A Fond Farewell

by Jeff Oveson, GRMW

It was June, 1996, when Heather Hall heard about an opening for a part-time position at the Grande Ronde Model Watershed Program (GRMW) from an acquaintance, Mary Estes, who was (and still is) employed at the GRMW. Heather understood that because the position was funded by "soft money," there was no guarantee that the job would last, but she applied anyway. She was successful, and the job lasted, and lasted, and lasted.

Heather and her husband, Shawn, were expecting their second child when she joined the GRMW. That expected baby is now Jett Hall, a sophomore at La Grande High School, probably one of the few teenagers you'll meet who has taken down a cougar—with a bow and arrow. Jett's sister, Katelynn, is in her junior year at Eastern Oregon University and is pursuing a degree in business. Those of us who have worked with the GRMW for a long time have essentially watched Katelynn and Jett grow up.

It turns out that even as kids grow up and move on, parents can move on as well. In 2009, Heather became a Licensed Tax Preparer in Oregon and began to work part-time for Stuart Martin at "TaxMan" in La Grande. Heather enjoyed the challenge and felt as though she had found her new calling. So when the opportunity for a fuller work schedule at TaxMan arose, Heather announced that she was leaving the GRMW. Her official last day with the GRMW was in early September.

ABOVE: Photo provided by Heather Hall

We've enjoyed the 16 years that we have worked with Heather, and it isn't the same without her, but the entire GRMW family wishes her and her own family nothing but the very best. Thanks for 16 great years, Heather!

This newsletter is funded by the Bonneville Power Administration and the Oregon Watershed Enhancement Board

Grande Ronde Model Watershed

1114 J Avenue • La Grande OR 97850
ph 541-663-0570 • fax 541-962-1585

Margaret McGladrey,
Ripples Editor
grmw.ripples.editor@gmail.com

Ripples in the Grande Ronde

Fall 2012

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

Education Expansion

by Leigh Collins, GRMW

During the past year, the Grande Ronde Model Watershed (GRMW) has enjoyed the opportunity to expand its educational outreach activities to more youth in the area than ever before. The GRMW has been involved with multiple educational events this fall. The newest outreach idea we have put into practice is the addition of two new seats to the GRMW Board of Directors. With the approval of the Board, the GRMW staff added a FFA high school representative and an Eastern Oregon University (EOU)/Oregon State University (OSU) representative to the GRMW Board.

Troy Abercromie will serve as the EOU/OSU student representative, and Mikayla Frei will serve as the FFA representative. These two new representatives will add more diversity to the Board and will also bring more restoration opportunities to a younger demographic of community members. More information about our new Board members will be included in the winter issue of the *Ripples*.

Learning Opportunities for Local Schools

The GRMW and EOU have also partnered to place environmental studies majors in an 11-week internship program at the GRMW. These internships allow students to gain practicum credits at the end of their college careers while working toward graduation. The internship provides students with the ability to integrate classroom theory into workplace practice. The current EOU intern has assisted with education outreach, database entry, project site visits, and habitat surveys. The GRMW hosted its first intern this spring, and we hope to host more interns in the future.

The GRMW had the opportunity to join six different elementary schools for various outdoor educational activities during the 2011-2012 school year. Grande Ronde Academy and La Grande Middle School sixth graders joined the GRMW team and volunteers at Ladd Marsh for a day of learning about plants, forestry, birds, insects, water quality, and more. Students participated in hands-on activities that encouraged learning about environmental stewardship.

Continued on page 2

LEFT: Trent Bray, owner of the Bobolink, listens and watches for birds at Ladd Marsh with students from Grande Ronde Academy.

ABOVE: A Wallowa County youth painting on the watershed mural at the Wallowa Resources Watershed Festival.

The volunteers who helped lead these activities were from the Confederated Tribes of the Umatilla Indian Reservation, Oregon Department of Fish and Wildlife, Eastern Oregon University, Union Soil and Water Conservation District, U.S. Fish and Wildlife Service, Department of Forestry, and local community members. Each volunteer shared specific knowledge about their area of expertise and how it ties into watershed management.

