From the Archives

The Story of Bird Track Springs

compiled by

Heather Hall, GRMW

ABOVE: Bird Track Springs, Photo by GRMW Staff

ABOVE: Bird Track Springs, Photo by GRMW Staff

ABOVE: Bird Track Interpretive Trail Trailhead Sign, Photo by GRMW Staff

As a youth, GRMW Board member Larry Cribbs recalls being a member of Explorers Post 114, which was led by Scoutmaster Lee Reynolds. Mr. Reynolds was a member of a prominent Union County pioneer family that was involved in a wide variety of youth and civic activities.

In the summer of 1957, the Scoutmaster and Scouts from Post 114 chose as one of their annual civic projects the construction of a spring-water cistern at a spot along the Upper Grande Ronde River favored by many locals. The young Explorers made this project into a camping and construction trip. They stayed overnight in railroad cars owned by Mount Emily Lumber Company, which donated the use of cars that were more or less permanently stationed across the river. Many of those same railroad cars are now located at Camp Elkanah.

The Explorers mixed concrete by hand, poured it into forms they had built themselves, and left their work to harden overnight. Upon returning from their "camp" across the river the next morning to check out their handiwork, they discovered that some small birds had unknowingly left a permanent imprint in the newly formed concrete. Hence, Cribbs and his fellow Explorers anointed their project "Bird Track Springs."

Today, Bird Track Springs is a popular campground for hikers and bird watchers alike and features a 1.5-mile Interpretive Trail that wanders through meadows and forest along the Grande Ronde River.

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

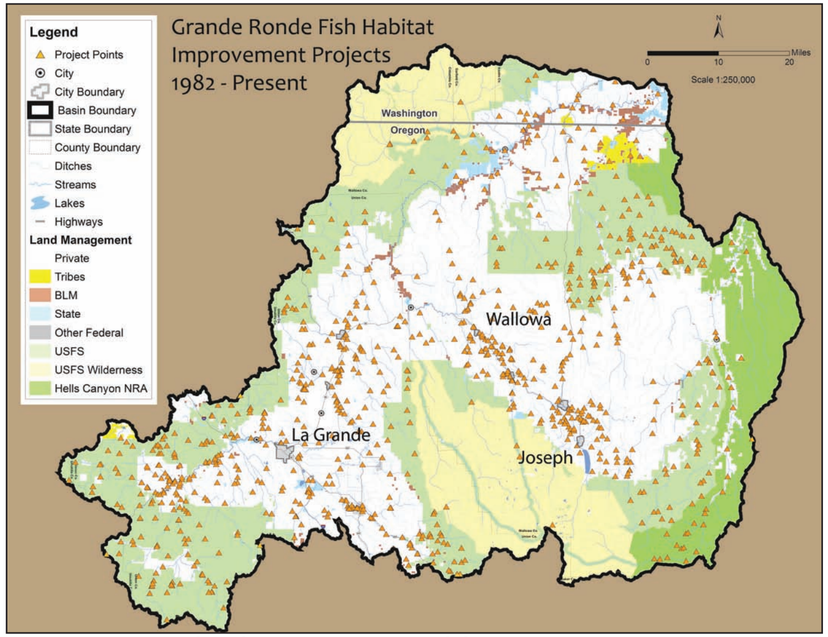
Winter 2010

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

The GRMW Looks Back:

Nearly Two Decades of Watershed Restoration in the Grande Ronde

Graphic by Mason Bailie, GRMW
Text by Margaret McGladrey, Editor



As 2009 and the first decade of the twenty-first century draw to a close and we embark upon a new year and a new decade, the GRMW team developed the map at right to reflect on the progress of the cooperative efforts of public agencies and private partners to restore the watershed and fish habitat in the Grande Ronde Basin. The GRMW's core strategy that locally based efforts to improve coordination, integration, and implementation of existing local, state, and federal programs can effectively protect, enhance, and restore a regional watershed area has served as a model for the state of Oregon since the GRMW's designation as the model watershed project by the Northwest Power Planning Council in April 1992. As the model watershed project for the state, the GRMW and our partners have demonstrated that this cooperative, collaborative approach to watershed management and restoration works: since 1982, Grande Ronde Basin projects have treated 421 miles of stream with in-stream work, improved fish passage at 78 sites, relocated or improved 866 miles of road, and treated almost 60,000 acres of riparian and upland habitat. The GRMW thanks its many project partners for their contributions to this success and looks forward to another decade of watershed restoration in the Grande Ronde Basin. ■

