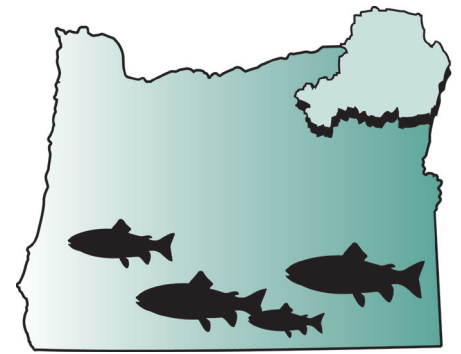


RIPPLES IN THE GRANDE RONDE



SUMMER
FALL 2019

RIVERS UNITING NEIGHBORS · NEWS FROM THE GRANDE RONDE MODEL WATERSHED

A Day to Remember



by Tim Bailey, *Oregon Department of Fish and Wildlife*

Last spring, I experienced one of those days in the career of a fishery biologist that will forever stand out among the thousands of other days I have spent in the field.

If you were to ask 100 fishery biologists why they chose this career, most probably would relate a desire to work in the natural environment and a fascination with creatures that live in water. In addition, you likely would find that days afield are treasured and that some days or moments afield are truly spiritual, per the Merriam-Webster Dictionary definition of the word as “of, relating to, consisting of, or affecting the spirit.” I recall a time on the upper Minam River watching a pair of Chinook salmon spawn as one of those spiritual moments, even though I had watched salmon spawn hundreds of times. Something about that day was special, and it truly was a

privilege to just be there, thinking of the journey from egg to spawning and the opportunity to witness the beginning of yet another generation of Minam River Chinook.

June 28, 2019, was another one of those days that meant more than simply completing a task. My partner, Winston Morton, and I found evidence that steelhead had spawned in upper Beaver Creek (a Grande Ronde River tributary) after having been blocked from accessing this habitat for more than 100 years. The blockage was removed in 2017 when the City of La Grande constructed a fishway over the dam that forms Beaver Reservoir (see “Reconnecting the Habitat Dots” in the Summer 2017 issue of *Ripples*). What made this day even more meaningful is that I began the survey feeling pessimistic about what we would find. It was not that there was a flaw in the fish passage project that had made this survey possible, but I was concerned that steelhead returns to the Columbia River Basin this year had been quite low. We already had completed a number of surveys on other streams where we found no redds (nests where salmon/steelhead deposit their eggs), and on the streams where

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The Beaver Creek fishway allows access for steelhead, which were found spawning in Beaver Creek above the reservoir. These spawning grounds were previously inaccessible for more than 100 years (courtesy of Winston Morton).

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redds were found, the numbers were considerably below average. Further, we were getting to completing the survey quite late, meaning the redds would be less visible. Steelhead spawning surveys typically are done in April and May.

Spawning surveys are one of the ways that fishery biologists monitor the abundance of adult steelhead returning to their natal streams to spawn. Biologists conduct spawning surveys by walking predetermined stream reaches where spawning is known or suspected to occur. While walking the stream, biologists look for signs of spawning activity called redds.

Steelhead spawn by depositing eggs in redds on the stream bottom that are dug into gravels by the female, the male fertilizing the eggs, and then the female covering the eggs with sediment-free gravels. The female digs by turning on her side and fanning the stream bottom with her tail, or what biologists call the caudal fin. The process of digging, egg deposition, fertilization, and covering of the eggs occurs numerous times until the female has deposited all of her eggs, averaging about 4,000 in number. What is left is a pit on the stream bottom between six and 12 inches deep, with a pillow of sorted gravels immediately downstream. Redds can be between 1.5 and five feet in diameter. Immediately after construction, the excavated gravels of the redd can starkly contrast with



A spawning female steelhead (courtesy of Winston Morton).

surrounding gravels because they have been cleaned of algae and sediment through the digging process. Over the course of a few weeks as the algae recolonizes the moved gravels and streamflows flatten the redds' topography, they become harder to see. The redds typically are found at the tailout of pools, where gravels of appropriate size (between the size of a grape and a baseball) are present and water can readily flow through the redd pillow to keep the developing eggs oxygenated

and free of sediment and waste products.

