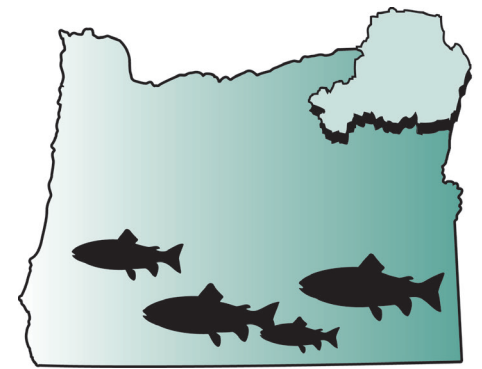


# RIPPLES IN THE GRANDE RONDE



WINTER  
SPRING  
EDITION 2025

RIVERS UNITING NEIGHBORS · NEWS FROM THE GRANDE RONDE MODEL WATERSHED

The Grande Ronde Basin (GRB) spans over 5,000 square miles, encompassing a vast network of perennial flowing streams that serve as critical habitats for several species listed under the Endangered Species Act (ESA), including the Snake River spring/summer Chinook salmon, Snake River summer steelhead, and bull trout. To ensure the health of these ecosystems, a network of stream gauges has been established throughout the Grande Ronde and Imnaha River sub-basins. These gauges provide invaluable data that informs a range of management efforts, from irrigation and fisheries management to water quality monitoring and restoration project development.

## Stream Gauges in the Grande Ronde Basin: Essential Tools for Water Management and Conservation

by Amanda Coffman, GRMW staff

The Grande Ronde and Imnaha sub-basins are home to a complex hydrology, and the network of stream gauges is designed to capture detailed information about stream flows across this diverse landscape.



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**The Lostine River, a major tributary to the Wallowa River, has two separate stream flow gauges on the downstream portion of the river.** (Courtesy of Freshwaters Illustrated)

The success of the stream gauge network relies on the collaborative efforts of several organizations. The Grande Ronde Model Watershed (GRMW) and the Oregon Water Resources Department (OWRD) are key project partners, working together to operate the network and interpret the data. The project also receives crucial funding from partners such as the Bonneville Power Administration (BPA), the Oregon Watershed Enhancement Board (OWEB), and the OWRD.

The project operates 12 stream gauges across the basin, in the Grande Ronde, Catherine Creek, and Wallowa watersheds. In addition to these 12, more gauges operated by other agencies complete the flow monitoring network. Together, these flow gauges provide comprehensive coverage of the region's water systems, helping to inform various water management decisions.

The data gathered from the stream gauges supports a wide range of management objectives, including:

