GRMW 2009 Project Proposals

Projects reviewed for technical merit on Tuesday December 2, 2008, included:

- *Wal' a wa – Tamkaliks Channel Engineering Project sponsored by the Nez Perce Tribe.* This project proposes funding for design of a channel realignment on the Wallowa River near Wallowa.
- *Lostine River Fish Passage Improvement Project sponsored by the Nez Perce Tribe.* This project proposes to rebuild a fish ladder below an irrigation diversion structure on the Lostine River.
- *Upper Grande Ronde Invasive Weed Control Project sponsored by the Tri-County Weed Management Area.* This project proposes funding for noxious weed survey and inventory in Union County.
- *South Fork Spring Creek Culvert Replacement Project sponsored by the U.S. Forest Service La Grande Ranger District.* This project proposes funding for a culvert replacement on South Fork Spring Creek in Union County.
- *Mill Creek Warnock Push-up Dam Elimination sponsored by the Union Soil and Water Conservation District.* This project proposes funding to eliminate a gravel push-up dam on Mill Creek and replace it with a permanent fish passable structure.
- *Lick Creek Riparian Fence Project sponsored by the U.S. Forest Service Wallowa Mountains Office.* This project proposes to build a lay-down fence to remove cattle from Lick Creek in Wallowa County.
- *Wallowa Canyonlands Noxious Weed Partnership sponsored by Wallowa Resources.* This project proposes funding for noxious weed survey and inventory in the canyon lands of Wallowa County.

The technical review committee consisted of eight representatives from government agencies including the Oregon Department of Fish and Wildlife, the National Marine Fisheries Service, the Confederated Tribes of the Umatilla Indian Reservation, the U.S. Fish and Wildlife Service, the Nez Perce Tribe, the U.S. Forest Service, and the Oregon Department of Environmental Quality's Water Quality division.

The GRMW Board of Directors will review, rate, rank, and decide if funding is appropriate for the above seven projects on January 27, 2009.

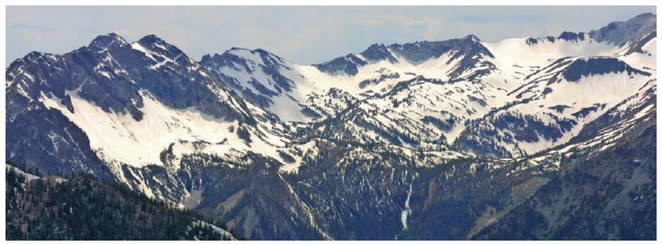
This newsletter is funded by the Bonneville Power Administration and the Oregon Watershed Enhancement Board

OWEB

From the Archives

The Founding of Wallowa County

Wallowa County was established in February 1887 out of the eastern portion of Union County. The county is 3,153 square miles in area. Wallowa is the Nez Perce word for "fish trap." The mountains get their name from the Wallowa River that is formed by the confluence of the east and west forks about one mile south of Wallowa Lake. This eventually flows into the Grande Ronde River. The Wallowa Mountains are an important geographical feature of Wallowa County. Unlike other mountain ranges in the state, the Wallowa Mountains are granite in origin rather than volcanic.