Selected GRMW Project Accomplishments, 1994-Present

- 254 miles of stream channel and streambank treated, including placement of large woody debris, boulders, log and rock structures, and restoration of historic stream channels.
- 332 miles of exclosure fencing and cross-fencing.
- 3,328 acres of riparian habitat treated, including protection with exclosure fencing, vegetation planting, seeding, noxious weed control, and floodplain/wetland/meadow restoration.
- 23,301 acres of upland habitat treated, including modification of agriculture practices, noxious weed control, seeding, and tree thinning.
- 15,789 acres of "mixed" habitat (including both riparian and upland habitat) treated, including exclosure fencing, vegetation planting, seeding, thinning, and noxious weed control.
- 179 miles of road improvements or relocation, including drainage improvements to reduce sediment and the relocation of draw-bottom roads away from streams.
- 437 livestock water developments (for off-stream watering), including spring, pond, and well developments.
- 66 fish passage improvement sites.

Fish Crossing!

Improving Fish Passage in the Grande Ronde Basin One Project at a Time

ABOVE: The completed bridge and roadway. Ecoblocks and rock were used to protect bridge abutments. The road was graded and graveled to provide a smooth surface for drivers.

LEFT: Instream work is complete. Flow capacity has been greatly increased, eliminating any possibility of future failure due an extreme flood event. Any obstacles to fish passage have been removed.

by Lyle Kuchenbecker, GRMW
All photos by GRMW staff

The Union County Public Works Department recently completed another successful culvert replacement project to improve fish passage through a local stream. During the past 15 years, many groups have cooperated to replace, modify, or eliminate culverts and old bridges that created partial or total obstacles for anadromous fish returning to tributary habitat. Anadromous fish are fish species such as Chinook and steelhead that migrate from saltwater to spawn in freshwater habitat.

Culvert and bridge replacement projects that help migrating adult Chinook and steelhead as well as juvenile fish to move unimpaired throughout stream systems without a doubt have increased the survival of these fish populations. Unlike most other habitat improvement projects that take years to mature, fish passage projects provide immediate benefits to threatened and endangered fish species. Fish passage improvements at road crossings and at irrigation diversions have been high-priority restoration activities since the mid-1990s in the Grande Ronde River Basin, providing fish access to hundreds of miles of stream habitat.

Why Replace the Culvert on Mill Creek?

The Mill Creek project involved replacing a steel culvert located above the City of Cove on Forest Road 6220 to Moss Springs, which is a heavily used recreational and forest access road. Mill Creek is a resident rainbow and steelhead stream and has been identified as critical habitat for Endangered Species Act-listed Snake River summer steelhead. The culvert did not meet current fish passage criteria for slope and length, meaning that fish passing through could be at risk. The project was a cooperative effort among the U.S. Forest Service, the Federal Highway Administration, Forest Capital, the Union County Public Works Department, and the City of Cove. Engineers of Anderson·Perry & Associates, Inc. designed the new bridge.

Planning and Designing the Mill Creek Project

Planning for the project began about three years ago, when the U.S. Forest Service identified culverts for improvement and worked with the Federal Highway Administration to acquire funding. With cost estimates developed by Anderson·Perry, the Union County Public Works Department applied for funds from the Federal Highway Administration and received $336,000 for the bridge. Union County provided a cost-share primarily for the road realignment work.

Project partners faced the challenges of acquiring right-of-way, realigning the road, and constructing a bridge that crosses the stream at an angle. The road immediately above the old culvert had a sharp curve, which was a safety and maintenance concern for the county. The old road crossed Mill Creek just beyond the Cove powerhouse. The project partners decided that the most appropriate and cost-effective plan for replacing the creek crossing would include realigning the road, constructing the new bridge below the powerhouse (about 300 feet downstream of the culvert), and using the old culvert for traffic bypass during construction.

Meet the Board

Larry Cribbs

GRANDE RONDE MODEL WATERSHED

Profile by Jeff Oveson, GRMW

"Lots of people look at Eastern Oregon as the end of the earth, but it's really the beginning," said Larry Cribbs. And if you've ever had the chance to hear a part of his life story, you would know that he meant what he said.

Born in Salem, Oregon, but raised in Wallowa and Union Counties, Larry is the great-grandson, grandson, and son of loggers and attended Eastern Oregon University (then called Eastern Oregon State College). Larry says that in 1962, he helped plant many of the trees that are still growing on the EOU campus.

