

From the Archives

The Red Fish of Wallowa Lake

by Lacey Moore, GRMW

Lakes are extremely important to the life cycles of sockeye salmon, as they provide key rearing habitat for their formative year(s) of life. These bodies of water, such as Wallowa Lake, also can be home to kokanee, a non-migratory variety of sockeye salmon. Kokanee spend their entire lives in freshwater instead of making the long and arduous journey to and from the Pacific Ocean. Both kokanee and sockeye transform from silver to bright red when they become mature adults. Inlet and outlet streams of their homestead lakes provide crucial spawning habitat for these fish.

In the late 1950s, the kokanee population nearly vanished from Wallowa Lake. Two significant factors contributed to this rapid decline. The first of these factors was the alteration of critical spawning grounds in the Wallowa River at the head of the lake, in an effort to prevent flooding in the state park. In addition, predation of kokanee by lake trout significantly reduced the number of spawning fish sustaining this landlocked salmon species. Since the late 1950s, Wallowa Lake's kokanee population has increased steadily, and on any given year, more than 10,000 of these fish can be caught



ABOVE: A couple with their catch of kokanee at Wallowa Lake, circa 1965. Photograph provided by ODFW.

by anglers. The world record for the largest kokanee (a whopping 9.67 pounds) was set by a fish caught from Wallowa Lake in 2011.

This year marks the fourth annual Wallowa Lake State Park Kokanee Festival, a celebration that coincides with the time of year when the red fish travel up river to spawn. Highlights of the festival include education presentations about the fish and other natural systems, music, food, and the chance to view the kokanee up close. This year's festival is on August 30 at the Wallowa Lake State Park Day Use Area; the Grande Ronde Model Watershed staff hopes to see everyone there.



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Grande Ronde Model Watershed

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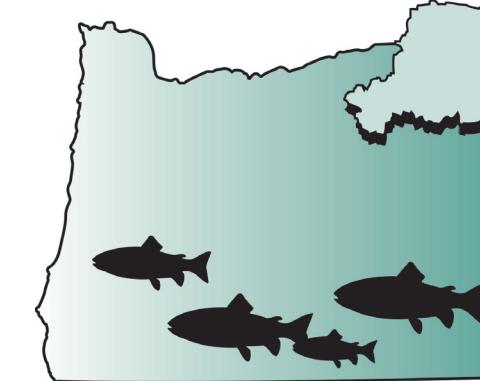
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Ripples in the Grande Ronde

Summer 2014

RIVERS UNITING NEIGHBORS · QUARTERLY NEWS FROM THE GRANDE RONDE MODEL WATERSHED

What is a Floodplain, and Why is it Important?

by Jesse Steele, GRMW

Every year when springtime rolls around, the snow melts, and the rains begin, I am curious to see how the rivers in our beautiful Grande Ronde and Wallowa River Basins will respond. Springtime river flows are a topic of discussion at the coffee shops, cafes, and even church on Sunday mornings. It's a big deal to say the least; the amount of snow we received the previous winter, the relative warmth of spring temperatures, and rainfall levels will determine very critical issues for everyone who calls this area home. Will homes and crops be flooded and destroyed this year? Will the snow in the Eagle Cap and Elkhorn Mountains linger long enough to provide much-needed water for irrigation throughout the summer? Will water flows and temperatures be favorable for our endangered fish species?

Some of the changes people made to rivers around our valley many years ago were undertaken with these very concerns in mind. These changes included dredging and straightening the river channels as well as designing and building levees to withhold the springtime flood waters. Banks were armored with rip rap, car bodies, and



ABOVE: An aerial photo highlighting Willow Creek spilling over into the surrounding floodplain.

even cement chunks removed from Adams Avenue. Decades later, we have learned that no matter how much we straighten, levee, and armor a river, we cannot control or contain it every year. We also have learned that by restricting the rivers' floodplains,

we have made matters worse not only for aquatic species but also for erosion control and sustained summer flows. What is so important about floodplains? Consider some of the essential functions that an active, connected floodplain accomplishes.

As defined by the Merriam-Webster Online Dictionary, a floodplain is an area of low, relatively flat land along a stream or river that may periodically flood. By dredging rivers and building levees, we have removed much of the historic floodplain connectivity along Catherine Creek and the Grande Ronde River. We now understand that connected floodplains are

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Outdoor Education in Eastern Oregon!

by Leigh Collins, GRMW

As the weather warms up, field season begins for many of our restoration partners in the valley. At the Grande Ronde Model Watershed (GRMW), we also have the chance to enjoy the great outdoors while teaching local youth about important natural systems in our area. We are currently in the midst of outreach and educational events with local elementary and junior high students, and we are excited to add new opportunities with Eastern Oregon University (EOU) to our slate during the summer months.

