration work in the lower Umpqua system, 2013 was dominated by the West Fork Smith River (WFSR) project. My work began in earnest on WFSR much earlier than is usual for projects — February! Normally, the few months after the holidays are spent writing reports and getting geared up for OWEB grant writing. In the winter of 2013, however, PUR staff and partners were facing the harsh elements of the WFSR.

Due to in-water work period restrictions, we have only a brief two-month window in which we can work in the streams. This means that we try to have as many materials staged and ready to go as possible so that when July 1st arrives we can "jump right in." On a typical project, staging would begin a week or two before implementation. However, time and time again the WFSR project has proven to be less than typical. We had funding to place more than 8,000 boulders throughout 45 structures on the mainstem. That's a lot of boulders—certainly more than we have ever dealt with before. And the size! They all needed to be at least 1.5 cubic yards, which equals about 5,000 pounds! A standard "tub" style rock truck could only carry 12-14 boulders at a time so that meant that more than 600 trips were needed. WFSR is located in the middle of nowhere so the trucks had about a four-hour turn-around time.

(continued on page 7)

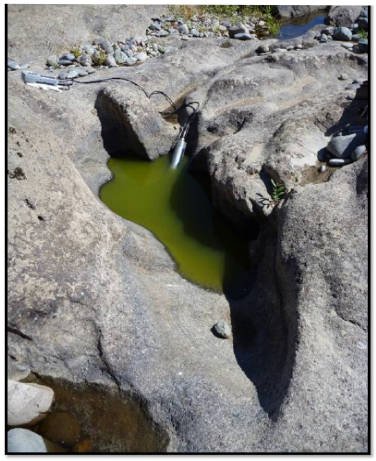
Notes from the Executive Director

This past year has been another spectacular, if not monumental, year for the Partnership for the Umpqua Rivers. Januar 2013 marked the 20th anniversary of the Council, an event we celebrated with our partners, volunteers, and friends in July. Although we have grown over the years, the original founding principles that established this organization persist today. What I most remember of 2013 is how this organization responds to each of the daily challenges that face a non-profit organization. Amid all of the challenges and opportunities PUR completed an enormous amount of work this past year, which was only possible because of the efforts of a remarkable staff, a devoted board and many outstanding partners. As we eagerly look ahead to the next 20 years, it is my desire for PUR to grow as a vibrant and vital organization within the community and to be known as a leader in watershed stewardship and collaboration throughout the state. In contemplating the coming year, I am excited to say that 2014 is shaping up to be another great year. While we negotiate the daily obstacles that a watershed council faces, I look forward the coming months as we gear up for another thrilling field season. Thank you to all of our members, partners, volunteers, funders and general supporters; without you we would have a much different story to tell.

Eric Riley
(541) 673-5756 ext. 159
info@umpquarivers.org

Monitoring Mystery

This summer provided some interesting information for our study of harmful blue-green algae (BGA), more correctly referred to as cyanobacteria because they are bacteria, not algae. With a grant from Oregon Department of Environmental Quality, we have been trying to assess the amount, distribution and species of cyanobacteria which is capable of producing a toxin that has killed dogs along the Umpqua and South Umpqua Rivers.



September 18, 2013
Pothole near railroad trestle that crosses the South Umpqua at Myrtle Creek.

For the past two years, our YSI probe has been indicating the presence of BGA in potholes along the South Umpqua River in our study area between Canyonville and Boomer Hill. We have sent samples for algae identification and counts to two laboratories both of which were unable to identify the presence of any BGA. This left us rather perplexed as the YSI probe, though not able to indicate precise amounts of BGA, is widely used for detecting its presence and relative quantities. We check that it is working properly with rodamine dye which fluoresces at the same wavelength as BGA and is used to assure that the probe is working properly. All equipment appeared to be working properly and the potholes certainly visually appeared to contain BGAs (See photo). What was going on??