We counted four redds that day on a 1.5-mile section of Beaver Creek just upstream of the City of La Grande's Beaver Reservoir. The long-term average in the upper Grande Ronde River Basin is approximately two redds per mile, so 2.7 redds per mile is pretty good, considering the factors described above. Nevertheless, given the significance of the survey, we took extra care to carefully examine and discuss what we saw, wanting to make sure that we were seeing steelhead redds and not some anomaly in the stream gravels created by the streamflow. Four times, we observed and discussed the identifying characteristics of the prospective steelhead redd and agreed based on our more than 50 years of combined experience that steelhead had spawned at these locations.

What we witnessed that day – evidence of steelhead spawning in upper Beaver Creek – was the result of a long journey not only for the steelhead, which left their natal stream as juveniles to forage in the Pacific Ocean and returned as adults to spawn, but also for those of us involved in the planning, design, and construction of the Beaver Reservoir fishway.



Looking upstream at spawning and rearing habitat that is now available to Beaver Creek steelhead (courtesy of Winston Morton).

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Meet the Staff:

Ian Wilson

by Jesse Steele, GRMW staff

The Grande Ronde Model Watershed (GRMW) welcomed a new team member in August. Ian Wilson will be taking over the Wallowa County Project Coordinator position based in Enterprise, Oregon. Ian is originally from Portland, Oregon, and moved to Wallowa County in 1998. Ian, his wife, Heidi, and their two kids, Ashley and Malachi, have lived just outside of Lostine, Oregon, along the Wallowa River for 21 years. Ian's eldest child, Ashley, just left home to attend the University of Montana in Missoula to study art education. His son, Malachi, is a seventh grader at Wallowa Junior High School and enjoys playing basketball.

During Ian's time living in Wallowa County,

he has owned and operated an outdoor store called Wallowa Outdoors in Enterprise as well as worked for the Oregon Department of Fish and Wildlife, the Nez Perce Tribe, the

Confederated Tribes of the Umatilla Indian Reservation, and now the GRMW. Ian earned a bachelor's degree in Fish and Wildlife Science from Oregon State University in 2015 and an associate's degree in Forestry from Central Oregon Community College in 1998. His extensive experience working in natural resources and education along with his well-established roots in Wallowa County make him a perfect fit for the GRMW.

Ian loves the outdoors and spends much of his free time with his family hiking in the Eagle Cap Wilderness and fly-fishing the area's numerous high lakes and streams. Not many people can say they have fished the entire Minam River from the headwaters (Minam

Lake) to the mouth, which Ian completed in 2018. Ian packed in an inflatable kayak to float and fish the remote river, catching everything from trout to Mountain Whitefish. To say Ian has a good understanding of the natural resources and geography of Wallowa County is an understatement!

Ian and his wife recently took over a portion of the family farm where they have been living and already have started making plans for how to improve the fish habitat along the property's one-mile stretch of the Wallowa River. Ian loves not only the vast recreational opportunities in Wallowa County but also the county's people. He often reminisces about his time operating the outdoor store, saying that his favorite part of that job was getting to talk with all the people who would stop in each day.

So, please stop in and congratulate Ian at his new office (located at **936 W. North Street, Enterprise, Oregon**) or give him a call at **541-426-0389**. ■



Ian with his daughter Ashley, son Malachi, and wife Heidi at Ashley's graduation from Wallowa High School (courtesy of Ian Wilson).

GRMW Board Meetings

Tuesday, November 26th, 2019
5:00 p.m.

Elgin Community Center
260 N 10th St.
Elgin OR 97827

Tuesday, February 25th, 2020
5:00 p.m.

Wallowa Senior Center
204 E 2nd St.
Wallowa OR 97885

The public is welcome to attend.
Meeting dates are subject to change.
Please call (541) 663 - 0570 to confirm.
Thank you!