Eagle Cap in the Wallowa Mountains

Grande Ronde Model Watershed

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

Margaret McGladrey,
Ripples Editor
mmcgladrey@andersonperry.com

Winter 2009

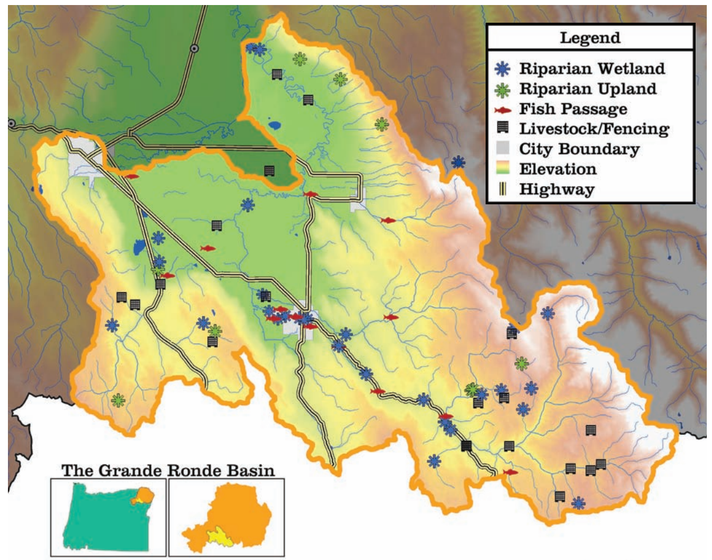
Ripples in the Grande Ronde

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

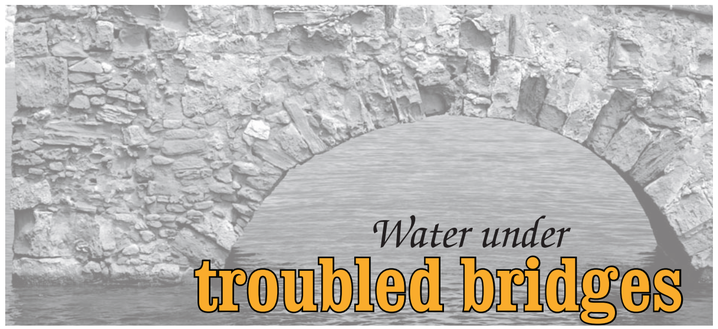
Enhancements *to the* Catherine Creek Watershed *at a glance*

by Mason Bailie, GRMW

In the Grande Ronde Model Watershed's (GRMW) work to preserve and protect the water and natural resources in Union and Wallowa Counties, every individual project fits together like pieces of a puzzle to form the larger picture of an enhanced fish habitat on a watershed-level scale. While each project affects its immediate environment, every project effort builds on and interconnects with other improvements throughout the watershed system so that each project is a microcosm of the larger goals for the watershed. This map illustrates the cumulative effect of many partners doing project work on the Catherine Creek watershed to improve riparian (waterway-related) wetlands and upland areas, prevent livestock intrusion into habitat, and enhance fish passage for spawning and other activities.



- East Fork Ladd Creek shelterbelt, riparian exclosure fencing and planting, bridge and headgate installation
- Union intake emergency fish ladder
- Catherine Creek fish passage structures at three irrigation diversion dams
- Kirby/Catherine Creek diversion improvements and conversion to sprinkler irrigation systems
- Catherine Creek Wright-Hempe-Hutchinson Fishway irrigation diversion structure modifications for fish passage
- Catherine Creek Sheldon-Sheehy irrigation and waterway improvements
- Catherine Creek/Hefner irrigation system efficiency improvements
- Ladd Creek/Tule Lake restoration of stream channel, floodplain and lake habitat, and riparian upland and wetlands, as well as water control structures
- Mill Creek fish ladder and headgate repair at diversion structure
- Repair and installation of culverts at four creeks
- Little Creek bridge replacement
- Mill Creek bridge replacement
- Murphy-Sheehy streambank restoration
- Catherine Creek/Hefner riparian exclosure fencing and planting
- Little Creek/Catherine Creek riparian exclosure fencing and planting
- Catherine Creek State Park campground relocation, footbridge construction, and riparian vegetation planting
- Scott streambank restoration
- Little Catherine Creek Headcut stabilization and restoration with boulder weirs, streambank riprap, and pool construction
- Placement of woody debris in Lick Creek riparian zone to exclude cattle
- Catherine Creek streambank rock barbs and planting
- Catherine Creek streambank stabilization and spring Chinook habitat enhancement near the City of Union's wastewater treatment plant
- Little Creek/Kerr riparian fencing
- Loren Fleet Dike relocation, wetland restoration, and reconnection to the floodplain
- Ladd Marsh effluent irrigation improvements
- Grande Ronde Basin in-stream structure enhancement with boulders and woody material
- Forkan riparian and streambank plantings
- Ladd Creek/Smutz Draw Road decommission, relocation, and stream enhancement
- North Fork Catherine Creek watershed restoration
- Middle Fork Ladd Creek relocation from ditch and restoration to historic channel
- Little Catherine Creek and Lick Creek subwatershed restoration
- Milk/Catherine Creek channel meander and establishment of fish passage
- Little Indian Creek streambank and subwatershed rehabilitation
- Mill Creek riparian enhancement
- Grazing system development and habitat improvement in three subwatersheds
- Mt. Harris noxious weed control
- Ladd Creek riparian exclosure and planting
- Catherine Creek division fence
- Little Catherine Creek watershed enhancement and livestock exclusion
- Ladd Creek livestock fencing
- Mt. Harris watershed enhancement
- Cove yellowstar thistle weed control
- Brush Creek/Price streambank restoration
- North Fork, South Fork, and Mainstem Catherine Creek/Miller grazing management and riparian restoration
- Upper Grande Ronde River sediment reduction
- Ladd Creek riparian fencing
- Bouvy Trust water riparian fencing
- Thompson riparian fencing
- Minam/Mt. Harris road improvements
- Pole Creek fence and livestock water
- Replace Red Pepper Bridge culvert
- Catherine Creek road erosion
- Little Catherine Creek riparian pasture and livestock watering
- Hagedorn Road rehabilitation and Ladd Creek streambank rehabilitation
- Ladd Creek alternative watering system
- Grande Ronde River, Catherine Creek, and Little Catherine Creek riparian exclosure fencing
- Livestock water developments on five different waterways
- La Grande livestock watering
- Relocate Catherine Creek dike
- Little Creek solar livestock watering