Larry left the relative comforts of his homeland to serve in the U.S. Army from 1964 to 1966, which included a tour in Vietnam. After his return home from military service, he married Shirley, his wife of 42 years and the mother of his sons, Christopher and Michael, who are both married and raise families in La Grande.

When Larry first started working at Eagle Freightliner 26 years ago, he served as a liaison to natural resources agencies and working groups. It was a natural link between the land he loved and the people he served. He strongly feels that those best-suited to make sound decisions about natural resources in Eastern Oregon are the people who live in Eastern Oregon, those with a "vested interest" in the well-being of natural resources and rural communities alike. His actions are well-founded in that belief.

Today, Larry is "Corporate Branch Manager" for Eagle Freightliner (which seems like a rather stuffy title for someone as down-to-earth as he is, but it means that he is the general manager for both stores, located in La Grande and Hermiston). Even with an vastly expanded role in his official occupation, he never really got away from a number of other responsibilities related to natural resources and local economics.

Larry was instrumental in the formation of the Blue Mountains Natural Resources Institute; served as Chair of the Union County Economic Development Corporation and the President of the La Grande/Union County Chamber of Commerce; helped develop the Starkey Experimental Forest; served on the Blue Mountain Ecosystem Restoration Board, the Eastside Ecosystem Restoration Committee, and La Grande Industrial Development Corporation; and has been involved in numerous timber salvage and thinning efforts on public lands. Larry received the "Chief's Award" from Jack Ward Thomas for his involvement in furthering caring and correct resource management as well as the Forestry Appreciation Award from the Oregon Society of American Foresters. Larry and others formed Our National Forests, Inc. and published a magazine titled "Everyone's Outdoors," which promotes the care and wise use of public lands.

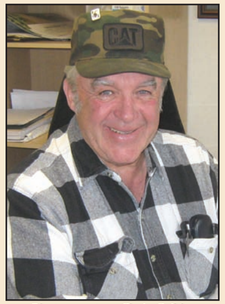


Photo courtesy Chris Cribbs, Eagle Freightliner

Larry was part of the original group that identified numerous challenges with watershed management and formed what is now the Grande Ronde Model Watershed Program. The Union County Commissioners appointed him serve on the Board of Directors when it was founded in 1992. It would be difficult to find anyone who knows the forests, streams, and mountains of this area any better than Larry, and it might be even harder to find anyone who better understands and appreciates the people that share his love of this area.

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

- March 23: 6:30 p.m.
  Elgin Community Center
  260 North 10th Street
  Elgin, Oregon
- May 25: 6:30 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!

How Do Salmon Weather the Winter in the Grande Ronde?

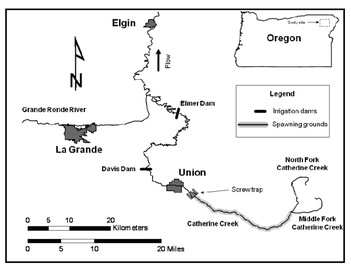
The ODFW Early Life History Project Tracks Catherine Creek Spring Chinook Salmon Throughout the Winter Months

By Margaret McGladrey, Editor, and Scott Favrot, ODFW Northeast Region Fish Research Assistant Project Leader
All images courtesy of ODFW

In the Grande Ronde Basin and beyond, critical habitat for Chinook salmon varies greatly as fish migrate from the freshwater streams where they are born to the Pacific Ocean. Catherine Creek, a tributary of the Grande Ronde River, supports a depressed population of Snake River spring/summer Chinook salmon listed as threatened under the Endangered Species Act (ESA). Most spring Chinook salmon spawning in Catherine Creek occurs between Union, Oregon, and the confluence of North Fork and Middle Fork Catherine creeks.

Chinook Salmon's Winter-time Habitat on Catherine Creek

The quantity and quality of winter-time rearing habitat may be limiting the production of Chinook salmon in Catherine Creek. According to Oregon Department of Fish and Wildlife (ODFW) researchers, wild juvenile Chinook salmon exhibit two overwintering life history strategies. "Overwintering" refers to how juvenile salmon spend the winter months. Early migrants redistribute downstream from upstream rearing areas to spend the winter between Union and Elgin. Late migrants spend the winter in upstream rearing areas of Catherine Creek above Union. Both early and late groups migrate seaward during spring (see map below).



Research indicates that on average about 80 percent of Catherine Creek Chinook salmon juveniles demonstrate the early migrant life history strategy.