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A Habitat Restoration Odyssey

by Matteo Moretti, *5 Rivers Odyssey Student*
foreword by Levi Old, *Trout Unlimited*

Foreword: Trout Unlimited's Costa 5 Rivers Program is a flagship program sponsored by Costa Sunglasses, which supports college-based angling and stewardship programs throughout the nation. The program is co-sponsored and led by Trout Unlimited and the U.S. Forest Service. Each year the program sends several college students on an adventure to learn about the connection between river conservation, native fish, and their local human communities. The summer 2019 program sent a handful of students to the Columbia Basin to experience the challenges facing the basin's fisheries and rivers and local communities' connections to these special places. The crew started their travels on the Willamette River, then traversed up the Mackenzie River and down the Deschutes River. After these adventures, they jumped across the Columbia and into the North Cascades, and finally to the Lower Snake and Grande Ronde Rivers. While in the Grande Ronde River Basin the crew of four conservation-minded anglers visited the Sheep Creek Restoration Project, Bird Track Springs Fish Enhancement Project, and the Wilson-Haun Ranch on the Wallowa River. Their Grande Ronde adventures included fish salvage work, hand-based in-stream wood placement, and a fishing trip with a passionate landowner-conservationist on private lands. Below is an account and photos by one of the program's students, Matteo Moretti.

As a college student and environmentalist interested in pursuing a career in the outdoor media industry, I am constantly amazed by all the wonderful opportunities offered to passionate young anglers and students. The journey I embarked upon through the Trout Unlimited Costa 5 Rivers Odyssey is one that exemplifies a dedication to creating and providing such opportunities.

I am so grateful for my experience traveling across the Pacific Northwest for half of the summer with the Trout Unlimited 5 Rivers Odyssey. Moreover, I am honored

to be able to highlight the people, stories, and places we came across and to emphasize *why* an experience like this is so important for young students and for the future of our environment and fisheries.

Throughout our journey, we were fortunate enough to meet, talk with, and really get to know so many incredible people. As avid fishing nerds and outdoorsmen ourselves, we approached this trip with a level of excitement, wonder, and curiosity that I thought could not grow any larger. However, in our search for genuine and honest stories, what we found was true inspiration. It was in the eyes of volunteers, the gravity in the voices of our native people, and the sweat and grit that were evident on maps, blueprints, and design plans for cutting-edge fish habitat restoration projects.

Our experience in the Grande Ronde River Basin could not have epitomized our odyssey any more perfectly. Working with two inspiring conservationists, Levi Old (a project manager for Trout Unlimited) and Ian Wilson (a fish habitat specialist for the Confederated Tribes of the Umatilla Indian Reservation) showed us the true power of dedicated individuals and the importance of small projects.

Ian and Levi's excitement and love for their rivers were contagious as we worked on improving both headwater and mainstem sections of the Grande Ronde River. They explained every aspect of their projects, pointed out the progress already being made, and, most importantly, made us feel like we were just as crucial to their mission as they were.

In between fish salvage attempts and grueling hand crew work, we exchanged fishing tales, talked about our personal goals and



Dyer Benjovsky, a Costa 5 Rivers Odyssey student, enjoys an evening of fly-fishing on the Wallowa River (courtesy of Matteo Moretti).



The four Costa 5 Rivers students who spent time in the Pacific Northwest. From left to right: Dan Eiden (Gustavus Adolphus College), Morgan Bradley (University of Colorado-Boulder), Matteo Moretti (Middlebury College), and Dyer Benjovsky (University of Buffalo)(courtesy of Matteo Moretti).

aspirations, and shared some late-night meals under the basin's beautiful canopy of stars. We valued each other's company, and we shared each other's passion.

I think the 5 Rivers Odyssey is an exceptional program because it not only allows a group to highlight the problems and successes surrounding our fisheries, native fish, and public lands but also is a catalyst that connects people to people. An amazing thing happens when you put many unique and different people together who share a common connection to the environment: they push each other to continue to make change.

This odyssey challenged me in all sorts of ways, from having to swallow the hard truth about seemingly impossible recoveries to capturing every genuine moment of our interactions, lessons, and experiences through film and photography. Thanks to this challenge – and because of the connections I made – I will continue to aspire to bring about change in my own way.

Having the privilege to capture and document the stories of people whose souls are connected to their lands and rivers has taught me so much about conservation. In particular, it has shown me

the importance of pushing past the negativity that sometimes surrounds our current environmental situation. If I could conclude with only one takeaway, it would be this: there are countless people in our world dedicating their lives to save, protect, and recover what they love. This realization only has given me more guidance to do the same. The drive, kinship, and love I saw in these people is what will inspire me to continue to tell these stories throughout my life.