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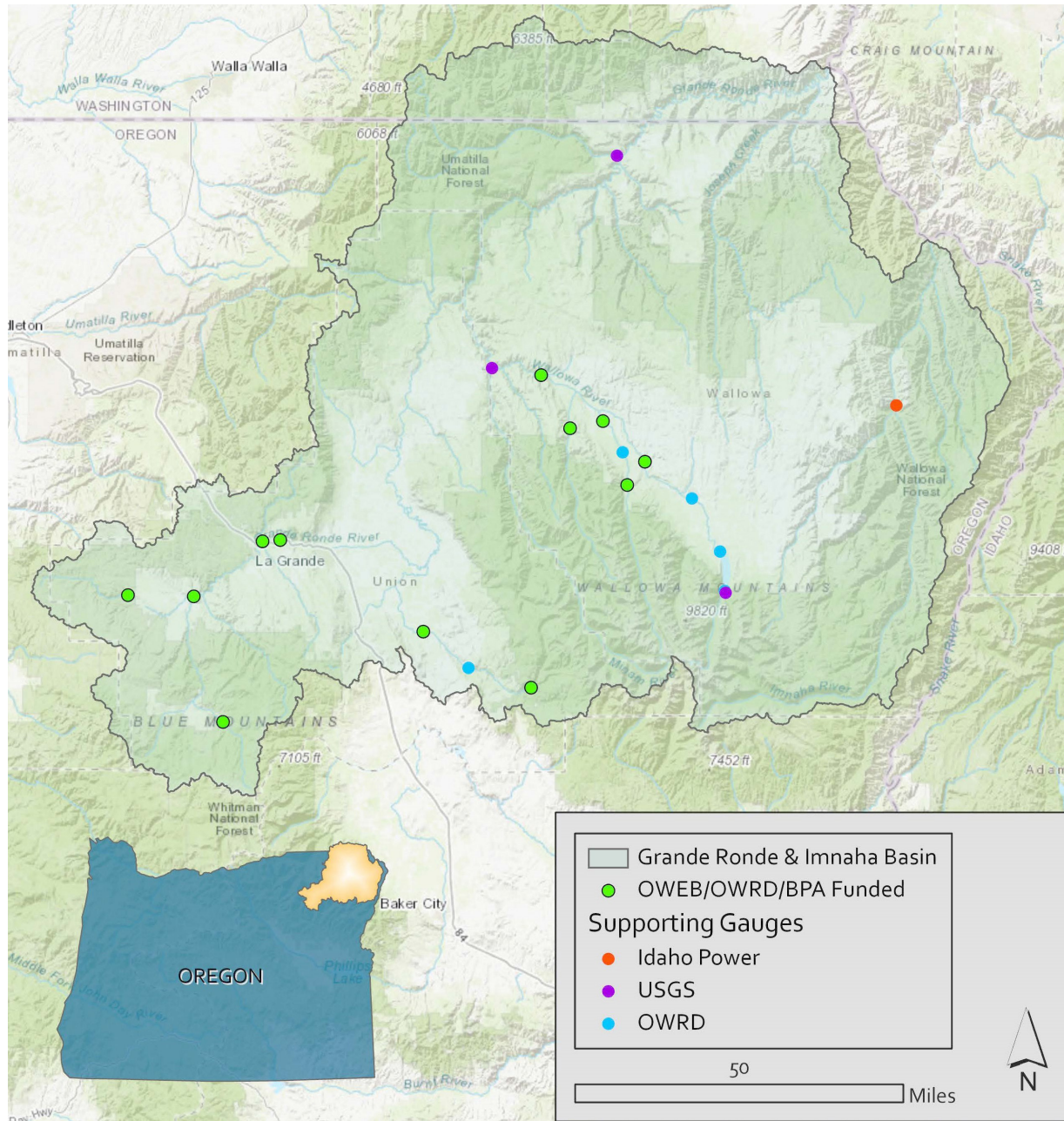
... continued from front page, **STREAM**

1. **Irrigation Water Management:** Reliable stream flow data ensures that irrigation efforts are aligned with available water resources, reducing waste and improving crop yields.

2. **Fisheries Management:** Understanding stream flows helps guide fisheries management practices, ensuring that water levels are

suitable for species such as Chinook salmon, steelhead, and bull trout.

3. **Long-Term Flow and Trend Analysis:** Continuous monitoring allows for the identification of long-term trends in stream flow, which is crucial for predicting future water availability and ecosystem health.



**The GRMW, in cooperation with OWRD, operates and maintains 12 stream-flow gauges in the Grande Ronde Basin. Five of the 12 operate in Wallowa County and the remaining seven in Union County. In addition to these 12, eight additional gauges exist that strengthen the overall flow-monitoring network.** (Courtesy of Alexandra Towne, GRMW)

4. **Water Quality Management:** The data supports Total Maximum Daily Load (TMDL) and SB1010 water quality management plans, helping to track and improve water quality over time.

5. **Sub-basin Plan Implementation and Restoration Projects:** The information provided by the gauges is key to the implementation of sub-basin plans and the development of restoration projects aimed at improving water quality and stream health.

6. **Cumulative Effects of Conservation:** The gauges also provide essential information on how conservation efforts are impacting stream flows and ecosystem health over time.

**T**he stream gauge network in the Grande Ronde Basin plays an essential role in ensuring that water resources are managed effectively, fish habitats are preserved, and water quality is maintained. By continuing to collect and analyze stream flow data, this network will help guide water management decisions in the region for years to come, contributing to the health of the ecosystem and the success of conservation efforts.

In conclusion, the data from the stream gauges is not only critical for understanding the flow characteristics of the Grande Ronde and Imnaha sub-basins, but it also serves as a cornerstone for informed, science-based water and fisheries management. With the ongoing collaboration of agencies and partners, the future of this vital watershed looks brighter than ever. ■

# Meet GRMW's Newest Board Member:

## JAKE SEAVERT

by Jesse Steele, GRMW Executive Director

Jake Seavert and his wife, Kim, have been married for 21 years. They have two sons, ages 18 and 16. Their oldest is currently studying Diesel and Advanced Diesel Technology at WyoTech, while their youngest is a sophomore at Union High School.

Both Jake and Kim grew up in Union County and are happy to be back after spending a combined 14 years living in Montana, Idaho, and Umatilla County. Since returning to La Grande, Jake has come to appreciate Union County as a uniquely special place—one that shares many similarities with parts of Montana. The opportunities for hunting, fishing, and spending time outdoors are a major perk of living here, and the rural community feel fits their lifestyle perfectly.