Water under troubled bridges

by Lyle Kuchenbecker, GRMW

The "4-H" Approach to Fish Habitat Restoration

When you think of 4-H, you probably imagine kids showing their sheep and pigs at the county fair. But when those who work to restore salmon and steelhead runs hear the phrase "4-H," chances are that they are thinking about habitat, hydro, hatcheries, and harvest, the activities that comprise the work of restoration programs in areas like the Columbia River Basin. As the name implies, the habitat category includes actions to improve habitat conditions from headwater streams down to the ocean. Hydro involves activities to physically improve passage conditions or modify operations at Columbia River and Snake River dams. Hatchery actions consist of the production of fish to supplement or restore natural salmon and steelhead runs. Harvest is the management of recreational, traditional, or commercial fish harvest.

The GRMW's restoration activities within the Grande Ronde Basin primarily involve habitat actions. Habitat improvement work typically includes activities such as re-establishing vegetation along streams, increasing stream channel pool habitat, reducing sediment input, removing fish passage barriers, and/or modifying land management activities that adversely affect streams or water quality. A recently completed example of the GRMW's habitat improvement projects is the Wildcat and Wallupa culverts replacement project, located in Wallowa County, which is described later in this article in further detail. Generally, habitat improvement work takes years, sometimes decades, for fish populations to fully realize the work's benefits. For example, re-established riparian vegetation may take several decades to mature so that it can provide shade or streambank stability.

This photo shows an example of a culvert that posed obstacles to fish passage: the pre-project Wildcat Creek culvert. The bottomless arch is undersized and periodically becomes plugged with debris, causing the road to wash out.

The Problems Posed to Fish Passage by Culverts

Exceptions to this rule about the delay between restoration actions and their benefits are projects that improve or restore fish access to marginally accessible or inaccessible habitat. Fish passage projects that open up previously unreachable stream sections result in immediate benefits. Manmade channel impediments such as irrigation diversions or road crossing structures can sometimes prevent or partially restrict adult salmon and steelhead access to spawning areas. Even relatively small barriers can prevent juvenile fish from freely moving throughout stream reaches to access better habitats. In our local streams, most of the problematic irrigation diversion structures have been improved, have been reconstructed, or are planned for remediation. Yet there are still many culverts that restrict fish movement, especially on smaller tributary streams.

Over the years, hundreds of culverts and bridges have been installed at stream crossings throughout the Grande Ronde Basin. Bridges, even those constructed many years ago, often do not compromise fish movement or stream dynamics. Culverts, however, are a different story. Historically, the major consideration for culvert construction was to install the least costly structure available that would efficiently pass anticipated flows. Year-round fish passage for all species and life stages was often not considered, prioritized, or achieved. However, advances in awareness and knowledge of fish use, needs, and movement throughout our streams have given fish passage considerations more significance to culvert owners. But despite the changes in knowledge about the effects of culverts on fish populations, many culverts that impede fish movement remain.