The GRMW once again had the pleasure of hosting and participating in outdoor education days with Stella May Field Elementary School, Grande Ronde Academy, and La Grande Middle School sixth graders. The majority of the outdoor education days were held at the Tule Lake



LEFT: Students from Grande Ronde Academy catching aquatic insects from Ladd Marsh to study different characteristics.

BELOW: Students from Stella May Field Elementary identify and learn about aquatic insects.



public access area at Ladd Marsh, and many watershed professionals were able to join in the fun. Collen Fagen, Dana Giffen, Holly Stanton, Nicole McConnell, Shelly Banks, and Winston Morton from the Oregon Department of Fish and Wildlife; Trent Bray from the BoBo Link; Marcia Macomber from the Union Soil and Water Conservation District; Andy Tarvin from the Oregon Department of Forestry; Arlene Blumton, Toni Molina, and Laura Navarrete from the La Grande Ranger District; Rebecca Dittmann from the National Oceanic and Atmospheric Administration; and Natalie Wright, an EOU student, were able to make these days possible for local students by sharing their invaluable knowledge and skills.

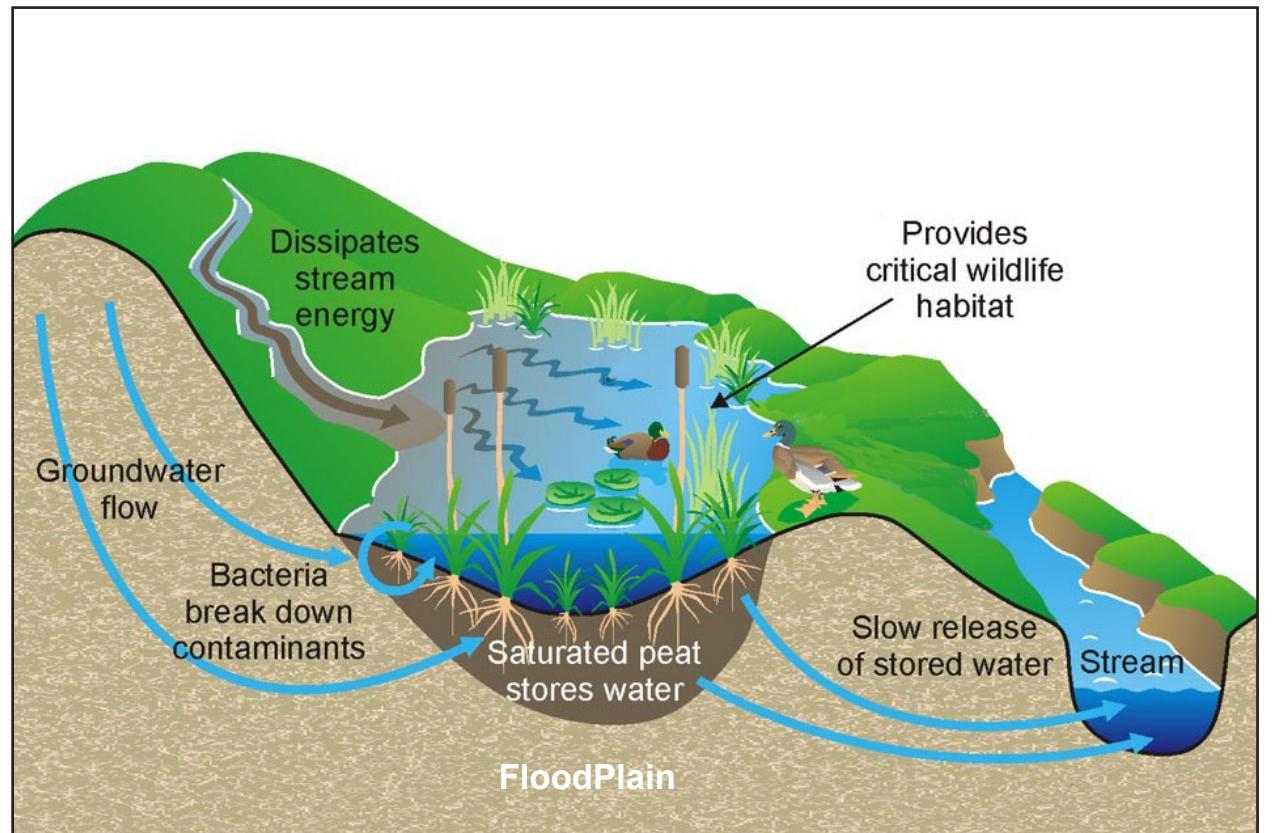
In addition to our familiar outdoor days for local schools, on June 23, 2014, GRMW will team up with

EOU's Eastern Promise to assist in teaching one of three Summer Institutes. GRMW will participate in the Summer Institute called "Knee Deep in Science." During this three-week intensive course, high school students from all over Oregon will have the opportunity to earn nine college credit hours in science, chemistry, and environmental studies.