Staff from the GRMW joined Stella May Field Elementary and Middle School sixth graders for outdoor school at the 4H Center. The GRMW team introduced students to plant identification techniques, non-point source pollution, aquatic insect identification, and stream hydrology. GRMW staff members also took natural resources and agricultural classes from Cove High School and Joseph High School to visit current projects. While on site, the high school students helped strategize ways to improve stream habitat.

New Directions for GRMW Outreach Activities

Cove High School began the proposal process to initiate a restoration project on privately owned property near the school. Under the supervision of teacher Bruce Mackey, the natural resources class built a riparian fence to keep out cattle on a section of Mill Creek. During the coming year, they will address problems with invasive vegetation on the same section of the creek. This is the GRMW's first project for which a local high school has served as the project sponsor.

Last but not by any means least, the GRMW set up educational booths at multiple festivals and education days during the spring, summer, and fall, such as the Free Fishing Day, the Salmon Walk, the Wallowa Resources Watershed Festival, the Kokanee Festival, Arbor Day, Arts for All, the Future Stewards Day, Science Day with Marian Academy, and the Bird-A-Thon. GRMW booth activities included mural painting, wildlife, fish printing, tree giveaways, lessons about local birds, water treatment, and assistance with free fishing day. Youth attending each of these activities learned about how they can influence the health of their watershed. These booths and outdoor days sponsored by the GRMW and other agencies help to increase local youth's awareness of environmental issues in their own backyards.

The GRMW is always looking for ways to increase public awareness about watershed activities and local watershed health. In addition to partnering with organizations to complete watershed enhancement projects, the GRMW seeks to increase public knowledge about stream habitat and ways that community members can improve their local streams. Please check our website for resources and opportunities to get involved, or contact Leigh Collins at the GRMW office.

ABOVE: Marissa Ticus of the ODFW teaches a sixth-grade student about aquatic insects at Ladd Marsh.

Meet the Staff
Lacey Moore

Profile by Jeff Oveson, GRMW

In early April this year, I received an email from a young Oregon State University (OSU) student inquiring as to whether the Grande Ronde Model Watershed (GRMW) might have an internship available. I had been considering the standard "thank you so much for inquiring, but we really don't have anything like what you're looking for" response when the Bonneville Power Administration (BPA), our single largest funding partner, dropped a rather large technological undertaking onto my desk, with the expectation that it would be completed in what I viewed as a fairly short timeframe. The assignment involved a lot of Geographic Information Systems (GIS) work, a discipline in which we have some staff capacity, but not enough to complete the task that came to be known as the "Restoration Atlas."

As it turns out, the young student who had sent the email, Lacey Moore, a 2007 graduate of Cove High School, already had a Bachelor of Science degree in Environmental Economics and Policy from OSU and was working on a GIS graduate certificate. Although I really didn't know Lacey, I knew her mother, Meg, and had known her late father, Scott, who at the time of his premature passing in 2007 was a Sergeant in the Oregon State Police, working primarily in fish and game enforcement.

Typical of many young people in rural eastern Oregon, Lacey and her older sister, Maddee, were involved with 4-H and Future Farmers of America (FFA), involved to the extent that they helped charter the Cove High School FFA Chapter. Maddee now lives in Kansas City, Missouri, and Meg is a dental hygienist in La Grande.

I like the chance to hire local people, people who appreciate northeastern Oregon and understand our communities as well as recognize the relationship we have with our surroundings and also happen to have the skills and personality to work on a small staff and with numerous partners from different disciplines. I didn't know all of these things for certain about Lacey, but because my immediate need was to fill a task-specific position for a few months, it seemed to me that she could make a solid contribution and learn some job skills that might help her in the future.

In a small office like ours, personalities are important. It's not as though two people who don't get along can just ignore each other; everyone has to work alongside everyone else.

ABOVE: Lacey Moore

Lacey turned out to be another perfect fit for our little GRMW family. She is bright, inquisitive, ambitious, and pleasant, with an ability to partake in the intra-office banter on which we pride ourselves.