In the past, typical culvert installations, usually round or oval configurations with bottoms, almost always resulted in negative impacts to stream dynamics regardless of the size of the stream. Over time, culverts often result in a passage barrier to fish. Culverts usually constrict the channel to a width that is somewhat less than the average width of the stream during times of moderate flows. Channel constriction, along with the slope of the culverts, increases water velocity. Excessive velocities are particularly damaging to the stream channel at high spring flows. They wash out sediments, gravel, and cobble below the culvert, which results in a drop-off in the channel bed below the culvert. When scouring of the streambed is excessive, it causes an obstacle to fish movement by creating a drop at the downstream end of the culvert. When the drop is deeper than six inches, it exceeds the Oregon Department of Fish and Wildlife's (ODFW) current criterion for jump height. The ODFW's criterion reflects the needs of all life stages of all native species. Besides creating potential barriers to fish passage, culverts, due to their relatively narrow width, are often at risk of catching debris, plugging, and washing out, adversely affecting the stream's flow.

Transition at Ripples

Make new friends but keep the old

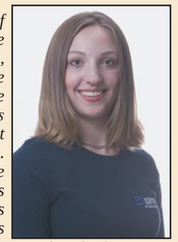
GRANDE RONDE MODEL WATERSHED

Since the summer of 2005, Beth Stewart has been the editor and publisher of Ripples in the Grande Ronde, assisting the GRMW in churning out 13 issues of the quarterly newsletter. Beth is really responsible for turning Ripples into a meaningful yet entertaining source of watershed-related news and perspectives. But she has a number of other responsibilities that preclude her from having the time to continue in her role as the Ripples "Mother Hen," covering all the steps it takes to turn an idea into an article, reminding us here at the GRMW of timelines, formats, writing styles, and then reminding us again.

Beth had the perfect background for helping with Ripples. With a Master of Science in Public Relations and Communications in Natural Resources from Colorado State University, she had previously authored 10 children's books, written technical documents for the Northwest Power and Conservation Council, and written and published a variety of equine magazines and catalogs before she joined us here. Beth's background, along with an intense interest in natural resources and communities, made her a natural fit with the GRMW and Ripples.

Beth is a very busy mother of three very busy children (ages 11, 13, and 16), is involved in a wide variety of civic activities, and is a full-time agent specializing in health and life insurance. Her contributions to GRMW and Ripples are immeasurable, and we will miss her a great deal while we wish her the best in her other ventures.

As one special person leaves us to pursue other matters, another joins us. A summa cum laude graduate of the School of Journalism and Communication at the University of Oregon (UO), Margaret McGladrey has been the Marketing Coordinator for Anderson·Perry and Associates (AP) of La Grande for more than two years, where she coordinates the firm's business development activities. Margaret will be taking over Beth's responsibilities as GRMW contracts with the local engineering firm for her professional services, a natural extension of the ongoing professional services contract between the two entities.



During her last year of college, Margaret was the editor-in-chief of inFlux, an online magazine produced by the UO School of Journalism and Communication, and previous to that served editorial internships with Oregon Quarterly (the UO alumni magazine) Flux magazine, KEZI News in Eugene, and TV-3 Magazine Department in Accra, Ghana. She also teaches weekly yoga classes in La Grande and is active in local volunteer organizations including Shelter from the Storm, the Mt. Emily Safe Center, and several handbell choirs. Margaret's husband Matt is a professor of Chinese studies and Asian history at Eastern Oregon University. Margaret and Matt enjoy camping, hiking, traveling throughout Oregon and internationally, and spending time with their menagerie of pets (two dogs and two cats).

During the normal course of business between GRMW and AP, it became apparent that Margaret could assume Beth's role, and we are excited that they have worked together to make the transition easy for all. It says something about the character of both, as if Beth is leaving something special to someone she knows will take good care. Here at GRMW, we are very pleased to be working with Margaret, and we are comfortable that the transition will also be pleasing to our readers.

So, a Big Thanks to Beth and a Hearty Welcome to Margaret!