Without getting too corny or nostalgic, I think I can speak for us all when I say that this was a truly life-changing experience. Not many college-aged students have the opportunity to tour an entire area of the U.S. for a month, let alone have the pleasure to meet the honest and inspirational souls we did along the way. We learned that there are still countless problems for habitat in the Columbia River basin, some that seem insurmountable. However, we also discovered the importance of actually listening to the local stories of the men and women who dedicate their lives to saving what native and wild areas we have left and, hopefully, to bringing them back.

As a culmination of our odyssey, I plan to make a short film documenting our journey, our discoveries, the stories of the Columbia River basin, and the passion for inspiring others that brought our group together as friends.

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Drone footage of the Sheep Creek Restoration Project where the students got to experience working with a hand crew (courtesy of Matteo Moretti).

Amphibians in the Coal Mine?

How Columbia Spotted Frog are Indicators of Ecosystem Health in the Grande Ronde River Basin

by Laura Navarrete, U.S. Forest Service

More than 360 million years ago, amphibians evolved from fish, marking a key evolutionary turning point for vertebrates: the transition from water to land. They are the only class of vertebrates that has no special protective covering on the skin, and they have an astounding ability to regenerate tails and legs that have been lost. They also play a significant role within ecosystems as predators and prey. The term amphibian, from the Greek *amphi* ('double' or 'circular') and *bios* (life), refers to how most frogs, toads, and some salamanders start life in the water in a larval form with gills and later metamorphose into a form that can live on land but must return to water to reproduce. In this way, amphibians are sensitive to changes not only in the water but also to the land and often sound early alarms about ecosystem health.

Since the mid-1980s, herpetologists (scientists who specialize in the study of reptiles and amphibians) have realized that many amphibian populations are in decline and entire species have gone extinct. Causes of these declines are varied and include habitat destruction, climate

change, and environmental contamination. The Blue Mountains of Eastern Oregon within the Wallowa-Whitman National Forest are home to amphibian species comprising three native frogs, one native toad, and one native salamander. The largest of these frogs, the Columbia spotted frog (*Rana luteiventris*), is one of many amphibians in the western U.S. experiencing population declines and is considered a sensitive species by the U.S. Forest Service (USFS).

Columbia spotted frogs in the Wallowa-Whitman National Forest breed in shallow ponds or slow-moving water and prefer

areas with little shade from vegetation. Their breeding season is short, and it is the only time a visitor to the forest can reliably hear the frogs croaking. Depending on elevation, they breed between March and June and lay their eggs communally. It is common to find the gelatinous egg

masses from multiple females piled on top of each other. After breeding, the adults disperse into nearby streams and rivers to spend the rest of the year happily eating aquatic and terrestrial invertebrates, rarely moving far from where they were born. These frogs can live for nine to 12 years, and they have high site fidelity, which means that they return to the same breeding pond year after year. These shallow pools of water that are vital for healthy frog populations need to maintain the correct temperature for the eggs to hatch and to retain water long enough for the tadpoles to metamorphose.

The majority of spotted frog habitat within the La Grande Ranger District of the Wallowa-Whitman National Forest overlaps with an intensive multi-agency, multi-partner stream restoration effort designed to recover Endangered Species Act-listed fish populations. Past practices of heavy logging and intensive grazing have severely damaged riparian habitat, and the current threat of climate change looms large. To combat these



Taking a measurement of a spotted frog for monitoring (courtesy of Laura Navarrete).



Columbia spotted frog (courtesy of Laura Navarrete).



The challenging but fun work of capturing spotted frogs with a net per the mark-recapture monitoring protocol (courtesy of Laura Navarrete).

effects and restore habitat, large wood is placed within streams to create structures where fish can hide, provide shading, and increase the number and depth of pools. Recently, restoration methods have evolved

and now include placing small-diameter trees and large quantities of smaller slash in a way that simulates the function of beaver dams in backing up water on the floodplain. An immediate effect of this type of floodplain restoration is the creation of small, slow-moving side channels and pools, which could potentially increase spotted frog breeding habitat.