Having "lived in some of the most beautiful places in Oregon," Lacey said she felt like she wanted to contribute to maintaining the ecological and social values of those places, so environmental economics and policy was a natural choice for her program of study. Like innumerable other recent college graduates, Lacey was having trouble finding employment commensurate with her degree. In her employment search, she had noticed that many job offerings mentioned GIS as a preferred skill, so she decided to acquire a GIS certificate.

Lacey still has some coursework to finish this fall and winter before she has completed her GIS certificate, but her performance here at the GRMW so far has been exemplary. As a result of compiling massive data sets and converting them into geo-referenced maps, base work upon which the Restoration Atlas will be constructed is nearing completion. In addition to laying the groundwork for the Restoration Atlas, Lacey has been gaining experience with many other aspects of the GRMW's work. She has gone along on spawning ground surveys with partner biologists, worked on fish salvage details, participated in public involvement and education field days, and, probably most critically, prepared and delivered an excellent presentation to the GRMW Board of Directors.

If Lacey is representative of the "next" generation, then you have to like their chances.

Fish Online!

www.grmw.org

- Adult salmon counts at the dams
- 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, December 11:
  9:00 a.m. to 3:00 p.m.
  Kimsey Commons
  1104 Church Street
  Cove, Oregon
- Tuesday, Febuary 26: 5:00 p.m.
  Wallowa Community Center
  204 East Second Street
  Wallowa, Oregon

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

Making Sure Fish Don't Get Lost on the Lostine:

The Lostine River/City of Lostine Fishway Improvement

by Coby Menton, GRMW

Located 1¼ miles south of the City of Lostine on the Lostine River is a fish ladder owned by the Oregon Department of Fish and Wildlife (ODFW). This fishway was built in the early 1960s in order to improve fish passage on the Lostine River at the City of Lostine's irrigation diversion. The existing fish ladder structure has served a dual purpose. The first purpose has been to provide passage for adult Chinook salmon and steelhead both upstream and downstream at the point of diversion, and the second purpose has been to eliminate a gravel push-up dam constructed by the irrigation ditch company on an annual basis.

Push-up dams are a method by which streambed material is piled in-stream to check water and divert it down the irrigation canal. Although dams are effective at diverting irrigation water, this method is disruptive to the stream, causes erosion and sedimentation, and can create a barrier to aquatic organism movement both upstream and downstream if the dam spans the channel. Push-up dams are usually washed out during high spring flows and have to be rebuilt annually. The upstream end of the fishway checks water elevation enough for the irrigation company to divert water without a push-up dam.

The existing fish ladder consisted of five channel-crossing concrete walls that formed an approximately one-foot-high jump between each wall. Several notches were cut into each wall to provide for low flow and a more attractive area for fish to navigate the ladder. Some years after the construction of the first five walls, a sixth structure made of the concrete, rock, and metal that had been on-hand was installed on the downstream end to prevent the lowest wall from being undercut during high flows and to help ensure favorable passage conditions.

LEFT: Taken on August 2, 2012, before project construction, this photo shows the fish ladder from the downstream side. What looks like piled rocks at the bottom of the ladder is the rock, concrete, and metal used to shore up the lowest wall. Low-flow notches are visible in the five walls; the elevation difference between each wall is approximately one foot.
BELOW: Taken on September 5, 2012. In this photo, the contractor is blending channel bottom material to prevent flow from moving to the subsurface. The excavator places the material and provides compaction, and the high-pressure water seals the channel bottom.

Problems with the Existing Fish Ladder

Unfortunately, the existing fish ladder has been deteriorating; passage of all ages of aquatic organisms could not occur through the existing structure, and it does not meet current fish passage criteria from both state and federal fish management agencies. The concrete walls, including the newer sixth structure, had to be stabilized at least one additional time following initial construction. This temporary fix required an excavator to push back the walls to a vertical position and shore them up with large boulders. Due to high flows and age, the walls were tipping over and becoming increasingly unstable. Had the structure washed out, the ditch company would have had no provisions to divert irrigation water, unless it once again constructed a push-up dam.