Jake's deep appreciation for the Grande Ronde Valley and the surrounding mountains inspired him to run for County Commissioner. That same passion also led him to join the Grande Ronde Model Watershed (GRMW) Board of Directors. In addition to this role, Jake serves on the Union County Weed Board, the Tri-County Weed Board, the Eastern Oregon Jobs Council, the Northeast Oregon Economic Development District Board, and the Union County Cattlemen's Association, where he is currently President and a member of the Animal Health and ID Committee.

The Seaverts own a small cattle operation in the Grande Ronde Valley, where they practice

holistic grazing—an interest that began for Jake during his time in the Agriculture Program at Eastern Oregon University. He believes cattle can be used as a tool to promote plant diversity and soil health. Through managed grazing, he has watched their land transform from a greasewood monoculture into a diverse plant community by

rotating cattle through small paddocks.

Recently, the Seaverts expanded their

operation and now lease additional grazing land, allowing for adequate rest periods on their home property. They are currently applying for Natural Resource Conservation Service funding to help establish off-channel water developments, which will further protect the water sources on their land. Jake is also passionate about improving avian habitat and is working to install brush breaks as part of that effort.

Jake enjoys the satisfaction of completing conservation-minded projects and will be a valuable voice on the GRMW Board of Directors. ■



**Jake with his wife, Kim, and their two sons.** (Courtesy of Jake Seavert)

# Fisheries Research Monitoring and Evaluation in the Upper Grande Ronde Basin: A multi-agency approach to filling the data gaps

by Les Naylor,  
CTUIR Grande Ronde Basin  
Research, Monitoring and  
Evaluation Project Lead

**S**ometimes you just can't do it on your own, and that's OK. Get help when you need it and provide help when you can.

In the Grande Ronde Basin, monitoring and evaluating salmon populations and their responses to habitat improvements require partnerships to leverage expertise from multiple agencies for assessing recovery efforts.

Hatchery programs were initiated to supplement the natural production of declining salmonid populations and help maintain populations. However, just putting more fish in a stream may not lead to better juvenile survival and adult returns. Salmonids require appropriate habitats in tributaries to support their numbers for natural production. This includes habitats with structural complexity, diverse flow conditions, cool water and abundant food sources to survive and grow before migrating to the ocean. Habitat restoration programs from tribal, state, federal and non-profit agencies have ramped up their efforts focusing on the headwater streams of

the Upper Grande Ronde River to improve spawning and rearing (key bottlenecks in juvenile natural production).

## Spending the Money in the Right Places: A coordinated effort

In 2012, the Grande Ronde Model Watershed (GRMW) developed the Grande Ronde Atlas process by ranking and prioritizing habitat restoration areas based on fish use by life stage and key limiting factors (conditions that could prevent recovery of fish populations).

This moved agencies away from an opportunistic and somewhat uncoordinated approach to improving stream habitat into a clear structured decision-making process. For Atlas to succeed, it is important to integrate past and current empirical data into the decision-making process so restoration projects are focused in the right areas of the watershed to address key limiting factors to survival. This data integration allows reviewers to assess whether a project is biologically beneficial for the life stage being affected and is collaborative and integrated with other restoration actions (e.g., linking stream reaches already restored or planned for restoration).

Atlas is designed to be iterative and adaptive as new data and research become available. However, the Upper Grande Ronde Watershed covers most of Union County and drains an area of about 1,650 square miles and has more than 900 miles of streams. Not all those streams are home to fish species, but they play an important part in the processes needed to support fish populations.

So how can you know if your hatchery supplementation or habitat restoration

are meeting goals and objectives for salmon recovery? That's where partnerships built on shared goals of salmon recovery and adaptive management come into play.

## Meadow Creek Collaborative: Complex processes and multiple agencies

The Meadow Creek watershed is in southwestern Union County and covers approximately 181 square miles. Almost 76% of it is on federal land with the remaining areas being tribally-, privately- and state-owned.



**Figure 1: Upper photo is pre-thinning. The bottom photo is the post thinning of the same area. The dense canopy pre-thinning prevents snow accumulation on the ground which reduces soil moisture and inhibits plant growth.** (Courtesy of Mike Wisdom, USFS Starkey Experimental Forest and Range)

The watershed has served, since time immemorial, as a traditional use area for fishing, hunting and gathering of First Foods by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). First Foods constitute the minimum ecological products necessary to sustain the CTUIR's subsistence and cultural needs. However, early European settlement and legacy management practices have resulted in an altered ecology from the uplands to the valley floor that cannot support the once-abundant natural resources traditionally used by the Cayuse, Walla Walla and Umatilla Tribes.