During these three weeks, students will spend time in both the field and laboratory conducting research on local streams and learning about entry-level chemistry through lab experiments. Students will have the resources needed to snorkel streams, test water, sample invertebrates, and more during their time in the field. Once back in the lab at EOU, students will be able to test water source quality as well as learn other fundamental chemistry skills.

Donna Rainboth, Assistant Professor of

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ABOVE: This diagram shows how a well-connected floodplain functions. The left side of the diagram illustrates the floodplain after a high-water event, and the right side shows the main stream channel.

one of the best flood prevention measures we have available. By ensuring that rivers have floodplains, we can control where rivers flood by allowing them enough space to contain the seasonally high flows that occur during the springtime. This floodplain connectivity helps to protect crops, livestock, and infrastructure. It makes perfect sense to direct flows to the areas where they will do the least damage rather than attempt to prevent flooding entirely.

Floodplains also serve as reservoirs by capturing some of the water that inundates river basins each spring and then slowly allowing it to return to the river through seepage. This seepage helps to sustain or bolster late summer flows. A floodplain has been described as a sponge; you let the sponge soak up the water when flows are high, and then, as the flows recede, the water will slowly seep back into the river. Without available floodplains, flows are restricted to the main channel and quickly flow out of the valley. If we allow the river to expand into active floodplain areas, then we essentially are storing some of that water for when it is most needed: the dry late summer months.

Floodplains are often located in the same areas that are known as riparian zones.

These areas are crucial to almost every aquatic species and many migratory birds. A healthy riparian area associated with a floodplain is well-vegetated and creates much-needed shade that prevents solar loading, or increased water temperatures resulting from direct sunlight. The riparian area also provides organic material used for food and cover by many fish and insect species. The roots from the vegetation also minimize erosion by stabilizing soils, keeping the river on its intended path.

In this way, the river needs floodplains to direct flooding, provide much-needed flow in the summer through seepage returns, and create critical habitat for aquatic species. So, how much land does the river need? The answer is dependent on numerous factors, like the size of drainage area, stream gradient, elevations, and other variables, but the bottom line is that if we support healthy floodplain areas, then we can solve many of the problems that have haunted those who have lived and made a living along the river for decades. Providing rivers with additional floodplain areas may require some tradeoffs, but it is the only ecologically and economically sustainable solution to the cyclical water flow challenges we face in our river basins.

Fish Online!

www.grmw.org

- Snake River Basin stream flows
- Snow and precipitation reports
- Habitat enhancement projects
- Meetings, activities, and events
- Past issues of *Ripples* and more!

Grande Ronde Model Watershed Upcoming Board Meetings

The public is welcome to attend

- Tuesday, June 24: 5:00 p.m.
Wallowa Community Center
204 East Second Street
Wallowa, Oregon
- Tuesday, August 26: TBA
Alpine Meadow Golf Course
66098 Golf Course Road
Enterprise, OR

Meeting dates are subject to change.
Please call 541-663-0570 to confirm.
Thank you!

The Meeting Play-By-Play *The Meadow Creek Workshop*

by Jesse Steele, GRMW

Collaboration has been defined as “an unnatural act committed by two or more non-consenting adults.” It is certainly true that professionals in any business can find it difficult to work together toward a common goal. We all have opinions on what, when, and how things should be done. But on April 2 of this year, the United States Forest Service (USFS); the Pacific Northwest Research Station La Grande Forestry and Range Sciences Laboratory (PNW Lab); Oregon State University’s Eastern Oregon Agricultural Research Center at Union Station (EOARC); the Oregon Department of Fish and Wildlife Fish Research Program (ODFW); and Grande Ronde Model Watershed (GRMW) collaborated to host a very informative workshop focused on current and potential research projects on Meadow Creek within the Starkey Experimental Forest.

Held in Hoke Hall on the Eastern Oregon University campus, more than 60 people attended the workshop, and at least another 25 attended online via webinar. Several well-respected professionals shared their expertise in river restoration, monitoring, and research as well as the potential for additional monitoring and research. As with all areas of research, there are always more questions to be asked but never enough money to answer them all. One of the main goals of this workshop was to inform potential funders about the excellent opportunities afforded by the Starkey Experimental Forest to pursue additional information and knowledge through continued research.