Fish passage structures built in the 1960s are much different than those constructed today. Decades ago, passage improvement efforts in our area largely focused on adult salmonids, specifically Chinook salmon and steelhead. Less consideration was given to juvenile Chinook and steelhead or to any life stage of other

resident fish species. Although adult fish were able to navigate the fish ladder, younger fish could not, which is why the existing structure did not meet fish passage criteria. Current fish passage rules call for no more than a six-inch jump height between structures in streams that are home to bull trout. Bull trout inhabit the Lostine River, and any project addressing or affecting fish passage in the Lostine must meet this criterion.

The Habitat Improvement Project

In cooperation with ODFW, the GRMW developed a project that would restore aquatic organism passage to all species and life stages, maintain the necessary physical characteristics of the stream channel to accommodate irrigation practices, and result in a river channel that is natural in terms of its appearance and function. After several design and review iterations by nearly ten agencies, the project team decided on a design solution that would reduce slope and jump heights at the fishway. The focus of the design was to implement a project that would restore both upstream and downstream passage and that would be durable, require no maintenance, and return this 350-foot section of the Lostine River to a natural functioning condition.

Constructing the New Fishway

Construction began on August 2, 2012, and ended on September 14, 2012. During this time, eleven channel-spanning rock structures known as cross-vanes were installed in the project area. The intent of the cross-vanes is to maintain the river channel grade and elevation during erosive high flows and focus low flows in the center of the channel during times of low flow. Each vane is constructed from large rock; in this case, the size of the rock used ranged from three- to five-feet. Slope reduction through the reach was accomplished by spacing each vane approximately 30 feet apart, which resulted in a project length of 300 feet compared with the previous 100-foot-long fishway. The old fishway was left in place, except for small modifications to install the vanes, for several reasons, including enhancing stability, maintaining irrigation diversion capabilities, and providing additional structure. The new rock structure has been incorporated into and on top of the five concrete walls.

A second component of the construction process was the placement of river gravel between each of the vanes. This process is necessary to simulate a natural stream bottom and stabilize the cross-vanes. The size of this material ranged from sand to medium-sized cobbles, and the gravel was installed through a process called blending. Blending is a method by which the material is installed is small amounts, incorporated with existing material, compacted with heavy equipment, and sealed with high-pressure water. Blending keeps river flow on the surface rather than on the subsurface, which could happen if this material were loose and unconsolidated.

LEFT: This photo was taken on September 13, 2012, from the same location as the large photo on page 4. At the time of the photo, water had been running through the newly constructed project for two days, and flow did not go subsurface. The fishway built in the 1960s has been overtopped by a natural channel design fishway that gives the river a more natural appearance as well as restores fish passage.

The final construction phase of the project involved installing fish habitat-enhancing large wood features. Two wood features were installed, consisting of three trees with rootwads intact, pinned together, held in place with large rock, and buried into the stream banks. At completion, the rootwads extend into the river channel, and the tree trunks are buried in the stream bank. Large wood provides a multitude of benefits for fish, including hiding cover, resting pools, and habitat diversity.

Project Partners

Steve Lindley Construction, Inc., was awarded the construction contract, and from August 2 to September 14, they hauled and installed 1,467 cubic yards of boulders and 1,370 cubic yards of river gravel and backfill material. They performed this work on time and to specification in 42 days. The construction crew implemented a variety of tactics to reduce impact at the construction site. Original plans called for two access points to the project site, but with an innovative use of a temporary bridge access, the number of access points was reduced to one. This system not only reduced cleanup and reclamation of disturbed areas but also preserved valuable streamside vegetation. The crew also paid extra attention to the preservation of riparian vegetation during construction. Very few trees were removed, and where the rock structures key into the stream banks, trees and shrubs were left undisturbed to the maximum extent possible. In an attempt to reduce disturbance to neighbors, rock delivery times were scheduled after 7:00 a.m., and the crew worked Monday through Thursday, with no work occurring on weekends.