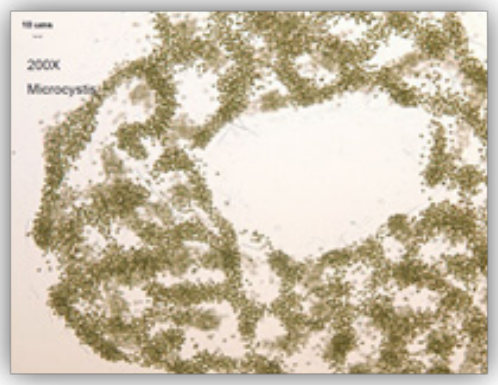
After numerous calls and much researching, we decided to contact Wayne Carmichael, Professor Emeritus from Wright State University in Ohio, who has retired to Seaside, Oregon and now runs his own consulting business. Dr. Carmichael is considered by many to be the world's foremost expert in cyanobacteria. He said he would be happy to look at some samples from us. The only problem was that by then it was July and all of the potholes had dried up. Luckily, this year no BGA had been detected in the river. Well, Mother Nature stepped in and sent some rain in August. Some potholes refilled and during our next monitoring run On September 16th we found a few potholes looking very suspicious and the YSI probe indicated that there were approximately 61,000 BGA cells/ml, which was concerning. We immediately contacted Dr. Carmichael and arranged to send him a fresh sample on September 18th.

The Results:

"Cyanobacteria or blue-green algae (Cyanophyta) were present in the water sample. The potentially toxic colonial unicell cyanobacteria, Genus-Microcystis was dominant. Microcystis can produce Microcycstin. The cell count of

Mystery Continued…

the potential toxin producer is well above the 40,000/ml cell count as set as a guideline by Oregon Health Authority." The normal colonial "nature had broken down and only individual cells were present. So while a species was not possible to



Example of how Microcystis is typically seen clumped together in colonies when magnified at 200X.

determine, the genus Microcystis was determined based upon cell size and shape plus the prokaryotic nature of the cell." He indicated that the cells were still viable, just disaggregated.

Mystery solved: The other labs had been looking for typical colonial masses and had not recognized that the individual cells were actually Microcystis. Dr. Carmichael was kind enough to also perform a "strip test" for Microcystin, the only Cyanotoxin that Microcystis might be producing. His results indicated that there was no measurable Microcystin present. Therefore there was no concern for animal poisoning, and, within a few days, the potholes had once again dried up.

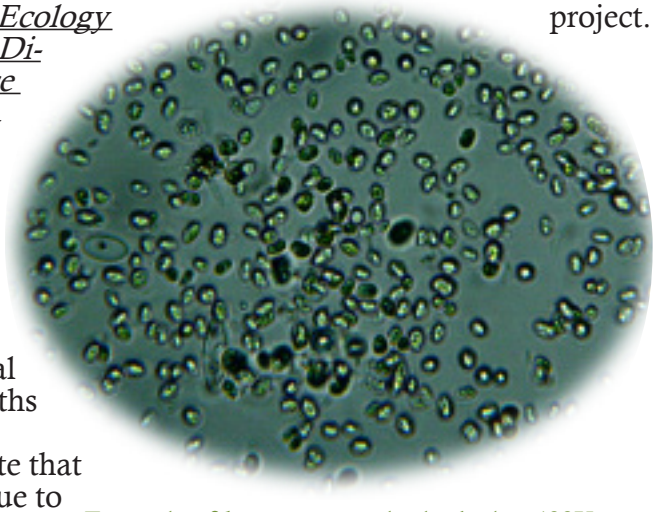
By now you may be asking yourself why PUR should be concerned about cyanobacteria blooms along our rivers. Our focus is on salmon. Of course we are concerned for dogs and the risk to humans, but that is the concern of the Oregon Health Authority. Why is the Watershed Council wanting to know where, and how much there is in potholes and in the river? Cyanobacteria is much more of a problem in lakes where its presence can restrict recreational activities due to the risk it might pose to humans. Finding it in rivers is a newly recognized phenomenon occurring worldwide. The following paragraph lists a few of the reasons to be concerned that it may be having an effect on fish too.