- Jeff Oveson
GRMW Executive Director

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, January 27, 9:00 a.m. - 3:00 p.m.
  Cove Ascension Conference Center, 1006 Church St, Cove
- Tuesday, February 24, 6:30 p.m.
  Wallowa Community Center, 2nd St, Wallowa
- Tuesday, April 28, 6:30 p.m.
  Elgin City Hall, 8th St, Elgin
- Tuesday, June 23, 6:30 p.m.
  Wallowa Community Center, 2nd St, Wallowa

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

Aquifer storage and recovery

in the Grande Ronde Watershed

by Margaret McGladrey, Anderson·Perry

As the great Old West philosopher Mark Twain observed, oftentimes in the Western United States, "Whiskey's for drinkin', and water's for fightin.'" The primary bone of contention that sparks almost all water-related conflicts is the fact that water is a limited, finite resource to which everyone needs access to varying degrees in order to survive. Historically, a "resource war" over water has unwittingly pitted agricultural producers and municipalities against those who advocate for the protection of natural resources such as fish populations and watersheds, especially during the dog days of summer when both irrigation and in-stream water demands reach their highest levels. During the summer months when water is scarce, fish and other water-dependent species need more instream flow than is available. Unfortunately, when demand for water is at its highest during summer months, water supply bottoms out, leaving users and water-dependent species high and dry, without enough water to go around.

Water Supply in the Grande Ronde Basin

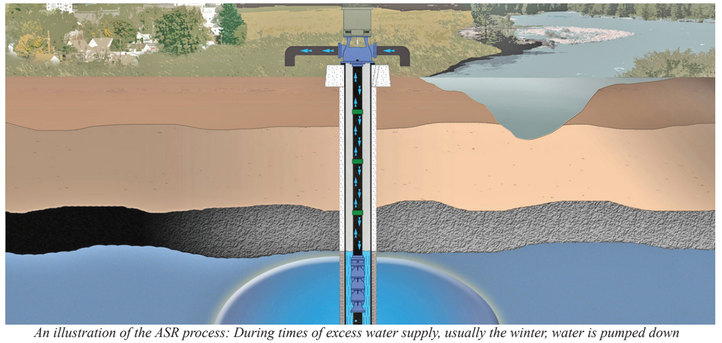
In the upper Grande Ronde River and Catherine Creek watersheds, the water rights held by agricultural producers and other users exceed the in-stream flow and sustainable pumping capacity of the aquifers available during much of the irrigation season. The agricultural producers rely on water for growing crops and providing the basis for the livelihoods of much of the population in Union County. The GRMW has been working for years with many of these producers to improve the irrigation efficiencies of and mitigating the effects of channelization, removal of shade trees from riparian areas, levees and dikes, removal of wetlands, and other agricultural practices that have harmfully impacted fish habitat. According to the Oregon Snake River Chinook and Steelhead Conservation and Recovery Plan, many landowners have changed their approaches to farming and grazing so that important ecosystem processes and functions can recover. Stream restoration and easement programs such as the Conservation Reserve Enhancement Program have allowed miles of stream adjacent to farmland in Union County to recover.

However, despite the best efforts of producers, landowners, and government agencies, these water conservation efforts alone have not been able to mitigate the summertime depletion of water supply. The 1995 NRCS Grande Ronde Cooperative River Basin Study for Union County estimated the combined irrigation rights for the main sources of surface water diversion (Catherine Creek and the Grande Ronde River) are 678 cubic feet per second (cfs). This 1995 River Basin Study reported that typical late season Grande Ronde River flows at La Grande drop to near 30 cfs, but the irrigation rights total 300 cfs; similarly, the Catherine Creek flows near Union drop to near 30 cfs with irrigation rights totaling 500 cfs. The need for supplemental water, especially during the mid- to late summer and early fall, could not be greater for both fish populations and agricultural producers, and the current water available simply cannot meet those needs.

The irony of the supply-demand situation is that water supply is plentiful during winter months, when rivers overflow with water from snowpacks and other precipitation. With all rights to existing water appropriated by landowners and other users and conservation/efficiency practices already widely employed, it will be very difficult to meet the water supply needs in the Grande Ronde Basin without additional storage capacity. But now, the application of a novel approach to water storage known as aquifer storage and recovery (ASR) and artificial recharge (AR) promises to change the typical water supply and demand equation by storing water from the winter months for use in the summer months.