The Bonneville Power Administration funded the majority of this project through its Environment Fish and Wildlife Program. Other partners included the ODFW and the Lostine Ditch Company. Many agencies provided technical assistance, especially the ODFW. The Nez Perce Tribe provided valuable fish tracking data through the project area to ensure migrating Chinook salmon were able to pass through the restoration site during construction. The U.S. Fish and Wildlife Service observed construction over a period of two days to ensure that all terms and conditions of construction were being followed, that migrating Chinook were able to migrate through the area, and that no endangered fish were either harmed or killed during construction.

Continued from page 3

As part of the Upper Grande Ronde tributary assessment effort, Reclamation funded the production of 2012 aerial photographs and light distance and ranging (LiDAR) data in August of this year. LiDAR is the process of using ultraviolet, visible, or near infrared light to create multiple sets of data that include "bare earth" terrain images and digital elevation models, which provide detailed images of the ground surface in the assessment area. This newly acquired data will be available to the general public as well as to agencies, organizations, and partners of Reclamation sometime early next year.

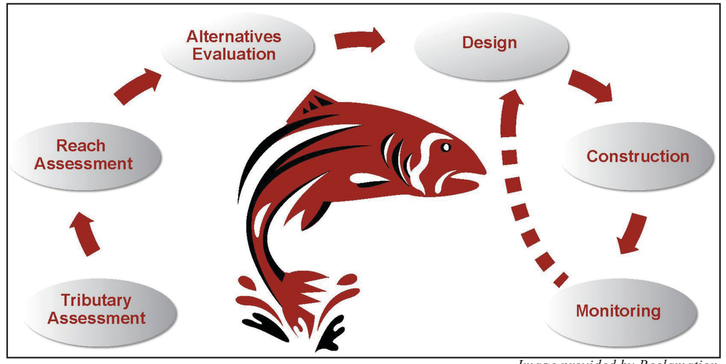


Image provided by Reclamation

For more information regarding the Upper Grande Ronde Tributary Assessment, please contact Darrell Dyke, Reclamation Subbasin Liaison, (541) 663-0177; Jeff Oveson, Executive Director, Grande Ronde Model Watershed, (541) 663-0570; or Allen Childs, CTUIR Grande Ronde Fish Habitat Project Leader, (541) 429-7940.

Stepping Through the Projects

by Mason Bailie, GRMW

Interested in knowing more about the projects that are currently supported by the Grande Ronde Model Watershed (GRMW)? Then the GRMW has good news for you! We have released a new online database that tracks all projects supported by the GRMW program. It is called the Stepwise Database, and it provides the public, project partners, and all interested parties with valuable information about each project.

The GRMW receives many project proposals during our spring and fall project solicitations. For each potential project, we receive a prospectus, proposal, budget, and engineering and map documents. We used to keep all of these files in a folder on the GRMW server, and if a member of the public wanted to access those files, then a staff member would have to email them. This new system allows us to offer a central location where anyone can access project files.

Another very important component of the database is date tracking. Projects can change significantly throughout the development and implementation stages. Sometimes, we will receive a re-designed project that went through our solicitation process years ago. It is helpful to know when the site visit for the project occurred, what was said about the project, and why the project was delayed. The Stepwise Database allows us to offer all of this information and helps us keep track of newer and older projects.

The idea for the Stepwise Database came about during the creation of the Stepwise Process. The Stepwise Process was developed to provide more clarity about the GRMW's project solicitation process, and the Stepwise Database was created to display the clarity of that process. The goal is to provide a system that keeps track of important dates, people involved, and documents submitted for each project.

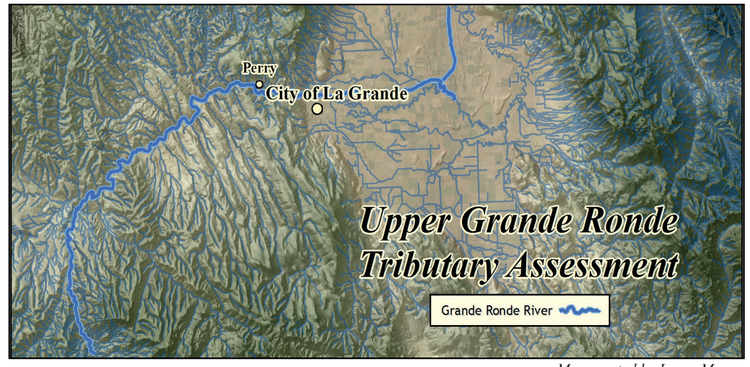
The creation of the database began in the summer of 2011 and finished in the spring of 2012. The database uses the MySQL platform, which is the world's most-used open-source relational database management system and runs as a server providing multi-user access to a number of databases. The programming language Python is used to make queries to the database. The front-end of the database is the GRMW's website, which is controlled by the open-source web framework Django.