A chapter by C.S. Dow and U.K Swoboda from *The Ecology of Cyanobacteria: Their Diversity in Time and Space* by Brain A. Whitton and Malcom Potts includes the following information (Microcycstin and Saxitoxins are some of the toxins that can be released from certain BGAs):

1. "Histopathological investigations of fish deaths during Cyanobacterial blooms in the UK indicate that the cause of death was due to damage to the gills, digestive tract and liver (Rodger et al., 1944)."
2. "… The most definitive effect on fish concerns Atlantic salmon reared in net pens in coastal waters of British Columbia and Washington State, USA (Anderson et al., 1993). An unidentified Microcystin-producing organism caused progressive degeneration of the liver of salmon smolts, a disease referred to as Net Pen Liver Disease, with significant economic consequences."
3. "Recent studies have addressed the effects of Cyanobacterial toxins on developing fish embryos.

… Saxitoxin delayed hatching and led to malformations and mortalities."

So there are many reasons to be concerned with Cyanobacteria appearing in our rivers, as well as our lakes. Our faith restored in the YSI probe used for detecting BGA, we will return to our survey next summer and send samples off to Dr. Carmichael for identification and enumeration. If BGAs are detected that are capable of producing toxins, we will then send samples to a lab certified for toxin identification and quantification. Hopefully, weather cooperating, we will be able to map such occurrences along our study area which will end this project.



Example of how our samples looked at 400X.

Sandy Lyon and Joe Carnes
Monitoring Team
(541) 673-5756 ext. 149

Water Facts

Only 2.5% of all Earth's water is freshwater

Only 1.2% of that is available for human use

Only .49% of the 1.2% is in rivers

Rivers are where humans get a large portion of their water.

In other words, a large portion of water for human use is only .00015% of Earth's total water.

Source: http://water.usgs.gov/edu/earthwherewater.html

Education Outreach Update

In 2010, PUR took over the annual river and stream cleanup started by Umpqua Watersheds in 1982. Based on what we've learned since taking on this program, we have developed a "PUR-ified" approach that is working very well. Rather than host a cleanup event on one or two weekends in September, we promote a self-directed cleanup the entire month of September. We distribute bags, gloves, supplies and site/safety information at the popular Umpqua Valley Farmers' Market each Saturday since the market draws community-minded residents from all over central Douglas County.

Overall, this "PUR-ified" approach, implemented cooperatively with SOLVE (a non-profit organization best known for their beach cleanup efforts) has successfully recruited cleanup volunteers. But there is potential to do more. In 2013, around half of our cleanup volunteers came from one, very large church group. This suggests that the key to getting more people to volunteer for the cleanup is to focus on recruiting groups. So last October I submitted an OWEB grant for Umpqua Basin Cleanup outreach. If funded, this grant would pay for staff time (mostly me) to meet with community organizations and other groups to recruit their participation in the cleanup.

Last October, I also submitted an OWEB grant to expand PUR's fledging Fish Eggs to Fry program. Fish Eggs to Fry is a project lead by the Oregon Department of Fish and Wildlife (ODFW) that provides students from kindergarten to 12th grade with an opportunity to rear salmon, steelhead or trout and to release them as unfed fry. It offers students a hands-on stewardship experience, an experience they will remember throughout their lifetimes.

Steelhead eggs ready for delivery to Melrose Elementary school.

Thanks to equipment funding from the Umpqua Fishery Enhancement Derby (UFED) and the Western Native Trout Initiative (WNTI), and the volunteer efforts of Master Watershed Stewards participant Amy Pinson-Dumm (who selected this program for her MWS project), in the spring of 2013 we were able to pilot the Fish Eggs to Fry curriculum in three classrooms: one first-grade classroom at Hucrest Elementary and two third-grade classrooms at Melrose Elementary. UFED and WNTI funds were used to purchase tanks and chillers through a local vendor and ODFW provided 100 steelhead eggs for each classroom. Teachers (three) and students (65) monitored the growth and development of steelhead from eggs to alevins to fry. They learned about the habitat needs at each stage, before releasing them into the North Umpqua River. Amy and I provided the schools with educational and technical support by providing handouts, in-class presentations, activities and leading the fish release field trips for both schools.