A New Way to Increase Water Supply

In the fall 2008 issue of Ripples, Jeff Oveson, the executive director of the GRMW, introduced in detail the characteristics, benefits, and considerations associated with ASR and AR; please visit www.grmw.org to access this article. To recap, what ASR and AR have in common is that when excess water is available, it is placed into an underground aquifer where it is stored until it is needed for either agricultural or municipal uses when the demands of those uses exceed the available supply. This presents a win-win solution for the watershed and water users where irrigators who use AR for late season irrigation do not have to take water from an area stream and cities do not need to deplete natural aquifers or draw water from streams to meet supply needs. In December 2008, the Oregon Water Resources Department (OWRD) began grant agreement negotiations with the GRMW for approximately $46,000 in funding for a technical study to conduct the earliest phases of analysis and feasibility assessment for ASR/AR options in the Catherine Creek and upper Grande Ronde River watersheds in Union County. The GRMW's board of directors matched the commitment with $50,000 to the effort, for a total of almost $100,000 in funding to study the two watersheds. To continue the Ripples series on ASR/AR concepts and applications, this article provides a broad overview of the issues and considerations that will be analyzed in the Catherine Creek and upper Grande Ronde River watersheds study, which the GRMW will begin to conduct in spring 2009 with the receipt of OWRD funding. The GRMW is partnering with Anderson·Perry & Associates, Inc. (AP) and their staff of engineers and environmental scientists, in conjunction with GSI Water Solutions, Inc. (GSI) and their staff of geologists and hydrogeologists to complete the study. AP has worked in Union County for over 30 years, and both firms have completed above-ground and below-ground storage projects in the area. Most recently, AP and GSI worked together to complete the very successful ASR project for Baker City.



An illustration of the ASR process: During times of excess water supply, usually the winter, water is pumped down into the aquifer. During times of diminished supply, water from the aquifer is pumped out for use.

The GRMW's Planning Study for ASR and AR Applications in the Grande Ronde Basin

The 2009-2010 planning study will assess the potential applications of managed underground storage (MUS) techniques such as AR and ASR options in the Catherine Creek watershed and in the upper Grande Ronde River Basin in Union County. The goal of this study is to evaluate the feasibility of developing a cost-effective alternative for storing water during periods when water is available in the Catherine Creek and upper Grande Ronde River watershed areas and 1) releasing it for beneficial (either in-stream or consumptive) use during periods when water shortages exist and 2) providing groundwater recharge to help declining water levels. This conceptual-level planning study is designed to determine potential water availability, identify potential below-ground storage alternatives, and identify any water quality concerns that may need to be addressed in order for groundwater storage to be implemented in a practical manner. Additional, detailed analyses will be required for each alternative that is selected for further consideration, which would be accomplished in a second phase of detailed planning.

Pictured at left: Catherine Creek during the summertime, when stream flows are typically at their lowest.

Pictured at right: Catherine Creek during the winter, when excess water from precipitation is available for ASR/AR storage.

The planning study will begin in spring 2009 with a draft study completed in summer 2010 for review by appropriate agencies and project partners. Work elements that will be performed as a part of the planning study are described in sequence below and would be completed somewhat concurrently:

1. A hydrologic determination of surface water availability for groundwater storage during high stream flow periods.
2. An evaluation of water quality and treatment issues associated with groundwater storage that are pertinent to storage when source water may be available.
3. A hydrogeological determination of potential alluvial aquifers that would benefit from groundwater recharge and/or groundwater storage and recovery.
4. A hydrogeological determination of aquifer storage and recovery opportunities to help replenish declining basalt aquifers that are being utilized for municipal purposes and for agricultural irrigation.
5. Identification of surface water rights that could be exchanged for new groundwater storage rights.
6. Evaluation of water conservation opportunities coupled with new groundwater storage options that would result in increased stream flows during low stream flow periods.
7. Identification of the potential environmental impacts of implementing the various storage opportunities.
8. Public information program to inform and obtain comments from various entities and agencies that would be impacted by the proposed alternatives.
9. Written report summarizing the results of the study, identifying alternatives that should be considered for implementation, outlining conceptual costs of implementation, and providing recommendations for further evaluation and analysis.