If you see a restoration project in the Grande Ronde Basin and you are curious about what is going on, then head over to our website and check it out! As long as it is a project that is supported by the GRMW, the database will give you lots of interesting information to look at. The database is accessible online via our website at www.grmw.org. Simply go to the "Projects" page and select "Stepwise Database."

Partnerships to Assess the Upper Grande Ronde River Tributaries

by Rob McAfee, Reclamation

The Bureau of Reclamation (Reclamation) is partnering with the Grande Ronde Model Watershed (GRMW) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to conduct a watershed-scale assessment (Tributary Assessment) on the mainstem of the Upper Grande Ronde River. The tributary assesment will extend nearly 50 miles upstream of the confluence with Catherine Creek, excluding some sections of private land. Reclamation has previously partnered with the Union Soil and Water Conservation District, the GRMW, and other local agencies to complete the Catherine Creek tributary assessment, which is available on the GRMW website (http://www.grmw.org/). The effort resulting from the Catherine Creek tributary assessment is the Catherine Creek Reach 3 and 4 assessment. This reach assessment is currently being finalized and will also be available on the GRMW website. Additional cooperative efforts between Reclamation, local agencies, and land owners include a juvenile Chinook salmon tracking effort on Catherine Creek that was conducted with Oregon Department of Fish and Wildlife biologists during the past three years as well as projects to reconstruct numerous irrigation diversions to improve fish passage.



Map created by Lacey Moore

Reclamation and the Bonneville Power Administration contribute to the implementation of salmonid habitat improvement projects in the Columbia basin to help meet commitments made in the 2008/2010 Supplemental Federal Columbia River Power System (FCRPS) Biological Opinion issued by the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. The Biological Opinion includes a Reasonable and Prudent Alternative (RPA), or a suite of actions, to protect salmon and steelhead listed under the Endangered Species Act (ESA) across their life cycles. Habitat improvement projects in various Columbia River tributaries are one aspect of this RPA. Reclamation provides technical assistance to states, tribes, federal agencies, and other local partners to facilitate the identification, design, and construction of stream habitat improvement projects that primarily address stream flow, access, entrainment, and channel complexity limiting factors. Reclamation's contributions to habitat improvement are conducted within the framework of the FCRPS RPA or related commitments.

The assessment described in this article will provide scientific information about geomorphology and physical processes that can be used to help identify, prioritize, and implement sustainable fish habitat improvement projects and to focus those projects on addressing key limiting factors to protect and improve survival of salmon and steelhead listed under the ESA. The tributary assessment is the initial step in a process aimed at gearing habitat improvement efforts toward the most beneficial actions in the most appropriate locations.

The purpose of the assessment is to gain a better understanding of how watershed-scale characteristics such as climate, geology, valley widths, and stream gradients influence the ability of the Grande Ronde River to create and maintain habitat today compared with the habitat that fish utilized in the past. In addition, this assessment effort will evaluate the potential to enhance the Grande Ronde River's ability to create and maintain habitat in the future, given current constraints. One objective of the watershed-scale assessment is to identify specific segments of river (reaches) that are most suitable for locally driven habitat recovery efforts focused on all life cycles of the ESA-listed Chinook salmon and steelhead. With target areas identified, another objective of the assessment effort is to provide guidance and context to Reclamation partners regarding Chinook salmon and steelhead habitat improvement projects that are currently under consideration as well as those that will be identified through efforts following the tributary assessment.

Continued on page 6