The pilot program was a great success. Kids of all grade levels as well as school faculty and staff visited the classrooms to watch the "fishies" grow. Kids were delighted with every step of the steelheads' development, from egg emergence to becoming "swimmers." By the end of the program, many of the children were deeply attached to the fish, certain that "their" fish will make it back up the river to spawn someday. One little girl cried when she had to let the fish go. All three teachers were pleased with the program's results and asked to have their school participate in 2014. Hucrest plans to expand the program to involve a whole grade level (three classrooms total). If funded, our OWEB Fish Eggs to Fry grant would expand this program beyond the greater Roseburg area in 2015. In the meantime, we are adding four more tanks and chillers to the three we have thanks to a UFED grant. Two of these tanks will go to Hucrest and the others will go to two new Roseburg-area schools.

In the near future, there is a lot on Education and Outreach's

Amy Pinson-Dumm delivering eggs. To create a salmonid-egg-friendly environment, the water is circulated through the black chiller to the right of the fish tank.

Education Outreach Update Continued...

(E/O) docket. This winter and early spring, I will host the invasive species booth at the Umpqua Fishermen Association's fish release program (our message: clean, drain and dry your boats and equipment every time you change stream systems!). In May I will again spend two or three days hosting a fishery station at OSU Extension's Glide Forestry School Tour (our lesson: what makes a fish a salmon?). However, I will not host a booth at the Earth Day Fair. After carefully considering PUR's budget for educational activities, Eric Riley and I determined that any involvement we have at the Earth Day Fair should be organized by volunteers. Alas, there is just not enough money in the budget to do everything so we are focusing our limited E/O funds on interactive projects and programs.

Melrose Elementary third-graders at the June, 2013 fish release field trip at River Forks Park.

If you're interested in helping put together an Earth Day Fair booth for PUR, or if you belong to a group that would be interested in helping with our 2014 Umpqua Basin Cleanup, please contact me (see the contact information below) or Eric Riley at the PUR office.

Nancy Geyer
E/O Coordinator
negeyer@douglasfast.net

Deep Thoughts from Our Senior Planner

My project planning is at an all-time high these days. Targeted outreach in south county, as well as the continuation of watershed-scale projects in Rock and Brush creeks, has resulted in over 30 separate potential projects. Developing these, in addition to the planning work needed for summer 2014 projects, are my main efforts. Luckily, PUR and our partners are fully engaged in long term planning and prioritization efforts and there is a framework in place to track these opportunities.

New projects are always exciting because there is always so much to learn. I have also been excited to meet so many new landowners and hear their stories. Some are descended from pioneer families while some are recent transplants from other places, but all share a desire to make a difference in this watershed.

Project development is not done alone. I can't thank the Roseburg BLM aquatics staff enough for helping to develop projects across private and public lands while our ODFW contact, Eric Himmelreich, recovers from the helicopter crash last fall. This is a true testament to the power of teamwork. Their involvement has made the difference to be able to stay on track for fundraising and other goals.

Flowering Oregon grape in Myrtle Creek. Photo by Terry Burleson.

The other side of project development is fundraising. I have been busy working with PUR staff and contractors this fall and winter to keep track of grant opportunities and to create a fundraising plan for my 2014 and 2015 projects. The plan currently includes 12 possible grantors and 20 grant applications to complete between now and this fall. Our contract grant writer, Amy Pinson-Dumm and I will be writing our hearts out between now and then.

All in all, 2014 is looking to be a record year for project development and meeting new partners. I couldn't be more excited!

Terry Burleson
Senior Planner
541-673-5756 ext. 148

Myrtle Creek Watershed Restoration Planning Update

From Diamond Lake to Reedsport, from Drain to Glendale, the Umpqua River and its web of tributaries encompass some 2.7 million acres. The Umpqua and the Rogue, in fact, are the only two rivers in Oregon with headwaters in the Cascades that flow directly to the Pacific. What that means for anadromous fish, those migrating from the ocean to freshwater rivers and streams to spawn, is that they may spend many months in the system traveling to the very streams they were hatched in to repeat the cycle of birth and death.

Within the Umpqua basin, Myrtle Creek has been identified as one of the top-priority watersheds for restoration. It has many miles of potentially high quality salmon spawning and rearing habitat, a definite strength. However, most of this habitat is found on private land, a definite challenge, but an opportunity, also.