**T**he Meadow Creek Watershed Restoration and Research Collaboration is a multi-agency restoration and enhancement project involving tribal, state, federal, educational and nonprofit organizations with expertise in natural resource management, cultural resource protection, data management, public outreach and education.

This collaboration, for the first time, combines the CTUIR River Vision and Upland Vision into one intensively monitored watershed intended to benefit multiple First Foods species by incorporating Indigenous traditional ecological knowledge and western science (research, monitoring and evaluation) to understand changes in the physical and biological processes resulting from a holistic approach to watershed restoration.

### What work is going on?

In the uplands, fire suppression practices have created dense-canopy, early-stage forests that have an increased catastrophic fire risk (Figure 1). These dense forests can also prevent snow from getting to the ground by keeping it in the canopy layer where it evaporates early in the spring and does not reach the soil. The resulting low soil moisture content in turn leads to reduced deer and elk forage, fruit-bearing plants (huckleberry), rooting plants (cous and prairie onion) and pollinator abundance. Forest thinning on U.S. Forest Service (USFS) property is designed to open the canopy to reduce fire risk and allow snow to reach the ground. The thinning process will also be engineered to provide “wind breaks” that serve to accumulate snow. These snow drifts will



**Figure 2: The current condition of riparian vegetation and the effects of ungulate grazing on Meadow Creek have already been documented by USFS and Oregon State University. The next phase is to collect the same response data after a more aggressive restoration action referred to as Stage 0 or Valley re-set. This will bring the level of the stream and the floodplain closer together to re-hydrate the riparian zone to benefit plant growth and provide velocity refuge for juvenile salmon in high flows.** (Courtesy of Mike Wisdom, USFS Starkey Experimental Forest and Range)

be strategically located in sheltered drainages so the drifts last longer into the late spring/early summer season and release water into the system over a longer period. Snow depth stations, soil moisture probes, stream flow gauges, plant community transects, pollinator surveys and forage condition (nutrition) monitoring will help assess thinning effectiveness.

With regards to riparian and stream conditions, Meadow Creek and its tributaries have been highly altered and are mostly simplified channels cut off from an active floodplain. Plant growth in the former floodplains has changed from wetland-dominated species to dryer-tolerant species (as the channel cuts downward the groundwater depth reduces and floodplains dry). Planned habitat restoration work will bring the stream bed and floodplain closer together in elevation so the flood prone area is activated more frequently, the local groundwater elevation is raised and juvenile fish can get out of the high-flow main channel into a calmer-flowing complex floodplain (with lots of bugs to eat). This restoration approach is referred to as “Stage 0” and/or “Valley Reset.”

There have been several research papers published by the Starkey Experimental Forest and Range about the effects of wild and domestic ungulates (hooved mammals) on riparian vegetation under the

*Continued on page 6, CTUIR*



**Figure 3: The Meadow Creek Incline Plane trap is a fish trap that is located at the lower end of the creek before it meets the Grande Ronde River. This trap is designed to catch fish as they move out of the watershed. The data from this trap will tell us how long a fish tagged upstream has spent in the watershed and we can tag any fish not already caught higher up. From these data we will be able to estimate the number of out-migrating salmonids and monitor their survival down through the Columbia River. Downstream of the trap is a PIT tag receiver array that adds another layer of detection for fish going out but also detects tagged fish coming back into the system.** (Courtesy of Jacob Kennedy, CTUIR Grande Ronde Research, Monitoring and Evaluation)



**Figure 4: Electro-fishing crews on Meadow Creek catching salmonids and non-salmonid fish to determine abundance and distribution. Some fish will get a PIT tag so we can track their movement past a series of receiver arrays.** (Courtesy of Les Naylor, CTUIR Grande Ronde Research, Monitoring and Evaluation)

current conditions of Meadow Creek. The next phase is to focus on documenting the vegetation changes post Stage 0 versus those before stream restoration under the same grazing conditions (Figure 2).