For the past few years, La Grande Ranger District biologists have been conducting egg mass counts and frog surveys to track changes in population trends within frog-occupied streams and to find out if frogs start to colonize new, restored streams. Egg mass counts take place during the spring and, depending on the year, can involve crunching through late snow to reach the breeding ponds. Stream surveys occur during the summer, after the adult frogs have returned to the streams. Biologists and seasonal crews walk through the streams, climb over logs, and slip on algae-covered rocks to locate these frogs. Spotted frogs are large but quiet, so if they stay still, they can escape detection by even the most eagle-eyed surveyor. Netting the frogs can be an

exercise in patience, and groans of frustration and shouts of joy are common while surveying. After biologists weigh, measure, and pit-tag them as part of the mark-recapture protocol, the frogs are released back into the river.

Stream restoration has the potential to produce positive results impacting a whole suite of species. Unfortunately, funding often is narrowly focused and rarely allows for monitoring beyond the target species (typically endangered or threatened fish species). So, biologists have many unanswered questions about the effects of stream restoration on amphibian populations. Does floodplain restoration increase breeding habitat for spotted frogs? Does increasing breeding habitat lead to an increased spotted frog population? Will spotted frogs colonize new streams if breeding habitat is created? USFS biologists hope that through these surveys, they will be able to answer some of these questions. However, in a time of decreasing budgets and personnel, the Grande Ronde Model Watershed and the USFS also are partnering to develop citizen science programs that, if successful, would generate long-term monitoring data. Through citizen science, children and adults not only directly contribute to science but also can gain a greater sense of ownership and stewardship of the natural resources that surround them. If you are interested in participating in citizen science efforts or volunteering, then please contact Kayla Morinaga, Grande Ronde Model Watershed Monitoring Coordinator (kayla@grmw.org), or Laura Navarrete, USFS Wildlife Biologist (laura.navarrete@usda.gov). ■



A surveyor takes a weight measurement of spotted frogs (courtesy of Laura Navarrete).



A female spotted frog in her egg mass. It is possible she is still depositing eggs or has just finished doing so (courtesy of Laura Navarrete).

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Given the remoteness of the location, the annual snow load, and the more than 40-foot drop over the dam, our efforts to find a solution that could effectively allow the passage of all life stages of steelhead, redband trout, and bull trout over Beaver Creek Dam involved a journey of nearly 20 years for city, state, and federal officials and a local engineering firm (Anderson-Perry and Associates, Inc.) to develop a design we could all support.

The result is a one-of-a-kind fishway that we now know has reconnected wild steelhead to 14 miles of some of the best habitat in the upper Grande Ronde River Basin. This biologist with deep roots in northeastern Oregon will not forget that day in June 2019 when I saw confirmation that steelhead had been reconnected to their homeland and knew that something I had a part in had made this homecoming possible. Thank you to all the partners who made this day a reality.

The story of Beaver Creek and the fish within it continues. Steelhead will continue to ascend the Beaver Reservoir fishway to spawn and recolonize the habitat upstream, as will redband trout and bull trout. The project partners will continue to observe the fishway to make sure it is functioning as intended and will revisit the stream annually to document the effectiveness of the project while witnessing one of nature's wonders. ■

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I cannot thank enough the 5 Rivers Program, Trout Unlimited, all of our sponsors, and every wonderful soul I had the pleasure of connecting with. I hope that our experience serves as an impetus for other young students, anglers, and conservationists to get out and see what impact they can make, especially in their own backyards.

See more photos and learn more about the program here:

- www.instagram.com/tucosta5rivers
- <https://www.tu.org/conservation/outreach-education/headwaters-youth-program/tu-costa-5-rivers-college-clubs/>
- <http://www.tucosta5rivers.com/about-1>

Thanks to the sponsors of the Costa 5 Rivers Program, the Sheep Creek Stream and Floodplain Restoration Project, and the Sheep Creek Hand Crew-Based Headwater Resilience Project. These sponsors include the National Forest Foundation, the Bureau of Reclamation, the Oregon Watershed Enhancement Board, Portland General Electric/The Nature Conservancy Salmon Habitat Fund, the Bonneville Power Administration, the U.S. Forest Service, the U.S. Bureau of Land Management, the NF John Day Watershed Council, the Grande Ronde Model Watershed, and Trout Unlimited. ■

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To everyone who has purchased a GRMW t-shirt, hat, or sticker to show your support for *Ripples in the Grande Ronde* and our mission, we want to say **THANK YOU!**

Thank You

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