PUR is working with Myrtle Creek landowners to keep livestock like Daniella the Donkey out of streams.

In 2013, we launched a campaign in Myrtle Creek. It's purpose: education and outreach to landowners with historically salmon-bearing streams running through their properties. This project began with the identification of these landowners, followed by invitations to any of three public meetings that were held in the town of Myrtle Creek from July to November in 2013.

Approximately 50 landowners attended these meetings which served as a general introduction to PUR: its history, future, focus and mission within the Umpqua basin. The vast majority of landowners present had specific concerns regarding their streams, ranging from stream bank erosion to failing culverts to noxious weed control and livestock fencing.

As a follow-up to the meetings, site visits to individual properties were scheduled with interested landowners where more specific questions could be addressed on a one-on-one basis. These site visits were also scheduled with those who were unable to attend the meetings. All together, these site visits have encompassed many miles of streams throughout upper and lower, north and south Myrtle Creek watershed. Now that the majority of site visits have been completed for this phase of the project, the task of determining where to start new restoration efforts begins. This approach to landowner outreach within a specific watershed is nothing short of groundbreaking for PUR. Myrtle Creek is off to a great start. Given that it was feasible to reach so many landowners in one fell swoop and provide them with resources and contacts regarding their streams, it is sure to be a method that will continue to be implemented in the future.

Did you know? PUR staff now actively manages a Facebook page. "Like" us and receive current updates on our programs!

www.facebook.com/UmpquaRivers

Ann Kercher
(541) 673-5756
info@umpquarivers.org

Top Douglas County Weather Events in 2013

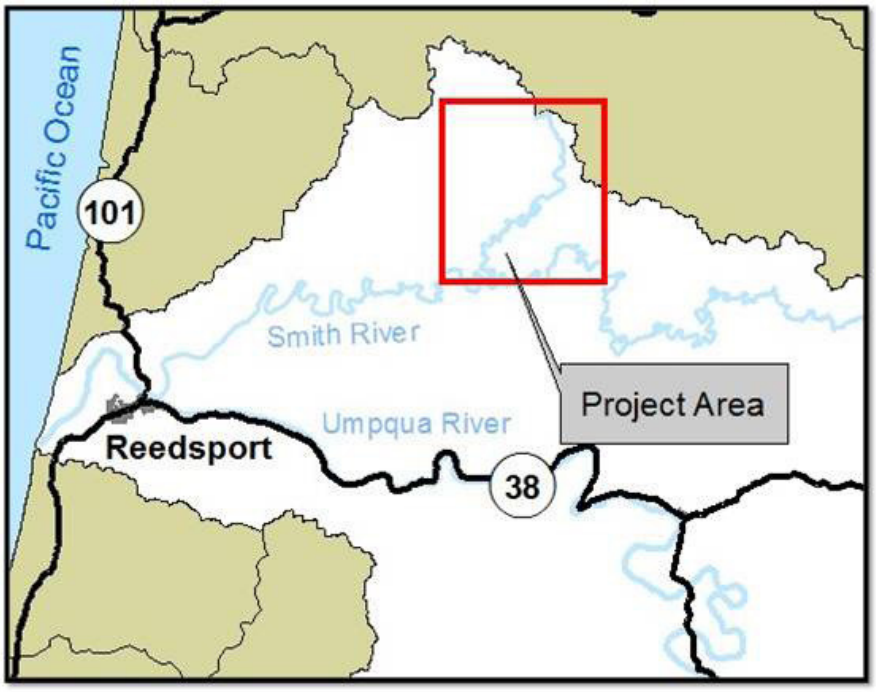
- **Driest year ever.** Only 16.11 inches of rain fell in Roseburg, breaking the record of 23.7 inches set in 1944. Roseburg normally receives about 32 inches of rain.
- **Hottest July ever.** The average high temperature was 90.1 degrees, topping the 89 degrees averaged in 1960. The month's average temperature of 74.6 degrees was almost 2 degrees warmer than the old record set in 1939. No day was hotter than 99 degrees.
- **Coldest December ever.** No daily records were broken, but the average temperature of 36.3 degrees was colder than the mark of 37.6 degrees set in 1932.
- **Wettest September ever.** Some 3.84 inches fell, almost all in the last one-third of the month, to break the record of 2.8 inches set in 1940. Single-day rainfall records were set on Sept. 21, 22 and 30.
- **Driest February ever.** Only .72 inches of rain fell. The old record was 1.04 inches in 1932.
- **Lightning strikes** July 26 in South County sparked fires that grew into the 48,000-acre Douglas Complex and the 17,000-acre Whiskey Complex.
- **Valley snow** Dec. 6 and cold days that followed caused schools to cancel classes for several days.