Unfortunately, survival of Catherine Creek early migrants is typically lower than that of other Chinook salmon populations in the Grande Ronde Basin, such as the Grande Ronde, Lostine, and Minam River populations. Areas of Catherine Creek where juvenile Chinook salmon overwinter are degraded due to changes in stream flows, sparse stream-side vegetation to provide shade and cover, competition from introduced species, lack of instream cover, habitat degradation and excessive amounts of silt due to erosion.

The Early Life History Research Project

For Chinook salmon populations, in which juveniles remain in freshwater for one year before migrating to the ocean, the quantity and quality of overwinter rearing habitat influences the number and size of fish produced. Due to concerns associated with this fundamental relationship between freshwater overwintering habitat and juvenile Chinook salmon production, the Northeast Oregon Fish Research and Development team of the Oregon Department of Fish and Wildlife (ODFW) has initiated additional research on Catherine Creek as part of their Early Life History (ELH) research project in the hope of assisting this threatened resource. This research is a collaborative effort between the ODFW, the Bureau of Reclamation (BOR), the Bonneville Power Association, the Grande Ronde Model Watershed, and the Union Soil and Water Conservation District among several other partners and contributors. Their research objective is to identify and describe which stream reaches in the Grande Ronde Valley are used by juvenile Chinook salmon during the fall and winter months.

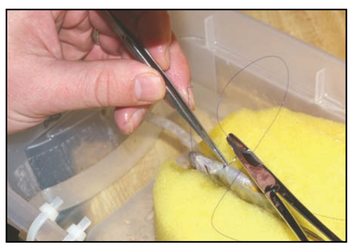
There are approximately 60 miles of river between Union and Elgin where Catherine Creek early migrant juvenile Chinook salmon can overwinter. The ELH project selected radiotelemetry techniques to address their established objective because of the high precision, flexibility, and reliability this technology provides for dealing with large study areas like the Grande Ronde Valley. The first phase of this project began during the winter of 2009 and is currently slated to conclude during the spring of 2010. The ELH project and BOR anticipate extending this research into 2011 in an effort to compare results from several years. Knowing where

Radio-tagged juvenile Chinook salmon

Catherine Creek juvenile Chinook salmon overwinter in the Grande Ronde Valley will assist fisheries managers in more efficiently allocating limited resources toward efforts designed to improve the survival of this fish population.

The First Task: Radio-Tagging the Fish

The first task for the researchers was to capture juvenile Chinook salmon that migrate from their upstream rearing areas in Catherine Creek to overwinter in downstream reaches. Researchers captured 99 wild juvenile Chinook salmon from October through December 2009 using a rotary screw trap and anesthetized them in preparation for radio tag implantation. These radio tags are approximately the size of a sunflower seed and are surgically implanted into the body cavity of each fish under sterile conditions. The only visible evidence of tagging following surgery is two small sutures that dissolve in a couple weeks and a 7-inch antenna trailing behind the fish through an exit incision. Each radio tag emits a unique signal every 10 seconds during daylight hours, allowing fisheries researchers to track individual movements of tagged fish.



Surgery to implant the radio-tag into the juvenile fish

Tracking the Chinook Salmon

Next, the team positioned five stationary radio receiver and antenna configurations systematically throughout downstream Catherine Creek. Researchers prioritized their tracking efforts based on data obtained from stationary receivers. The researchers conducted manual tracking using a mobile receiver to locate tagged fish and then obtained geographic coordinates using a hand-held GPS device. The team made every effort to locate

Manual fish tracking using a mobile receiver

Tracking fish on the deeper downstream sections of Catherine Creek by canoe

Tracking fish on foot over the ice-covered creek with the assistance of crampons

When manual tracking on the ground was made impractical by weather or stream conditions, researchers used a helicopter to conduct aerial tracking surveys

each tagged fish weekly throughout the fall and winter. The upper sections of Catherine Creek are shallow and were tracked by foot; however, the downstream sections are deeper and were tracked by boat. When snow and ice covered the creek, researchers tracked the fish manually on foot with the assistance of crampons. When manual tracking on the ground was made impractical by weather or stream conditions, researchers used a helicopter to conduct aerial tracking surveys. In addition to geographic coordinates of located fish, the researchers collected microhabitat use data for 30 randomly selected fish per week. Microhabitat use variables measured by the team included depth, velocity, dominant substrate, cover, and distance to bank. Stream reach occupancy combined with habitat use data will guide the implementation of specific restoration techniques in an effort to achieve the overall goal of improving the survival of Catherine Creek Chinook salmon.