This study represents an exciting first step in the process of utilizing MUS techniques such as AR and ASR to resolve long-standing water supply issues in our area watersheds. Please feel free to contact me at (541) 963-8309 or mmcgladrey@andersonperry.com with any questions, concerns, or ideas regarding the planning study for AR/ASR applications in the Grande Ronde Valley. ■

ODFW fish screening program

forced to cut services with a reduction in federal funding from the Mitchell Act

by Margaret McGladrey, Anderson·Perry, with contributions from Bruce Eddy, Oregon Department of Fish and Wildlife (ODFW)

Fish screens are an important tool in recovering Endangered Species Act (ESA)-listed fish populations, protecting water users from federal enforcement action, and preventing additional ESA listings. More than a million fish a year in the Columbia Basin likely avoid diversion-related mortalities due to the presence of fish screens at diversion structures. The Mitchell Act was enacted by Congress in 1938 to invest in the conservation of salmon and steelhead resources in the Columbia River Basin by funding the ODFW's partnerships with water users to prevent the loss of salmonids at diversion sites. Mitchell Act funding within the Columbia River facilities budget of the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) has historically provided the major source of funding for fish protection screening and fishways in the Columbia Basin. In Oregon, these funds have supported the operation and maintenance of three shop facilities, 771 fish protection screens, and 71 fish ladders and weirs. All of these fish protection facilities are located in ESA-listed fish species habitat streams and waterways. Based on trap data from the John Day Basin, these screens prevent the loss of approximately 359,000 salmonids per year.

Funding for screens and fishways has remained relatively flat since 1993. Prior to 1993, ODFW received $2.24 million yearly for screening and passage activities in the Columbia River Basin including screen fabrications shops, personnel, and the operation and maintenance of fish protection screens. Between 1994 and 2006, ODFW annually received an average of $1.8 million in Mitchell Act funds to support fish screening and passage activities. In 2008 and 2009, ODFW received only $1,482,025. Meanwhile costs for personnel, materials, and transportation have increased substantially. Since 2001, personnel costs alone have risen approximately 38%. Annual operation and maintenance costs of Mitchell Act fish screens are about 10% of the initial implementation price.

The ODFW's fish screening program's funding has been reduced to a new low for the upcoming fiscal year, which includes the 2009 irrigation season. As a result of this decrease in funding, the ODFW has been forced to cut six fish screen technicians and reduce the services it provides to water users such as irrigation districts in the Columbia Basin. At current Mitchell Act funding levels, the program is unable to continue to construct new screening and passage facilities. Most of the fish screens have been put on a reduced maintenance schedule that is resulting in considerable loss of fish at some diversion sites. ODFW will no longer be able to provide historic levels of routine maintenance and repair services, instead focusing remaining resources on emergency and major maintenance needs and relying on water users to handle routine inspections and maintenance. In FY 2009 the ODFW Fish Screening and Passage Program will receive $1,482,025. NMFS has indicated to ODFW that in FY 2010 there are no funds budgeted for the program. Without these funds in FY 2010, ODFW will be forced to lay off many experienced fish screen technicians and will be unable to adequately maintain existing screens and fishways that protect ESA listed fish in the John Day, Deschutes, Umatilla, and Grande Ronde sub-basins. This could immediately put many ranchers and farmers in those basins in jeopardy of federal ESA enforcement action or third-party lawsuits as a result of take of these listed fish.

Horizontal Flat Plate Fish Screen

In Oregon, the reduction of Mitchell Act fish screens funding could mean:

- Closure of up to three fish screen fabrication and maintenance shops (in The Dalles, John Day, and Enterprise) and a loss of up to 30 positions.
- Up to $5 million loss to the economies of Eastern Oregon's rural communities.
- As many as 771 fish protection screens and 71 fish ladders and weirs will not be operated and maintained by the ODFW fish screening program.
- The entire ODFW Fish Screening and Passage Program could be in jeopardy since Mitchell Act funds fund half of the program manager and administrative assistant salaries.
- Oregon could no longer provide technical assistance to water users on fish screening and passage in the Columbia River Basin.
- The State Fish Screening and Passage cost-share program would no longer be able to construct fish screens and fishways using state lottery funds since the majority of the shop facilities are funded with Mitchell Act money.