Source: Records are based on readings taken by the National Weather Service at the Roseburg Regional Airport. Reprinted with permission from the News-Review 01/05/14.

West Fork Smith River Continued...

The bottom line is that we had to get started early. We held contractor site shows in February, and contracts were signed and rocks started moving in early March. From there it was a constant convoy of trucks moving into and out of the WFSR basin. One after another, local quarries were depleted of boulders in our size range (it is difficult for a quarry to plan on getting 1.5 cubic yard boulders). Our contractors did an outstanding job of sourcing good materials and I like to joke that they took every boulder in the "Tri-County" area (Lane, Coos, and Douglas).

Our planning and preparation paid off, though! On July 1st we started placing boulders into weirs designed to slow the water down and create pools and gravel bars. This will provide crucial summer rearing and winter refuge habitat for juvenile salmonids. Everything went smoothly with help from our ODFW and BLM partners. We worked almost continually until September 23rd, at which point I was able to squeeze in a quick vacation before getting ready to write fall OWEB grants so we can continue doing great work.



Located northeast of Reedsport, West Fork Smith River is the second northernmost coho-bearing stream in the Umpqua.

In addition to our WFSR project, I managed one other small instream project. Camp Creek, Phase I is the first part of a three-to-four phase project and we successfully completed it last August. We placed about 150 logs and 250 boulders throughout 25 sites on Buck Creek, a tributary to Camp Creek. This project went very smoothly and will greatly improve the spawning, winter refuge, and summer rearing habitat in the basin.

Now I am gearing up for the 2014 in-stream season which will include a second phase of Lutsinger Creek, some helicopter work at Camp Creek, and tree pulling at West Fork Smith River. And, as always, I am working with landowners and partners to plan projects for 2015 and beyond.

NOTE: The American Fisheries Society -Western Division awarded the Coos Bay BLM, Coquille Watershed Association, Smith River Watershed Council, PUR, Coquille Indian Tribe, Roseburg Resources, Menasha, ODFW (Roseburg/Charleston), and Plum Creek Timber Company its 2011 Award of Excellence for work done in the Coquille River and West Fork Smith River watersheds.

Matt Ruwaldt
(541) 673-5756
info@umpquarivers.org


American Fisheries Society
WESTERN DIVISION
2011 Award of Excellence in Riparian Management
Presented to
Coos Bay BLM, Coquille WA, Smith River WC, PUR,
Coquille Indian Tribe, Roseburg Resources, Menasha,
ODFW (Roseburg/Charleston) & Plum Creek Timber Co
Awarded for special recognition in behalf of your efforts, interdisciplinary skills and leadership so capably applied toward protection, enhancement, and overall management of riparian zones within the
COQUILLE RIVER AND WEST FORK SMITH RIVER WATERSHED RESTORATION PROJECTS - 2010
Western Division President

2011 Award of Excellence for Riparian Management awarded to PUR and our partners by the Western Division of the American Fisheries Society.

Did you know? There are 33 fifth-field watersheds in the Umpqua Basin; PUR has completed assessments for 22 of them. The rest are primarily within US forest Service managed areas.

Partnership for the Umpqua Rivers
1758 NE Airport Rd.
Roseburg, OR 97470

March 2014

Our Mission

Through collaboration with diverse participants, the Partnership for the Umpqua Rivers maintains and improves water quality & fish populations from source to sea in the streams of the Umpqua.

We educate people about the value of healthy streams; we work with willing landowners to improve stream conditions; we monitor the health of the streams

Partnership for the Umpqua Rivers
Your Watershed Council

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