In addition to locating tagged fish on a weekly basis, the researchers monitored environmental conditions by collecting continuous hourly water temperature data at eight locations in lower Catherine Creek. The final task for this project is to submit a final report to the BOR in early 2010 summarizing the research team's findings pertaining to stream reaches and habitat used by juvenile Chinook salmon in the Grande Ronde Valley during the winter.

Significance of the Research for the Grande Ronde Valley

The ODFW and collaborators are optimistic that this research effort will provide results that will facilitate effective habitat restoration strategies to enhance the survival of Catherine Creek early migrant juvenile Chinook salmon during their seaward migration through the Grande Ronde Valley. Returning adult Chinook salmon are culturally, economically, recreationally, aesthetically, and ecologically important to the Grande Ronde Valley. Numerous groups rely upon this resource, ranging from tribal communities and local businesses to fishermen and wildlife enthusiasts. In addition, returning adult Chinook salmon are a keystone species central to the operation of a healthy ecosystem. Other native species, such as birds of prey, scavengers, stream-side vegetation, herbivores, aquatic life, and predators, that share habitat with returning adult Chinook salmon benefit from carcass nutrients originating in the Pacific Ocean. Increasing the survival of juvenile Chinook salmon populations in the Grande Ronde Valley could potentially benefit many different groups and improve ecosystem health.

This radiotelemetry project is one of many research efforts of the ODFW's Early Life History project. The overall goal of the project is to investigate the critical habitat, abundance, migration patterns, survival, and alternate life history strategies exhibited by spring Chinook salmon and summer steelhead juveniles from distinct populations in the Grande Ronde River and Imnaha River subbasins. The ELH project provides information about the abundance of juvenile Chinook salmon and steelhead parr and estimates of survival for several life stages. Several field techniques employed by the ELH project to meet their objectives include snorkeling, seining, rotary screw trap operation to capture migrating juvenile fish, marking juvenile salmon and steelhead with PIT tags to estimate survival, and radio-tagging to determine winter habitat use. Research conducted by the ELH project provides a means for long-term monitoring of wild juvenile salmonid production in the Grande Ronde and Imnaha River subbasins that is essential for assessing the success of restoration and enhancement efforts.

"The Best Country: People Restoring Rivers"

A New Documentary Film About the Wallowa River Restoration Project

by Jeff Oveson, GRMW

ABOVE: An aerial view of the Wallowa River restoration project featured in the documentary, courtesy of Anderson-Perry and Associates

The Grande Ronde Model Watershed (GRMW) team is excited to be in the final stages of releasing "The Best Country: People Restoring Rivers," a 35-minute video program by Green Fire Productions that is focused on the restoration of two reaches of the Wallowa River. The video not only showcases the process of building new, natural stream channels to replace older, "channelized" reaches of the main stem river but also presents a look into the history and philosophy of the McDaniel and Nichols families, long-time Wallowa Valley residents and landowners upon whose land these restoration projects were implemented.

We are thrilled to show "The Best Country" and thinks that afterwards you just might look at rivers a little differently. Final plans for local showings of the video are in the works. The GRMW hopes to schedule at least three showings in Union and Wallowa Counties during the spring as well as coordinate smaller showings for local educators, civic groups, and other interested parties. The Spring 2010 issue of the Ripples and local newspapers will publicize screenings of "The Best Country." Please contact the GRMW office at 541-663-0570 for further details regarding when and where the documentary will be shown near you.

The Fall 2009 issue of Ripples in the Grande Ronde featured several articles about the Wallowa River restoration project; to learn more about the project, please visit ***http://www.grmw.org/publications/newsletter***

ABOVE: Karen and Ralf Meyer on location at Yellowstone National Park. Image courtesy of Green Fire Productions

green fire PRODUCTIONS

Getting the video project to this stage has been an interesting saga. In November 2007, I happened to be sitting next to Ray Jubitz, Executive Director of the Jubitz Family Foundation, at a conference in Hood River called the Gathering of the Network of Oregon Watershed Councils. Ray mentioned to me that he had heard about the GRMW's planned channel relocation project on 6 Ranch property near Enterprise, that he knew landowners Liza Jane and Craig Nichols, that they were very excited about the project, and that he was interested in knowing how it turned out.