The workshop began with a brief introduction by Jeff Oveson of GRMW, including a tutorial video created using an unmanned aerial system, or drone. The video gave a bird’s-eye view of more than one mile of Meadow Creek, highlighting some of current restoration and monitoring efforts. The video was a great way to kick off the workshop and piqued the interest of many of the attendees. The first speakers



ABOVE: Looking upstream on Meadow Creek, the large fenced area is one of the ungulate exclosures.

were Mike Wisdom, PNW Research Wildlife Biologist and Team Leader, and Rich Carmichael, Project Leader for ODFW Northeast Oregon Fish Research. Mike provided an overview and brief history of Meadow Creek located within the Starkey Experimental Forest and described some of the past and present research studying the interactions and impacts of wild ungulates and cattle. Rich spoke about a research project ODFW began in 2013 to study fish habitat status and trends on Meadow Creek using the Columbia Habitat Monitoring Program (CHaMP), funded in large part by Bonneville Power Administration. Joe Platz with USFS La Grande Ranger District then talked about the fish habitat restoration work that has been completed along Meadow Creek. By the end of 2014, three phases of restoration will have been completed, totaling 7.3 miles of treated stream, 571 installed pieces of large woody debris, 271 installed boulders, 112 acres of riparian planted, 217 fenced riparian acres, 47,500 plantings, 6 water developments, and 2 removed culverts, with the bulk of these restoration projects funded by Bonneville

Power Administration’s Fish and Wildlife Program.

Mike then presented the current study design that is being implemented this year to compare the effects of wild ungulates with the effects of cattle on riparian conditions and fish habitat. The study will examine nine small pastures along Meadow Creek to compare how wild ungulate and cattle affect riparian and stream health. The pastures are located in newly restored areas of Meadow Creek. Tim Delcurto of Oregon State University outlined how these nine pastures will be utilized. Three pastures will exclude all ungulates, three will exclude cattle but allow wild ungulate use, and three will exclude wild ungulates but will be grazed by cattle.

Ted Sedell and Chris Horn, both ODFW research biologists, wrapped up the morning session by outlining how they will measure responses to the habitat restoration projects and ungulate grazing treatments. ODFW will use the CHaMP protocol to evaluate both habitat and fish responses within the restoration areas.

After lunch, Bryan Endress with



ABOVE: A map showing the location of the Meadow Creek restoration project area within the Starkey Experimental Forest. Map created by Lacey Moore, GRMW.

the San Diego Zoo Global Conservation Program spoke about research he conducted to track vegetation responses after restoration treatments have been applied. Similar approaches will be used to monitor the effects of wild ungulates and cattle inside of the nine controlled pastures. With the current infrastructure already in place, Mary Rowland, Research Wildlife Biologist with the PNW Lab, and Ted described additional research that could occur if adequate funding were available. Questions related to everything from birds and insects to amphibians easily could be added to this research. Jeff Oveson closed out the afternoon session with a discussion of strategies for maintaining long-term monitoring and research on Meadow Creek. One of Jeff’s closing points was that organizations like GRMW can help to garner interest and funding to maintain these

types of invaluable research projects. Rob Mangold, Director of the Pacific Northwest Research Station, concluded the workshop by affirming his support of the research and thanking everyone for their interest. The workshop presenters then addressed questions from both the audience and online participants.

The current infrastructure in place at the Starkey Experimental Forest and along Meadow Creek provides many important research opportunities. The research starting this summer is unique in that it will seek to answer one of the hottest topics in the area of river restoration: what are the effects of cattle and wild ungulates on restoration projects? We all know that ungulates browse on riparian plantings, but is one species more damaging than others? How does the timing of grazing impact the studied areas? Are there cost-effective ways to manage the

effects? Do benefits result from rotational grazing within riparian areas? Questions like these and many more can be answered with the current research projects. One of the keys to the projects’ success will be maintaining the research for a sufficient period of time to ensure that researchers can obtain an accurate picture of what is really taking place and why.

In the arid western United States, thousands of wild and domestic ungulates graze millions of acres of rangeland that intersect with thousands of miles of fish-bearing streams. Understanding the complex interaction of the myriad of species of mammals, fish, birds, and insects (not to mention the vast array of grasses, rushes, forbes, shrubs, and trees) will be essential to the long-term viability of diverse and resilient ecosystems in our watershed.