Fish response to the type of valley re-set taking place in the Meadow Creek watershed can be difficult to track. To understand the existing habitat conditions, distribution, abundance and species richness of the watershed, there is a large-scale fish capture and tagging effort being conducted by the CTUIR, Columbia River Inter-Tribal Fish Commission, Oregon Department of Fish and Wildlife, Oregon State University (OSU) and the USFS. Crews capture salmonid species and implant Passive Integrated Transponder tags, which are 12mm long microchips that stay with the fish for their whole lives and when scanned provide unique identification codes. Each code is linked to a database that shows when and where the fish was tagged, what research agency tagged it and its weight and length when tagged. Fish are caught using an “incline plane” trap set at the downstream

end of Meadow Creek so it can capture fish from any of the tributaries (Figure 3). They are also captured using electro-fishing methods (Figure 4). There are receiver arrays in the Meadow Creek watershed and further downstream in the Grande Ronde River and Columbia River that provide a way to track each fish’s movement through the stream system as a juvenile and returning adult. This data provides a means by which researchers can estimate juvenile outmigration timing and survival along with adult return estimates.

**W**ith regards to fish food, when a floodplain gets inundated with water in the spring, fish get an opportunity to access abundant food sources of terrestrial macro invertebrates and seek refuge from the higher-velocity flows in the main channel. Eating lots of bugs and not spending a lot of energy swimming equals larger growth compared to fish that can’t get out of the high flows. Larger juveniles that out-migrate have a higher survival rate compared to smaller ones. Food availability data and what salmonids are eating under

conditions will be compared to post-restoration conditions (Figure 5). USFS scientists are developing a computer model for Meadow Creek to estimate food-based capacity under current conditions (based off the data already collected). The expected model output post restoration will be predicted and macro-invertebrate data added to validate the model's performance.

**A**quatic vegetation is an important part of stream habitat for salmon. After all it's where a large part of their food source lives. Pre-Stage 0/Valley Reset data has been collected by OSU, USFS and CTUIR on the macroinvertebrate species richness and abundance within bryophytes (aquatic and semi-aquatic mosses and liverworts) compared to those in the stream bed (substrate) and has shown much larger numbers of salmonid food species in bryophytes. This work has provided previously unknown information for the restoration implementors so they can now alter their practices to include plantings of aquatic vegetation beneficial to the fish species for which they are creating the habitat. The changes in bryophyte distribution will be monitored during the post-restoration phase of the Meadow Creek Collaborative to understand the effectiveness of the Stage 0 type of restoration action in creating and maintaining the habitat needed by the salmonids' food source.

### **There is more.**

This article highlights only a part of what is happening in the basin, with the Meadow Creek Collaborative being an example of



**Figure 5: Fish stomach contents are taken to determine what they are eating now, and will be compared to what they are eating post restoration.** (Courtesy of Les Naylor, CTUIR Grande Ronde Research, Monitoring and Evaluation)

multiple agencies working together effectively. With the inclusion of supplementation and effectiveness-monitoring projects occurring in the larger basin by tribal, state, federal agencies and universities, there is too much information to share in this article, but future Ripples articles may provide additional details regarding those projects.

The private landowners in the Basin continue to provide support and input on these projects and allow access to monitor fish and vegetation responses as well as creating important conservation areas on their respective properties. We thank them.

Also, the financial and technical support of organizations and agencies such as Bonneville Power Administration, Bureau of Reclamation,

Oregon Watershed Enhancement Board, GRMW and USFS continue to keep the recovery efforts going. ■

*For more information about the CTUIR, visit [ctuir.org](http://ctuir.org)*

# WE'RE HIRING!!

## Wallowa County Project Coordinator

**Location:** Enterprise, Oregon

**Pay:** \$26–\$28/hr (DOE) + full benefits

Love rivers, restoration, and working with awesome people? Join the Grande Ronde Model Watershed team! We're looking for a motivated, community-minded person to help lead stream restoration projects in Wallowa County. If you enjoy coordinating, problem-solving, and making a real impact on our local environment—this job's for you.

**Apply by:** May 28, 2025 at 12 PM

Email cover letter, resume, and 3 references to: [jesse@grmw.org](mailto:jesse@grmw.org)

Full details at: [www.grmw.org](http://www.grmw.org)

## Grande Ronde Model Watershed UPCOMING BOARD MEETINGS

Tuesday, June 24, 2025  
5:00 p.m.  
Wallowa Community Center  
204 E 2nd St.  
Wallowa OR 97885

Tuesday, August 26, 2025  
5:00 p.m.  
Annual Board BBQ  
TBD

*The public is welcome to attend.*

Meeting dates are subject to change.  
Please call (541) 663 - 0570 to confirm.

Thank you!

## Grande Ronde Model Watershed

1114 J Avenue | La Grande OR 97850

Ph. 541-663-0570

[WWW.GRMW.ORG](http://WWW.GRMW.ORG)

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Jed Hassinger, Vice-Chair  
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