Questions on the reduction of Mitchell Act funds and how this may impact water users, particularly those with diversions in streams with ESA-listed fish habitat, should be directed to Erik White (503) 230-5403 at NMFS. Water users who are not receiving water as a result of a problem with a fish screen or who alter the screen to get water should contact ODFW as soon as possible at the phone numbers for ODFW fish screen shops listed below:

ODFW Fish Screen Shops

The Dalles	(541) 296-8026
John Day	(541) 575-0561
Enterprise	(541) 426-0311

Replacing the Culverts on Wallupa and Wildcat Creeks

Recently, the GRMW replaced two problematic culverts in the Grande Ronde Basin. The structures were located in Wallowa County on Promise Road near Troy, Oregon. One was a crossing of Wildcat Creek and the other a culvert on Wallupa Creek, a tributary of Wildcat Creek. Wildcat Creek is a major tributary of the lower Grande Ronde River, which produces steelhead and resident rainbow trout. Wallupa Creek also provides steelhead and rainbow habitat, although habitat is intermittent through some reaches. The Wildcat Bridge is located on Wildcat Creek just above the confluence of Wallupa and Wildcat Creeks. Nine miles of habitat exist upstream of the site. The Wallupa Bridge is on Wallupa Creek approximately five miles above the confluence of the two creeks. There are about two and a half miles of fish habitat upstream of this site.

The previous structure on Wildcat Creek was an undersized, partially crushed bottomless arch. The arch had a history of washing out during high water events that are common to the canyon country in the lower Grande Ronde River. Each time the arch failed, a portion of the road went with it, washing hundreds of tons of road fill into Wildcat Creek and down into the Grande Ronde River. The existing Wallupa Creek culvert was a round eight-foot culvert that also periodically washed out, likely as the result of debris plugging up the entrance. Additionally, high water velocity through the pipe created a two-foot drop at the outlet that partially blocked adult steelhead access to about two miles of spawning habitat. Juvenile steelhead and resident rainbow trout were also blocked from accessing perennial flow reaches in the headwaters. The GRMW's recent habitat restoration project replaced these two undersized, failure-prone culverts with full channel-spanning bridges.

The Wallupa Creek Culvert

Before Improvements

After Improvements

The Project Process

Although construction of the new structures was completed in fall 2008, initial planning for the project effort began two years earlier and concluded with bridge designs that would span the entire channels and would pass 500-year flood flows, which are extreme flood events that are predicted to occur only once every 500 years. The bridge designs called for concrete and steel piling foundations anchored to bedrock and prestressed concrete slab decking. The total span of the Wildcat Bridge is 50 feet. The span of the Wallupa Bridge is 38 feet. Construction of both bridges began simultaneously in mid-June 2008. The construction process went smoothly and was completed in a timely manner despite the remoteness of the site. With the exception of the guardrail installation, work was completed in mid-September. Road access had to be maintained throughout the construction period because Promise Road is used extensively by whitewater rafters, anglers, hunters, loggers, and residents from the Troy area.

This significant undertaking required the cooperation and coordination of multiple players and stakeholders. The GRMW was the project sponsor, managing project implementation and acquiring design and construction funds from Bonneville Power Administration and the Oregon Watershed Enhancement Board. Anderson·Perry & Associates, Inc. (AP) designed the bridges, acquired the required Army Corps of Engineers and Oregon Department of State Lands permits, and performed construction inspections. D.L. Edmonson, Inc., of Summerville, was awarded the bridge construction contract. The Wallowa County Public Works Department constructed and removed traffic bypasses, regulated traffic, provided riprap and surface gravel, and completed erosion seeding.

In no small part, the project was successfully completed thanks to the efforts of the cooperators and construction crews. The Wallowa Valley Ranger District cultural resource and environmental compliance staff provided timely assistance and environmental documentation (as land surrounding the Wildcat site is National Forest). The ODFW's fish biologists provided technical input and assistance in project design, construction timing, and construction methods to protect fisheries resources. The Wallowa County Public Works Department began stockpiling rock in advance of the construction period, constructed and removed the bypasses in a very timely manner, and worked closely with the construction contractor. Don Edmonson and his crew worked steadily to complete high-quality bridge work in the environmentally conscientious manner prescribed by AP's designs. AP construction inspectors were on site and available to make timely construction decisions.

The new bridges are fisheries and infrastructure investments that will provide fish habitat as well as recreational and economic benefits well into the future.

The Wildcat Creek Culvert

Before Improvements

After Improvements