Meet the Partner

Tony Malmberg

by Jeff Oveson, GRMW

When someone who lives in Union tells you that the wind does not blow "that bad" there, this claim provides some insight about the Union resident in question. For one thing, it must mean that this person once lived in Wyoming, where wind was invented. For another, it means that this person tends to evaluate things on a relative scale, on which there is no absolute lost cause and nothing is perfect. The person to whom I am referring is Tony Malmberg, a man I have known to quote the Bard of Avon in stating that "nothing is good or bad, but thinking makes it so" as he makes seamless reference to grass, water, and cattle. He says he is proud that he ranched the sagebrush steppe country during his 20s but is glad to live in Ponderosa grasslands in his 50s. The sagebrush steppes make for a tough trip through paradise for young cowboys, but they are hard on the horses they ride and the women who love them.

Knowing these things about Tony, you might suppose that the weight gain on this year's yearlings is important to him. What you might not pick up until you have gotten to know Tony better is that in a decade, there will be more yearlings in the same pasture, they will gain more per head, and the pasture will be in better condition with more biological diversity and organic matter. What, you say?

This story is about Tony, so I will use his name a lot, but readers should know that his wife, Andrea, is an equal partner in his life and shares his understanding of holistic grazing management and his passion for sustainably feeding a world of 7 billion people. Tony is what I would call a Renaissance man who is interested in a broad variety of topics with a high level of expertise in most of them (although his golf game could use some refinement). He looks the part of the cattleman in riding heels, vest, and a weathered Stetson, proudly driving a Dodge flatbed with more than 300,000 miles on it. Then, suddenly, he looks at home in their family's Volvo wagon while driving to Portland to meet with "bridge funders" to talk about keeping young people and cattle on the land, keeping more water in the rivers, and keeping small communities whole. Tony understands the local implications of policy decisions made by those who have never really spent any time on the land or in a small natural resource-dependent economy, and he protectively guards what he views as the sanctity of community. Getting to know Tony is like watching a prism on a breezy and bright sunny day. What you thought was the obvious ordinary light of the



ABOVE: Tony Malmberg with wife, Andrea

sun is refracted into colors you could never see without the prism. For the last three years, Tony has been a Flow Restoration Project Manager for The Freshwater Trust. The job? Tony cut

Professional in Holistic Management. In other words, he has not received all of his education from the back of a horse.

I am not the only person who thinks Tony has a lot to offer and has offered a lot to our communities. The recognition of his efforts and achievements has included some very prestigious kudos:

1989 Wyoming Association of Conservation Districts Outstanding Area Supervisor
1993 Distinguished Service Award, Popo Agie Conservation District
1995 Bureau of Land Management National Stewardship Award
1996 Wyoming Stockgrowers' Association Environmental Stewardship Award
1998 National Cattlemen's Beef Association National Environmental Stewardship Award
1999 Environmental Protection Agency Outstanding Environmental Achievement Award
2000 Wyoming Natural Resources Conservation Services Outstanding Environmental Achievement
2002 Wyoming Wildlife Society Citizen of the Year Award
2004 Wyoming Game and Fish Department Landowner of the Year

In a society in which there is still a strong tendency to pit conservationists and natural resource users against each other, Tony knows that there can be no conservation without the support of resource users and no long-term resource use without conservation. ■

Natural Resources, and Jeremy Riggle, Assistant Professor of Chemistry, will be co-teaching with Leigh Collins of GRMW.

"This is science that a variety of professionals are doing," Rainboth said. "It's real-life, and that's the cool part. Those who are reluctant or think they're not 'good' at science benefit when they experience it outside of the classroom."

Much of the coursework will take place on the Grande Ronde River, Catherine Creek, and Ladd Creek stream banks at local parks or public access areas. There also will be time during this summer session to go birding at Ladd Marsh, visit the local water treatment plant, and make and identify various chemical compounds in the lab. At the end of the course, students will present their research findings in a mini-symposium at EOU attended by their peers and family.

GRMW is excited to once again expand our community ties with education and outreach while supporting the local university. To register or for more information about

the Summer Institute with Eastern Promise, please visit www.eou.edu/eastern-promise/summer-institute or contact Laurie Powell at 541-962-3941 and ep@eou.edu.

Our next outreach events will be at the Wallowa Resources Watershed Festival on June 27 and at the Wallowa Lake State Parks Kokanee Festival on August 30. Please check our website at www.grmw.org/events/ to learn about other future events or visit our Facebook page by searching for Grande Ronde Model Watershed. ■



LEFT: A student from La Grande Middle School looking at birds with the help of Laura Navarrete and Toni Molina of USFS.
BELOW: Colleen Fagen of the ODFW shares her expertise on fish habitat and restoration with sixth grade students from La Grande Middle School using a stream simulator.