It seemed like an opening to me, so I said, "Why don't you (meaning the Jubitz Foundation) fund the public outreach for the project?" As I recall, Ray replied, "Sure, if you use Green Fire." I had to admit I didn't know who Green Fire was, and he told me that they were "right there in La Grande, and do amazing videos about conservation." I guess he thought that was not enough information, so he dialed his cell phone, and when Karen Meyer answered it, he handed the phone to me. I have no recollection of that conversation other than it ended in an agreement to get together when I returned to La Grande, but it was the beginning of a great relationship with two very fascinating people, Karen and Ralf Meyer of Green Fire Productions.

Karen was born in Texas, grew up in northern California, and moved to Oregon after graduating from University of California, San Diego with a degree in communication. Ralf grew up in the 2,000-year-old town of Rodenbach outside Frankfurt, Germany. After they met in the Alps of Switzerland, they realized they shared a passion for all things natural and for telling stories, so it made sense that they would come to devote their lives to producing documentaries about conservation success stories. They founded the non-profit Green Fire Productions in 1989. Since then, the Meyers have produced more than 20 programs that have won numerous national and international awards as well as the hearts and minds of thousands of people who have viewed their work across the country and the world.

It's easy to understand why they are successful when you hear what they say about their life's work: "Whether it's cattle or sheep ranchers working to restore rivers and salmon habitat or commercial fishermen designating parts of their historic fishing grounds as protected 'marine reserves,' tribal elders conveying their connections to the land or people removing obsolete dams in their communities.…Seeing and hearing about these kinds of experiences has the power to motivate folks to act on their conservation values."

New bridges must meet stringent fish passage criteria in addition to safety and structural soundness criteria. Structures must have a natural bottom and be at least one-and-a-half times as wide as the waterway at its highest flow (called the channel's bankfull width). The new Mill Creek bridge spans about an 18-foot-wide channel; however, due to the diagonal orientation of the bridge in relation to the stream, the bridge is actually about 40 feet long and 24 feet wide.

The Union County Public Works Department ordered bridge parts and fabricated the structural components prior to the construction period. Actual construction began around the end of June 2009. Initial work involved clearing and excavation for the road relocation, and the logs were commercially harvested. A five-person crew under the direction of Joe Valek from the Union County Public Works Department did all of the excavation, bridge construction, backfilling, road work, culvert removal, and site cleanup. The project team completed work in early November 2009. Planting in the old roadbed and adjacent to the stream will be finished as weather permits this winter or in early spring.

Thanks to the new bridge, steelhead and resident fish will now have unimpeded access to about four miles of critical habitat in Mill Creek and Bridge Creek.

More Than a Decade of Fish Passage Improvements

Since 1998, 40 Bridge and Culvert Replacement Projects Completed

Project partners included:

- Grande Ronde Model Watershed
- Union County Public Works Department
- Wallowa County Public Works Department
- U.S. Forest Service
- Oregon Department of Forestry

The Bonneville Power Administration and the Oregon Watershed Enhancement Board provided funds, with agencies and landowners often sharing costs in the form of cash or services in-kind. Culvert replacements with bridges, bottom-less arches, or box culverts have been installed throughout the Grande Ronde Basin on major streams and small tributaries crucial for fish habitat, including:

- Clark Creek System
- Little Creek
- Cabin Creek
- Wildcat Creek
- Wallupa Creek
- Mill Creek
- Pelican Creek
- Deer Creek
- Summit Creek
- Numerous Small Tributaries

Since 1995, Fish Passage at More Than 25 Irrigation Diversion Improved

Project partners included:

- Grande Ronde Model Watershed
- Union County Soil and Water Conservation District
- Wallowa County Soil and Water Conservation District
- Bureau of Reclamation
- Natural Resources Conservation Service
- Irrigators

The majority of the funding for projects at irrigation diversions has been provided by the Bonneville Power Administration, the Bureau of Reclamation, and the Oregon Watershed Enhancement Board. Irrigation diversion structures have been replaced or modified on the:

- Grande Ronde River
- Catherine Creek
- Wallowa River
- Lostine River

LEFT: The old culvert was a 7-foot-tall, 11-foot-wide, 40-foot-long steel corrugated metal pipe. Although it was able to accommodate high spring flows, the culvert did not meet current fish passage criteria.

RIGHT: After installation of the new bridge, the old culvert is removed and hauled off-site. The streambanks will be reshaped and planted with hardwood and conifer vegetation.

ABOVE: The steel bridge structure is prefabricated off-site and then transported and lowered into the trenches on either side of the channel. Approximately 30 yards of concrete will be poured into each trench. Union County has used this design on 10 previous bridge projects.